

SECTION **DAS**

DRIVER ASSISTANCE SYSTEM

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< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precautions for Removing of Battery Terminal

INFOID:000000009898556

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

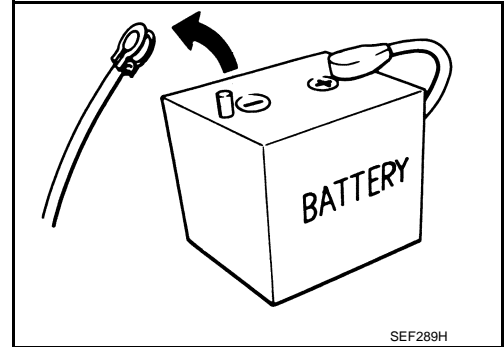
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



Precautions For Harness Repair

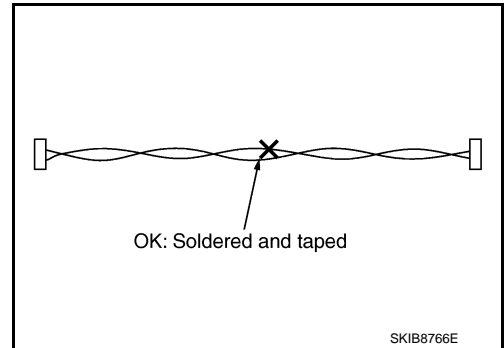
INFOID:000000009013427

ITS communication uses a twisted pair line. Be careful when repairing it.

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

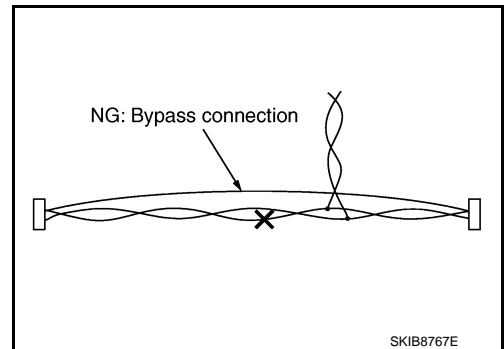
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.

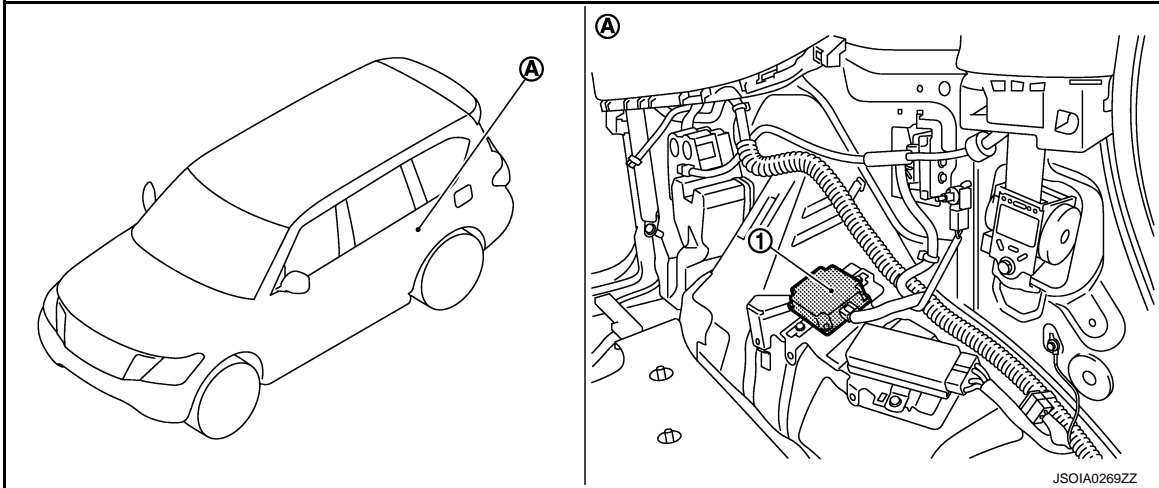


SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000009013428



- 1. ADAS control unit
- A. Inside of luggage side finisher lower (LH)

Component Description

INFOID:000000009013429

Component	Description
ADAS control unit	<ul style="list-style-type: none"> • Controls each system, based on ITS communication signals received from the ICC sensor, the accelerator pedal actuator, the lane camera unit, and the side radar LH/RH and CAN communication signals received from each control unit • Transmits signals necessary for control between CAN communication and ITS communication

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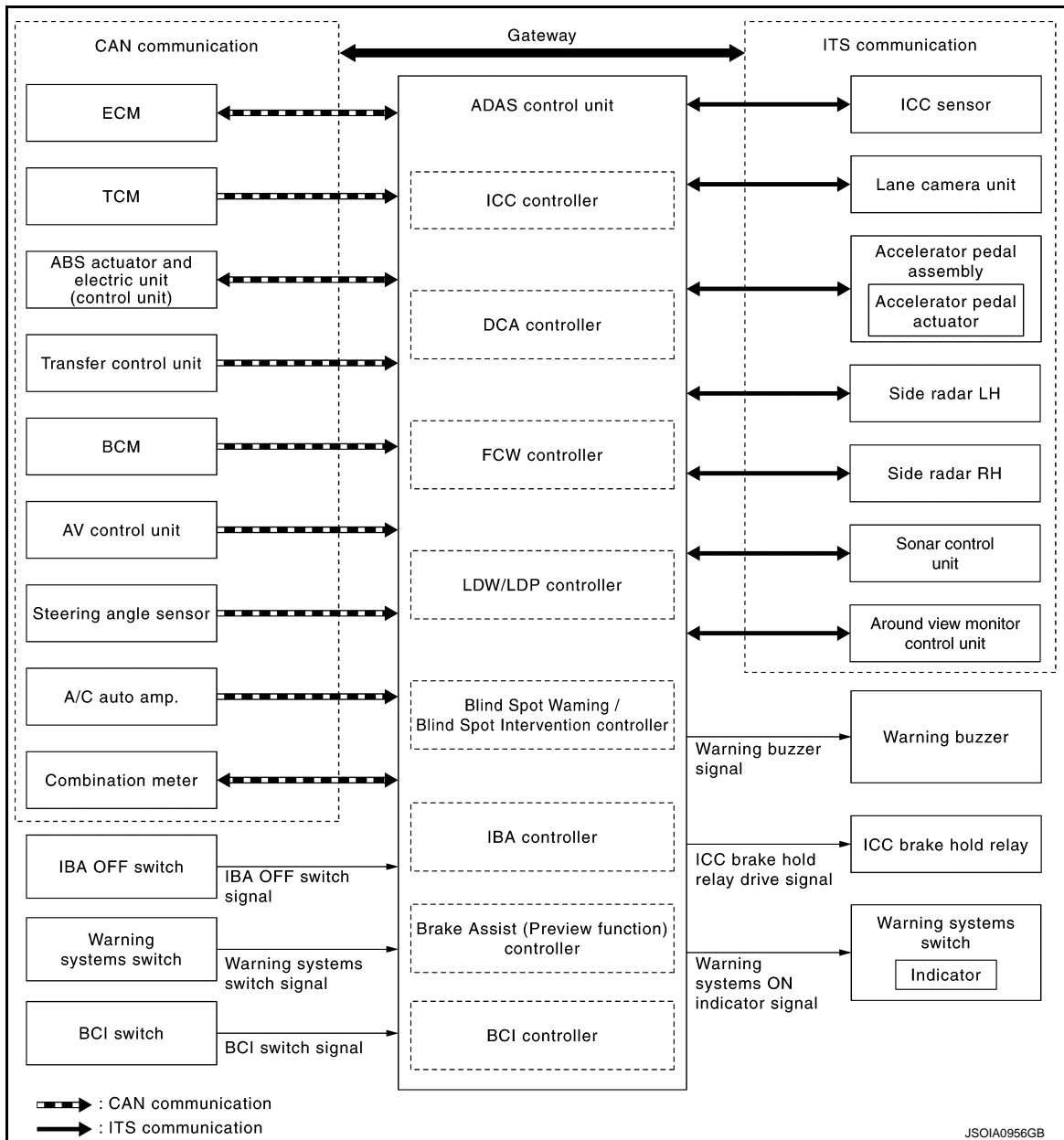
DAS

SYSTEM

System Description

INFOID:00000009013430

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

SYSTEM

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Transmit unit	Signal name	Description		
ECM	Closed throttle position signal		Receives idle position state (ON/OFF)	
	Accelerator pedal position signal		Receives accelerator pedal position (angle)	
	ICC prohibition signal		Receives an operable/inoperable state of the ICC system	
	CAN communication	ICC steering switch signal	Main switch signal	Receives the operational state of the ICC steering switch
			SET/COAST switch signal	
			CANCEL switch signal	
			RESUME/ACCELERATE switch signal	
			DISTANCE switch signal	
			Dynamic driver assistance switch signal	
	Engine speed signal		Receives engine speed	
	Stop lamp switch signal		Receives an operational state of the brake pedal	
	ICC brake switch signal		Receives an operational state of the brake pedal	
Snow mode switch signal		Receives an operational state of the snow mode		
TCM	CAN communication			
	Input speed signal		Receives the number of revolutions of input shaft	
	Current gear position signal		Receives a current gear position	
	Shift position signal		Receives a selector lever position	
Output shaft revolution signal		Receives the number of revolutions of output shaft		
ABS actuator and electric unit (control unit)	CAN communication			
	ABS malfunction signal		Receives a malfunction state of ABS	
	ABS operation signal		Receives an operational state of ABS	
	ABS warning lamp signal		Receives an ON/OFF state of ABS warning lamp	
	TCS malfunction signal		Receives a malfunction state of TCS	
	TCS operation signal		Receives an operational state of TCS	
	VDC OFF switch signal		Receives an ON/OFF state of VDC	
	VDC malfunction signal		Receives a malfunction state of VDC	
	VDC operation signal		Receives an operational state of VDC	
	Vehicle speed signal (ABS)		Receives wheel speeds of four wheels	
	Stop lamp switch signal		Receives an operational state of the brake pedal	
Yaw rate signal		Receives yaw rate acting on the vehicle		
Side G sensor signal		Receives lateral G acting on the vehicle		
Combination meter	CAN communication	Parking brake switch signal	Receives an operational state of the parking brake	
BCM	CAN communication			
	Front wiper request signal		Receives an operational state of front wiper(s)	
	Turn indicator signal		Receives an operational state of the turn signal lamp and the hazard lamp	
Dimmer signal		Receives ON/OFF state of dimmer signal		
Steering angle sensor	CAN communication			
	Steering angle sensor malfunction signal		Receives a malfunction state of steering angle sensor	
	Steering angle sensor signal		Receives the number of revolutions, turning direction of the steering wheel	
Steering angle speed signal		Receives the turning angle speed of the steering wheel		

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SYSTEM

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Transmit unit	Signal name		Description
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in "Driver Assistance" selected with the navigation system
A/C auto amp.	CAN communication	Ambient temperature signal	Receives ambient temperature signal
Transfer control unit	CAN communication	Current 4WD mode signal	Receives a mode selection state of the 4WD shift switch
ICC sensor	ITS communication	ICC sensor signal	Receives detection results, such as the presence or absence of a vehicle ahead and distance from the vehicle
Lane camera unit	ITS communication	Detected lane condition signal	Receives detection results of lane marker
Sonar control unit	ITS communication	Rear object detection signal	Receives objects detection result of rear area behind vehicle
Accelerator pedal actuator	ITS communication	Accelerator pedal actuator operation status signal	Receives an operational state of accelerator pedal actuator
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone
IBA OFF switch	IBA OFF switch signal		Receives an ON/OFF state of the IBA OFF switch
Warning systems switch	Warning systems switch signal		Receives an ON/OFF state of the warning systems switch
BCI switch	BCI switch signal		Receives an ON/OFF state of the BCI switch

Output Signal Item

Reception unit	Signal name		Description
ECM	CAN communication	ICC operation signal	Transmits an ICC operation signal necessary for intelligent cruise control
TCM	CAN communication	ICC operation signal	Transmits an ICC operation signal necessary for intelligent cruise control via ECM
ABS actuator and electric unit (control unit)	CAN communication	Brake fluid pressure control signal	Transmits a brake fluid pressure control signal to activates the brake
		Target yaw moment signal	Transmits a target yaw moment signal to generate yaw moment to the vehicle

SYSTEM

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Reception unit	Signal name		Description
Combination meter	CAN communication	Own vehicle indicator signal	Transmits a signal to display a state of the system on the information display
		Vehicle ahead detection indicator signal	
		Set vehicle speed indicator signal	
		Set distance indicator signal	
		SET switch indicator signal	
		MAIN switch indicator signal	
		DCA system switch indicator signal	
		BCI system display signal	
	Blind Spot Warning/Blind Spot Intervention warning lamp signal	Blind Spot Warning/Blind Spot Intervention warning lamp signal	Transmits a Blind Spot Warning/Blind Spot Intervention warning lamp signal to turn ON the Blind Spot Warning/Blind Spot Intervention warning lamp
	Blind Spot Intervention ON indicator lamp signal	Blind Spot Intervention ON indicator lamp signal	Transmits a Blind Spot Intervention ON indicator lamp signal to turn ON the Blind Spot Intervention ON indicator lamp
	LDP ON indicator lamp signal	LDP ON indicator lamp signal	Transmits an LDP ON indicator lamp signal to turn ON the LDP ON indicator lamp
	Lane departure warning lamp signal	Lane departure warning lamp signal	Transmits a lane departure warning lamp signal to turn ON the lane departure warning lamp
	ICC warning lamp signal	ICC warning lamp signal	Transmits an ICC warning lamp signal to turn ON the ICC system warning lamp
IBA OFF indicator lamp signal	IBA OFF indicator lamp signal	<ul style="list-style-type: none"> • Transmits a signal to turn ON the IBA OFF indicator lamp • Transmits an ON/OFF state of the intelligent brake assist 	
Buzzer output signal	Buzzer output signal	Transmits a buzzer output signal to turn ON the buzzer of the following systems: <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Intelligent Brake Assist (IBA) • Forward Collision Warning (FCW) 	
ICC sensor	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
		Steering angle sensor signal	Transmits a steering angle sensor signal received from the steering angle sensor
Lane camera unit	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
		Turn indicator signal	Transmits a turn indicator signal received from BCM
Accelerator pedal actuator	ITS communication	Accelerator pedal position signal	Transmits an accelerator pedal angle calculated by the ADAS control unit
		Accelerator pedal feedback force control signal	Transmits a target reaction force value calculated by the ADAS control unit

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Reception unit	Signal name		Description
Side radar LH, RH	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
		Blind Spot Warning/Blind Spot Intervention indicator signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator signal to turn ON the Blind Spot Warning/Blind Spot Intervention indicator
		Blind Spot Warning/Blind Spot Intervention indicator dimmer signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator
Sonar control unit	ITS communication	Warning buzzer signal	Transmits a buzzer drive signal to activate buzzer
Around view monitor control unit	ITS communication	BCI warning signal	Transmits a BCI warning signal to indicate the yellow/red frame on the front display
ICC brake hold relay	ICC brake hold relay drive signal		Activates the brake hold relay and turns ON the stop lamp
Warning buzzer	Warning buzzer signal		Activates the warning buzzer of the following systems: <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
Warning systems ON indicator	Warning systems ON indicator signal		Turns ON the warning systems ON indicator

DESCRIPTION

- ADAS* control unit controls the following systems, based on ITS communication signals from the ICC sensor, the accelerator pedal actuator, the lane camera unit and side radar LH/RH and a CAN communication signal from each control unit.

NOTE:

*: Advanced Driver Assistance Systems

- Intelligent Cruise Control (ICC)
- Distance Control Assist (DCA)
- Intelligent Brake Assist (IBA)
- Brake Assist (with preview function)
- Forward Collision Warning (FCW)
- Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)/Blind Spot Intervention
- Back-up Collision Intervention (BCI)

System	Reference
Intelligent Cruise Control (ICC)	CCS-12. "System Description"
Distance Control Assist (DCA)	DAS-77. "System Description"
Intelligent Brake Assist (IBA)	BRC-161. "INTELLIGENT BRAKE ASSIST : System Description"
Brake Assist (with preview function)	BRC-154. "BRAKE ASSIST (WITH PREVIEW FUNCTION) : System Description"
Forward Collision Warning (FCW)	DAS-232. "System Description"
Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)	<ul style="list-style-type: none"> • Lane Departure Warning: DAS-297. "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description" • Lane Departure Prevention: DAS-300. "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description"

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[ADAS CONTROL UNIT]

System	Reference
Blind Spot Warning (BSW)/Blind Spot Intervention	<ul style="list-style-type: none"> Blind Spot Warning: DAS-437, "BLIND SPOT WARNING (BSW) SYSTEM : System Description" Blind Spot Intervention: DAS-442, "BLIND SPOT INTERVENTION SYSTEM : System Description"
Back-up Collision Intervention (BCI)	<ul style="list-style-type: none"> Back-up Collision Intervention: DAS-612, "System Description"

Fail-safe

INFOID:000000009013431

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

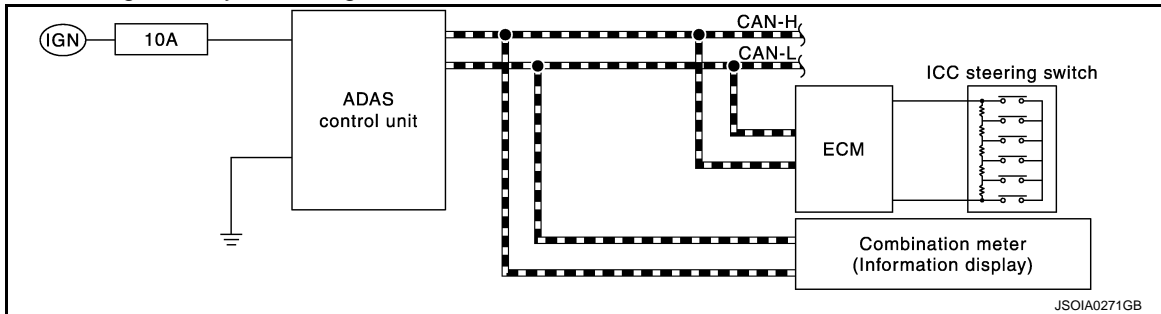
On Board Diagnosis Function

INFOID:000000009013432

DESCRIPTION

The DTC is displayed on the information display by operating the ICC steering switch.

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

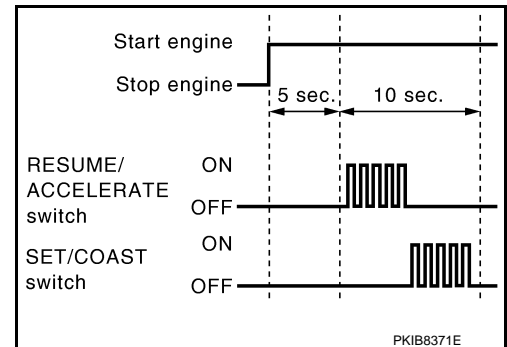
Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)

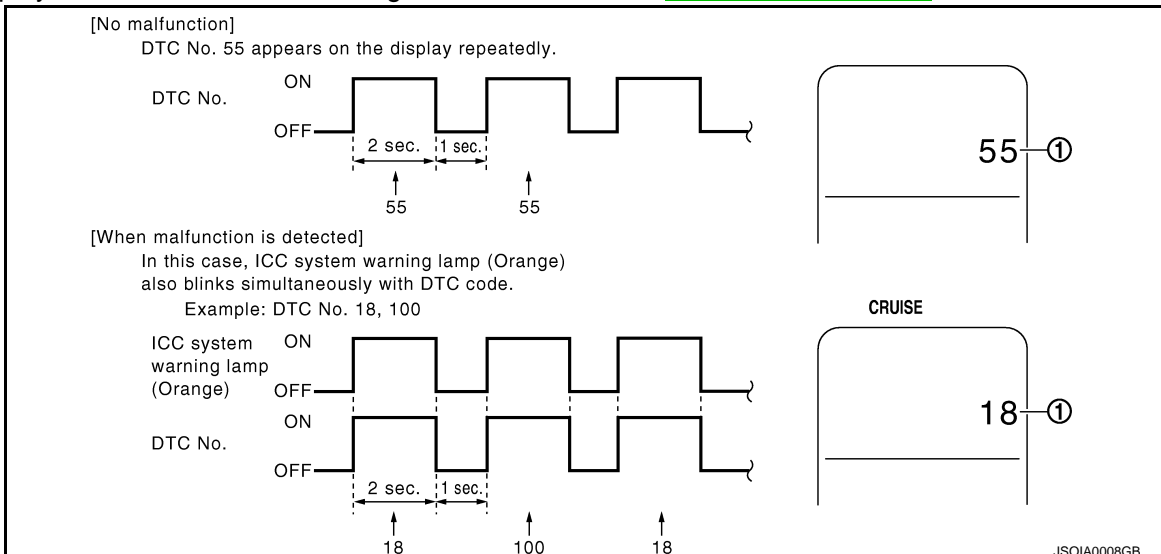
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [DAS-45, "DTC Index"](#).



NOTE:

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- It displays for up to 5 minutes and then stops.
- If multiple malfunctions exist, up to 6 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-30, "On Board Diagnosis Function"
ICC steering switch malfunction		Perform the inspection for DTC"C1A06". Refer to CCS-100, "Diagnosis Procedure"
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		<ul style="list-style-type: none"> • Check power supply and ground circuit of ADAS control unit. Refer to DAS-71, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for "ICC/ADAS"with CONSULT, and then check the malfunctioning parts. Refer to DAS-45, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Start the engine, and then start the on board self-diagnosis.
3. Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

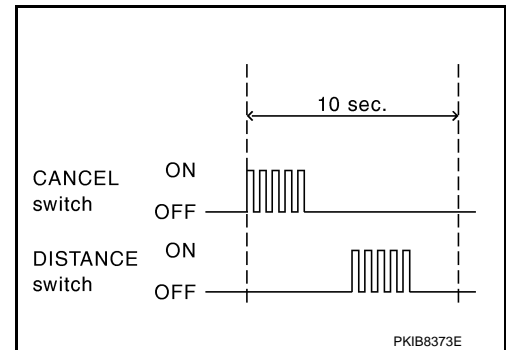
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

5. Turn ignition switch OFF, and finish the diagnosis.



CONSULT Function (ICC/ADAS)

INFOID:000000009013433

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit.

Diagnosis mode	Description
Work Support	Displays causes of automatic system cancellation occurred during system control
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit
Data Monitor	Displays ADAS control unit input/output data in real time
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load
Ecu Identification	Displays ADAS control unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication

WORK SUPPORT

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[ADAS CONTROL UNIT]

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • Conventional (fixed speed) cruise control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Lane Departure Prevention (LDP) • Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Back-up Collision Intervention (BCI)

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description
OPERATING WIPER	×			The wiper operates at HI (it includes when the wiper is operated at HI with the wiper switch AUTO position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor light sensing part
LASER TEMP	×		×	Temperature around ICC sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH)
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed

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TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage
PARKING BRAKE ON	×	×		The parking brake is operating
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values
INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less
CAN COMM ERROR	×	×	×	ADAS control unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system
ECD CIRCUIT	×	×	×	An abnormal condition occurs in ECD system
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high
ICC SENSOR CAN COMM ERR	×		×	Communication error between ADAS control unit and the ICC sensor
4WD LOCK MODE	×	×	×	Shifting of the 4WD shift switch to 4H or 4L
ABS WARNING LAMP	×		×	ABS warning lamp ON
NO RECORD	×	×	×	—

Display Items for The Cause of Automatic Cancellation 2

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
OPE VDC/TCS/ABS 1	×		The activation of VDC, TCS, or ABS during LDP system control
Vehicle dynamics	×		Vehicle behavior exceeds specified value
Steering speed	×		Steering speed was more than the specified value in evasive direction
End by yaw angle	×		Yaw angle was the end of LDP control
Departure yaw large	×		Detected more than the specified value of yaw angle in departure direction
ICC WARNING	×		Target approach warning of ICC system, IBA system, or FCW system was activated
CURVATURE	×		Road curve was more than the specified value
Steering angle large	×		Steering angle was more than the specified value
Brake is operated	×		Brake pedal was operated
IGN LOW VOLT	×		Decrease in ADAS control unit IGN voltage
Lateral offset	×		Distance of vehicle and lane was detached in lateral direction more than the specified value
Lane marker lost	×		Lane camera unit lost the trace of lane marker
Lane marker unclear	×		Detected lane marker was unclear
Yaw acceleration	×		Detected yawing speed was more than the specified value
Deceleration large	×		Deceleration in a longitudinal direction was more than the specified value
Accel is operated	×		Accelerator pedal was depressed
Departure steering	×		Steering wheel was steered more than the specified value in departure direction
Evasive steering	×		Steering wheel was steered more than the specified value in the evasive direction

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
R range	×		Selector lever was operated to R range
Parking brake drift	×		Rear wheels lock was detected
Not operating condition	×		Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
4WD LOCK MODE	×		Shifting of the 4WD shift switch to 4H or 4L
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker un- clear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
BSI) 4WD LOCK MODE		×	Shifting of the 4WD shift switch to 4H or 4L

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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[ADAS CONTROL UNIT]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Back-up Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	—
APA POWER	×	Decrease in accelerator pedal actuator ignition or battery voltage
VEHICLE SPEED UP	×	Vehicle speed higher than 8 km/h (5 MPH)

SELF DIAGNOSTIC RESULT

Refer to [DAS-45. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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[ADAS CONTROL UNIT]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
THRTL SENSOR [deg]	×	×				NOTE: The item is displayed, but it is not monitored
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
YAW RATE [deg/s]	×					NOTE: The item is displayed, but it is not monitored
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of “D” or “M” positions read from ADAS control unit through CAN communication; ON when position “D” or “M” (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit

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[ADAS CONTROL UNIT]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
VHCL SPD AT [km/h] or [mph]	×					Indicates vehicle speed calculated from A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×					Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [ON/OFF] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed
IBA SW [On/Off]	×	×				Indicates [On/Off] status of IBA OFF switch
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of warning systems ON indicator output
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system
READY signal [On/Off]			×			Indicates LDP system settings

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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[ADAS CONTROL UNIT]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
Camera lost [Detect/Deviate/Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection signal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)
STATUS signal [Stnby/Warn/Cancl/Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an ON/OFF state of the lane marker. The ON/OFF state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
FUNC ITEM (NV-ICC) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
FUNC ITEM (NV-DCA) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
DCA SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
NAVI ICC SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
NAVI DCA SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
SYS SELECTABILITY [On/Off]	×	×	×	×		Indicates the availability of ON/OFF switching for "Driver Assistance" items received from the AV control unit via CAN communication
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system
4WD SW [AUTO, 4H, 4L]	×		×	×		Indicates [On/Off] status as judged from current 4WD mode signal (Transfer control unit transmits current 4WD mode signal through CAN communication)
BCI SWITCH [On/Off]					×	Indicates [On/Off] status of BCI switch
BCI SYSTEM ON [On/Off]					×	Indicates [On/Off] status of Back-up Collision Intervention system
BCI ON IND [On/Off]					×	Indicates [On/Off] status of BCI ON indicator
BCI OFF IND [On/Off]					×	Indicates [On/Off] status of BCI OFF indicator
BCI WARNING IND [On/Off]					×	Indicates [On/Off] status of BCI malfunction indicator
BCI HI TEMP WARN IND [On/Off]					×	Indicates [On/Off] status of BCI not available indicator
BATTERY CIRCUIT OFF [Off]						NOTE: The item is displayed, but it is not monitored

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning lamp is illuminated.**
 - **ICC system warning lamp**
 - **Lane departure warning lamp**
 - **Blind Spot Warning/Blind Spot Intervention warning lamp**
 - **IBA OFF indicator lamp (IBA system ON)**
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
Active Pedal	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF operations as necessary

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Test item	Description
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	<ul style="list-style-type: none"> • MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the combination meter via CAN communication <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signals to the combination meter via CAN communication	Intermittent beep sound
	Test start	Starts the tests of "MODE1"	—
	Reset	Stops transmitting the buzzer output signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

BRAKE ACTUATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3"	—
	Reset	Stops transmitting the brake fluid pressure control signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

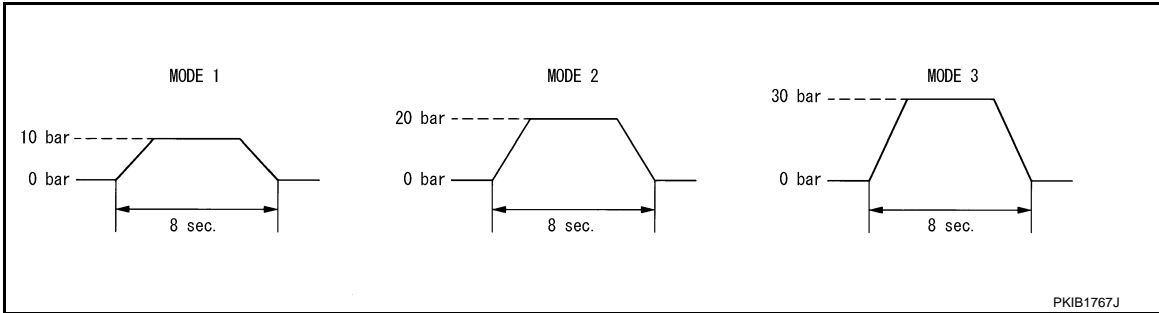
NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

The test is finished in 10 seconds after starting



Active Pedal

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

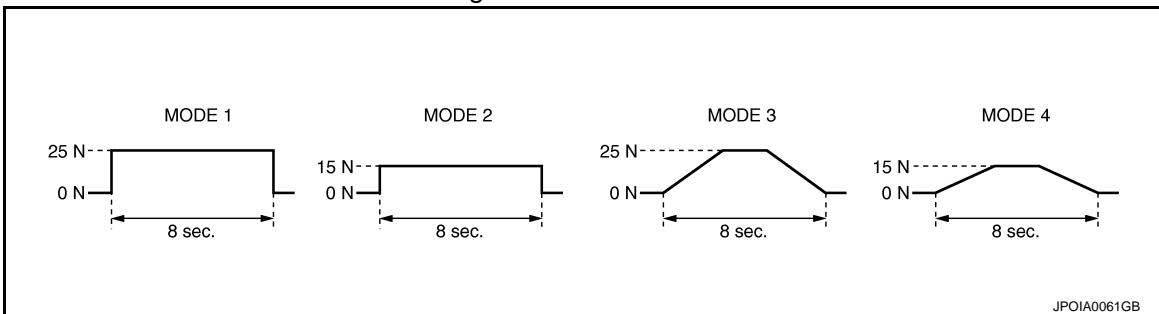
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
Active Pedal	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3” and “MODE4”	—
Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—	
End	Returns to the “SELECT TEST ITEM” screen	—	

NOTE:

The test is finished in 10 seconds after starting



DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test	—
	On	Transmits the DCA system switch indicator signal to the combination meter via CAN communication	ON

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

LDP BUZZER

Test item	Operation	Description	Warning buzzer
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	—
	On	Transmits the warning buzzer signal to the warning buzzer	ON

WARNING SYSTEM IND

Test item	Operation	Description	Warning systems ON indicator
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	—
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

LDP ON IND

Test item	Operation	Description	LDP ON indicator lamp (Green)
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal below to end the test	—
	On	Transmits the LDP ON indicator lamp signal to the combination meter via CAN communication	ON

LANE DEPARTURE W/L

Test item	Operation	Description	Lane departure warning lamp (Yellow)
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp signal below to end the test	—
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON

BSW/BSI WARNING LAMP

Test item	Operation	Description	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow)
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot Intervention warning lamp signal below to end the test	—
	On	Transmits the Blind Spot Warning/Blind Spot Intervention warning lamp signal to the combination meter via CAN communication	ON

BSI ON INDICATOR

Test item	Operation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indicator signal below to end the test	—
	On	Transmits the Blind Spot Intervention ON indicator signal to the combination meter via CAN communication	ON

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:000000009013434

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> Start the engine and turn the ICC system ON Press the DISTANCE switch to change the vehicle-to-vehicle distance setting 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

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ADAS CONTROL UNIT

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[ADAS CONTROL UNIT]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehicle speed calculated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	On
		When the buzzer of the following system not operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
BA WARNING	Engine running	IBA OFF indicator lamp ON <ul style="list-style-type: none"> • When IBA system is malfunctioning • When IBA system is turned to OFF 	On
		IBA OFF indicator lamp OFF <ul style="list-style-type: none"> • When IBA system is normal • When IBA system is turned to ON 	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
		When ICC brake hold relay is not activated	Off
D RANGE SW	Engine running	When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Monitor item	Condition		Value/Status
GEAR	While driving		Displays the gear position
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> • Drive the vehicle and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch 	SET switch indicator ON	On
		SET switch indicator OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is pressed	On
		When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dynamic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
IBA SW	Ignition switch ON	When the IBA OFF switch is pressed	On
		When the IBA OFF switch is not pressed	Off
FCW SYSTEM ON	Ignition switch ON	When the FCW system is ON (Warning systems ON indicator ON)	On
		When the FCW system is OFF (Warning systems ON indicator OFF)	Off
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator pedal actuator
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON (Warning systems ON indicator ON)	On
		When the LDW system is OFF (Warning systems ON indicator OFF)	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

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ADAS CONTROL UNIT

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[ADAS CONTROL UNIT]

Monitor item	Condition		Value/Status
LDP ON IND	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp ON	On
		LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Drive the vehicle and activate the LDW system or LDP system	Lane departure warning lamp ON	On
		Lane departure warning lamp OFF	Off
LDW BUZER OUT-PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system	When the buzzer of the following system operates • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	On
		When the buzzer of the following system does not operate • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	Off
LDP SYSTEM ON	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
READY signal	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
Camera lost	Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	<ul style="list-style-type: none"> • Engine running • While driving 		Displays the shift position
Turn signal	Turn signal lamps OFF		Off
	Turn signal lamp LH blinking		LH
	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH blinking		LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
		Vehicle turning left	Positive value
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off
STATUS signal	Drive the vehicle with the LDP system turned ON	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV-DCA)	NOTE: The item is indicated, but not monitored		Off
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the navigation system is ON	On
		"Distance Control Assist" set with the navigation system is OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Monitor item	Condition		Value/Status
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the navigation system is ON	On
		"Lane Departure Prevention" set with the navigation system is OFF	Off
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the navigation system is ON	On
		"Blind Spot Intervention" set with the navigation system is OFF	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored		Off
NAVI DCA SELECT	NOTE: The item is indicated, but not monitored		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the navigation system can be switched normally	On
		Items set with the navigation system cannot be switched normally	Off
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
		Blind Spot Intervention ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON (Warning systems ON indicator ON)	On
		When the BSW system is OFF (Warning systems ON indicator OFF)	Off
BSI SYSTEM ON	Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
		When the Blind Spot Intervention system is OFF	Off
4WD SW	Engine running	4WD shift switch position is in AUTO	AUTO
		4WD shift switch position is in 4H	4H
		4WD shift switch position is in 4L	4L
BCI SWITCH	Ignition switch ON	When BCI switch is pressed	ON
		When BCI switch is not pressed	OFF
BCI SYSTEM ON	Ignition switch ON	When BCI system is ON	ON
		When BCI system is OFF	OFF
BCI ON IND	Ignition switch ON	When BCI ON indicator is ON	ON
		When BCI ON indicator is OFF	OFF
BCI OFF IND	Ignition switch ON	When BCI OFF indicator is ON	ON
		When BCI OFF indicator is OFF	OFF
BCI WARNING IND	Ignition switch ON	When BCI malfunction indicator is ON	ON
		When BCI malfunction indicator is OFF	OFF
BCI HI TEMP WARN IND	Ignition switch ON	When BCI not available indicator is ON	ON
		When BCI not available indicator is OFF	OFF
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not monitored		Off

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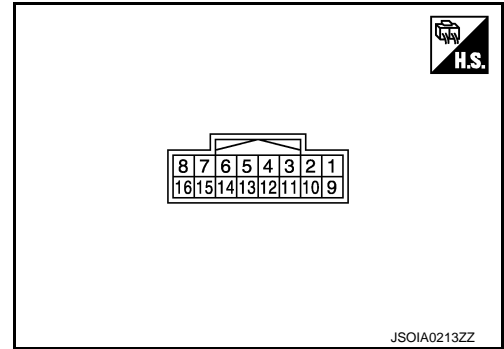
ADAS CONTROL UNIT

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[ADAS CONTROL UNIT]

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (V/W)	Ground	Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed	12 V
					When warning systems switch is pressed	0 V
3 (R/Y)		IBA OFF switch	Input	Ignition switch ON	When IBA OFF switch is not pressed	12 V
					When IBA OFF switch is pressed	0 V
4 (LG/B)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (R)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (Y)		ITS communication-L	—	—	—	—
10 (O)		BCI switch	Input	Ignition switch ON	When BCI OFF switch is not pressed	12 V
					When BCI OFF switch is pressed	0 V
12 (G/R)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	0 V
					Warning buzzer not operating	12 V
14 (L)		CAN -H	—	—	—	—
15 (P)	CAN -L	—	—	—	—	
16 (W/G)	Ignition power supply	Input	Ignition switch ON		Battery Voltage	

Fail-safe

INFOID:000000009013435

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000009013436

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Priority	Detected items (DTC)
4	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A2A: ICC SEN PWR SUP CIR • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD PWR SUPPLY CIR • C1A33: CAN TRANSMISSION ERR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR 2 • C1A38: APA CAN CIR 1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1B01: CAM AIMING INCOMP • C1B03: CAM ABNRML TMP DETCT • C1B56: SONOR CIRCUIT • C1B57: AVM CIRCUIT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0428: STRG SEN CAN CIR 2 • U1500: CAM CAN CIR 2 • U1501: CAM CAN CIR 1 • U1502: ICC SEN CAN COMM CIR • U1503: SIDE RDR L CAN CIR 2 • U1504: SIDE RDR L CAN CIR 1 • U1505: SIDE RDR R CAN CIR 2 • U1506: SIDE RDR R CAN CIR 1 • U150B: ECM CAN CIRC 3 • U150C: VDC CAN CIRC 3 • U150D: TCM CAN CIRC 3 • U150E: BCM CAN CIRC 3 • U150F: AV CAN CIRC 3 • U1512: HVAC CAN CIRC3 • U1513: METER CAN CIRC 3 • U1514: STRG SEN CAN CIRC 3 • U1515: ICC SENSOR CAN CIRC 3 • U1516: CAM CAN CIRC 3 • U1517: APA CAN CIRC 3 • U1518: SIDE RDR L CAN CIRC 3 • U1519: SIDE RDR R CAN CIRC 3 • U1520: 4WD CAN CIRC 3 • U1521: SONAR CAN COMMUNICATION 2 • U1522: SONAR CAN COMMUNICATION 1 • U1523: SONAR CAN COMMUNICATION 3 • U1524: AVM CAN COMMUNICATION 1 • U1525: AVM CAN COMMUNICATION 3
5	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Priority	Detected items (DTC)
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:000000009013437

NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-66
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-93

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ADAS CONTROL UNIT

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[ADAS CONTROL UNIT]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp		System	
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-95
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON		A, B, C, D, E, F, G	CCS-96
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	CCS-100
C1A12	12	LASER BEAM OFFCNTR	ON	ON				A, C, D, E	CCS-102
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	CCS-103
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	CCS-109
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-110
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	CCS-112
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	CCS-114
C1A18	18	LASER AIMING INC-MP	ON	ON				A, C, D, E	CCS-115
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	CCS-117
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-119
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	CCS-121
C1A27	27	ECD PWR SUPPLY CIR	ON	ON				A, B, C, D, E	CCS-122
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	CCS-124
C1A34	34	COMMAND ERROR	ON					A, B, E	CCS-125
C1A35	35	APA CIR	ON				ON	A, E, H	CCS-126

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Systems for fail-safe

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	CCS-127
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	CCS-128
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	CCS-129
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-130
C1A40	40	SYSTEM SW CIRC		ON				C, D	CCS-132
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	CCS-123
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-386
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	DAS-388
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK		F, G	DAS-390
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-543
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-544
C1B56	87	SONOR CIRCUIT					ON	H	DAS-544
C1B57	88	AVM CIRCUIT					ON	H	DAS-544
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	CCS-135
C1F02	92	APA C/U MALF	ON				ON	A, E, H	CCS-136
C1F05	95	APA PWR SUPPLY CIR	ON				ON	A, E, H	CCS-137
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—	—	ON	—	—

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Systems for fail-safe

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-139
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	—	A, B, C, D, E, G, H	CCS-141
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			ON	A, B, C, D, E	CCS-143
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	CCS-144
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON		A, B, C, D, E, F, G, H	CCS-145
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-147
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-149
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-68
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-69
U1500	145	CAM CAN CIR 2			ON	ON	ON	F, G	DAS-406
U1501	146	CAM CAN CIR 1			ON	ON	ON	F, G	DAS-407
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	CCS-158
U1503	150	SIDE RDR L CAN CIR 2				ON		G, H	DAS-569
U1504	151	SIDE RDR L CAN CIR 1				ON		G, H	DAS-570
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-571

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-572
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-573
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-574
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-154
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-155
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-156
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-157
U150F	161	AV CAN CIRC 3					ON		DAS-70
U1512	162	HVAC CAN CIRC3			ON	ON	ON	F, G	DAS-408
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON		A, B, C, D, E, F, G, H	CCS-159
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON		A, B, C, D, E, G, H	CCS-160
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			ON	A, B, C, D, E	CCS-161
U1516	166	CAM CAN CIRC 3			ON	ON	ON	F, G	DAS-410
U1517	167	APA CAN CIRC 3	ON					A, B, E, H	CCS-162
U1518	168	SIDE RDR L CAN CIRC 3				ON		G, H	DAS-579
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-580

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1520	176	4WD CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-163
U1521	177	SONAR CAN COMMUNICATION 2					ON	H	DAS-740
U1522	178	SONAR CAN COMMUNICATION 1					ON	H	DAS-741
U1523	179	SONAR CAN COMMUNICATION 3					ON	H	DAS-742
U1524	180	AVM CAN COMMUNICATION 1					ON	H	DAS-743
U1525	181	AVM CAN COMMUNICATION 3					ON	H	DAS-744

NOTE:

With the detection of "U1000" some systems do not perform the fail-safe operation.

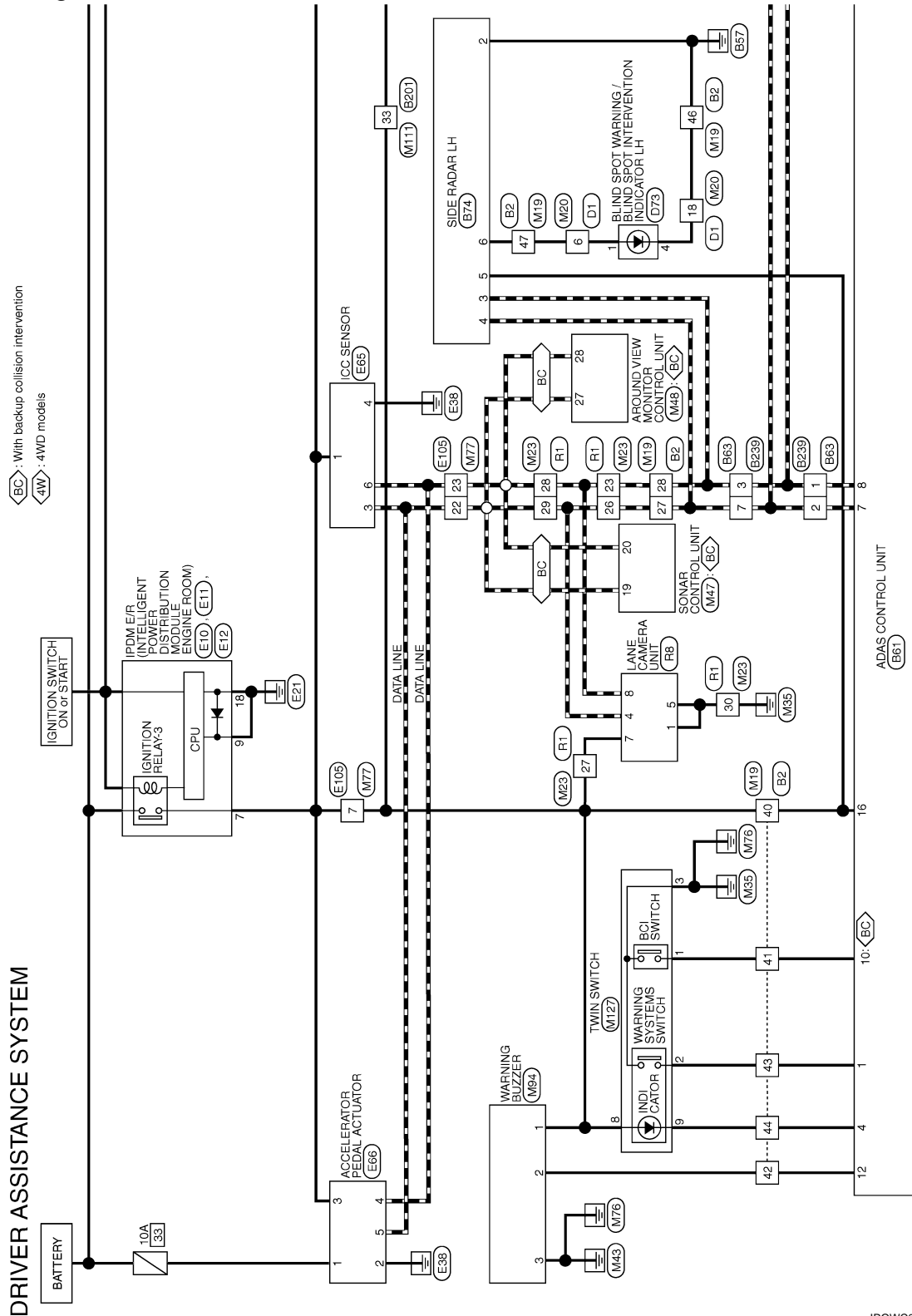
A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

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*: This connector is not shown in "Harness Layout".

2013/01/30

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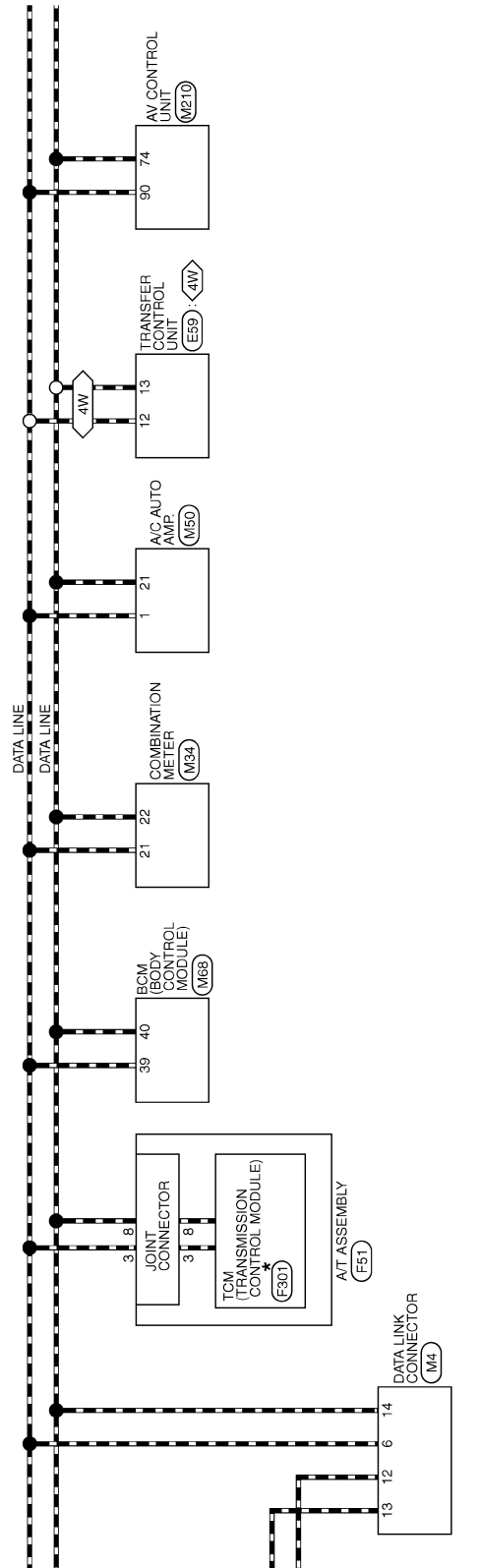
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]



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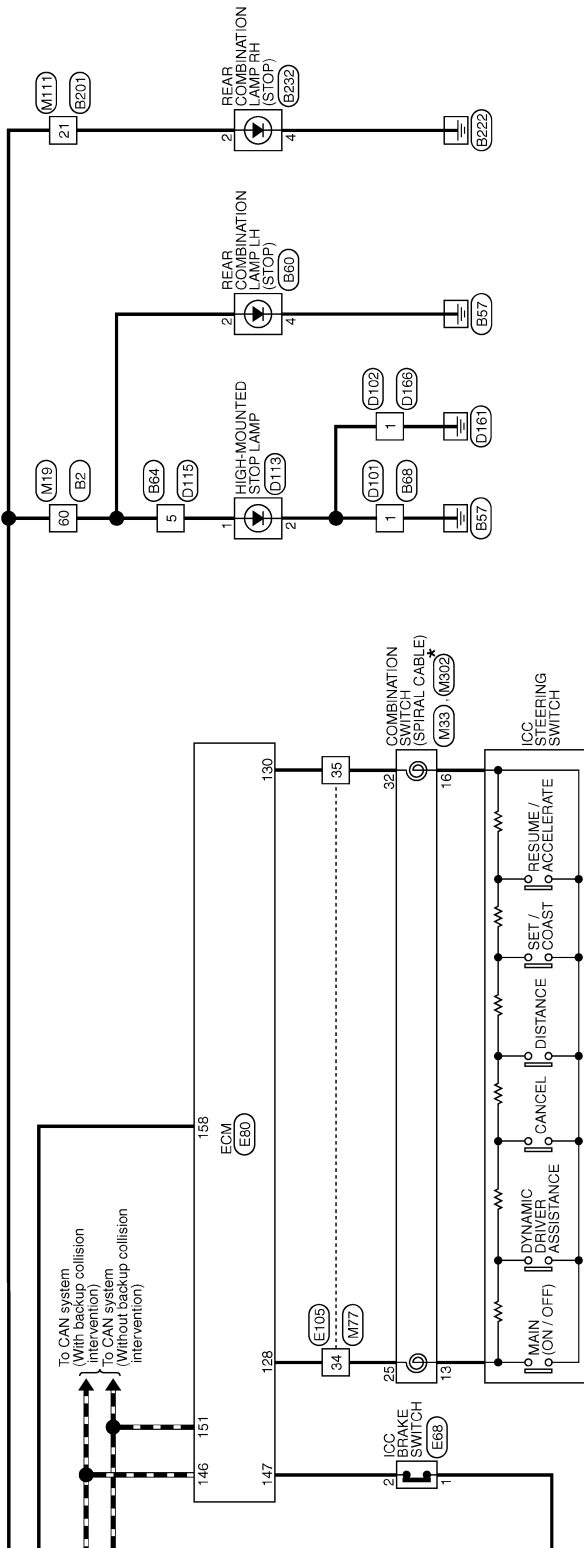
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]



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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
2	BR	
3	RW	
4	R	
5	L	
6	V	
7	G	
8	W/B	
9	BR	
10	G/R	
11	BY	
12	GR	
13	W/R	
14	W/L	
15	W	
16	GR/R	
17	GW	
18	V	
19	W/G	
20	B/W	
21	W	
22	V	
23	G	
24	O	
25	Y	
26	L/O	
27	R/Y	
28	R	
29	R	
30	G/Y	
31	B/SB	
32	LG/R	
33	BR/W	
34	SB	
35	GR/R	
36	SB	
37	LG	
38	B	
39	W/G	
40	W	
41	O	

42	G/R	
43	V/W	
44	LG/B	
45	R/Y	
46	B	
47	BR	
48	GR	
49	R/B	
50	W/R	
51	B/Y	
52	O/B	
53	G/O	
54	R/B	
55	LG/R	
56	GR/R	
57	Y/G	
58	V/W	
59	R	
60	B	
61	R	
62	R	
63	W	
64	G	
65	W	
66	G	
67	SHIELD	
68	LG/B	
69	P/L	
70	L	
71	L	
72	R	
73	Y/B	
74	Y/L	
75	Y	
76	W/R	
77	Y/L	
78	O	
79	W/R	
80	W/R	
81	Y/L	
82	L/O	
83	O	
84	W/R	
85	W	
86	W/R	
87	R/Y	
88	O	
89	W/L	
90	GR/L	
91	W	
92	G	
93	Y	
94	W/R	
95	L/W	
96	R	
97	R	
98	V	
99	L/W	
100	P/B	

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FM-CS



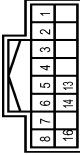
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	
2	R	
3	G	
4	B	

Connector No.	B61
Connector Name	ADAS CONTROL UNIT
Connector Type	TH18FM-NH



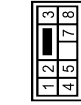
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V/W	WARNING SYSTEMS SW
2	R/Y	IBA OFF SW
3	LG/B	WARNING SYSTEMS ON IND
4	R	BRAKE HOLD RLY DRIVE SIGNAL
5	B	GND
6	L	ITS COMM-H
7	O	BCI SW
8	Y	ITS COMM-L
9	L	WARNING BUZZER
10	GR	CANH
11	P	CANL
12	W/G	IGNITION

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH18FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	
2	L	
3	Y/B	
4	SB	
5	G	
6	Y	
7	L/O	
8	G	
9	R/L	
10	G	
11	W	

Connector No.	B64
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
2	R/Y	
3	GW	
4	R	
5	R	
6	LW	
7	V	
8	V	

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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



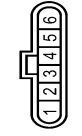
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	RW	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-

Connector No.	B74
Connector Name	SIDE RADAR LH
Connector Type	AA026FB-VP-5P



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GND
3	Y	ITS COM+L
4	L	ITS COM+H
5	W/G	IGNITION
6	BR	BSW INDICATOR

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	RG	-
19	L/Y	-

20	GY	-
21	R	-
22	GR	-
27	L/W	-
29	W	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L	-
43	B/W	-
44	B	-
45	P	-
46	SHIELD	-
47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	L/B	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
80	W/B	-
83	Y	-
84	L	-
85	LR	-
86	LR	-
96	R	-

97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LW	-
2	R	-
3	GY	-
4	B	-

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	LG	-
6	Y	-
7	L	-
8	G	-
13	RL	-
14	G	-

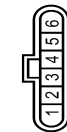
DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

Terminal No.	16	W	-
Connector No.	B243		
Connector Name	SIDE RADAR RH		
Connector Type	AAQ3BFB-WP		



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BY	RIGHT/LEFT SWITCHING SIGNAL
2	B	GND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	WG	IGNITION
6	L/R	BSW INDICATOR

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	Y	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-

14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	O/L	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	GO	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR/L	-
45	SHIELD	-
46	W	-
47	LG	-
48	GW	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
6	P/L	-
8	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	BY	-
13	L	-
14	R	-
15	B	-
18	BR/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/O	-
25	R/W	-
26	W/R	-
36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR/L	-
45	G	-
46	W	-
47	LG	-
48	GR/L	-
49	Y	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No.	D73
Connector Name	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR LH
Connector Type	TH40MW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR/W	-
4	B	-

Connector No.	D74
Connector Name	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR RH
Connector Type	TH40MW-NH



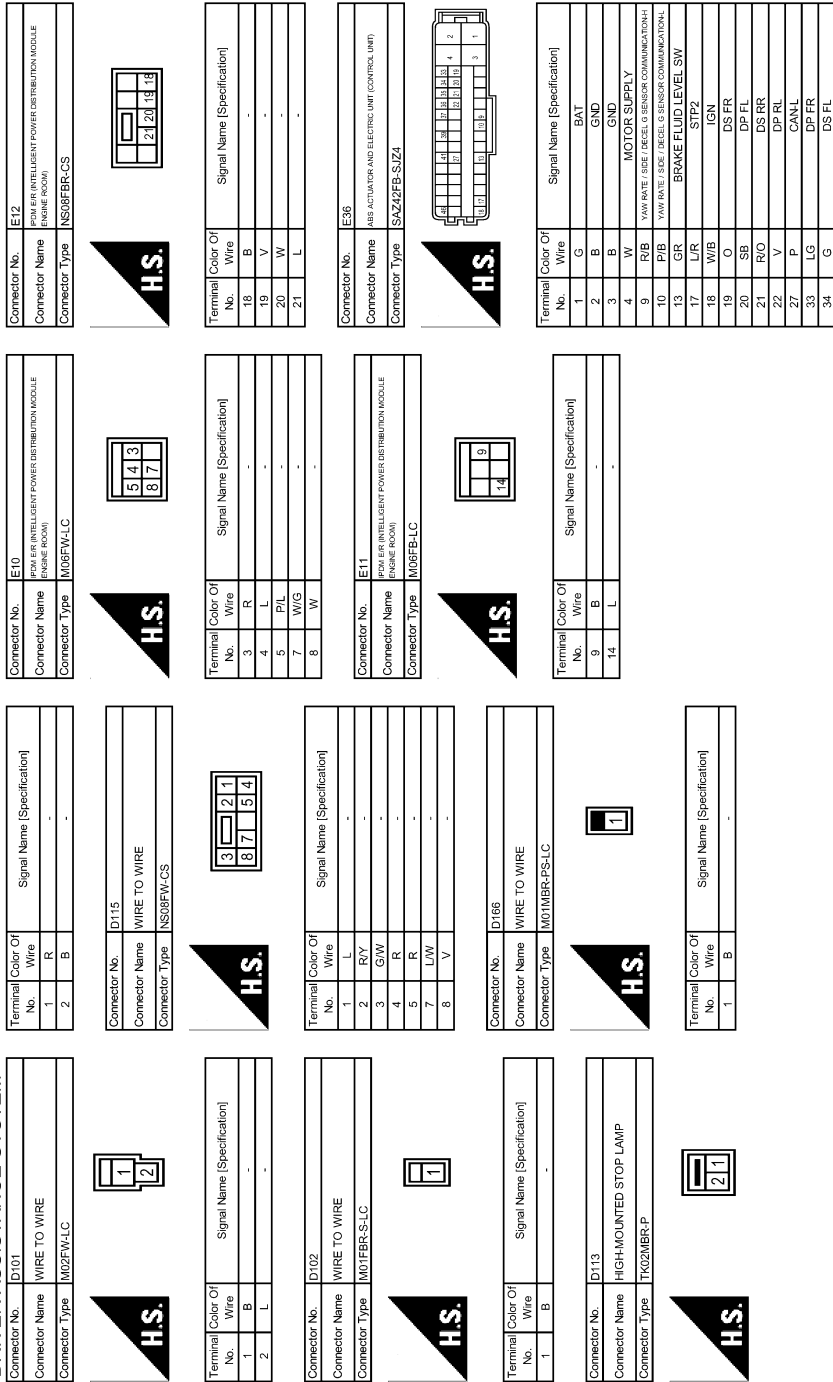
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/R	-
4	B/W	-

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DRIVER ASSISTANCE SYSTEM



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DRIVER ASSISTANCE SYSTEMS

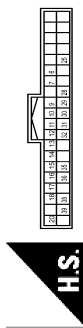
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[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VDC OFF SW
41	L	CANH
46	W	STOP LAMP SW ON

Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	H-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CANH
13	P	CAN-L
14	W/R	AUTO SW
15	P/B	ROTALY POSITION SEN PWM
16	LG	ROTALY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	B/R/Y	ROTALY POSITION SEN PWR SUPPLY
20	GR	TRANSFER CU PWR SUPPLY
25	P/L	H-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	H-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL
39	R/W	INTERNAL SPEED SEN PWR SUPPLY

Connector No.	E64
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	R	-
3	L/B	-
5	R	-

Connector No.	E65
Connector Name	ICC SENSOR
Connector Type	RS08FB-FR



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGNITION
3	L	ITS COMM-L
4	B	GND
6	Y	ITS COMM-H

Connector No.	E66
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH08FLGY



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	BATTERY
2	B	GND
3	W/G	IGNITION
4	Y	ITS COMM-L
5	L	ITS COMM-H

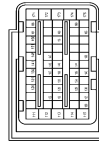
Connector No.	E68
Connector Name	ICC BRAKE SWITCH
Connector Type	IM02FBR-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	G/Y	-

Connector No.	E80
Connector Name	ECM
Connector Type	MA855FB-MEB-10-LH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	THROTTLE CONTROL MOTOR RELAY
123	GR	FUEL PUMP CONTROL MODULE (FFCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASCD/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FFCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	LG	ECM RELAY (SELF SHUT-OFF)
165	GR/R	ECM COMMUNICATION LINE
166	W	ECM COMMUNICATION LINE
169	GB	ENGINE SPEED SIGNAL OUTPUT

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DRIVER ASSISTANCE SYSTEMS

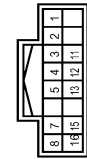
< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

Terminal No.	Wire	Signal Name [Specification]
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E93
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



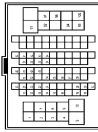
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E103
Connector Name	FUSE BLOCK (JIB)
Connector Type	NS16FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10F	G	-
14F	Y	-
15F	G	-
1F	W/B	-
2F	R	-
4F	G	-
6F	Y/G	-
8F	L/B	-
9F	Y	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	L/B	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	Y/V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-

Terminal No.	Color Of Wire	Signal Name [Specification]
29	R/W	-
30	L/B	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/R	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	W	-
62	R	-
63	G	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	G/R	-
97	R	-
98	G/B	-
100	W/R	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	MD4FW-LC



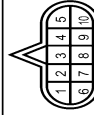
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/B	-
2	R	-
3	G	-
4	L/R	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CANH
4	SB	K-LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CANL
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CANH
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CANL
9	-	STARTER RELAY
10	-	GROUND

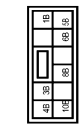
DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

Connector No.	M2
Connector Name	FUSE BLOCK (UB)
Connector Type	NS10FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10B	W/B	-
11B	R	-
12B	R	-
13B	B	-
14B	Y	-
15B	L/O	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

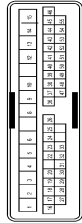
Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	B	-
9	G	-
11	W/B	-
12	BR	-
13	GR	-
14	BY	-
15	WR	-
16	GR	-
18	GW	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	GY	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	GR	-

43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
6	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-
14	R	-
15	B	-
16	GR/R	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

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DRIVER ASSISTANCE SYSTEMS

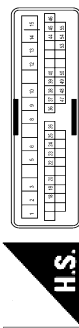
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[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No. M22
 Connector Name WIRE TO WIRE
 Connector Type TH40MW-CS15



H.S.

36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

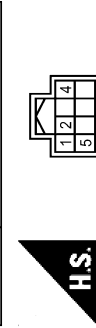
Connector No. M23
 Connector Name WIRE TO WIRE
 Connector Type TH42MW-AH



H.S.

22	SB	-
23	Y/R	-
24	SHIELD	-
25	Y/G	-
26	L/O	-
27	W/O	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	GR/L	-

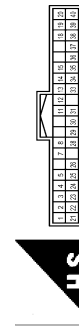
Connector No. M30
 Connector Name STEERING ANGLE SENSOR
 Connector Type TH48FW-AH



H.S.

31	Y/L	-
32	R	-
33	B	-
34	P/B	-

Connector No. M34
 Connector Name COMBINATION METER
 Connector Type TH40FW-AH

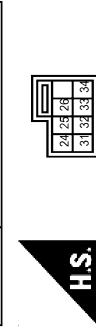


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Terminal No.	Color Of Wire	Signal Name (Specification)
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	ILL GND
5	B	ILL CONTROL OUTPUT
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	AC AUTO AMP CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CANH
22	P	CANL
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BE/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT buckle SWITCH SIGNAL (DRIVER SIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	R/Y	NON-MANUAL MODE SIGNAL

Terminal No.	Color Of Wire	Signal Name (Specification)
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No. M33
 Connector Name COMBINATION SWITCH (SFRAL CABLE)
 Connector Type TK08FGY-1V



H.S.

Terminal No.	Color Of Wire	Signal Name (Specification)
24	Y/G	-
25	Y	-
26	B	-

Terminal No.	Color Of Wire	Signal Name (Specification)
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	B/Y	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

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DRIVER ASSISTANCE SYSTEMS

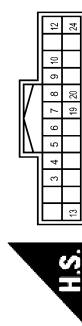
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[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

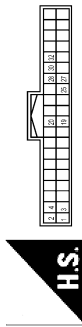
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

Connector No.	M47
Connector Name	SOMAR CONTROL UNIT
Connector Type	TH24FM-NH



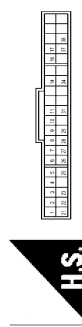
Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	SOMAR RR INNER LH
8	Y	SOMAR RR INNER RH
9	G	SOMAR FR INNER LH
10	Y	SOMAR FR INNER RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CANH [Without ADAS]
19	L	ITS-CAN H [With ADAS]
20	R	CANH [Without ADAS]
20	Y	ITS-CAN L [With ADAS]
24	B	GND

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	W	ACC POWER SUPPLY
19	SB	AV COMB (H)
20	LG	AV COMB (L)
25	P	REV
27	L	CANH
28	R	CANH [Without ADAS]
28	Y	CANH [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

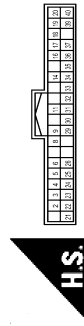
Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Type	SAB40FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	W	ACC POWER SUPPLY
6	W	IONIZER CONTROL SIGNAL
6	W/W	AC AUTO AMP CORNER SENSOR
7	WR	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL

9	BR	SUNLOAD SENSOR (DR) SIGNAL (PHASE) (ON/ISBE DOOR DETECTING SENSOR SIGNAL)
10	V/W	COMM (A/C AUTO AMP-RR A/C CONT)
11	W	FR BLOWER MOTOR CONTROL SIGNAL
14	OIL	EACH DOOR MOTOR LIN SIGNAL
16	R/G	EACH DOOR MOTOR POWER SUPPLY
17	L/Y	EACH DOOR MOTOR CONTROL SIGNAL
21	P	CANH
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
25	R	-
26	B	SENSOR GROUND
27	GR	FR IN-VEHICLE SENSOR SIGNAL
28	R	INTAKE SENSOR SIGNAL
29	O	SUNLOAD SENSOR (PASS) SIGNAL
31	OIL	COMM (RR A/C CONT-A/C AUTO AMP)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	G/W	RR A/C RELAY CONTROL SIGNAL

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BRY	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	DIMMER SENSOR
16	L/O	OPTICAL SENSOR
17	Y/G	SENSOR POWER SUPPLY
18	B/Y	RECEIVER POWER SUPPLY
19	BR	RECEIVER POWER SUPPLY
20	GR	KYLS ENT RECEIVER COMM
21	P	WATS ANT AMP
22	W/B	KYLS ENT RECEIVER RSSI

23	GR/R	SECURITY IND CONT
24	SB	DOUBLE LINK
25	L/R	NATS ANT AMP
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	DR DOOR UNLOCK SENSOR
31	W/G	COMBI SW OUTPUT 5
32	LG	COMBI SW OUTPUT 4
33	Y	COMBI SW OUTPUT 3
34	W	COMBI SW OUTPUT 2
35	R/W	COMBI SW OUTPUT 1
36	SB	SHIFT P
37	G/Y	CANH
39	L	CANH
40	P	CANH

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
6	SB	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	OIL	-
16	SB	-
18	BR	-
19	Y/G	-
20	BRY	-

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DAS

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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

21	V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
29	R/W	-
30	O/L	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/O	-
37	GY	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	B	-
62	G	-
63	R	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	R	-
98	O/L	-
100	W/B	-

Connector No.	M93
Connector Name	IBA OFF SWITCH
Connector Type	TK08FGY



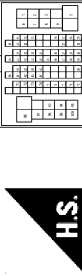
Terminal No.	Color Of Wire	Signal Name [Specification]
6	B	-
7	R/Y	-

Connector No.	M94
Connector Name	WARNING BUZZER
Connector Type	NS04FBRCS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	G/R	-
3	B	-

Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH09FMCS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/R	-
5	W/B	-
6	L/Y	-
7	B	-
8	GR	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	G/Y	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L/W	-
43	B/W	-
44	B	-
45	P	-
46	SHIELD	-

47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	O/L	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
90	W/B	-
93	Y	-
94	L	-
95	L/R	-
96	R	-
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FM-NH



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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

DRIVER ASSISTANCE SYSTEM

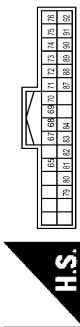
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
3	Y	BATTERY
4	L	CANH
5	B	GND
6	L	CANH
7	P	CANL
9	GR	IGNITION
10	R	CANL
11	B	GND
12	R	CANL

Connector No.	M127
Connector Name	TWIN SWITCH
Connector Type	TH2FY-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	V/W	-
3	B	-
5	L/O	-
6	B/O	-
8	W/G	-
9	LG/B	-

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FM-NH



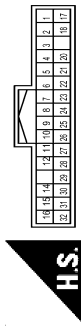
Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
69	O	INTELLIGENT-VEH IDENTIFICATION SIGNAL
70	BR	REVERSE L2
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
73	Y/G	MICROPHONE VCC [Without DCM]
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	L/O	DIMMER SIGNAL
80	GR/L	IGNITION SIGNAL
81	R/Y	REVERSE SIGNAL
82	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	W/B	COMPOSITE IMAGE SYNC SIGNAL
87	BR	MICROPHONE SIGNAL [With DCM]
87	Y/L	MICROPHONE SIGNAL [Without DCM]
88	SHIELD	SHIELD
89	Y/L	COMM (DISP-COMT)
90	L	CAN-H
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SPRAL. CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	BR	-
6	BY	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-

14	BY	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	Y	-
24	SHIELD	-
25	Y/G	-
26	L	-
27	W/G	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	BR	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH08FY-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
4	L	ITS COMM-H
5	B	GND
7	W/G	IGNITION
8	Y	ITS COMM-L

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DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:000000009013439

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [DAS-66, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013440

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-45, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000009013441

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds	<ul style="list-style-type: none">• Connector, harness, fuse• ADAS control unit
C1A02 (2)	POWER SUPPLY CIR 2	The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A01" or "C1A02" detected as the current malfunction?

- YES >> Refer to [DAS-67, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013442

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [DAS-71, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> Repair or replace the malfunctioning parts.

DAS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000009013443

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

DTC Logic

INFOID:000000009013444

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none"> • CAN communication system • ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

Diagnosis Procedure

INFOID:000000009013445

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the MAIN switch of ICC system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected as the current malfunction?

- YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000009013446

CAN controller controls the communication of CAN communication signal and ITS communication signal, and the error detection.

DTC Logic

INFOID:000000009013447

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit

Diagnosis Procedure

INFOID:000000009013448

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the MAIN switch of ICC system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1010" detected as the current malfunction?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> INSPECTION END

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DAS

U150F AV CAN 3

DTC Logic

INFOID:000000009013449

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150F (161)	AV CAN CIRC 3	ADAS control unit detects an error signal that is received from AV control unit via CAN communication	AV control unit

NOTE:

If DTC "U150F" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-68, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA or LDP or Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150F" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150F" detected as the current malfunction?

- YES >> Refer to [DAS-70, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013450

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150F" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-68, "DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK AV CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "MULTI AV".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [AV-69, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000009013451

1. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Ignition switch	0 V
Connector	Terminal		
B61	16	OFF	0 V
		ON	Battery volt- age

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ADAS control unit power supply circuit.

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ADAS control unit connector.
3. Check for continuity between ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	6		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

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DAS

REMOVAL AND INSTALLATION

ADAS CONTROL UNIT

Removal and Installation

INFOID:000000009013452

REMOVAL

1. Remove the luggage side lower finisher (LH). Refer to [INT-36, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation"](#).
2. Disconnect ADAS control unit connector.
3. Remove mounting bolts from ADAS control unit.
4. Remove ADAS control unit.

INSTALLATION

Install in the reverse order of removal.

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009013453

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Removing of Battery Terminal

INFOID:000000009898571

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

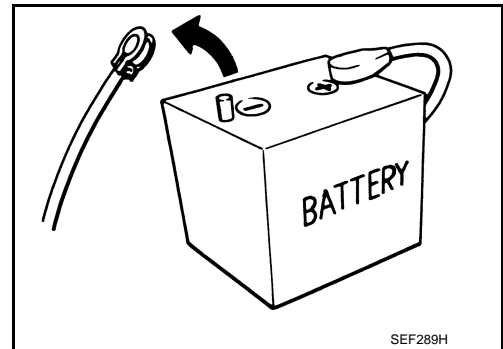
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



Precautions For Harness Repair

INFOID:000000009013454

ITS communication uses a twisted pair line. Be careful when repairing it.

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PRECAUTIONS

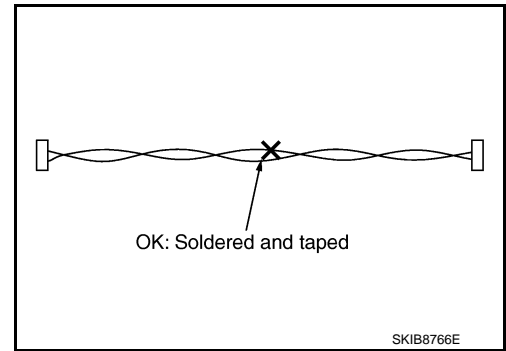
[DCA]

< PRECAUTION >

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

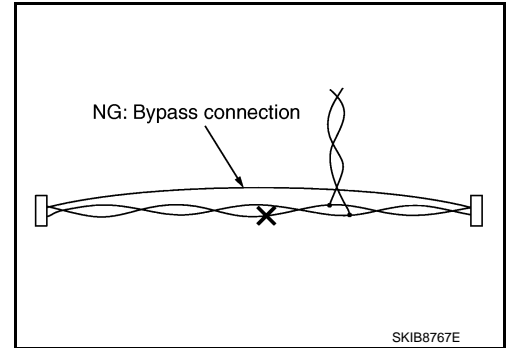
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



DCA System Service

INFOID:000000009013455

CAUTION:

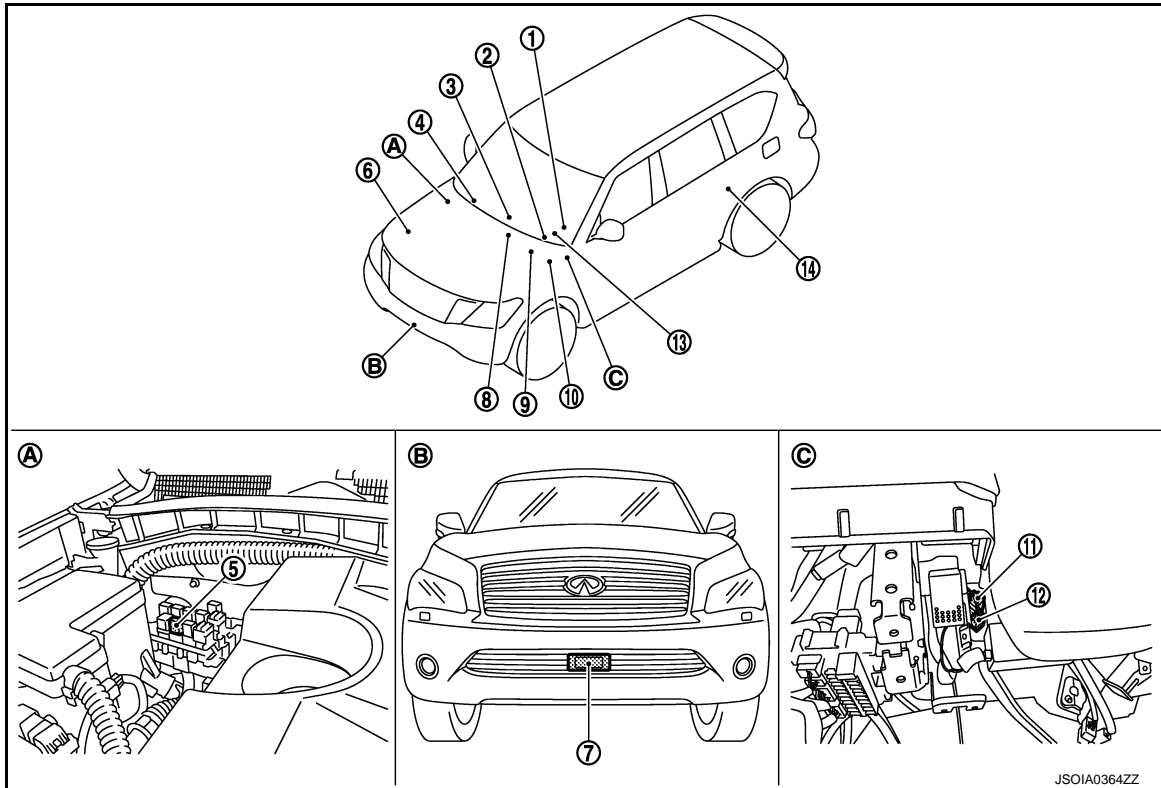
- Never look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the MAIN switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Never use the ICC sensor removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of DCA system, then check the operation of DCA system after adjusting laser beam aiming if necessary.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000009013456



- | | | |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. ICC steering switch | 2. Information display, ICC system warning lamp, buzzer (On the combination meter) | 3. AV control unit
Refer to AV-12, "Component Parts Location" |
| 4. Transfer control unit
Refer to DLN-11, "Component Parts Location" | 5. ICC brake hold relay | 6. ECM
Refer to the following.
• For USA and Canada: EC-23, "Component Parts Location"
• For Mexico: EC-593, "Component Parts Location" |
| 7. ICC sensor | 8. TCM
Refer to TM-11, "A/T CONTROL SYSTEM : Component Parts Location" | 9. ABS actuator and electric unit (control unit)
Refer to BRC-9, "Component Parts Location" |
| 10. Accelerator pedal actuator | 11. Stop lamp switch | 12. ICC brake switch |
| 13. Steering angle sensor
Refer to BRC-9, "Component Parts Location" | 14. ADAS control unit
Refer to DAS-17, "Component Parts Location" | |
| A. Back side of engine room (RH) | B. Front bumper (center) | C. Upper side of brake pedal |

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[DCA]

Component Description

INFOID:000000009013457

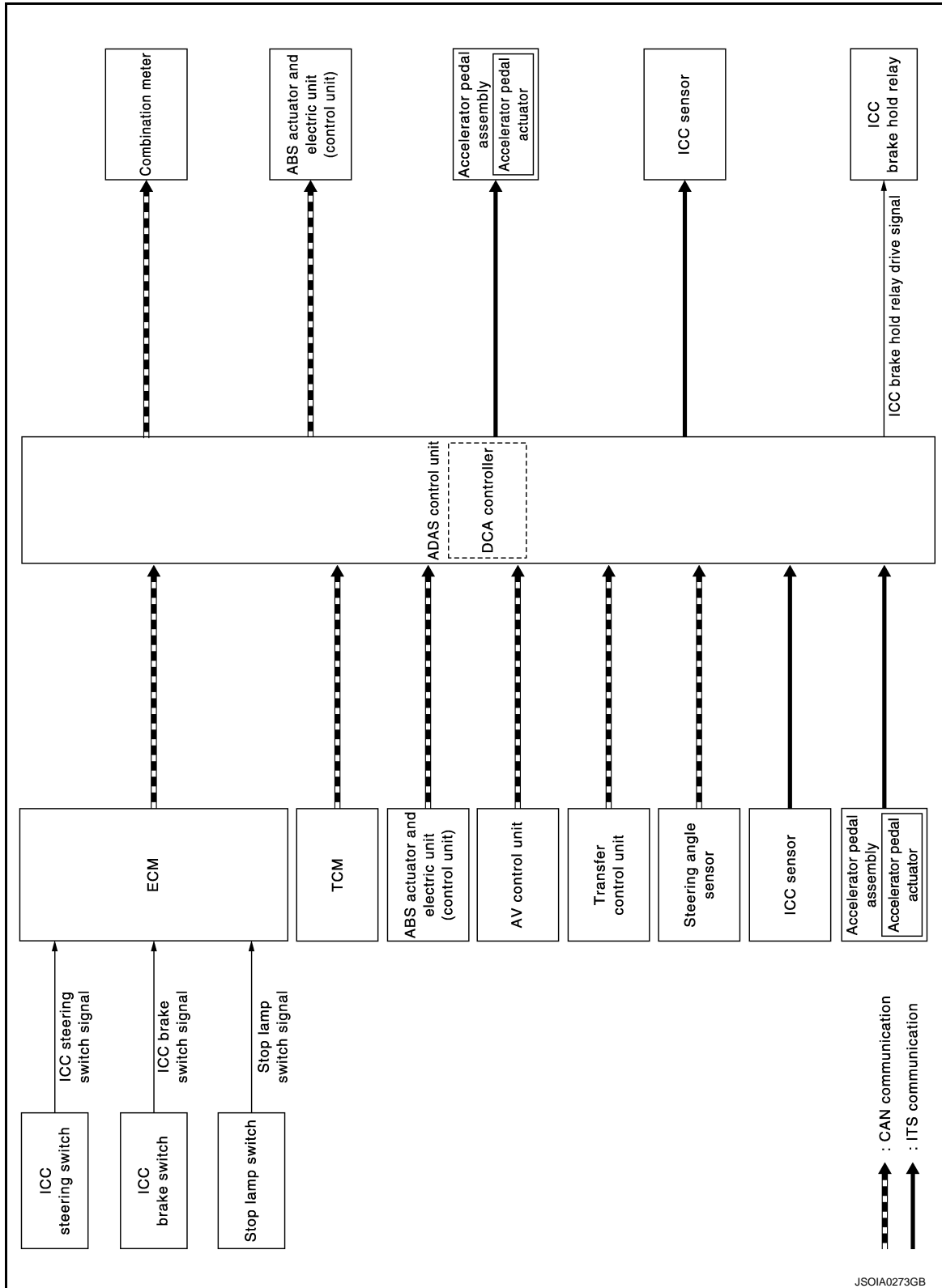
Component	Description
ADAS control unit	<ul style="list-style-type: none"> • ADAS control unit calculates a target distance between vehicles and a target speed, based on signals received from each sensor and switch to transmit a brake fluid pressure control signal to ABS actuator and electric unit (control unit) via CAN communication • ADAS control unit transmits the buzzer output signal to the combination meter via CAN communication • ADAS control unit transmits an accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication
ICC sensor	<ul style="list-style-type: none"> • ICC sensor detects light reflected from a vehicle ahead by irradiating laser forward and calculates a distance from the vehicle ahead and a relative speed, based on the detected signal • ICC sensor transmits the presence/absence of vehicle ahead and the distance from the vehicle to ADAS control unit via ITS communication
ECM	ECM transmits the accelerator pedal position signal, ICC brake switch signal, stop lamp switch signal, ICC steering switch signal, etc. to ADAS control unit via CAN communication
ABS actuator and electric unit (control unit)	<ul style="list-style-type: none"> • ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), stop lamp signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication • ABS actuator and electric unit (control unit) controls the brake, based on a brake fluid pressure control signal received from ADAS control unit via CAN communication
TCM	TCM transmits the signal related to A/T control to ADAS control unit via CAN communication
Combination meter	<p>Performs the following operations using the signals received from the ADAS control unit via the CAN communication</p> <ul style="list-style-type: none"> • Displays the DCA system operation status using the meter display signal • Illuminates the ICC system warning lamp using the ICC warning lamp signal • Operates the buzzer (ICC warning chime) using the buzzer output signal
Dynamic driver assistance switch (On the ICC steering switch)	ECM receives an ICC steering switch (dynamic driver assistance switch) signal and transmits the signal to ADAS control unit via CAN communication
ICC brake hold relay	ICC brake hold relay activates the stop lamp by ICC brake hold relay drive signal (stop lamp drive signal) outputted by the ADAS control unit
ICC brake switch	<ul style="list-style-type: none"> • ICC brake switch is turned OFF and stop lamp switch is turned ON, when depressing the brake pedal
Stop lamp switch	<ul style="list-style-type: none"> • ICC brake switch signal is input to ECM. These signals are transmitted from ECM to ADAS control unit via CAN communication • Stop lamp switch signal is input to ECM and ABS actuator and electric unit (control unit). These signals are transmitted from ECM and ABS actuator and electric unit (control unit) to ADAS control unit via CAN communication
Transfer control unit	Transfer control unit transmits a mode selection state of 4WD shift switch to the ADAS control unit via CAN communication
AV control unit	AV control unit transmits the system selection signal to the ADAS control unit via CAN communication
Steering angle sensor	Measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ADAS control unit via CAN communication
Accelerator pedal actuator	Accelerator pedal actuator receives an accelerator pedal feedback force control signal from the ADAS control unit via ITS communication and pushes back the accelerator pedal

SYSTEM

System Description

INFOID:000000009013458

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

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SYSTEM

< SYSTEM DESCRIPTION >

[DCA]

Transmit unit	Signal name		Description	
ECM	CAN communication	Closed throttle position signal	Receives idle position state (ON/OFF)	
		Accelerator pedal position signal	Receives accelerator pedal position (angle)	
		ICC steering switch signal	Dynamic driver assistance switch signal	Receives the operational state of the ICC steering switch
		Engine speed signal		Receives engine speed
		Stop lamp switch signal		Receives an operational state of the brake pedal
		Snow mode switch signal		Receives an operational state of the snow mode
TCM	CAN communication	Input speed signal	Receives the number of revolutions of input shaft	
		Current gear position signal	Receives a current gear position	
		Shift position signal	Receives a selector lever position	
		Output shaft revolution signal	Receives the number of revolutions of output shaft	
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS	
		ABS operation signal	Receives an operational state of ABS	
		ABS warning lamp signal	Receives an ON/OFF state of ABS warning lamp	
		TCS malfunction signal	Receives a malfunction state of TCS	
		TCS operation signal	Receives an operational state of TCS	
		VDC OFF switch signal	Receives an ON/OFF state of VDC	
		VDC malfunction signal	Receives a malfunction state of VDC	
		VDC operation signal	Receives an operational state of VDC	
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels	
		Stop lamp switch signal	Receives an operational state of the brake pedal	
Yaw rate signal	Receives yaw rate acting on the vehicle			
Steering angle sensor	CAN communication	Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor	
		Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel	
		Steering angle speed signal	Receives the turning angle speed of the steering wheel	
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in "Driver Assist" selected with the navigation system	
Transfer control unit	CAN communication	Current 4WD mode signal	Receives a mode selection state of the 4WD shift mode	
ICC sensor	ITS communication	ICC sensor signal	Receives detection results, such as the presence or absence of a vehicle ahead and distance from the vehicle	
Accelerator pedal actuator	ITS communication	Accelerator pedal actuator operation status signal	Receives an operational state of accelerator pedal actuator	

Output Signal Item

Reception unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Brake fluid pressure control signal	Transmits a brake fluid pressure control signal to activates the brake

SYSTEM

< SYSTEM DESCRIPTION >

[DCA]

Reception unit	Signal name		Description
Combination meter	CAN communication	Meter display signal	Transmits a signal to display a state of the system on the information display
		DCA system switch indicator signal	
	ICC warning lamp signal	Transmits an ICC warning lamp signal to turn ON the ICC system warning lamp	
ICC sensor	ITS communication	Buzzer output signal	Transmits a buzzer output signal to activate the buzzer
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
Accelerator pedal actuator	ITS communication	Steering angle sensor signal	Transmits a steering angle sensor signal received from the steering angle sensor
		Accelerator pedal position signal	Transmits an accelerator pedal angle calculated by the ADAS control unit
ICC brake hold relay	ICC brake hold relay drive signal	Accelerator pedal feedback force control signal	Transmits a target actuation force value calculated by the ADAS control unit
			Activates the brake hold relay and turns ON the stop lamp

FUNCTION DESCRIPTION

When a vehicle is detected ahead

- The vehicle ahead detection indicator comes ON.

When vehicle approaches a vehicle ahead

- If the driver is not depressing the accelerator pedal, the system activates the brakes to decelerate smoothly as necessary. If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system.
- If the driver is depressing the accelerator pedal, the system moves the accelerator pedal upward to assist the driver to release the accelerator pedal.

When brake operation by driver is required

- The system alerts the driver by a warning chime and blinking the vehicle ahead detection indicator. If the driver is depressing the accelerator pedal after the warning, the system moves the accelerator pedal upward to assist the driver to switch to the brake pedal.

CAUTION:

If the vehicle ahead comes to a standstill, the vehicle decelerates to a standstill within the limitations of the system. The system will release brake control with a warning chime once it judges the vehicle is at a standstill. To prevent the vehicle from moving, the driver must depress the brake pedal. [The system will resume control automatically once the system reaches 5 km/h (3 MPH)].

NOTE:

- Depending on the position of the accelerator pedal, the system may not be able to assist the driver to release the accelerator pedal appropriately.
- When the driver depresses the accelerator pedal even further while the system is moving the accelerator pedal upward, the accelerator pedal control will be canceled.
- When the driver is depressing the accelerator pedal, the brake control by the system is not operated.
- When the driver is depressing the brake pedal, neither the brake control nor the alert by the system operates.
- When the ICC system is set, the DCA system will be canceled.

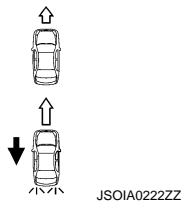
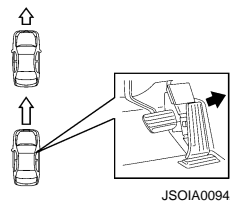
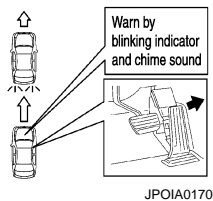
OPERATION DESCRIPTION

ICC sensor calculates a distance from a vehicle ahead and a relative speed to transmit the ICC sensor signal to the ADAS control unit via ITS communication. Based on the received signal, the ADAS control unit transmits a control signal to the accelerator pedal actuator via ITS communication and to the ABS actuator control unit (control unit) via CAN communication.

SYSTEM

< SYSTEM DESCRIPTION >

[DCA]

<p>When vehicle approaches a vehicle ahead</p>	<p>If the driver is not depressing the accelerator pedal, the system activates the brakes to decelerate smoothly as necessary</p>	
	<p>If the driver is depressing the accelerator pedal, the system moves the accelerator pedal upward to assist the driver to release the accelerator pedal</p>	
<p>When brake operation by driver is required</p>	<p>The system alerts the driver by a warning chime and blinking the vehicle ahead detection indicator. If the driver is depressing the accelerator pedal after the warning, the system moves the accelerator pedal upward to assist the driver to switch to the brake pedal</p>	
<p>Deceleration control</p>	<p>It transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication and performs the brake control</p>	
<p>Accelerator pedal actuation control</p>	<p>It transmits the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication and controls the accelerator pedal in the upward direction</p>	

Operation Condition

ADAS control unit performs the control when the following conditions are satisfied.

- When the DCA system setting on the navigation screen is ON.
- When the dynamic driver assistance switch is turned to ON.
- When the brake pedal is not depressed.
- When the vehicle speed is above approximately 5 km/h (3 MPH).
- When the vehicle ahead is detected.
- When the ICC system is not set.

No Operation Condition

The ADAS control unit is not operate when the system is under any conditions of the no operation condition.

- When the brake pedal depressed.
- When the ICC system is set.
- When the system judges that the vehicle comes to a standstill by the system control.
- When the vehicle ahead is not detected.

Operation Cancellation Condition

The ADAS control unit cancels the operation when the system is under any conditions of the operation cancellation condition.

- When the dynamic driver assistance switch is turned to OFF.
- When the system malfunction occurs.
- When ABS or VDC (including the TCS) operates.
- When the VDC is turned OFF.
- When the SNOW mode switch is turned ON.
- When the 4WD shift switch is turned to not AUTO position.
- When driving into a strong light (i.e., sunlight).
- When the ICC sensor body window is dirty and the measurement of the distance between the vehicles becomes difficult.

Operation At The Driver Operation

Give priority to the driver operation in the following situation.

SYSTEM

[DCA]

< SYSTEM DESCRIPTION >

- When the accelerator pedal is depressed again.
- When the brake pedal is depressed.

Fail-safe (ADAS Control Unit)

INFOID:000000009870867

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

Fail-safe (ICC Sensor)

INFOID:000000009013460

If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning lamp in the combination meter.

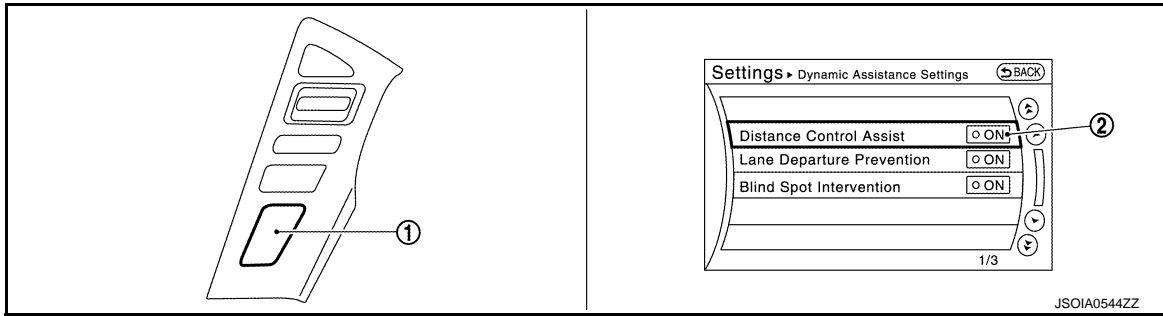
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OPERATION

Switch Name and Function

INFOID:000000009013461

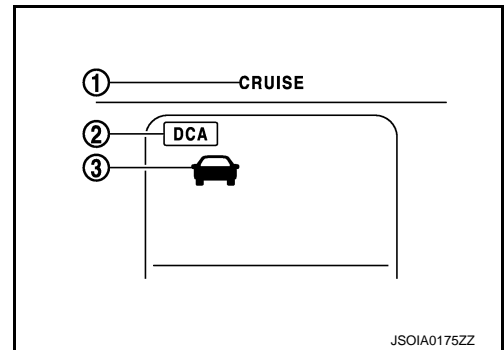


No.	Switch name	Description
1	Dynamic driver assistance switch	Turns the DCA system ON/OFF (When the setting of the DCA system on the navigation screen is ON)
2	DCA system setting screen (Navigation system settings screen)	DCA system settings can be switched between ON and OFF

Menu Displayed by Pressing Each Switch

INFOID:000000009013462

SYSTEM DISPLAY



No.	Switch name	Description
1	ICC system warning lamp	This indicates that an abnormal condition is present in DCA system
2	DCA system switch indicator	Indicates that DCA system is ON
3	Vehicle ahead detection indicator	Indicates whether it detects a vehicle ahead NOTE: The vehicle ahead detection indicator turns OFF when the no operation condition is satisfied

DISPLAY AND WARNING LAMP

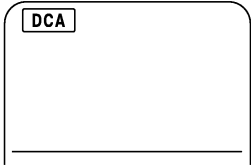
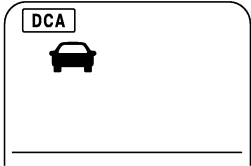
System Control Condition Display

The DCA system switch indicator illuminates and the system is turned ON by pressing the dynamic driver assistance switch at the system OFF.

OPERATION

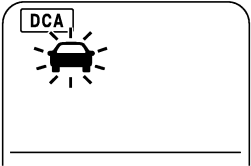
< SYSTEM DESCRIPTION >

[DCA]

	Condition	Display on combination meter	
Operation status	Vehicle ahead not detected	 <small>JSOIA0207ZZ</small>	A B C
	Vehicle ahead detected	 <small>JSOIA0208ZZ</small>	D E F

Approach Warning Display

- If own vehicle comes closer to the vehicle ahead due to rapid deceleration of that vehicle or if another vehicle cuts in, the system warns the driver with the chime and DCA system display. Decelerate by depressing the brake pedal to maintain a safe vehicle distance if:
 - The chime sounds.
 - The vehicle ahead detection indicator blinks.
- The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:
 - When the vehicles are traveling at the same speed and the distance between vehicles is not changing
 - When the vehicle ahead is traveling faster and the distance between vehicles is increasing
 - When a vehicle cuts in near own vehicle
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.

Condition	Display on combination meter	
When the system judges that the brake operation by the driver is necessary	 <small>JSOIA0209ZZ</small>	J K L

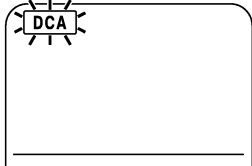
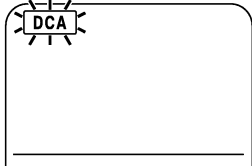
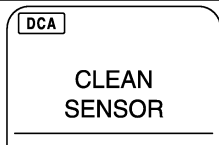
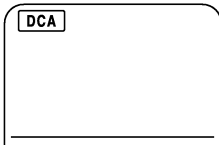
Warning Lamp Display

DAS

OPERATION

< SYSTEM DESCRIPTION >

[DCA]

	Condition	Description	Display on combination meter
Warning display	When the dynamic driver assistance switch is turned ON with settings of DCA system, LDP system and Blind Spot Intervention system OFF	The DCA system is not activated. The DCA system switch indicator blinks.	 JSOIA0210ZZ
	<ul style="list-style-type: none"> • When the VDC or ABS (including the TCS) operates • When the VDC is turned OFF • When the SNOW mode switch is turned ON • When the 4WD shift switch is turned to not AUTO • When driving into a strong light (i.e., sunlight) 	The DCA system is automatically canceled. The chime will sound and the DCA system switch indicator will blink. NOTE: The system operates if the dynamic driver assistance switch is turned OFF⇒ON after the condition improves.	 JSOIA0210ZZ
	When the sensor window is dirty, making it impossible to detect a vehicle ahead	The DCA system is automatically canceled. The chime sounds and the ICC system warning lamp will come on and the "CLEAN SENSOR" indicator will appear. NOTE: Stop the vehicle in a safe location and turn the ignition switch OFF. Clean the dirty area with soft cloth. The system returns to normal condition when turning the ignition switch ON again.	CRUISE  JSOIA0326ZZ
When the DCA system is not operating properly	The chime sounds and the ICC system warning lamp will come on. NOTE: Turn the ignition switch OFF, and then turn the ignition switch ON again. If there is no malfunction, the system returns to the normal condition.	CRUISE  JSOIA0212ZZ	

NOTE:

When the DCA system is automatically canceled, the cancellation condition can be displayed on "WORK SUPPORT" of CONSULT (ICC/ADAS).

HANDLING PRECAUTION

Precautions for Distance Control Assist

INFOID:000000009013463

- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill with a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The DCA system will not apply brake control while the driver is depressing the accelerator pedal.
- This system is only an aid to assist the driver and is not a collision warning or avoidance device. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- This system will not adapt automatically to road conditions. Do not use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The distance sensor will not detect under most conditions.
 - Stationary and slow moving vehicles
 - Pedestrians or objects in the roadway
 - Oncoming vehicles in the same lane
 - Motorcycles traveling offset in the travel lane
- As there is a performance limit to the distance control function, never rely solely on the DCA system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- The system may not detect the vehicle in front of own vehicle in certain road or weather conditions. To avoid accidents, never use the DCA system under the following conditions.
 - On roads with sharp curves
 - On slippery road surfaces such as on ice or snow, etc.
 - On off-road surfaces such as on sand or rock, etc.
 - During bad weather (rain, fog, snow, etc.)
 - When strong light (for example, at sunrise or sunset) is directly shining on the front of the vehicle
 - When rain, snow or dirt adhere to the system sensor
 - On steep downhill roads (frequent braking may result in overheating the brakes)
 - On repeated uphill and downhill roads
 - When towing a trailer or other vehicle
- In some road or traffic conditions, a vehicle or object can unexpectedly come into the sensor detection zone and cause automatic braking. Driver may need to control the distance from other vehicles using the accelerator pedal. Always stay alert and avoid using the DCA system when it is not recommended in this section.
- The following are some conditions in which the sensor cannot detect the signals.
 - When the reflector of the vehicle ahead is positioned high on the vehicle (trailer, etc.)
 - When the reflector on the vehicle ahead is missing, damaged or covered
 - When the reflector of the vehicle ahead is covered with dirt, snow and road spray
 - When the snow or road spray from traveling vehicles reduces the sensor's visibility
 - When dense exhaust or other smoke (black smoke) from vehicles reduces the sensor's visibility
 - When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle
- The DCA system is designed to automatically check the sensor's operation. When the sensor is covered with dirt or is obstructed, the system will automatically be canceled. If the sensor is covered with ice, a transparent or translucent vinyl bag, etc., the DCA system may not detect them. In these instances, the DCA system may not be able to decelerate the vehicle properly. Be sure to check and clean the sensor regularly.
- The DCA system is designed to help assist the driver to maintain a following distance from the vehicle ahead. The system will decelerate as necessary and if the vehicle ahead comes to a stop, the vehicle decelerates to standstill. However, the DCA system can only apply up to 25% of the vehicles total braking power. If a vehicle moves into the traveling lane ahead or if a vehicle traveling ahead rapidly decelerates, the distance between vehicles may become closer because the DCA system cannot decelerate the vehicle quickly enough. If this occurs, the DCA system will sound a warning chime and blink the system display to notify the driver to take necessary action.
- The DCA system does not control vehicle speed or warn when driver approach stationary and slow moving vehicles. Driver must pay attention to vehicle operation to maintain proper distance from vehicles ahead.

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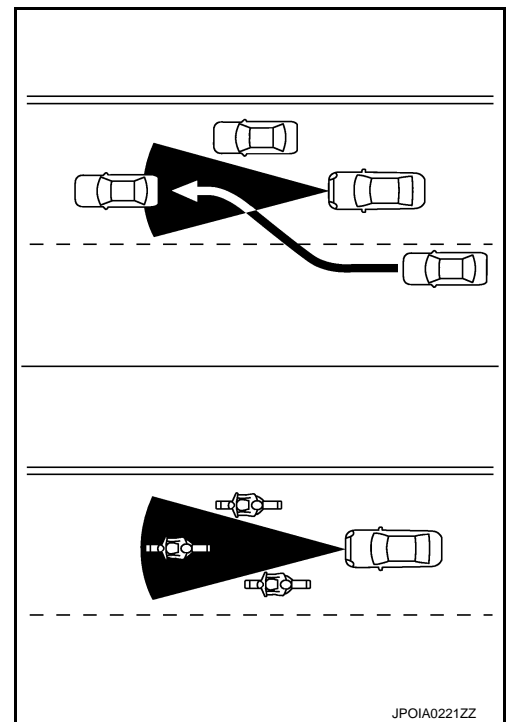
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HANDLING PRECAUTION

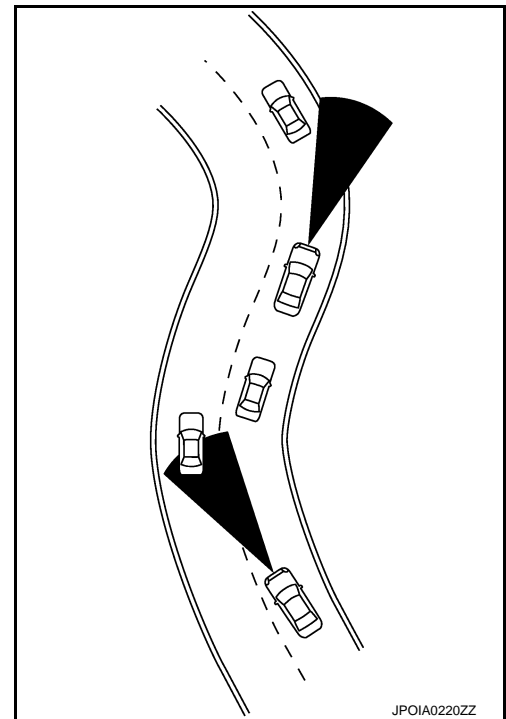
[DCA]

< SYSTEM DESCRIPTION >

- The detection zone of the sensor is limited. A vehicle ahead must be in the detection zone for the system to operate.
- A vehicle ahead may move outside of the detection zone due to its position within the same lane of travel. Motorcycles may not be detected in the same lane ahead if they are traveling offset from the center line of the lane. A vehicle that is entering the lane ahead may not be detected until the vehicle has completely moved into the lane. If this occurs, the system may warn driver by blinking the system indicator and sounding the chime. The driver may have to manually control the proper distance away from vehicle traveling ahead.



- When driving on some roads, such as winding, hilly, curved, narrow roads, or roads which are under construction, the sensor may detect vehicles in a different lane, or may temporarily not detect a vehicle traveling ahead. This may cause the system to work inappropriately. The detection of vehicles may also be affected by vehicle operation (steering maneuver or traveling position in the lane, etc.) or vehicle condition. If this occurs, the system may warn driver by blinking the system indicator and sounding the chime unexpectedly. The driver will have to manually control the proper distance away from the vehicle traveling ahead.
- The approach warning chime may sound and the system display may blink when the sensor detects some reflectors which are fitted on vehicles in other lanes or on the side of the road. This may cause the DCA system to operate inappropriately. The sensor may detect these reflectors when the vehicle is driven on winding roads, hilly roads or when entering or exiting a curve. The sensor may also detect reflectors on narrow roads or in road construction zones. In these cases driver will have to manually control the proper distance ahead of own vehicle. Also, the sensor sensitivity can be affected by vehicle operation (steering maneuver or driving position in the lane) or traffic or vehicle condition (for example, if a vehicle is being driven with some damage).
- The DCA system automatically decelerates own vehicle to help assist the driver to maintain a following distance from the vehicle ahead. Manually brake when deceleration is required to maintain a safe distance upon sudden braking by the vehicle ahead or when a vehicle suddenly appears in front of own vehicle. Always stay alert when using the DCA system.



- The DCA system automatically decelerates own vehicle to help assist the driver to maintain a following distance from the vehicle ahead. Manually brake when deceleration is required to maintain a safe distance upon sudden braking by the vehicle ahead or when a vehicle suddenly appears in front of own vehicle. Always stay alert when using the DCA system.
- When the vehicle ahead detection indicator lamp is not illuminated, system will not control or warn the driver.
- Never place a foot under the brake pedal. A foot may be caught when the system controls the brake.
- Depending on the position of the accelerator pedal, the system may not be able to assist the driver to release the accelerator pedal appropriately.
- If the vehicle ahead comes to a standstill, the vehicle decelerates to a standstill within the limitations of the system. The system will release brake control with a warning chime once it judges the vehicle is at a standstill. To prevent the vehicle from moving, the driver must depress the brake pedal. [The system will resume control automatically once the system reaches 5 km/h (3 MPH)].

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DCA]

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

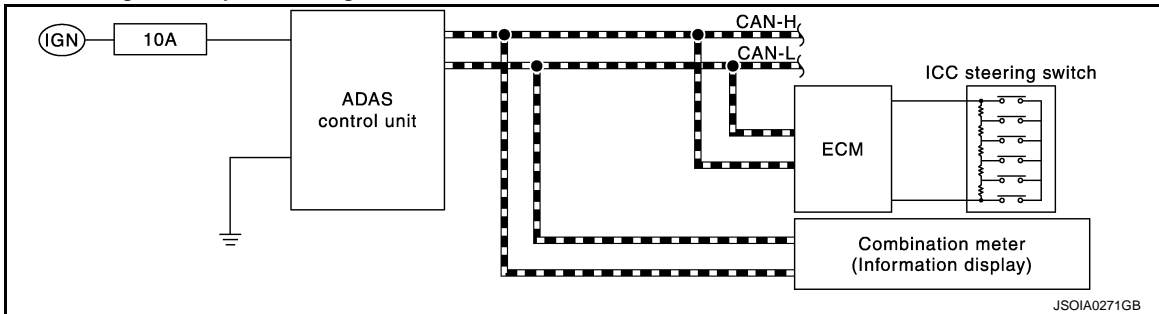
On Board Diagnosis Function

INFOID:000000009909812

DESCRIPTION

The DTC is displayed on the information display by operating the ICC steering switch.

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

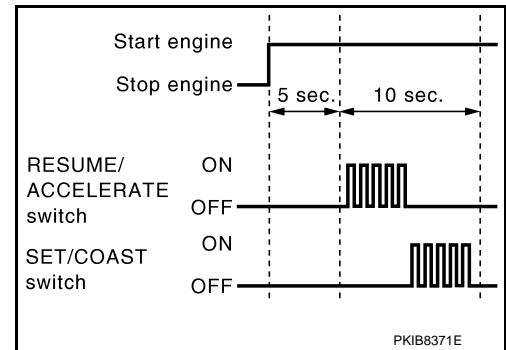
Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)

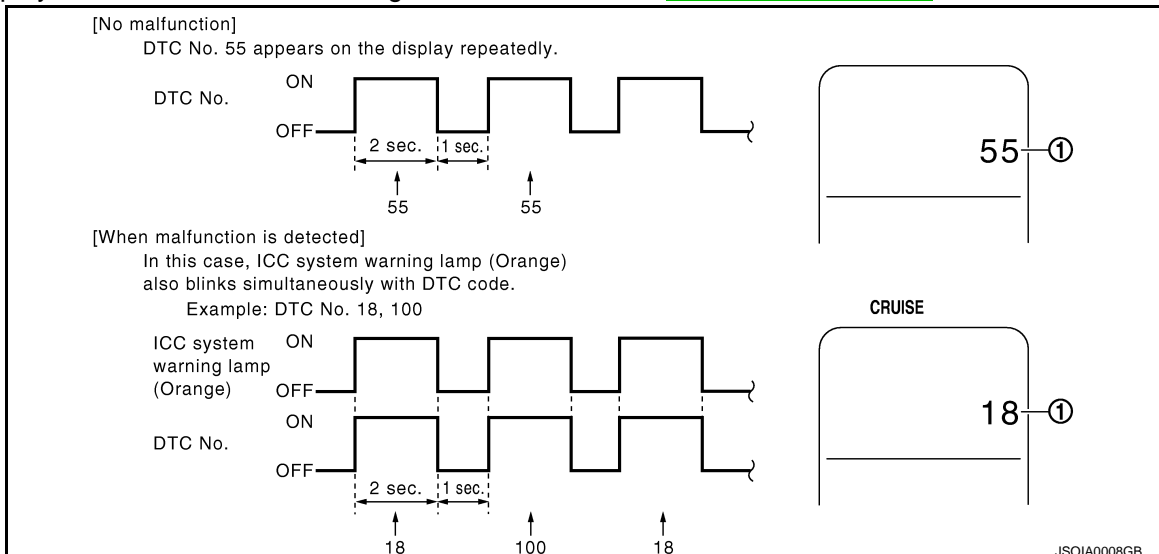
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [DAS-45, "DTC Index"](#).



NOTE:

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- It displays for up to 5 minutes and then stops.
- If multiple malfunctions exist, up to 6 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-30, "On Board Diagnosis Function"
ICC steering switch malfunction		Perform the inspection for DTC"C1A06". Refer to CCS-100, "Diagnosis Procedure"
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		<ul style="list-style-type: none"> • Check power supply and ground circuit of ADAS control unit. Refer to DAS-71, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to DAS-45, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Start the engine, and then start the on board self-diagnosis.
3. Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

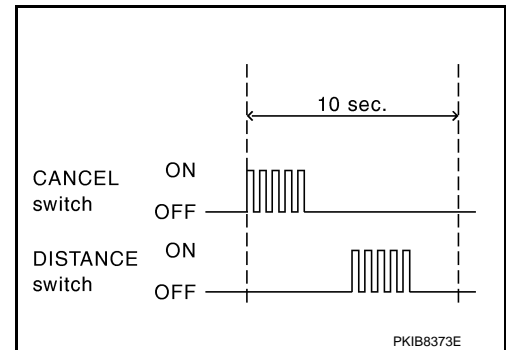
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

5. Turn ignition switch OFF, and finish the diagnosis.



CONSULT Function (ICC/ADAS)

INFOID:000000009909813

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit.

Diagnosis mode	Description
Work Support	Displays causes of automatic system cancellation occurred during system control
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit
Data Monitor	Displays ADAS control unit input/output data in real time
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load
Ecu Identification	Displays ADAS control unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication

WORK SUPPORT

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Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • Conventional (fixed speed) cruise control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Lane Departure Prevention (LDP) • Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Back-up Collision Intervention (BCI)

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description
OPERATING WIPER	×			The wiper operates at HI (it includes when the wiper is operated at HI with the wiper switch AUTO position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor light sensing part
LASER TEMP	×		×	Temperature around ICC sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH)
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed

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TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage
PARKING BRAKE ON	×	×		The parking brake is operating
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values
INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less
CAN COMM ERROR	×	×	×	ADAS control unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system
ECD CIRCUIT	×	×	×	An abnormal condition occurs in ECD system
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high
ICC SENSOR CAN COMM ERR	×		×	Communication error between ADAS control unit and the ICC sensor
4WD LOCK MODE	×	×	×	Shifting of the 4WD shift switch to 4H or 4L
ABS WARNING LAMP	×		×	ABS warning lamp ON
NO RECORD	×	×	×	—

Display Items for The Cause of Automatic Cancellation 2

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
OPE VDC/TCS/ABS 1	×		The activation of VDC, TCS, or ABS during LDP system control
Vehicle dynamics	×		Vehicle behavior exceeds specified value
Steering speed	×		Steering speed was more than the specified value in evasive direction
End by yaw angle	×		Yaw angle was the end of LDP control
Departure yaw large	×		Detected more than the specified value of yaw angle in departure direction
ICC WARNING	×		Target approach warning of ICC system, IBA system, or FCW system was activated
CURVATURE	×		Road curve was more than the specified value
Steering angle large	×		Steering angle was more than the specified value
Brake is operated	×		Brake pedal was operated
IGN LOW VOLT	×		Decrease in ADAS control unit IGN voltage
Lateral offset	×		Distance of vehicle and lane was detached in lateral direction more than the specified value
Lane marker lost	×		Lane camera unit lost the trace of lane marker
Lane marker unclear	×		Detected lane marker was unclear
Yaw acceleration	×		Detected yawing speed was more than the specified value
Deceleration large	×		Deceleration in a longitudinal direction was more than the specified value
Accel is operated	×		Accelerator pedal was depressed
Departure steering	×		Steering wheel was steered more than the specified value in departure direction
Evasive steering	×		Steering wheel was steered more than the specified value in the evasive direction

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[DCA]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description	A B C D E F G H I J K L M N P
R range	×		Selector lever was operated to R range	
Parking brake drift	×		Rear wheels lock was detected	
Not operating condition	×		Did not meet the operating condition (vehicle speed, turn signal operation, etc.)	
SNOW MODE SW	×		SNOW mode switch was pressed	
VDC OFF SW	×		VDC OFF switch was pressed	
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control	
4WD LOCK MODE	×		Shifting of the 4WD shift switch to 4H or 4L	
BSI WARNING	×		Blind Spot Intervention system was activated	
BSI) OPE VDC/TCS/ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control	
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value	
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction	
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control	
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction	
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated	
BSI) CURVATURE		×	Road curve was more than the specified value	
BSI) Steering angle large		×	Steering angle was more than the specified value	
BSI) Brake is operated		×	Brake pedal was operated	
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage	
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified	
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker	
BSI) Lane marker unclear		×	Detected lane marker was unclear	
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value	
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value	
BSI) Accel is operated		×	Accelerator pedal was depressed	
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction	
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction	
BSI) R range		×	Selector lever was operated to R range	
BSI) Parking brake drift		×	Rear wheels lock was detected	
BSI) SNOW MODE SW		×	SNOW mode switch was pressed	
BSI) VDC OFF SW		×	VDC OFF switch was pressed	
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control	
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)	
BSI) 4WD LOCK MODE		×	Shifting of the 4WD shift switch to 4H or 4L	

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Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Back-up Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	—
APA POWER	×	Decrease in accelerator pedal actuator ignition or battery voltage
VEHICLE SPEED UP	×	Vehicle speed higher than 8 km/h (5 MPH)

SELF DIAGNOSTIC RESULT

Refer to [DAS-45. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)

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Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
THRTL SENSOR [deg]	×	×				NOTE: The item is displayed, but it is not monitored
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
YAW RATE [deg/s]	×					NOTE: The item is displayed, but it is not monitored
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of “D” or “M” positions read from ADAS control unit through CAN communication; ON when position “D” or “M” (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit

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Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
VHCL SPD AT [km/h] or [mph]	×					Indicates vehicle speed calculated from A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×					Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [ON/OFF] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed
IBA SW [On/Off]	×	×				Indicates [On/Off] status of IBA OFF switch
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of warning systems ON indicator output
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system
READY signal [On/Off]			×			Indicates LDP system settings

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[DCA]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
Camera lost [Detect/Deviate/Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection signal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)
STATUS signal [Strby/Warn/Cancl/Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an ON/OFF state of the lane marker. The ON/OFF state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
FUNC ITEM (NV-ICC) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
FUNC ITEM (NV-DCA) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
DCA SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
NAVI ICC SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
NAVI DCA SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
SYS SELECTABILITY [On/Off]	×	×	×	×		Indicates the availability of ON/OFF switching for "Driver Assistance" items received from the AV control unit via CAN communication
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system

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Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system
4WD SW [AUTO, 4H, 4L]	×		×	×		Indicates [On/Off] status as judged from current 4WD mode signal (Transfer control unit transmits current 4WD mode signal through CAN communication)
BCI SWITCH [On/Off]					×	Indicates [On/Off] status of BCI switch
BCI SYSTEM ON [On/Off]					×	Indicates [On/Off] status of Back-up Collision Intervention system
BCI ON IND [On/Off]					×	Indicates [On/Off] status of BCI ON indicator
BCI OFF IND [On/Off]					×	Indicates [On/Off] status of BCI OFF indicator
BCI WARNING IND [On/Off]					×	Indicates [On/Off] status of BCI malfunction indicator
BCI HI TEMP WARN IND [On/Off]					×	Indicates [On/Off] status of BCI not available indicator
BATTERY CIRCUIT OFF [Off]						NOTE: The item is displayed, but it is not monitored

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning lamp is illuminated.**
 - **ICC system warning lamp**
 - **Lane departure warning lamp**
 - **Blind Spot Warning/Blind Spot Intervention warning lamp**
 - **IBA OFF indicator lamp (IBA system ON)**
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
Active Pedal	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF operations as necessary

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Test item	Description
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	<ul style="list-style-type: none"> • MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the combination meter via CAN communication <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signals to the combination meter via CAN communication	Intermittent beep sound
	Test start	Starts the tests of "MODE1"	—
	Reset	Stops transmitting the buzzer output signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

BRAKE ACTUATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3"	—
	Reset	Stops transmitting the brake fluid pressure control signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

NOTE:

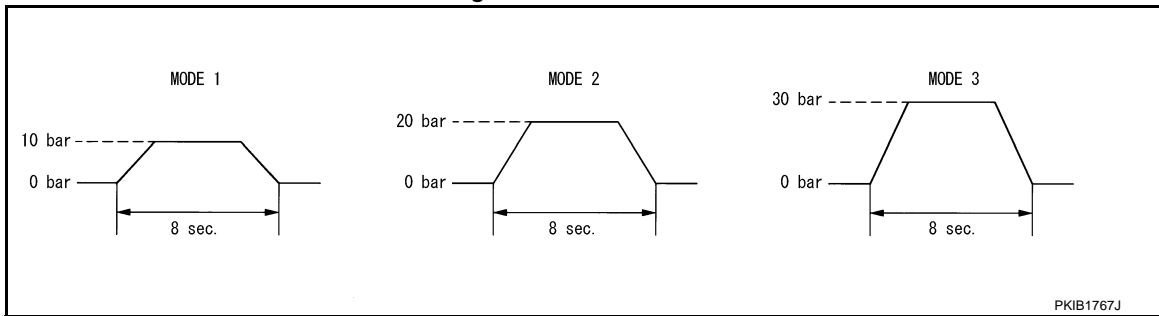
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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[DCA]

< SYSTEM DESCRIPTION >

The test is finished in 10 seconds after starting



Active Pedal

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

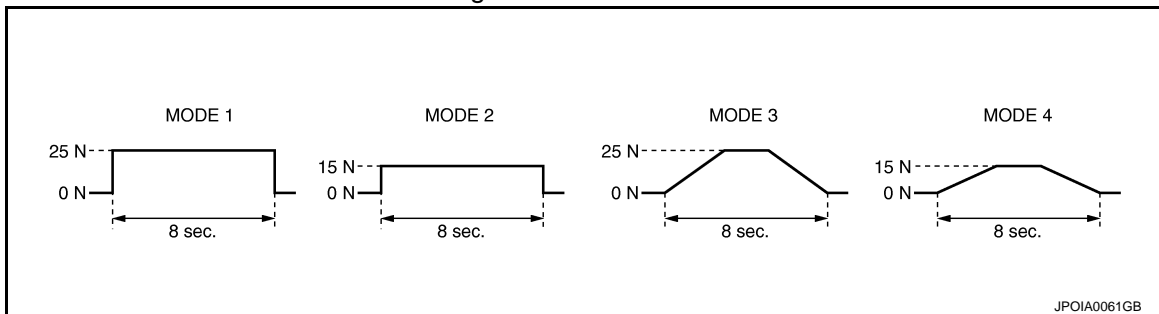
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
Active Pedal	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3” and “MODE4”	—
	Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—
	End	Returns to the “SELECT TEST ITEM” screen	—

NOTE:

The test is finished in 10 seconds after starting



DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test	—
	On	Transmits the DCA system switch indicator signal to the combination meter via CAN communication	ON

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DCA]

LDP BUZZER

Test item	Operation	Description	Warning buzzer
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	—
	On	Transmits the warning buzzer signal to the warning buzzer	ON

WARNING SYSTEM IND

Test item	Operation	Description	Warning systems ON indicator
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	—
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

LDP ON IND

Test item	Operation	Description	LDP ON indicator lamp (Green)
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal below to end the test	—
	On	Transmits the LDP ON indicator lamp signal to the combination meter via CAN communication	ON

LANE DEPARTURE W/L

Test item	Operation	Description	Lane departure warning lamp (Yellow)
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp signal below to end the test	—
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON

BSW/BSI WARNING LAMP

Test item	Operation	Description	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow)
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot Intervention warning lamp signal below to end the test	—
	On	Transmits the Blind Spot Warning/Blind Spot Intervention warning lamp signal to the combination meter via CAN communication	ON

BSI ON INDICATOR

Test item	Operation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indicator signal below to end the test	—
	On	Transmits the Blind Spot Intervention ON indicator signal to the combination meter via CAN communication	ON

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DAS

DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[DCA]

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER)

INFOID:000000009013466

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication with ADAS control unit and the communication with ICC sensor.

Diagnosis mode	Description
Work Support	It can monitor the adjustment direction indication in order to perform the laser beam aiming operation smoothly
Self Diagnostic Result	Displays malfunctioning system memorized in ICC sensor
Data Monitor	Displays real-time input/output data of ICC sensor
Ecu Identification	Displays ICC sensor part number
CAN Diag Support Monitor	The results of transmit/receive diagnosis of ITS communication can be read

WORK SUPPORT

Work support items	Description
LASER BEAM ADJUST	Outputs laser beam, calculates dislocation of the beam, and indicates adjustment direction

Laser Beam Adjust

Refer to [CCS-78. "Description"](#).

SELF DIAGNOSTIC RESULT

Refer to [CCS-60. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	Description
VHCL SPEED SE [km/h] or [mph]	Vehicle speed judged from a vehicle speed signal read by the ICC sensor via ITS communication is displayed [ADAS control unit receives a vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated vehicle speed to ICC sensor via ITS communication]
YAW RATE [deg/s]	Indicates yaw rate read from ADAS control unit through ITS communication (ADAS control unit receives yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits yaw rate calculated by the ADAS control unit) Yaw rate judged from a yaw rate signal read by ICC sensor via ITS communication is displayed [ADAS control unit receives a yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated yaw rate to ICC sensor via ITS communication]
PWR SUP MONI [V]	Indicates IGN voltage input by ICC sensor
DISTANCE [m]	Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	Indicates the relative speed of the vehicle ahead
LASER OFFSET [m]	NOTE: The item is indicated, but not used
LASER HEIGHT [m]	NOTE: The item is indicated, but not used
STEERING ANGLE [deg]	The steering angle is displayed

DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[DCA]

Monitored item [Unit]	Description
STRG ANGLE SPEED [deg/s]	The steering angle speed is displayed
L/R ADJUST [deg]	The horizontal correction value of the laser beam is displayed
U/D ADJUST [deg]	The vertical correction value of the laser beam is displayed

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DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

< SYSTEM DESCRIPTION >

[DCA]

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

CONSULT Function (ACCELERATOR PEDAL ACT)

INFOID:000000009013467

DESCRIPTION

CONSULT performs the following functions via CAN communication with ADAS control unit and the communication with accelerator pedal actuator.

Test mode	Function
Self Diagnostic Result	<ul style="list-style-type: none">Displays malfunctioning system memorized in accelerator pedal actuatorDisplays the Freeze Frame Data when the malfunction is detected
DATA MONITOR	Displays real-time input/output data of accelerator pedal actuator
ACTIVE TEST	Enables operation check of electrical loads by sending driving signal to them
ECU Identification	Displays accelerator pedal actuator parts number
CAN Diag Support Monitor	The results of transmit/receive diagnosis of ITS communication can be read

SELF DIAGNOSTIC RESULT

Self Diagnostic Result

Refer to [DAS-122, "DTC Index"](#).

FFD (Freeze Frame Data)

The accelerator pedal actuator records the following data when the malfunction is detected.

Freeze Frame Data item [Unit]	Description
TGT FBK FRC [N]	It displays the target accelerator pedal actuation force that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication at the time when the malfunction is detected
TGT MOT POSI [%]	It displays the target motor position that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication at the time when the malfunction is detected
ACT MOT POSI [%]	It displays the integrated motor position that the accelerator pedal actuator read out at the time when the malfunction is detected
AP OPEN [%]	It displays the accelerator pedal position signal that the accelerator pedal actuator read out via ITS communication at the time when the malfunction is detected
APA TEMP [°C]	It displays the integrated motor temperature that the accelerator pedal actuator read out at the time when the malfunction is detected
APA CURRENT [A]	It displays the integrated motor consumption current that the accelerator pedal actuator read out at the time when the malfunction is detected
APA PWR [V]	It displays the power supply voltage that the accelerator pedal actuator read out at the time when the malfunction is detected
APA OPE STATS [On/Off]	It displays the activation permission status of accelerator pedal actuator at the time when the malfunction is detected
APA STATS [READY/NG/TP NG/INIT]	It displays the condition of accelerator pedal actuator at the time when the malfunction is detected
IGN Counter ^{Note}	It displays number of ignition switch OFF → ON after the malfunction is detected

NOTE:

- The number is 0 when is detected now.
- The number increases like 1 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

< SYSTEM DESCRIPTION >

[DCA]

Monitor item [Unit]	FUNCTION DESCRIPTION
TGT FBK FRC [N]	It displays the target accelerator pedal actuation force that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication (The ADAS control unit transmits the accelerator pedal feedback force control signal via ITS communication)
TGT MOT POSI [%]	It displays the target motor position that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication (The ADAS control unit transmits the accelerator pedal feedback force control signal via ITS communication)
ACT MOT POSI [%]	It displays the integrated motor position that the accelerator pedal actuator read out
AP OPEN [%]	It displays the accelerator pedal position signal that the accelerator pedal actuator read out via ITS communication (The ADAS control unit transmits with ITS communication the accelerator pedal position signal that is received from ECM via CAN communication)
APA TEMP [°C]	It displays the accelerator pedal actuator integrated motor temperature
APA CURRENT [A]	It displays the accelerator pedal actuator integrated motor consumption current
APA PWR [V]	It displays the power supply voltage that the accelerator pedal actuator read out
APA OPE STATS [On/Off]	It displays the activation permission status of accelerator pedal actuator
APA STATS [READY/NG/TP NG/INIT]	It displays the condition of accelerator pedal actuator

ACTIVE TEST

CAUTION:

Never perform ACTIVE TEST while driving the vehicle.

NOTE:

The active test cannot be performed when the ICC system warning lamp is illuminated.

Item list

Active test item	Description
ACCELERATOR PEDAL ACTUATOR TEST1	Drive the accelerator pedal actuator and generate the constant accelerator pedal actuation force
ACCELERATOR PEDAL ACTUATOR TEST2	Drive the accelerator pedal actuator and generate the vibration

ACCELERATOR PEDAL ACTUATOR TEST 1

NOTE:

Check the accelerator pedal by depressing when performing the test.

Active test item	Operation	Description
ACCELERATOR PEDAL ACTUATOR TEST1	STOP	Finish the test
	START	Generate the constant accelerator pedal actuation force for accelerator pedal

ACCELERATOR PEDAL ACTUATOR TEST 2

NOTE:

Check the accelerator pedal by depressing when performing the test.

Active test item	Operation	Description
ACCELERATOR PEDAL ACTUATOR TEST 2	STOP	Finish the test
	START	Generate the vibration for accelerator pedal

ECU IDENTIFICATION

Displays accelerator pedal assembly parts number.

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:000000009909821

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> • Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehicle speed calculated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	On
		When the buzzer of the following system not operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
BA WARNING	Engine running	IBA OFF indicator lamp ON <ul style="list-style-type: none"> • When IBA system is malfunctioning • When IBA system is turned to OFF 	On
		IBA OFF indicator lamp OFF <ul style="list-style-type: none"> • When IBA system is normal • When IBA system is turned to ON 	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
		When ICC brake hold relay is not activated	Off
D RANGE SW	Engine running	When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position

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ADAS CONTROL UNIT

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[DCA]

Monitor item	Condition		Value/Status
GEAR	While driving		Displays the gear position
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> • Drive the vehicle and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch 	SET switch indicator ON	On
		SET switch indicator OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is pressed	On
		When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dynamic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
IBA SW	Ignition switch ON	When the IBA OFF switch is pressed	On
		When the IBA OFF switch is not pressed	Off
FCW SYSTEM ON	Ignition switch ON	When the FCW system is ON (Warning systems ON indicator ON)	On
		When the FCW system is OFF (Warning systems ON indicator OFF)	Off
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator pedal actuator
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON (Warning systems ON indicator ON)	On
		When the LDW system is OFF (Warning systems ON indicator OFF)	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Monitor item	Condition		Value/Status
LDP ON IND	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp ON	On
		LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Drive the vehicle and activate the LDW system or LDP system	Lane departure warning lamp ON	On
		Lane departure warning lamp OFF	Off
LDW BUZER OUT-PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system	When the buzzer of the following system operates • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	On
		When the buzzer of the following system does not operate • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	Off
LDP SYSTEM ON	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
READY signal	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
Camera lost	Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system	Both side lane markers are detected	Detect
		Deviated side lane marker is lost	Deviated
		Both side lane markers are lost	Both
Shift position	<ul style="list-style-type: none"> • Engine running • While driving 		Displays the shift position
Turn signal	Turn signal lamps OFF		Off
	Turn signal lamp LH blinking		LH
	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH blinking		LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
		Vehicle turning left	Positive value
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off
STATUS signal	Drive the vehicle with the LDP system turned ON	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancel
		When the LDP system is OFF	Off
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV-DCA)	NOTE: The item is indicated, but not monitored		Off
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the navigation system is ON	On
		"Distance Control Assist" set with the navigation system is OFF	Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Monitor item	Condition		Value/Status
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the navigation system is ON	On
		"Lane Departure Prevention" set with the navigation system is OFF	Off
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the navigation system is ON	On
		"Blind Spot Intervention" set with the navigation system is OFF	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored		Off
NAVI DCA SELECT	NOTE: The item is indicated, but not monitored		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the navigation system can be switched normally	On
		Items set with the navigation system cannot be switched normally	Off
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
		Blind Spot Intervention ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON (Warning systems ON indicator ON)	On
		When the BSW system is OFF (Warning systems ON indicator OFF)	Off
BSI SYSTEM ON	Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
		When the Blind Spot Intervention system is OFF	Off
4WD SW	Engine running	4WD shift switch position is in AUTO	AUTO
		4WD shift switch position is in 4H	4H
		4WD shift switch position is in 4L	4L
BCI SWITCH	Ignition switch ON	When BCI switch is pressed	ON
		When BCI switch is not pressed	OFF
BCI SYSTEM ON	Ignition switch ON	When BCI system is ON	ON
		When BCI system is OFF	OFF
BCI ON IND	Ignition switch ON	When BCI ON indicator is ON	ON
		When BCI ON indicator is OFF	OFF
BCI OFF IND	Ignition switch ON	When BCI OFF indicator is ON	ON
		When BCI OFF indicator is OFF	OFF
BCI WARNING IND	Ignition switch ON	When BCI malfunction indicator is ON	ON
		When BCI malfunction indicator is OFF	OFF
BCI HI TEMP WARN IND	Ignition switch ON	When BCI not available indicator is ON	ON
		When BCI not available indicator is OFF	OFF
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not monitored		Off

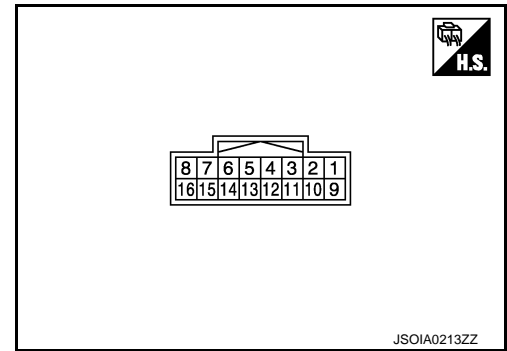
ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (V/W)	Ground	Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed	12 V
					When warning systems switch is pressed	0 V
3 (R/Y)		IBA OFF switch	Input	Ignition switch ON	When IBA OFF switch is not pressed	12 V
					When IBA OFF switch is pressed	0 V
4 (LG/B)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (R)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (Y)		ITS communication-L	—	—	—	—
10 (O)		BCI switch	Input	Ignition switch ON	When BCI OFF switch is not pressed	12 V
					When BCI OFF switch is pressed	0 V
12 (G/R)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	0 V
					Warning buzzer not operating	12 V
14 (L)		CAN -H	—	—	—	—
15 (P)	CAN -L	—	—	—	—	
16 (W/G)	Ignition power supply	Input	Ignition switch ON		Battery Voltage	

Fail-safe

INFOID:000000009909822

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000009909823

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Priority	Detected items (DTC)		
4	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A2A: ICC SEN PWR SUP CIR • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD PWR SUPPLY CIR • C1A33: CAN TRANSMISSION ERR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR 2 • C1A38: APA CAN CIR 1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1B01: CAM AIMING INCOMP • C1B03: CAM ABNRML TMP DETCT • C1B56: SONOR CIRCUIT • C1B57: AVM CIRCUIT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR 	A	
	<ul style="list-style-type: none"> • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0428: STRG SEN CAN CIR 2 • U1500: CAM CAN CIR 2 • U1501: CAM CAN CIR 1 • U1502: ICC SEN CAN COMM CIR • U1503: SIDE RDR L CAN CIR 2 • U1504: SIDE RDR L CAN CIR 1 • U1505: SIDE RDR R CAN CIR 2 • U1506: SIDE RDR R CAN CIR 1 • U150B: ECM CAN CIRC 3 • U150C: VDC CAN CIRC 3 • U150D: TCM CAN CIRC 3 • U150E: BCM CAN CIRC 3 • U150F: AV CAN CIRC 3 • U1512: HVAC CAN CIRC3 • U1513: METER CAN CIRC 3 • U1514: STRG SEN CAN CIRC 3 • U1515: ICC SENSOR CAN CIRC 3 • U1516: CAM CAN CIRC 3 • U1517: APA CAN CIRC 3 • U1518: SIDE RDR L CAN CIRC 3 • U1519: SIDE RDR R CAN CIRC 3 • U1520: 4WD CAN CIRC 3 • U1521: SONAR CAN COMMUNICATION 2 • U1522: SONAR CAN COMMUNICATION 1 • U1523: SONAR CAN COMMUNICATION 3 • U1524: AVM CAN COMMUNICATION 1 • U1525: AVM CAN COMMUNICATION 3 	B C D E F G H I J K L M N	
	5	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIR 	P

DAS

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Priority	Detected items (DTC)
6	<ul style="list-style-type: none"> • C1A15: GEAR POSITION
7	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

DTC Index

INFOID:000000009870915

NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-143
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-144
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-145

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp		System	
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-147
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON		A, B, C, D, E, F, G	DAS-148
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	DAS-152
C1A12	12	LASER BEAM OFFCNTR	ON	ON				A, C, D, E	DAS-154
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	DAS-155
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	DAS-161
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-162
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	DAS-164
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	DAS-165
C1A18	18	LASER AIMING INC-MP	ON	ON				A, C, D, E	DAS-166
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	DAS-167
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-168
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	DAS-170
C1A27	27	ECD PWR SUPPLY CIR	ON	ON				A, B, C, D, E	DAS-171
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	DAS-173
C1A34	34	COMMAND ERROR	ON					A, B, E	DAS-174
C1A35	35	APA CIR	ON				ON	A, E, H	DAS-175

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	DAS-176
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	DAS-177
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	DAS-178
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	DAS-179
C1A40	40	SYSTEM SW CIRC		ON				C, D	CCS-132
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	CCS-123
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-386
C1B01	82	CAM AIMING INCOMP			ON	ON		F, G	DAS-388
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK		F, G	DAS-390
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-543
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-544
C1B56	87	SONOR CIRCUIT					ON	H	DAS-544
C1B57	88	AVM CIRCUIT					ON	H	DAS-544
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	DAS-180
C1F02	92	APA C/U MALF	ON				ON	A, E, H	DAS-182
C1F05	95	APA PWR SUPPLY CIR	ON				ON	A, E, H	DAS-185
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—	—	ON	—	—

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp		System	
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-189
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	—	A, B, C, D, E, G, H	DAS-190
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			ON	A, B, C, D, E	DAS-191
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	DAS-192
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON		A, B, C, D, E, F, G, H	DAS-193
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-194
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	DAS-195
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-196
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-198
U1500	145	CAM CAN CIR 2			ON	ON	ON	F, G	DAS-406
U1501	146	CAM CAN CIR 1			ON	ON	ON	F, G	DAS-407
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	DAS-203
U1503	150	SIDE RDR L CAN CIR 2				ON		G, H	DAS-569
U1504	151	SIDE RDR L CAN CIR 1				ON		G, H	DAS-570
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-571

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-572
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-573
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-574
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	DAS-199
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-200
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-201
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	DAS-202
U150F	161	AV CAN CIRC 3					ON		DAS-70
U1512	162	HVAC CAN CIRC3			ON	ON	ON	F, G	DAS-408
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON		A, B, C, D, E, F, G, H	DAS-204
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON		A, B, C, D, E, G, H	DAS-205
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			ON	A, B, C, D, E	DAS-206
U1516	166	CAM CAN CIRC 3			ON	ON	ON	F, G	DAS-410
U1517	167	APA CAN CIRC 3	ON					A, B, E, H	DAS-207
U1518	168	SIDE RDR L CAN CIRC 3				ON		G, H	DAS-579
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-580

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DCA]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1520	176	4WD CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-208
U1521	177	SONAR CAN COMMUNICATION 2					ON	H	DAS-740
U1522	178	SONAR CAN COMMUNICATION 1					ON	H	DAS-741
U1523	179	SONAR CAN COMMUNICATION 3					ON	H	DAS-742
U1524	180	AVM CAN COMMUNICATION 1					ON	H	DAS-743
U1525	181	AVM CAN COMMUNICATION 3					ON	H	DAS-744

NOTE:

With the detection of “U1000” some systems do not perform the fail-safe operation.

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

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DAS

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

ICC SENSOR

Reference Value

INFOID:000000009013472

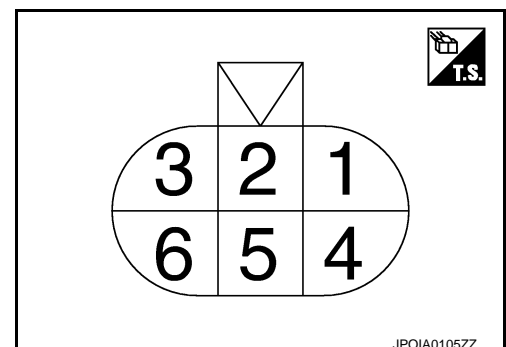
VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
YAW RATE	While driving	Vehicle stopped	0.0
		Vehicle turning right	Positive value
		Vehicle turning left	Negative value
PWR SUP MONI	Ignition switch ON		Power supply voltage value of ICC sensor
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed
		When a vehicle ahead is not detected	0.0
LASER OFFSET	NOTE: The item is indicated, but not used		—
LASER HEIGHT	NOTE: The item is indicated, but not used		—
STEERING ANGLE	Ignition switch ON	When setting the steering wheel in straight-ahead position	0.0
		When turning the steering wheel 90° rightward	+90
		When turning the steering wheel 90° leftward	-90
STRG ANGLE SPEED	Ignition switch ON	At the time of turning the steering wheel	Steering wheel turning speed is displayed
L/R ADJUST	Ignition switch ON	At the completion of laser beam adjustment	Horizontal correction value is displayed
U/D ADJUST	Ignition switch ON	At the completion of laser beam adjustment	Vertical correction value is displayed

TERMINAL LAYOUT



ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (W/G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
3 (L)		ITS communication-H	—	—	—
4 (B)		Ground	—	Ignition switch ON	0 V
6 (Y)		ITS communication-L	—	—	—

Fail-safe

INFOID:000000009013473

If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning lamp in the combination meter.

DTC Inspection Priority Chart

INFOID:000000009013474

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> C1A50: ADAS MALFUNCTION
3	<ul style="list-style-type: none"> C1A01: POWER SUPPLY CIR C1A02: POWER SUPPLY CIR 2 C1A12: LASER BEAM OFFCNTR C1A16: RADAR STAIN C1A18: LASER AIMING INCOMP C1A21: UNIT HIGH TEMP C1A39: STRG SEN CIR U0104: ADAS CAN CIR1 U0121: VDC CAN CIR2 U0126: STRG SEN CAN CIR1 U0405: ADAS CAN CIR2 U0415: VDC CAN CIR1 U0428: STRG SEN CAN CIR2
4	<ul style="list-style-type: none"> C1A00: CONTROL UNIT

DTC Index

INFOID:000000009013475

NOTE:

- The details of time display are as per the following.
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
- Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

×: Applicable

DTC	CONSULT display	ICC system warning lamp	Fail-safe function						Reference
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Intelligent Brake Assist (IBA)	Brake Assist (with preview function)	
C1A00	CONTROL UNIT	ON	×	×	×	×	×	×	CCS-89
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	×	CCS-91
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	×	CCS-91
C1A12	LASER BEAM OFFCNTR	ON	×		×	×	×	×	CCS-102
C1A16	RADAR STAIN	ON	×		×	×	×	×	CCS-112
C1A18	LASER AIMING INCMP	ON	×		×	×	×	×	CCS-115
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	×	×	CCS-117
C1A39	STRG SEN CIR	ON	×	×	×	×	×	×	CCS-130
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	×	×	CCS-134
U0104	ADAS CAN CIR1	ON	×	×	×	×	×	×	CCS-138
U0121	VDC CAN CIR2	ON	×	×	×	×	×	×	CCS-139
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	×	CCS-141
U0405	ADAS CAN CIR2	ON	×	×	×	×	×	×	CCS-146
U0415	VDC CAN CIR1	ON	×	×	×	×	×	×	CCS-147
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	×	CCS-149
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	×	×	CCS-151
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	×	×	CCS-153

ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

ACCELERATOR PEDAL ACTUATOR

Reference Value

INFOID:000000009013476

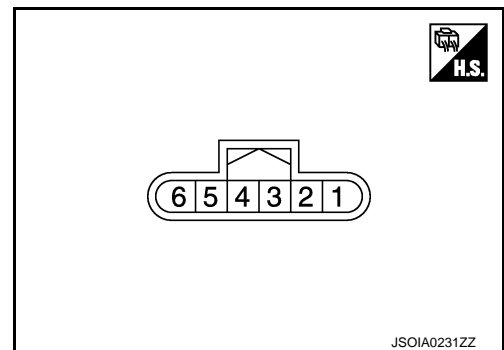
VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
TGT FBK FRC	Drive the vehicle and operate the DCA system	When the ADAS control unit is controlling the accelerator pedal actuator	It changes with the demand from the ADAS control unit
TGT MOT POSI	NOTE: The item is indicated, but not used.		—
ACT MOT POSI	Engine running	Depress accelerator pedal	It changes according to the depressed amount of accelerator pedal
AP OPEN	Engine running	Depress accelerator pedal	It changes according to the depressed amount of accelerator pedal
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA CURRENT	Drive the vehicle and operate the DCA system	When the ADAS control unit is controlling the accelerator pedal actuator	Display the accelerator pedal actuator motor operation consumption current
APA PWR	Ignition switch ON		Battery voltage
APA OPE STATS	Engine running	When the accelerator pedal actuator control is permitted	On
		When the accelerator pedal actuator control is invalid	Off
APA STATS	Engine running	When the accelerator pedal actuator is normal	Ready
		When the accelerator pedal actuator is temporarily malfunctioning	TP NG
		When the accelerator pedal actuator is malfunctioning	NG
		During the accelerator pedal actuator operation preparations	Init

TERMINAL LAYOUT



PHYSICAL VALUES

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DAS

ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

[DCA]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (B/O)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (B)		Ground	—	Ignition switch ON	0 V
3 (W/G)		Ignition power supply	Input	Ignition switch ON	Battery voltage
4 (Y)		ITS communication-L	—	—	—
5 (L)		ITS communication-H	—	—	—

DTC Inspection Priority Chart

INFOID:000000009013477

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • C1F02: APA C/U MALF
3	<ul style="list-style-type: none"> • C1F01: APA MOTOR MALF • C1F03: APA HI TEMP • C1F05: APA PWR SUPPLY CIR • C1F06: CAN CIR2 • C1F07: CAN CIR1

DTC Index

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NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed in FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.

x: Applicable

CONSULT display	ICC system warning lamp	Fail-safe function	Reference
C1F01: APA MOTOR MALF	ON	×	DAS-180
C1F02: APA C/U MALF	ON	×	DAS-182
C1F03: APA HI TEMP	—	—	DAS-184
C1F05: APA PWR SUPPLY CIR	ON	×	DAS-185
C1F06: CAN CIR2	ON	×	DAS-187
C1F07: CAN CIR1	ON	×	DAS-188
U1000: CAN COMM CIRCUIT	ON	×	DAS-196
U1010: CONTROL UNIT (CAN)	ON	×	DAS-198

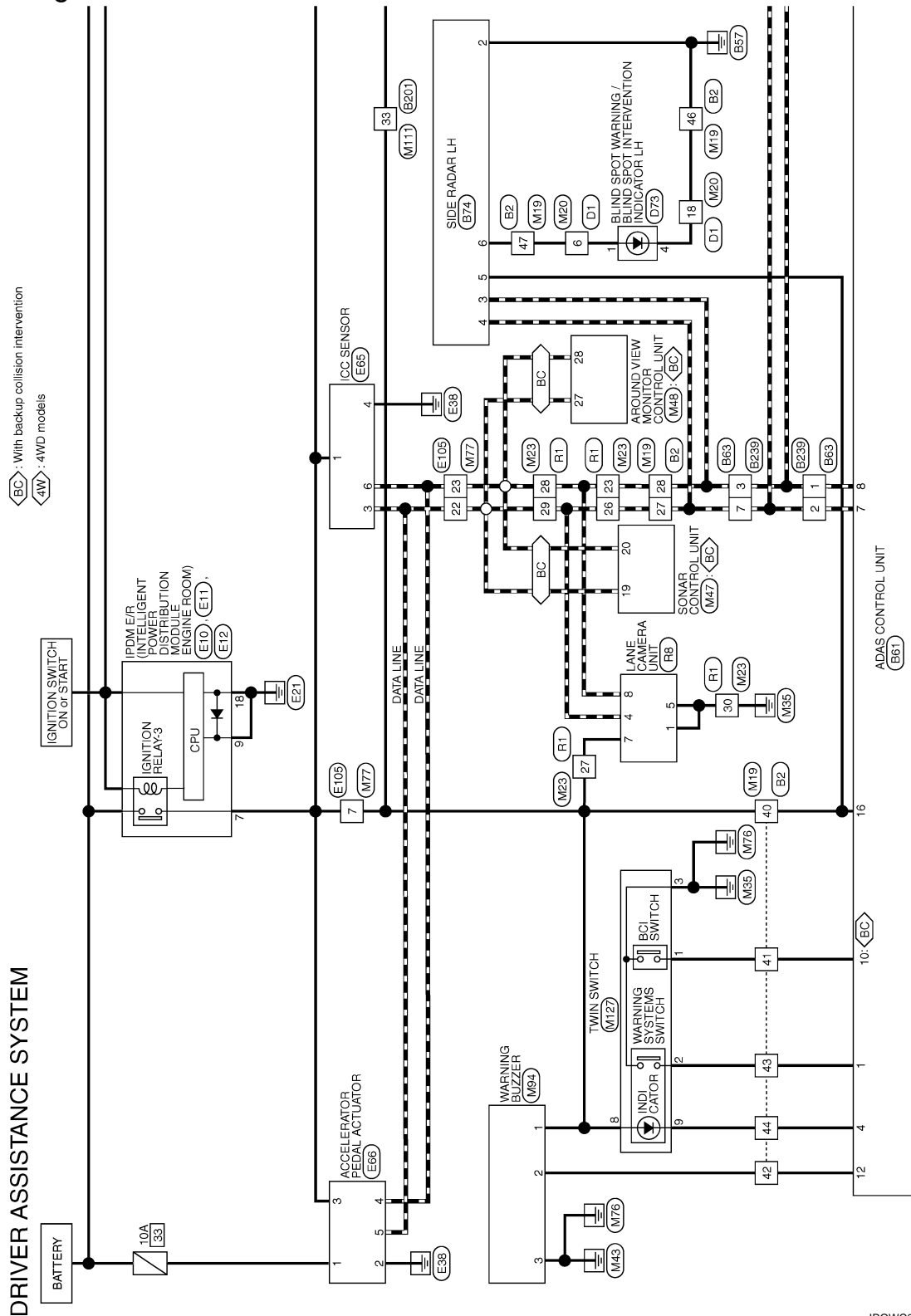
< WIRING DIAGRAM >

WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:000000009356139



DRIVER ASSISTANCE SYSTEM

*: This connector is not shown in "Harness Layout".

2013/01/30

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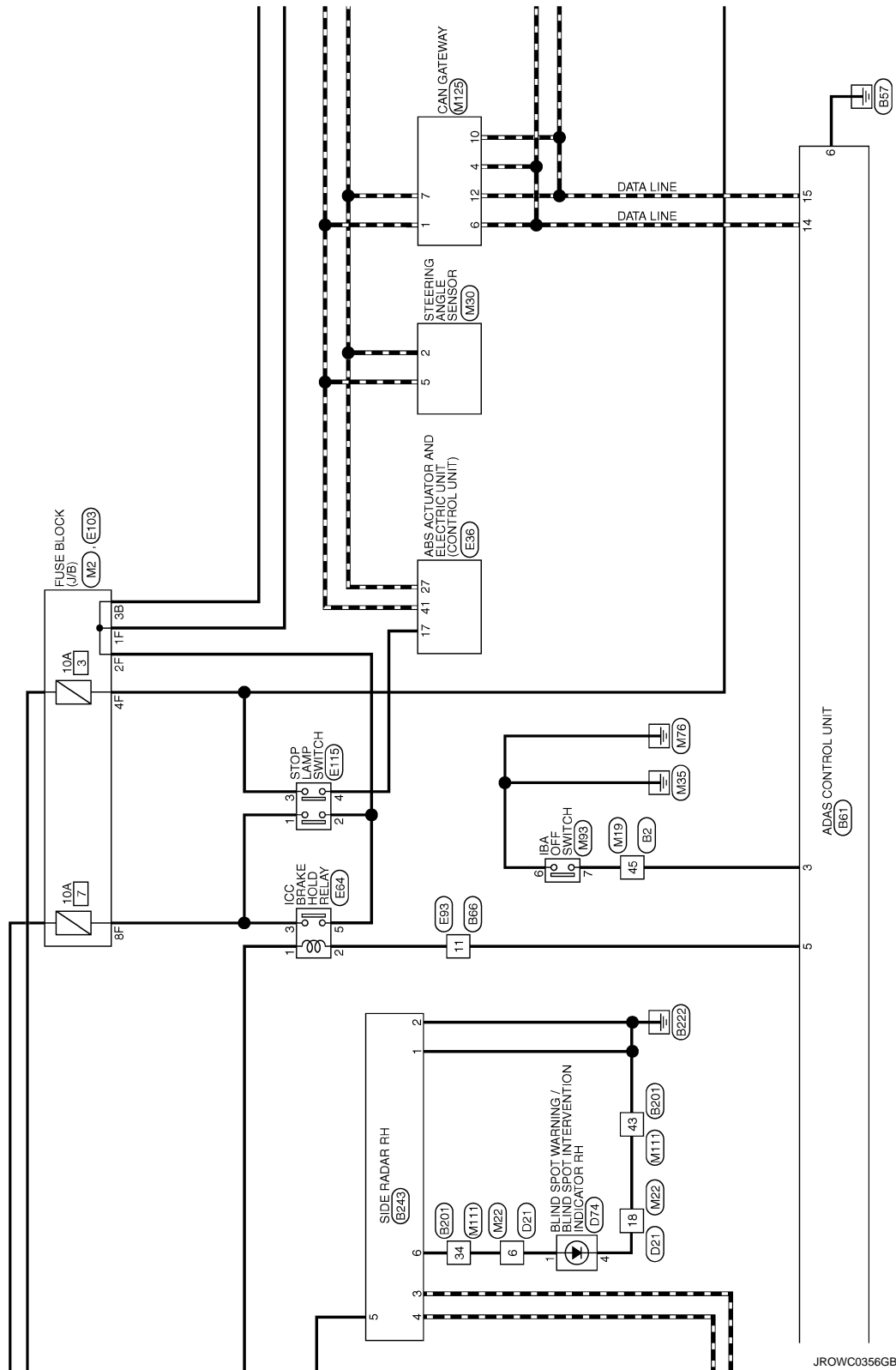
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DRIVER ASSISTANCE SYSTEMS

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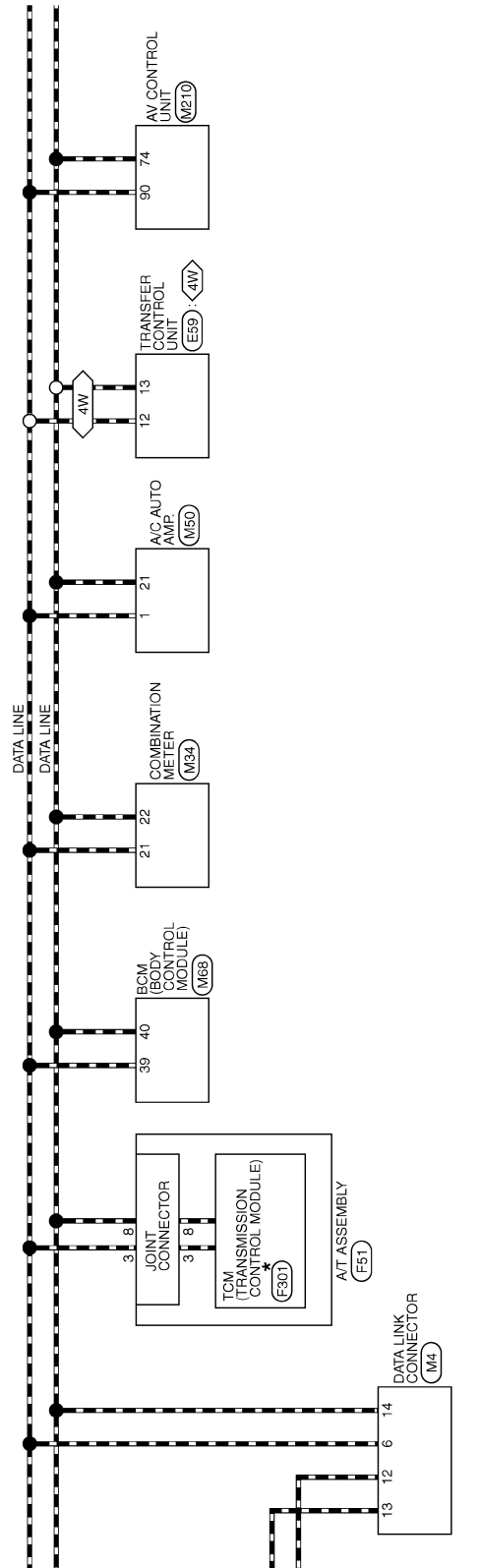


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DRIVER ASSISTANCE SYSTEMS

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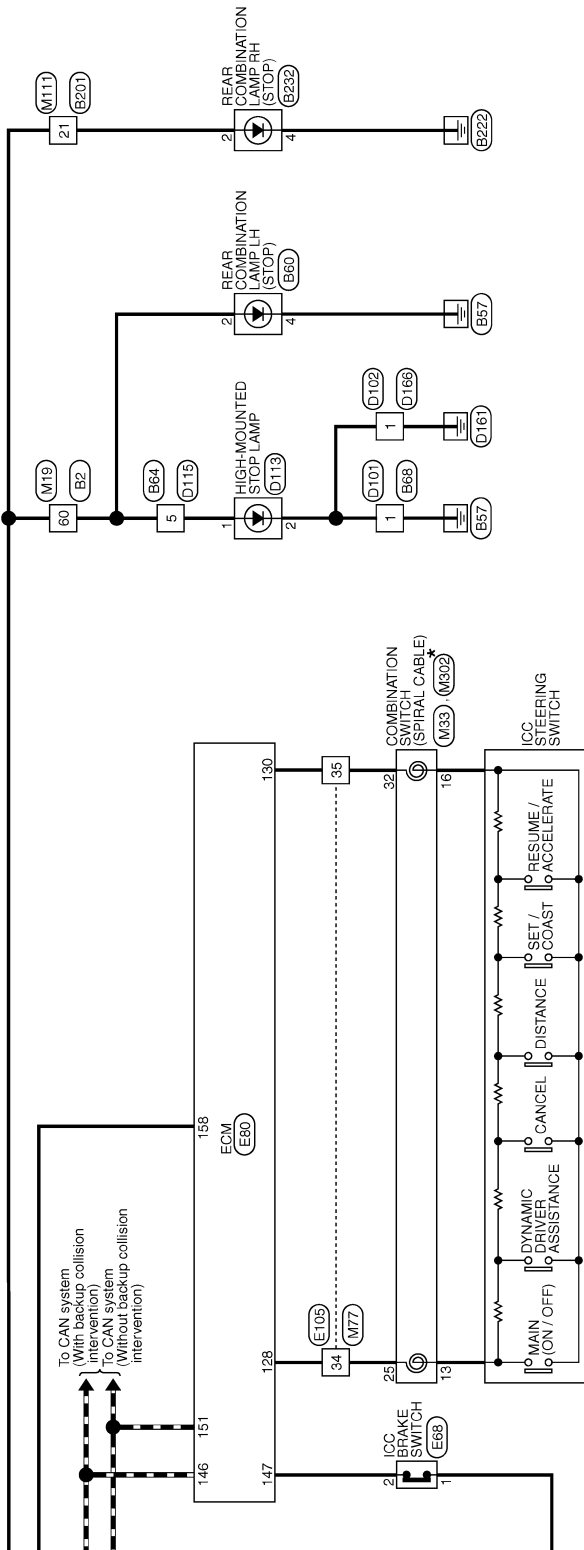
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DRIVER ASSISTANCE SYSTEMS

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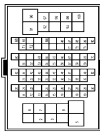
DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[DCA]

DRIVER ASSISTANCE SYSTEM

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	RW	-
6	RW	-
7	V	-
9	G	-
11	WB	-
12	BR	-
13	GR	-
14	BY	-
15	WR	-
16	GR	-
18	GW	-
19	V	-
20	WG	-
21	BW	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	LO	-
28	YR	-
29	L	-
30	R	-
31	GY	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	B	-
39	B	-
40	WG	-
41	O	-

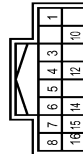
42	GR	-
43	VW	-
44	LG/B	-
45	RY	-
46	B	-
47	BR	-
49	GR	-
50	R/B	-
51	WR	-
52	BRY	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	VW	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	PL	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	WR	-
81	Y/L	-
84	L/O	-
86	O	-
87	WR	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	WR	-
96	LW	-
97	R	-
98	V	-
99	LW	-
100	P/B	-

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FM-CS



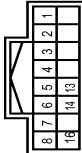
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	R	-
3	G	-
4	B	-

Connector No.	B61
Connector Name	ADAS CONTROL UNIT
Connector Type	TH18FM-NH



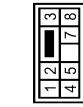
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V/W	WARNING SYSTEMS SW
3	RY	IBA OFF SW
4	LG/B	WARNING SYSTEMS ON IND
5	R	BRAKE HOLD RLY DRIVE SIGNAL
6	B	GND
7	L	ITS COMM-H
8	Y	ITS COMM-L
10	O	BCI SW
12	GR	WARNING BUZZER
14	R	CANH
15	B	CANL
16	W/G	IGNITION

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH18FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y/B	-
4	SB	-
6	G	-
6	Y	-
7	L/O	-
8	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B64
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	RY	-
3	GW	-
4	R	-
5	R	-
7	LW	-
8	V	-

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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[DCA]

DRIVER ASSISTANCE SYSTEM

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



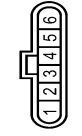
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	RW	-
11	R	-
12	V	-
13	P/L	-
15	RY	-
16	L/W	-

Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-

Connector No.	B74
Connector Name	SIDE RADAR LH
Connector Type	AA036FB-VP-5P



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GND
3	Y	ITS COM+L
4	L	ITS COM+H
5	W/G	IGNITION
6	BR	BSW INDICATOR

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	RG	-
19	L/Y	-

Terminal No.	Color Of Wire	Signal Name [Specification]
20	GY	-
21	R	-
22	GR	-
27	L/W	-
29	W	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L	-
43	B/W	-
44	B	-
45	P	-
46	SHIELD	-
47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	L/B	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
80	W/B	-
83	Y	-
84	L	-
85	UR	-
86	UR	-
96	R	-

Terminal No.	Color Of Wire	Signal Name [Specification]
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LW	-
2	R	-
3	GY	-
4	B	-

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	LG	-
6	Y	-
7	L	-
8	G	-
13	RL	-
14	G	-

DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[DCA]

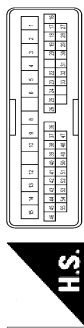
DRIVER ASSISTANCE SYSTEM

16	W	-
14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	O/L	-
30	O/L	-
31	GR/B	-
32	BR	-
33	W/V	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR/L	-
45	SHIELD	-
46	W	-
47	LG	-
48	GW	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-



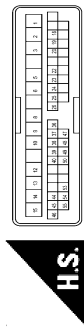
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BY	RIGHT/LEFT SWITCHING SIGNAL
2	B	GND
3	Y	ITS COM1-L
4	L	ITS COM1-H
5	W/G	IGNITION
6	L/R	BSW INDICATOR

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
6	P/L	-
8	L/R	-
9	L/W	-
9	G/Y	-
10	L	-
12	BY	-
13	L	-
14	R	-
15	B	-
18	BR/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/O	-
25	R/W	-
26	W/R	-
36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR/L	-
45	G	-
46	W	-
47	LG	-
48	GW	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	D73
Connector Name	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR LH
Connector Type	TH40MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR/W	-
4	B	-

Connector No.	D74
Connector Name	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR RH
Connector Type	TH40MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/R	-
4	B/W	-

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DRIVER ASSISTANCE SYSTEM

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	L	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	M07FER-S-LC



Terminal No.	1	Color Of Wire	B	Signal Name [Specification]	-
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Connector No.	D113
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TK02MBR-P



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-

Connector No.	D115
Connector Name	WIRE TO WIRE
Connector Type	NS08FV-GS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	RY	-
3	GW	-
4	R	-
5	R	-
7	LW	-
8	V	-

Connector No.	D166
Connector Name	WIRE TO WIRE
Connector Type	M01MBR-PS-LC



Terminal No.	1	Color Of Wire	B	Signal Name [Specification]	-
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Connector No.	E10
Connector Name	FROM INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	M06FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	L	-
5	P/L	-
7	W/G	-
8	W	-

Connector No.	E11
Connector Name	FROM INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	M06FB-LC



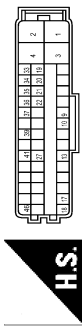
Terminal No.	9	Color Of Wire	B	Signal Name [Specification]	-
14	L	-	-	-	-

Connector No.	E12
Connector Name	FROM INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS08FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
18	B	-
19	V	-
20	W	-
21	L	-

Connector No.	E36
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ42FB-SJ24



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	BAT
2	B	GND
3	B	GND
4	W	MOTOR SUPPLY
9	R/B	YAW RATE / SIDE / DECEL G SENSOR COMMUNICATION+
10	P/B	YAW RATE / SIDE / DECEL G SENSOR COMMUNICATION-
13	GR	BRAKE FLUID LEVEL SW
17	L/R	STP2
18	W/B	IGN
19	O	DS FR
20	SB	DP FL
21	R/O	DS RR
22	V	DP RL
27	P	CANL
33	L/G	DP FR
34	G	DS FL

DRIVER ASSISTANCE SYSTEMS

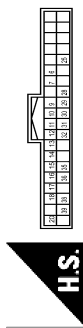
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[DCA]

DRIVER ASSISTANCE SYSTEM

35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VDC OFF SW
41	L	CANH
46	W	STOP LAMP SW ON

Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	H-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CANH
13	P	CAN-L
14	W/R	AUTO SW
15	P/B	ROTALY POSITION SEN PWM
16	LG	ROTALY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	B/R/Y	ROTALY POSITION SEN PWR SUPPLY
20	GR	TRANSFER CU PWR SUPPLY
25	P/L	H-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	H-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL
39	R/W	INTERNAL SPEED SEN PWR SUPPLY

Connector No.	E64
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	R	-
3	LB	-
5	R	-

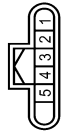
Connector No.	E65
Connector Name	ICC SENSOR
Connector Type	RS08FB-FR



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGNITION
3	L	ITS COMM-L
4	B	GND
6	Y	ITS COMM-H

Connector No.	E66
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH08FLGY



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	BATTERY
2	B	GND
3	W/G	IGNITION
4	Y	ITS COMM-L
5	L	ITS COMM-H

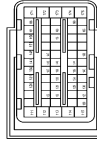
Connector No.	E68
Connector Name	ICC BRAKE SWITCH
Connector Type	IM02FBR-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	G/Y	-

Connector No.	E80
Connector Name	ECM
Connector Type	MA855FB-MEB-10-LH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	THROTTLE CONTROL MOTOR RELAY
123	W/R	FUEL PUMP CONTROL MODULE (FFCM)
125	GR	ACCELERATOR PEDAL POSITION SENSOR 2
126	O	ASCD/ICC STEERING SWITCH
128	Y	SENSOR GROUND
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FFCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASCD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	LG	ECM RELAY (SELF SHUT-OFF)
165	GR/R	ECM COMMUNICATION LINE
166	W	ECM COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT

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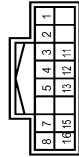
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[DCA]

DRIVER ASSISTANCE SYSTEM

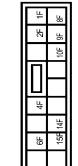
Terminal No.	Wire	Signal Name [Specification]
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E93
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



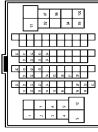
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E103
Connector Name	FUSE BLOCK (JIB)
Connector Type	NS16FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10F	G	-
14F	Y	-
15F	G	-
1F	W/B	-
2F	R	-
4F	G	-
6F	Y/G	-
8F	L/B	-
9F	Y	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	L/B	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	Y/V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-

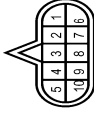
Terminal No.	Color Of Wire	Signal Name [Specification]
29	R/W	-
30	L/B	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/R	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	W	-
62	R	-
63	G	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	G/R	-
97	R	-
98	G/B	-
100	W/R	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	MD4FW-LC



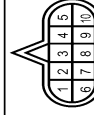
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/B	-
2	R	-
3	G	-
4	L/R	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CANH
4	SB	K-LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CAN-L
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CANH
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CAN-L
9	-	STARTER RELAY
10	-	GROUND

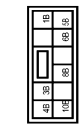
DRIVER ASSISTANCE SYSTEMS

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DRIVER ASSISTANCE SYSTEM

Connector No.	M2
Connector Name	FUSE BLOCK (UB)
Connector Type	NS10FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10B	W/B	-
11B	R	-
12B	R	-
13B	R	-
14B	B	-
15B	BR	-
16B	Y	-
17B	L/O	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

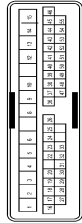
Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	B	-
9	G	-
11	W/B	-
12	BR	-
13	GR	-
14	BY	-
15	WR	-
16	GR	-
18	GW	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	GY	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	GR	-

43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
6	LG/R	-
8	BR/W	-
9	G	-
10	L	-
12	BY	-
13	Y	-
14	R	-
15	B	-
16	GR	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

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DRIVER ASSISTANCE SYSTEMS

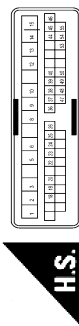
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DRIVER ASSISTANCE SYSTEM

42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	M22
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



H.S.

36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

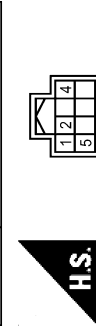
Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH22MW-AH



H.S.

22	SB	-
23	Y/R	-
24	SHIELD	-
25	Y/G	-
26	L/O	-
27	W/O	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	GR/L	-

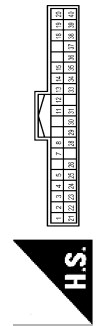
Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH28FW-AH



H.S.

31	Y/L	-
32	R	-
33	B	-
34	P/B	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-AH

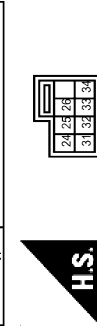


H.S.

Terminal No.	Color Of Wire	Signal Name (Specification)
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	ILL GND
5	B	ILL CONTROL OUTPUT
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	AC AUTO AMP CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CANH
22	P	CANL
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BE/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT buckle SWITCH SIGNAL (DRIVER SIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	R/Y	NON-MANUAL MODE SIGNAL

Terminal No.	Color Of Wire	Signal Name (Specification)
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No.	M33
Connector Name	COMBINATION SWITCH (SFRAL CABLE)
Connector Type	TK28FGY-1V



H.S.

Terminal No.	Color Of Wire	Signal Name (Specification)
24	Y/G	-
25	Y	-
26	B	-

Terminal No.	Color Of Wire	Signal Name (Specification)
1	W	-
2	V	-
3	B	-
4	Y	-
5	GR	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-
14	Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-

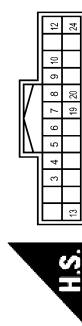
Terminal No.	Color Of Wire	Signal Name (Specification)
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	B/Y	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

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DRIVER ASSISTANCE SYSTEM

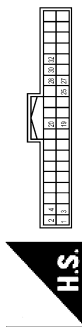
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

Connector No. M47
 Connector Name SONAR CONTROL UNIT
 Connector Type TH24FM-NH



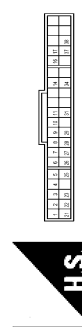
Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	SONAR RR INNER LH
8	Y	SONAR RR INNER RH
9	G	SONAR FR INNER LH
10	Y	SONAR FR INNER RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CANH [Without ADAS]
19	L	ITS-CAN L [With ADAS]
20	R	CANH [Without ADAS]
20	R	ITS-CAN R [With ADAS]
24	B	GND

Connector No. M48
 Connector Name AROUND VIEW MONITOR CONTROL UNIT
 Connector Type TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	W	ACC POWER SUPPLY
19	SB	AV COMM (H)
20	LG	AV COMM (L)
25	P	REV
27	L	CANH
28	R	CANH [Without ADAS]
28	Y	CANH [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

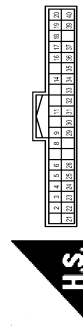
Connector No. M50
 Connector Name A/C AUTO AMP.
 Connector Type SAB40FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	W	ACC POWER SUPPLY
6	W	IONIZER CONTROL SIGNAL
6	W	AC AUTO AMP COMPENSATION CONTROL SIGNAL
7	WR	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL

9	BR	SUNLOAD SENSOR (DR) SIGNAL (EPH&S) (ON/ISBE DOOR DEFECTIVE SENSOR SIGNAL)
10	V/W	COMM (A/C AUTO AMP.-RR A/C CONT)
11	W	FR BLOWER MOTOR CONTROL SIGNAL
14	OIL	EACH DOOR MOTOR LIN SIGNAL
16	R/G	EACH DOOR MOTOR POWER SUPPLY
17	L/Y	EACH DOOR MOTOR CONTROL SIGNAL
21	P	CANH
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
25	R	SENSOR GROUND
26	B	FR IN-VEHICLE SENSOR SIGNAL
27	GR	INTAKE SENSOR SIGNAL
28	R	SUNLOAD SENSOR (PASS) SIGNAL
29	O	SUNLOAD SENSOR (A/C AUTO AMP.)
31	OIL	COMM (RR A/C CONT.-A/C AUTO AMP.)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	G/W	RR A/C RELAY CONTROL SIGNAL

Connector No. M68
 Connector Name BCM (BODY CONTROL MODULE)
 Connector Type TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BRY	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	B/Y	RECEIVER PWR SPLY
19	BR	RECEIVER PWR SPLY
20	GR	KYLS ENT RECEIVER COMM
21	P	WATS ANT AMP
22	W/B	KYLS ENT RECEIVER RSSI

23	GR/R	SECURITY IND CONT
24	SB	DOUBLE LINK
25	L/R	NATS ANT AMP
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	DR DOOR UNLOCK SENSOR
31	W/G	COMBI SW OUTPUT 5
32	LG	COMBI SW OUTPUT 4
34	Y	COMBI SW OUTPUT 3
35	R/W	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIFT P
39	L	CANH
40	P	CANH

Connector No. M77
 Connector Name WIRE TO WIRE
 Connector Type TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
6	SB	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	OIL	-
16	SB	-
18	BR	-
19	Y/G	-
20	BRY	-

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DRIVER ASSISTANCE SYSTEMS

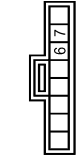
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DRIVER ASSISTANCE SYSTEM

21	V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
29	R/W	-
30	O/L	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/O	-
37	GY	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	B	-
62	G	-
63	R	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	R	-
98	O/L	-
100	W/B	-

Connector No.	M93
Connector Name	IBA OFF SWITCH
Connector Type	TK08FGY



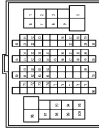
Terminal No.	Color Of Wire	Signal Name [Specification]
6	B	-
7	R/Y	-

Connector No.	M94
Connector Name	WARNING BUZZER
Connector Type	NS04FBRCS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	G/R	-
3	B	-

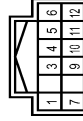
Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH09FMCS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/R	-
5	W/B	-
6	L/Y	-
7	B	-
8	GR	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	GY	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L/W	-
43	B/W	-
44	B	-
45	P	-
46	SHIELD	-

47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	O/L	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
90	W/B	-
93	Y	-
94	L	-
95	L/R	-
96	R	-
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FM-NH

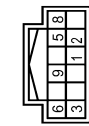


JROWC1016GB

DRIVER ASSISTANCE SYSTEM

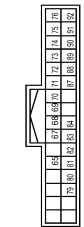
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
3	Y	BATTERY
4	L	CANH
5	B	GND
6	L	CANH
7	P	CANH
9	GR	IGNITION
10	R	CANL
11	B	GND
12	R	CANL

Connector No.	M127
Connector Name	TWIN SWITCH
Connector Type	TH2F5V-NH



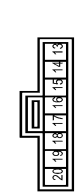
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	V/W	-
3	B	-
5	L/O	-
6	B/O	-
8	W/G	-
9	LG/B	-

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FM-NH



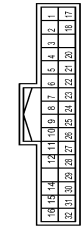
Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
69	O	INTELLIGENT VEHICLE IDENTIFICATION SIGNAL
70	BR	REVERSE L2
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
73	Y/G	MICROPHONE VCC [Without DCM]
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	L/O	DIMMER SIGNAL
80	GR/L	IGNITION SIGNAL
81	R/Y	REVERSE SIGNAL
82	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	W/B	COMPOSITE IMAGE SYNC SIGNAL
87	BR	MICROPHONE SIGNAL [With DCM]
87	Y/L	MICROPHONE SIGNAL [Without DCM]
88	SHIELD	SHIELD
89	Y/L	COMM (DISP-COMT)
90	L	CANH
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SPRAL. CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	B/R	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-

14	BY	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	Y	-
24	SHIELD	-
25	Y/G	-
26	L	-
27	W/G	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	BR	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH08FY-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
4	L	ITS COMM-H
5	B	GND
7	W/G	IGNITION
8	Y	ITS COMM-L

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[DCA]

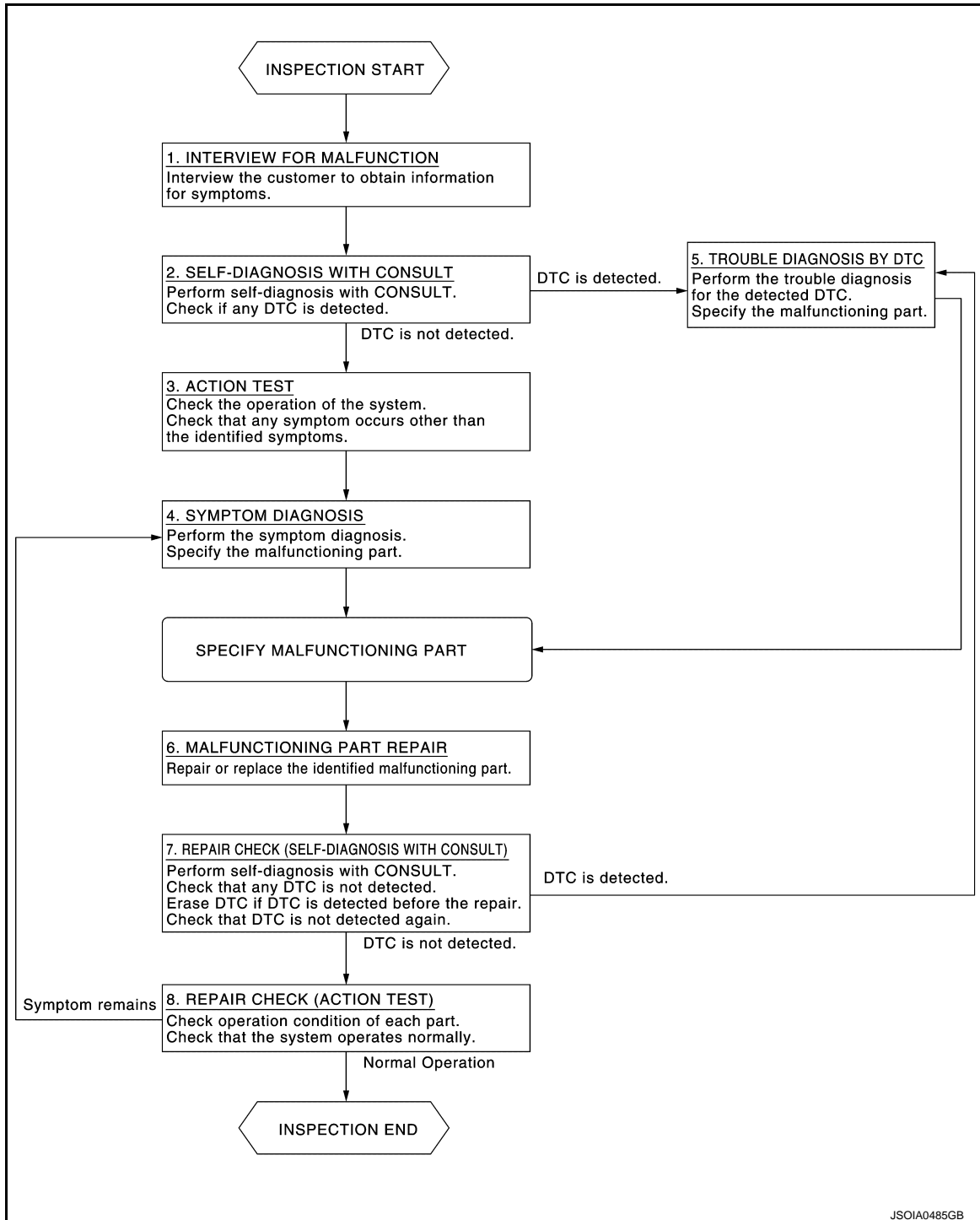
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009013480

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

DIAGNOSIS AND REPAIR WORK FLOW

[DCA]

< BASIC INSPECTION >

NOTE:

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT

1. Perform “All DTC Reading” with CONSULT.
2. Check if the DTC is detected on the self-diagnosis results of “ICC/ADAS” and/or “ACCELE PEDAL ACT”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 3.

3. ACTION TEST

Perform DCA system action test to check the operation status. Refer to [DAS-142, "Description"](#).
Check if any other malfunctions occur.

>> GO TO 4.

4. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [DAS-211, "Symptom Table"](#).

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [DAS-112, "DTC Index"](#) (ICC/ADAS) and/or [DAS-122, "DTC Index"](#) (ACCELE PEDAL ACT).

NOTE:

If “DTC: U1000” is detected, first diagnose the CAN communication system or ITS communication system.

>> GO TO 6.

6. MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

7. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of “ICC/ADAS” and “ACCELE PEDAL ACT”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 8.

8. REPAIR CHECK (ACTION TEST)

Perform the DCA system action test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

YES >> GO TO 4.

NO >> INSPECTION END

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DAS

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

< BASIC INSPECTION >

[DCA]

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

Description

INFOID:000000009013481

- Always perform the laser beam aiming adjustment after removing and installing or replacing the ICC sensor.
CAUTION:
The system does not operate normally unless the laser beam aiming adjustment is performed. Always perform it.
- Perform the DCA system action test check that the DCA system operates normally.

Work Procedure

INFOID:000000009013482

1. LASER BEAM AIMING ADJUSTMENT

Adjust the laser beam aiming. Refer to [CCS-78. "Description"](#).

>> GO TO 2.

2. DCA SYSTEM ACTION TEST

-
1. Perform the DCA system action test. Refer to [DAS-142. "Description"](#).
 2. Check that the DCA system operates normally.

>> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING ACCELERATOR PEDAL ASSEMBLY

< BASIC INSPECTION >

[DCA]

ADDITIONAL SERVICE WHEN REPLACING ACCELERATOR PEDAL ASSEMBLY

Description

INFOID:000000009013483

- Always perform accelerator pedal released position learning when replacing the accelerator pedal assembly or disconnecting the accelerator pedal position sensor connector.
- Perform the DCA system action test check that the DCA system operates normally.

Work Procedure

INFOID:000000009013484

1.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform accelerator pedal released position learning. Refer to [EC-161, "Description"](#) (For USA and Canada) or [EC-724, "Description"](#) (For Mexico).

>> GO TO 2.

2.DCA SYSTEM ACTION TEST

1. Perform the DCA system action test. Refer to [DAS-142, "Description"](#).
2. Check that the DCA system operates normally.

>> INSPECTION END

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ACTION TEST

< BASIC INSPECTION >

[DCA]

ACTION TEST

Description

INFOID:000000009013485

Always perform the DCA system action test to check that the system operates normally after replacing the ICC sensor, replacing the accelerator pedal assembly, or repairing any DCA system malfunction.

CAUTION:

Perform the DCA system action test after checking that the ICC system operates normally because the DCA system shares components with the ICC system.

Work Procedure

INFOID:000000009013486

NOTE:

When the ICC system is set, the information display changes to the ICC system display.

1. ICC SYSTEM ACTION TEST

Perform the ICC system action test. Refer to [CCS-83. "Description"](#).

>> GO TO 2.

2. CHECK DCA SYSTEM SETTING

1. Start the engine.
2. After starting the engine wait for 30 seconds or more.
3. Check that the DCA system setting can be enabled/disabled on the navigation screen.
4. Turn OFF the ignition switch and wait for 5 seconds or more.
5. Check that the previous setting is saved when the engine starts again.

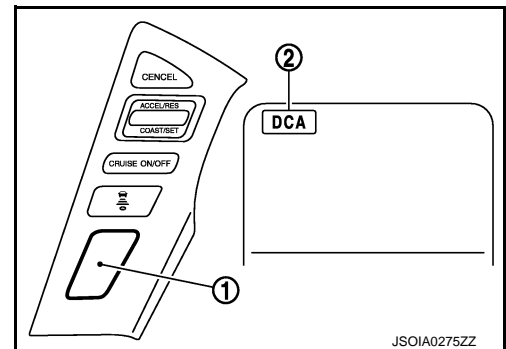
>> GO TO 3.

3. CHECK DYNAMIC DRIVER ASSISTANCE SWITCH

1. Start the engine.
2. After starting the engine wait for 30 seconds or more.
3. Enable the setting of the DCA system on the navigation screen.
4. Press the dynamic driver assistance switch (1).
5. Check that the DCA system switch indicator (2) on the information display illuminates.
6. Check that the DCA system switch indicator turns OFF when the system is turned OFF by pressing the dynamic driver assistance switch.
7. Check that the DCA system switch indicator turns OFF when the engine starts again.

NOTE:

The DCA system switch indicator does not illuminate even when the dynamic driver assistance switch is turned ON within approximately 5 seconds after starting the engine.



If the accelerator pedal assembly is not replaced>>INSPECTION END

If the accelerator pedal assembly is replaced>>GO TO 4.

4. CHECK DCA SYSTEM OPERATION

Check that the accelerator pedal actuator operates by the "Active Test" items "ACCELERATOR PEDAL ACTUATOR TEST1" and "ACCELERATOR PEDAL ACTUATOR TEST2" of "ACCELE PEDAL ACT" with CONSULT.

>> INSPECTION END

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:000000009013487

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [DAS-143. "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013488

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-112. "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

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C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000009013489

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds	<ul style="list-style-type: none">• Connector, harness, fuse• ADAS control unit
C1A02 (2)	POWER SUPPLY CIR 2	The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A01" or "C1A02" detected as the current malfunction?

YES >> Refer to [DAS-144. "Diagnosis Procedure"](#).

NO >> Refer to [GI-43. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013490

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [DAS-209. "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

NO >> Repair or replace the malfunctioning parts.

C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000009013491

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM, received by the ADAS control unit via CAN communication, are inconsistent	<ul style="list-style-type: none">• Wheel speed sensor• ABS actuator and electric unit (control unit)• Vehicle speed sensor A/T (output speed sensor)• TCM• ADAS control unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04".

- Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-147, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A03" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A03" detected as the current malfunction?

- YES >> Refer to [DAS-145, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013492

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A04" or "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-112, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

1. Start the engine.
2. Drive the vehicle.
3. Check that the value of "VHCL SPD AT" is almost the same as the value of "VHCL SPEED SE" in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> GO TO 3.

3. CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

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DAS

C1A03 VEHICLE SPEED SENSOR

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82. "DTC Index"](#).
- NO >> GO TO 4.

4. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:000000009013493

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A04 (4)	ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013494

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:000000009013495

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) continues for 10 seconds or more with vehicle speeds at approximately 40 km/h or more	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• Stop lamp switch• ICC brake switch• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM• ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013496

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

- YES >> GO TO 3.
- NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4.
- NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3. CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS".

Is the inspection result normal?

- YES >> GO TO 14.
- NO >> GO TO 9.

4. CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

5. ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [DAS-151, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

C1A05 BRAKE SW/STOP LAMP SW

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 6.
- NO >> Replace ICC brake switch.

6. CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between ICC brake switch harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
ICC brake switch		Ground
Connector	Terminal	
E68	1	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair the harnesses or connectors.

7. CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM connector.
3. Check for continuity between ICC brake switch harness connector and ECM harness connector.

ICC brake switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E68	2	E80	147	Existed

4. Check for continuity between ICC brake switch harness connector and ground.

ICC brake switch		Ground	Continuity
Connector	Terminal		
E68	2		Not existed

Is the inspection result normal?

- YES >> GO TO 8.
- NO >> Repair the harnesses or connectors.

8. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (For USA and Canada) or [EC-672. "DTC Index"](#) (For Mexico).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

9. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7. "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> Adjust stop lamp switch installation. Refer to [BR-7. "Inspection and Adjustment"](#).

10. STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [DAS-151. "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

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C1A05 BRAKE SW/STOP LAMP SW

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 11.
NO >> Replace stop lamp switch.

11. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between stop lamp switch harness connector and ground.

Terminals		Voltage (Approx.)	
(+)	(-)		
Stop lamp switch		Ground	Battery voltage
Connector	Terminal		
E115	1		
	3		

Is the inspection result normal?

- YES >> GO TO 12.
NO >> Repair the harnesses or connectors.

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM, rear combination lamp and high-mounted stop lamp connectors.
3. Check for continuity between stop lamp switch harness connector and ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E115	2	E80	158	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	2		Not existed

Is the inspection result normal?

- YES >> GO TO 13.
NO >> Repair the harnesses or connectors.

13. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check for continuity between stop lamp switch harness connector and ABS actuator and electric unit (control unit) harness connector.

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E115	4	E36	17	Existed

3. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	4		Not existed

Is the inspection result normal?

- YES >> GO TO 14.

C1A05 BRAKE SW/STOP LAMP SW

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harnesses or connectors.

14.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (For USA and Canada) or [EC-672. "DTC Index"](#) (For Mexico).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 15.

15.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to [BRC-50. "DTC Index"](#).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

Component Inspection (ICC Brake Switch)

INFOID:000000009013497

1.CHECK ICC BRAKE SWITCH

Check for continuity between ICC brake switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Not existed
		When brake pedal is released	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:000000009013498

1.CHECK STOP LAMP SWITCH

Check for continuity between stop lamp switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed
3	4	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch.

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DAS

C1A06 OPERATION SW

DTC Logic

INFOID:000000009013499

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	<ul style="list-style-type: none"> Any switch of the ICC steering switch is detected as "ON" continuously for 60 seconds An ON/OFF state judgment of the ICC differs between ECM and ADAS control unit, and the state continues for 2 seconds or more 	<ul style="list-style-type: none"> ICC steering switch circuit ICC steering switch ECM

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Wait for approximately 10 minutes after turning the DCA system ON.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A06" detected as the current malfunction?

- YES >> Refer to [DAS-152, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013500

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A06" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

- Turn the ignition switch OFF.
- Disconnect the ICC steering switch connector.
- Check the ICC steering switch. Refer to [DAS-153, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace the steering wheel.

3. CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

- Disconnect the ECM connector.
- Check for continuity between the spiral cable harness connector and ECM harness connector.

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M33	25	M80	128	Existed
	32		130	

- Check for continuity between spiral cable harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

Spiral cable		Ground	Continuity
Connector	Terminal		
M33	25		Not existed
	32		

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the harnesses or connectors.

4.CHECK SPIRAL CABLE

Check for continuity between spiral cable terminals.

Spiral cable		Continuity
Terminal		
13	25	Existed
16	32	

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace the spiral cable.

5.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect the connectors of ICC steering switch and ECM connector.
2. Turn the ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

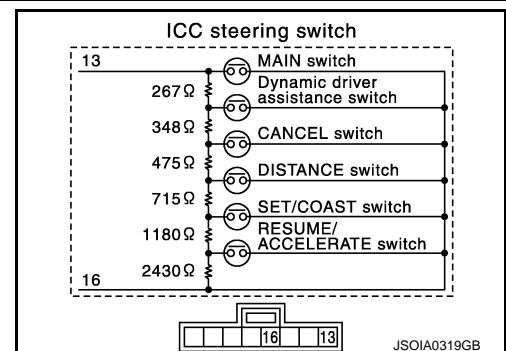
Component Inspection

INFOID:000000009013501

1.CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

Terminal	Switch operation	Resistance [Ω]
13 16	When pressing MAIN switch	Approx. 0
	When pressing dynamic driver assistance switch	Approx. 267
	When pressing CANCEL switch	Approx. 615
	When pressing DISTANCE switch	Approx. 1090
	When pressing SET/COAST switch	Approx. 1805
	When pressing RESUME/ACCELERATE switch	Approx. 2985
	When all switches are not pressed	Approx. 5415



Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the steering wheel.

C1A12 LASER BEAM OFF CENTER

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A12 LASER BEAM OFF CENTER

DTC Logic

INFOID:000000009013502

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A12 (12)	LASER BEAM OFFCNTR	Laser beam of ICC sensor is off the aiming point	Laser beam is off the aiming point

Diagnosis Procedure

INFOID:000000009013503

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "C1A12" is detected as the current malfunction in "Self Diagnostic Result" of "LASER".

Is "C1A12" detected?

YES >> Refer to [CCS-102, "ICC SENSOR : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ADAS CONTROL SELF-DIAGNOSIS RESULTS

Check if the "C1A12" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A12" detected?

YES >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> INSPECTION END

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A13 STOP LAMP RELAY

DTC Logic

INFOID:000000009013504

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A13 (13)	STOP LAMP RLY FIX	<ul style="list-style-type: none">Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ICC sensor ICC brake hold relay drive signalThe stop lamp remains ON for 60 seconds or more under the following conditions:<ul style="list-style-type: none">- Driving at 40 km/h or more- No stop lamp drive signal output from ICC sensor- No brake operation	<ul style="list-style-type: none">Stop lamp switch circuitICC brake switch circuitICC brake hold relay circuitStop lamp switchICC brake switchICC brake hold relayIncorrect stop lamp switch installationIncorrect ICC brake switch installationECMABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A13" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196. "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

- Start the engine.
- Perform the active test item "STOP LAMP" with CONSULT.
- Perform "All DTC Reading".
- Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

YES >> Refer to [DAS-155. "Diagnosis Procedure"](#).

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

- Drive at the vehicle speed of 40 km/h (25 MPH) or more for approximately 60 seconds or more without the brake pedal depressed.

CAUTION:

Always drive safely.

NOTE:

If it is outside the above condition, repeat step 1.

- Perform "All DTC Reading".
- Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

YES >> Refer to [DAS-155. "Diagnosis Procedure"](#).

NO >> Refer to [GI-43. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013505

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A13" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196. "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ICC/ADAS".

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> GO TO 3.

3.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust stop lamp switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

4.CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [DAS-151, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace stop lamp switch.

5.CHECK STOP LAMP FOR ILLUMINATION

1. Turn the ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON.

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

6.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn the ignition switch OFF.
2. Disconnect stop lamp switch, ECM, rear combination lamp, and high-mounted stop lamp connectors.
3. Check for continuity between the stop lamp switch harness connector and the ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E115	2	M80	158	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	2		Not existed

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair the harnesses or connectors.

7.CHECK ICC BRAKE HOLD RELAY CIRCUIT

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors.
2. Check that the stop lamp does not illuminate when brake pedal is not depressed.

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> GO TO 8.

8.CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay
2. Check ICC brake hold relay. Refer to [DAS-160, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 9.

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace ICC brake hold relay.

9. PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

10. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
ICC brake hold relay		Ground
Connector	Terminal	
E64	1	
		Battery voltage

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace ICC brake hold relay power supply circuit.

11. CHECK HARNESS BETWEEN AND ICC BRAKE HOLD RELAY AND ADAS CONTROL UNIT

1. Disconnect ADAS control unit connectors.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

ICC brake hold relay		ADAS control unit		Continuity
Connector	Terminal	Connector	Terminal	
E64	2	B61	5	Existed

3. Check for continuity between ADAS control unit harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E64	2		Not existed

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12. CHECK ADAS CONTROL UNIT STANDARD VOLTAGE

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "STOP LAMP" on "Active Test" of "ICC/ADAS", and then check the voltage between ADAS control unit harness connector and ground.

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DAS

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Active Test item "STOP LAMP"	Battery voltage
Connector	Terminal		
B61	5	Off	Battery voltage
		On	0 V

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

13.CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake hold relay		Ground	Battery voltage
Connector	Terminal		
E64	3		

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair or replace ICC brake hold relay power supply circuit.

14.CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors and remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E64	5	M80	158	Existed

3. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E64	5		Not existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair the harnesses or connectors.

15.CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check ICC brake hold relay. Refer to [DAS-160, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace ICC brake hold relay.

16.CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS".

C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 21.

NO >> GO TO 17.

17.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

YES >> GO TO 18.

NO >> Adjust stop lamp switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

18.CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [DAS-151, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace stop lamp switch.

19.CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Connect stop lamp switch connector.
2. Check the voltage between stop lamp switch harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
Stop lamp switch		Ground
Connector	Terminal	
E115	3	
		Battery voltage

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair or replace stop lamp switch power supply circuit.

20.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Turn the ignition switch OFF.
2. Disconnect stop lamp switch, ABS actuator and electric unit (control unit) connectors.
3. Check for continuity between the stop lamp switch harness connector and the ABS actuator and electric unit (control unit) harness connector.

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E115	4	E36	17	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	4		Not existed

Is the inspection result normal?

YES >> GO TO 21.

NO >> Repair the harnesses or connectors.

21.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.

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C1A13 STOP LAMP RELAY

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (For USA and Canada) or [EC-672. "DTC Index"](#) (For Mexico).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
 NO >> GO TO 22.

22. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to [BRC-50. "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
 NO >> Replace ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

Component Inspection

INFOID:000000009013506

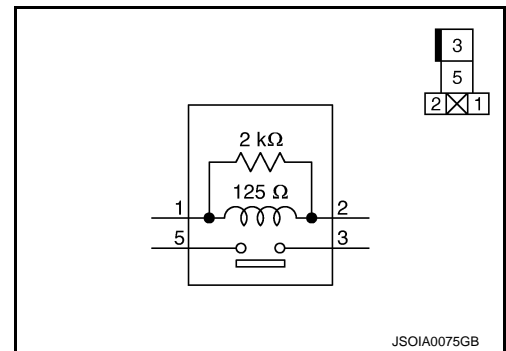
1. CHECK ICC BRAKE HOLD RELAY

Apply battery voltage to ICC brake hold relay terminals 1 and 2, and then check for continuity under the following conditions.

Terminal		Condition	Continuity
3	5	When the battery voltage is applied	Existed
		When the battery voltage is not applied	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace ICC brake hold relay.



C1A14 ECM

DTC Logic

INFOID:000000009013507

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	<ul style="list-style-type: none"> Accelerator pedal position sensor ECM ADAS control unit

NOTE:

If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Operate the ICC system and drive.
CAUTION:
Always drive safely.
- Stop the vehicle.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A14" detected as the current malfunction?

- YES >> Refer to [DAS-161, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013508

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A14" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A15 GEAR POSITION

Description

INFOID:000000009013509

ADAS control unit judges the gear position based on the following signals.

- Current gear position signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from input speed signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from the vehicle speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000009013510

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN communication and a gear position calculated by the ADAS control unit continues for approximately 11 minutes or more	<ul style="list-style-type: none">• Input speed sensor• Vehicle speed sensor A/T (output speed sensor)• TCM

NOTE:

If DTC "C1A15" is detected along with DTC "U1000", "C1A03", or "C1A04", first diagnose the DTC "U1000", "C1A03", or "C1A04".

- Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-145, "DTC Logic"](#) for DTC "C1A03".
- Refer to [DAS-147, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A15" detected as the current malfunction?

YES >> Refer to [DAS-162, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013511

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

Check that "VHCL SPEED SE" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

C1A15 GEAR POSITION

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 3.
- NO >> GO TO 7.

3.CHECK GEAR POSITION

Check that "GEAR" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 4.

4.CHECK GEAR POSITION SIGNAL

Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 6.

5.CHECK INPUT SPEED SENSOR SIGNAL

Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
- NO >> GO TO 6.

6.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

7.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

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DAS

C1A16 RADAR STAIN

DTC Logic

INFOID:000000009013512

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A16 (16)	RADAR STAIN	If any stain occurs to ICC sensor body window	<ul style="list-style-type: none"> Stain or foreign materials is deposited Cracks or scratches exist

NOTE:

DTC "C1A16" may be detected under the following conditions. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".)

- When contamination or foreign materials adhere to the ICC sensor body window
- When driving while it is snowing or when frost forms on the ICC sensor body window
- When ICC sensor body window is temporarily fogged

Diagnosis Procedure

INFOID:000000009013513

1. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "C1A16" is detected as the current malfunction in "Self Diagnostic Result" of "LASER".

Is "C1A16" detected?

- YES >> Refer to [CCS-112, "ICC SENSOR : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

1. Erase All self-diagnosis results with CONSULT.
2. Perform "All DTC Reading"
3. Check if the "C1A16" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A16" detected?

- YES >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
 NO >> INSPECTION END

C1A17 ICC SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A17 ICC SENSOR

DTC Logic

INFOID:000000009013514

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A17 (17)	ICC SENSOR MALF	If ICC sensor is malfunctioning	ICC sensor

NOTE:

If DTC "C1A17" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013515

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-165, "DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LASER".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-60, "DTC Index"](#).

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A18 LASER AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A18 LASER AIMING INCOMP

DTC Logic

INFOID:000000009013516

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A18 (18)	LASER AIMING INCOMP	Laser beam aiming of ICC sensor is not adjusted	<ul style="list-style-type: none">No laser beam aiming adjustment is performedLaser beam aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A18" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A18" detected as the current malfunction?

- YES >> Refer to [DAS-166. "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013517

1.ADJUST LASER BEAM AIMING

Check if the "C1A18" is detected in "Self Diagnostic Result" of "LASER".

Is "C1A18" detected?

- YES >> Refer to [CCS-115. "ICC SENSOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

C1A21 UNIT HIGH TEMP

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

C1A21 UNIT HIGH TEMP

DTC Logic

INFOID:000000009013518

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A21 (21)	ICC SENSOR HIGH TEMP	ICC sensor judges high temperature abnormality	Temperature around the ICC sensor becomes high

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more to cool the ICC sensor.
3. Start the engine.
4. Turn the DCA system ON.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A21" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A21" detected as the current malfunction?

- YES >> Refer to [DAS-167, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013519

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A21" is detected in "Self Diagnostic Result" of "LASER".

Is "C1A21" detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-117, "ICC SENSOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A24 NP RANGE

DTC Logic

INFOID:000000009013520

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communication and a current gear position signal continues for 60 seconds or more	<ul style="list-style-type: none"> • TCM • Transmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196. "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. CHECK DTC REPRODUCE (1)

1. Start the engine.
2. Turn the DCA system ON.
3. Wait for approximately 5 minutes or more after shifting the selector lever to "P" position.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-168. "Diagnosis Procedure"](#).
 NO >> GO TO 2.

2. CHECK DTC REPRODUCE (2)

1. Wait for approximately 5 minutes or more after shifting the selector lever to "N" position.
2. Perform "All DTC Reading".
3. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-168. "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013521

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A24" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [DAS-196. "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK NP POSITION SWITCH SIGNAL

Check that "NP RANGE SW" operates normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> GO TO 4.

3. CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
 NO >> GO TO 4.

C1A24 NP RANGE

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

4.PERFORM TCM SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A26 ECD MODE MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A26 ECD MODE MALFUNCTION

DTC Logic

INFOID:000000009013522

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A26 (26)	ECD MODE MALF	If an abnormal condition occurs with ECD system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A26" is detected along with DTC "U1000", "U0415" or "U0121" first diagnose the DTC "U1000", "U0415" or "U0121".

- DTC "U1000": Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- DTC "U0415": Refer to [DAS-194, "DTC Logic"](#).
- DTC "U0121": Refer to [DAS-189, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Wait for approximately 1 minute after turning the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A26" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A26" detected as the current malfunction?

- YES >> Refer to [DAS-170, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013523

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000", "U0415" or "U0121" is detected other than "C1A26" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A27 ECD POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A27 ECD POWER SUPPLY CIRCUIT

DTC Logic

INFOID:000000009013524

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A27 (27)	ECD PWR SUPPLY CIR	ECD system power supply voltage is excessively low	<ul style="list-style-type: none">• ABS actuator and electric unit (control unit) power supply circuit• ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A27" is detected along with DTC "U1000", "U0415" or "U0121" first diagnose the DTC "U1000", "U0415" or "U0121".

- DTC "U1000": Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- DTC "U0415": Refer to [DAS-194, "DTC Logic"](#).
- DTC "U0121": Refer to [DAS-189, "DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Wait for approximately 1 minute after turning the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A27" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A27" detected as the current malfunction?

- YES >> Refer to [DAS-171, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013525

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000", "U0415" or "U0121" is detected other than "C1A27" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-45, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check power supply circuit of ABS actuator and electric unit (control unit). Refer to [BRC-122, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Perform self-diagnosis of ABS actuator and electric unit (control unit). Refer to [BRC-50, "DTC Index"](#).
NO >> Repair the harnesses or connectors.

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DAS

C1A2A ICC SENSOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A2A ICC SENSOR POWER SUPPLY CIRCUIT

DTC Logic

INFOID:000000009013526

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A2A (80)	ICC SEN PWR SUP CIR	Abnormal power supply voltage in ICC sensor	<ul style="list-style-type: none">• Harness, connector, fuse• ICC sensor

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A2A" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A2A" detected as the current malfunction?

- YES >> Refer to [DAS-172, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013527

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A2A" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS

Check if any DTC is detected in "Self Diagnostic Result" of "LASER".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-60, "DTC Index"](#).
NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A33 CAN TRANSMISSION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A33 CAN TRANSMISSION ERROR

DTC Logic

INFOID:000000009013528

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A33 (33)	CAN TRANSMISSION ERR	If an error occurs in the CAN communication signal that ADAS control unit transmits to ECM	ADAS control unit

NOTE:

If DTC "C1A33" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A33" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A33" detected as the current malfunction?

- YES >> Refer to [DAS-173, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013529

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A33" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

C1A34 COMMAND ERROR

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

C1A34 COMMAND ERROR

DTC Logic

INFOID:000000009013530

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A34 (34)	COMMAND ERROR	If an error occurs in the command signal that ADAS control unit transmits to ECM via CAN communication	ADAS control unit

NOTE:

If DTC "C1A34" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the ICC system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A34" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A34" detected as the current malfunction?

YES >> Refer to [DAS-174, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013531

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A34" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A35 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A35 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000009013532

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A35 (35)	APA CIR	If the accelerator pedal actuator is malfunctioning	Accelerator pedal actuator

NOTE:

If DTC "C1A35" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013533

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A35" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A35" detected as the current malfunction?

- YES >> GO TO 2.
NO >> INSPECTION END

2. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A35" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 3.

3. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-122, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

DTC Logic

INFOID:000000009013534

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A36 (36)	APA CAN COMM CIR	If an error occurs in the signal that the accelerator pedal actuator transmits via ITS communication	<ul style="list-style-type: none">• ADAS control unit• Accelerator pedal actuator• ITS communication system

NOTE:

If DTC "C1A36" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A36" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A36" detected as the current malfunction?

- YES >> Refer to [DAS-176, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013535

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A36" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-122, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

DTC Logic

INFOID:000000009013536

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A37 (133)	APA CAN CIR2	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A37" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A37" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected as the current malfunction?

- YES >> Refer to [DAS-177, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013537

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A37" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Turn the ignition switch ON.
4. Erases all self-diagnosis results.
5. Perform "All DTC Reading" again.
6. Check if the DTC "C1A37" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> INSPECTION END

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DAS

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

DTC Logic

INFOID:000000009013538

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A38 (132)	APA CAN CIR1	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A38" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A38" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A38" detected as the current malfunction?

- YES >> Refer to [DAS-178, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013539

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A38" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1A38" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A38" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> INSPECTION END

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000009013540

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to [DAS-179, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013541

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F01 ACCELERATOR PEDAL ACTUATOR ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013542

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F01 (91)	APA MOTOR MALF	If the accelerator pedal actuator motor error is detected	Accelerator pedal actuator integrated motor malfunction

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON.
3. Slowly depress the accelerator pedal completely, and then release it.
4. Repeat step 3 several times.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the DTC "C1F01" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F01" detected as the current malfunction?

- YES >> Refer to [DAS-180, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013543

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F01" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F01" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F01" detected?

- YES >> Refer to [DAS-180, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:000000009013544

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F01	APA MOTOR MALF	If the accelerator pedal actuator motor error is detected	Accelerator pedal actuator integrated motor malfunction

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON.
3. Slowly depress the accelerator pedal completely, and then release it.

C1F01 ACCELERATOR PEDAL ACTUATOR

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

4. Repeat step 3 several times.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the DTC "C1F01" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS" or "ACCELE PEDAL ACT".

Is "C1F01" detected as the current malfunction?

YES >> Refer to [DAS-181, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000009013545

1. REPLACE ACCELERATOR PEDAL ASSEMBLY

Perform DTC confirmation procedure. If "C1F01" is detected, replace the accelerator pedal assembly. Refer to [DAS-227, "Exploded View"](#).

>> INSPECTION END

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C1F02 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F02 ACCELERATOR PEDAL ACTUATOR ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013546

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F02 (92)	APA C/U MALF	If the accelerator pedal actuator integrated control unit error is detected	Accelerator pedal actuator integrated control unit malfunction

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F02" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F02" detected as the current malfunction?

- YES >> Refer to [DAS-182, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013547

1.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F02" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F02" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F02" detected?

- YES >> Refer to [DAS-182, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:000000009013548

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F02	APA C/U MALF	If the accelerator pedal actuator integrated control unit error is detected	Accelerator pedal actuator integrated control unit malfunction

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000009013549

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F02" is detected as the current malfunction on the self-diagnosis results of "ACCELE PEDAL ACT" or "ICC/ADAS"

Is "C1F02" detected as the current malfunction?

C1F02 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

YES >> Replace the accelerator pedal assembly. Refer to [DAS-227. "Exploded View"](#).
NO >> INSPECTION END

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DAS

C1F03 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F03 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000009013550

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F03	APA HI TEMP	<ul style="list-style-type: none">The temperature of the motor integrated in the accelerator pedal actuator remains 100°C (212°F) or more for 0.4 seconds or moreThe temperature of the motor drive circuit integrated in the accelerator pedal actuator remains 120°C (248°F) or more for 0.4 seconds or more	Accelerator pedal actuator integrated motor malfunction

NOTE:

When the accelerator pedal actuator operates excessively, "C1F03" may be detected temporarily.

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn the ignition switch OFF.
- Wait for 10 minutes or more and cool the accelerator pedal actuator integrated motor.
- Drive the vehicle with DCA system ON and operate the system.
CAUTION:
Always drive safely.
- Stop the vehicle.
- Perform "All DTC Reading" with CONSULT.
- Check if the DTC "C1F03" is detected as the current malfunction in self-diagnosis results of "ACCELERATOR PEDAL ACT".

Is "C1F03" detected as the current malfunction?

- YES >> Refer to [DAS-184, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013551

1. REPLACE ACCELERATOR PEDAL ASSEMBLY

Perform DTC confirmation procedure. If "C1F03" is detected, replace the accelerator pedal assembly. Refer to [DAS-227, "Exploded View"](#).

>> INSPECTION END

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013552

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F05 (95)	APA PWR SUPPLY CIR	The battery voltage sent to accelerator pedal actuator remains less than 7.9 V or more than 19.3 V for 5 seconds	<ul style="list-style-type: none">• Harness, connector, or fuse• Accelerator pedal actuator

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F05" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F05" detected as the current malfunction?

YES >> Refer to [DAS-185, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013553

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F05" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F05" detected?

YES >> Refer to [DAS-185, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:000000009013554

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F05	APA PWR SUPPLY CIR	The battery voltage sent to accelerator pedal actuator remains less than 7.9 V or more than 19.3 V for 5 seconds	<ul style="list-style-type: none">• Harness, connector, or fuse• Accelerator pedal actuator

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

4. Check if the "C1F05" is detected as the current malfunction on the self-diagnosis results of "ACCELERATOR PEDAL ACT".

Is "C1F05" detected as the current malfunction?

YES >> Refer to [DAS-186, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000009013555

1. CHECK POWER SUPPLY CIRCUIT

Check the accelerator pedal actuator power supply circuit. Refer to [DAS-209, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the accelerator pedal assembly. Refer to [DAS-227, "Exploded View"](#).

NO >> Repair or replace the malfunctioning parts.

C1F06 CAN CIRCUIT2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F06 CAN CIRCUIT2

DTC Logic

INFOID:000000009013556

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F06	CAN CIR 2	If accelerator pedal actuator detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "C1F06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F06" is detected as the current malfunction in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F06" detected as the current malfunction?

- YES >> Refer to [DAS-187, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013557

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F06" in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ADAS CONTROL UNIT

1. Turn the ignition switch OFF.
2. Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1F06" is detected in self-diagnosis results of "ACCELE PEDAL ACT".

Is "C1F06" detected?

- YES >> Replace the accelerator pedal assembly. Refer to [DAS-227, "Exploded View"](#).
NO >> INSPECTION END

DAS

C1F07 CAN CIRCUIT1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

C1F07 CAN CIRCUIT1

DTC Logic

INFOID:000000009013558

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F07	CAN CIR 1	If accelerator pedal actuator detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "C1F07" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F07" is detected as the current malfunction in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F07" detected as the current malfunction?

- YES >> Refer to [DAS-187, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013559

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F07" in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ADAS CONTROL UNIT

1. Turn the ignition switch OFF.
2. Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1F07" is detected in self-diagnosis results of "ACCELE PEDAL ACT".

Is "C1F07" detected?

- YES >> Replace the accelerator pedal assembly. Refer to [DAS-227, "Exploded View"](#).
NO >> INSPECTION END

U0121 VDC CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0121 VDC CAN 2

DTC Logic

INFOID:000000009013560

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0121" detected as the current malfunction?

- YES >> Refer to [DAS-189, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013561

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U0126 STRG SEN CAN 1

DTC Logic

INFOID:000000009013562

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0126" detected as the current malfunction?

- YES >> Refer to [DAS-190, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013563

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0235 ICC SENSOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0235 ICC SENSOR CAN 1

DTC Logic

INFOID:000000009013564

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0235 (144)	ICC SENSOR CAN CIR1	If ADAS control unit detects an error signal that is received from ICC sensor via ITS communication	ICC sensor

NOTE:

If DTC "U0235" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0235" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0235" detected as the current malfunction?

- YES >> Refer to [DAS-191, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013565

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0235" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LASER".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-60, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0401 ECM CAN 1

DTC Logic

INFOID:000000009013566

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

- YES >> Refer to [DAS-192, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013567

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0402 TCM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U0402 TCM CAN 1

DTC Logic

INFOID:000000009013568

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0402" detected as the current malfunction?

- YES >> Refer to [DAS-193, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013569

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U0415 VDC CAN 1

DTC Logic

INFOID:000000009013570

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [DAS-194, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013571

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0428 STRG SEN CAN 2

DTC Logic

INFOID:000000009013572

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [DAS-195, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013573

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).



U1000 CAN COMM CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009013574

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013576

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none"> • CAN communication system • ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013576

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the DCA system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43. "Intermittent Incident"](#).

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Description

INFOID:000000009013577

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:000000009013578

DTC DETECTION LOGIC

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If accelerator pedal actuator is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

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ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000009013579

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the DCA system ON, and then wait for 2 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ACCELERATOR PEDAL ACT".

Is "U1000" detected as the current malfunction?

- YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).
NO >> Refer to [GI-43. "Intermittent Incident"](#).

DAS

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U1010 CONTROL UNIT (CAN)

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009013580

CAN controller controls the communication of CAN communication signal and ITS communication signal, and the error detection.

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013581

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013582

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the DCA system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1010" detected as the current malfunction?

YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

NO >> INSPECTION END

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Description

INFOID:000000009013583

CAN controller controls the communication of ITS communication signal and the error detection.

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:000000009013584

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	If accelerator pedal actuator detects malfunction by CAN controller initial diagnosis	Accelerator pedal actuator

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000009013585

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the DCA system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ACCELERATOR PEDAL ACT".

Is "U1010" detected as the current malfunction?

YES >> Replace the accelerator pedal actuator. Refer to [DAS-227. "Exploded View"](#).

NO >> INSPECTION END

U150B ECM CAN 3

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

U150B ECM CAN 3

DTC Logic

INFOID:000000009013586

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150B" detected as the current malfunction?

- YES >> Refer to [DAS-199, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013587

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U150C VDC CAN 3

DTC Logic

INFOID:000000009013588

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150C" detected as the current malfunction?

- YES >> Refer to [DAS-200, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013589

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U150D TCM CAN 3

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

U150D TCM CAN 3

DTC Logic

INFOID:000000009013590

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150D" detected as the current malfunction?

- YES >> Refer to [DAS-201, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013591

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U150E BCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U150E BCM CAN 3

DTC Logic

INFOID:000000009013592

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	BCM

NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196. "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150E" detected as the current malfunction?

- YES >> Refer to [DAS-202. "Diagnosis Procedure"](#).
NO >> Refer to [GI-43. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013593

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196. "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "BCM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BCS-57. "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

U1502 ICC SENSOR CAN COMM CIRC

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U1502 ICC SENSOR CAN COMM CIRC

DTC Logic

INFOID:000000009013594

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1502 (147)	ICC SEN CAN COMM CIR	ADAS control unit detects an error signal that is received from ICC sensor via CAN communication	ICC sensor

NOTE:

If DTC "U1502" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1502" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1502" detected as the current malfunction?

- YES >> Refer to [DAS-203, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013595

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1502" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LASER".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-60, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U1513 METER CAN 3

[DCA]

< DTC/CIRCUIT DIAGNOSIS >

U1513 METER CAN 3

DTC Logic

INFOID:000000009013596

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter

NOTE:

If DTC "U1513" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1513" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1513" detected as the current malfunction?

- YES >> Refer to [DAS-204, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013597

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1513" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK COMBINATION METER SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "METER/M&A".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [MWI-44, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1514 STRG SEN CAN 3

DTC Logic

INFOID:000000009013598

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1514 (165)	STRG SEN CAN CIRC 3	ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U1514" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1514" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1514" detected as the current malfunction?

- YES >> Refer to [DAS-205, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013599

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1514" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).



U1515 ICC SENSOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U1515 ICC SENSOR CAN 3

DTC Logic

INFOID:000000009013600

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1515 (165)	ICC SENSOR CAN CIRC 3	ADAS control unit detects an error signal that is received from ICC sensor via CAN communication	ICC sensor

NOTE:

If DTC "U1515" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1515" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1515" detected as the current malfunction?

- YES >> Refer to [DAS-206, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013601

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1515" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC SENSOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LASER".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [CCS-60, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

DTC Logic

INFOID:000000009013602

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1517 (167)	APA CAN CIRC 3	ADAS control unit detects an error signal that is received from accelerator pedal actuator via CAN communication	Accelerator pedal actuator

NOTE:

If DTC "U1517" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1517" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1517" detected as the current malfunction?

- YES >> Refer to [DAS-207, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013603

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1517" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-122, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

U1520 4WD CAN 3

DTC Logic

INFOID:000000009013604

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1520 (176)	4WD CAN CIRC 3	ADAS control unit detects an error signal that is received from transfer control unit via CAN communication	Transfer control unit

NOTE:

If DTC "U1520" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the DCA system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1520" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1520" detected as the current malfunction?

- YES >> Refer to [DAS-208, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013605

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1520" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK TRANSFER CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ALL MODE AWD/4WD".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DLN-30, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

POWER SUPPLY AND GROUND CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013606

1. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Ignition switch	0 V
Connector	Terminal		
B61	16	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ADAS control unit power supply circuit.

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ADAS control unit connector.
3. Check for continuity between ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	6		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000009013607

1. CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Battery power supply	33

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

2. CHECK ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

Check voltage between accelerator pedal actuator harness connector and ground.

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DAS

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
Accelerator pedal actuator		Ignition switch	Battery volt- age
Connector	Terminal		
E66	1	OFF	
	3	ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator power supply circuit.

3. CHECK ACCELERATOR PEDAL ACTUATOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the accelerator pedal actuator connector.
3. Check for continuity between accelerator pedal actuator harness connector and ground.

Accelerator pedal actuator		Ground	Continuity
Connector	Terminal		
E66	2		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the accelerator pedal actuator ground circuit.

DISTANCE CONTROL ASSIST SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DCA]

SYMPTOM DIAGNOSIS

DISTANCE CONTROL ASSIST SYSTEM SYMPTOMS

Symptom Table

INFOID:000000009013608

Symptoms		Reference page
Operation	Switch does not turn ON	Refer to DAS-212, "Description" .
	Switch does not turn OFF	
	DCA system setting cannot be turned ON on the navigation screen	Refer to DAS-214, "Description" .
	DCA system setting cannot be turned OFF on the navigation screen	
	DCA system not activated (switch is ON)	Refer to DAS-215, "Description" .
Display/Chime	Information display is not illuminated (vehicle ahead indicator)	Refer to MWI-30, "On Board Diagnosis Function" .
	Chime does not sound	Refer to DAS-217, "Description" .
Control	No force generated for putting back the accelerator pedal	Refer to DAS-219, "Description" .
Detection of lead vehicle	Frequently cannot detect the vehicle ahead	Refer to DAS-220, "Description" .
	Detection zone is short	
	System misidentifies a vehicle even though there is no vehicle ahead	<ul style="list-style-type: none"> • Adjust laser beam aiming: Refer to CCS-78, "Description". • Perform action test. Refer to DAS-142, "Description".
	System misidentifies a vehicle in the next lane	
	System does not detect the vehicle ahead at all	Refer to DAS-222, "Description" .

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DAS

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[DCA]

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

Description

INFOID:000000009013609

The switch does not turn ON

- When the DCA system setting is ON, the DCA system switch indicator does not illuminate even if the dynamic driver assistance switch is depressed.

The switch does not turn OFF

- The DCA system switch indicator does not turn OFF even if the dynamic driver assistance switch is pressed when the DCA system switch indicator illuminates.

NOTE:

The system cannot be operated when setting conventional (fixed speed) cruise control mode.

Diagnosis Procedure

INFOID:000000009013610

1. CHECK DCA SYSTEM SETTING

1. Start the engine.
2. After starting the engine wait for 5 seconds or more.
3. Check that DCA system setting on the navigation screen is ON.

Is DCA system setting ON?

- YES >> GO TO 2.
NO >> Enable the DCA system setting.

2. DYNAMIC DRIVER ASSISTANCE SWITCH INSPECTION

1. Start the engine.
2. Check that "DYNA ASIST SW" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

- YES >> GO TO 3.
NO >> GO TO 5.

3. CHECK DCA SYSTEM SWITCH INDICATOR CIRCUIT

1. Start the engine.
2. Select the active test item "DCA INDICATOR" of "ICC/ADAS" with CONSULT.
3. Check if the DCA system switch indicator illuminates when the test item is operated.

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 4.

4. PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to [MWI-44. "DTC Index"](#).

Is the inspection result normal?

- YES >> GO TO 7.
NO >> GO TO 6.

5. CHECK STEERING SWITCH CIRCUIT

Check the steering switch circuit. Refer to [DAS-152. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 6.
NO >> GO TO 7.

6. PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to [DAS-45. "DTC Index"](#).

Is any DTC detected?

- YES >> GO TO 7.

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[DCA]

NO >> GO TO 8.

7. REPAIR OR REPLACE MALFUNCTIONING PARTS.

Repair or replace malfunctioning parts.

>> GO TO 8.

8. CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [DAS-142. "Description"](#) for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

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DAS

DCA SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

< SYMPTOM DIAGNOSIS >

[DCA]

DCA SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

Description

INFOID:000000009013611

- DCA system setting is not selectable on the navigation screen.

NOTE:

When the ignition switch is in ACC position, DCA system settings cannot be changed.

- "Distance Control Assist" is not indicated on the navigation screen.
- The switching between ON and OFF cannot be performed by operating the navigation system.
- The item of "Distance Control Assist" on the navigation screen is not active.
- After turning ON the ignition switch or starting the engine, DCA settings of the navigation system cannot be selected for several tens of seconds under the following conditions:
 - After replacing AV control unit.
 - After erasing connection history of the navigation system.
 - After erasing self-diagnosis results.
- The DCA system setting differs from the one set at the previous driving.

NOTE:

Turn OFF the ignition switch and wait for 5 seconds or more.

Diagnosis Procedure

INFOID:000000009013612

1. CHECK DCA SYSTEM SETTING

1. Start the engine.
2. Check that the DCA system settings is selectable on the navigation screen.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". Refer to the following.
 - ICC/ADAS: [DAS-112, "DTC Index"](#)
 - MULTI AV: [AV-69, "DTC Index"](#)
 - METER/M&A: [MWI-44, "DTC Index"](#)

Is any DTC detected?

YES >> Repair or replace malfunctioning parts.

NO >> INSPECTION END

3. CHECK DATA MONITOR OF ADAS CONTROL UNIT

Check that "DCA SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> Refer to [AV-37, "On Board Diagnosis Function"](#).

NO >> GO TO 4.

4. CHECK MULTIFUNCTION SWITCH

Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate properly.

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

< SYMPTOM DIAGNOSIS >

[DCA]

DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

Description

INFOID:000000009013613

The dynamic driver assistance switch can be turned ON/OFF, but the DCA system does not operate.

NOTE:

Never start the operation under the following conditions.

No operation condition

- When the brake pedal depressed
- When the ICC system is set
- When the system judges that the vehicle comes to a standstill by the system control
- When the vehicle ahead is not detected

Operation cancellation condition

- When the dynamic driver assistance switch is turned to OFF
- When the system malfunction occurs
- When ABS or VDC (including the TCS) operates
- When the VDC is turned OFF
- When driving into a strong light (i.e., sunlight)
- When the ICC sensor body window is dirty and the measurement of the distance between the vehicles becomes difficult
- When ABS warning lamp is ON
- When the SNOW mode switch is turned ON
- When the 4WD shift switch is not AUTO position

Diagnosis Procedure

INFOID:000000009013614

1. CHECK CAUSE OF AUTOMATIC CANCELLATION

Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT.

Is it displayed?

Not displayed >> GO TO 2.

"OPE SW VOLT CIRC" >> Refer to [DAS-152. "DTC Logic"](#).

"VHCL SPD UNMATCH" >> Refer to [DAS-145. "DTC Logic"](#).

"IGN LOW VOLT" >> Refer to [DAS-144. "DTC Logic"](#).

"CAN COMM ERROR" >> Refer to [DAS-196. "ADAS CONTROL UNIT : DTC Logic"](#).

"ICC SENSOR CAN COMM ERR" >> Refer to [DAS-191. "DTC Logic"](#).

"ABS/TCS/VDC CIRC" >> Refer to [DAS-147. "DTC Logic"](#).

"APA HI TEMP" >> Refer to [DAS-184. "DTC Logic"](#).

"ECD CIRCUIT" >> Refer to [DAS-170. "DTC Logic"](#).

2. PERFORM ALL OF THE SELF-DIAGNOSIS

1. Perform "All DTC Reading".

2. Check if any DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to [DAS-112. "DTC Index"](#).

Is any DTC detected?

YES >> GO TO 3.

NO >> GO TO 4.

3. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts identified by the self-diagnosis result.

>> GO TO 6.

4. CHECK EACH SWITCH AND VEHICLE SPEED SIGNAL

1. Start the engine.

2. Check that the following items operate normally in "DATA MONITOR" of "ICC/ADAS".

- "VHCL SPEED SE"
- "BRAKE SW"
- "DYNA ASIST SW"

Is there a malfunctioning item?

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DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

[DCA]

< SYMPTOM DIAGNOSIS >

All items are normal>>GO TO 5.

“VHCL SPEED SE”>>Refer to [DAS-145, "DTC Logic"](#).

“BRAKE SW”>>Refer to [DAS-148, "DTC Logic"](#).

“DYNA ASIST SW”>>Refer to [DAS-152, "DTC Logic"](#).

5.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

>> GO TO 6.

6.CHECK DCA SYSTEM

1. Erase “self-diagnosis result”, and then perform “All DTC Reading” again after performing the action test. (Refer to [DAS-142, "Description"](#) for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[DCA]

CHIME DOES NOT SOUND

Description

INFOID:000000009013615

The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing
- When a vehicle cuts in near own vehicle
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.
- The warning chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the [DAS-220, "Description"](#).)

Diagnosis Procedure

INFOID:000000009013616

1.PERFORM ACTIVE TEST

Check if the warning chime sounds on the active test item "ICC BUZZER" of "ICC/ADAS" with CONSULT.

Does the warning chime sound?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK THE MALFUNCTION SYMPTOM DURING WARNING CHIME OPERATION

Understand the vehicle ahead detection condition when the malfunction occurred. If the warning chime should have sounded, replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

>> GO TO 9.

3.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.

2. Check if the "U1000" is detected in self-diagnosis results of "ICC/ADAS".

Is "U1000" detected?

YES >> GO TO 4.

NO >> GO TO 5.

4.CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

>> GO TO 9.

5.PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.

2. Check if any DTC is detected in self-diagnosis results of "METER/M&A".

Is any DTC detected?

YES >> Repair or replace malfunctioning parts. Refer to [MWI-44, "DTC Index"](#).

NO >> GO TO 6.

6.CHECK ICC WARNING CHIME CIRCUIT

Check meter buzzer. Refer to [WCS-40, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 7.

7.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

[DCA]

>> GO TO 9.

8. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

>> GO TO 9.

9. CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [DAS-142. "Description"](#) for action test.)
2. Check if the DCA system is normal.

>> INSPECTION END

NO FORCE GENERATED FOR PUTTING BACK THE ACCELERATOR PEDAL

< SYMPTOM DIAGNOSIS >

[DCA]

NO FORCE GENERATED FOR PUTTING BACK THE ACCELERATOR PEDAL

Description

INFOID:000000009013617

The dynamic driver assistance switch can be turned ON/OFF but the actuation force of accelerator pedal is not generated.

NOTE:

- When the vehicle ahead detection indicator does not illuminate, the control and warning with the system are not performed.
- The actuation force of accelerator pedal may not be generated sufficiently depending on depressing method or depressing amount of accelerator pedal.

Diagnosis Procedure

INFOID:000000009013618

1.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.
2. Check if any DTC is detected in self-diagnosis results of "ICC/ADAS" or "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> GO TO 2.
- NO >> GO TO 3.

2.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts. Refer to [DAS-112. "DTC Index"](#) (ICC/ADAS) or [DAS-122. "DTC Index"](#) (ACCELE PEDAL ACT).

>> GO TO 5.

3.PERFORM ACTIVE TEST

Check if the accelerator pedal actuator operates by the active test items "ACCELERATOR PEDAL ACTUATOR TEST1" and "ACCELERATOR PEDAL ACTUATOR TEST2" of "ACCELE PEDAL ACT" with CONSULT.

Does it operate?

- YES >> GO TO 4.
- NO >> Replace the accelerator pedal assembly.

4.CHECK VEHICLE AHEAD DETECTION PERFORMANCE

Understand the vehicle ahead detection condition when the malfunction occurred. If the detecting function is malfunctioning, check according to [DAS-220. "Description"](#).

>> INSPECTION END

5.CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [DAS-142. "Description"](#) for action test.)
2. Check if the DCA system is normal.

>> INSPECTION END

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DCA]

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

Description

INFOID:000000009013619

Symptom check: Detection function may become unstable under the following conditions.

- When the reflector of vehicle ahead is broken or dirty.
- When the vehicle is driving on a curve such as S-curve where the curvature changes.
- When the vehicle is driving on up-and-down road or passing the peak or foot of slope or passing the break of the inclination of hill.

Diagnosis Procedure

INFOID:000000009013620

1.VISUAL CHECK (1)

Check ICC sensor body window for contamination and foreign materials.

Do foreign materials adhere?

- YES >> GO TO 2.
- NO >> GO TO 3.

2.WIPE OUT DIRT AND FOREIGN OBJECTS

Wipe out the contamination and/or foreign materials from the ICC sensor body window.

>> GO TO 7.

3.VISUAL CHECK (2)

Check ICC sensor body window for cracks and/or scratches.

Are there cracks?

- YES >> GO TO 5.
- NO >> GO TO 4.

4.LASER BEAM AIMING ADJUSTMENT

1. Adjust the laser beam aiming. Refer to [CCS-78, "Description"](#).
2. Perform action test. Refer to [DAS-142, "Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
- NO >> GO TO 5.

5.REPLACE ICC SENSOR

1. Replace the ICC sensor. Refer to [DAS-226, "Removal and Installation"](#).
2. Adjust the laser beam aiming. Refer to [CCS-78, "Description"](#).
3. Perform action test. Refer to [DAS-142, "Description"](#).
4. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
- NO >> GO TO 6.

6.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

>> GO TO 7.

7.CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [DAS-142, "Description"](#) for action test.)
2. Check that the DCA system is normal.

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DCA]

>> INSPECTION END

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THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[DCA]

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:000000009013621

When DCA system is active, the DCA system does not perform any control even through there is a vehicle ahead.

Diagnosis Procedure

INFOID:000000009013622

1. CHECK INFORMATION DISPLAY

1. Start the self-diagnosis mode of combination meter. Refer to [MWI-30, "On Board Diagnosis Function"](#).
2. Check that the segment of information display is displayed normally.

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Replace the combination meter.

2. VISUAL CHECK (1)

Check ICC sensor body window for contamination and/or foreign materials.

Do foreign materials adhere?

- YES >> GO TO 3.
- NO >> GO TO 4.

3. WIPE OUT DIRT AND FOREIGN MATERIALS

Wipe out the contamination and/or foreign materials from the ICC sensor body window.

>> GO TO 8.

4. VISUAL CHECK (2)

Check ICC sensor body window for cracks and/or scratches.

Are there cracks?

- YES >> GO TO 6.
- NO >> GO TO 5.

5. LASER BEAM AIMING ADJUSTMENT

1. Adjust the laser beam aiming. Refer to [CCS-78, "Description"](#).
2. Perform action test. Refer to [DAS-142, "Description"](#).
3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> INSPECTION END
- NO >> GO TO 6.

6. REPLACE ICC SENSOR

1. Replace the ICC sensor. Refer to [DAS-226, "Removal and Installation"](#).
2. Adjust the laser beam aiming. Refer to [CCS-78, "Description"](#).
3. Perform action test. Refer to [DAS-142, "Description"](#).
4. Check that the vehicle ahead detection performance improves.

>> GO TO 7.

7. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

>> GO TO 8.

8. CHECK DCA SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [DAS-142, "Description"](#) for action test.)

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

[DCA]

2. Check that the DCA system is normal.

>> INSPECTION END

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NORMAL OPERATING CONDITION

Description

INFOID:000000009013623

PRECAUTIONS FOR DISTANCE CONTROL ASSIST (DCA) SYSTEM

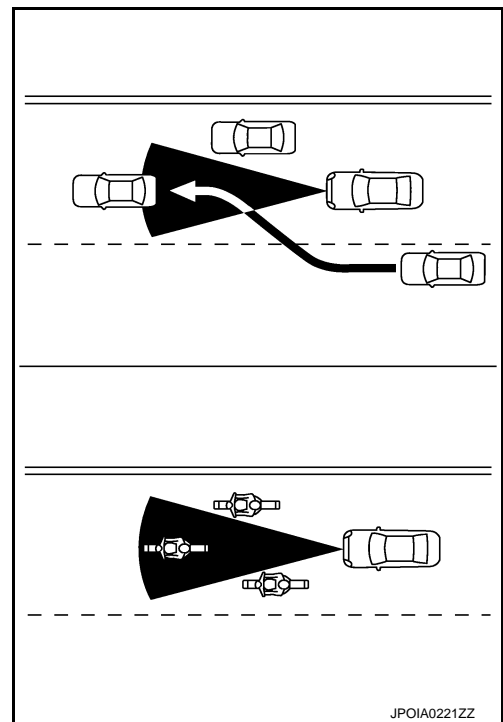
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill with a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The DCA system will not apply brake control while the driver is depressing the accelerator pedal.
- This system is only an aid to assist the driver and is not a collision warning or avoidance device. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- This system will not adapt automatically to road conditions. Do not use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The distance sensor will not detect under most conditions.
 - Stationary and slow moving vehicles
 - Pedestrians or objects in the roadway
 - Oncoming vehicles in the same lane
 - Motorcycles traveling offset in the travel lane
- As there is a performance limit to the distance control function, never rely solely on the DCA system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance between vehicles.
- The system may not detect the vehicle in front of own vehicle in certain road or weather conditions. To avoid accidents, never use the DCA system under the following conditions.
 - On roads with sharp curves
 - On slippery road surfaces such as on ice or snow, etc.
 - On off-road surfaces such as on sand or rock, etc.
 - During bad weather (rain, fog, snow, etc.)
 - When strong light (for example, at sunrise or sunset) is directly shining on the front of the vehicle
 - When rain, snow or dirt adhere to the system sensor
 - On steep downhill roads (frequent braking may result in overheating the brakes)
 - On repeated uphill and downhill roads
 - When towing a trailer or other vehicle
- In some road or traffic conditions, a vehicle or object can unexpectedly come into the sensor detection zone and cause automatic braking. Driver may need to control the distance from other vehicles using the accelerator pedal. Always stay alert and avoid using the DCA system when it is not recommended in this section.
- The following are some conditions in which the sensor cannot detect the signals.
 - When the reflector of the vehicle ahead is positioned high on the vehicle (trailer, etc.)
 - When the reflector on the vehicle ahead is missing, damaged or covered
 - When the reflector of the vehicle ahead is covered with dirt, snow and road spray
 - When the snow or road spray from traveling vehicles reduces the sensor's visibility
 - When dense exhaust or other smoke (black smoke) from vehicles reduces the sensor's visibility
 - When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle
- The DCA system is designed to automatically check the sensor's operation. When the sensor is covered with dirt or is obstructed, the system will automatically be canceled. If the sensor is covered with ice, a transparent or translucent vinyl bag, etc., the DCA system may not detect them. In these instances, the DCA system may not be able to decelerate the vehicle properly. Be sure to check and clean the sensor regularly.
- The DCA system is designed to help assist the driver to maintain a following distance from the vehicle ahead. The system will decelerate as necessary and if the vehicle ahead comes to a stop, the vehicle decelerates to standstill. However, the DCA system can only apply up to 25% of the vehicles total braking power. If a vehicle moves into the traveling lane ahead or if a vehicle traveling ahead rapidly decelerates, the distance between vehicles may become closer because the DCA system cannot decelerate the vehicle quickly enough. If this occurs, the DCA system will sound a warning chime and blink the system display to notify the driver to take necessary action.
- The DCA system does not control vehicle speed or warn when driver approach stationary and slow moving vehicles. Driver must pay attention to vehicle operation to maintain proper distance from vehicles ahead.

NORMAL OPERATING CONDITION

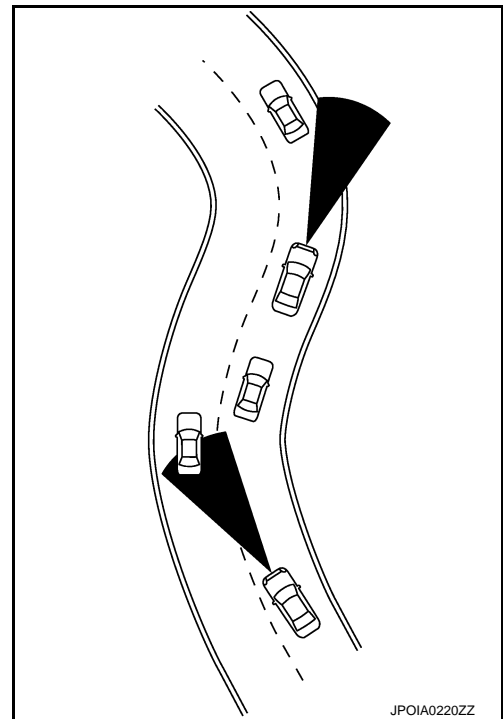
[DCA]

< SYMPTOM DIAGNOSIS >

- The detection zone of the sensor is limited. A vehicle ahead must be in the detection zone for the system to operate.
- A vehicle ahead may move outside of the detection zone due to its position within the same lane of travel. Motorcycles may not be detected in the same lane ahead if they are traveling offset from the center line of the lane. A vehicle that is entering the lane ahead may not be detected until the vehicle has completely moved into the lane. If this occurs, the system may warn driver by blinking the system indicator and sounding the chime. The driver may have to manually control the proper distance away from vehicle traveling ahead.



- When driving on some roads, such as winding, hilly, curved, narrow roads, or roads which are under construction, the sensor may detect vehicles in a different lane, or may temporarily not detect a vehicle traveling ahead. This may cause the system to work inappropriately. The detection of vehicles may also be affected by vehicle operation (steering maneuver or traveling position in the lane, etc.) or vehicle condition. If this occurs, the system may warn driver by blinking the system indicator and sounding the chime unexpectedly. The driver will have to manually control the proper distance away from the vehicle traveling ahead.
- The approach warning chime may sound and the system display may blink when the sensor detects some reflectors which are fitted on vehicles in other lanes or on the side of the road. This may cause the DCA system to operate inappropriately. The sensor may detect these reflectors when the vehicle is driven on winding roads, hilly roads or when entering or exiting a curve. The sensor may also detect reflectors on narrow roads or in road construction zones. In these cases driver will have to manually control the proper distance ahead of own vehicle. Also, the sensor sensitivity can be affected by vehicle operation (steering maneuver or driving position in the lane) or traffic or vehicle condition (for example, if a vehicle is being driven with some damage).
- The DCA system automatically decelerates own vehicle to help assist the driver to maintain a following distance from the vehicle ahead. Manually brake when deceleration is required to maintain a safe distance upon sudden braking by the vehicle ahead or when a vehicle suddenly appears in front of own vehicle. Always stay alert when using the DCA system.



- When the vehicle ahead detection indicator lamp is not illuminated, system will not control or warn the driver.
- Never place a foot under the brake pedal. A foot may be caught when the system controls the brake.
- Depending on the position of the accelerator pedal, the system may not be able to assist the driver to release the accelerator pedal appropriately.
- If the vehicle ahead comes to a standstill, the vehicle decelerates to a standstill within the limitations of the system. The system will release brake control with a warning chime once it judges the vehicle is at a standstill. To prevent the vehicle from moving, the driver must depress the brake pedal. [The system will resume control automatically once the system reaches 5 km/h (3 MPH)].

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REMOVAL AND INSTALLATION

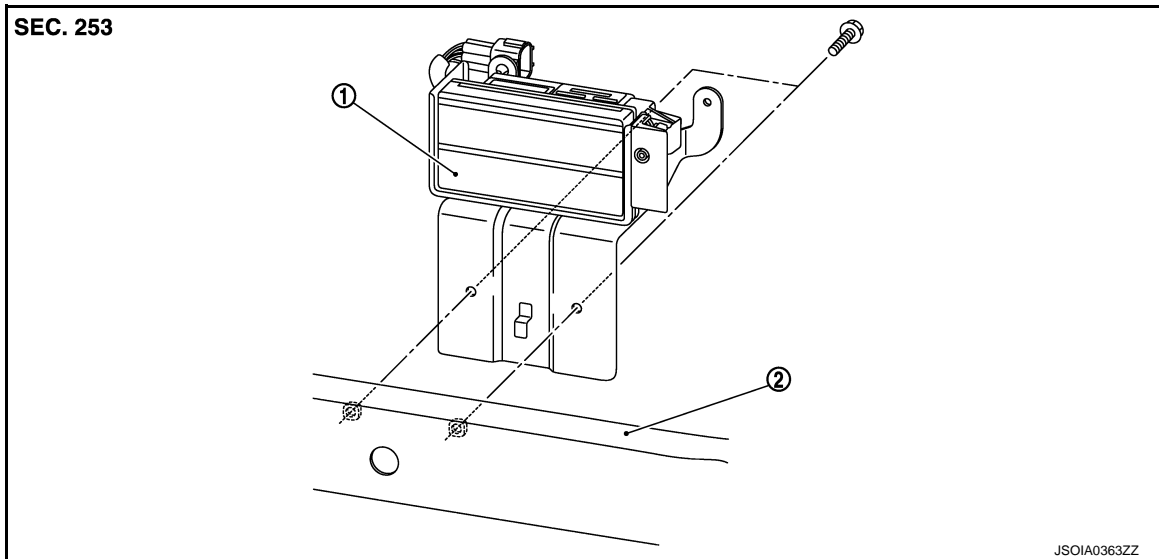
ICC SENSOR

Exploded View

INFOID:000000009013624

CAUTION:

Always perform the laser beam aiming adjustment and check the operation after the replacement, removal and installation of ICC sensor.



1. ICC sensor

2. Front bumper reinforcement

Removal and Installation

INFOID:000000009013625

REMOVAL

1. Remove front under cover. Refer to [EXT-26, "Exploded View"](#).
2. Disconnect the connector of ICC sensor.
3. Remove the bolts.
4. Remove ICC sensor from front bumper reinforcement.

NOTE:

Remove ICC sensor from under the bumper.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Always perform the laser beam aiming adjustment and check the operation after the replacement, removal, and installation of ICC sensor. Refer to [CCS-77, "Description"](#).

ACCELERATOR PEDAL ASSEMBLY

< REMOVAL AND INSTALLATION >

[DCA]

ACCELERATOR PEDAL ASSEMBLY

Exploded View

INFOID:000000009013626

Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View"](#).

CAUTION:

Always perform accelerator pedal released position learning after replacement, removal, or installation of accelerator pedal assembly, and then check the DCA system operation. Refer to [DAS-141, "Description"](#).

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DAS

DYNAMIC DRIVER ASSISTANCE SWITCH

< REMOVAL AND INSTALLATION >

[DCA]

DYNAMIC DRIVER ASSISTANCE SWITCH

Exploded View

INFOID:000000009013627

Dynamic driver assistance switch is integrated in the ICC steering switch. Refer to [ST-33. "Exploded View"](#).

NOTE:

Always remove ICC steering switch together with steering wheel.

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precautions for Removing of Battery Terminal

INFOID:000000009898572

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

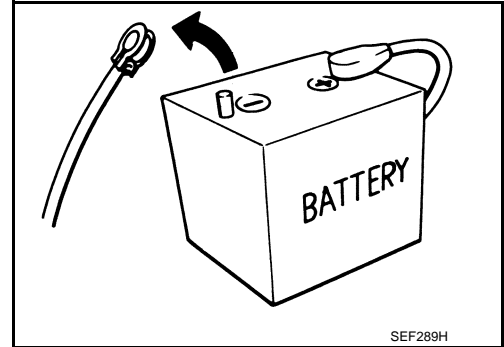
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



Precaution for FCW System Service

INFOID:000000009013628

CAUTION:

- Never look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the FCW system OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Never use the ICC sensor removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of ICC system, then check the operation of ICC system after adjusting laser beam aiming if necessary.
- Never change FCW initial state ON ⇒ OFF without the consent of the customer.

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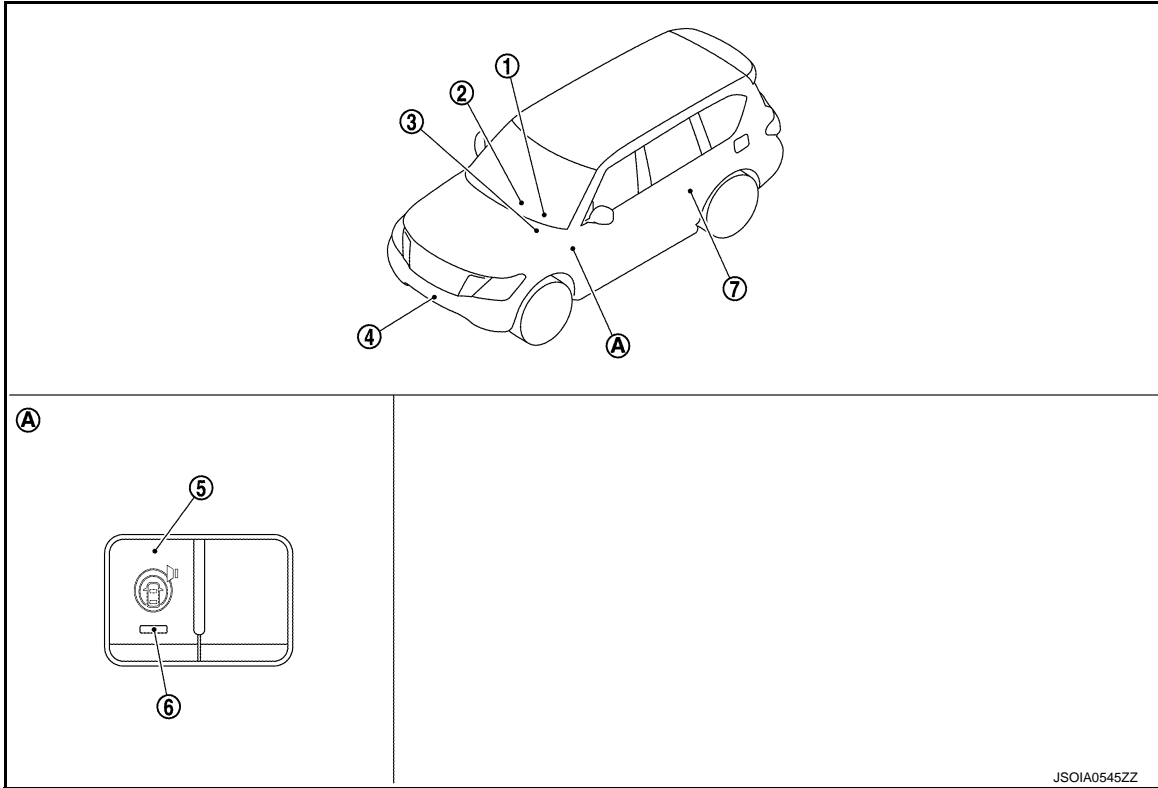
DAS

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000009013629



- 1. Information display, IBA OFF indicator lamp, buzzer (On the combination meter)
- 2. AV control unit
Refer to [AV-12, "Component Parts Location"](#)
- 3. ABS actuator and electric unit (control unit)
Refer to [BRC-9, "Component Parts Location"](#)
- 4. ICC sensor
Refer to [CCS-9, "Component Parts Location"](#)
- 5. Warning systems switch
- 6. Warning systems ON indicator
- 7. ADAS control unit
Refer to [DAS-17, "Component Parts Location"](#)
- A. Instrument lower panel (LH)

Component Description

INFOID:000000009013630

Component	Description
ADAS control unit	<ul style="list-style-type: none"> • ADAS control unit turns ON warning systems ON indicator • ADAS control unit transmits a buzzer output signal to combination meter via CAN communication
ICC sensor	<ul style="list-style-type: none"> • ICC sensor detects light reflected from a vehicle ahead by irradiating laser forward and calculates a distance from the vehicle ahead and a relative speed, based on the detected signal • ICC sensor transmits the presence/absence of a vehicle ahead and a distance from the vehicle ahead to the ADAS control unit via ITS communication
ABS actuator and electric unit (control unit)	ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), to ADAS control unit via CAN communication

COMPONENT PARTS

[FCW]

< SYSTEM DESCRIPTION >

Component	Description
Warning systems switch	Inputs the warning systems switch signal to ADAS control unit.
Warning systems ON indicator (On the warning systems switch)	Turns warning systems ON indicator ON/OFF according to the signals from the ADAS control unit
Combination meter	Performs the following operations using the signals received from the ADAS control unit via the CAN communication <ul style="list-style-type: none"> • Blinks the vehicle ahead detection indicator according to a meter display signal • Illuminates the IBA OFF indicator lamp using the IBA OFF indicator lamp signal • Operates the buzzer (ICC warning chime) using the buzzer output signal
AV control unit	AV control unit transmits the system selection signal to the ADAS control unit via CAN communication

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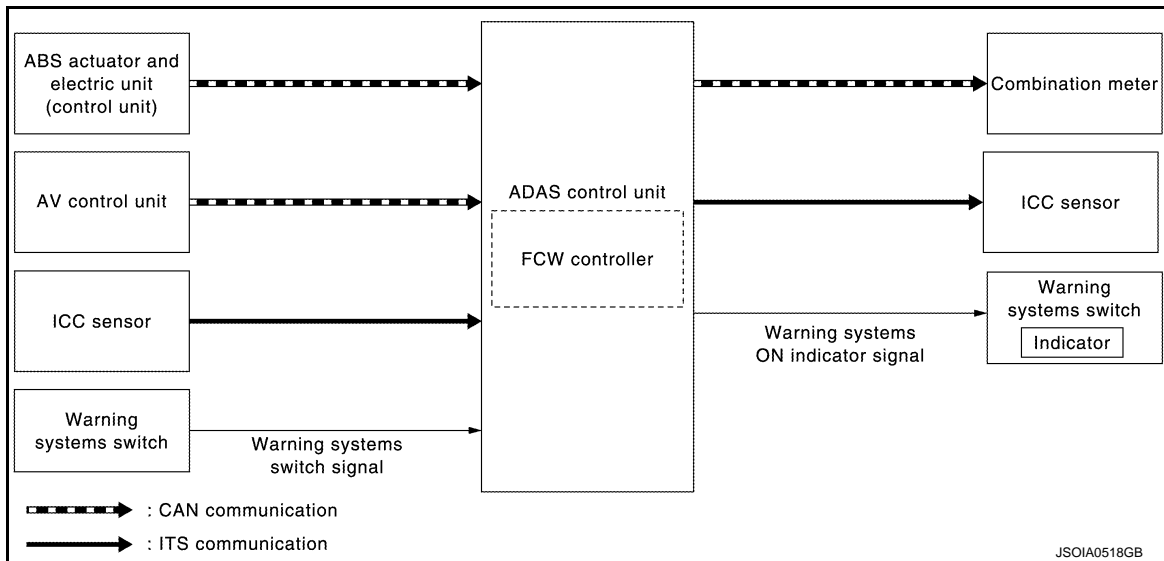
DAS

SYSTEM

System Description

INFOID:000000009013631

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
AV control unit	CAN communication	System selection signal	Receives a selection state each item in "Driver Assist" selected with the navigation system
ICC sensor	ITS communication	ICC sensor signal	Receives detection results, such as the presence or absence of a leading vehicle and distance from the vehicle
Warning systems switch	Warning systems switch signal		Receives an ON/OFF state of the warning systems switch

Output Signal Item

Reception unit	Signal name		Description
Combination meter	CAN communication	Meter display signal	Transmits a signal to display a state of the system on the information display
		Vehicle ahead detection indicator signal	
		IBA OFF indicator lamp signal	<ul style="list-style-type: none"> Transmits a signal to turn ON the IBA OFF indicator lamp Transmits an ON/OFF state of the intelligent brake assist
		Buzzer output signal	Transmits a buzzer output signal to activate the buzzer
ICC sensor	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
Warning systems ON indicator	Warning systems ON indicator signal		Turns ON the warning systems ON indicator

DESCRIPTION

SYSTEM

[FCW]

< SYSTEM DESCRIPTION >

- The Forward Collision Warning (FCW) system will warn the driver by a warning lamp (vehicle ahead detection indicator) and chime when own vehicle is getting close to the vehicle ahead in the traveling lane.
- The FCW system will function when own vehicle is driven at speeds of approximately 15 km/h (10 MPH) and above.

NOTE:

The FCW system shares the diagnosis function with ICC system.

FUNCTION DESCRIPTION

The distance from the vehicle ahead and a relative speed are calculated by using the ICC sensor and an ICC sensor signal is transmitted to the ADAS control unit via ITS communication. When judging the necessity of warning according to the received ICC sensor signal, the ADAS control unit transmits a buzzer output signal and meter display signal to the combination meter via CAN communication.


FCW Operating Condition

- Warning systems ON indicator: ON
- Vehicle speed: Approximately 15 km/h (10 MPH) and above.

NOTE:

When the FCW system setting on the navigation screen is ON.

Fail-safe Indication

Vehicle condition	Indication on the combination meter
<ul style="list-style-type: none"> • When the FCW system malfunctions • When the sensor window is dirty • When driving into a strong light (i.e. sunlight) <p>NOTE: Check that the IBA system is not OFF. The indicator lamp is shared with IBA system.</p>	 <p>JPOIA0179ZZ</p>

Fail-safe (ADAS Control Unit)

INFOID:000000009871036

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

Fail-safe (ICC Sensor)

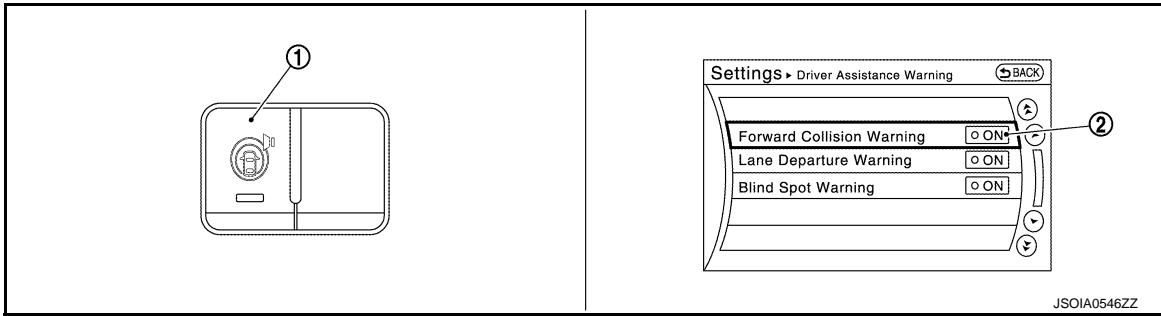
INFOID:000000009013633

If a malfunction occurs in the system, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning lamp in the combination meter.

OPERATION

Switch Name and Function

INFOID:000000009013634

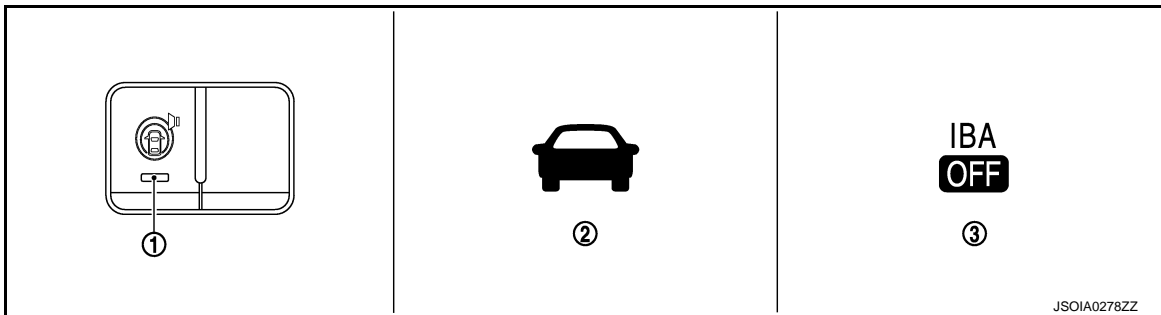


No.	Switch name	Description
1	Warning systems switch	Turns FCW system ON/OFF (When the setting of FCW system on the navigation system setting screen is ON)
2	FCW system setting screen (Navigation system settings screen)	The setting of FCW system can be switched between ON and OFF

Menu Displayed by Pressing Each Switch

INFOID:000000009013635

DISPLAY AND WARNING LAMP



No.	Display item	Description
1	Warning systems ON indicator	<ul style="list-style-type: none"> Indicates that the FCW system, LDW system, and/or BSW system is ON. Blinks when the setting of LDW, FCW, and BSW are "OFF" and the warning systems switch is pressed.
2	Vehicle ahead detection indicator	Vehicle ahead detection indicator blinks when the FCW system is activated
3	IBA OFF indicator lamp	<ul style="list-style-type: none"> IBA OFF indicator lamp turns ON when: <ul style="list-style-type: none"> FCW system has a malfunction ICC sensor window is too dirty to detect a vehicle ahead Subjected to a strong light (e.g. sunlight) IBA OFF indicator lamp blinks when 4WD shift switch is set in a position other than AUTO <p>NOTE: Shared with IBA system</p>

SYSTEM CONTROL CONDITION DISPLAY

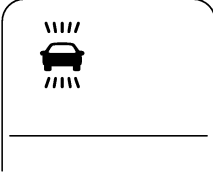
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OPERATION

< SYSTEM DESCRIPTION >

[FCW]

Condition	Warning systems ON indicator	Vehicle ahead detection indicator (In the combination meter)	Buzzer
Set condition	ON	OFF	—
When the warning systems switch is turned ON with settings of FCW system, LDW system and BSW system OFF	Blink	OFF	—
When own vehicle comes closer to the vehicle ahead and it is judged that the distance between the vehicles is not sufficient	ON	 <p style="text-align: center; font-size: small;">JSOIA0134ZZ</p>	Beep

HANDLING PRECAUTION

Precautions for Forward Collision Warning

INFOID:000000009013636

FORWARD COLLISION WARNING (FCW)

- FCW system is intended to warn the driver before a collision but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- As there is a performance limit, the FCW system may not provide a warning in certain conditions.
- The FCW system will not detect the following objects.
 - Pedestrians, animals, or obstacles in the roadway.
 - Oncoming vehicles in the same lane
- FCW system will not detect under the following conditions.
 - When the sensor gets dirty, it is impossible to detect the distance from the vehicle ahead.
 - When driving into a strong light (i.e. sunlight)
- The sensor generally detects signals returned from the reflectors on a vehicle ahead. Therefore, the FCW system may not warn properly under the following conditions:
 - When the reflectors of the vehicle ahead are positioned high or close to each other (including a small vehicle such as motorcycles).
 - When the sensor gets dirty or it is impossible to detect the distance to the vehicle ahead.
 - When the reflectors on the vehicle ahead is missing, damaged or covered.
 - When the reflector of the vehicle ahead is covered with dirt, snow or road spray.
 - When visibility is low (such as rain, fog, snow, etc.).
 - When snow or road spray from traveling vehicles are splashed.
 - When dense exhaust or other smoke (black smoke) from vehicles reduces the visibility of the sensor.
 - When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle.
 - When abruptly accelerating or decelerating.
 - On steep downhill or roads with sharp curves.
 - When there is a highly reflective object near the vehicle ahead.
 - i.e.) very close to other vehicle, signboard, etc.
 - When own vehicle are towing a trailer.
- Depending on certain road conditions (curved, beginning of a curve), vehicle conditions (steering position, vehicle position), or preceding vehicle's conditions (position in lane, etc.), the FCW system may not function properly. The FCW system may detect highly reflective objects such as reflectors, signs, white markers, and other stationary objects on the road or near the traveling lane, and provide unnecessary warning.
- The FCW system may not function in offset conditions.
- The FCW system may not function when the distance to the vehicle ahead is extremely close.
- The FCW system is designed to automatically check the sensor's functionality. If the sensor is covered with ice, a transparent or translucent plastic bag, etc., the system may not detect them. In these instances the FCW system may not be able to warn properly. Be sure to check and clean the sensor regularly.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- A sudden appearance of the vehicle in front (i.e.: when a vehicle abruptly cuts in) may not be detected and the system may not warn soon enough.
- The FCW system will be canceled automatically with a chime sound and the IBA OFF indicator light will illuminate under the following conditions:
 - When the sensor window is dirty
 - When the FCW system malfunctions

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DAS

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

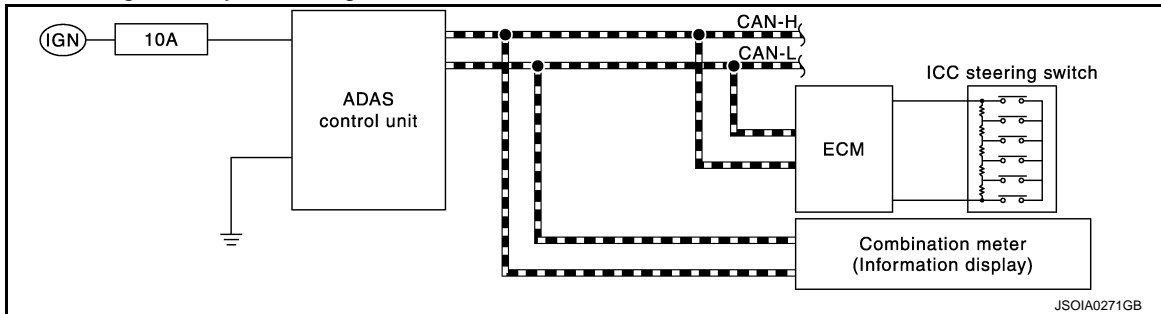
On Board Diagnosis Function

INFOID:000000009910262

DESCRIPTION

The DTC is displayed on the information display by operating the ICC steering switch.

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

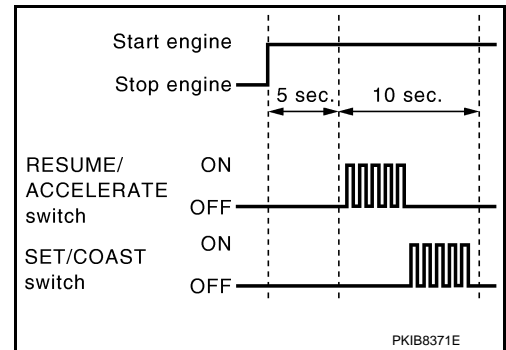
Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)

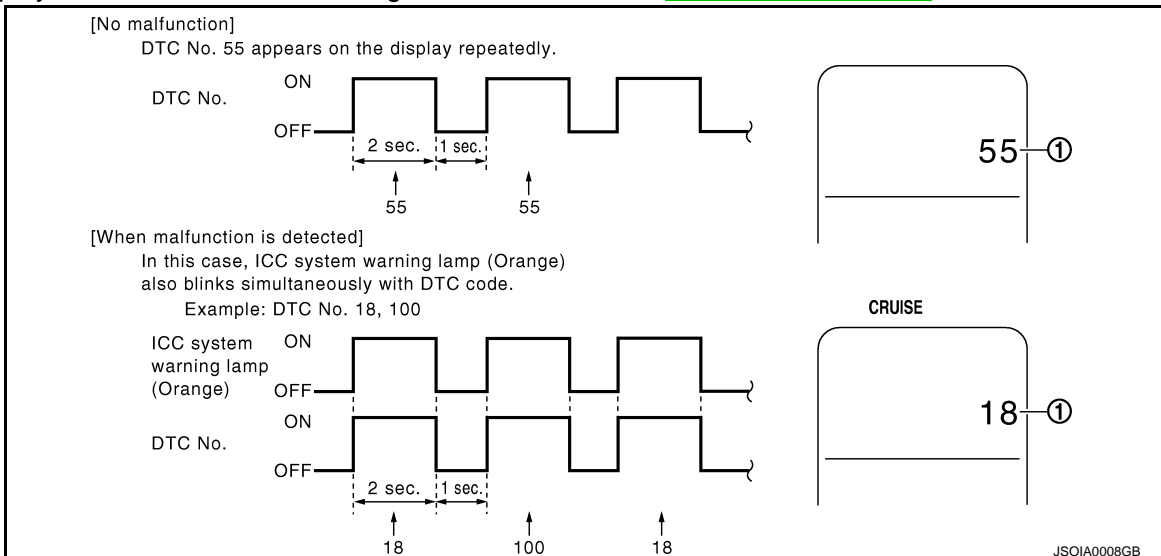
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [DAS-45, "DTC Index"](#).



NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

- It displays for up to 5 minutes and then stops.
- If multiple malfunctions exist, up to 6 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-30, "On Board Diagnosis Function"
ICC steering switch malfunction		Perform the inspection for DTC"C1A06". Refer to CCS-100, "Diagnosis Procedure"
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		<ul style="list-style-type: none"> • Check power supply and ground circuit of ADAS control unit. Refer to DAS-71, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for "ICC/ADAS"with CONSULT, and then check the malfunctioning parts. Refer to DAS-45, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Start the engine, and then start the on board self-diagnosis.
3. Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

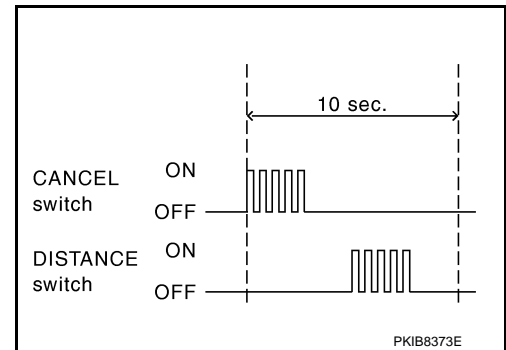
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

5. Turn ignition switch OFF, and finish the diagnosis.



CONSULT Function (ICC/ADAS)

INFOID:000000009910263

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit.

Diagnosis mode	Description
Work Support	Displays causes of automatic system cancellation occurred during system control
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit
Data Monitor	Displays ADAS control unit input/output data in real time
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load
Ecu Identification	Displays ADAS control unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication

WORK SUPPORT

DAS

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[FCW]

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • Conventional (fixed speed) cruise control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Lane Departure Prevention (LDP) • Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Back-up Collision Intervention (BCI)

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description
OPERATING WIPER	×			The wiper operates at HI (it includes when the wiper is operated at HI with the wiper switch AUTO position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor light sensing part
LASER TEMP	×		×	Temperature around ICC sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH)
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage
PARKING BRAKE ON	×	×		The parking brake is operating
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values
INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less
CAN COMM ERROR	×	×	×	ADAS control unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system
ECD CIRCUIT	×	×	×	An abnormal condition occurs in ECD system
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high
ICC SENSOR CAN COMM ERR	×		×	Communication error between ADAS control unit and the ICC sensor
4WD LOCK MODE	×	×	×	Shifting of the 4WD shift switch to 4H or 4L
ABS WARNING LAMP	×		×	ABS warning lamp ON
NO RECORD	×	×	×	—

Display Items for The Cause of Automatic Cancellation 2

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
OPE VDC/TCS/ABS 1	×		The activation of VDC, TCS, or ABS during LDP system control
Vehicle dynamics	×		Vehicle behavior exceeds specified value
Steering speed	×		Steering speed was more than the specified value in evasive direction
End by yaw angle	×		Yaw angle was the end of LDP control
Departure yaw large	×		Detected more than the specified value of yaw angle in departure direction
ICC WARNING	×		Target approach warning of ICC system, IBA system, or FCW system was activated
CURVATURE	×		Road curve was more than the specified value
Steering angle large	×		Steering angle was more than the specified value
Brake is operated	×		Brake pedal was operated
IGN LOW VOLT	×		Decrease in ADAS control unit IGN voltage
Lateral offset	×		Distance of vehicle and lane was detached in lateral direction more than the specified value
Lane marker lost	×		Lane camera unit lost the trace of lane marker
Lane marker unclear	×		Detected lane marker was unclear
Yaw acceleration	×		Detected yawing speed was more than the specified value
Deceleration large	×		Deceleration in a longitudinal direction was more than the specified value
Accel is operated	×		Accelerator pedal was depressed
Departure steering	×		Steering wheel was steered more than the specified value in departure direction
Evasive steering	×		Steering wheel was steered more than the specified value in the evasive direction

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
R range	×		Selector lever was operated to R range
Parking brake drift	×		Rear wheels lock was detected
Not operating condition	×		Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
4WD LOCK MODE	×		Shifting of the 4WD shift switch to 4H or 4L
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker un- clear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
BSI) 4WD LOCK MODE		×	Shifting of the 4WD shift switch to 4H or 4L

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[FCW]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Back-up Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	—
APA POWER	×	Decrease in accelerator pedal actuator ignition or battery voltage
VEHICLE SPEED UP	×	Vehicle speed higher than 8 km/h (5 MPH)

SELF DIAGNOSTIC RESULT

Refer to [DAS-45. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
THRTL SENSOR [deg]	×	×				NOTE: The item is displayed, but it is not monitored
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
YAW RATE [deg/s]	×					NOTE: The item is displayed, but it is not monitored
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of “D” or “M” positions read from ADAS control unit through CAN communication; ON when position “D” or “M” (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[FCW]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
VHCL SPD AT [km/h] or [mph]	×					Indicates vehicle speed calculated from A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×					Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [ON/OFF] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed
IBA SW [On/Off]	×	×				Indicates [On/Off] status of IBA OFF switch
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of warning systems ON indicator output
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system
READY signal [On/Off]			×			Indicates LDP system settings

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
Camera lost [Detect/Deviate/Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection signal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)
STATUS signal [Stnby/Warn/Cancl/Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an ON/OFF state of the lane marker. The ON/OFF state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
FUNC ITEM (NV-ICC) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
FUNC ITEM (NV-DCA) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
DCA SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
NAVI ICC SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
NAVI DCA SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
SYS SELECTABILITY [On/Off]	×	×	×	×		Indicates the availability of ON/OFF switching for "Driver Assistance" items received from the AV control unit via CAN communication
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[FCW]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system
4WD SW [AUTO, 4H, 4L]	×		×	×		Indicates [On/Off] status as judged from current 4WD mode signal (Transfer control unit transmits current 4WD mode signal through CAN communication)
BCI SWITCH [On/Off]					×	Indicates [On/Off] status of BCI switch
BCI SYSTEM ON [On/Off]					×	Indicates [On/Off] status of Back-up Collision Intervention system
BCI ON IND [On/Off]					×	Indicates [On/Off] status of BCI ON indicator
BCI OFF IND [On/Off]					×	Indicates [On/Off] status of BCI OFF indicator
BCI WARNING IND [On/Off]					×	Indicates [On/Off] status of BCI malfunction indicator
BCI HI TEMP WARN IND [On/Off]					×	Indicates [On/Off] status of BCI not available indicator
BATTERY CIRCUIT OFF [Off]						NOTE: The item is displayed, but it is not monitored

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning lamp is illuminated.**
 - ICC system warning lamp
 - Lane departure warning lamp
 - Blind Spot Warning/Blind Spot Intervention warning lamp
 - IBA OFF indicator lamp (IBA system ON)
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
Active Pedal	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF operations as necessary

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

Test item	Description
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	<ul style="list-style-type: none"> • MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the combination meter via CAN communication <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signals to the combination meter via CAN communication	Intermittent beep sound
	Test start	Starts the tests of "MODE1"	—
	Reset	Stops transmitting the buzzer output signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

BRAKE ACTUATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3"	—
	Reset	Stops transmitting the brake fluid pressure control signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

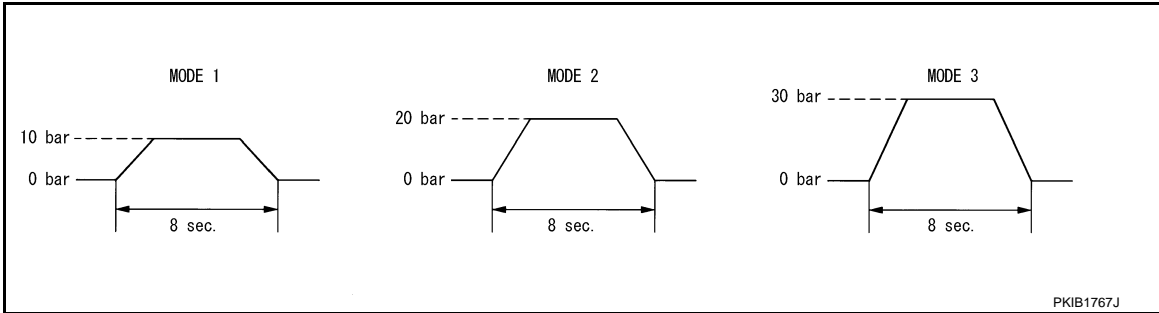
NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[FCW]

< SYSTEM DESCRIPTION >

The test is finished in 10 seconds after starting



Active Pedal

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

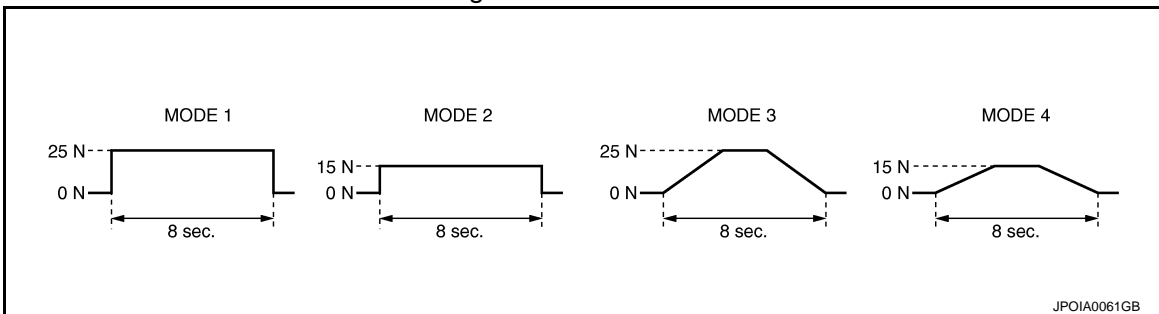
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
Active Pedal	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3” and “MODE4”	—
Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—	
End	Returns to the “SELECT TEST ITEM” screen	—	

NOTE:

The test is finished in 10 seconds after starting



DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test	—
	On	Transmits the DCA system switch indicator signal to the combination meter via CAN communication	ON

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[FCW]

LDP BUZZER

Test item	Operation	Description	Warning buzzer
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	—
	On	Transmits the warning buzzer signal to the warning buzzer	ON

WARNING SYSTEM IND

Test item	Operation	Description	Warning systems ON indicator
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	—
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

LDP ON IND

Test item	Operation	Description	LDP ON indicator lamp (Green)
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal below to end the test	—
	On	Transmits the LDP ON indicator lamp signal to the combination meter via CAN communication	ON

LANE DEPARTURE W/L

Test item	Operation	Description	Lane departure warning lamp (Yellow)
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp signal below to end the test	—
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON

BSW/BSI WARNING LAMP

Test item	Operation	Description	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow)
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot Intervention warning lamp signal below to end the test	—
	On	Transmits the Blind Spot Warning/Blind Spot Intervention warning lamp signal to the combination meter via CAN communication	ON

BSI ON INDICATOR

Test item	Operation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indicator signal below to end the test	—
	On	Transmits the Blind Spot Intervention ON indicator signal to the combination meter via CAN communication	ON

DIAGNOSIS SYSTEM (ICC SENSOR)

[FCW]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER)

INFOID:000000009013639

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication with ADAS control unit and the communication with ICC sensor.

Diagnosis mode	Description
Work Support	It can monitor the adjustment direction indication in order to perform the laser beam aiming operation smoothly
Self Diagnostic Result	Displays malfunctioning system memorized in ICC sensor
Data Monitor	Displays real-time input/output data of ICC sensor
Ecu Identification	Displays ICC sensor part number
CAN Diag Support Monitor	The results of transmit/receive diagnosis of ITS communication can be read

WORK SUPPORT

Work support items	Description
LASER BEAM ADJUST	Outputs laser beam, calculates dislocation of the beam, and indicates adjustment direction

Laser Beam Adjust

Refer to [CCS-78, "Description"](#).

SELF DIAGNOSTIC RESULT

Refer to [CCS-60, "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	Description
VHCL SPEED SE [km/h] or [mph]	Vehicle speed judged from a vehicle speed signal read by the ICC sensor via ITS communication is displayed [ADAS control unit receives a vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated vehicle speed to ICC sensor via ITS communication]
YAW RATE [deg/s]	Indicates yaw rate read from ADAS control unit through ITS communication (ADAS control unit receives yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits yaw rate calculated by the ADAS control unit) Yaw rate judged from a yaw rate signal read by ICC sensor via ITS communication is displayed [ADAS control unit receives a yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated yaw rate to ICC sensor via ITS communication]
PWR SUP MONI [V]	Indicates IGN voltage input by ICC sensor
DISTANCE [m]	Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	Indicates the relative speed of the vehicle ahead
LASER OFFSET [m]	NOTE: The item is indicated, but not used
LASER HEIGHT [m]	NOTE: The item is indicated, but not used
STEERING ANGLE [deg]	The steering angle is displayed

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DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[FCW]

Monitored item [Unit]	Description
STRG ANGLE SPEED [deg/s]	The steering angle speed is displayed
L/R ADJUST [deg]	The horizontal correction value of the laser beam is displayed
U/D ADJUST [deg]	The vertical correction value of the laser beam is displayed

ADAS CONTROL UNIT

[FCW]

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:000000009910265

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> • Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehicle speed calculated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	On
		When the buzzer of the following system not operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
BA WARNING	Engine running	IBA OFF indicator lamp ON <ul style="list-style-type: none"> • When IBA system is malfunctioning • When IBA system is turned to OFF 	On
		IBA OFF indicator lamp OFF <ul style="list-style-type: none"> • When IBA system is normal • When IBA system is turned to ON 	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
		When ICC brake hold relay is not activated	Off
D RANGE SW	Engine running	When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item	Condition		Value/Status
GEAR	While driving		Displays the gear position
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> • Drive the vehicle and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch 	SET switch indicator ON	On
		SET switch indicator OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is pressed	On
		When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dynamic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
IBA SW	Ignition switch ON	When the IBA OFF switch is pressed	On
		When the IBA OFF switch is not pressed	Off
FCW SYSTEM ON	Ignition switch ON	When the FCW system is ON (Warning systems ON indicator ON)	On
		When the FCW system is OFF (Warning systems ON indicator OFF)	Off
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator pedal actuator
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON (Warning systems ON indicator ON)	On
		When the LDW system is OFF (Warning systems ON indicator OFF)	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

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ADAS CONTROL UNIT

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[FCW]

Monitor item	Condition		Value/Status
LDP ON IND	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp ON	On
		LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Drive the vehicle and activate the LDW system or LDP system	Lane departure warning lamp ON	On
		Lane departure warning lamp OFF	Off
LDW BUZER OUT-PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system	When the buzzer of the following system operates • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	On
		When the buzzer of the following system does not operate • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	Off
LDP SYSTEM ON	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
READY signal	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
Camera lost	Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	<ul style="list-style-type: none"> • Engine running • While driving 		Displays the shift position
Turn signal	Turn signal lamps OFF		Off
	Turn signal lamp LH blinking		LH
	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH blinking		LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
		Vehicle turning left	Positive value
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off
STATUS signal	Drive the vehicle with the LDP system turned ON	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV-DCA)	NOTE: The item is indicated, but not monitored		Off
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the navigation system is ON	On
		"Distance Control Assist" set with the navigation system is OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item	Condition		Value/Status
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the navigation system is ON	On
		"Lane Departure Prevention" set with the navigation system is OFF	Off
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the navigation system is ON	On
		"Blind Spot Intervention" set with the navigation system is OFF	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored		Off
NAVI DCA SELECT	NOTE: The item is indicated, but not monitored		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the navigation system can be switched normally	On
		Items set with the navigation system cannot be switched normally	Off
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
		Blind Spot Intervention ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON (Warning systems ON indicator ON)	On
		When the BSW system is OFF (Warning systems ON indicator OFF)	Off
BSI SYSTEM ON	Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
		When the Blind Spot Intervention system is OFF	Off
4WD SW	Engine running	4WD shift switch position is in AUTO	AUTO
		4WD shift switch position is in 4H	4H
		4WD shift switch position is in 4L	4L
BCI SWITCH	Ignition switch ON	When BCI switch is pressed	ON
		When BCI switch is not pressed	OFF
BCI SYSTEM ON	Ignition switch ON	When BCI system is ON	ON
		When BCI system is OFF	OFF
BCI ON IND	Ignition switch ON	When BCI ON indicator is ON	ON
		When BCI ON indicator is OFF	OFF
BCI OFF IND	Ignition switch ON	When BCI OFF indicator is ON	ON
		When BCI OFF indicator is OFF	OFF
BCI WARNING IND	Ignition switch ON	When BCI malfunction indicator is ON	ON
		When BCI malfunction indicator is OFF	OFF
BCI HI TEMP WARN IND	Ignition switch ON	When BCI not available indicator is ON	ON
		When BCI not available indicator is OFF	OFF
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not monitored		Off

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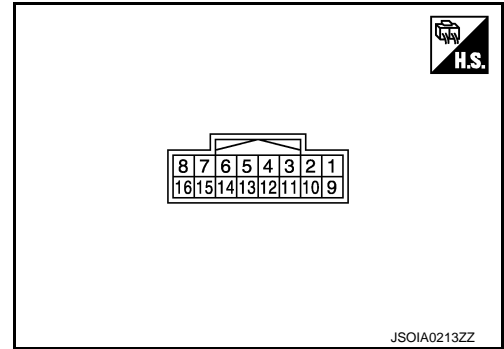
ADAS CONTROL UNIT

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[FCW]

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (V/W)	Ground	Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed	12 V
					When warning systems switch is pressed	0 V
3 (R/Y)		IBA OFF switch	Input	Ignition switch ON	When IBA OFF switch is not pressed	12 V
					When IBA OFF switch is pressed	0 V
4 (LG/B)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (R)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (Y)		ITS communication-L	—	—	—	—
10 (O)		BCI switch	Input	Ignition switch ON	When BCI OFF switch is not pressed	12 V
					When BCI OFF switch is pressed	0 V
12 (G/R)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	0 V
					Warning buzzer not operating	12 V
14 (L)		CAN -H	—	—	—	—
15 (P)	CAN -L	—	—	—	—	
16 (W/G)	Ignition power supply	Input	Ignition switch ON		Battery Voltage	

Fail-safe

INFOID:000000009910266

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000009910267

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

DAS

ADAS CONTROL UNIT

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[FCW]

Priority	Detected items (DTC)
4	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A2A: ICC SEN PWR SUP CIR • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD PWR SUPPLY CIR • C1A33: CAN TRANSMISSION ERR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR 2 • C1A38: APA CAN CIR 1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1B01: CAM AIMING INCOMP • C1B03: CAM ABNRML TMP DETCT • C1B56: SONOR CIRCUIT • C1B57: AVM CIRCUIT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0428: STRG SEN CAN CIR 2 • U1500: CAM CAN CIR 2 • U1501: CAM CAN CIR 1 • U1502: ICC SEN CAN COMM CIR • U1503: SIDE RDR L CAN CIR 2 • U1504: SIDE RDR L CAN CIR 1 • U1505: SIDE RDR R CAN CIR 2 • U1506: SIDE RDR R CAN CIR 1 • U150B: ECM CAN CIRC 3 • U150C: VDC CAN CIRC 3 • U150D: TCM CAN CIRC 3 • U150E: BCM CAN CIRC 3 • U150F: AV CAN CIRC 3 • U1512: HVAC CAN CIRC3 • U1513: METER CAN CIRC 3 • U1514: STRG SEN CAN CIRC 3 • U1515: ICC SENSOR CAN CIRC 3 • U1516: CAM CAN CIRC 3 • U1517: APA CAN CIRC 3 • U1518: SIDE RDR L CAN CIRC 3 • U1519: SIDE RDR R CAN CIRC 3 • U1520: 4WD CAN CIRC 3 • U1521: SONAR CAN COMMUNICATION 2 • U1522: SONAR CAN COMMUNICATION 1 • U1523: SONAR CAN COMMUNICATION 3 • U1524: AVM CAN COMMUNICATION 1 • U1525: AVM CAN COMMUNICATION 3
5	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Priority	Detected items (DTC)
6	<ul style="list-style-type: none"> • C1A15: GEAR POSITION
7	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

DTC Index

INFOID:000000009871053

NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-66
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-93

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[FCW]

Systems for fail-safe

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-95
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON		A, B, C, D, E, F, G	CCS-96
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	CCS-100
C1A12	12	LASER BEAM OFFCNTR	ON	ON				A, C, D, E	CCS-102
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	CCS-103
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	CCS-109
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-110
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	CCS-112
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	CCS-114
C1A18	18	LASER AIMING INC-MP	ON	ON				A, C, D, E	CCS-115
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	CCS-117
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-119
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	CCS-121
C1A27	27	ECD PWR SUPPLY CIR	ON	ON				A, B, C, D, E	CCS-122
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	CCS-124
C1A34	34	COMMAND ERROR	ON					A, B, E	CCS-125
C1A35	35	APA CIR	ON				ON	A, E, H	CCS-126

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< ECU DIAGNOSIS INFORMATION >

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp		System	
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	CCS-127
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	CCS-128
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	CCS-129
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-130
C1A40	40	SYSTEM SW CIRC		ON				C, D	CCS-132
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	CCS-123
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-386
C1B01	82	CAM AIMING INCOMP			ON	ON		F, G	DAS-388
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK		F, G	DAS-390
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-543
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-544
C1B56	87	SONOR CIRCUIT					ON	H	DAS-544
C1B57	88	AVM CIRCUIT					ON	H	DAS-544
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	CCS-135
C1F02	92	APA C/U MALF	ON				ON	A, E, H	CCS-136
C1F05	95	APA PWR SUPPLY CIR	ON				ON	A, E, H	CCS-137
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—	—	ON	—	—

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[FCW]

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-139
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	—	A, B, C, D, E, G, H	CCS-141
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			ON	A, B, C, D, E	CCS-143
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	CCS-144
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON		A, B, C, D, E, F, G, H	CCS-145
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-147
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-149
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-68
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-69
U1500	145	CAM CAN CIR 2			ON	ON	ON	F, G	DAS-406
U1501	146	CAM CAN CIR 1			ON	ON	ON	F, G	DAS-407
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	CCS-158
U1503	150	SIDE RDR L CAN CIR 2				ON		G, H	DAS-569
U1504	151	SIDE RDR L CAN CIR 1				ON		G, H	DAS-570
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-571

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1506	153	SIDE RDR R CAN CIRC 1				ON	ON	G, H	DAS-572
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-573
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-574
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-154
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-155
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-156
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-157
U150F	161	AV CAN CIRC 3					ON		DAS-70
U1512	162	HVAC CAN CIRC3			ON	ON	ON	F, G	DAS-408
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON		A, B, C, D, E, F, G, H	CCS-159
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON		A, B, C, D, E, G, H	CCS-160
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			ON	A, B, C, D, E	CCS-161
U1516	166	CAM CAN CIRC 3			ON	ON	ON	F, G	DAS-410
U1517	167	APA CAN CIRC 3	ON					A, B, E, H	CCS-162
U1518	168	SIDE RDR L CAN CIRC 3				ON		G, H	DAS-579
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-580

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[FCW]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
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- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1520	176	4WD CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-163
U1521	177	SONAR CAN COMMUNICATION 2					ON	H	DAS-740
U1522	178	SONAR CAN COMMUNICATION 1					ON	H	DAS-741
U1523	179	SONAR CAN COMMUNICATION 3					ON	H	DAS-742
U1524	180	AVM CAN COMMUNICATION 1					ON	H	DAS-743
U1525	181	AVM CAN COMMUNICATION 3					ON	H	DAS-744

NOTE:

With the detection of "U1000" some systems do not perform the fail-safe operation.

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[FCW]

ICC SENSOR

Reference Value

INFOID:000000009013644

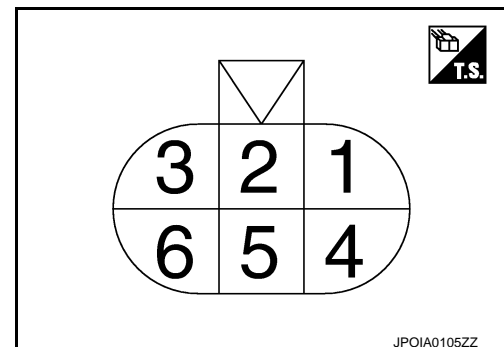
VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
YAW RATE	While driving	Vehicle stopped	0.0
		Vehicle turning right	Positive value
		Vehicle turning left	Negative value
PWR SUP MONI	Ignition switch ON		Power supply voltage value of ICC sensor
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed
		When a vehicle ahead is not detected	0.0
LASER OFFSET	NOTE: The item is indicated, but not used		—
LASER HEIGHT	NOTE: The item is indicated, but not used		—
STEERING ANGLE	Ignition switch ON	When setting the steering wheel in straight-ahead position	0.0
		When turning the steering wheel 90° rightward	+90
		When turning the steering wheel 90° leftward	-90
STRG ANGLE SPEED	Ignition switch ON	At the time of turning the steering wheel	Steering wheel turning speed is displayed
L/R ADJUST	Ignition switch ON	At the completion of laser beam adjustment	Horizontal correction value is displayed
U/D ADJUST	Ignition switch ON	At the completion of laser beam adjustment	Vertical correction value is displayed

TERMINAL LAYOUT



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ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[FCW]

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (W/G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
3 (L)		ITS communication-H	—	—	—
4 (B)		Ground	—	Ignition switch ON	0 V
6 (Y)		ITS communication-L	—	—	—

Fail-safe

INFOID:000000009013645

If a malfunction occurs in the ICC sensor, ADAS control unit cancels control, sounds a beep, and turns ON the ICC system warning lamp in the combination meter.

DTC Inspection Priority Chart

INFOID:000000009013646

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • C1A50: ADAS MALFUNCTION
3	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A12: LASER BEAM OFFCNTR • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A21: UNIT HIGH TEMP • C1A39: STRG SEN CIR • U0104: ADAS CAN CIR1 • U0121: VDC CAN CIR2 • U0126: STRG SEN CAN CIR1 • U0405: ADAS CAN CIR2 • U0415: VDC CAN CIR1 • U0428: STRG SEN CAN CIR2
4	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

DTC Index

INFOID:000000009013647

NOTE:

- The details of time display are as per the following.
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

[FCW]

×: Applicable

DTC	CONSULT display	ICC system warning lamp	Fail-safe function						Reference
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Intelligent Brake Assist (IBA)	Brake Assist (with preview function)	
C1A00	CONTROL UNIT	ON	×	×	×	×	×	×	CCS-89
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	×	CCS-91
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	×	CCS-91
C1A12	LASER BEAM OFFCNTR	ON	×		×	×	×	×	CCS-102
C1A16	RADAR STAIN	ON	×		×	×	×	×	CCS-112
C1A18	LASER AIMING INCOMP	ON	×		×	×	×	×	CCS-115
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	×	×	CCS-117
C1A39	STRG SEN CIR	ON	×	×	×	×	×	×	CCS-130
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	×	×	CCS-134
U0104	ADAS CAN CIR1	ON	×	×	×	×	×	×	CCS-138
U0121	VDC CAN CIR2	ON	×	×	×	×	×	×	CCS-139
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	×	CCS-141
U0405	ADAS CAN CIR2	ON	×	×	×	×	×	×	CCS-146
U0415	VDC CAN CIR1	ON	×	×	×	×	×	×	CCS-147
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	×	CCS-149
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	×	×	CCS-151
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	×	×	CCS-153

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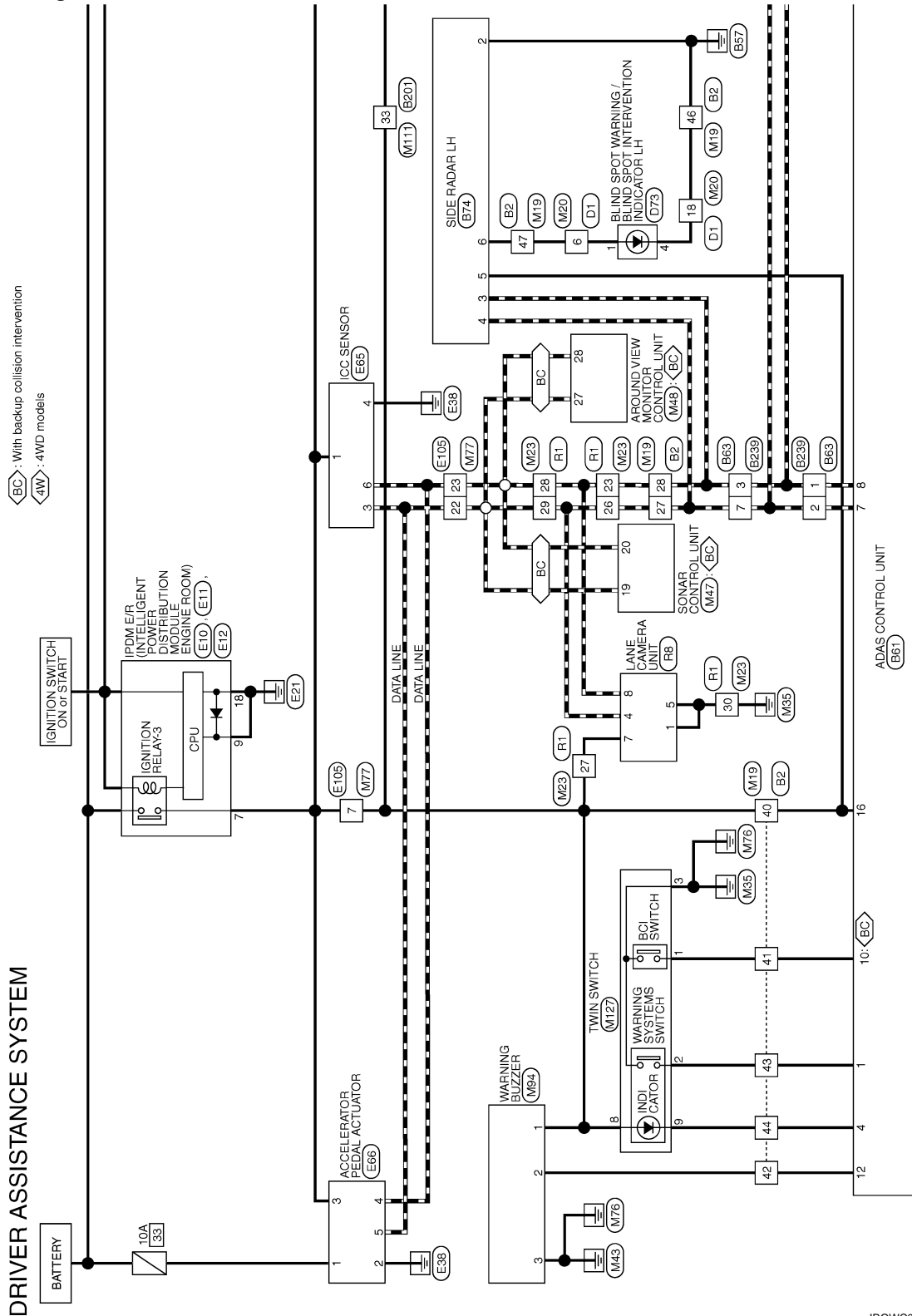
< WIRING DIAGRAM >

WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:000000009356140



*: This connector is not shown in "Harness Layout".

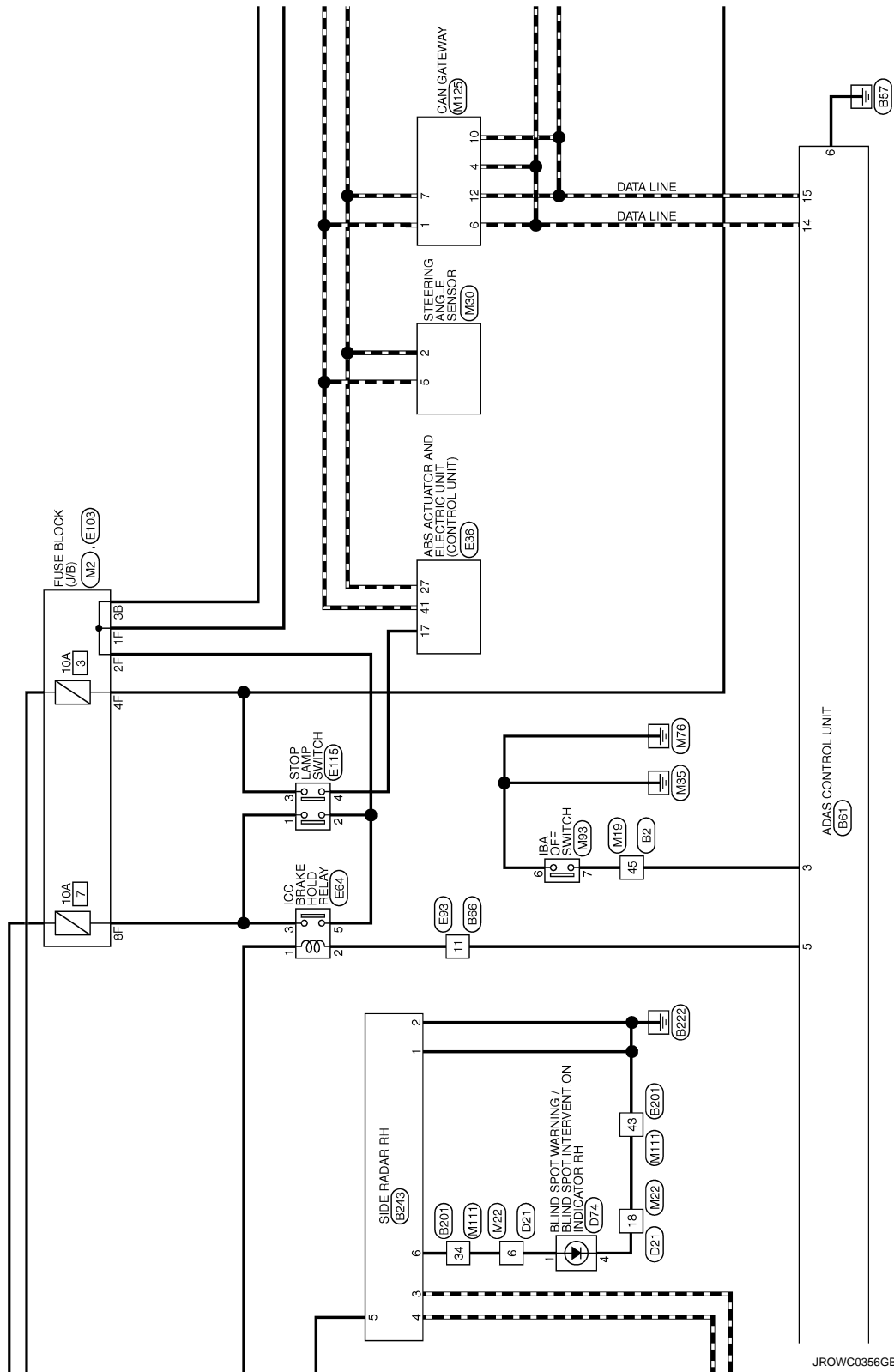
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DRIVER ASSISTANCE SYSTEMS

[FCW]

< WIRING DIAGRAM >



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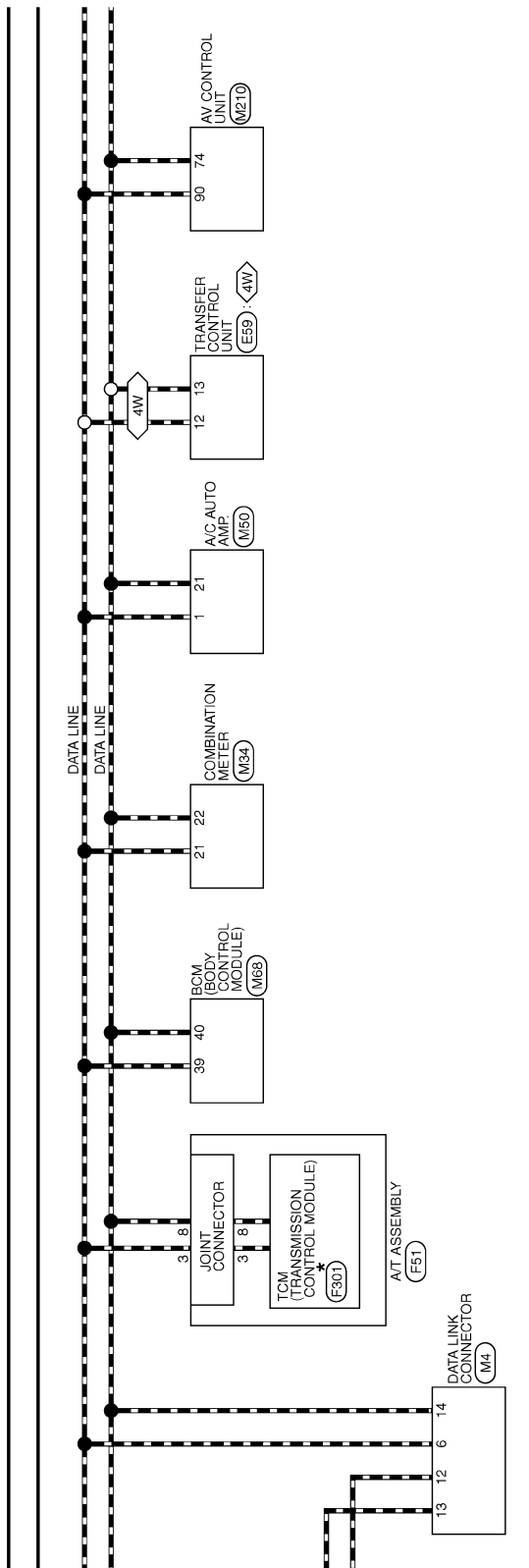
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[FCW]

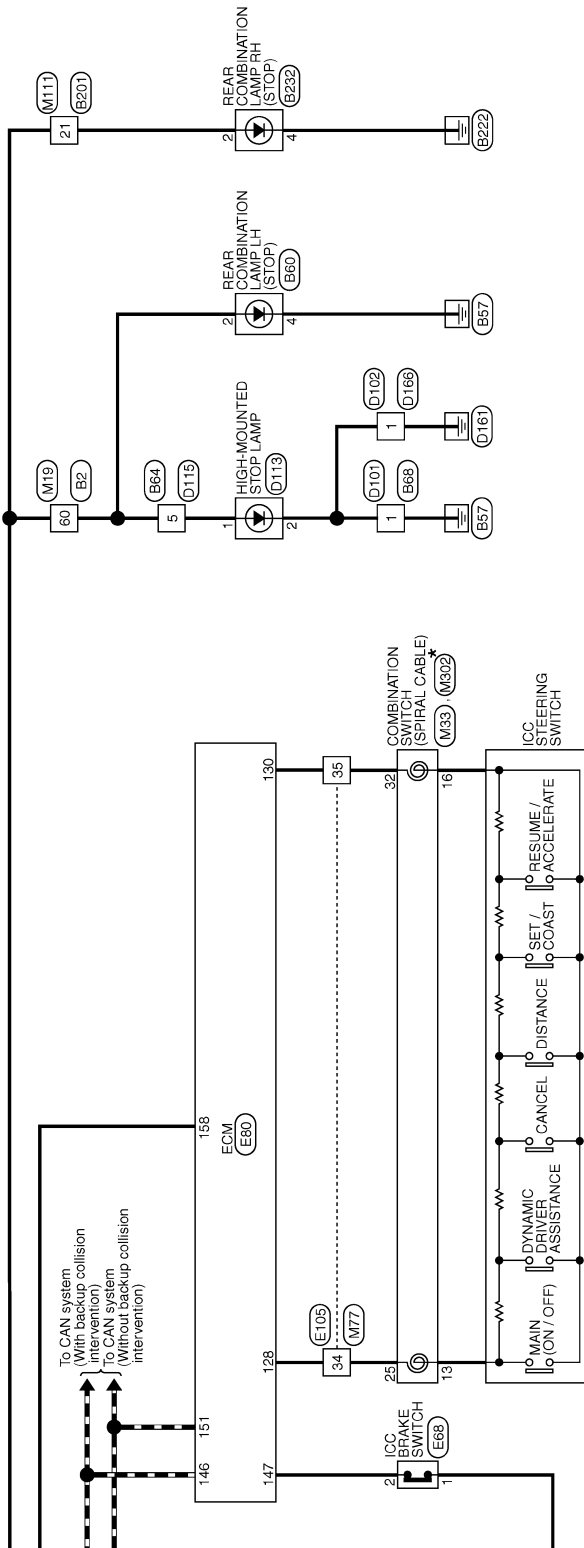


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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[FCW]



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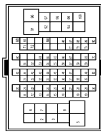
DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[FCW]

DRIVER ASSISTANCE SYSTEM

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	V	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	G/R	-
14	B/Y	-
15	W/R	-
16	GR/R	-
18	GW	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-

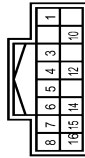
42	G/R	-
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR	-
49	GR	-
50	R/B	-
51	W/R	-
52	BRY	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FM-CS



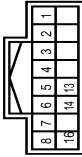
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	R	-
3	G	-
4	B	-

Connector No.	B61
Connector Name	ADAS CONTROL UNIT
Connector Type	TH16FM-NH



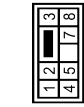
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V/W	WARNING SYSTEMS SW
3	R/Y	IBA OFF SW
4	LG/B	WARNING SYSTEMS ON IND
5	R	BRAKE HOLD RLY DRIVE SIGNAL
6	B	GND
7	L	ITS COMM-H
8	Y	ITS COMM-L
10	O	B3 SW
12	G/R	WARNING BUZZER
14	L	CANL
15	P	CANH
16	W/G	IGNITION

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH16FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y/R	-
4	SB	-
6	LG	-
8	Y	-
7	LO	-
6	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B64
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	R/Y	-
3	GW	-
4	R	-
5	R	-
7	L/W	-
8	V	-

DRIVER ASSISTANCE SYSTEMS

[FCW]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



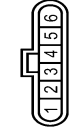
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	RW	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-

Connector No.	B74
Connector Name	SIDE RADAR LH
Connector Type	AAC36FB-VP-5P



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GND
3	Y	ITS COMFL
4	L	ITS COMRH
5	W/G	IGNITION
6	BR	BSW INDICATOR

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-

20	GY	-
21	R	-
22	GR	-
27	L/W	-
29	W	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L	-
43	B/W	-
44	L	-
45	P	-
46	SHIELD	-
47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	L/B	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	L/G	-
79	R/B	-
80	W/B	-
83	Y	-
84	L	-
85	L/R	-
96	R	-

97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	R	-
3	GY	-
4	B	-

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	L/G	-
6	Y	-
7	L	-
8	G	-
13	R/L	-
14	G	-

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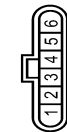
DRIVER ASSISTANCE SYSTEMS

[FCW]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

16	W	-
Connector No. B243		
Connector Name SIDE RADAR RH		
Connector Type AAC2BFB-WP		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BY	RIGHTLEFT SWITCHING SIGNAL
2	B	GND
3	Y	ITS COM+L
4	L	ITS COM+H
5	WG	IGNITION
6	L/R	BSW INDICATOR

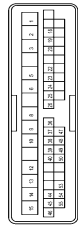
Connector No. D1		
Connector Name WIRE TO WIRE		
Connector Type TH40FW-CS15		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-

14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	Oil	-
31	GR/B	-
32	BR	-
33	V/W	-
36	GO	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR/L	-
45	SHIELD	-
46	W	-
47	LG	-
48	GW	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No. D21		
Connector Name WIRE TO WIRE		
Connector Type TH40FW-CS15		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	BY	-
13	L	-
14	R	-
15	B	-
18	BR/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/O	-
25	R/W	-
26	W/R	-
36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR/L	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No. D73		
Connector Name BLIND SPOT INTERFERING SPOT INTERFERION INDICATOR L/R		
Connector Type TH40MM-NH		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR/W	-
4	B	-

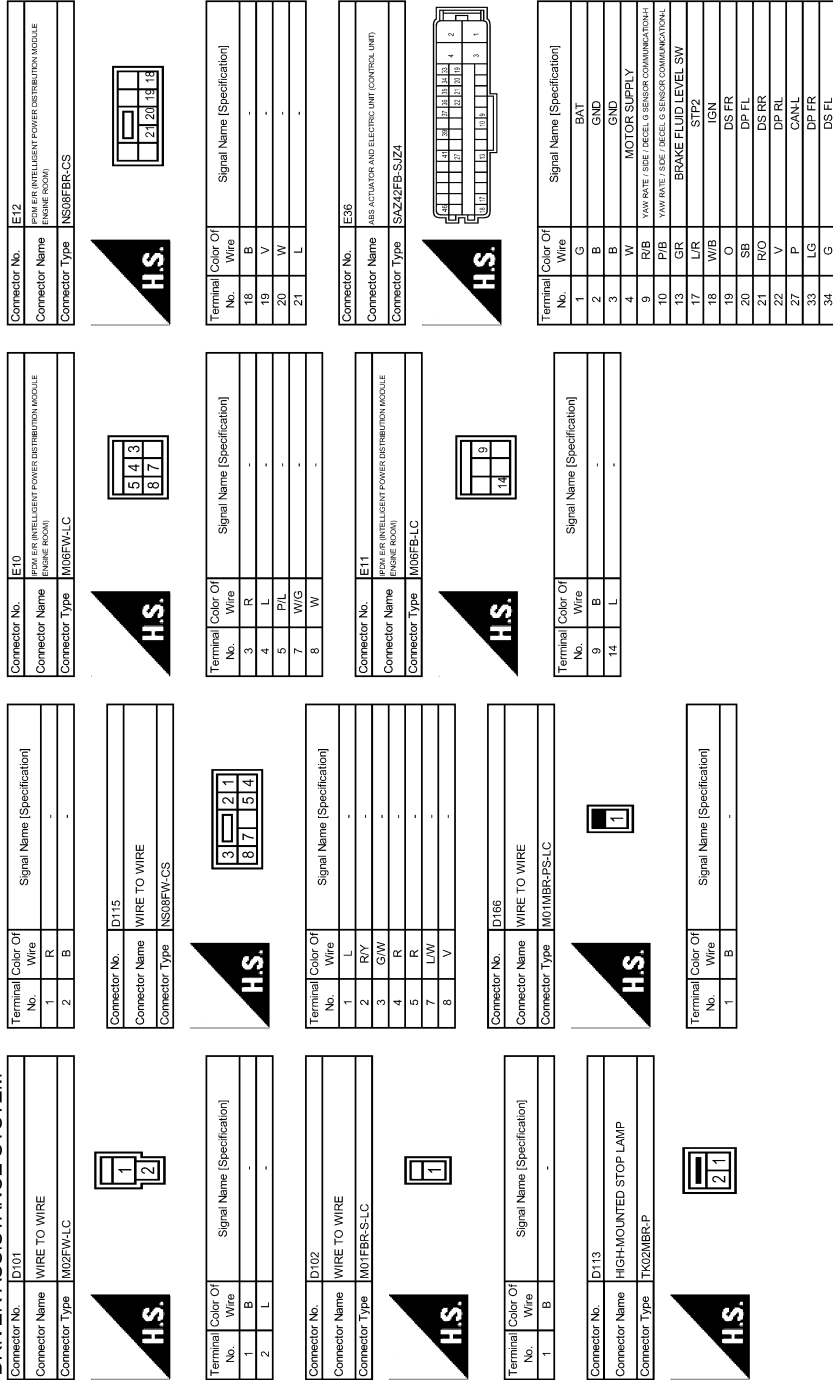
Connector No. D74		
Connector Name BLIND SPOT INTERFERING SPOT INTERFERION INDICATOR R/L		
Connector Type TH40MM-NH		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/R	-
4	B/W	-

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DRIVER ASSISTANCE SYSTEM



A B C D E F G H I J K L M N P

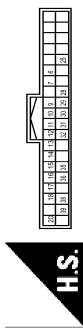
DAS

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DRIVER ASSISTANCE SYSTEM

35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VDC OFF SW
41	L	CANH
46	W	STOP LAMP SW ON

Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	H-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CANH
13	P	CANH
14	W/R	AUTO SW
15	P/B	ROTARY POSITION SEN PWM
16	LG	ROTARY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	B/R/Y	ROTARY POSITION SEN PWR SUPPLY
20	GR	TRANSFER CU PWR SUPPLY
25	P/L	H-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	H-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL
39	R/W	INTERNAL SPEED SEN PWR SUPPLY

Connector No.	E64
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	R	-
3	L/B	-
5	R	-

Connector No.	E66
Connector Name	ICC SENSOR
Connector Type	RS08FB-PR



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGNITION
3	L	ITS COMM-L
4	B	GND
6	Y	ITS COMM-H

Connector No.	E66
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH08FLGY



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	BATTERY
2	B	GND
3	W/G	IGNITION
4	Y	ITS COMM-L
5	L	ITS COMM-H

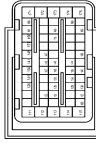
Connector No.	E68
Connector Name	ICC BRAKE SWITCH
Connector Type	MO2FBR-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	G/Y	-

Connector No.	E60
Connector Name	ECM
Connector Type	MB655FB-MEB10-LH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	THROTTLE CONTROL MOTOR RELAY
123	W/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FFCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASD/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FFCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	L/G	ECM RELAY (SELF SHUT-OFF)
165	GR/R	-
166	R/Y	ECM COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT

DRIVER ASSISTANCE SYSTEM

Terminal No.	Wire	Signal Name [Specification]
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E033
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E103
Connector Name	FUSE BLOCK (JIB)
Connector Type	NS16FW-CS



H.S.

Terminal No.	Wire	Signal Name [Specification]
10F	G	-
14F	Y	-
15F	G	-
1F	W/B	-
2F	R	-
4F	G	-
6F	Y/G	-
8F	L/B	-
9F	Y	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	L	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	L/B	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	Y/V	-
22	L	-
23	V	-
24	L/W	-
28	O	-

Terminal No.	Wire	Signal Name [Specification]
29	R/W	-
30	L/B	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/R	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GS/L	-
60	W	-
61	B	-
62	R	-
63	G	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	G/R	-
97	R	-
98	G/B	-
100	W/R	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	L/B	-
2	R	-
3	G	-
4	L/R	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CANH
4	SB	K-LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CANL
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CANH
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CANL
9	-	STARTER RELAY
10	-	GROUND

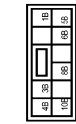
DRIVER ASSISTANCE SYSTEMS

[FCW]

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DRIVER ASSISTANCE SYSTEM

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10B	W/B	-
1B	R	-
3B	R	-
4B	B	-
5B	BR	-
6B	Y	-
8B	L/O	-

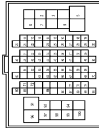
Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

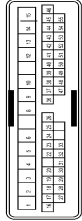
DRIVER ASSISTANCE SYSTEM

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	B	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
6	LG/R	-
8	BR/W	-
8	V	-
9	G	-
10	L	-
12	BR/Y	-
13	Y	-
14	R	-
15	B	-
16	GR/R	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

DRIVER ASSISTANCE SYSTEMS

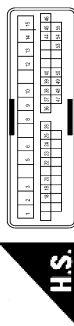
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DRIVER ASSISTANCE SYSTEM

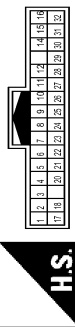
42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	M22
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH22MW-AH



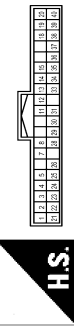
22	SB	-
23	Y/R	-
24	SHIELD	-
25	Y/G	-
26	L/O	-
27	W/O	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	GR/L	-

Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FM-AH



31	Y/L	-
32	R	-
33	B	-
34	P/B	-

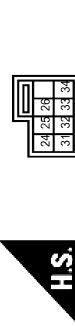
Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	TLL GND
5	B	ILL CONTROL OUTPUT
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	AC/AUTO AMP CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CANH
22	P	CANL
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BR/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT SWITCH SIGNAL (DRIVERSIDE)
36	GY	PASSENGER SEAT BELT WARNING SIGNAL
37	RY	NON-MANUAL MODE SIGNAL

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No.	M33
Connector Name	COMBINATION SWITCH (SIGNAL CABLE)
Connector Type	TK08FGY-1V



Terminal No.	Color Of Wire	Signal Name [Specification]
24	Y/G	-
25	Y	-
26	B	-
31	GR	-
32	GR	-
33	GR	-
34	GR	-

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	GR	-
6	BY	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-
14	Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	BY	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/B	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

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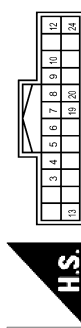
DAS

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DRIVER ASSISTANCE SYSTEM

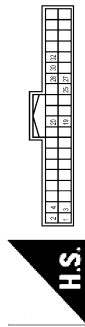
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

Connector No.	M47
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FM-NH



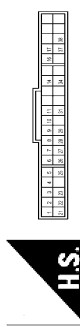
Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	SONAR FR INNER LH
8	Y	SONAR FR INNER RH
9	G	SONAR FR INNER LH
10	Y	SONAR FR INNER RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CAN-H [Without ADAS]
19	L	ITS-CAN L [With ADAS]
20	R	CAN-L [Without ADAS]
20	Y	ITS-CAN L [With ADAS]
24	B	GND

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COM1 (H)
20	LG	AV COM1 (L)
25	P	REV
27	L	CAN-H
28	R	CAN-L [Without ADAS]
28	Y	CAN-L [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
30	LG	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

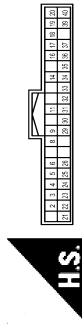
Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Type	SAB40FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	V	ACC POWER SUPPLY
5	W	IONIZER CONTROL SIGNAL
6	V/W	A/C AUTO AMP. CONNECTION SIGNAL
7	WR	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL

9	BR	SUNLOAD SENSOR (DR) SIGNAL <small>(EX GAS / OUTSIDE DOOR DETECTING SENSOR SIGNAL)</small>
10	V/W	COMM (A/C AUTO AMP.-RR A/C CONT)
11	OL	FR BLOWER MOTOR CONTROL SIGNAL
14	W/L	EACH DOOR MOTOR LIN SIGNAL
16	R/G	EACH DOOR MOTOR POWER SUPPLY
17	L/Y	EACH DOOR MOTOR LIN SIGNAL
21	P	CAN-L
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
25	R	-
26	GR	SENSOR GROUND
27	BR	FR IN-VEHICLE SENSOR SIGNAL
28	R	INTAKE SENSOR SIGNAL
29	O	SUNLOAD SENSOR (PASS) SIGNAL
31	OL	COMM (RR A/C CONT-A/C AUTO AMP.)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	G/W	RR A/C RELAY CONTROL SIGNAL

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BRY	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	BR	RECEIVER SENSOR GND
19	BR	RECEIVER PWR SPLY
20	GR	KEYLS ENT RECEIVER COMM
21	P	WATS ANT AMP
22	W/B	KEYLS ENT RECEIVER RSSI

23	GR/R	SECURITY IND CONT
24	SB	DONGLE LINK
25	LR/R	WATS ANT AMP.
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	BK DOOR OPNR SW
31	W/G	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/W	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIFT P
39	L	CAN-H
40	P	CAN-L

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
6	SB	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	O/L	-
16	SB	-
18	BR	-
19	Y/G	-
20	BRY	-

DRIVER ASSISTANCE SYSTEMS

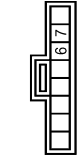
[FCW]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

21	V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
29	R/W	-
30	O/L	-
31	O/L	-
32	GR/R	-
34	Y	-
35	R	-
36	B/O	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	Y	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	B	-
62	G	-
63	R	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	R	-
98	O/L	-
100	W/B	-

Connector No.	M93
Connector Name	IBA OFF SWITCH
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
6	B	-
7	R/Y	-

Connector No.	M94
Connector Name	WARNING BUZZER
Connector Type	NSM4FBRCS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	G/R	-
3	B	-

Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH80FMCS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/B	-
4	W/B	-
5	W/B	-
6	R	-
7	R	-
8	GR	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	G/Y	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L/W	-
43	B/W	-
44	L	-
45	P	-
46	SHIELD	-

47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	O/L	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
90	W/B	-
93	Y	-
94	L	-
95	L/R	-
96	R	-
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



JROWC1016GB

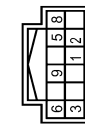
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DAS

DRIVER ASSISTANCE SYSTEM

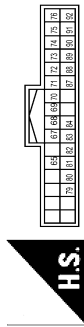
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
3	Y	BATTERY
4	L	CANH
5	B	GND
6	L	CANH
7	P	CANL
9	GR	IGNITION
10	R	CANL
11	B	GND
12	R	CANL

Connector No.	M127
Connector Name	TWIN SWITCH
Connector Type	TH12FY-AH



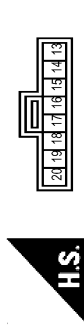
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	V/W	-
3	B	-
5	L/O	-
6	B/O	-
8	W/G	-
9	LG/B	-

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FM-AH



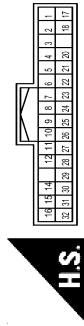
Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
69	O	INTELLIGENT KEY IDENTIFICATION SIGNAL
70	BR	REVERSE 12
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
72	Y/G	MICROPHONE VCC [Without DCM]
73	Y/G	COMM [CONT-DISP]
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	L/O	DIMMER SIGNAL
80	GR/L	IGNITION SIGNAL
81	R/Y	REVERSE SIGNAL
82	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	W/B	COMPOSITE IMAGE SYNC SIGNAL
87	BR	MICROPHONE SIGNAL [With DCM]
87	Y/L	MICROPHONE SIGNAL [Without DCM]
88	SHIELD	SHIELD
89	Y/L	COMM [DISP-CONT]
90	L	CANH
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SPRAL CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-

Connector No.	R1
Connector Name	WIRES TO WIRE
Connector Type	TH32FM-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	BR	-
6	BY	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-

14	BY	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	Y	-
24	SHIELD	-
25	Y/G	-
26	L	-
27	W/G	-
28	Y	-
29	L	-
30	B/SR	-
31	BR	-
32	BR	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH08FY-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
4	L	ITS COMM-H
5	B	GND
7	W/G	IGNITION
8	Y	ITS COMM-L

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[FCW]

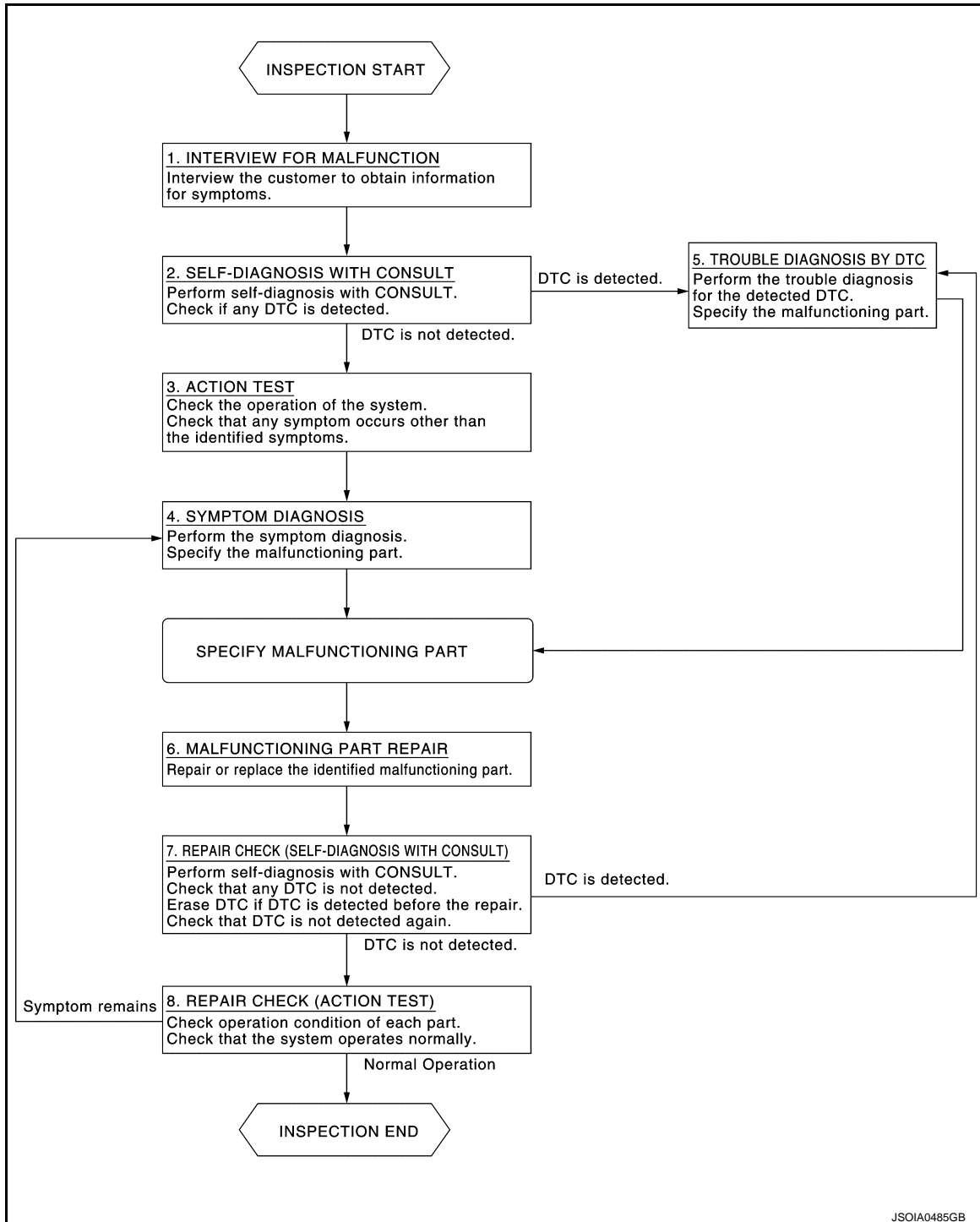
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009013649

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

The FCW system shares component parts with the ICC system. If the FCW system has a malfunction perform diagnosis for the ICC system.

1. INTERVIEW FOR MALFUNCTION

DIAGNOSIS AND REPAIR WORK FLOW

[FCW]

< BASIC INSPECTION >

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT

1. Perform “All DTC Reading” with CONSULT.
2. Check if the DTC is detected on the self-diagnosis results of “ICC/ADAS”.

Is any DTC detected?

- YES >> GO TO 5.
- NO >> GO TO 3.

3. ACTION TEST

Perform the ICC system action test to check the operation status. Refer to [CCS-83, "Description"](#).

>> GO TO 4.

4. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [DAS-287, "Symptom Table"](#).

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [DAS-261, "DTC Index"](#).

>> GO TO 6.

6. MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

7. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the specific items.
3. Check if the DTC is detected on the self-diagnosis results of “ICC/ADAS”.

Is any DTC detected?

- YES >> GO TO 5.
- NO >> GO TO 8.

8. REPAIR CHECK (ACTION TEST)

Perform the ICC system action test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there any malfunction symptom?

- YES >> GO TO 4.
- NO >> INSPECTION END

FORWARD COLLISION WARNING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[FCW]

SYMPTOM DIAGNOSIS

FORWARD COLLISION WARNING SYSTEM SYMPTOMS

Symptom Table

INFOID:000000009013650

NOTE:

Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptoms		Reference page
Operation	FCW system is not activated	Refer to DAS-288, "Description"
	FCW system setting cannot be turned ON on the navigation screen	Refer to DAS-289, "Description"
	FCW system setting cannot be turned OFF on the navigation screen	

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FCW SYSTEM IS NOT ACTIVATED

< SYMPTOM DIAGNOSIS >

[FCW]

FCW SYSTEM IS NOT ACTIVATED

Description

INFOID:000000009013651

FCW system does not operate by pressing the warning systems switch.

NOTE:

Warning systems switch is shared with LDW system and BSW system.

Diagnosis Procedure

INFOID:000000009013652

1. PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to [DAS-261, "DTC Index"](#).

Is any DTC detected?

- YES >> GO TO 3.
- NO >> GO TO 2.

2. CHECK WARNING SYSTEMS SWITCH CIRCUIT

Check warning systems switch circuit. Refer to [DAS-414, "Component Function Check"](#).

NOTE:

Warning systems switch is shared with LDW system and BSW system.

Is the inspection result normal?

- YES >> Replace the ADAS control unit.
- NO >> GO TO 3.

3. REPAIR OR REPLACE THE SPECIFIC ITEMS

Repair or replace malfunctioning items.

>> INSPECTION END

FCW SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

< SYMPTOM DIAGNOSIS >

[FCW]

FCW SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

Description

INFOID:000000009013653

- FCW system setting is not selectable on the navigation screen.

NOTE:

When the ignition switch is in ACC position, FCW system settings cannot be changed.

- "Forward Collision Warning" is not indicated on the navigation screen.
- The switching between ON and OFF cannot be performed by operating the navigation system.
- The item of "Forward Collision Warning" on the navigation screen is not active.
- After turning ON the ignition switch or starting the engine, FCW settings of the navigation system cannot be selected for several tens of seconds under the following conditions:
 - After replacing AV control unit.
 - After erasing connection history of the navigation system.
 - After erasing self-diagnosis results of AV control unit.
- The FCW system setting differs from the one set at the previous driving.

NOTE:

Turn OFF the ignition switch and wait for 5 seconds or more.

Diagnosis Procedure

INFOID:000000009013654

1. CHECK FCW SYSTEM SETTING

1. Start the engine.
2. Check that the FCW system settings is selectable on the navigation screen.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. PERFORM THE SELF-DIAGNOSIS

1. Perform self-diagnosis with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". Refer to the following.
 - ICC/ADAS: [DAS-261, "DTC Index"](#)
 - MULTI AV: [AV-69, "DTC Index"](#)
 - METER/M&A: [MWI-44, "DTC Index"](#)

Is any DTC detected?

YES >> Repair or replace malfunctioning parts.

NO >> INSPECTION END

3. CHECK DATA MONITOR OF ADAS CONTROL UNIT

Check that "DCA SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> Refer to [AV-37, "On Board Diagnosis Function"](#).

NO >> GO TO 4.

4. CHECK MULTIFUNCTION SWITCH

Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate properly.

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

Description

INFOID:000000009013655

PRECAUTIONS FOR FORWARD COLLISION WARNING (FCW)

- FCW system is intended to warn the driver before a collision but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- As there is a performance limit, the FCW system may not provide a warning in certain conditions.
- The FCW system will not detect the following objects.
 - Pedestrians, animals, or obstacles in the roadway.
 - Oncoming vehicles in the same lane
- FCW system will not detect under the following conditions.
 - When the sensor gets dirty, it is impossible to detect the distance from the vehicle ahead.
 - When driving into a strong light (i.e. sunlight)
- The sensor generally detects signals returned from the reflectors on a vehicle ahead. Therefore, the FCW system may not warn properly under the following conditions:
 - When the reflectors of the vehicle ahead are positioned high or close to each other (including a small vehicle such as motorcycles).
 - When the sensor gets dirty or it is impossible to detect the distance to the vehicle ahead.
 - When the reflectors on the vehicle ahead is missing, damaged or covered.
 - When the reflector of the vehicle ahead is covered with dirt, snow or road spray.
 - When visibility is low (such as rain, fog, snow, etc.).
 - When snow or road spray from traveling vehicles are splashed.
 - When dense exhaust or other smoke (black smoke) from vehicles reduces the visibility of the sensor.
 - When excessively heavy baggage is loaded in the rear seat or the trunk room of own vehicle.
 - When abruptly accelerating or decelerating.
 - On steep downhill or roads with sharp curves.
 - When there is a highly reflective object near the vehicle ahead.
 - i.e.) very close to other vehicle, signboard, etc.
- Depending on certain road conditions (curved, beginning of a curve), vehicle conditions (steering position, vehicle position), or preceding vehicle's conditions (position in lane, etc.), the FCW system may not function properly. The FCW system may detect highly reflective objects such as reflectors, signs, white markers, and other stationary objects on the road or near the traveling lane, and provide unnecessary warning.
- The FCW system may not function in offset conditions.
- The FCW system may not function when the distance to the vehicle ahead is extremely close.
- The FCW system is designed to automatically check the sensor's functionality. If the sensor is covered with ice, a transparent or translucent plastic bag, etc., the system may not detect them. In these instances the FCW system may not be able to warn properly. Be sure to check and clean the sensor regularly.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- A sudden appearance of the vehicle in front (i.e.: when a vehicle abruptly cuts in) may not be detected and the system may not warn soon enough.
- The FCW system will be canceled automatically with a chime sound and the IBA OFF indicator light will illuminate under the following conditions:
 - When the sensor window is dirty
 - When the FCW system malfunctions

WARNING SYSTEMS SWITCH

< REMOVAL AND INSTALLATION >

[FCW]

REMOVAL AND INSTALLATION

WARNING SYSTEMS SWITCH

Removal and Installation

INFOID:000000009013656

REMOVAL

1. Remove the instrument lower panel (LH). Refer to [IP-14. "Removal and Installation"](#).
2. Remove warning systems switch from instrument driver lower panel.

NOTE:

Warning systems switch and automatic back door switch are integrated.

INSTALLATION

Install in the reverse order of removal.

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DAS

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009013657

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Removing of Battery Terminal

INFOID:000000009898573

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

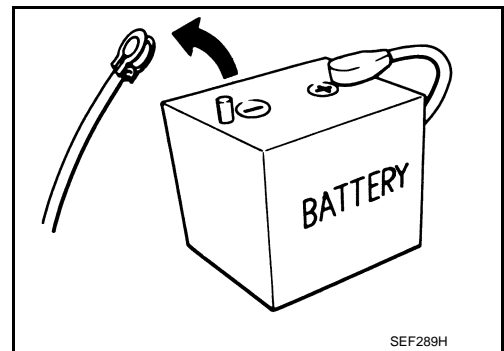
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



Precautions For Harness Repair

INFOID:000000009013658

ITS communication uses a twisted pair line. Be careful when repairing it.

PRECAUTIONS

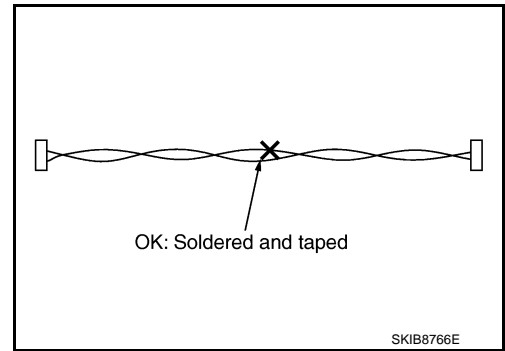
[LDW & LDP]

< PRECAUTION >

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

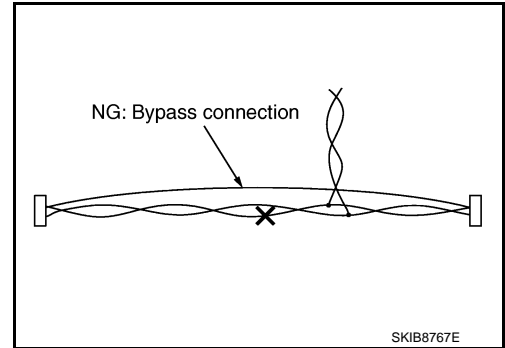
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



Precaution for LDW/LDP System Service

INFOID:000000009013659

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Never use the LDP system when driving with free rollers or a chassis dynamometer.
- Never perform the active test while driving.
- Never disassemble and remodel the lane camera unit.
- Do not use the lane camera unit that is removed from the vehicle.
- Never change LDW initial state ON ⇒ OFF without the consent of the customer.

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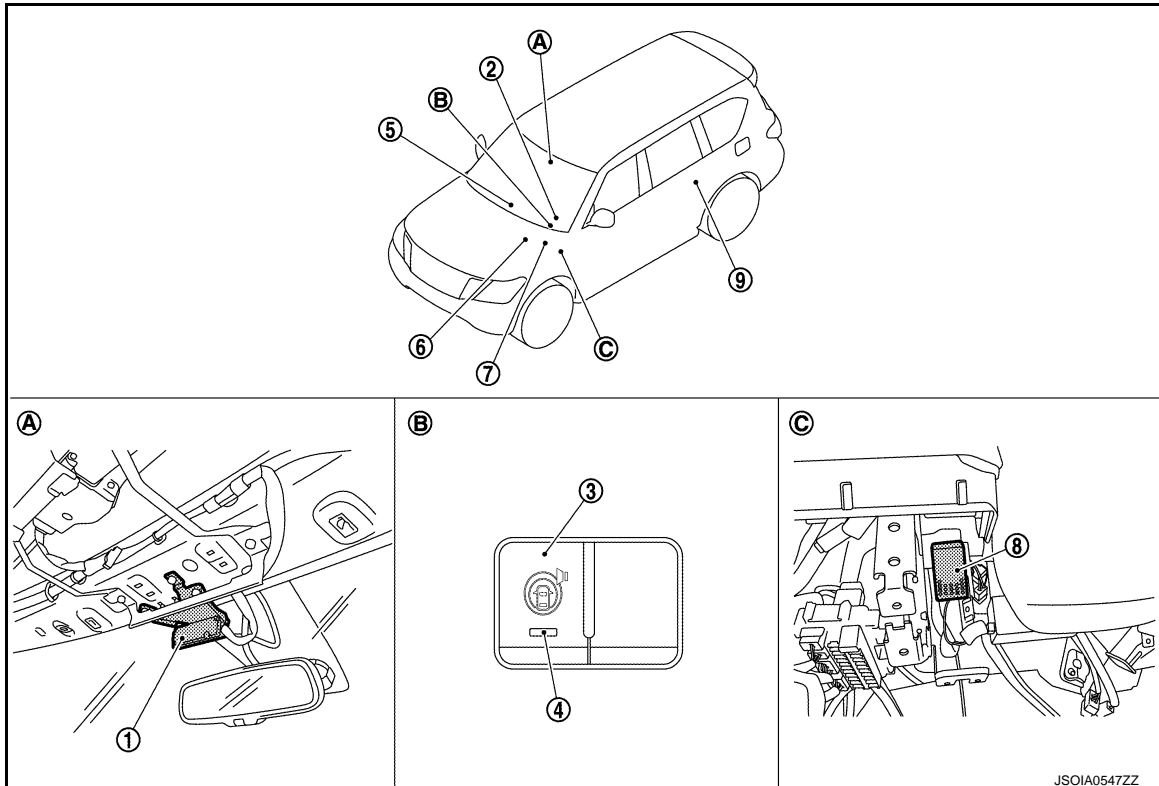
SYSTEM DESCRIPTION

COMPONENT PARTS

LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : Component Parts Location

INFOID:000000009013660



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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Lane camera unit</p> <p>4. Warning systems ON indicator</p> <p>7. BCM
Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"</p> <p>A. Front of the map lamp</p> | <p>2. Lane departure warning lamp (Yellow)
(On the combination meter)</p> <p>5. AV control unit
Refer to AV-12, "Component Parts Location"</p> <p>8. Warning buzzer</p> <p>B. Instrument lower panel (LH)</p> | <p>3. Warning systems switch</p> <p>6. ABS actuator and electric unit (control unit)
Refer to BRC-9, "Component Parts Location"</p> <p>9. ADAS control unit
Refer to DAS-17, "Component Parts Location"</p> <p>C. Behind the instrument lower panel (LH)</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

LANE DEPARTURE WARNING (LDW) SYSTEM : Component Description

INFOID:000000009013661

Component	Description
ADAS control unit	<ul style="list-style-type: none"> Judges the lane departure depending on the lane detection result and each signals Controls the warning buzzer and the warning systems ON indicator Transmits lane departure warning lamp signal to combination meter via CAN communication
Lane camera unit	<ul style="list-style-type: none"> Detects the lane marker in travel lane Transmits the detected lane condition signal to ADAS control unit via ITS communication

COMPONENT PARTS

< SYSTEM DESCRIPTION >

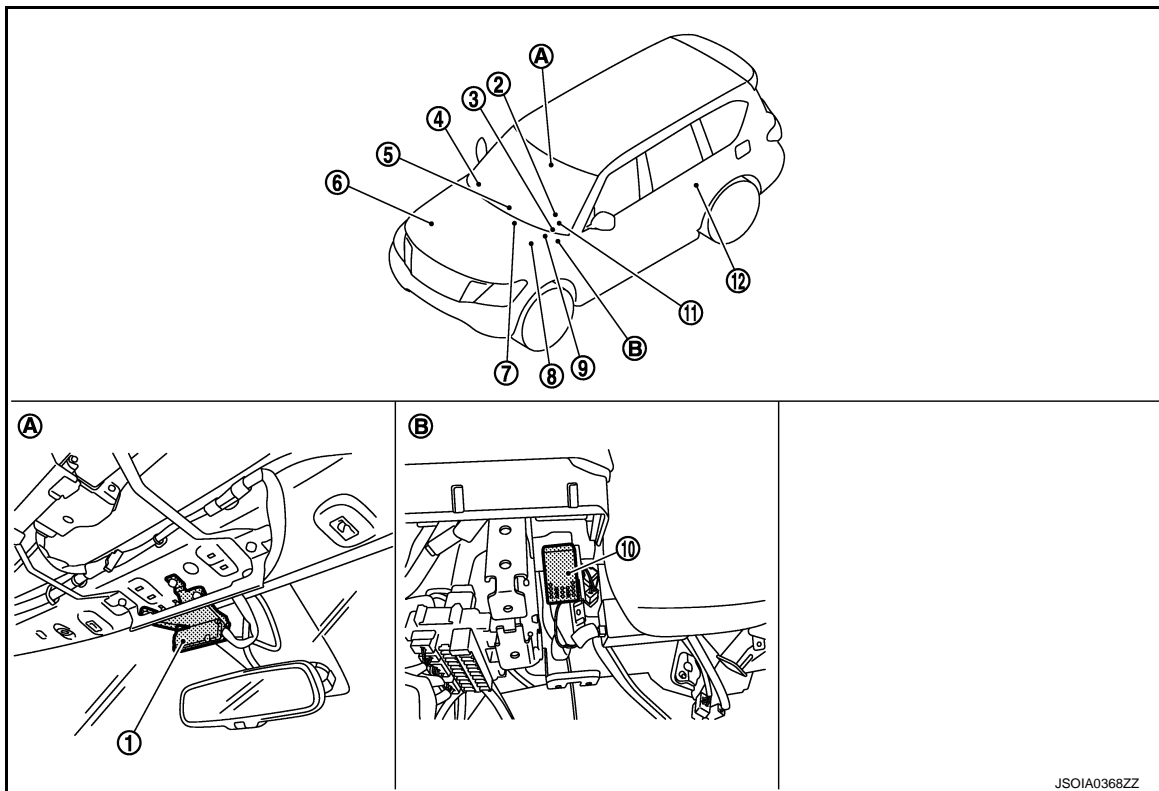
[LDW & LDP]

Component	Description
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal (wheel speed) to ADAS control unit via CAN communication
Warning systems switch	Inputs the warning systems switch signal to ADAS control unit
Warning systems ON indicator (On the warning systems switch)	Turns on the warning systems ON indicator, according to a warning systems ON indicator signal received from the ADAS control unit
Warning buzzer	Activates the warning buzzer, according to a warning buzzer signal received from the ADAS control unit
Combination meter	Turns the lane departure warning lamp ON/OFF according to the signals from ADAS control unit via CAN communication
BCM	Transmits the turn indicator signal to ADAS control unit via CAN communication
AV control unit	Transmits the system selection signal to ADAS control unit via CAN communication

LANE DEPARTURE PREVENTION (LDP) SYSTEM

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Component Parts Location

INFOID:000000009013662



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|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Lane camera unit | 2. Dynamic driver assistance switch (On the ICC steering switch) | 3. • Lane departure warning lamp (Yellow)
• LDP ON indicator (Green) (On the combination meter) |
| 4. Transfer control unit
Refer to DLN-11, "Component Parts Location" | 5. AV control unit
Refer to AV-12, "Component Parts Location" | 6. ECM
Refer to the following
• For USA and Canada: EC-23, "Component Parts Location"
• For Mexico: EC-593, "Component Parts Location" |
| 7. TCM
Refer to TM-11, "A/T CONTROL SYSTEM : Component Parts Location" | 8. ABS actuator and electric unit (control unit)
Refer to BRC-9, "Component Parts Location" | 9. BCM
Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" |

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[LDW & LDP]

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|----------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 10. Warning buzzer | 11. Steering angle sensor
Refer to BRC-9, "Component Parts Location" | 12. ADAS control unit
Refer to DAS-17, "Component Parts Location" |
| A. Front of map lamp | B. Behind instrument lower panel (LH) | |

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Component Description

INFOID:000000009013663

Component	Description
ADAS control unit	<ul style="list-style-type: none"> Judges lane departure based on each signal and calculates yaw moment necessary to generate force toward the direction to recover the vehicle from the lane departure Outputs the warning buzzer signal to the warning buzzer Transmits a target yaw moment signal to the ABS actuator and electric unit (control unit) via CAN communication Transmits the lane departure warning lamp signal and LDP ON indicator lamp signal to combination meter via CAN communication
Lane camera unit	<ul style="list-style-type: none"> Detects the lane marker in travel lane Transmits the detected lane condition signal to ADAS control unit via ITS communication
ABS actuator and electric unit (control unit)	<ul style="list-style-type: none"> Transmits the vehicle speed signal (wheel speed) to ADAS control unit via CAN communication Transmits the yaw rate signal and side G sensor signal to ADAS control unit via CAN communication Receives a target yaw moment signal from the ADAS control unit via CAN communication and controls brake pressure of four wheels, respectively
Warning buzzer	Activates the warning buzzer, according to a warning buzzer signal received from the ADAS control unit
Dynamic driver assistance switch (On the ICC steering switch)	ECM receives an ICC steering switch (dynamic driver assistance switch) signal and transmits the signal to ADAS control unit via CAN communication
Combination meter	Turns on the following indicator/warning lamp, according to a signal received for the ADAS control unit via CAN communication <ul style="list-style-type: none"> LDP ON indicator lamp (Green) Lane departure warning lamp (Yellow)
BCM	Transmits the turn indicator signal to ADAS control unit via CAN communication
ECM	Transmits the accelerator pedal position signal, engine speed signal and ICC steering switch signal (dynamic driver assistance switch signal) to ADAS control unit via CAN communication
Steering angle sensor	Transmits the steering angle sensor signal to ADAS control unit via CAN communication
TCM	Transmits the output shaft revolution signal, input speed signal, current gear position signal and shift position signal to ADAS control unit via CAN communication
Transfer control unit	Transmits the current 4WD mode signal to ADAS control unit via CAN communication
AV control unit	Transmits the system selection signal to ADAS control unit via CAN communication

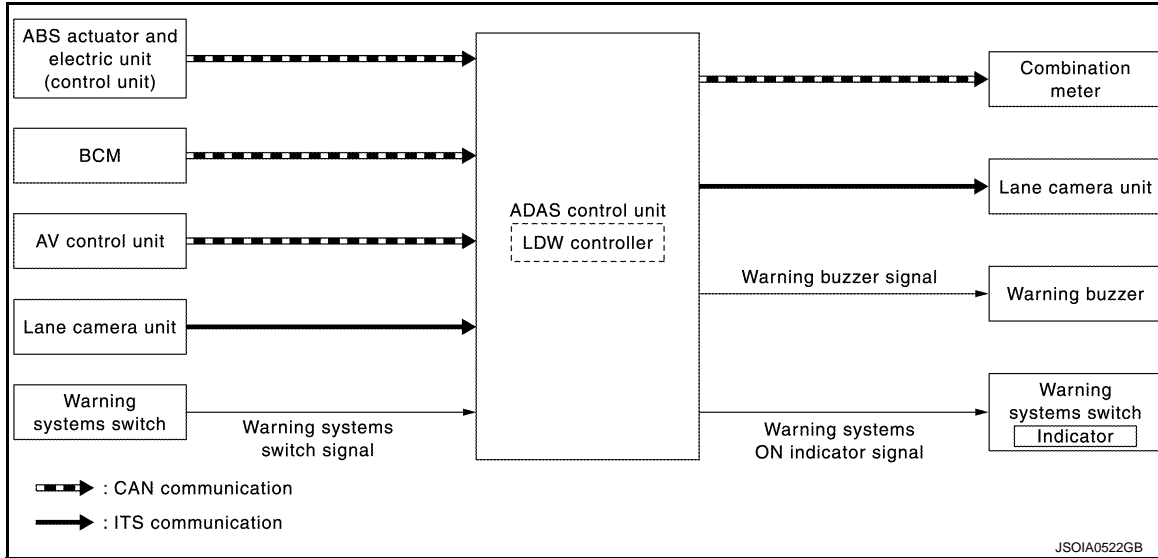
SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : System Description

INFOID:000000009013664

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in "Driver assist" selected with the navigation system
Lane camera unit	ITS communication	Detected lane condition signal	Receives detection results of lane marker
Warning systems switch	Warning systems switch signal		Receives an ON/OFF state of the warning systems switch

Output Signal Item

Reception unit	Signal name		Description
Combination meter	CAN communication	Lane departure warning lamp signal	Transmits a lane departure warning lamp signal to turn ON the lane departure warning lamp
Lane camera unit	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
		Turn indicator signal	Transmits a turn indicator signal received from BCM
Warning buzzer	Warning buzzer signal		Activates the warning buzzer
Warning systems ON indicator	Warning systems ON indicator signal		Turns ON the warning systems ON indicator

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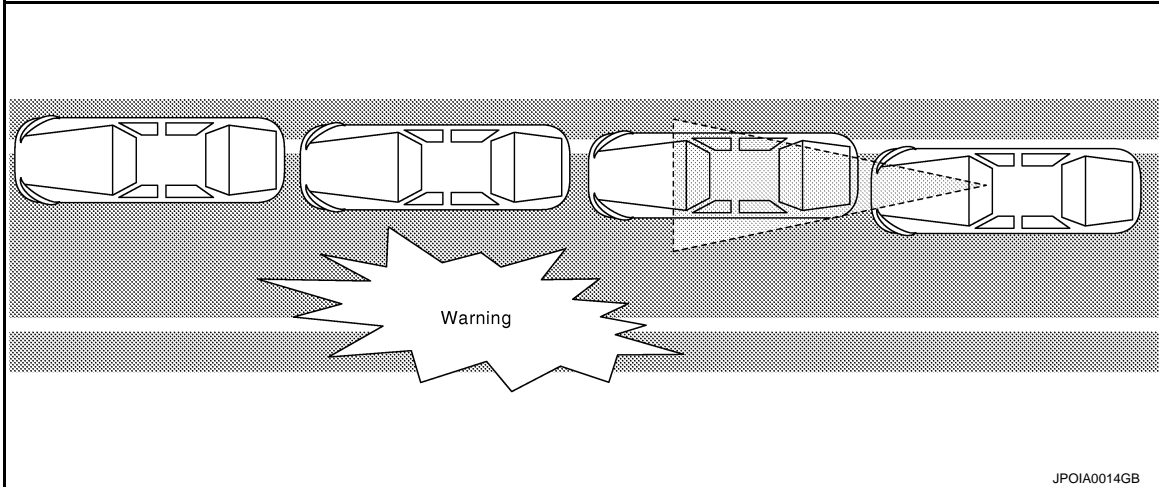
[LDW & LDP]

< SYSTEM DESCRIPTION >

FUNCTION DESCRIPTION

- Lane Departure Warning (LDW) system provides a lane departure warning function when the vehicle is driven at speeds of approximately 70 km/h (45 MPH) or more.
- When the vehicle approaches either the left or the right side of the traveling lane, a warning will sound and the lane departure warning lamp (yellow) on the combination meter will blink to alert the driver.
- The warning does not occur during turn signal operation (Lane change side).
- The warning function will stop when the vehicle returns inside of the lane markers.

EXAMPLE



When the vehicle approaches the right lane marker, the driver is alerted by the buzzer and the blinking of lane departure warning lamp (yellow).

OPERATION DESCRIPTION

- When the system is turned ON by operating the warning systems switch, ADAS control unit turns ON the warning systems ON indicator.
- Lane camera unit monitors lane markers of the traveling lane. It transmits the detected lane condition signal to ADAS control unit via ITS communication.
- When judging from a lane marker detection signal that the vehicle is approaching the lane marker, the ADAS control unit controls the following item to alert the driver.
 - Activates warning buzzer
 - ADAS control unit transmits a lane departure warning lamp signal to combination meter via CAN communication and turns ON/OFF the lane departure warning lamp (yellow).

OPERATING CONDITION

- Warning systems ON indicator: ON
- Vehicle speed: approximately 70 km/h (45 MPH) or more
- Turn indicator signal: After 2 seconds or more from turned OFF

NOTE:

- When the LDW system setting on the navigation screen is ON.
- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 60 km/h (40 MPH)
- LDP ON indicator lamp is OFF
- The LDW system may not function properly, depending on the situation. Refer to [DAS-308. "Precautions for Lane Departure Warning/Lane Departure Prevention"](#)

Bulb Check Action and Fail-safe Indication

SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

Vehicle condition/ Driver's operation	Warning systems ON indicator	Indication on the combination meter
Ignition switch OFF ⇒ ON (Bulb check)	Approx. 5 sec. ON	<p style="text-align: center;">(Yellow) ON (Green) ON</p> <p style="text-align: right; font-size: small;">JPOIA0017GB</p>
When DTC is detected (Except "C1B01" and "C1B03")	ON	<p style="text-align: center;">(Yellow) ON</p> <p style="text-align: right; font-size: small;">JPOIA0019GB</p>
Camera aiming is not completed ("C1B01" is detected) NOTE: This is detected while driving the vehicle and the indication remains ON until the ignition switch is turned OFF	ON	
Temporary disabled status at high temperature ("C1B03" is detected)	ON	<p style="text-align: center;">(Yellow) Blink</p> <p style="text-align: right; font-size: small;">JPOIA0020GB</p>
When the warning systems switch is pressed (When the settings of LDW system, FCW system, and BSW system on the navigation screen are "OFF")	Blink	—

LANE DEPARTURE WARNING (LDW) SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:000000009013665

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

LANE DEPARTURE WARNING (LDW) SYSTEM : Fail-safe (Lane Camera Unit)

INFOID:000000009013666

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the lane departure warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

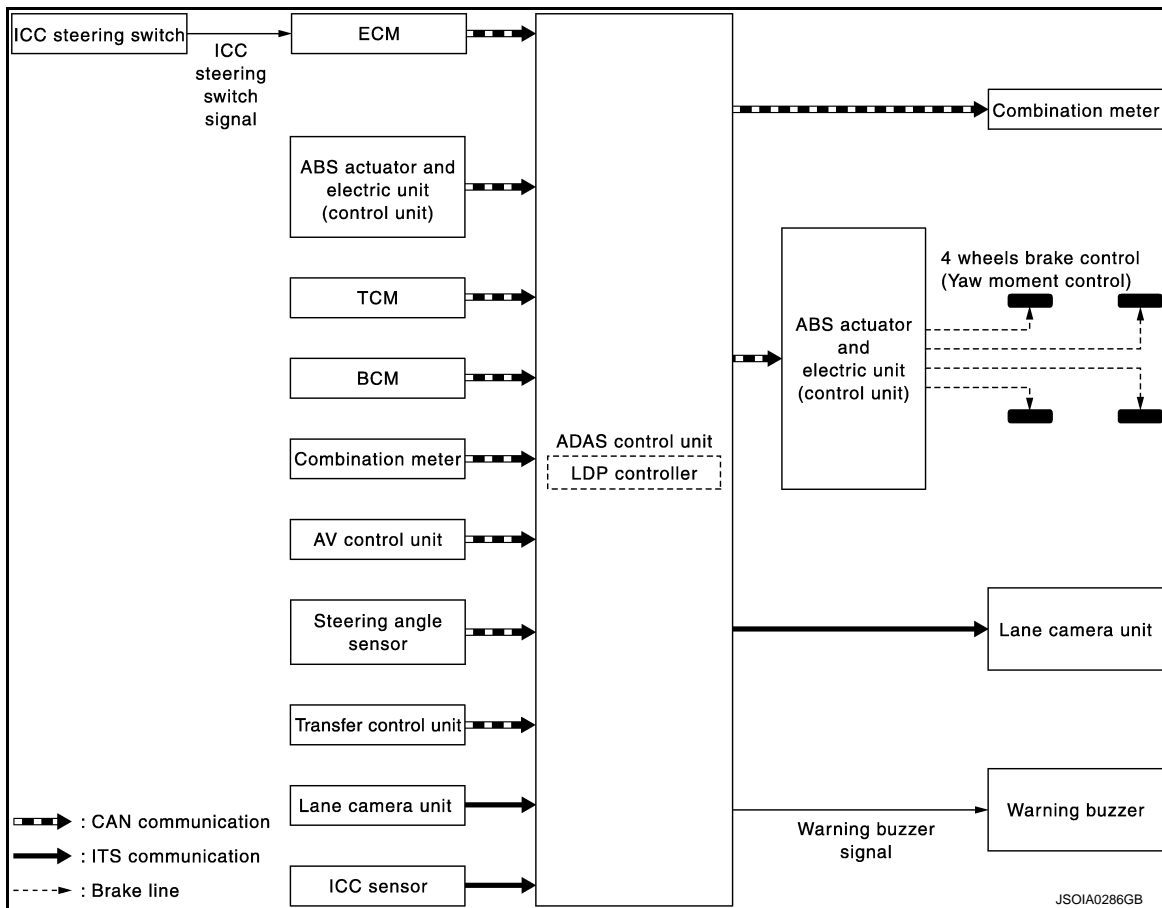
- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the lane departure warning lamp (yellow) in the combination meter will blink.
- When interior temperature is reduced, the system will resume operation automatically and the lane departure warning lamp (yellow) in the combination meter will stop blinking.

LANE DEPARTURE PREVENTION (LDP) SYSTEM

LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description

INFOID:000000009013667

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ECM	CAN communication	Accelerator pedal position signal	Receives accelerator pedal position (angle)
		ICC steering switch signal	Dynamic driver assistance switch signal Receives the operational state of the ICC steering switch
		Engine speed signal	Receives engine speed
		Snow mode switch signal	Receives an operational state of the snow mode

SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

Transmit unit	Signal name		Description
TCM	CAN communication	Input speed signal	Receives the number of revolutions of input shaft
		Current gear position signal	Receives a current gear position
		Shift position signal	Receives a selector lever position
		Output shaft revolution signal	Receives the number of revolutions of output shaft
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS
		ABS operation signal	Receives an operational state of ABS
		TCS malfunction signal	Receives a malfunction state of TCS
		TCS operation signal	Receives an operational state of TCS
		VDC OFF switch signal	Receives an ON/OFF state of VDC
		VDC malfunction signal	Receives a malfunction state of VDC
		VDC operation signal	Receives an operational state of VDC
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
		Yaw rate signal	Receives yaw rate acting on the vehicle
Side G sensor signal	Receives lateral G acting on the vehicle		
Combination meter	CAN communication	Parking brake switch signal	Receives an operational state of the parking brake
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
Steering angle sensor	CAN communication	Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor
		Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel
		Steering angle speed signal	Receives the turning angle speed of the steering wheel
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in "Driver Assistance" selected with the navigation system
Transfer control unit	CAN communication	Current 4WD mode signal	Receives a mode selection state of the 4WD shift switch
ICC sensor	ITS communication	ICC sensor signal	Receives detection results, such as the presence or absence of a vehicle ahead and distance from the vehicle
Lane camera unit	ITS communication	Detected lane condition signal	Receives detection results of lane marker

Output Signal Item

Reception unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Target yaw moment signal	Transmits a target yaw moment signal to generate yaw moment to the vehicle
Combination meter	CAN communication	LDP ON indicator lamp signal	Transmits an LDP ON indicator lamp signal to turn ON the LDP ON indicator lamp
		Lane departure warning lamp signal	Transmits an lane departure warning lamp signal to turn ON the lane departure warning lamp

SYSTEM

< SYSTEM DESCRIPTION >

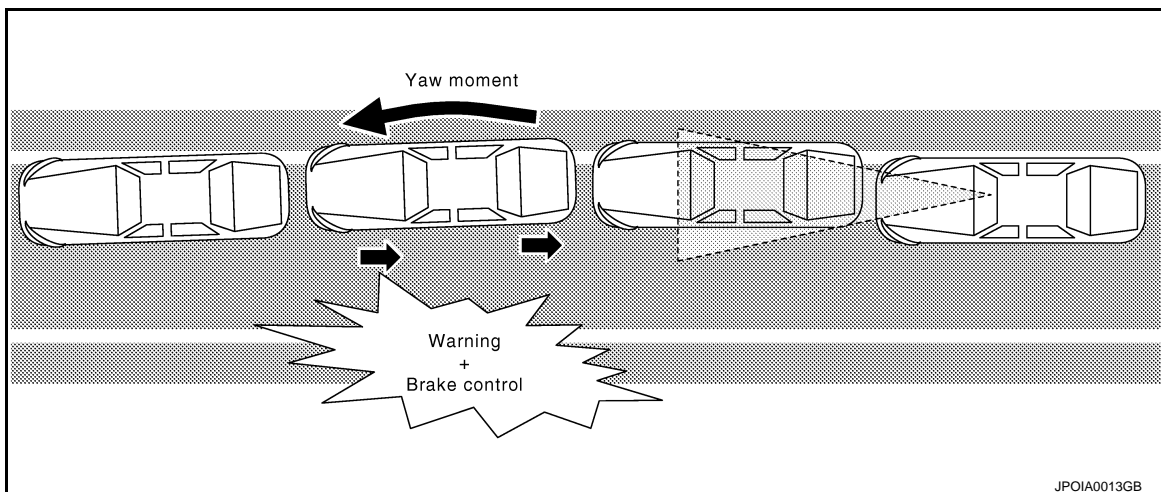
[LDW & LDP]

Reception unit	Signal name		Description
Lane camera unit	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
		Turn indicator signal	Transmits a turn indicator signal received from BCM
Warning buzzer	Warning buzzer signal		Activates the warning buzzer

FUNCTION DESCRIPTION

- Lane Departure Prevention (LDP) system provides a lane departure warning and brake control assistance when the vehicle is driven at speeds of approximately 70 km/h (45 MPH) or more.
- When the vehicle approaches either the left or the right side of the traveling lane, a warning sounds and the lane departure warning lamp (yellow) on the combination meter blinks to alert the driver. Then, the LDP system automatically applies the brakes for a short period of time to help assist the driver to return the vehicle to the center of the traveling lane.
- Warning and brake control are not performed during turn signal operation (lane change side).
- The warning and assist functions stop when the vehicle returns to a position inside of the lane marker.

EXAMPLE



When the vehicle approaches the right lane marker, the driver is alerted by the buzzer and the blinking of lane departure warning lamp (yellow). Simultaneously, the left brake is controlled independently to generate force toward the direction to recover the vehicle from the lane departure.

OPERATION DESCRIPTION

- When the system is turned ON by dynamic driver assistance switch, ADAS control unit transmits LDP ON indicator signal to combination meter via CAN communication.
- Lane camera unit monitors lane markers of the traveling lane. It transmits the detected lane condition signal to ADAS control unit via ITS communication.
- When judging from a lane marker detection signal that the vehicle is approaching the lane marker, ADAS control unit controls the following items.
 - Activates warning buzzer.
 - Transmits a lane departure warning lamp signal to combination meter via CAN communication.
 - Calculates necessary yaw moment to transmit a target yaw moment signal to ABS actuator and electric unit (control unit) via CAN communication.
- When receiving the target yaw moment signal, ABS actuator and electric unit (control unit) controls brake pressure of four wheels, respectively.
- When receiving the signal from ADAS control unit, combination meter turns ON/OFF the lane departure warning lamp (yellow) and the LDP ON indicator lamp (green).

OPERATING CONDITION

- LDP ON indicator lamp: ON
- Vehicle speed: approximately 70 km/h (45 MPH) or more
- Turn indicator signal: After 2 seconds or more from turned OFF

NOTE:

- When the LDP system setting on the navigation screen is ON.

SYSTEM

< SYSTEM DESCRIPTION >

[LDW & LDP]

- After the operating conditions are satisfied, the control continues until the vehicle speed reaches approximately 60 km/h (40 MPH).
- The LDP system may not function properly, depending on the situation. Refer to [DAS-308. "Precautions for Lane Departure Warning/Lane Departure Prevention"](#).

Bulb Check Action and Fail-safe Indication

Vehicle condition/ Driver's operation	Indication on the combination meter	Buzzer
Ignition switch OFF ⇒ ON (Bulb check)	<p style="text-align: center;">(Yellow) ON (Green) ON</p> <p style="text-align: center;">JPOIA0017GB</p>	—
When DTC is detected (Except "C1B01" and "C1B03")	<p style="text-align: center;">(Yellow) ON</p> <p style="text-align: center;">JPOIA0019GB</p>	Beep
Camera aiming is not completed ("C1B01" is detected) NOTE: This is detected while driving the vehicle and the indication remains ON until the ignition switch is turned OFF		
Temporary disabled status at high temperature ("C1B03" is detected)	<p style="text-align: center;">(Yellow) Blink</p> <p style="text-align: center;">JPOIA0020GB</p>	Beep
When the dynamic driver assistance switch is pressed (When the settings of LDP system, DCA system and Blind Spot Intervention system on the navigation screen are "OFF")	<p style="text-align: center;">(Green) Blink</p> <p style="text-align: center;">JPOIA0036GB</p>	—

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:000000009013668

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel

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[LDW & LDP]

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Fail-safe (Lane Camera Unit)

INFOID:000000009013669

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the lane departure warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

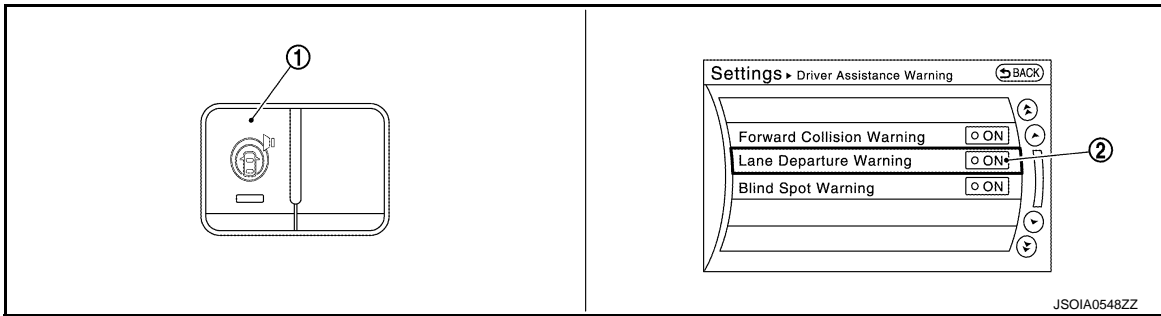
- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and lane departure warning lamp (yellow) in the combination meter will blink.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON and the lane departure warning lamp (yellow) in the combination meter will stop blinking.

OPERATION

LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : Switch Name and Function

INFOID:000000009013670

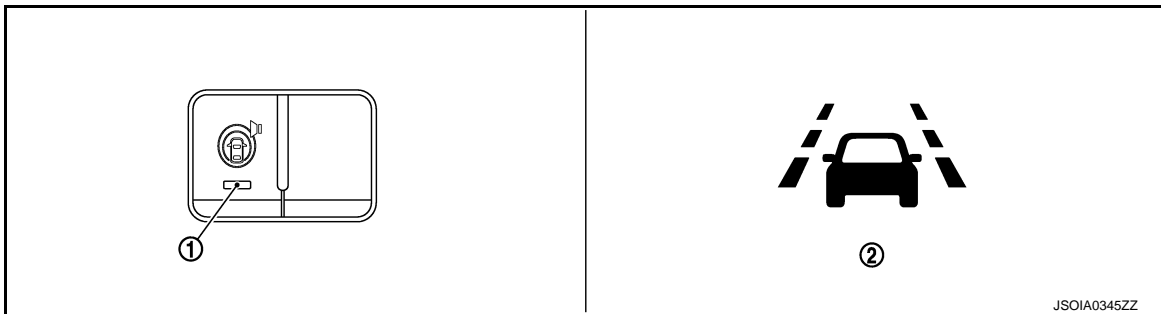


No.	Switch name	Description
1	Warning systems switch	Turns LDW system ON/OFF (When the setting of LDW system on the navigation system screen is ON)
2	LDW system setting screen (Navigation system setting screen)	Turns setting of LDW system can be switched between ON and OFF

LANE DEPARTURE WARNING (LDW) SYSTEM : Menu Displayed by Pressing Each Switch

INFOID:000000009013671

INDICATOR LAMP AND WARNING LAMP



No.	Display item	Description
1	Warning systems ON indicator	<ul style="list-style-type: none"> Indicates that the LDW, FCW, and/or BSW system is ON Blinks when the setting of LDW, FCW, and BSW are "OFF" and the warning systems switch is pressed
2	Lane departure warning lamp	<ul style="list-style-type: none"> Blinks when LDW system is activated Turns ON when LDW system has a malfunction Blinks when the temperature of the lane camera unit becomes high

DISPLAY AND WARNING

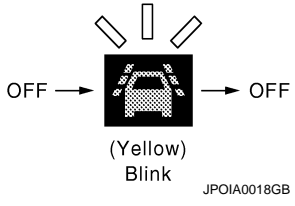
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OPERATION

< SYSTEM DESCRIPTION >

[LDW & LDP]

Vehicle condition/ Driver's operation		Action	Warning systems ON indicator	Indication on the combination meter	Buzzer
Less than Approx. 60 km/h (40 MPH)	Close to lane marker	No action	ON	OFF	—
Approx. 70 km/h (45 MPH) or more	Close to lane marker	Warning <ul style="list-style-type: none"> • Buzzer sounds • Warning lamp blinks 	ON		Short continuous beeps
	<ul style="list-style-type: none"> • Close to lane marker • Turn signal ON (Deviate side) 	No action	ON	OFF	—

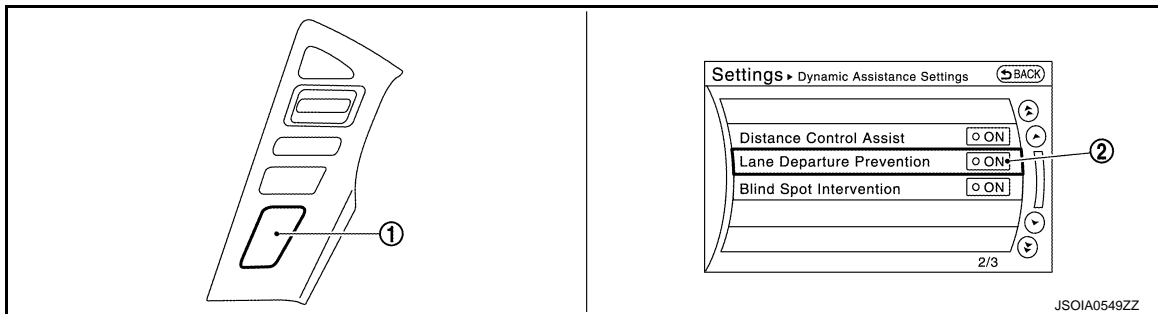
NOTE:

After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 60 km/h (40 MPH). Refer to [DAS-297. "LANE DEPARTURE WARNING \(LDW\) SYSTEM : System Description"](#).

LANE DEPARTURE PREVENTION (LDP) SYSTEM

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Switch Name and Function

INFOID:000000009013672

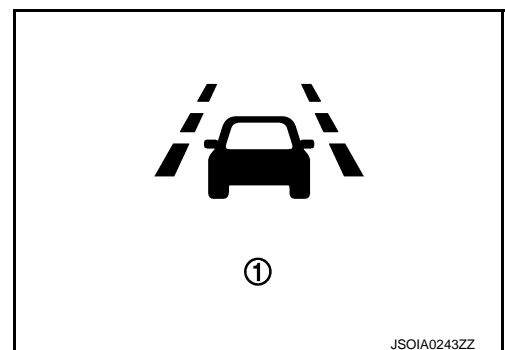


No.	Switch name	Description
1	Dynamic driver assistance switch	Turns LDP system ON/OFF (When the setting of LDP system on the navigation system setting screen is ON)
2	LDP system settings screen (Navigation system settings screen)	The setting of LDP system can be switched between ON and OFF

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Menu Displayed by Pressing Each Switch

INFOID:000000009013673

INDICATOR LAMP AND WARNING LAMP




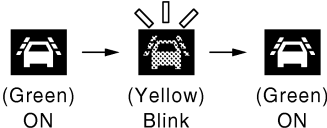

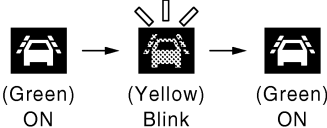

OPERATION

< SYSTEM DESCRIPTION >

[LDW & LDP]

No.	Display item	Description
1	LDP ON indicator (green)	<ul style="list-style-type: none"> Indicates that LDP system is ON Blinks when dynamic driver assistance switch is pressed (When the setting of LDP system and DCA system are "OFF")
	Lane departure warning lamp (yellow)	<ul style="list-style-type: none"> Blinks when the warning of LDP system occurs Turns ON when LDP system has a malfunction Blinks when the temperature of lane camera unit becomes high

DISPLAY AND WARNING

Vehicle condition/ Driver's operation	Action	Indication on the combination meter	Buzzer	
Less than Approx. 60 km/h (40 MPH)	Close to lane marker	 (Green) ON <small>JPOIA0021GB</small>	—	
Approx. 70 km/h (45 MPH) or more	Close to lane marker	 (Green) ON → (Yellow) Blink → (Green) ON <small>JPOIA0022GB</small>	Short continuous beeps	
	<ul style="list-style-type: none"> Close to lane marker Turn signal ON (Deviate side) 	 (Green) ON <small>JPOIA0021GB</small>	—	
	Close to lane with soft braking	Warning <ul style="list-style-type: none"> Buzzer sounds Warning lamp blinks 	 (Green) ON → (Yellow) Blink → (Green) ON <small>JPOIA0022GB</small>	Short continuous beeps
	<ul style="list-style-type: none"> VDC OFF Switch OFF ⇒ ON (VDC system ON ⇒ OFF) SNOW mode switch OFF ⇒ ON 4WD shift switch is in the 4H or 4L 	Cancellation <ul style="list-style-type: none"> Buzzer sounds Indicator lamp blinks NOTE: When dynamic driver assistance switch is ON ⇒ OFF, indicator lamp is turned OFF	 (Green) ON → (Green) Blink <small>JPOIA0023GB</small>	Beep

NOTE:

After the operating conditions are satisfied, the control continues until the vehicle speed reaches approximately 60 km/h (40 MPH). Refer to [DAS-300. "LANE DEPARTURE PREVENTION \(LDP\) SYSTEM : System Description"](#).

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HANDLING PRECAUTION

Precautions for Lane Departure Warning/Lane Departure Prevention

INFOID:000000009013674

LANE CAMERA UNIT HANDLING

To keep the proper operation of the LDW/LDP systems and prevent a system malfunction, be sure to observe the following:

- Always keep the windshield clean.
- Do not attach a sticker (including transparent material) or install an accessory near the lane camera unit.
- Do not place reflective materials, such as white paper or a mirror, on the instrument panel. The reflection of sunlight may adversely affect the lane camera unit capability of detecting the lane markers.
- Do not strike or damage the areas around the lane camera unit.
- Do not touch the camera lens.
- Do not remove the screw located on the lane camera unit.

LANE DEPARTURE WARNING (LDW)

- LDW system is only a warning device to inform the driver of a potential unintended lane departure. It will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of the vehicle at all times.
- LDW system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- LDW system may not function properly under the following conditions:
 - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers; or lane markers covered with water, dirt or snow, etc.
 - On roads where the discontinued lane markers are still detectable.
 - On roads where there are sharp curves.
 - On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs. (The LDW system could detect these items as lane markers.)
 - On roads where the traveling lane merges or separates.
 - When the vehicle's traveling direction does not align with the lane marker.
 - When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range.
 - When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
 - When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
 - When strong light enters the lane camera unit. (For example, the light directly shines on the front of the vehicle at sunrise or sunset.)
 - When a sudden change in brightness occurs. (For example, when the vehicle enters or exits a tunnel or under a bridge.)

LANE DEPARTURE PREVENTION (LDP)

- LDP system will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of vehicle at all times.
- LDP system is primarily intended for use on well-developed freeways or highways. It may not detect the lane markers in certain roads, weather or driving conditions.
- Using the LDP system under some conditions of road, lane marker or weather, or when driver change lanes without using the turn signal could lead to an unexpected system operation. In such conditions, driver needs to correct the vehicle's direction with driver's steering operation to avoid accidents.
- When the LDP system is operating, avoid excessive or sudden steering maneuvers. Otherwise, driver could lose control of the vehicle.
- The LDP system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers.
- The LDP system may not function properly under the following conditions, and do not use the LDP system:
 - During bad weather (rain, fog, snow, wind, etc.).
 - When driving on slippery roads, such as on ice or snow, etc.
 - When driving off-road such as on sand or rock, etc.
 - When driving on winding or uneven roads.
 - When there is a lane closure due to road repairs.
 - When driving in a makeshift lane.
 - When driving on roads where the lane width is too narrow.

HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

[LDW & LDP]

- When driving without normal tire conditions (for example, tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels). A
- When the vehicle is equipped with non-original brake parts or suspension parts.
- When towing a trailer or other vehicle.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard. B
- The functions of the LDP system (warning and brake control assist) may or may not operate properly under the following conditions: C
 - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers or lane markers covered with water, dirt or snow, etc.
 - On roads where discontinued lane markers are still detectable.
 - On roads where there are sharp curves.
 - On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs (The LDP system could detect these items as lane markers.). D
 - On roads where the traveling lane merges or separates.
 - When the vehicle's traveling direction does not align with the lane marker. E
 - When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range.
 - When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
 - When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
 - When strong light enters the lane camera unit (For example, the light directly shines on the front of the vehicle at sunrise or sunset.) F
 - When a sudden change in brightness occurs (For example, when the vehicle enters or exits a tunnel or under a bridge.) G
- While the LDP system is operating, driver may hear a sound of brake operation. This is normal and indicates that the LDP system is operating properly. H

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

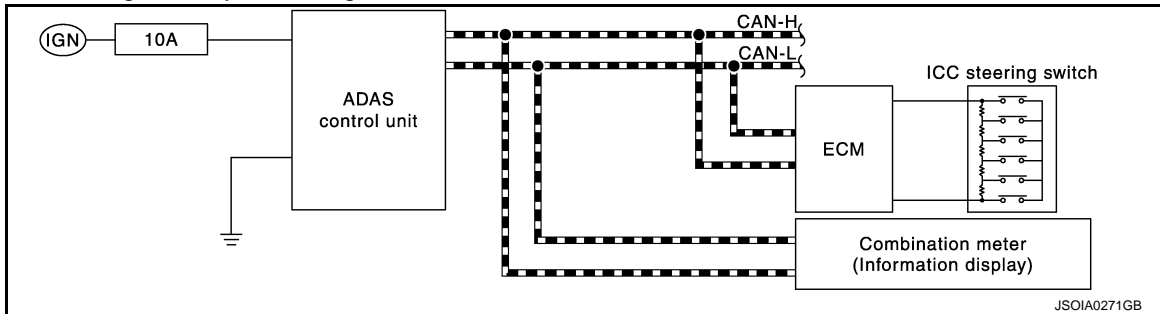
On Board Diagnosis Function

INFOID:000000009910693

DESCRIPTION

The DTC is displayed on the information display by operating the ICC steering switch.

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

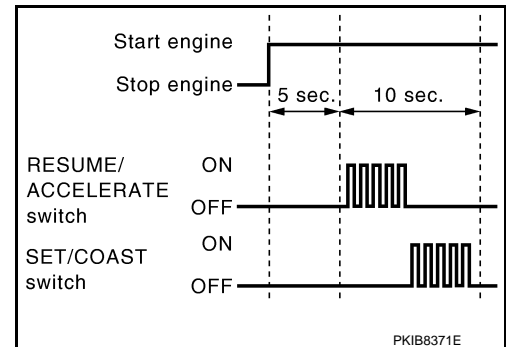
Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)

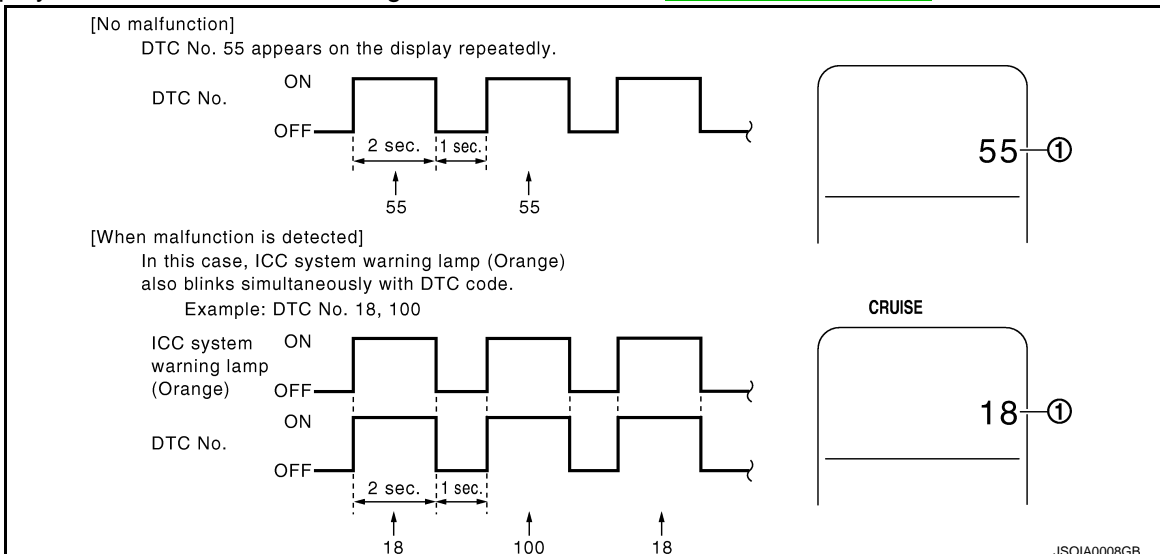
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [DAS-45, "DTC Index"](#).



NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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- It displays for up to 5 minutes and then stops.
- If multiple malfunctions exist, up to 6 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-30, "On Board Diagnosis Function"
ICC steering switch malfunction		Perform the inspection for DTC"C1A06". Refer to CCS-100, "Diagnosis Procedure"
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		<ul style="list-style-type: none"> • Check power supply and ground circuit of ADAS control unit. Refer to DAS-71, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for "ICC/ADAS"with CONSULT, and then check the malfunctioning parts. Refer to DAS-45, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Start the engine, and then start the on board self-diagnosis.
3. Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

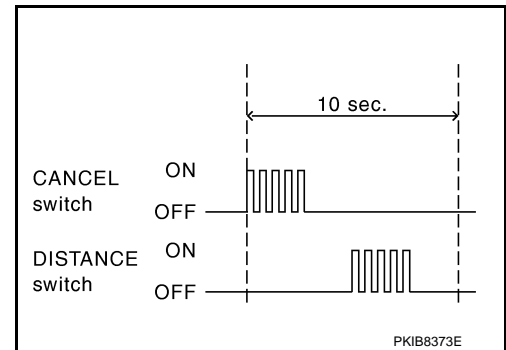
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

5. Turn ignition switch OFF, and finish the diagnosis.



CONSULT Function (ICC/ADAS)

INFOID:000000009910694

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit.

Diagnosis mode	Description
Work Support	Displays causes of automatic system cancellation occurred during system control
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit
Data Monitor	Displays ADAS control unit input/output data in real time
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load
Ecu Identification	Displays ADAS control unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication

WORK SUPPORT

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[LDW & LDP]

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • Conventional (fixed speed) cruise control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Lane Departure Prevention (LDP) • Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Back-up Collision Intervention (BCI)

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description
OPERATING WIPER	×			The wiper operates at HI (it includes when the wiper is operated at HI with the wiper switch AUTO position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor light sensing part
LASER TEMP	×		×	Temperature around ICC sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH)
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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[LDW & LDP]

TIRE SLIP	×	×		Wheel slipped	A
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	
PARKING BRAKE ON	×	×		The parking brake is operating	
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values	B
INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less	
CAN COMM ERROR	×	×	×	ADAS control unit received an abnormal signal with CAN communication	C
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system	
ECD CIRCUIT	×	×	×	An abnormal condition occurs in ECD system	D
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed	
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously	E
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high	
ICC SENSOR CAN COMM ERR	×		×	Communication error between ADAS control unit and the ICC sensor	F
4WD LOCK MODE	×	×	×	Shifting of the 4WD shift switch to 4H or 4L	
ABS WARNING LAMP	×		×	ABS warning lamp ON	G
NO RECORD	×	×	×	—	

Display Items for The Cause of Automatic Cancellation 2

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description	
OPE VDC/TCS/ABS 1	×		The activation of VDC, TCS, or ABS during LDP system control	K
Vehicle dynamics	×		Vehicle behavior exceeds specified value	
Steering speed	×		Steering speed was more than the specified value in evasive direction	L
End by yaw angle	×		Yaw angle was the end of LDP control	
Departure yaw large	×		Detected more than the specified value of yaw angle in departure direction	
ICC WARNING	×		Target approach warning of ICC system, IBA system, or FCW system was activated	M
CURVATURE	×		Road curve was more than the specified value	
Steering angle large	×		Steering angle was more than the specified value	N
Brake is operated	×		Brake pedal was operated	
IGN LOW VOLT	×		Decrease in ADAS control unit IGN voltage	
Lateral offset	×		Distance of vehicle and lane was detached in lateral direction more than the specified value	DAS
Lane marker lost	×		Lane camera unit lost the trace of lane marker	
Lane marker unclear	×		Detected lane marker was unclear	P
Yaw acceleration	×		Detected yawing speed was more than the specified value	
Deceleration large	×		Deceleration in a longitudinal direction was more than the specified value	
Accel is operated	×		Accelerator pedal was depressed	
Departure steering	×		Steering wheel was steered more than the specified value in departure direction	
Evasive steering	×		Steering wheel was steered more than the specified value in the evasive direction	

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
R range	×		Selector lever was operated to R range
Parking brake drift	×		Rear wheels lock was detected
Not operating condition	×		Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
4WD LOCK MODE	×		Shifting of the 4WD shift switch to 4H or 4L
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker unclear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
BSI) 4WD LOCK MODE		×	Shifting of the 4WD shift switch to 4H or 4L

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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[LDW & LDP]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Back-up Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	—
APA POWER	×	Decrease in accelerator pedal actuator ignition or battery voltage
VEHICLE SPEED UP	×	Vehicle speed higher than 8 km/h (5 MPH)

SELF DIAGNOSTIC RESULT

Refer to [DAS-45. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
THRTL SENSOR [deg]	×	×				NOTE: The item is displayed, but it is not monitored
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
YAW RATE [deg/s]	×					NOTE: The item is displayed, but it is not monitored
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of “D” or “M” positions read from ADAS control unit through CAN communication; ON when position “D” or “M” (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
VHCL SPD AT [km/h] or [mph]	×					Indicates vehicle speed calculated from A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×					Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [ON/OFF] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed
IBA SW [On/Off]	×	×				Indicates [On/Off] status of IBA OFF switch
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of warning systems ON indicator output
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system
READY signal [On/Off]			×			Indicates LDP system settings

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
Camera lost [Detect/Deviate/Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection signal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)
STATUS signal [Stnby/Warn/Cancl/Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an ON/OFF state of the lane marker. The ON/OFF state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
FUNC ITEM (NV-ICC) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
FUNC ITEM (NV-DCA) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
DCA SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
NAVI ICC SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
NAVI DCA SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
SYS SELECTABILITY [On/Off]	×	×	×	×		Indicates the availability of ON/OFF switching for "Driver Assistance" items received from the AV control unit via CAN communication
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system
4WD SW [AUTO, 4H, 4L]	×		×	×		Indicates [On/Off] status as judged from current 4WD mode signal (Transfer control unit transmits current 4WD mode signal through CAN communication)
BCI SWITCH [On/Off]					×	Indicates [On/Off] status of BCI switch
BCI SYSTEM ON [On/Off]					×	Indicates [On/Off] status of Back-up Collision Intervention system
BCI ON IND [On/Off]					×	Indicates [On/Off] status of BCI ON indicator
BCI OFF IND [On/Off]					×	Indicates [On/Off] status of BCI OFF indicator
BCI WARNING IND [On/Off]					×	Indicates [On/Off] status of BCI malfunction indicator
BCI HI TEMP WARN IND [On/Off]					×	Indicates [On/Off] status of BCI not available indicator
BATTERY CIRCUIT OFF [Off]						NOTE: The item is displayed, but it is not monitored

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning lamp is illuminated.**
 - ICC system warning lamp
 - Lane departure warning lamp
 - Blind Spot Warning/Blind Spot Intervention warning lamp
 - IBA OFF indicator lamp (IBA system ON)
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
Active Pedal	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF operations as necessary

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Test item	Description
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	<ul style="list-style-type: none"> • MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the combination meter via CAN communication <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signals to the combination meter via CAN communication	Intermittent beep sound
	Test start	Starts the tests of "MODE1"	—
	Reset	Stops transmitting the buzzer output signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

BRAKE ACTUATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3"	—
	Reset	Stops transmitting the brake fluid pressure control signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

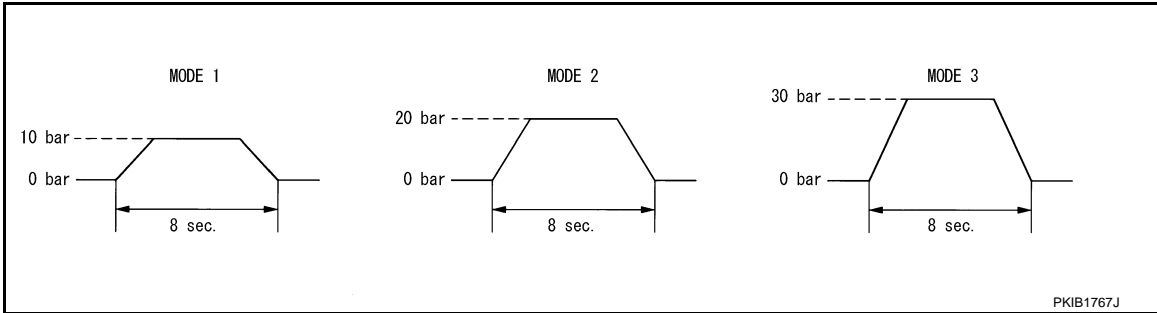
NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

The test is finished in 10 seconds after starting



Active Pedal

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

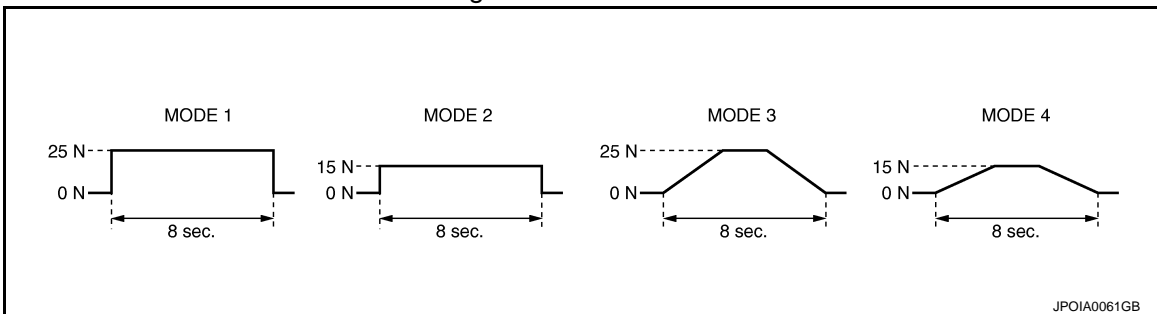
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
Active Pedal	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3” and “MODE4”	—
Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—	
End	Returns to the “SELECT TEST ITEM” screen	—	

NOTE:

The test is finished in 10 seconds after starting



DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test	—
	On	Transmits the DCA system switch indicator signal to the combination meter via CAN communication	ON

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

LDP BUZZER

Test item	Operation	Description	Warning buzzer
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	—
	On	Transmits the warning buzzer signal to the warning buzzer	ON

WARNING SYSTEM IND

Test item	Operation	Description	Warning systems ON indicator
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	—
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

LDP ON IND

Test item	Operation	Description	LDP ON indicator lamp (Green)
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal below to end the test	—
	On	Transmits the LDP ON indicator lamp signal to the combination meter via CAN communication	ON

LANE DEPARTURE W/L

Test item	Operation	Description	Lane departure warning lamp (Yellow)
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp signal below to end the test	—
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON

BSW/BSI WARNING LAMP

Test item	Operation	Description	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow)
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot Intervention warning lamp signal below to end the test	—
	On	Transmits the Blind Spot Warning/Blind Spot Intervention warning lamp signal to the combination meter via CAN communication	ON

BSI ON INDICATOR

Test item	Operation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indicator signal below to end the test	—
	On	Transmits the Blind Spot Intervention ON indicator signal to the combination meter via CAN communication	ON

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT Function (LANE CAMERA)

INFOID:000000009013677

APPLICATION ITEMS

CONSULT performs the following functions by communicating with the lane camera unit.

Diagnosis mode	Description
Work Support	Performs the camera aiming
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the lane camera unit
Data Monitor	Displays lane camera unit input/output data in real time
Ecu Identification	Displays lane camera unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of ITS communication

WORK SUPPORT

Work support items	Description
AUTO AIM	Outputs camera unit, calculates dislocation of the camera, and displays adjustment direction.
AIM CHECK	NOTE: The item is indicated, but not used

SELF DIAGNOSTIC RESULT

Refer to [DAS-493. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	Description
LC INACCURAT [On/Off]	Lane camera unit status
AIMING DONE [OK/NG]	Status that camera aiming is done
AIMING RESULT [OK/NOK]	Result of camera aiming
CAM HIGH TEMP [NORMAL/High]	Status of lane camera unit high temperature judgment
VHCL SPD SE [km/h] or [mph]	Vehicle speed received from ADAS control unit via ITS communication
TURN SIGNAL [Off, LH, RH, LH/RH]	Status of "Turn signal" determined from ADAS control unit via ITS communication
LANE DETCT LH [On/Off]	Left side lane marker detection
LANE DETCT RH [On/Off]	Right side lane marker detection
CROSS LANE LH [On/Off]	Condition that the vehicle is crossing left lane marker
CROSS LANE RH [On/Off]	Condition that the vehicle is crossing right lane marker
WARN LANE LH [On/Off]	Warning for left lane marker
WARN LANE RH [On/Off]	Warning for right lane marker
VALID POS LH [VLD/INVLD]	Lateral position for left lane marker is valid
VALID POS RH [VLD/INVLD]	Lateral position for right lane marker is valid
XOFFSET [pixel]	Lane camera unit installation condition
AIM CHECK YAW [deg]	Check result of camera aiming
AIM CHECK ROLL [deg]	Check result of camera aiming
AIM CHECK PITCH [deg]	Check result of camera aiming

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitored item [Unit]	Description
FCTRY AIM YAW [deg]	Lane camera unit installation condition
FCTRY AIM ROL [deg]	Lane camera unit installation condition
FCTRY AIM PIT [deg]	Lane camera unit installation condition
ADAS MALF [On/Off]	ADAS control unit status

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:000000009910695

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> • Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehicle speed calculated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	On
		When the buzzer of the following system not operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
BA WARNING	Engine running	IBA OFF indicator lamp ON <ul style="list-style-type: none"> • When IBA system is malfunctioning • When IBA system is turned to OFF 	On
		IBA OFF indicator lamp OFF <ul style="list-style-type: none"> • When IBA system is normal • When IBA system is turned to ON 	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
		When ICC brake hold relay is not activated	Off
D RANGE SW	Engine running	When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Condition		Value/Status
GEAR	While driving		Displays the gear position
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> Drive the vehicle and activate the conventional (fixed speed) cruise control mode Press SET/COAST switch 	SET switch indicator ON	On
		SET switch indicator OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is pressed	On
		When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dynamic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
IBA SW	Ignition switch ON	When the IBA OFF switch is pressed	On
		When the IBA OFF switch is not pressed	Off
FCW SYSTEM ON	Ignition switch ON	When the FCW system is ON (Warning systems ON indicator ON)	On
		When the FCW system is OFF (Warning systems ON indicator OFF)	Off
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator pedal actuator
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON (Warning systems ON indicator ON)	On
		When the LDW system is OFF (Warning systems ON indicator OFF)	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Condition		Value/Status
LDP ON IND	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp ON	On
		LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Drive the vehicle and activate the LDW system or LDP system	Lane departure warning lamp ON	On
		Lane departure warning lamp OFF	Off
LDW BUZER OUT-PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system	When the buzzer of the following system operates • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	On
		When the buzzer of the following system does not operate • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	Off
LDP SYSTEM ON	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
READY signal	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
Camera lost	Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	<ul style="list-style-type: none"> • Engine running • While driving 		Displays the shift position
Turn signal	Turn signal lamps OFF		Off
	Turn signal lamp LH blinking		LH
	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH blinking		LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
		Vehicle turning left	Positive value
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off
STATUS signal	Drive the vehicle with the LDP system turned ON	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV-DCA)	NOTE: The item is indicated, but not monitored		Off
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the navigation system is ON	On
		"Distance Control Assist" set with the navigation system is OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Condition		Value/Status
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the navigation system is ON	On
		"Lane Departure Prevention" set with the navigation system is OFF	Off
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the navigation system is ON	On
		"Blind Spot Intervention" set with the navigation system is OFF	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored		Off
NAVI DCA SELECT	NOTE: The item is indicated, but not monitored		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the navigation system can be switched normally	On
		Items set with the navigation system cannot be switched normally	Off
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
		Blind Spot Intervention ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON (Warning systems ON indicator ON)	On
		When the BSW system is OFF (Warning systems ON indicator OFF)	Off
BSI SYSTEM ON	Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
		When the Blind Spot Intervention system is OFF	Off
4WD SW	Engine running	4WD shift switch position is in AUTO	AUTO
		4WD shift switch position is in 4H	4H
		4WD shift switch position is in 4L	4L
BCI SWITCH	Ignition switch ON	When BCI switch is pressed	ON
		When BCI switch is not pressed	OFF
BCI SYSTEM ON	Ignition switch ON	When BCI system is ON	ON
		When BCI system is OFF	OFF
BCI ON IND	Ignition switch ON	When BCI ON indicator is ON	ON
		When BCI ON indicator is OFF	OFF
BCI OFF IND	Ignition switch ON	When BCI OFF indicator is ON	ON
		When BCI OFF indicator is OFF	OFF
BCI WARNING IND	Ignition switch ON	When BCI malfunction indicator is ON	ON
		When BCI malfunction indicator is OFF	OFF
BCI HI TEMP WARN IND	Ignition switch ON	When BCI not available indicator is ON	ON
		When BCI not available indicator is OFF	OFF
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not monitored		Off

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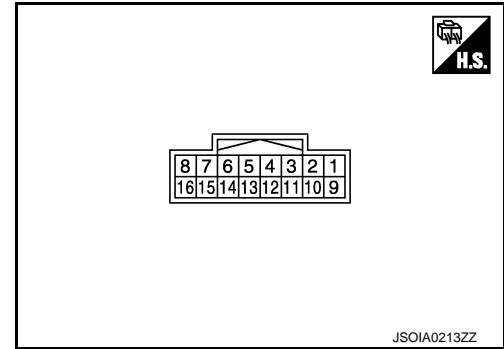
ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (V/W)	Ground	Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed	12 V
					When warning systems switch is pressed	0 V
3 (R/Y)		IBA OFF switch	Input	Ignition switch ON	When IBA OFF switch is not pressed	12 V
					When IBA OFF switch is pressed	0 V
4 (LG/B)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (R)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (Y)		ITS communication-L	—	—	—	—
10 (O)		BCI switch	Input	Ignition switch ON	When BCI OFF switch is not pressed	12 V
					When BCI OFF switch is pressed	0 V
12 (G/R)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	0 V
					Warning buzzer not operating	12 V
14 (L)		CAN -H	—	—	—	—
15 (P)	CAN -L	—	—	—	—	
16 (W/G)	Ignition power supply	Input	Ignition switch ON		Battery Voltage	

Fail-safe

INFOID:000000009910696

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000009910697

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

DAS

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Priority	Detected items (DTC)
4	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A2A: ICC SEN PWR SUP CIR • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD PWR SUPPLY CIR • C1A33: CAN TRANSMISSION ERR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR 2 • C1A38: APA CAN CIR 1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1B01: CAM AIMING INCOMP • C1B03: CAM ABNRML TMP DETCT • C1B56: SONOR CIRCUIT • C1B57: AVM CIRCUIT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0428: STRG SEN CAN CIR 2 • U1500: CAM CAN CIR 2 • U1501: CAM CAN CIR 1 • U1502: ICC SEN CAN COMM CIR • U1503: SIDE RDR L CAN CIR 2 • U1504: SIDE RDR L CAN CIR 1 • U1505: SIDE RDR R CAN CIR 2 • U1506: SIDE RDR R CAN CIR 1 • U150B: ECM CAN CIRC 3 • U150C: VDC CAN CIRC 3 • U150D: TCM CAN CIRC 3 • U150E: BCM CAN CIRC 3 • U150F: AV CAN CIRC 3 • U1512: HVAC CAN CIRC3 • U1513: METER CAN CIRC 3 • U1514: STRG SEN CAN CIRC 3 • U1515: ICC SENSOR CAN CIRC 3 • U1516: CAM CAN CIRC 3 • U1517: APA CAN CIRC 3 • U1518: SIDE RDR L CAN CIRC 3 • U1519: SIDE RDR R CAN CIRC 3 • U1520: 4WD CAN CIRC 3 • U1521: SONAR CAN COMMUNICATION 2 • U1522: SONAR CAN COMMUNICATION 1 • U1523: SONAR CAN COMMUNICATION 3 • U1524: AVM CAN COMMUNICATION 1 • U1525: AVM CAN COMMUNICATION 3
5	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Priority	Detected items (DTC)
6	<ul style="list-style-type: none"> • C1A15: GEAR POSITION
7	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

DTC Index

INFOID:000000009871072

NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-370
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-371
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-372

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp		System	
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-373
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON		A, B, C, D, E, F, G	DAS-374
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	DAS-378
C1A12	12	LASER BEAM OFFCNTR	ON	ON				A, C, D, E	CCS-102
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	CCS-103
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	DAS-380
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-381
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	CCS-112
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	CCS-114
C1A18	18	LASER AIMING INC-MP	ON	ON				A, C, D, E	CCS-115
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	CCS-117
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-383
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	CCS-121
C1A27	27	ECD PWR SUPPLY CIR	ON	ON				A, B, C, D, E	CCS-122
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	CCS-124
C1A34	34	COMMAND ERROR	ON					A, B, E	CCS-125
C1A35	35	APA CIR	ON				ON	A, E, H	CCS-126

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- E: Distance Control Assist (DCA)
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- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	CCS-127
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	CCS-128
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	CCS-129
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-130
C1A40	40	SYSTEM SW CIRC		ON				C, D	CCS-132
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	CCS-123
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-386
C1B01	82	CAM AIMING INCOMP			ON	ON		F, G	DAS-388
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK		F, G	DAS-390
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-543
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-544
C1B56	87	SONOR CIRCUIT					ON	H	DAS-544
C1B57	88	AVM CIRCUIT					ON	H	DAS-544
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	CCS-135
C1F02	92	APA C/U MALF	ON				ON	A, E, H	CCS-136
C1F05	95	APA PWR SUPPLY CIR	ON				ON	A, E, H	CCS-137
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—	—	ON	—	—

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- C: Intelligent Brake Assist (IBA)
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- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-392
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	—	A, B, C, D, E, G, H	DAS-393
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			ON	A, B, C, D, E	CCS-143
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	DAS-394
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON		A, B, C, D, E, F, G, H	DAS-395
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-397
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	DAS-398
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-399
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-401
U1500	145	CAM CAN CIR 2			ON	ON	ON	F, G	DAS-406
U1501	146	CAM CAN CIR 1			ON	ON	ON	F, G	DAS-407
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	CCS-158
U1503	150	SIDE RDR L CAN CIR 2				ON		G, H	DAS-569
U1504	151	SIDE RDR L CAN CIR 1				ON		G, H	DAS-570
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-571

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp		System	
U1506	153	SIDE RDR R CAN CIRC 1				ON	ON	G, H	DAS-572
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-573
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-574
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	DAS-402
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-403
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-404
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	DAS-405
U150F	161	AV CAN CIRC 3					ON		DAS-70
U1512	162	HVAC CAN CIRC3			ON	ON	ON	F, G	DAS-408
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON		A, B, C, D, E, F, G, H	DAS-409
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON		A, B, C, D, E, G, H	CCS-160
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			ON	A, B, C, D, E	CCS-161
U1516	166	CAM CAN CIRC 3			ON	ON	ON	F, G	DAS-410
U1517	167	APA CAN CIRC 3	ON					A, B, E, H	CCS-162
U1518	168	SIDE RDR L CAN CIRC 3				ON		G, H	DAS-579
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-580

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
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- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1520	176	4WD CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-411
U1521	177	SONAR CAN COMMUNICATION 2					ON	H	DAS-740
U1522	178	SONAR CAN COMMUNICATION 1					ON	H	DAS-741
U1523	179	SONAR CAN COMMUNICATION 3					ON	H	DAS-742
U1524	180	AVM CAN COMMUNICATION 1					ON	H	DAS-743
U1525	181	AVM CAN COMMUNICATION 3					ON	H	DAS-744

NOTE:

With the detection of "U1000" some systems do not perform the fail-safe operation.

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

LANE CAMERA UNIT

Reference Value

INFOID:000000009013682

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item	Condition	Value/Status
LC INACCURAT	Lane camera unit malfunction	On
	Lane camera unit normal	Off
AIMING DONE	Camera aiming is completed	OK
	Camera aiming is not adjusted	NG
AIMING RESULT	Camera aiming is completed	OK
	Camera aiming is not completed	NOK
CAM HIGH TEMP	When the temperature around lane camera unit is adequate	NORMAL
	When the temperature around the lane camera unit is high	High
VHCL SPD SE	While driving	Approximately equivalent to speedometer reading
TURN SIGNAL	Turn signal lamp LH and RH blinking	LH/RH
	Turn signal lamp LH blinking	LH
	Turn signal lamp RH blinking	RH
	Turn signal lamps OFF	Off
LANE DETCT LH	Left side lane marker is detected	On
	Left side lane marker is not detected	Off
LANE DETCT RH	Right side lane marker is detected	On
	Right side lane marker is not detected	Off
CROSS LANE LH	The vehicle is crossing left side lane marker	On
	The vehicle is not crossing left side lane marker	Off
CROSS LANE RH	The vehicle is crossing right side lane marker	On
	The vehicle is not crossing right side lane marker	Off
WARN LANE LH	Warning for left side lane	On
	Not warning for left side lane	Off
WARN LANE RH	Warning for right side lane	On
	Not warning for right side lane	Off
VALID POS LH	Lateral position for left side lane marker is valid	VLD
	Lateral position for left side lane marker is invalid	INVLD
VALID POS RH	Lateral position for right side lane marker is valid	VLD
	Lateral position for right side lane marker is invalid	INVLD
XOFFSET	Camera aiming is completed	Approx. 180 pixel
AIM CHECK YAW	NOTE: The item is indicated, but not used	—
AIM CHECK ROLL	NOTE: The item is indicated, but not used	—
AIM CHECK PITCH	NOTE: The item is indicated, but not used	—

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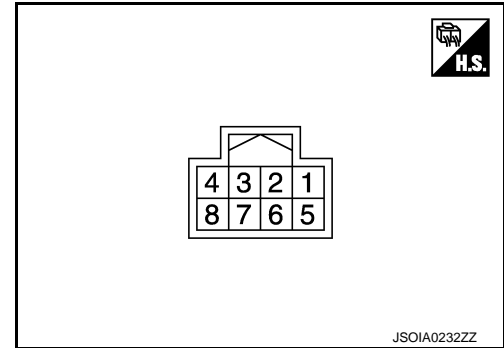
LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor Item	Condition	Value/Status
FCTRY AIM YAW	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	0 ± 5.0 deg
FCTRY AIM ROL	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	0 ± 5.0 deg
FCTRY AIM PIT	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	0 ± 5.0 deg
ADAS MALF	ADAS control unit malfunction	On
	ADAS control unit normal	Off

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (B)	Ground	Ground	—	—	0 V
4 (L)		ITS communication-H	—	—	—
5 (B)		Ground	—	—	0 V
7 (W/G)		Ignition power supply	Input	Ignition switch ON	Battery voltage
8 (Y)		ITS communication-L	—	—	—

Fail-safe

INFOID:000000009013683

FAIL-SAFE CONTROL BY DTC

Lane Departure Warning (LDW)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the lane departure warning lamp in the combination meter.

Lane Departure Prevention (LDP)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the lane departure warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

Lane Departure Warning (LDW)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the lane departure warning lamp (yellow) in the combination meter will blink.

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

- When interior temperature is reduced, the system will resume operation automatically and the lane departure warning lamp (yellow) in the combination meter will stop blinking.

Lane Departure Prevention (LDP)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and lane departure warning lamp (yellow) in the combination meter will blink.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON and the lane departure warning lamp (yellow) in the combination meter will stop blinking.

DTC Inspection Priority Chart

INFOID:000000009013684

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	C1A50: ADAS MALFUNCTION
3	<ul style="list-style-type: none"> • C1B01: CAM AIMING INCOMP • C1B03: ABNRML TEMP DETECT • U0104: ADAS CAN CIR1 • U0126: STRG SEN CAN CIR1 • U0405: ADAS CAN CIR2 • U0428: STRG SEN CAN CIR2
4	C1B00: CAMERA UNIT MALF

DTC Index

INFOID:000000009013685

×: Applicable

DTC		Lane departure warning lamp (yellow)	Fail-safe	Reference
C1A50	ADAS MALFUNCTION	ON	—	DAS-406
C1B00	CAMERA UNIT MALF	ON	×	DAS-386
C1B01	CAM AIMING INCOMP	ON	×	DAS-388
C1B03	ABNRML TEMP DETECT	Blink	×	DAS-390
U0104	ADAS CAN CIR1	ON	×	DAS-391
U0126	STRG SEN CAN CIR1	ON	×	DAS-393
U0405	ADAS CAN CIR2	ON	×	DAS-396
U0428	STRG SEN CAN CIR2	ON	×	DAS-398
U1000	CAN COMM CIRCUIT	ON	×	DAS-399
U1010	CONTROL UNIT (CAN)	ON	×	DAS-401

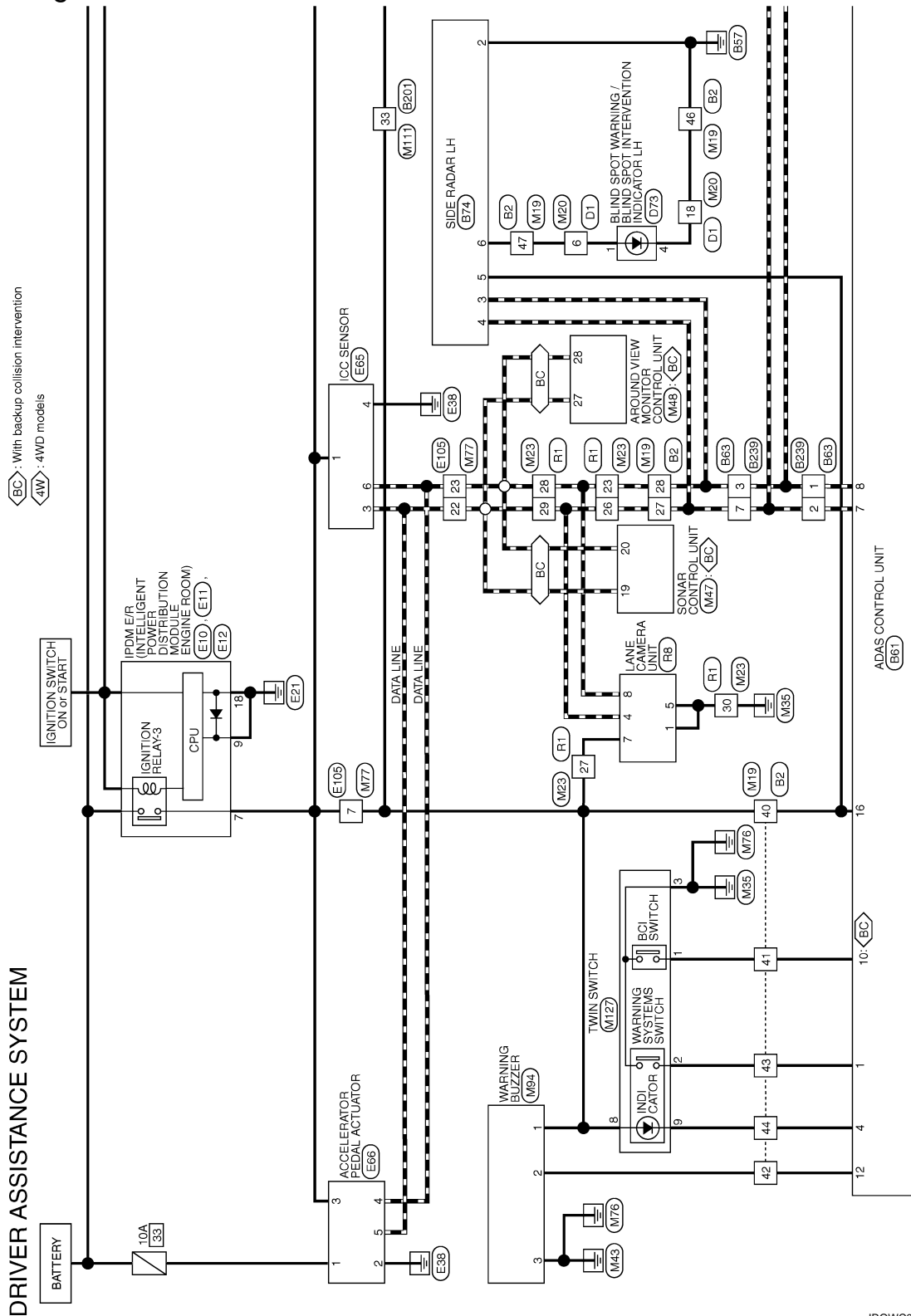
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WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:000000009356141



*: This connector is not shown in "Harness Layout".

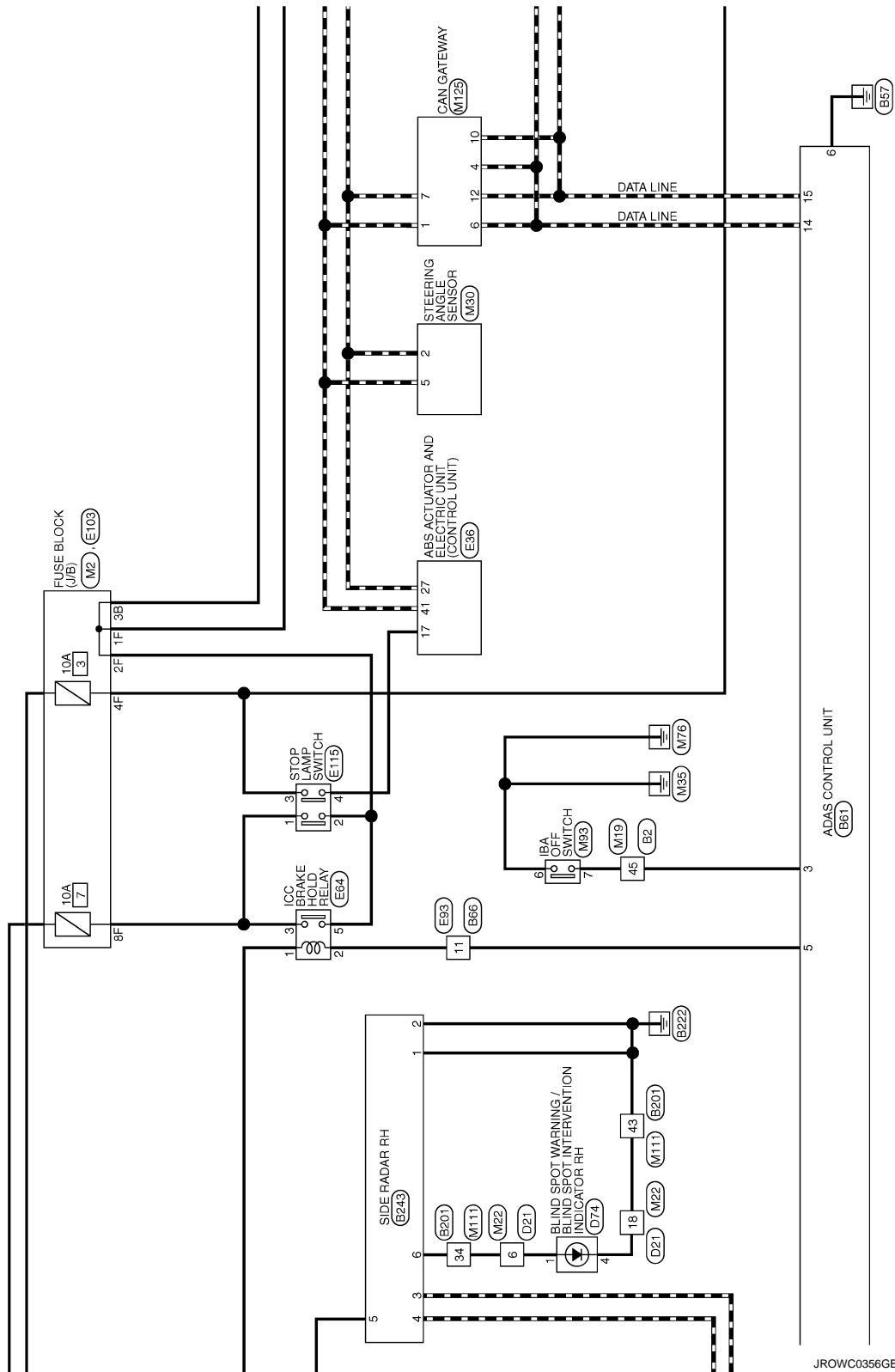
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[LDW & LDP]



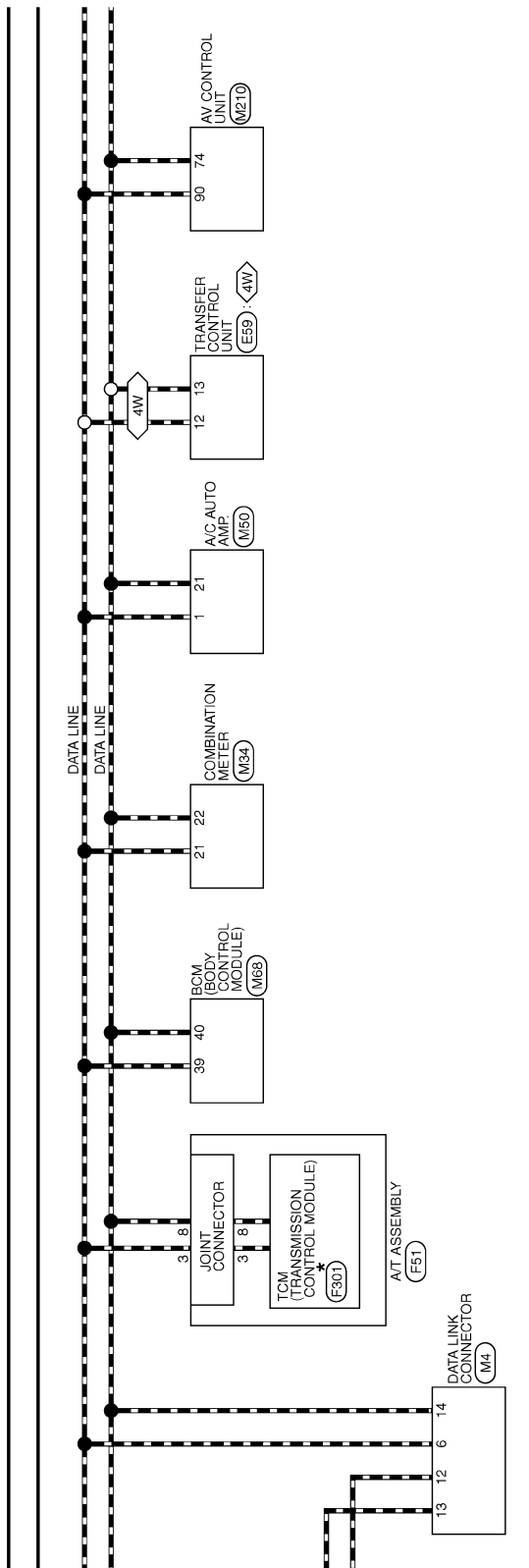
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[LDW & LDP]

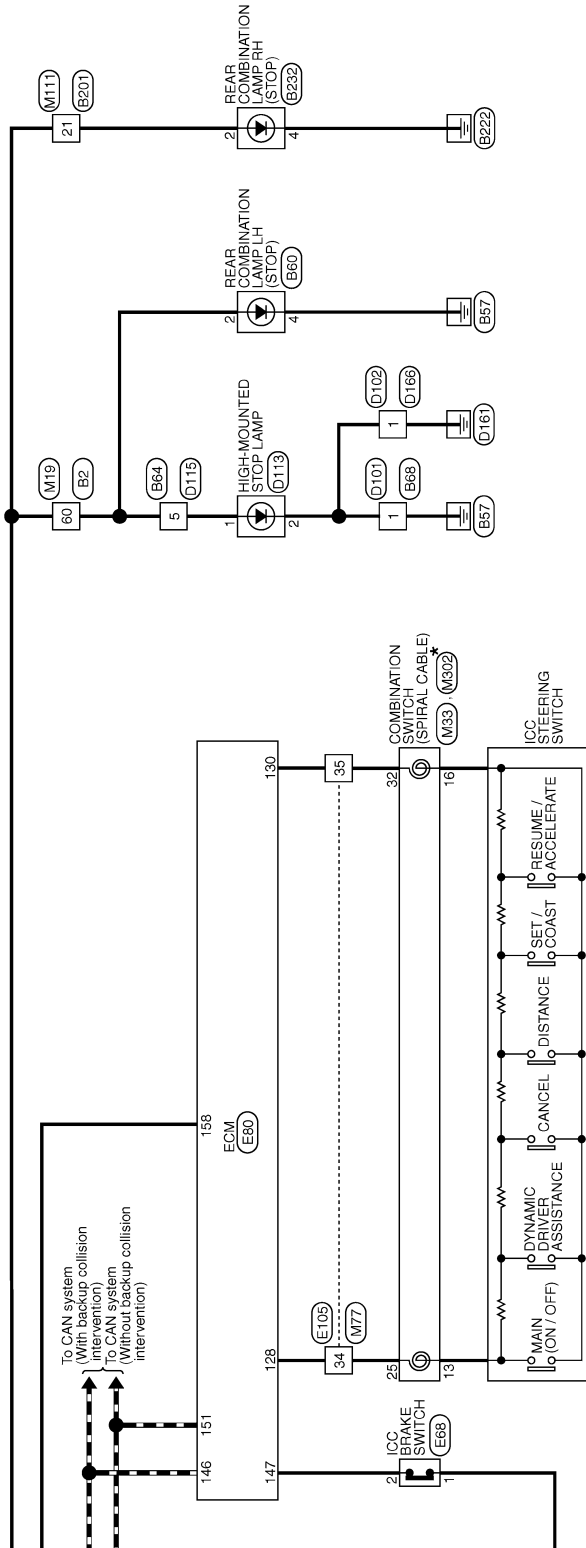


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DRIVER ASSISTANCE SYSTEMS

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[LDW & LDP]



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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	V	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	GR	-
14	B/Y	-
15	W/R	-
16	GR/R	-
18	GW	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-

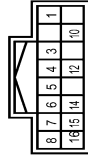
42	G/R	-
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR	-
49	GR	-
50	R/B	-
51	W/R	-
52	BRY	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FM-CS



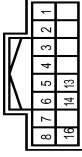
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	R	-
3	G	-
4	B	-

Connector No.	B61
Connector Name	ADAS CONTROL UNIT
Connector Type	TH16FM-NH



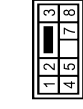
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V/W	WARNING SYSTEMS SW
3	R/Y	IBA OFF SW
4	LG/B	WARNING SYSTEMS ON IND
5	R	BRAKE HOLD RLY DRIVE SIGNAL
6	B	GND
7	L	ITS COMM-H
8	Y	ITS COMM-L
10	O	B3 SW
12	G/R	WARNING BUZZER
14	L	CANL
15	P	CANH
16	W/G	IGNITION

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH16FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y/R	-
4	SB	-
6	LG	-
8	Y	-
7	LO	-
6	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B64
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	R/Y	-
3	GW	-
4	R	-
5	R	-
7	L/W	-
8	V	-

DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	RW	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-

Connector No.	B74
Connector Name	SIDE RADAR LH
Connector Type	AAC36FB-VP-5P



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GND
3	Y	ITS COM+L
4	L	ITS COM+H
5	W/G	IGNITION
6	BR	BSW INDICATOR

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-

20	GY	-
21	R	-
22	GR	-
27	L/W	-
29	W	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L	-
43	B/W	-
44	L	-
45	P	-
46	SHIELD	-
47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	L/B	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	L/G	-
79	R/B	-
80	W/B	-
83	Y	-
84	L	-
85	L/R	-
96	R	-

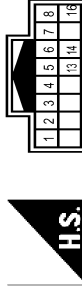
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	R	-
3	GY	-
4	B	-

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	L/G	-
6	Y	-
7	L	-
8	G	-
13	R/L	-
14	G	-

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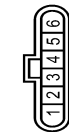
DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

16	W	-
Connector No. B243		
Connector Name SIDE RADAR RH		
Connector Type AAC08FB-WP		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BY	RIGHTLEFT SWITCHING SIGNAL
2	B	GND
3	Y	ITS COM+L
4	L	ITS COM+H
5	WG	IGNITION
6	L/R	BSW INDICATOR

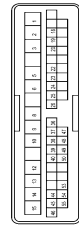
Connector No. D1		
Connector Name WIRE TO WIRE		
Connector Type TH09FW-CS15		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-

14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	Oil	-
31	GR/B	-
32	BR	-
33	V/W	-
36	GO	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR/L	-
45	SHIELD	-
46	W	-
47	LG	-
48	GW	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No. D21		
Connector Name WIRE TO WIRE		
Connector Type TH09FW-CS15		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	BY	-
13	L	-
14	R	-
15	B	-
18	BR/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/O	-
25	R/W	-
26	W/R	-
36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR/L	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No. D73		
Connector Name BLIND SPOT INTERFERING SPOT INTERFERENCE INDICATOR L/R		
Connector Type TH04MM-NH		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR/W	-
4	B	-

Connector No. D74		
Connector Name BLIND SPOT INTERFERING SPOT INTERFERENCE INDICATOR R/L		
Connector Type TH04MM-NH		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/R	-
4	B/W	-

DRIVER ASSISTANCE SYSTEMS

DRIVER ASSISTANCE SYSTEM

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	MD2FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	L	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	MD1FER-S-LC



Terminal Color Of No.	Wire	Signal Name [Specification]
1	B	-

Connector No.	D113
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TK02MBR-P



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-

Connector No.	D115
Connector Name	WIRE TO WIRE
Connector Type	NS08FW-GS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	RY	-
3	GW	-
4	R	-
5	R	-
7	LW	-
8	V	-

Connector No.	D166
Connector Name	WIRE TO WIRE
Connector Type	MD1MBR-FS-LC



Terminal Color Of No.	Wire	Signal Name [Specification]
1	B	-

Connector No.	E10
Connector Name	IPDM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	MD0FW-LC



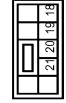
Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	L	-
5	PL	-
7	WG	-
8	W	-

Connector No.	E11
Connector Name	IPDM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	MD0FB-LC



Terminal Color Of No.	Wire	Signal Name [Specification]
9	B	-
14	L	-

Connector No.	E12
Connector Name	IPDM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS08FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
18	B	-
19	V	-
20	W	-
21	L	-

Connector No.	E36
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SA242FB-SJ24



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	BAT
2	B	GND
3	B	GND
4	W	MOTOR SUPPLY
9	R/B	YAW RATE / YAW RATE SENSOR COMMUNICATION
10	P/B	YAW RATE / YAW RATE SENSOR COMMUNICATION
13	GR	STP2
17	L/R	IGN
18	W/B	IGN
19	O	DS FR
20	SB	DP FL
21	RO	DS FR
22	V	DP RL
27	P	CAN-L
33	LG	DP FR
34	G	DS FL

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DRIVER ASSISTANCE SYSTEMS

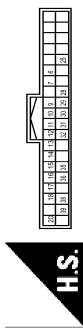
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[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VDC OFF SW
41	L	CANH
46	W	STOP LAMP SW ON

Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	H-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CANH
13	P	CANH
14	W/R	AUTO SW
15	P/B	ROTARY POSITION SEN PWM
16	LG	ROTARY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	B/R/Y	ROTARY POSITION SEN PWR SUPPLY
20	GR	TRANSFER CU PWR SUPPLY
25	P/L	H-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	H-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL
39	R/W	INTERNAL SPEED SEN PWR SUPPLY

Connector No.	E64
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	R	-
3	L/B	-
5	R	-

Connector No.	E66
Connector Name	ICC SENSOR
Connector Type	RS08FB-PR



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGNITION
3	L	ITS COMM-L
4	B	GND
6	Y	ITS COMM-H

Connector No.	E66
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH08FLGY



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	BATTERY
2	B	GND
3	W/G	IGNITION
4	Y	ITS COMM-L
5	L	ITS COMM-H

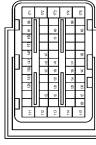
Connector No.	E68
Connector Name	ICC BRAKE SWITCH
Connector Type	MD2FBR-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	G/Y	-

Connector No.	E60
Connector Name	ECM
Connector Type	MB655FB-MEB10-LH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	THROTTLE CONTROL MOTOR RELAY
123	W/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FFCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASD/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FFCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	L/G	ECM RELAY (SELF SHUT-OFF)
165	GR/R	-
166	W	ECM COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT

DRIVER ASSISTANCE SYSTEMS

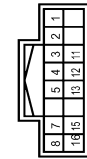
< WIRING DIAGRAM >

[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

Terminal No.	Color Of Wire	Signal Name [Specification]
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E033
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E103
Connector Name	FUSE BLOCK (JIB)
Connector Type	NS16FW-CS



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
10F	G	-
14F	Y	-
15F	G	-
1F	W/B	-
2F	R	-
4F	G	-
6F	Y/G	-
8F	L/B	-
9F	Y	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	L/B	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	Y/V	-
22	L	-
23	V	-
24	L/W	-
28	O	-

Terminal No.	Color Of Wire	Signal Name [Specification]
29	R/W	-
30	L/B	-
31	Y	-
32	GR/R	-
33	Y	-
34	R	-
35	R	-
36	B/R	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GS/L	-
60	W	-
61	B	-
62	R	-
63	G	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	G/R	-
97	R	-
98	G/B	-
100	W/R	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/B	-
2	R	-
3	G	-
4	L/R	-

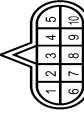
Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CANH
4	SB	K-LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CANL
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CANH
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CANL
9	-	STARTER RELAY
10	-	GROUND

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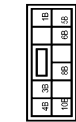
DRIVER ASSISTANCE SYSTEMS

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[LDW & LDP]

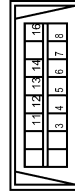
DRIVER ASSISTANCE SYSTEM

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



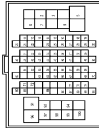
Terminal No.	Color Of Wire	Signal Name [Specification]
10B	W/B	-
11B	R	-
12B	R	-
13B	B	-
14B	BR	-
15B	Y	-
16B	L/O	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

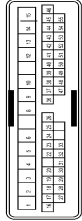
Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	V	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	GR	-
14	B/Y	-
15	W/R	-
16	GR	-
18	GRW	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	GR	-

43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	B	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
6	LG/R	-
8	BR/W	-
8	V	-
9	G	-
10	L	-
12	B/Y	-
13	Y	-
14	R	-
15	B	-
16	GR	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

DRIVER ASSISTANCE SYSTEMS

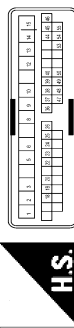
< WIRING DIAGRAM >

[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	M22
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

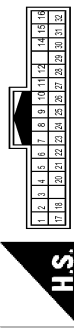


H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	B/Y	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/B	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH22MW-AH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	GR	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-
14	Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-

22	SB	-
23	Y/R	-
24	SHIELD	-
25	Y/G	-
26	L/O	-
27	W/O	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	GR/L	-

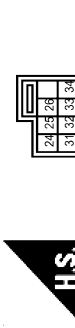
Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-AH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No.	M33
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V

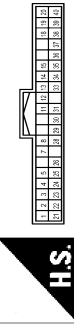


H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
24	Y/G	-
25	Y	-
26	B	-

31	Y/L	-
32	R	-
33	B	-
34	P/B	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	TIL GND
5	B	ILL CONTROL OUTPUT
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	AC/AUTO AMP CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CANH
22	P	CANL
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BR/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT SENSOR (DRIVERSIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	RY	NON-MANUAL MODE SIGNAL

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DRIVER ASSISTANCE SYSTEMS

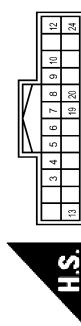
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[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

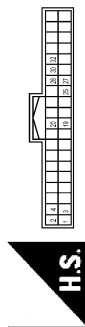
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

Connector No.	M47
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FM-NH



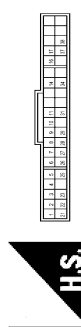
Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	SONAR FR INNER LH
8	Y	SONAR FR INNER RH
9	G	SONAR FR INNER LH
10	Y	SONAR FR INNER RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CAN-H [Without ADAS]
19	L	ITS-CAN L [With ADAS]
20	R	CAN-L [Without ADAS]
20	Y	ITS-CAN L [With ADAS]
24	B	GND

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COM1 (H)
20	LG	AV COM1 (L)
25	P	REV
27	L	CAN-H
28	R	CAN-L [Without ADAS]
28	Y	CAN-L [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

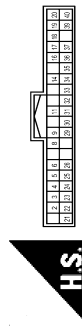
Connector No.	M50
Connector Name	A/C AUTO AMP
Connector Type	SAB40FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	V	ACC POWER SUPPLY
5	W	IONIZER CONTROL SIGNAL
6	V/W	A/C AUTO AMP CONNECTION SIGNAL
7	WR	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL

9	BR	SUNLOAD SENSOR (DR) SIGNAL <small>(EX GAS / OUTSIDE DOOR DETECTING SENSOR SIGNAL)</small>
10	V/W	COM1 (RR A/C AUTO AMP-RR A/C CONT)
11	W/L	FR BLOWER MOTOR CONTROL SIGNAL
14	O/L	EACH DOOR MOTOR LIN SIGNAL
16	R/G	EACH DOOR MOTOR POWER SUPPLY
17	L/Y	EACH DOOR MOTOR LIN SIGNAL
21	P	CAN-L
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
25	R	-
26	GR	SENSOR GROUND
27	GR	FR IN-VEHICLE SENSOR SIGNAL
28	R	INTAKE SENSOR SIGNAL
29	O	SUNLOAD SENSOR (PASS) SIGNAL
31	L/O	COM1 (RR A/C CONT-A/C AUTO AMP)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	G/W	RR A/C RELAY CONTROL SIGNAL

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BRY	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	BR	RECEIVER SENSOR GND
19	BY	RECEIVER PWR SPLY
20	GR	KEY IS ENT RECEIVER COMM
21	P	WATS ANT AMP
22	W/B	KEY IS ENT RECEIVER RSSI

23	GR/R	SECURITY IND CONT
24	SB	DOUBLE LINK
25	LR/R	NATS ANT AMP
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	BK DOOR OPNR SW
31	W/G	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/W	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIFT P
39	L	CAN-H
40	P	CAN-L

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
6	SB	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	O/L	-
16	SB	-
18	BR	-
19	Y/G	-
20	BRY	-

DRIVER ASSISTANCE SYSTEMS

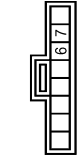
< WIRING DIAGRAM >

[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

21	V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
29	R/W	-
30	O/L	-
31	O/L	-
32	GR/R	-
34	Y	-
35	R	-
36	B/O	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	Y	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	B	-
62	G	-
63	R	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	R	-
98	O/L	-
100	W/B	-

Connector No.	M93
Connector Name	IBA OFF SWITCH
Connector Type	TK09FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
6	B	-
7	R/Y	-

Connector No.	M94
Connector Name	WARNING BUZZER
Connector Type	NSM4FBRCS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	G/R	-
3	B	-

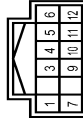
Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH80FMCS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/B	-
4	W/B	-
5	W/B	-
6	R	-
7	R	-
8	GR	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	G/Y	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L/W	-
43	B/W	-
44	L	-
45	P	-
46	SHIELD	-

47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	O/L	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
90	W/B	-
93	Y	-
94	L	-
95	L/R	-
96	R	-
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



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DRIVER ASSISTANCE SYSTEMS

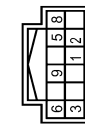
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[LDW & LDP]

DRIVER ASSISTANCE SYSTEM

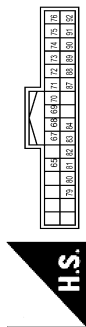
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
3	Y	BATTERY
4	L	CANH
5	B	GND
6	L	CANH
7	P	CANL
9	GR	IGNITION
10	R	CANL
11	B	GND
12	R	CANL

Connector No.	M127
Connector Name	TWIN SWITCH
Connector Type	TH12FY-AH



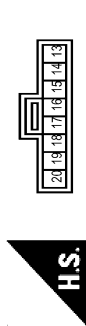
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	VW	-
3	B	-
5	L/O	-
6	B/O	-
8	W/G	-
9	LG/B	-

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FM-AH



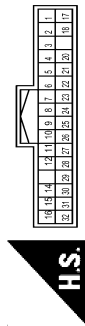
Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
69	O	INTELLIGENT KEY IDENTIFICATION SIGNAL
70	BR	REVERSE L2
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
72	Y/G	MICROPHONE VCC [Without DCM]
73	Y/G	COMM [CONT-DISP]
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	L/O	DIMMER SIGNAL
80	GR/L	IGNITION SIGNAL
81	R/Y	REVERSE SIGNAL
82	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	W/B	COMPOSITE IMAGE SYNC SIGNAL
87	BR	MICROPHONE SIGNAL [With DCM]
87	Y/L	MICROPHONE SIGNAL [Without DCM]
88	SHIELD	SHIELD
89	Y/L	COMM [DISP-CONT]
90	L	CANH
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SPRAL CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	BR	-
6	BY	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-

14	BY	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	Y	-
24	SHIELD	-
25	Y/G	-
26	L	-
27	W/G	-
28	Y	-
29	L	-
30	B/SR	-
31	BR	-
32	BR	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH08FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
4	L	ITS COMM-H
5	B	GND
7	W/G	IGNITION
8	Y	ITS COMM-L

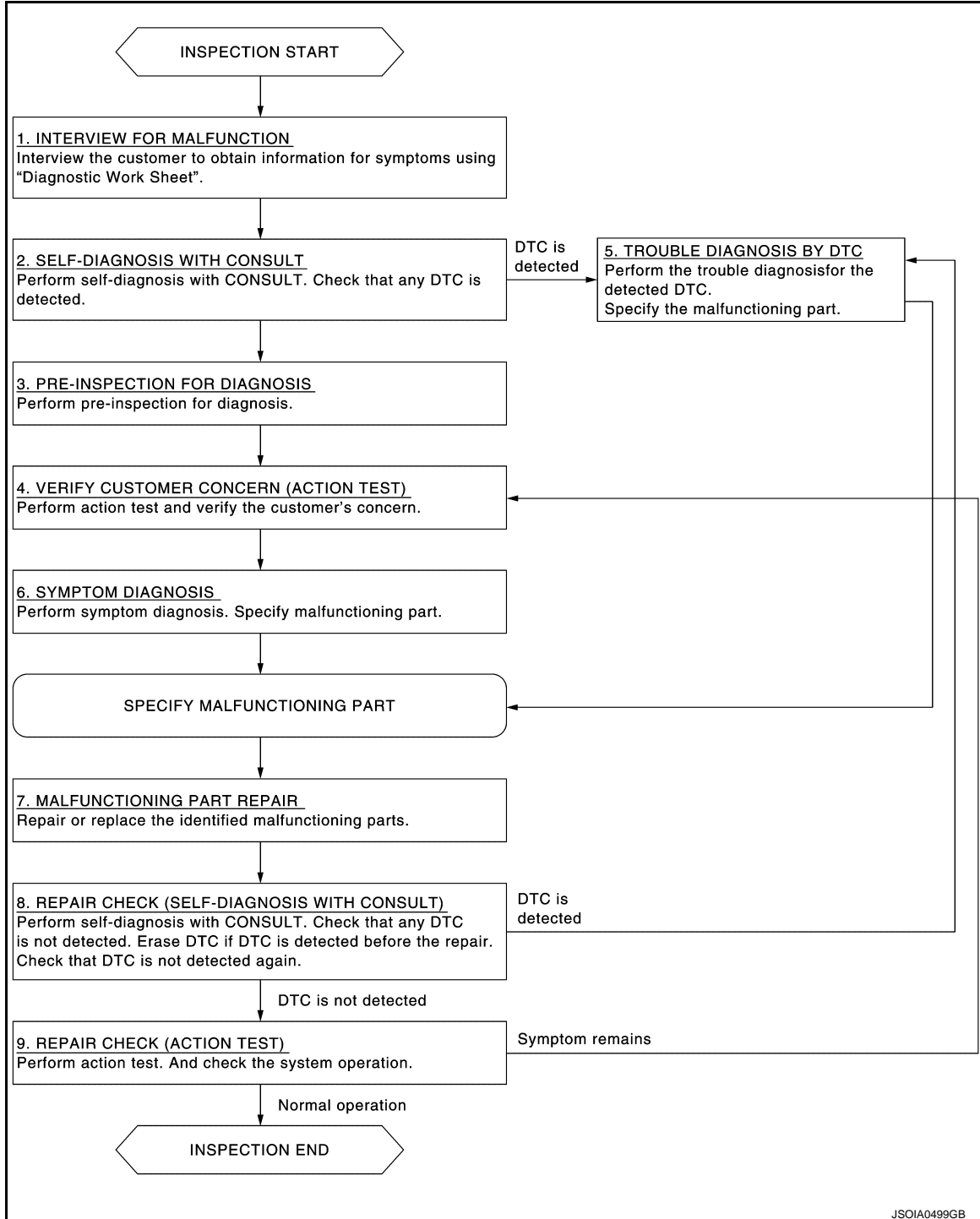
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009013687

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the customer to obtain information about symptoms using "Diagnostic Work Sheet". (Refer to [DAS-358](#), "Diagnostic Work Sheet".)

DAS

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[LDW & LDP]

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected on the self-diagnosis results of "ICC/ADAS" and/or "LANE CAMERA".

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 3.

3. PRE-INSPECTION FOR DIAGNOSIS

Perform pre-inspection for diagnosis. Refer to [DAS-360, "Inspection Procedure"](#).

>> GO TO 4.

4. ACTION TEST

Perform LDW/LDP system action test to check the operation status. Refer to [DAS-361, "Description"](#).

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

Perform trouble diagnosis for the detected DTC. Specify a malfunctioning part. Refer to [DAS-333, "DTC Index"](#) (ICC/ADAS) and/or [DAS-341, "DTC Index"](#) (LANE CAMERA).

>> GO TO 7.

6. SYMPTOM DIAGNOSIS

Perform symptom diagnosis. Specify malfunctioning part. Refer to [DAS-420, "Symptom Table"](#).

>> GO TO 7.

7. MALFUNCTION PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 8.

8. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

Perform self-diagnosis with CONSULT. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

- YES >> GO TO 5.
NO >> GO TO 9.

9. REPAIR CHECK (ACTION TEST)

Perform LDW/LDP system action test. Also check the system operation.

Does it operate normally?

- YES >> INSPECTION END
NO >> GO TO 4.

Diagnostic Work Sheet

INFOID:000000009013688

DESCRIPTION

In general, each customer feels differently about an incident. It is important to fully understand the symptoms or conditions for a customer complaint.

There are many operating conditions that lead to the malfunction. A good grasp of such conditions can make troubleshooting faster and more accurate.

Some conditions may cause the lane departure warning lamp to stay ON.

DIAGNOSIS AND REPAIR WORK FLOW

[LDW & LDP]

< BASIC INSPECTION >

Utilize a work sheet sample to organize all of the information for troubleshooting.

KEY POINTS

- WHAT..... System and functions
- WHEN..... Date, Frequencies
- WHERE..... Road conditions
- HOW..... Operating conditions, Symptoms

WORK SHEET SAMPLE

Customer name MR/MS		Model and Year		VIN
Engine #		Trans.		Mileage
Incident Date		Manuf. Date		In Service Date
Symptoms				
Indicator/Warning lamps	<input type="checkbox"/> Lane departure warning lamp	<input type="checkbox"/> Stays ON <input type="checkbox"/> Turned ON occasionally	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks
	<input type="checkbox"/> Warning systems ON indicator	<input type="checkbox"/> Stays ON	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks
	<input type="checkbox"/> LDP ON indicator lamp	<input type="checkbox"/> Stays ON <input type="checkbox"/> Turned ON occasionally	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks
	<input type="checkbox"/> Other lamps ()	<input type="checkbox"/> Stays ON <input type="checkbox"/> Turned ON occasionally	<input type="checkbox"/> Stays OFF <input type="checkbox"/> Others ()	<input type="checkbox"/> Blinks
Functions	<input type="checkbox"/> When using LDW <input type="checkbox"/> When using LDP			
	<input type="checkbox"/> All functions do not operate. <input type="checkbox"/> Warning function does not operate. (<input type="checkbox"/> No sound <input type="checkbox"/> No indicator) <input type="checkbox"/> Yawing function does not operate. (Warning function is operated.)			
	<input type="checkbox"/> Functions when changing the course in the turn signal direction. <input type="checkbox"/> Functions are untimely. <input type="checkbox"/> Does not function when driving on lane markers. <input type="checkbox"/> Functions when driving in a lane. <input type="checkbox"/> Functions in a different position from the actual position. <input type="checkbox"/> Others ()			
Conditions				
Frequency	<input type="checkbox"/> Continuously		<input type="checkbox"/> Intermittently	
Light conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> In the daytime <input type="checkbox"/> Direct light	<input type="checkbox"/> At night <input type="checkbox"/> Backlight	<input type="checkbox"/> Sunrise/sunset (Strong light) <input type="checkbox"/> Others ()	
Driving conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Vehicle speed	MPH (km/h)	<input type="checkbox"/> Vehicle is stopped	
Weather conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Fine <input type="checkbox"/> Clouding	<input type="checkbox"/> Raining	<input type="checkbox"/> Snowing <input type="checkbox"/> Others ()	
Road conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Highway <input type="checkbox"/> Uneven roads	<input type="checkbox"/> In town <input type="checkbox"/> Winding roads	<input type="checkbox"/> Others ()	
Lane maker conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> Clear	<input type="checkbox"/> Unclear	<input type="checkbox"/> Others ()	
Other conditions				

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PRE-INSPECTION FOR DIAGNOSIS

< BASIC INSPECTION >

[LDW & LDP]

PRE-INSPECTION FOR DIAGNOSIS

Inspection Procedure

INFOID:000000009013689

1.CHECK CAMERA LENS AND WINDSHIELD

Are camera lens and windshield contaminated with foreign materials?

- YES >> Clean camera lens and windshield.
- NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT INSTALLATION CONDITION

Check lane camera unit installation condition (installation position, properly tightened, a bent bracket).

Is it properly installed?

- YES >> GO TO 3.
- NO >> Install lane camera unit properly, and perform camera aiming. Refer to [DAS-365. "Description"](#).

3.CHECK VEHICLE HEIGHT

Check vehicle height. Refer to [FSU-21. "Wheel Height"](#).

Is vehicle height appropriate?

- YES >> INSPECTION END
- NO >> Repair vehicle to appropriate height.

ACTION TEST

Description

INFOID:000000009013690

- Perform action test to verify the customer's concern.
- Perform action test and check the system operation after system diagnosis.

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Fully understand the following items well before the road test;
- Precautions: Refer to [DAS-293, "Precaution for LDW/LDP System Service"](#).
- System description for LDW: Refer to [DAS-297, "LANE DEPARTURE WARNING \(LDW\) SYSTEM : System Description"](#).
- System description for LDP: Refer to [DAS-300, "LANE DEPARTURE PREVENTION \(LDP\) SYSTEM : System Description"](#).
- Handling precaution: Refer to [DAS-308, "Precautions for Lane Departure Warning/Lane Departure Prevention"](#).

Inspection Procedure

INFOID:000000009013691

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Fully understand the following items well before the road test;
- Precautions: Refer to [DAS-293, "Precaution for LDW/LDP System Service"](#).
- System description for LDW: Refer to [DAS-297, "LANE DEPARTURE WARNING \(LDW\) SYSTEM : System Description"](#).
- System description for LDP: Refer to [DAS-300, "LANE DEPARTURE PREVENTION \(LDP\) SYSTEM : System Description"](#).
- Handling precaution: Refer to [DAS-308, "Precautions for Lane Departure Warning/Lane Departure Prevention"](#).

1. CHECK LDW SYSTEM SETTING

1. Start the engine.
2. Check that the LDW system setting can be enabled/disabled on the navigation screen.
3. Turn OFF the ignition switch and wait for 30 seconds or more.
4. Check that the previous setting is saved when the engine starts again.

>> GO TO 2.

2. ACTION TEST FOR LDW

1. Enable the setting of the LDW system on the navigation screen.
2. Turn warning systems switch ON (warning systems ON indicator is ON).
NOTE:
LDP system is OFF.
3. Check the LDW operation according to the following table.

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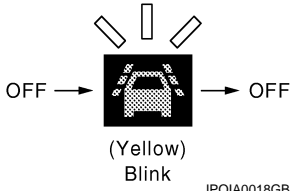
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ACTION TEST

< BASIC INSPECTION >

[LDW & LDP]

Vehicle condition/ Driver's operation		Action	Warning systems ON indicator	Indication on the combination meter	Buzzer
Less than Approx. 60 km/h (40 MPH)	Close to lane marker	No action	ON	OFF	—
Approx. 70 km/h (45 MPH) or more	Close to lane marker	Warning <ul style="list-style-type: none"> • Buzzer sounds • Warning lamp blinks 	ON	 (Yellow) Blink <small>JPOIA0018GB</small>	Short continuous beeps
	<ul style="list-style-type: none"> • Close to lane marker • Turn signal ON (Deviate side) 	No action	ON	OFF	—

NOTE:

After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 60 km/h (40 MPH). Refer to [DAS-297. "LANE DEPARTURE WARNING \(LDW\) SYSTEM : System Description"](#).

>> GO TO 3.

3. CHECK LDP SYSTEM SETTING

1. Start the engine.
2. Check that the LDP system setting can be enabled/disabled on the navigation screen.
3. Turn OFF the ignition switch and wait for 30 seconds or more.
4. Check that the previous setting is saved when the engine starts again.

>> GO TO 4.


4. ACTION TEST FOR LDP

1. Enable the setting of the LDP system on the navigation screen.
2. Turn dynamic driver assistance switch ON (LDP ON indicator lamp is ON).

NOTE:

LDW system is OFF.

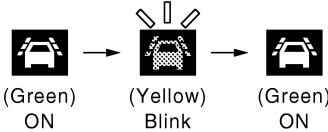

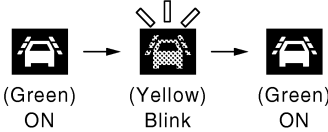
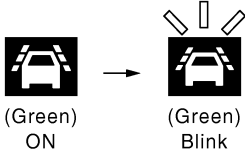
3. Check the LDP operation according to the following table.

Vehicle condition/ Driver's operation		Action	Indication on the combination meter	Buzzer
Less than Approx. 60 km/h (40 MPH)	Close to lane marker	No action	 (Green) ON <small>JPOIA0021GB</small>	—

ACTION TEST

< BASIC INSPECTION >

[LDW & LDP]

Vehicle condition/ Driver's operation	Action	Indication on the combination meter	Buzzer	
Approx. 70 km/h (45 MPH) or more	Close to lane marker	Warning and yawing • Buzzer sounds • Warning lamp blinks • Brake control  (Green) ON (Yellow) Blink (Green) ON JPOIA0022GB	Short continuous beeps	
	• Close to lane marker • Turn signal ON (Deviate side)	No action	 (Green) ON JPOIA0021GB	—
	Close to lane marker with soft braking	Warning • Buzzer sounds • Warning lamp blinks	 (Green) ON (Yellow) Blink (Green) ON JPOIA0022GB	Short continuous beeps
	• VDC OFF Switch OFF ⇒ ON (VDC system ON ⇒ OFF) • SNOW mode switch OFF ⇒ ON • 4WD shift switch is in the 4H or 4L	Cancellation • Buzzer sounds • Indicator lamp blinks NOTE: When dynamic driver assistance switch is ON ⇒ OFF, indicator lamp is turned OFF.	 (Green) ON (Green) Blink JPOIA0023GB	Beep

NOTE:

After the operating conditions are satisfied, the control continues until the vehicle speed reaches approximately 60 km/h (40 MPH). Refer to [DAS-300, "LANE DEPARTURE PREVENTION \(LDP\) SYSTEM : System Description"](#).

>> INSPECTION END

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ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT

< BASIC INSPECTION >

[LDW & LDP]

ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT

Description

INFOID:000000009013692

Always adjust the camera aiming after removing and installing or replacing the lane camera unit.

CAUTION:

The system does not operate normally unless the camera aiming adjustment is performed. Always perform it.

Work Procedure

INFOID:000000009013693

1. CAMERA AIMING ADJUSTMENT

Perform the camera aiming adjustment with CONSULT. Refer to [DAS-365, "Description"](#).

>> GO TO 2.

2. PERFORM SELF-DIAGNOSIS

Perform the self-diagnosis of lane camera unit with CONSULT. Check if any DTC is detected.

Is any DTC detected?

YES >> Perform the trouble diagnosis for the detected DTC. Refer to [DAS-341, "DTC Index"](#).

NO >> GO TO 3.

3. LDW/LDP SYSTEM ACTION TEST

-
1. Perform the LDW/LDP system action test. Refer to [DAS-364, "Description"](#).
 2. Check that the LDW/LDP system operates normally.

>> WORK END

CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

CAMERA AIMING ADJUSTMENT

Description

INFOID:000000009013694

Always adjust the camera aiming after removing and installing or replacing the lane camera unit.

CAUTION:

- Place the vehicle on level ground when the camera aiming adjustment is operated.
- Follow the **CONSULT** when performing the camera aiming. (Camera aiming adjustment cannot be operated without **CONSULT**.)

Work Procedure (Preparation)

INFOID:000000009013695

1. PERFORM SELF-DIAGNOSIS

Perform self-diagnosis of ADAS control unit and lane camera unit.

Is any DTC detected?

Except "C1B01">>Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to [DAS-333, "DTC Index"](#) (ICC/ADAS) or [DAS-341, "DTC Index"](#) (LANE CAMERA).

"C1B01" or no DTC>>GO TO 2.

2. PREPARATION BEFORE CAMERA AIMING ADJUSTMENT

1. Perform pre-inspection for diagnosis. Refer to [DAS-360, "Inspection Procedure"](#).
2. Adjust the tire pressure to the specified pressure value.
3. Maintain no-load in vehicle.
4. Check if coolant and engine oil are filled up to correct level and fuel tank is full.
5. Shift the selector lever to "P" position and release the parking brake.
6. Clean the windshield.
7. Completely clear off the instrument panel.

>> GO TO 3.

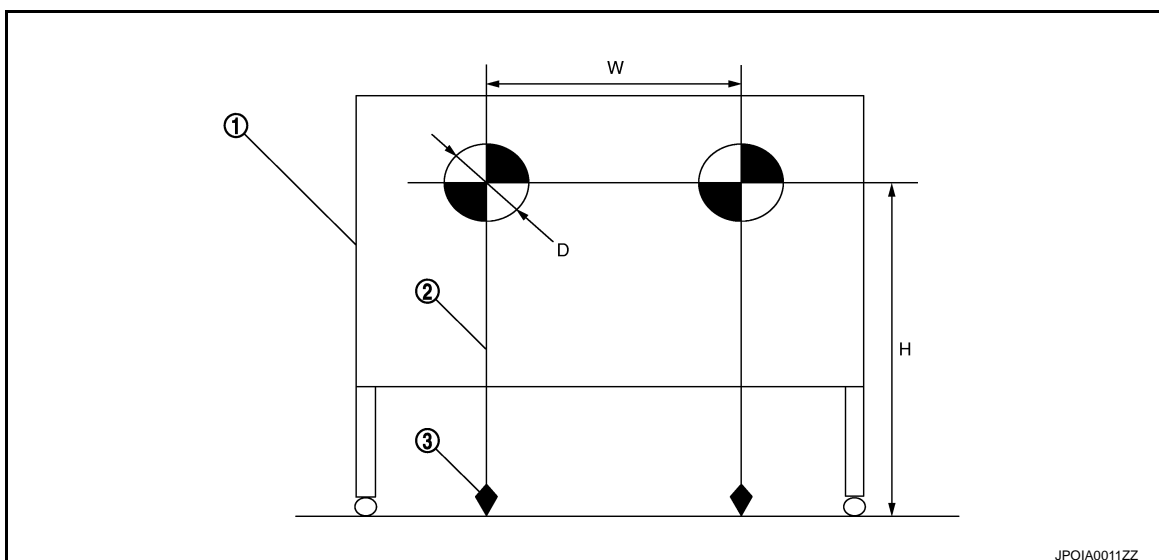
3. PREPARATION OF AIMING ADJUSTMENT JIG

Prepare the aiming adjustment jig according to the following procedure and the figure.

1. Print out the target mark attached in this service manual. Refer to [DAS-368, "Work Procedure \(Target Mark Sample\)"](#).
2. Stick a printed target mark on the board with a scotch tape or a piece of double-sided tape.

NOTE:

- Use the board that peripheral area of the target is monochrome such as a white-board.
- Notice that the cross of the target is horizontal and vertical.



CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

1. Board

2. String

3. Cone

☉ : Target mark

Diameter of a target (D) : 200 mm (7.87 in)
Height of a target center (H) : 1450 mm (57.09 in)
Width between a right target center from a left target center (W) : 600 mm (23.62 in)

>> Go to [DAS-366, "Work Procedure \(Target Setting\)"](#).

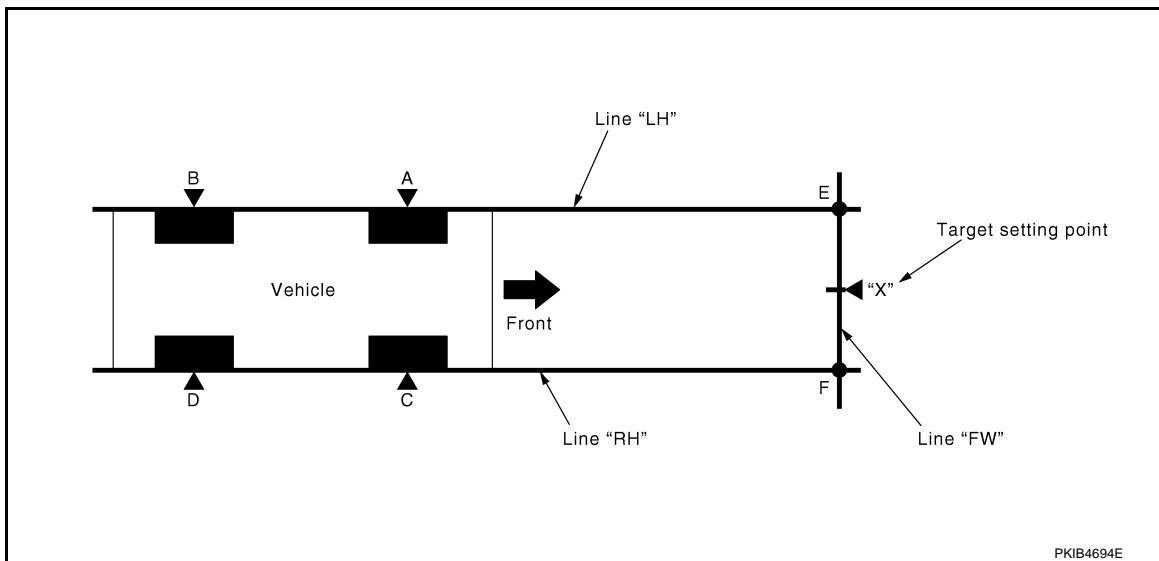
Work Procedure (Target Setting)

INFOID:000000009013696

CAUTION:

- Perform this operation in a horizontal position where there is a clear view for 5 m (16.4 ft) forward and 3 m (9.84 ft) wide.
- Place the target in a well-lighted location. (Poor lighting may make it hard to adjust.)
- The target may not be detected when there is a light source within 1.5 m (4.92 ft) from either side and within 1 m (3.28 ft) upward/downward from the target.
- Check the location of the sun. (Sunlight should not shine directly on the front of the vehicle.)
- The target may not be detected when there is the same pattern of black and white as the target when the pattern is within 1 m (3.28 ft) from either side and upward/downward position from the target. (It is desirable that the vehicle is positioned on the opposite side of a single-color wall.)

1. TARGET SETTING



"A" – "E" ("C" – "F") : 3850 mm (151.57 in)

1. Mark points "A", "B", "C" and "D" at the center of the lateral surface of each wheels.

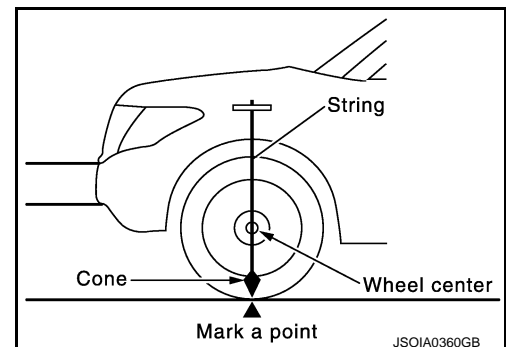
NOTE:

Hang a string with a cone from the fender so as to pass through the center of wheel, and then mark a point at the center of the lateral surface of the wheel.

2. Draw line "LH" passing through points "A" and "B" on the left side of vehicle.

NOTE:

Approximately 4 m (13.12 ft) or more from the front end of vehicle.



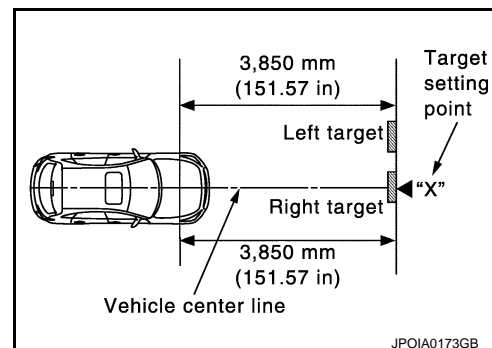
CAMERA AIMING ADJUSTMENT

[LDW & LDP]

< BASIC INSPECTION >

3. Mark point "E" on the line "LH" at the positions 3850 mm (151.57 in) from point "A".
 4. Draw line "RH" passing through points "C" and "D" on the right side of vehicle in the same way as step 2.
- NOTE:**
Approximately 4 m (13.12 ft) or more from the front end of vehicle.
5. Mark point "F" on the line "RH" at the positions 3850 mm (151.57 in) from point "C".
 6. Draw line "FW" passing through the points "E" and "F" on the front side of vehicle.
 7. Mark point "X" at the center of point "E" and "F" on the line "FW".
- CAUTION:**
Make sure that "E" to "X" is equal to "F" to "X".
8. Position the center of the right target to point of "X".

>> Go to [DAS-367, "Work Procedure \(Camera Aiming Adjustment\)"](#).



Work Procedure (Camera Aiming Adjustment)

INFOID:000000009013697

CAUTION:
Perform the adjustment under unloaded vehicle condition.

1. CHECK VEHICLE HEIGHT

Measure the wheelarch height. Calculate "Dh".

$$Dh [mm] = (Hfl + Hfr) \div 2 - 903$$

where,

Hfl: Front left wheelarch height [mm]

Hfr: Front right wheelarch height [mm]

NOTE:

"Dh" may be calculated as a minus value.

>> GO TO 2.

2. CAMERA AIMING ADJUSTMENT

CAUTION:

Operate CONSULT outside the vehicle, and close all the doors. (To retain vehicle attitude appropriately)

1. Select "Work Support" on "LANE CAMERA" with CONSULT.
2. Select "AUTO AIM".
3. Confirm the following items;
 - The target should be accurately placed.
 - The vehicle should be stopped.
4. Select "Start" to perform camera aiming.

CAUTION:

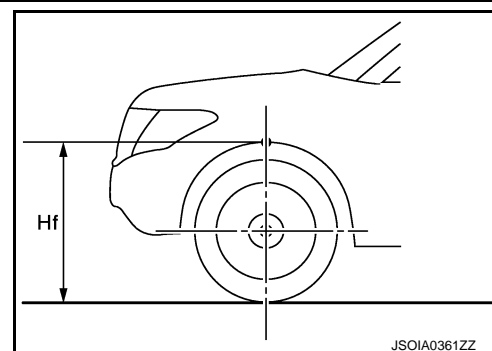
- Never select "Start" when the target is not accurately placed.
- Wait 5 seconds or more after selecting "Start".

5. Input "Dh", and then select "Start".

CAUTION:

Never change "Ht" and "Dt".

6. Confirm the displayed item.
 - "Normally Completed": Select "Completion".
 - "SUSPENSION", "X AIMING NG Y", "ABNORMALLY COMPLETED": Perform the following services.



CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

Displayed item		Possible cause	Service procedure
SUSPENSION	—	Temporary malfunction in internal processing of the lane camera unit.	Go back to Step 1
	00H Routine not activated	Lane camera unit malfunction.	Position the target appropriately again. Perform the aiming again. Refer to DAS-366, "Work Procedure (Target Setting)"
	10H Writing error	<ul style="list-style-type: none"> • Temporary malfunction in internal processing of the lane camera unit. • Lane camera unit malfunction. 	
X AIMING NG Y (X: 0 - 7, Y: 1 - 8)	—	<ul style="list-style-type: none"> • A target is not-yet-placed. (The lane camera unit cannot detect a target.) 	Position the target appropriately again. Perform the aiming again. Refer to DAS-365, "Work Procedure (Preparation)" .
ABNORMALLY COMPLETED	—	<ul style="list-style-type: none"> • The position of the lane camera unit is not correct. • Inappropriate work environment. • Inappropriate vehicle condition. 	

NOTE:

Replace camera unit if "00H Routine not activated" or "10H Writing error" are repeatedly indicated during the above two services are performed.

7. Confirm that "Normally Completed" is displayed and then select "End" to close the aiming adjustment procedure.

>> GO TO 3.

3.PERFORM SELF-DIAGNOSIS

Perform self-diagnosis of lane camera unit with CONSULT.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to [DAS-341, "DTC Index"](#).

NO >> GO TO 4.

4.ACTION TEST

Test the LDW/LDP system operation by action test. Refer to [DAS-361, "Description"](#).

>> WORK END

Work Procedure (Target Mark Sample)

INFOID:000000009013698

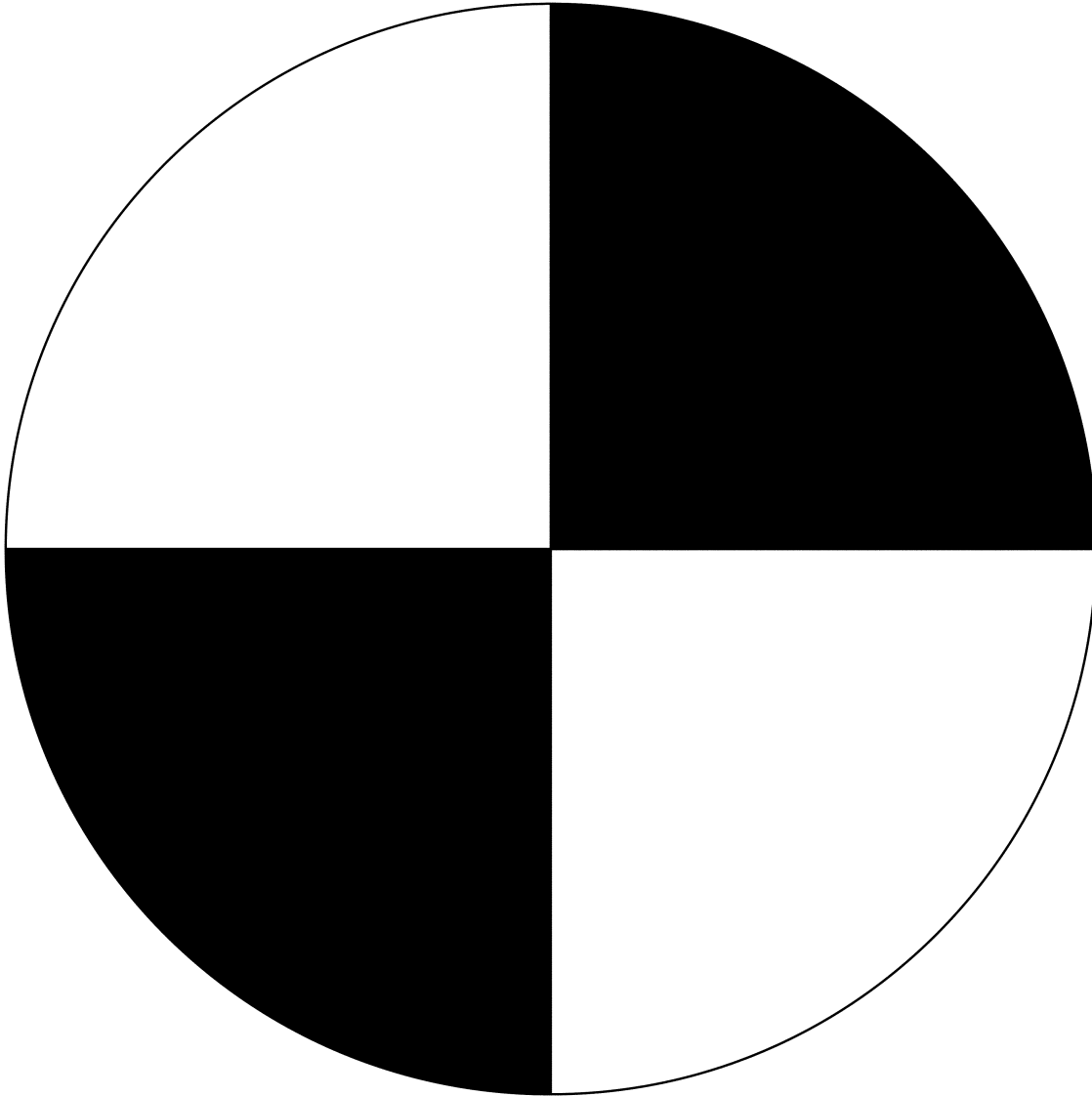
NOTE:

CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

Print this illustration so that the diameter of the circle is 200 mm (7.87 in).



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DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:000000009013699

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [DAS-370, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013700

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000009013701

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds	<ul style="list-style-type: none">• Connector, harness, fuse• ADAS control unit
C1A02 (2)	POWER SUPPLY CIR 2	The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A01" or "C1A02" detected as the current malfunction?

- YES >> Refer to [DAS-371, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013702

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [DAS-412, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> Repair or replace the malfunctioning parts.

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C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000009013703

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) received by the ADAS control unit via CAN communication, are inconsistent	<ul style="list-style-type: none">• Wheel speed sensor• ABS actuator and electric unit (control unit)• ADAS control unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04".

- Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-373, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A03" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A03" detected as the current malfunction?

YES-1 (Lane departure warning lamp: ON)>>Refer to [DAS-372, "Diagnosis Procedure"](#).

YES-2 (Lane departure warning lamp: OFF)>>Refer to [CCS-93, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013704

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A04" or "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:000000009013705

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A04 (4)	ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013706

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:000000009013707

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) continues for 10 seconds or more with vehicle speeds at approximately 40 km/h or more	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• Stop lamp switch• ICC brake switch• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM• ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013708

1.CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

- YES >> GO TO 3.
- NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4.
- NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3.CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS".

Is the inspection result normal?

- YES >> GO TO 14.
- NO >> GO TO 9.

4.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

5.ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [DAS-377, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

C1A05 BRAKE SW/STOP LAMP SW

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 6.
- NO >> Replace ICC brake switch.

6.CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between ICC brake switch harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
ICC brake switch		Ground
Connector	Terminal	
E68	1	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair the harnesses or connectors.

7.CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM connector.
3. Check for continuity between ICC brake switch harness connector and ECM harness connector.

ICC brake switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E68	2	E80	147	Existed

4. Check for continuity between ICC brake switch harness connector and ground.

ICC brake switch		Ground	Continuity
Connector	Terminal		
E68	2		Not existed

Is the inspection result normal?

- YES >> GO TO 8.
- NO >> Repair the harnesses or connectors.

8.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (For USA and Canada) or [EC-672. "DTC Index"](#) (For Mexico).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

9.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7. "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> Adjust stop lamp switch installation. Refer to [BR-7. "Inspection and Adjustment"](#).

10.STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [DAS-377. "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

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C1A05 BRAKE SW/STOP LAMP SW

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 11.
NO >> Replace stop lamp switch.

11. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between stop lamp switch harness connector and ground.

Terminals		Voltage (Approx.)	
(+)	(-)		
Stop lamp switch		Ground	Battery voltage
Connector	Terminal		
E115	1		
	3		

Is the inspection result normal?

- YES >> GO TO 12.
NO >> Repair the harnesses or connectors.

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM, rear combination lamp and high-mounted stop lamp connectors.
3. Check for continuity between stop lamp switch harness connector and ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E115	2	E80	158	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	2		Not existed

Is the inspection result normal?

- YES >> GO TO 13.
NO >> Repair the harnesses or connectors.

13. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check for continuity between stop lamp switch harness connector and ABS actuator and electric unit (control unit) harness connector.

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E115	4	E36	17	Existed

3. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	4		Not existed

Is the inspection result normal?

- YES >> GO TO 14.

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

NO >> Repair the harnesses or connectors.

14.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (For USA and Canada) or [EC-672. "DTC Index"](#) (For Mexico).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 15.

15.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to [BRC-50. "DTC Index"](#).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

Component Inspection (ICC Brake Switch)

INFOID:000000009013709

1.CHECK ICC BRAKE SWITCH

Check for continuity between ICC brake switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Not existed
		When brake pedal is released	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:000000009013710

1.CHECK STOP LAMP SWITCH

Check for continuity between stop lamp switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed
3	4	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch.

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DAS

C1A06 OPERATION SW

DTC Logic

INFOID:000000009013711

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	<ul style="list-style-type: none"> Any switch of the ICC steering switch is detected as "ON" continuously for 60 seconds An ON/OFF state judgment of the ICC differs between ECM and ADAS control unit, and the state continues for 2 seconds or more 	<ul style="list-style-type: none"> ICC steering switch circuit ICC steering switch ECM

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Wait for approximately 5 minutes after turning the LDP system ON.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A06" detected as the current malfunction?

- YES >> Refer to [DAS-378, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013712

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A06" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

- Turn the ignition switch OFF.
- Disconnect the ICC steering switch connector.
- Check the ICC steering switch. Refer to [DAS-379, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace the steering wheel.

3. CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

- Disconnect the ECM connector.
- Check for continuity between the spiral cable harness connector and ECM harness connector.

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M33	25	M80	128	Existed
	32		130	

- Check for continuity between spiral cable harness connector and ground.

Spiral cable		Ground	Continuity
Connector	Terminal		
M33	25		Not existed
	32		

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair the harnesses or connectors.

4.CHECK SPIRAL CABLE

Check for continuity between spiral cable terminals.

Spiral cable		Continuity
Terminal		
13	25	Existed
16	32	

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace the spiral cable.

5.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect the connectors of ICC steering switch and ECM connector.
2. Turn the ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

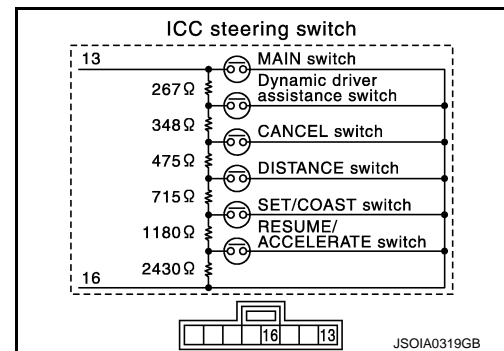
Component Inspection

INFOID:000000009013713

1.CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

Terminal	Switch operation	Resistance [Ω]
13 16	When pressing MAIN switch	Approx. 0
	When pressing dynamic driver assistance switch	Approx. 267
	When pressing CANCEL switch	Approx. 615
	When pressing DISTANCE switch	Approx. 1090
	When pressing SET/COAST switch	Approx. 1805
	When pressing RESUME/ACCELERATE switch	Approx. 2985
	When all switches are not pressed	Approx. 5415



Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the steering wheel.

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C1A14 ECM

DTC Logic

INFOID:000000009013714

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	<ul style="list-style-type: none"> Accelerator pedal position sensor ECM ADAS control unit

NOTE:

If DTC “C1A14” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the ICC system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “C1A14” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “C1A14” detected as the current malfunction?

- YES >> Refer to [DAS-380, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013715

1. CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “C1A14” in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U1000” detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in “Self Diagnostic Result” of “ENGINE”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1A15 GEAR POSITION

Description

INFOID:000000009013716

ADAS control unit judges the gear position based on the following signals.

- Current gear position signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from input speed signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from the vehicle speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000009013717

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN communication and a gear position calculated by the ADAS control unit continues for approximately 11 minutes or more	<ul style="list-style-type: none">• Input speed sensor• Vehicle speed sensor A/T (output speed sensor)• TCM

NOTE:

If DTC "C1A15" is detected along with DTC "U1000", "C1A03", or "C1A04", first diagnose the DTC "U1000", "C1A03", or "C1A04".

- Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-372, "DTC Logic"](#) for DTC "C1A03".
- Refer to [DAS-373, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A15" detected as the current malfunction?

YES >> Refer to [DAS-381, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013718

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

Check that "VHCL SPEED SE" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 3.
- NO >> GO TO 7.

3.CHECK GEAR POSITION

Check that "GEAR" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 4.

4.CHECK GEAR POSITION SIGNAL

Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 6.

5.CHECK INPUT SPEED SENSOR SIGNAL

Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
- NO >> GO TO 6.

6.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

7.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1A24 NP RANGE

DTC Logic

INFOID:000000009013719

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communication and a current gear position signal continues for 60 seconds or more	<ul style="list-style-type: none">• TCM• Transmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399. "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. CHECK DTC REPRODUCE (1)

1. Start the engine.
2. Turn the LDP system ON.
3. Wait for approximately 5 minutes or more after shifting the selector lever to "P" position.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-383. "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. CHECK DTC REPRODUCE (2)

1. Wait for approximately 5 minutes or more after shifting the selector lever to "N" position.
2. Perform "All DTC Reading".
3. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-383. "Diagnosis Procedure"](#).
NO >> Refer to [GI-43. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013720

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A24" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399. "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK NP POSITION SWITCH SIGNAL

Check that "NP RANGE SW" operates normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

- YES >> GO TO 3.
NO >> GO TO 4.

3. CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
NO >> GO TO 4.

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DAS

< DTC/CIRCUIT DIAGNOSIS >

4. PERFORM TCM SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A50 ADAS CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1A50 ADAS CONTROL UNIT

DTC Logic

INFOID:000000009013721

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A50	ADAS MALFUNCTION	If ADAS control unit is malfunctioning	ADAS control unit

NOTE:

If DTC "C1A50" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A50" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1A50" detected as the current malfunction?

- YES >> Refer to [DAS-385, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013722

1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A50" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).
NO >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).

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C1B00 CAMERA UNIT MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B00 CAMERA UNIT MALF

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013723

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B00 (81)	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B00" detected as the current malfunction?

YES >> Refer to [DAS-386. "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO >> INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013724

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B00" detected?

YES >> Refer to [DAS-386. "LANE CAMERA UNIT : DTC Logic"](#)

NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013725

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B00	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B00" detected as the current malfunction?

YES >> Refer to [DAS-386. "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO >> INSPECTION END

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013726

1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is any DTC detected?

C1B00 CAMERA UNIT MALF

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-341, "DTC Index"](#).
- NO >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).

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DAS

< DTC/CIRCUIT DIAGNOSIS >

C1B01 CAM AIMING INCOMP

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013727

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01 (82)	CAM AIMING INCOMP	Camera aiming is not completed	<ul style="list-style-type: none"> Lane camera aiming is not adjusted Lane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Operate the LDP system and drive.
CAUTION:
Always drive safely.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B01" detected as the current malfunction?

- YES >> Refer to [DAS-388, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013728

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1B01" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B01" detected?

- YES >> Refer to [DAS-388, "LANE CAMERA UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK DATA MONITOR

- Start the engine.
- Check that "OK" is indicated for the value of "AIMING RESULT" in "DATA MONITOR" of "LANE CAMERA".

Is "OK" indicated?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
 NO >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013729

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01	CAM AIMING INCOMP	Camera aiming is not completed	<ul style="list-style-type: none"> Lane camera aiming is not adjusted Lane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

C1B01 CAM AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B01" detected as the current malfunction?

- YES >> Refer to [DAS-389, "LANE CAMERA UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013730

1. CAMERA AIMING ADJUSTMENT

1. Perform the camera aiming. Refer to [DAS-365, "Description"](#).
2. Erase all self-diagnosis results with CONSULT.
3. Perform "All DTC Reading".
4. Check if the "C1B01" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B01" detected?

- YES >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).
NO >> INSPECTION END

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DAS

C1B03 ABNRML TEMP DETECT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

C1B03 ABNRML TEMP DETECT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013731

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03 (83)	CAM ABNRML TMP DETCT	Temperature around lane camera unit is excessively high	Interior room temperature is excessively high

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013732

1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA"

Is "C1B03" detected?

- YES >> Refer to [DAS-390. "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

1. Erase all self-diagnosis results with CONSULT.
2. Perform "All DTC Reading".
3. Check if the "C1B03" is detected in "Self Diagnostic Result" of "ICC/ADAS"

Is "C1B03" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013733

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03	ABNRML TEMP DETECT	Temperature around lane camera unit is excessively high	Interior room temperature is excessively high

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013734

1. COOLING LANE CAMERA UNIT

1. Wait for 10 minutes or more to cool the lane camera unit.
2. Erase All self-diagnosis results with CONSULT.
3. Perform "All DTC Reading".
4. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B03" detected?

- YES >> Replace the lane camera unit. Refer to [DAS-428. "Removal and Installation"](#).
NO >> INSPECTION END

U0104 ADAS CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0104 ADAS CAN 1

DTC Logic

INFOID:000000009013735

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0104	ADAS CAN CIR 1	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "LANE CAMERA UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0104" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0104" detected as the current malfunction?

- YES >> Refer to [DAS-391, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013736

1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).
NO >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).

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DAS

U0121 VDC CAN 2

DTC Logic

INFOID:000000009013737

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC “U0121” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to [DAS-196, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U0121” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U0121” detected as the current malfunction?

- YES >> Refer to [DAS-392, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013738

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U0121” in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U1000” detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “ABS”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0126 STRG SEN CAN 1

DTC Logic

INFOID:000000009013739

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126	STRG SEN CAN CIR1	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0126" detected as the current malfunction?

- YES >> Refer to [DAS-393, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013740

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).
NO >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).

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DAS

U0401 ECM CAN 1

DTC Logic

INFOID:000000009013741

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

- YES >> Refer to [DAS-394, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013742

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0402 TCM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0402 TCM CAN 1

DTC Logic

INFOID:000000009013743

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0402" detected as the current malfunction?

- YES >> Refer to [DAS-395, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013744

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U0405 ADAS CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0405 ADAS CAN 2

DTC Logic

INFOID:000000009013745

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0405	ADAS CAN CIR 2	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0405" detected as the current malfunction?

- YES >> Refer to [DAS-396, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013746

1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).
NO >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).

U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0415 VDC CAN 1

DTC Logic

INFOID:000000009013747

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [DAS-397, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013748

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U0428 STRG SEN CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U0428 STRG SEN CAN 2

DTC Logic

INFOID:000000009013749

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428	STRG SEN CAN CIR2	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "LANE CAMERA UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [DAS-398, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013750

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-333, "DTC Index"](#).
NO >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1000 CAN COMM CIRCUIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009013751

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013752

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none">• CAN communication system• ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013753

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the LDP system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:000000009013754

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013755

DTC DETECTION LOGIC

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U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If lane camera unit is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013756

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the LDP system ON, and then wait for 2 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected as the current malfunction?

- YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).
NO >> Refer to [GI-43. "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1010 CONTROL UNIT (CAN)

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009013757

CAN controller controls the communication of CAN communication signal and ITS communication signal, and the error detection.

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013758

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013759

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the LDP system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1010" detected as the current malfunction?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:000000009013760

CAN controller controls the communication of ITS communication signal and the error detection.

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013761

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	If lane camera unit detects malfunction by CAN controller initial diagnosis	Lane camera unit

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013762

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the LDP system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1010" detected as the current malfunction?

- YES >> Replace the lane camera unit. Refer to [DAS-428, "Removal and Installation"](#).
NO >> INSPECTION END

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DAS

< DTC/CIRCUIT DIAGNOSIS >

U150B ECM CAN 3

DTC Logic

INFOID:000000009013763

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150B" detected as the current malfunction?

- YES >> Refer to [DAS-402, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013764

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U150C VDC CAN 3

DTC Logic

INFOID:000000009013765

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150C" detected as the current malfunction?

- YES >> Refer to [DAS-403, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013766

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U150D TCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U150D TCM CAN 3

DTC Logic

INFOID:000000009013767

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150D" detected as the current malfunction?

- YES >> Refer to [DAS-404, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013768

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U150E BCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U150E BCM CAN 3

DTC Logic

INFOID:000000009013769

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	BCM

NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150E" detected as the current malfunction?

- YES >> Refer to [DAS-405, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013770

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "BCM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BCS-57, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1500 CAM CAN 2

DTC Logic

INFOID:000000009013771

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1500 (145)	CAM CAN CIRC 2	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit

NOTE:

If DTC “U1500” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U1500” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U1500” detected as the current malfunction?

- YES >> Refer to [DAS-406, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013772

1. CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U1500” in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U1000” detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “LANE CAMERA”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-341, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1501 CAM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1501 CAM CAN 1

DTC Logic

INFOID:000000009013773

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1501 (145)	CAM CAN CIRC 1	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit

NOTE:

If DTC "U1501" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1501" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1501" detected as the current malfunction?

- YES >> Refer to [DAS-407, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013774

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1501" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-341, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1512 HVAC CAN 3

DTC Logic

INFOID:000000009013775

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1512 (162)	HVAC CAN CIRC 3	ADAS control unit detects an error signal that is received from A/C auto amp. via CAN communication	A/C auto amp.

NOTE:

If DTC "U1512" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1512" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1512" detected as the current malfunction?

- YES >> Refer to [DAS-408, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013776

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1512" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK A/C AUTO AMP. SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "HVAC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [HAC-47, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1513 METER CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1513 METER CAN 3

DTC Logic

INFOID:000000009013777

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter

NOTE:

If DTC "U1513" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1513" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1513" detected as the current malfunction?

- YES >> Refer to [DAS-409, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013778

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1513" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK COMBINATION METER SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "METER/M&A".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [MWI-44, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1516 CAM CAN 3

DTC Logic

INFOID:000000009013779

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1516 (166)	CAM CAN CIRC 3	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit

NOTE:

If DTC "U1516" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1516" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1516" detected as the current malfunction?

- YES >> Refer to [DAS-410, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013780

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1516" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-341, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1520 4WD CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

U1520 4WD CAN 3

DTC Logic

INFOID:000000009013781

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1520 (176)	4WD CAN CIRC 3	ADAS control unit detects an error signal that is received from transfer control unit via CAN communication	Transfer control unit

NOTE:

If DTC "U1520" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDP system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1520" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1520" detected as the current malfunction?

- YES >> Refer to [DAS-411, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013782

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1520" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-399, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TRANSFER CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ALL MODE AWD/4WD".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DLN-30, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

POWER SUPPLY AND GROUND CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013783

1. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Ignition switch	0 V
Connector	Terminal		
B61	16	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ADAS control unit power supply circuit.

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ADAS control unit connector.
3. Check for continuity between ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	6		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

LANE CAMERA UNIT

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013784

1. CHECK LANE CAMERA UNIT POWER SUPPLY CIRCUIT

Check voltage between lane camera unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
Lane camera unit		Ignition switch	0 V
Connector	Terminal		
R8	7	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the lane camera unit power supply circuit.

2. CHECK LANE CAMERA UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the lane camera unit connector.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

3. Check for continuity between lane camera unit harness connector and ground.

Lane camera unit		Ground	Continuity
Connector	Terminal		
R8	1		Existed
	5		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the lane camera unit ground circuit.

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DAS

WARNING SYSTEMS SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

WARNING SYSTEMS SWITCH CIRCUIT

Component Function Check

INFOID:000000009013785

1.CHECK WARNING SYSTEMS SWITCH INPUT SIGNAL

1. Turn the ignition switch ON.
2. Select the DATA MONITOR item "WARN SYS SW" of "ICC/ADAS" with CONSULT.
3. With operating the warning systems switch, check the monitor status.

Monitor item	Condition	Monitor status
WARN SYS SW	Warning systems switch is pressed	On
	Warning systems switch is not pressed	OFF

Is the inspection result normal?

YES >> Warning systems switch circuit is normal.

NO >> Refer to [DAS-414. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000009013786

1.CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT

1. Turn the ignition switch ON.
2. Check voltage between ADAS control unit harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Warning systems switch	
Connector	Terminal		
B61	1	Pressed	0 V
		Released	12 V

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

NO >> GO TO 2.

2.CHECK WARNING SYSTEMS SWITCH

1. Turn ignition switch OFF.
2. Remove warning systems switch.
3. Check warning systems switch. Refer to [DAS-415. "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the warning systems switch. Refer to [DAS-429. "Removal and Installation"](#).

3.CHECK WARNING SYSTEMS SWITCH GROUND CIRCUIT

Check continuity between twin switch harness connector terminal and the ground.

Twin switch		Ground	Continuity
Connector	Terminal		
M127	3		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4.CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

1. Disconnect the ADAS control unit connector.

WARNING SYSTEMS SWITCH CIRCUIT

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

2. Check continuity between the ADAS control unit harness connector and twin switch harness connector.

ADAS control unit		Twin switch		Continuity
Connector	Terminal	Connector	Terminal	
B61	1	M127	2	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5.CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	1		Not existed

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000009013787

1.CHECK WARNING SYSTEMS SWITCH

Check continuity of warning systems switch.

Terminal		Condition	Continuity
2	3	When warning systems switch is pressed	Existed
		When warning systems switch is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace warning systems switch.

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DAS

WARNING SYSTEMS ON INDICATOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

WARNING SYSTEMS ON INDICATOR CIRCUIT

Component Function Check

INFOID:000000009013788

1.CHECK WARNING SYSTEMS ON INDICATOR

1. Turn the ignition switch ON.
2. Select the active test item "WARNING SYSTEM IND" of "ICC/ADAS" with CONSULT.
3. With operating the test item, check the operation.

On : Warning systems ON indicator illuminates

Off : Warning systems ON indicator is turned OFF

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [DAS-416, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000009013789

1.CHECK WARNING ON INDICATOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect twin switch connector.
3. Turn ignition switch ON.
4. Check voltage between twin switch harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Twin switch		Ground Battery voltage
Connector	Terminal	
M127	8	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the warning systems ON indicator power supply circuit.

2.CHECK WARNING SYSTEMS ON INDICATOR SIGNAL FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect the ADAS control unit harness connector.
3. Check continuity between the ADAS control unit harness connector and twin switch harness connector.

ADAS control unit		Twin switch		Continuity
Connector	Terminal	Connector	Terminal	
B61	4	M127	9	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK WARNING SYSTEMS ON INDICATOR SIGNAL CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	4		Not existed

Is the inspection result normal?

YES >> GO TO 4.

WARNING SYSTEMS ON INDICATOR CIRCUIT

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harnesses or connectors.

4.CHECK WARNING SYSTEMS ON INDICATOR

Check the warning systems ON indicator. Refer to [DAS-417, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> Replace warning systems switch. [DAS-429, "Removal and Installation"](#).

Component Inspection

INFOID:000000009013790

1.CHECK WARNING SYSTEMS ON INDICATOR

Apply battery voltage to warning systems switch terminals 8 and 9, and then check if the warning systems ON indicator illuminates.

Terminals		Condition	Warning systems ON indicator
(+)	(-)		
8	9	When the battery voltage is applied	On
		When the battery voltage is not applied	Off

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the warning systems switch. Refer to [DAS-429, "Removal and Installation"](#).

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DAS

WARNING BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[LDW & LDP]

WARNING BUZZER CIRCUIT

Component Function Check

INFOID:000000009013791

1.CHECK WARNING BUZZER

1. Turn the ignition switch ON.
2. Select the active test item "LDP BUZZER" of "ICC/ADAS" with CONSULT.
3. With operating the test item, check the operation.

On : Warning buzzer is activated.

Off : Warning buzzer is not activated.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [DAS-418, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000009013792

1.CHECK WARNING BUZZER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the warning buzzer connector.
3. Turn ignition switch ON.
4. Check voltage between the warning buzzer harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Warning buzzer		Ground Battery voltage
Connector	Terminal	
M94	1	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the warning buzzer power supply circuit.

2.CHECK WARNING BUZZER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between the warning buzzer harness connector and ground.

Warning buzzer		Ground	Continuity
Connector	Terminal		
M94	3		Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR OPEN

1. Disconnect the ADAS control unit connector.
2. Check continuity between the ADAS control unit harness connector and warning buzzer harness connector.

ADAS control unit		Warning buzzer		Continuity
Connector	Terminal	Connector	Terminal	
B61	12	M94	2	Existed

Is the inspection result normal?

WARNING BUZZER CIRCUIT

[LDW & LDP]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 4.
- NO >> Repair the harnesses or connectors.

4.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
M61	12		Not existed

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Repair the harnesses or connectors.

5.CHECK WARNING BUZZER OPERATION

1. Connect the warning buzzer connector.
2. Turn ignition switch ON.
3. Apply ground to warning buzzer terminal 2.
4. Check condition of the warning buzzer.

Does warning buzzer sound?

- YES >> Replace the ADAS control unit.
- NO >> Replace the warning buzzer.

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LDW & LDP SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

SYMPTOM DIAGNOSIS

LDW & LDP SYSTEM SYMPTOMS

Symptom Table

INFOID:000000009013793

NOTE:

For the operational conditions of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP), refer to the following descriptions.

- LDW: [DAS-297, "LANE DEPARTURE WARNING \(LDW\) SYSTEM : System Description"](#)
- LDP: [DAS-300, "LANE DEPARTURE PREVENTION \(LDP\) SYSTEM : System Description"](#)

Symptom	Possible cause	Inspection item/Reference page	
Indicator/warning lamps do not illuminate when ignition switch OFF ⇒ ON	Lane departure warning lamp (Yellow) does not illuminate.	<ul style="list-style-type: none"> • Combination meter • ADAS control unit 	Lane departure warning lamp does not turned ON Refer to DAS-422, "Description"
	LDP ON indicator lamp (Green) does not illuminate.	<ul style="list-style-type: none"> • Combination meter • ADAS control unit 	LDP ON indicator lamp does not turned ON Refer to DAS-423, "Description"
	Warning systems ON indicator does not illuminate.	<ul style="list-style-type: none"> • Harness between ADAS control unit and warning systems switch • Warning systems switch • ADAS control unit 	Warning systems ON indicator circuit Refer to DAS-416, "Component Function Check"
	Lane departure warning lamp (Yellow) and LDP ON indicator lamp (Green) does not illuminate.	<ul style="list-style-type: none"> • Combination meter • ADAS control unit 	<ul style="list-style-type: none"> • Lane departure warning lamp does not turned ON Refer to DAS-422, "Description" • LDP ON indicator lamp does not turned ON Refer to DAS-423, "Description"
	All of indicator/warning lamps does not illuminate; <ul style="list-style-type: none"> • Lane departure warning lamp (Yellow) • LDP ON indicator lamp (Green) • Warning systems ON indicator 	<ul style="list-style-type: none"> • Power supply and ground circuit of ADAS control unit • ADAS control unit 	Power supply and ground circuit of ADAS control unit Refer to DAS-412, "ADAS CONTROL UNIT : Diagnosis Procedure"
LDW system is not activated. (Indicator/warning lamps illuminate when ignition switch OFF ⇒ ON)	Warning systems ON indicator is not turned ON ⇔ OFF when operating warning systems switch	<ul style="list-style-type: none"> • Harness between ADAS control unit and warning systems switch • Harness between warning systems switch and ground • Warning systems switch • ADAS control unit 	<ul style="list-style-type: none"> • Warning systems switch circuit Refer to DAS-414, "Component Function Check" • LDW system setting can not be turned ON/OFF on the navigation screen Refer to DAS-425, "Diagnosis Procedure"
	Warning buzzer is not sounding. (Lane departure warning lamp is activated.)	<ul style="list-style-type: none"> • Harness between the IPDM E/R and warning buzzer • Harness between ADAS control unit and warning buzzer • Harness between warning buzzer and ground • Warning buzzer • ADAS control unit 	Warning buzzer circuit Refer to DAS-418, "Component Function Check"

LDW & LDP SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

Symptom		Possible cause	Inspection item/Reference page
LDP system is not activated. (LDW system is functioning normally)	Indicator lamp is not turned ON ⇔ OFF when operating dynamic driver assistance switch	<ul style="list-style-type: none"> Dynamic driver assistance switch Combination meter ADAS control unit AV control unit 	<ul style="list-style-type: none"> Dynamic driver assistance switch (ICC steering switch) Refer to DAS-379, "Component Inspection" LDP system setting can not be turned ON/OFF on the navigation screen Refer to DAS-425, "Description"
	Warning is functioning but yawing is not functioning.	—	<ul style="list-style-type: none"> Cause of auto-cancel 2 Refer to DAS-311 Normal operating condition Refer to DAS-426, "Description"
Warning functions are not timely (Example)		<ul style="list-style-type: none"> Camera aiming adjustment Lane camera unit ADAS control unit 	Camera aiming adjustment DAS-365, "Description"
<ul style="list-style-type: none"> Does not function when driving on lane markers Functions when driving in a lane Functions in a different position from the actual position. 			
Functions when changing the course in direction of the turn signal		Turn indicator signal (CAN) <ul style="list-style-type: none"> BCM ADAS control unit 	System operates even when using turn signal Refer to DAS-424, "Description"

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LANE DEPARTURE WARNING LAMP DOES NOT TURNED ON

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

LANE DEPARTURE WARNING LAMP DOES NOT TURNED ON

Description

INFOID:000000009013794

The lane departure warning lamp in the combination meter does not turn ON when turning on the ignition switch

Diagnosis Procedure

INFOID:000000009013795

1. CHECK LANE DEPARTURE WARNING LAMP

1. Check that "LANE DEPARTURE W/L" operate normally in "ACTIVE TEST" of "ICC/ADAS".
2. Operate the test items to check that the lane departure warning lamp blinks

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> GO TO 2.

2. CHECK COMBINATION METER

Turn the ignition switch from OFF to ON to check that "LANE W/L" included in "DATA MONITOR" in "METER/M&A" operates normally.

Is the inspection result normal?

- YES >> Replace the combination meter. Refer to [MWI-87, "Removal and Installation"](#).
- NO >> GO TO 3.

3. CHECK SELF-DIAGNOSIS RESULTS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to [MWI-44, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> GO TO 4.

4. CHECK SELF-DIAGNOSIS RESULTS OF ADAS CONTROL UNIT

Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" Refer to [DAS-333, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

LDP ON INDICATOR LAMP DOES NOT TURNED ON

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

LDP ON INDICATOR LAMP DOES NOT TURNED ON

Description

INFOID:000000009013796

The LDP ON indicator lamp in the combination meter does not turn ON when turning on the ignition switch

Diagnosis Procedure

INFOID:000000009013797

1. CHECK LDP ON INDICATOR LAMP

1. Check that "LDP ON IND" operate normally in "ACTIVE TEST" of "ICC/ADAS".
2. Check if the LDP ON indicator lamp illuminates when operates each test item.

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> GO TO 2.

2. CHECK COMBINATION METER

Turn the ignition switch from OFF to ON to check that "LDP IND" included in "DATA MONITOR" in "METER/M&A" operates normally.

Is the inspection result normal?

- YES >> Replace the combination meter. Refer to [MWI-87, "Removal and Installation"](#).
- NO >> GO TO 3.

3. CHECK SELF-DIAGNOSIS RESULTS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "METER/M&A" Refer to [MWI-44, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> GO TO 4.

4. CHECK SELF-DIAGNOSIS RESULTS OF ADAS CONTROL UNIT

Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" Refer to [DAS-333, "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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THE SYSTEM OPERATES EVEN WHEN USING TURN SIGNAL

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

THE SYSTEM OPERATES EVEN WHEN USING TURN SIGNAL

Description

INFOID:000000009013798

The warning of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP) and the yaw moment control are activated during the use of a turn signal.

NOTE:

For the operational conditions of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP), refer to the following descriptions.

- LDW: [DAS-297, "LANE DEPARTURE WARNING \(LDW\) SYSTEM : System Description"](#)
- LDP: [DAS-300, "LANE DEPARTURE PREVENTION \(LDP\) SYSTEM : System Description"](#)

Diagnosis Procedure

INFOID:000000009013799

1. CHECK TURN SIGNAL OPERATION

Check that both right and left turn signals are normal.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts. Refer to [DAS-420, "Symptom Table"](#).

2. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.

2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" Refer to [DAS-333, "DTC Index"](#).

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

LDW/LDP SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

LDW/LDP SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

Description

INFOID:000000009013800

- LDW system setting is not selectable on the navigation screen.
- LDP system setting is not selectable on the navigation screen.

NOTE:

- When the ignition switch is in ACC position, LDW or LDP system settings cannot be changed.
- "Lane Departure Warning" or "Lane Departure Prevention" is not indicated on the navigation screen.
- The switching between ON and OFF cannot be performed by operating the navigation system.
- The item of "Lane Departure Warning" or "Lane Departure Prevention" on the navigation screen is not active.
- After turning ON the ignition switch or starting the engine, LDW or LDP settings of the navigation system cannot be selected for several tens of seconds under the following conditions:
 - After replacing AV control unit.
 - After erasing connection history of the navigation system.
 - After erasing self-diagnosis results of AV control unit.
- The LDW or LDP system setting differs from the one set at the previous driving.

NOTE:

Turn OFF the ignition switch and wait for 5 seconds or more.

Diagnosis Procedure

INFOID:000000009013801

1. CHECK LDP SYSTEM SETTING

1. Start the engine.
2. Check that the LDP system settings is selectable on the navigation screen.

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> GO TO 2.

2. PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". Refer to the following.
 - ICC/ADAS: [DAS-333, "DTC Index"](#)
 - MULTI AV: [AV-69, "DTC Index"](#)
 - METER/M&A: [MWI-44, "DTC Index"](#)

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> INSPECTION END

3. CHECK DATA MONITOR OF ADAS CONTROL UNIT

Check that "LDP SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

- YES >> Refer to [AV-37, "On Board Diagnosis Function"](#).
- NO >> GO TO 4.

4. CHECK MULTIFUNCTION SWITCH

Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate properly.

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

Description

INFOID:000000009013802

PRECAUTIONS FOR LANE DEPARTURE WARNING (LDW)

- LDW system is only a warning device to inform the driver of a potential unintended lane departure. It will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of the vehicle at all times.
- LDW system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- LDW system may not function properly under the following conditions:
 - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers; or lane markers covered with water, dirt or snow, etc.
 - On roads where the discontinued lane markers are still detectable.
 - On roads where there are sharp curves.
 - On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs. (The LDW system could detect these items as lane markers.)
 - On roads where the traveling lane merges or separates.
 - When the vehicle's traveling direction does not align with the lane marker.
 - When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range.
 - When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
 - When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
 - When strong light enters the lane camera unit. (For example, the light directly shines on the front of the vehicle at sunrise or sunset.)
 - When a sudden change in brightness occurs. (For example, when the vehicle enters or exits a tunnel or under a bridge.)

PRECAUTIONS FOR LANE DEPARTURE PREVENTION (LDP)

- LDP system will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of vehicle at all times.
- LDP system is primarily intended for use on well-developed freeways or highways. It may not detect the lane markers in certain roads, weather or driving conditions.
- Using the LDP system under some conditions of road, lane marker or weather, or when driver change lanes without using the turn signal could lead to an unexpected system operation. In such conditions, driver needs to correct the vehicle's direction with driver's steering operation to avoid accidents.
- When the LDP system is operating, avoid excessive or sudden steering maneuvers. Otherwise, driver could lose control of the vehicle.
- The LDP system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers.
- The LDP system may not function properly under the following conditions, and do not use the LDP system:
 - During bad weather (rain, fog, snow, wind, etc.).
 - When driving on slippery roads, such as on ice or snow, etc.
 - When driving on winding or uneven roads.
 - When there is a lane closure due to road repairs.
 - When driving in a makeshift lane.
 - When driving on roads where the lane width is too narrow.
 - When driving with a tire that is not within normal tire conditions (for example, tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels).
 - When the vehicle is equipped with non-original brake parts or suspension parts.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- The functions of the LDP system (warning and brake control assist) may or may not operate properly under the following conditions:
 - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers or lane markers covered with water, dirt or snow, etc.
 - On roads where discontinued lane markers are still detectable.
 - On roads where there are sharp curves.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

- On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs (The LDP system could detect these items as lane markers.)
- On roads where the traveling lane merges or separates.
- When the vehicle's traveling direction does not align with the lane marker.
- When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range.
- When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
- When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
- When strong light enters the lane camera unit (For example, the light directly shines on the front of the vehicle at sunrise or sunset.)
- When a sudden change in brightness occurs (For example, when the vehicle enters or exits a tunnel or under a bridge.)
- While the LDP system is operating, driver may hear a sound of brake operation. This is normal and indicates that the LDP system is operating properly.

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REMOVAL AND INSTALLATION

LANE CAMERA UNIT

Removal and Installation

INFOID:000000009013803

REMOVAL

1. Remove headlining assembly. Refer to [INT-29, "Removal and Installation"](#).
2. Remove map lamp bracket. Refer to [INT-28, "Exploded View"](#).
3. Remove the bolts.
4. Remove lane camera unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

- Remove the camera lens cap for replacement.
- Never give an impact to the lane camera unit.
- Perform the camera aiming every time the lane camera unit is removed and installed. Refer to [DAS-364, "Description"](#).

WARNING SYSTEMS SWITCH

< REMOVAL AND INSTALLATION >

[LDW & LDP]

WARNING SYSTEMS SWITCH

Removal and Installation

INFOID:000000009013804

REMOVAL

1. Remove the instrument lower panel (LH). Refer to [IP-14, "Removal and Installation"](#).
2. Remove warning systems switch from instrument driver lower panel.

NOTE:

Warning systems switch and automatic back door switch are integrated.

INSTALLATION

Install in the reverse order of removal.

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DYNAMIC DRIVER ASSISTANCE SWITCH

< REMOVAL AND INSTALLATION >

[LDW & LDP]

DYNAMIC DRIVER ASSISTANCE SWITCH

Exploded View

INFOID:000000009013805

Dynamic driver assistance switch is integrated in the ICC steering switch. Refer to [ST-33. "Exploded View"](#).

NOTE:

Always remove ICC steering switch together with steering wheel.

WARNING BUZZER

< REMOVAL AND INSTALLATION >

[LDW & LDP]

WARNING BUZZER

Removal and Installation

INFOID:000000009013806

REMOVAL

1. Remove the instrument lower panel (LH). Refer to [IP-14, "Removal and Installation"](#).
2. Remove the screw.
3. Remove warning buzzer.

INSTALLATION

Install in the reverse order of removal.

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PRECAUTIONS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009013807

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Removing of Battery Terminal

INFOID:000000009898574

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

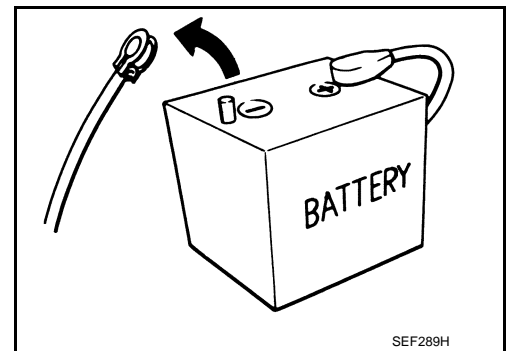
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



Precautions For Harness Repair

INFOID:000000009013808

ITS communication uses a twisted pair line. Be careful when repairing it.

PRECAUTIONS

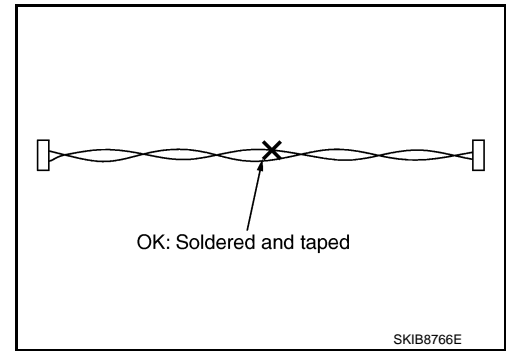
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< PRECAUTION >

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

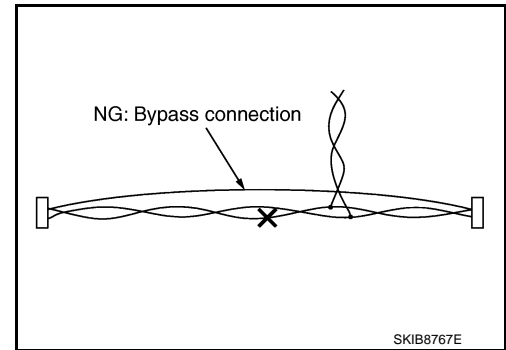
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



Precaution for Blind Spot Warning/Blind Spot Intervention System Service INFOID:000000009013809

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Never use the Blind Spot Intervention system when driving with free rollers or a chassis dynamometer.
- Never perform the active test while driving.
- Never disassemble and remodel the lane camera unit.
- Do not use the lane camera unit that is removed from the vehicle.
- Never change BSW initial state ON ⇒ OFF without the consent of the customer.

TO KEEP THE BLIND SPOT WARNING/BLIND SPOT INTERVENTION SYSTEM OPERATING PROPERLY, BE SURE TO OBSERVE THE FOLLOWING ITEMS:

Lane Camera Unit Maintenance

The lane camera unit for the LDW/LDP system is located above the inside mirror. To keep the proper operation of the LDW/LDP systems and prevent a system malfunction, be sure to observe the following:

- Always keep the windshield clean.
- Do not attach a sticker (including transparent material) or install an accessory near the camera unit.
- Do not place reflective materials, such as white paper or a mirror, on the instrument panel. The reflection of sunlight may adversely affect the camera unit capability of detecting the lane markers.
- Do not strike or damage the areas around the camera unit.
- Do not touch the camera lens or remove the screw located on the camera unit.

System Maintenance

The two side radar for the Blind Spot Warning and Blind Spot Intervention systems are located near the rear bumper.

- Always keep the area near the side radar clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the side radar.
- Do not strike or damage the area around the side radar.

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COMPONENT PARTS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

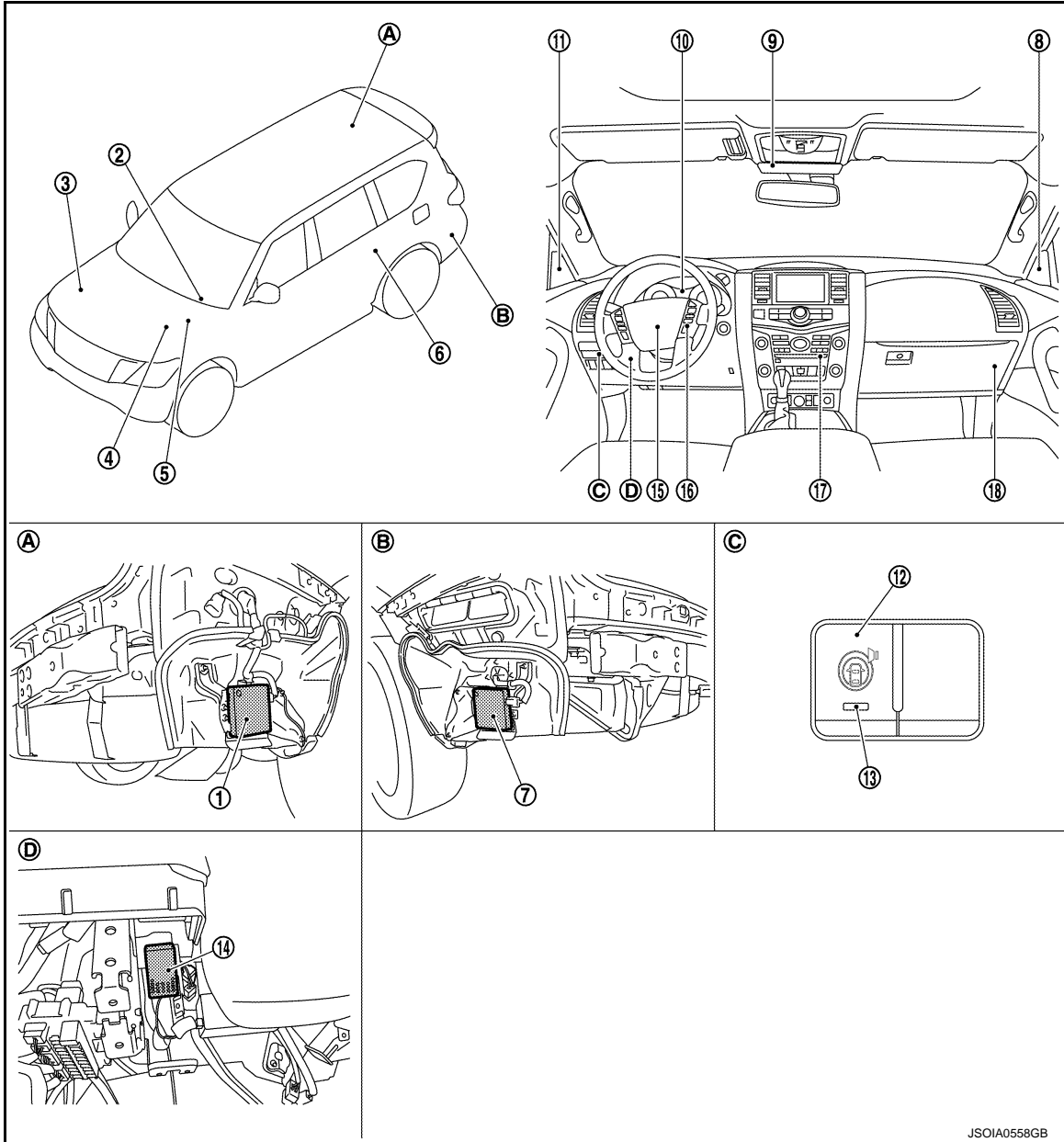
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000009013810



JSOIA0558GB

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| <p>1. Side radar RH</p> <p>4. TCM
Refer to TM-11, "A/T CONTROL SYSTEM : Component Parts Location".</p> | <p>2. BCM
Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location".</p> <p>5. ABS actuator and electric unit (control unit)
Refer to BRC-9, "Component Parts Location".</p> | <p>3. ECM
Refer to the following.</p> <ul style="list-style-type: none"> • For USA and Canada: EC-23, "Component Parts Location". • For Mexico: EC-593, "Component Parts Location". <p>6. ADAS control unit
Refer to DAS-17, "Component Parts Location".</p> |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 7. Side radar LH | 8. Blind Spot Warning/Blind Spot Intervention indicator RH | 9. Lane camera unit
Refer to DAS-294, "LANE DEPARTURE WARNING (LDW) SYSTEM: Component Parts Location" . |
| 10. Combination meter
• Blind Spot Intervention ON indicator (Green)
• Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow) | 11. Blind Spot Warning/Blind Spot Intervention indicator LH | 12. Warning systems switch |
| 13. Warning systems ON indicator | 14. Warning buzzer | 15. Steering angle sensor |
| 16. Dynamic driver assistance switch | 17. AV control unit
Refer to AV-12, "Component Parts Location" . | 18. Transfer control unit
Refer to DLN-11, "Component Parts Location" . |
| A. Rear bumper removed condition (RH) | B. Rear bumper removed condition (LH) | C. Instrument lower panel (LH) |
| D. Inside of the instrument panel | | |

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Component Description

INFOID:000000009013811

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Component	Description
ADAS control unit	<ul style="list-style-type: none"> Being connected with side radar (LH and RH) via ITS communication, receives vehicle detection signal and transmits Blind Spot Warning/Blind Spot Intervention indicator signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to side radar Being connected with lane camera unit via ITS communication, receives detected lane condition signal Receives steering angle sensor signal from steering angle sensor via CAN communication Judges a Blind Spot Warning/Blind Spot Intervention indicator ON/OFF state and an approach state to the lane marker, based on each signal and calculates yaw moment to help return the vehicle back to the center of the lane. Transmits target yaw moment signal to ABS actuator and electric unit (control unit) Activates the warning buzzer and warning systems ON indicator Transmits Blind Spot Intervention ON indicator signal and Blind Spot Intervention warning lamp signal to combination meter via CAN communication
Side radar LH/ RH	<ul style="list-style-type: none"> Being connected with ADAS control unit via ITS communication, transmits vehicle detection signal Receives Blind Spot Intervention indicator signal and Blind Spot Intervention indicator dimmer signal from ADAS control unit and transmits an indicator operation signal to Blind Spot Intervention indicator LH/RH RH side radar equips right/left switching signal circuit for identifying LH or RH because the parts of side radar are common for right and left
Blind Spot Warning/Blind Spot Intervention indicator LH/ RH	Receives Blind Spot Warning/Blind Spot Intervention indicator operation signal from side radar LH/ RH and turns OFF, turns ON or blinks
Lane camera unit	<ul style="list-style-type: none"> Detects the lane marker by the built-in camera Transmits detected lane condition signal to ADAS control unit
ABS actuator and electric unit (control unit)	<ul style="list-style-type: none"> Transmits vehicle speed signal to ADAS control unit via CAN communication Transmits yaw rate signal/side G sensor signal to ADAS control unit via CAN communication Receives a target yaw moment signal from the ADAS control unit via CAN communication and controls brake pressure of four wheels, respectively
Warning systems switch	Inputs the switch signal to ADAS control unit
Dynamic driver assistance switch	Inputs the switch signal to ECM
Warning systems ON indicator (On the warning systems switch)	Indicates BSW system status
Warning buzzer	Receives buzzer signal from ADAS control unit and sounds buzzer.
Combination meter	<ul style="list-style-type: none"> Turns the Blind Spot Warning/Blind Spot Intervention warning lamp and Blind Spot Intervention ON indicator ON/OFF according to the signals from the ADAS control unit via CAN communication Receives Blind Spot Intervention ON indicator signal, and Blind Spot Warning/Blind Spot Intervention warning lamp signal via CAN communication.
Steering angle sensor	Transmits steering angle sensor signal to ADAS control unit via CAN communication

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COMPONENT PARTS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

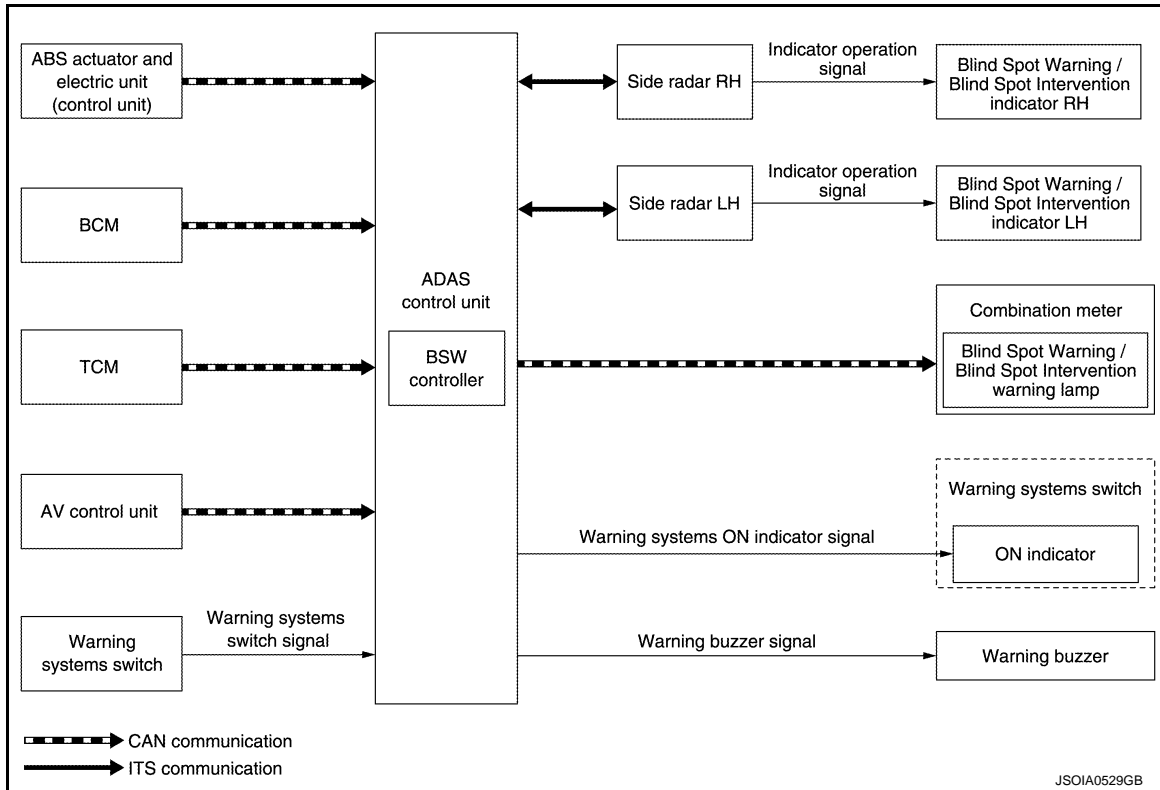
Component	Description
BCM	<ul style="list-style-type: none">• Transmits turn indicator signal to ADAS control unit via CAN communication• Transmits dimmer signal to ADAS control unit via CAN communication
ECM	Transmits the accelerator pedal position signal, engine speed signal and ICC steering switch signal (dynamic driver assistance switch signal) to ADAS control unit via CAN communication
TCM	Transmits the output shaft speed signal, input speed signal, current gear position signal and shift position signal to ADAS control unit via CAN communication
AV control unit	Transmits the system selection signal to ADAS control unit via CAN communication
Transfer control unit	Transmits the current 4WD mode signal to ADAS control unit via CAN communication

SYSTEM
BLIND SPOT WARNING (BSW) SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM : System Description

INFOID:000000009013812

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

ADAS control unit receives signals via CAN communication. It also detects vehicle conditions that are necessary for BSW control.

Input Signal Item

Transmit unit	Signal name	Description
TCM	CAN communication Shift position signal	Receives a selector lever position
ABS actuator and electric unit (control unit)	CAN communication Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
BCM	CAN communication Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
	Dimmer signal	Receives ON/OFF state of dimmer signal
AV control unit	CAN communication System selection signal	Receives a selection state of each item in "Driver Assist" selected with the navigation system
Side radar LH, RH	ITS communication Vehicle detection signal	Receives vehicle detection condition of detection zone.
Warning systems switch	Warning systems switch signal	Receives an ON/OFF state of the warning systems switch

Output Signal Item

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SYSTEM

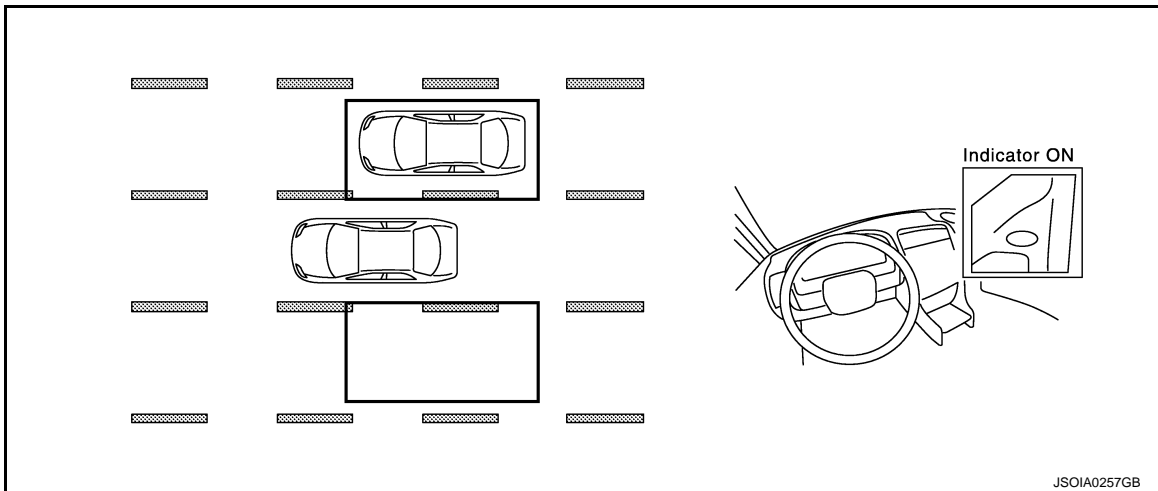
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Reception unit	Signal name		Description
Combination meter	CAN communication	Blind Spot Warning/Blind Spot Intervention warning lamp signal	Transmits a Blind Spot Warning/Blind Spot Intervention warning lamp signal to turn ON the Blind Spot Warning/Blind Spot Intervention warning lamp
		Blind Spot Intervention ON indicator signal	Transmits a Blind Spot Intervention ON indicator lamp signal to turn ON the Blind Spot Intervention ON indicator lamp
Side radar LH, RH	ITS communication	Blind Spot Warning/Blind Spot Intervention indicator signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator signal to turn ON the Blind Spot Warning/Blind Spot Intervention indicator
		Blind Spot Warning/Blind Spot Intervention indicator dimmer signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
Warning systems ON indicator	Warning systems ON indicator signal		Turns ON the warning systems ON indicator
Warning buzzer	Warning buzzer operation signal		Activates the warning buzzer

FUNCTION DESCRIPTION

- The BSW system can help alert the driver of other vehicles in adjacent lanes when changing lanes.
- The BSW system uses side radar installed near the rear bumper to detect vehicles in an adjacent lane.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- This detection zone starts from the outside mirror of vehicle and extends approximately 10 ft (3.0 m) behind the rear bumper, and approximately 10 ft (3.0 m) sideways.
- The BSW system operates above approximately 32 km/h (20 MPH).
- If the side radar detects vehicles in the detection zone, the Blind Spot Warning/Blind Spot Intervention indicator illuminates.



- If the driver then activates the turn signal, a buzzer will sound twice and the Blind Spot Warning/Blind Spot Intervention indicator will blink.

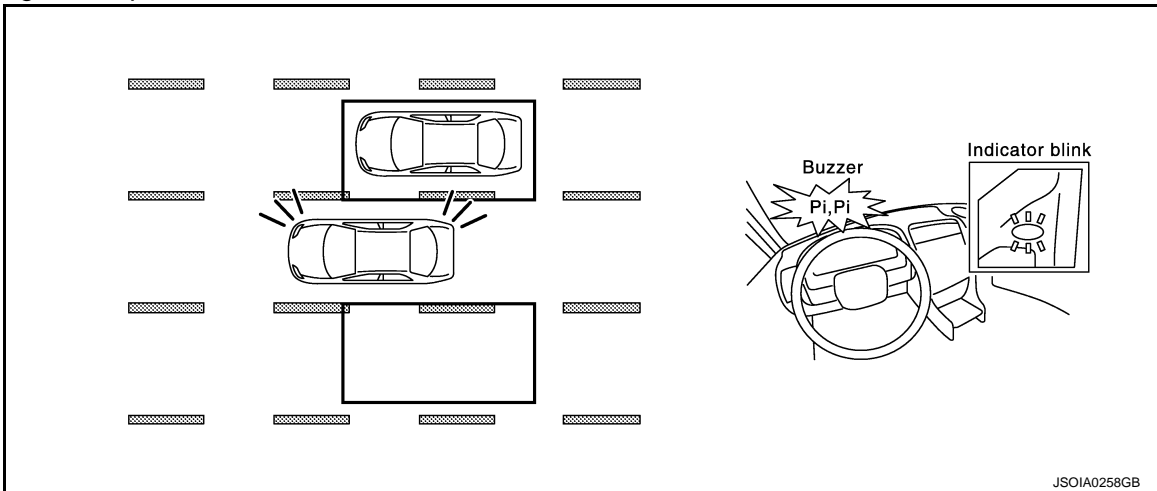
NOTE:

SYSTEM

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

A buzzer sounds if the side radar have already detected vehicles when the driver activates the turn signal. If a vehicle comes into the detection zone after the driver activates the turn signal, then only the Blind Spot Warning/Blind Spot Intervention indicator blinks and no buzzer sounds.



BSW SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables BSW system.
- The ADAS control unit turns on the BSW system when the warning systems switch is turned ON.
- Side radar detects a vehicle in the adjacent lane, and transmits the vehicle detection signal to ADAS control unit via ITS communication.
- ADAS control unit starts the control as follows, based on a vehicle detection signal, turn signal and dimmer signal transmitted from BCM via CAN communication:
 - Blind Spot Warning/Blind Spot Intervention indicator signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal transmission to side radar.
 - Buzzer signal transmission to warning buzzer.
- Side radar transmits an indicator operation signal to the Blind Spot Warning/Blind Spot Intervention indicator according to Blind Spot Warning/Blind Spot Intervention indicator signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal.

Operation Condition of BSW System

ADAS control unit performs the control when the following conditions are satisfied.

- When the warning systems switch in turned ON* or Blind Spot Intervention system turned ON.
- When the vehicle drives at 32 km/h (20 MPH) or more to the forward direction.

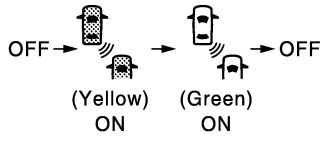
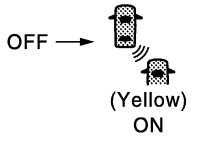
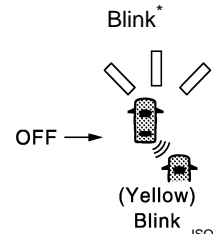
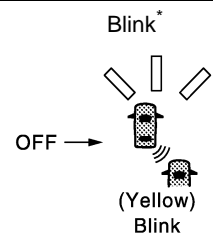
NOTE:

- *: When the BSW system setting on the navigation screen is ON.
- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 29 km/h (18 MPH)
- The BSW system may not function properly, depending on the situation. Refer to [DAS-452, "Precautions for Blind Spot Warning/Blind Spot Intervention"](#).

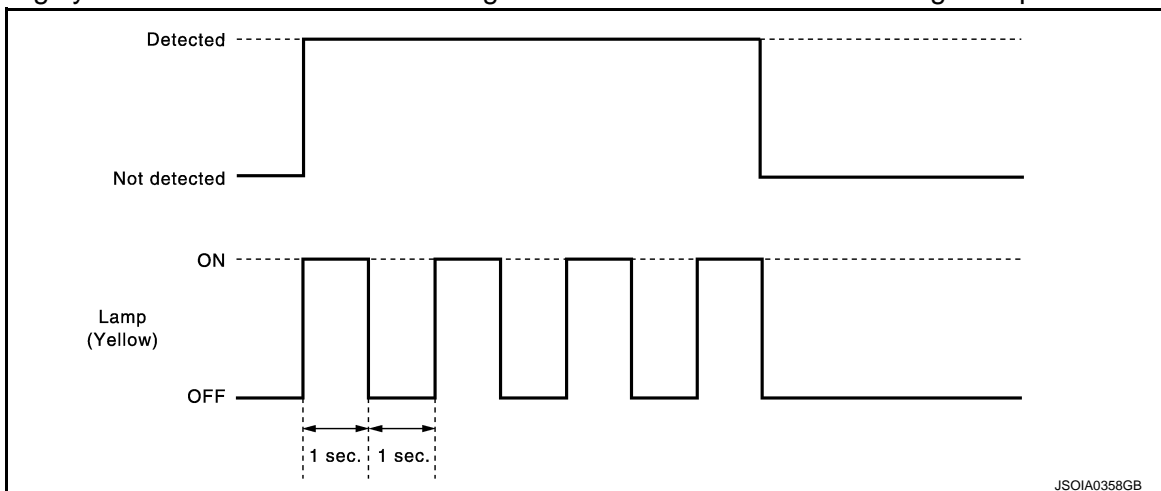
BULB CHECK ACTION AND FAIL-SAFE INDICATION

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Vehicle condition/Driver's operation	Blind Spot Warning/ Blind Spot Intervention indicator	Warning systems ON indicator	Indication on the combination meter
Ignition switch: OFF ⇒ ON	Approx. 2 sec. ON	Approx. 5 sec. ON	 <p style="text-align: center;">(Yellow) ON (Green) ON</p> <p style="text-align: right; font-size: small;">JSOIA0253GB</p>
When DTC is detected	OFF	ON	 <p style="text-align: center;">(Yellow) ON</p> <p style="text-align: right; font-size: small;">JSOIA0254GB</p>
When the camera detects that interior temperature is high	OFF	ON	 <p style="text-align: center;">(Yellow) Blink</p> <p style="text-align: right; font-size: small;">JSOIA0255GB</p>
When radar blockage is detected	OFF	ON	 <p style="text-align: center;">(Yellow) Blink</p> <p style="text-align: right; font-size: small;">JSOIA0255GB</p>
When the warning systems switch is pressed (When the settings of LDW system, FCW system, and BSW system on the navigation screen are "OFF")	OFF	Blink	—

*: Blinking cycle when the side radar blockage condition or lane camera unit high temperature condition



NOTE:

SYSTEM

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Time shown in the figure is approximate time.

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (ADAS Control Unit) INFOID:000000009013813

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (Lane Camera Unit) INFOID:000000009013814

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the Blind Spot Warning/Blind Spot Intervention warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in the combination meter will blink.
- When interior temperature is reduced, the system will resume operation automatically and the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in the combination meter will stop blinking.

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (Side Radar) INFOID:000000009013815

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning/Blind Spot Intervention warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

BLIND SPOT INTERVENTION SYSTEM

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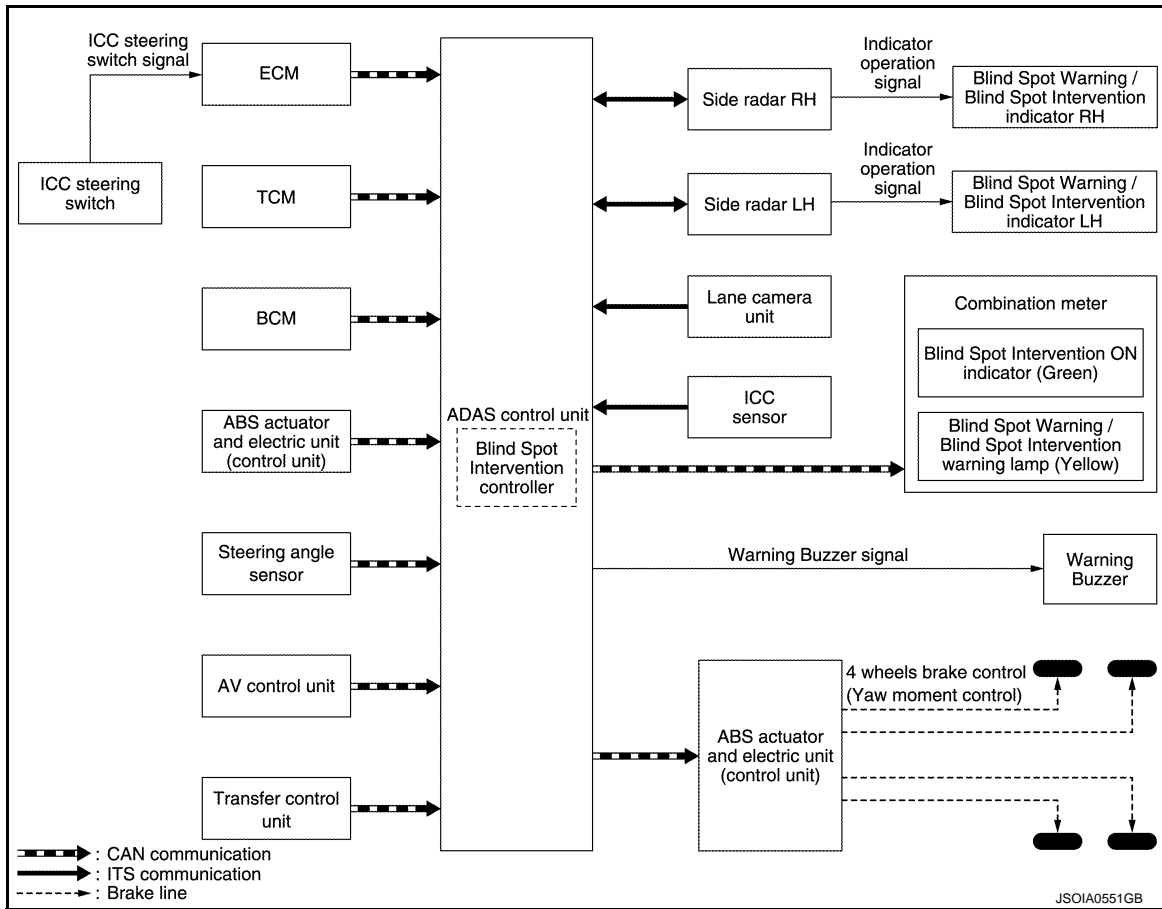
SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

BLIND SPOT INTERVENTION SYSTEM : System Description

INFOID:000000009013816

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ECM	CAN communication	Accelerator pedal position signal	Receives accelerator pedal position (angle)
		ICC steering switch signal	Receives the operational state of the ICC steering switch
		Dynamic driver assistance switch signal	
		Engine speed signal	Receives engine speed
TCM	CAN communication	Input speed signal	Receives the number of revolutions of input shaft
		Current gear position signal	Receives a current gear position
		Shift position signal	Receives a select lever position
		Output shaft revolution signal	Receives the number of revolutions of output shaft

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Transmit unit	Signal name		Description	
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS	A
		ABS operation signal	Receives an operational state of ABS	
		TCS malfunction signal	Receives a malfunction state of TCS	B
		TCS operation signal	Receives an operational state of TCS	
		VDC OFF switch signal	Receives an ON/OFF state of VDC	C
		VDC malfunction signal	Receives a malfunction state of VDC	
		VDC operation signal	Receives an operational state of VDC	
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels	D
		Yaw rate signal	Receives yaw rate acting on the vehicle	
		Side G sensor signal	Receives lateral G acting on the vehicle	
Combination meter	CAN communication	Parking brake switch signal	Receives an operational state of the parking brake	E
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp	F
		Dimmer signal	Receives ON/OFF state of dimmer signal	
Steering angle sensor	CAN communication	Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor	G
		Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel	
		Steering angle speed signal	Receives the turning angle speed of the steering wheel	H
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in "Driver Assist" selected with the navigation system	
Transfer control unit	CAN communication	Current 4WD mode signal	Receives a mode selection state of the 4WD shift switch	I
ICC sensor	ITS communication	ICC sensor signal	Receives detection results, such as the presence or absence of a leading vehicle and distance from the vehicle	J
Lane camera unit	ITS communication	Detection lane condition signal	Receives detection results of lane marker	
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.	K

Output Signal Item

Reception unit	Signal name		Description	
ABS actuator and electric unit (control unit)	CAN communication	Target yaw moment signal	Transmits a target yaw moment signal to generate yaw moment to the vehicle	M
Combination meter	CAN communication	Blind Spot Warning/Blind Spot Intervention warning lamp signal	Transmits a Blind Spot Warning/Blind Spot Intervention warning lamp signal to turn ON the Blind Spot Warning/Blind Spot Intervention warning lamp	N
		Blind Spot Intervention ON indicator lamp signal	Transmits a Blind Spot Intervention ON indicator lamp signal to turn ON the Blind Spot Intervention ON indicator lamp	DAS
Lane camera unit	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit	
		Turn indicator signal	Transmits a turn indicator signal received from BCM	P

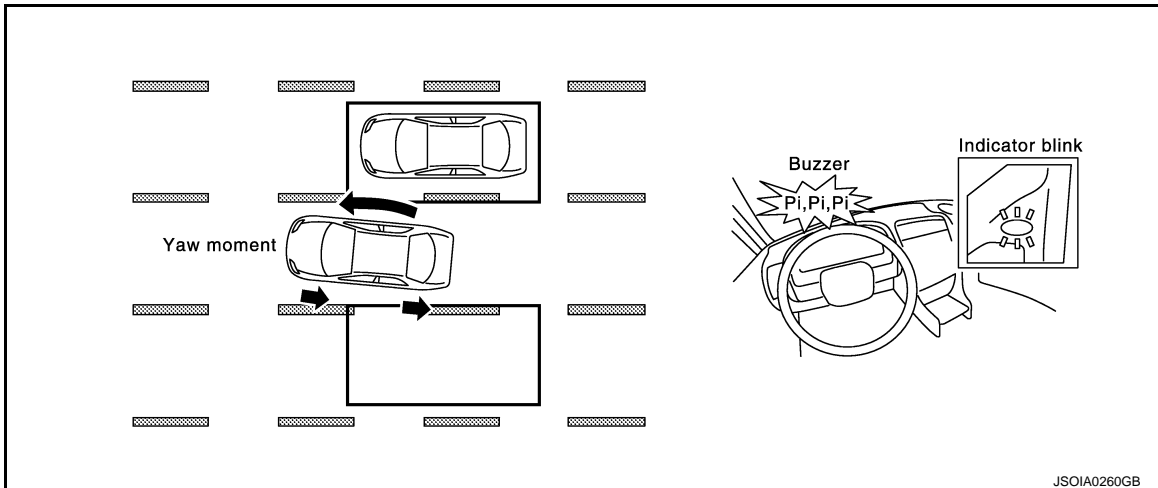
SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Reception unit	Signal name	Description
Side radar LH, RH	Blind Spot Warning/Blind Spot Intervention indicator signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator signal to turn ON the Blind Spot Warning/Blind Spot Intervention indicator
	Blind Spot Warning/Blind Spot Intervention indicator dimmer signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator
	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
Warning buzzer	Warning buzzer operation signal	Activates the warning buzzer

FUNCTION DESCRIPTION

- The Blind Spot Intervention system can help alert the driver of other vehicles in adjacent lanes when changing lanes. Blind Spot Intervention always operates together with BSW.
- The Blind Spot Intervention system operates above approximately 60 km/h (37 MPH).
- The Blind Spot Intervention system uses side radar installed near the rear bumper to detect other vehicles beside vehicle in an adjacent lane.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- This detection zone starts from the outside mirror of vehicle and extends approximately 10 ft (3.0 m) behind the rear bumper, and approximately 10 ft (3.0 m) sideways.
- If the Blind Spot Warning/Blind Spot Intervention indicator is illuminated while vehicle is approaching a lane marker, the Blind Spot Warning/Blind Spot Intervention indicator blinks and an audible warning will sound three times. Then the system applies the brakes on one side of the vehicle for a short period of time to help return the vehicle back to the center of the lane.



- Blind Spot Intervention operates regardless of turn signal usage.
- The brightness of Blind Spot Warning/Blind Spot Intervention indicator lights is adjusted automatically depending on the brightness of the ambient light.

NOTE:

- Blind Spot Intervention is typically activated earlier than LDP when getting closer to the lane marker.
- Warning and brake control will only be activated if the Blind Spot Warning/Blind Spot Intervention indicator is already illuminated when vehicle approaches a lane marker.
- If another vehicle comes into the detection zone after vehicle has crossed a lane marker, no warning or brake control will be activated.

BLIND SPOT INTERVENTION SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables Blind Spot Intervention system.
- Turn ON the dynamic driver assistance switch, and Blind Spot Intervention system setting on the navigation screen. Then Blind Spot Intervention ON indicator comes on.
- Combination meter turns Blind Spot Intervention ON indicator lamp ON/OFF according to the signals from ADAS control unit via CAN communication.
- Side radar detects a vehicle in the adjacent lane, and transmits the vehicle detection signal to ADAS control unit via ITS communication.
- Side radar receives vehicle speed signal from ADAS control unit and changes its detecting function.

SYSTEM

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

- Lane camera unit monitors lane markers of the traveling lane and transmits the detected lane condition signal to ADAS control unit via ITS communication.
- ADAS control unit starts the control as follows, based on a vehicle detection signal, lane condition signal, turn signal and dimmer signal transmitted from BCM via CAN communication:
 - Blind Spot Warning/Blind Spot Intervention indicator signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal transmission to side radar.
 - Buzzer signal transmission to warning buzzer.
 - Calculation of necessary yaw moment and transmission of the target yaw moment signal to ABS actuator and electric unit (control unit).
- Side radar transmits an indicator operation signal to the Blind Spot Warning/Blind Spot Intervention indicator according to Blind Spot Warning/Blind Spot Intervention indicator operation signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal.
- ABS actuator and electric unit (control unit) controls brake pressure of four wheels respectively according to the target yaw moment signal.

Operation Condition of Blind Spot Intervention System

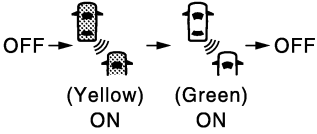
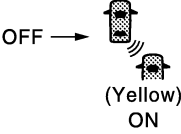
ADAS control unit performs the control when the following conditions are satisfied.

- Blind Spot Intervention ON indicator: ON
- When the vehicle drives at 60 km/h (37 MPH) or more to the forward direction.

NOTE:

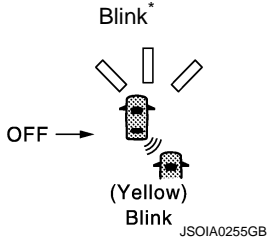
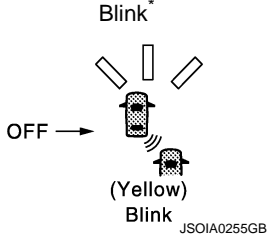
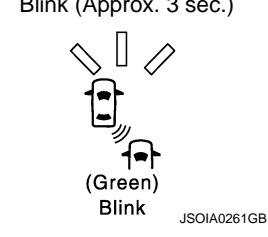
- When the Blind Spot Intervention system setting on the navigation screen is ON.
- The Blind Spot Intervention system may not function properly, depending on the situation. Refer to [DAS-452, "Precautions for Blind Spot Warning/Blind Spot Intervention"](#).
- Blind Spot Intervention braking will not operate or will stop operating and only a warning chime will sound under the following conditions.
 - When the brake pedal is depressed.
 - When the accelerator pedal is depressed while brake control assist is provided.
 - When steering quickly.
 - When the ICC, DCA, FCW or IBA warnings sound.
 - When the hazard warning flashers are operated.
 - When driving on a curve at a high speed.
- Under the following conditions, the Blind Spot Intervention system will be turned off automatically, a beep will sound and the Blind Spot Intervention ON indicator will blink. The BSW system is still available, but the Blind Spot Intervention system will not be available until the conditions no longer exist.
 - When the VDC system (except TCS function) or ABS operates.
 - When the VDC system is turned OFF.
 - When the 4WD shift switch is not AUTO position.
 - When the SNOW mode switch is turned ON.

BULB CHECK ACTION AND FAIL-SAFE INDICATION.

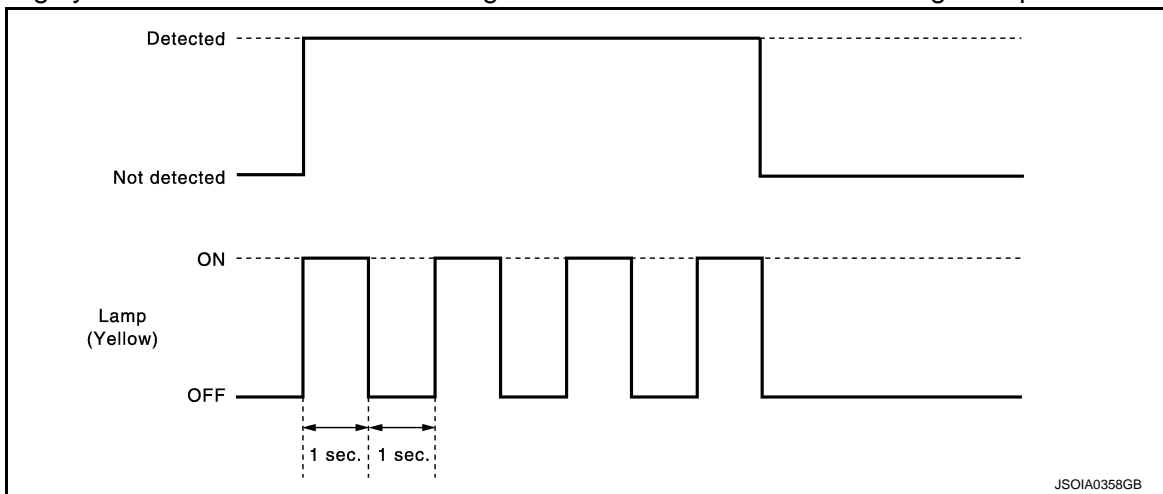
Vehicle condition/Driver's operation	Blind Spot Warning/Blind Spot Intervention indicator	Warning buzzer	Indication on the combination meter
Ignition switch: OFF ⇒ ON	Approx. 2 sec. ON	OFF	
When DTC is detected	OFF	Beep	

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Vehicle condition/Driver's operation	Blind Spot Warning/Blind Spot Intervention indicator	Warning buzzer	Indication on the combination meter
When radar blockage is detected	OFF	Beep	
When the camera detects that the interior temperature is high	OFF	Beep	
When the dynamic driver assistance switch is turned ON with settings of DCA system, LDP system and Blind Spot Intervention system OFF	OFF	—	

*: Blinking cycle when the side radar blockage condition or lane camera unit high temperature condition



NOTE:

Time shown in the figure is approximate time.

BLIND SPOT INTERVENTION SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:000000009013817

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel

SYSTEM

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

System	Buzzer	Warning lamp/Indicator lamp	Description
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

BLIND SPOT INTERVENTION SYSTEM : Fail-safe (Lane Camera Unit)

INFOID:000000009013818

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the Blind Spot Warning/Blind Spot Intervention warning in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in the combination meter will blink.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON and the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in the combination meter will stop blinking.

BLIND SPOT INTERVENTION SYSTEM : Fail-safe (Side Radar)

INFOID:000000009013819

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the Blind Spot Warning/Blind Spot Intervention warning in the combination meter.

TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

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OPERATION

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

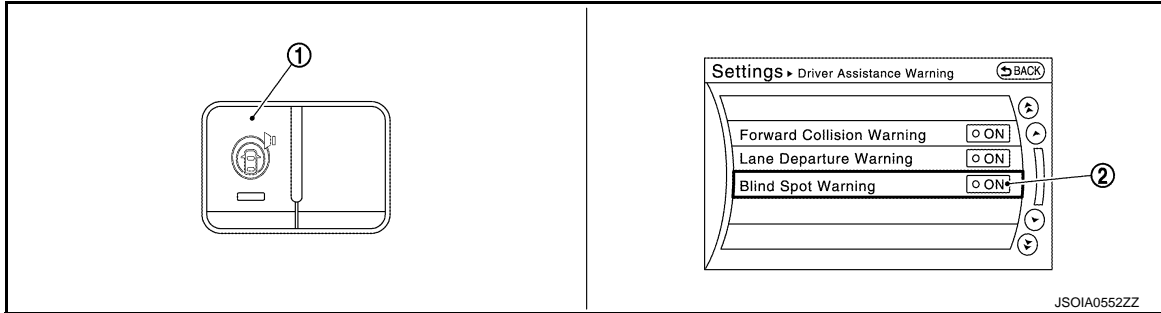
< SYSTEM DESCRIPTION >

OPERATION

BLIND SPOT WARNING (BSW) SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM : Switch Name and Function

INFOID:000000009013820

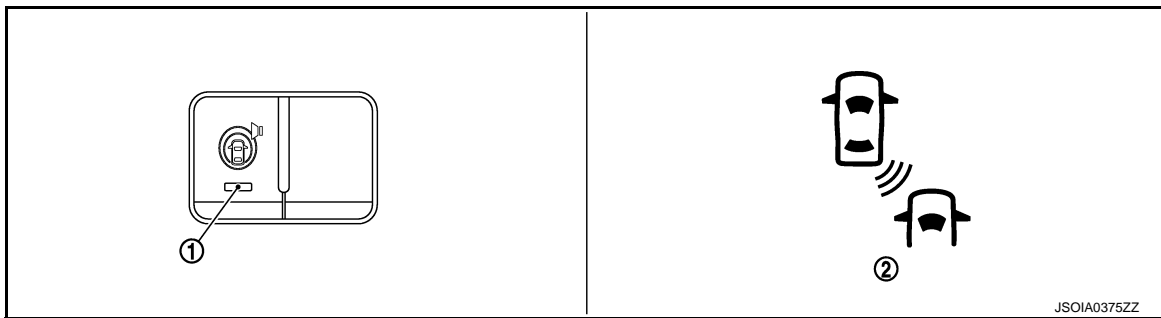


No.	Name	Function
1	Warning systems switch	Turns BSW system ON/OFF (When the setting of BSW system on the navigation system setting screen is ON)
2	BSW setting screen (Navigation setting screen)	Changes setting of BSW system (ON/OFF)

BLIND SPOT WARNING (BSW) SYSTEM : System Display and Warning

INFOID:000000009013821

INDICATOR AND WARNING LAMP



No.	Name	Description
1	Warning systems ON indicator	<ul style="list-style-type: none"> Indicates that the FCW system, LDW system, and/or BSW system is ON Blinks when the setting of LDW, FCW, and BSW are "OFF" and the warning systems switch is pressed
2	Blind Spot Warning/Blind Spot Intervention warning lamp (yellow)	<ul style="list-style-type: none"> Turns ON when Blind Spot Warning/Blind Spot Intervention system is malfunctioning Blinks when the following conditions: <ul style="list-style-type: none"> - When the camera detects that interior temperature is high. - When radar blockage is detected.

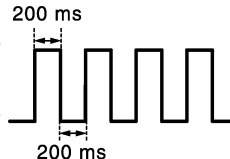
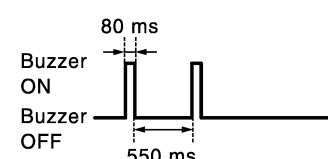
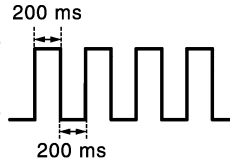
DISPLAY AND WARNING OPERATION

Vehicle condition/ Driver's operation				Action	
Warning systems ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of vehicle detection within detection area	Indication on the Blind Spot Warning/Blind Spot Intervention indicator	Buzzer
OFF	—	—	—	OFF	OFF

OPERATION

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Vehicle condition/ Driver's operation				Action	
Warning systems ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of vehicle detection within detection area	Indication on the Blind Spot Warning/Blind Spot Intervention indicator	Buzzer
ON	Less than approx. 29 (18)	—	—	OFF	OFF
	Approx. 32 (20) or more	—	Vehicle is absent	OFF	OFF
		OFF	Vehicle is detected	ON	OFF
		ON (vehicle detected direction)	Before turn signal operates Vehicle is detected	Blink	Short continuous beep
				Indicator ON  Indicator OFF	Buzzer ON  Buzzer OFF
Vehicle is detected after turn signal operates	Blink	OFF			
Indicator ON  Indicator OFF	OFF				

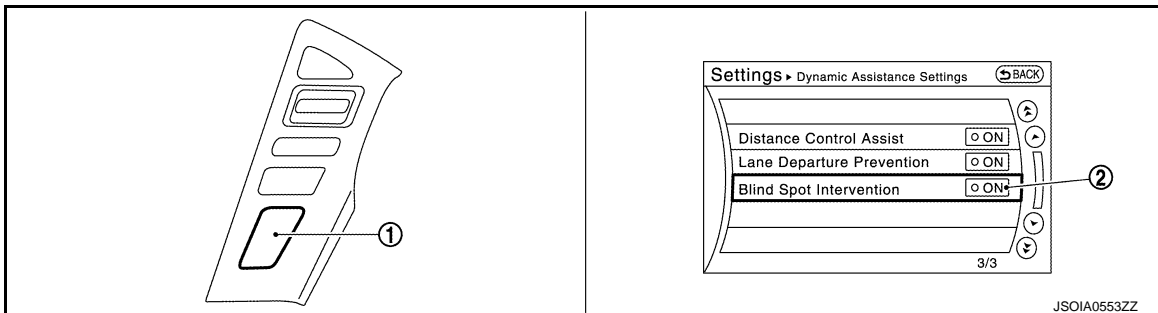
NOTE:

- If vehicle speed exceeds approximately 32 km/h (20MPH), BSW function operates until the vehicle speed becomes lower than approximately 29km/h (18MPH).
- Time shown in the figure is approximate time.
- Always Blind Spot Intervention system operates together with BSW system. Whenever Blind Spot Intervention system is turned on by pushing the dynamic driver assistance switch, BSW system also be turned on even if the BSW system is turned off. However, at this time the warning systems ON indicator remains OFF.

BLIND SPOT INTERVENTION SYSTEM

BLIND SPOT INTERVENTION SYSTEM : Switch Name and Function

INFOID:000000009013822



No.	Name	Function
1	Dynamic driver assistance switch	Turns Blind Spot Intervention, LDP, and DCA systems ON/OFF
2	Blind Spot Intervention setting screen (Navigation setting screen)	Changes setting of Blind Spot Intervention system (ON/OFF)

OPERATION

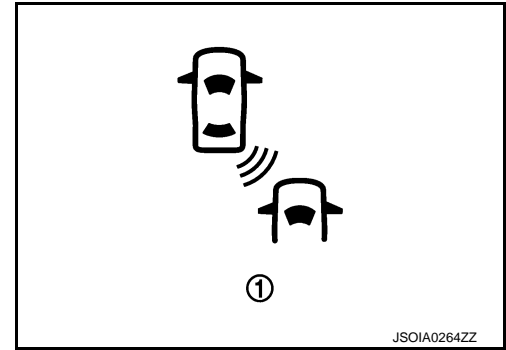
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

BLIND SPOT INTERVENTION SYSTEM : System Display and Warning

INFOID:00000009013823

INDICATOR AND WARNING LAMP



No.	Name	Description
1	Blind Spot Intervention ON indicator (green)	<ul style="list-style-type: none"> • Turns ON while Blind Spot Intervention system is ON • Blinks when dynamic driver assistance switch is pressed while setting of LDP/DCA/Blind Spot Intervention is OFF • Under the following conditions, the Blind Spot Intervention ON indicator (green) will blink. <ul style="list-style-type: none"> - When the VDC system (except TCS function) or ABS operates. - When the VDC system is turned off. - When the 4WD shift switch is turned to not AUTO position. - When the SNOW mode switch is turned ON.
	Blind Spot Warning/Blind Spot Intervention warning lamp (yellow)	<ul style="list-style-type: none"> • Turns ON when Blind Spot Warning/Blind Spot Intervention system is malfunctioning • Blinks when the following conditions: <ul style="list-style-type: none"> - When the camera detects that interior temperature is high. - When radar blockage is detected.

DISPLAY AND WARNING OPERATION

Whenever the Blind Spot Intervention system is turned on, the BSW system will also be on.

Vehicle condition/Driver's operation				Action		
Blind Spot Intervention ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Status of vehicle detection within detection area	Status of approach to adjacent lane	Indication on the Blind Spot Warning/Blind Spot Intervention indicator	Brake control	Buzzer
OFF	—	—	—	OFF	OFF	OFF
Green	Less than approx. 60 (37)	Vehicle is absent	—	OFF	OFF	OFF
		Vehicle is detected	Not approaching	ON	OFF	OFF
	Approx. 60 (37) or more	Vehicle is detected	Approaching	<p style="text-align: center;">Blink</p> <p style="text-align: center; font-size: x-small;">JSOIA0251GB Time shown in the figure is approximate time.</p>	ON	<p style="text-align: center; font-size: x-small;">JSOIA0334GB Time shown in the figure is approximate time.</p>

OPERATION

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

Under the following conditions, the Blind Spot Intervention system will be turned off automatically, a beep will sound and the Blind Spot Intervention ON indicator (green) will blink. The BSW system is still available, but the Blind Spot Intervention system will not be available until the conditions no longer exist.

- When the VDC system (except TCS function) or ABS operates.
- When the VDC system is turned OFF.
- When the 4WD shift switch is turned to not AUTO position.
- When the SNOW mode switch is turned ON.

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HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

HANDLING PRECAUTION

Precautions for Blind Spot Warning/Blind Spot Intervention

INFOID:000000009013824

LANE CAMERA UNIT HANDLING

Refer to [DAS-308. "Precautions for Lane Departure Warning/Lane Departure Prevention"](#).

SIDE RADAR HANDLING

- Side radar for Blind Spot Warning/Blind Spot Intervention system is located inside the rear bumper.
- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork near the side radar.
- Do not strike or damage the areas around the side radar.
- Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair.

BLIND SPOT WARNING & BLIND SPOT INTERVENTION

- The Blind Spot Warning and Blind Spot Intervention systems are not a replacement for proper driving procedure and are not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning and Blind Spot Intervention system.
- Using the Blind Spot Intervention system under some road, lane marker or weather conditions could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The Blind Spot Warning and Blind Spot Intervention systems may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the Blind Spot Warning or Blind Spot Intervention systems when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Blind Spot Warning/Blind Spot Intervention when certain objects are present such as:
 - Pedestrians, bicycles, animals.
 - Several types of vehicles such as motorcycles.
 - Oncoming vehicles.
 - Vehicles remaining in the detection zone when driver accelerate from a stop.
 - A vehicle merging into an adjacent lane at a speed approximately the same as vehicle.
 - A vehicle approaching rapidly from behind.
 - A vehicle which vehicle overtakes rapidly.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away.
- The side radar are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

BLIND SPOT INTERVENTION

- Do not use the Blind Spot Intervention system under the following conditions because the system may not function properly.
 - During bad weather (e.g. rain, fog, snow, wind, etc.)
 - When driving on slippery roads, such as on ice or snow, etc.
 - When driving on winding or uneven roads.
 - When there is a lane closure due to road repairs.
 - When driving in a makeshift lane.
 - When driving on roads where the lane width is too narrow.
 - When driving with a tire that is not within normal tire conditions (e.g. tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels).
 - When the vehicle is equipped with non-original brake parts or suspension parts.
- The camera may not detect lane markers in the following situations and the Blind Spot Intervention system may not operate properly.
 - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; nonstandard lane markers; lane markers covered with water, dirt, snow, etc.
 - On roads where discontinued lane markers are still detectable.
 - On roads where there are sharp curves.

HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs. A
- On roads where the traveling lane merges or separates.
- When the vehicle is traveling direction does not align with the lane markers.
- When traveling close to the vehicle in front of driver, which obstructs the lane camera unit detection range. B
- When rain, snow or dirt adheres to the windshield in front of a lane camera unit.
- When the headlights are not bright due to dirt on the lens or if aiming is not adjusted properly.
- When strong light enters a lane camera unit. (e.g. light directly shines on the front of the vehicle at sunrise or sunset.) C
- When a sudden change in brightness occurs. (e.g. when the vehicle enters or exits a tunnel or under a bridge.)
- The Blind Spot Intervention system will not operate if your vehicle is on a lane marker when another vehicle enters the detection zone. In this case only the BSW system operates. D
- Blind Spot Intervention braking will not operate or will stop operating and only a warning chime will sound under the following conditions. E
- When the brake pedal is depressed.
- When the accelerator pedal is depressed while brake control assist is provided.
- When steering quickly.
- When the ICC, DCA, FCW or IBA warnings sound. F
- When the hazard warning flashers are operated.
- When driving on a curve at a high speed. G

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

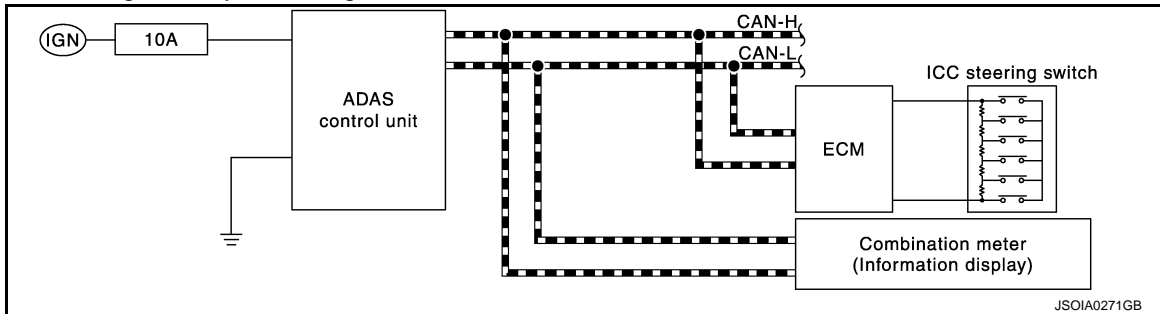
On Board Diagnosis Function

INFOID:000000009910906

DESCRIPTION

The DTC is displayed on the information display by operating the ICC steering switch.

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

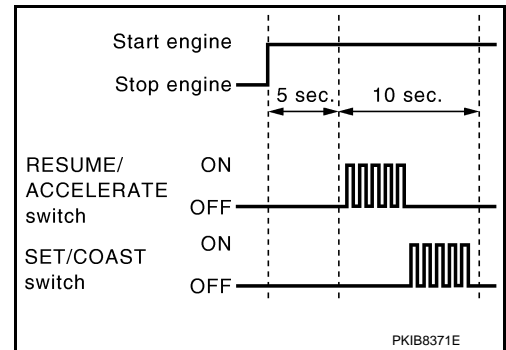
Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)

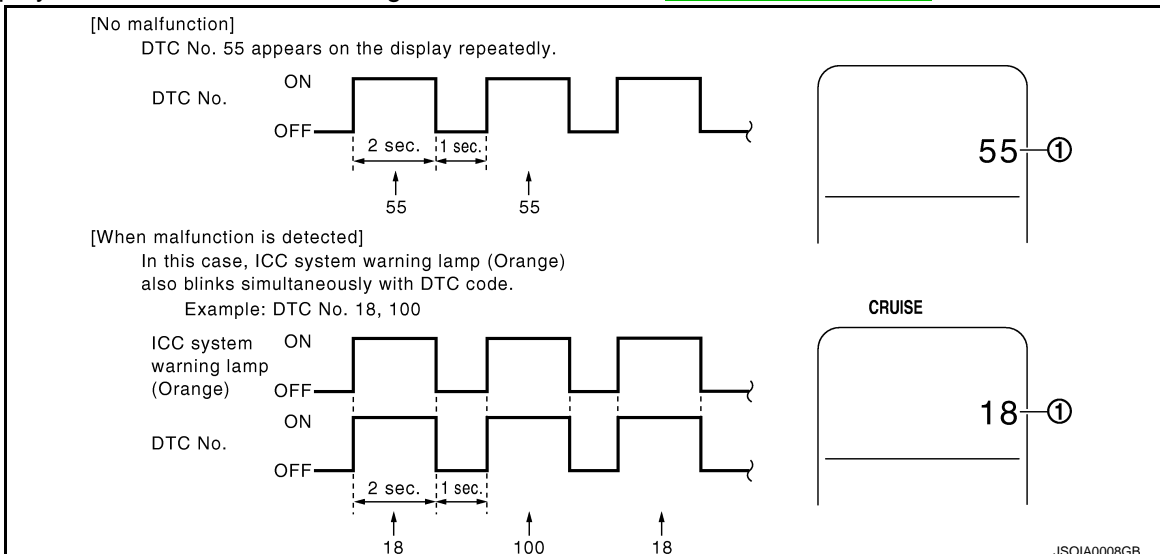
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [DAS-45, "DTC Index"](#).



NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- It displays for up to 5 minutes and then stops.
- If multiple malfunctions exist, up to 6 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-30, "On Board Diagnosis Function"
ICC steering switch malfunction		Perform the inspection for DTC"C1A06". Refer to CCS-100, "Diagnosis Procedure"
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		<ul style="list-style-type: none"> • Check power supply and ground circuit of ADAS control unit. Refer to DAS-71, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for "ICC/ADAS"with CONSULT, and then check the malfunctioning parts. Refer to DAS-45, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Start the engine, and then start the on board self-diagnosis.
3. Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

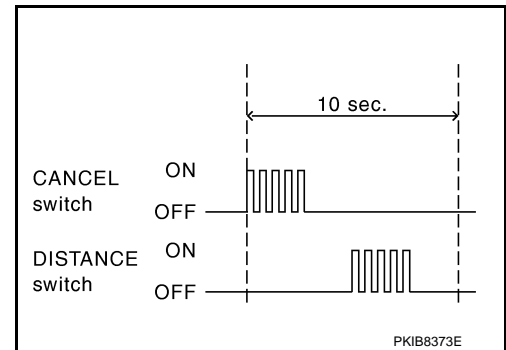
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

5. Turn ignition switch OFF, and finish the diagnosis.



CONSULT Function (ICC/ADAS)

INFOID:000000009910907

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit.

Diagnosis mode	Description
Work Support	Displays causes of automatic system cancellation occurred during system control
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit
Data Monitor	Displays ADAS control unit input/output data in real time
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load
Ecu Identification	Displays ADAS control unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication

WORK SUPPORT

DAS

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • Conventional (fixed speed) cruise control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Lane Departure Prevention (LDP) • Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Back-up Collision Intervention (BCI)

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description
OPERATING WIPER	×			The wiper operates at HI (it includes when the wiper is operated at HI with the wiper switch AUTO position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor light sensing part
LASER TEMP	×		×	Temperature around ICC sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH)
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage
PARKING BRAKE ON	×	×		The parking brake is operating
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values
INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less
CAN COMM ERROR	×	×	×	ADAS control unit received an abnormal signal with CAN communication
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system
ECD CIRCUIT	×	×	×	An abnormal condition occurs in ECD system
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high
ICC SENSOR CAN COMM ERR	×		×	Communication error between ADAS control unit and the ICC sensor
4WD LOCK MODE	×	×	×	Shifting of the 4WD shift switch to 4H or 4L
ABS WARNING LAMP	×		×	ABS warning lamp ON
NO RECORD	×	×	×	—

Display Items for The Cause of Automatic Cancellation 2

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
OPE VDC/TCS/ABS 1	×		The activation of VDC, TCS, or ABS during LDP system control
Vehicle dynamics	×		Vehicle behavior exceeds specified value
Steering speed	×		Steering speed was more than the specified value in evasive direction
End by yaw angle	×		Yaw angle was the end of LDP control
Departure yaw large	×		Detected more than the specified value of yaw angle in departure direction
ICC WARNING	×		Target approach warning of ICC system, IBA system, or FCW system was activated
CURVATURE	×		Road curve was more than the specified value
Steering angle large	×		Steering angle was more than the specified value
Brake is operated	×		Brake pedal was operated
IGN LOW VOLT	×		Decrease in ADAS control unit IGN voltage
Lateral offset	×		Distance of vehicle and lane was detached in lateral direction more than the specified value
Lane marker lost	×		Lane camera unit lost the trace of lane marker
Lane marker unclear	×		Detected lane marker was unclear
Yaw acceleration	×		Detected yawing speed was more than the specified value
Deceleration large	×		Deceleration in a longitudinal direction was more than the specified value
Accel is operated	×		Accelerator pedal was depressed
Departure steering	×		Steering wheel was steered more than the specified value in departure direction
Evasive steering	×		Steering wheel was steered more than the specified value in the evasive direction

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
R range	×		Selector lever was operated to R range
Parking brake drift	×		Rear wheels lock was detected
Not operating condition	×		Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
4WD LOCK MODE	×		Shifting of the 4WD shift switch to 4H or 4L
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker unclear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
BSI) 4WD LOCK MODE		×	Shifting of the 4WD shift switch to 4H or 4L

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Back-up Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	—
APA POWER	×	Decrease in accelerator pedal actuator ignition or battery voltage
VEHICLE SPEED UP	×	Vehicle speed higher than 8 km/h (5 MPH)

SELF DIAGNOSTIC RESULT

Refer to [DAS-45. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
THRTL SENSOR [deg]	×	×				NOTE: The item is displayed, but it is not monitored
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
YAW RATE [deg/s]	×					NOTE: The item is displayed, but it is not monitored
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of “D” or “M” positions read from ADAS control unit through CAN communication; ON when position “D” or “M” (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
VHCL SPD AT [km/h] or [mph]	×					Indicates vehicle speed calculated from A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×					Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [ON/OFF] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed
IBA SW [On/Off]	×	×				Indicates [On/Off] status of IBA OFF switch
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of warning systems ON indicator output
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system
READY signal [On/Off]			×			Indicates LDP system settings

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
Camera lost [Detect/Deviate/Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection signal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)
STATUS signal [Stnby/Warn/Cancl/Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an ON/OFF state of the lane marker. The ON/OFF state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
FUNC ITEM (NV-ICC) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
FUNC ITEM (NV-DCA) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
DCA SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
NAVI ICC SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
NAVI DCA SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
SYS SELECTABILITY [On/Off]	×	×	×	×		Indicates the availability of ON/OFF switching for "Driver Assistance" items received from the AV control unit via CAN communication
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system
4WD SW [AUTO, 4H, 4L]	×		×	×		Indicates [On/Off] status as judged from current 4WD mode signal (Transfer control unit transmits current 4WD mode signal through CAN communication)
BCI SWITCH [On/Off]					×	Indicates [On/Off] status of BCI switch
BCI SYSTEM ON [On/Off]					×	Indicates [On/Off] status of Back-up Collision Intervention system
BCI ON IND [On/Off]					×	Indicates [On/Off] status of BCI ON indicator
BCI OFF IND [On/Off]					×	Indicates [On/Off] status of BCI OFF indicator
BCI WARNING IND [On/Off]					×	Indicates [On/Off] status of BCI malfunction indicator
BCI HI TEMP WARN IND [On/Off]					×	Indicates [On/Off] status of BCI not available indicator
BATTERY CIRCUIT OFF [Off]						NOTE: The item is displayed, but it is not monitored

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning lamp is illuminated.**
 - ICC system warning lamp
 - Lane departure warning lamp
 - Blind Spot Warning/Blind Spot Intervention warning lamp
 - IBA OFF indicator lamp (IBA system ON)
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
Active Pedal	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF operations as necessary

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Test item	Description
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	<ul style="list-style-type: none"> • MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the combination meter via CAN communication <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signals to the combination meter via CAN communication	Intermittent beep sound
	Test start	Starts the tests of "MODE1"	—
	Reset	Stops transmitting the buzzer output signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

BRAKE ACTUATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3"	—
	Reset	Stops transmitting the brake fluid pressure control signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

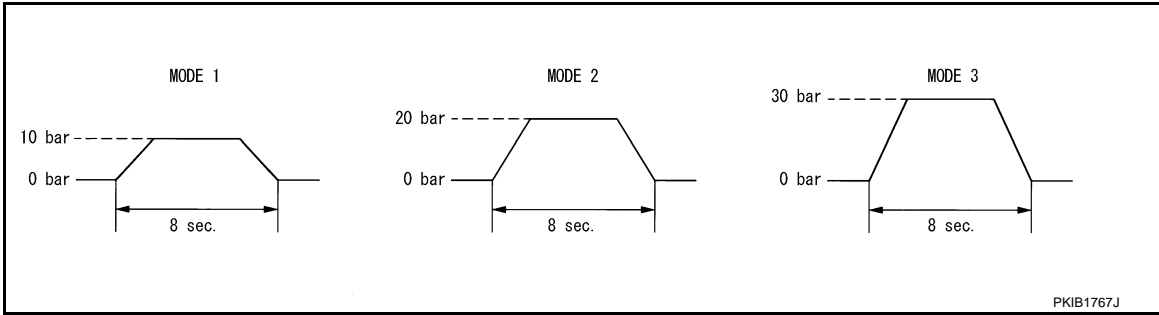
NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

The test is finished in 10 seconds after starting



Active Pedal

CAUTION:

- Shift the selector lever to “P” position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

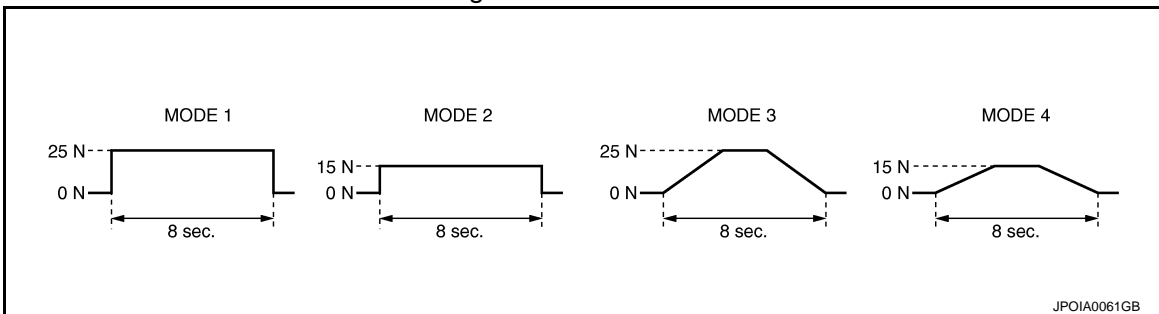
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
Active Pedal	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of “MODE1”, “MODE2”, “MODE3” and “MODE4”	—
Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—	
End	Returns to the “SELECT TEST ITEM” screen	—	

NOTE:

The test is finished in 10 seconds after starting



DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test	—
	On	Transmits the DCA system switch indicator signal to the combination meter via CAN communication	ON

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

LDP BUZZER

Test item	Operation	Description	Warning buzzer
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	—
	On	Transmits the warning buzzer signal to the warning buzzer	ON

WARNING SYSTEM IND

Test item	Operation	Description	Warning systems ON indicator
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	—
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

LDP ON IND

Test item	Operation	Description	LDP ON indicator lamp (Green)
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal below to end the test	—
	On	Transmits the LDP ON indicator lamp signal to the combination meter via CAN communication	ON

LANE DEPARTURE W/L

Test item	Operation	Description	Lane departure warning lamp (Yellow)
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp signal below to end the test	—
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON

BSW/BSI WARNING LAMP

Test item	Operation	Description	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow)
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot Intervention warning lamp signal below to end the test	—
	On	Transmits the Blind Spot Warning/Blind Spot Intervention warning lamp signal to the combination meter via CAN communication	ON

BSI ON INDICATOR

Test item	Operation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indicator signal below to end the test	—
	On	Transmits the Blind Spot Intervention ON indicator signal to the combination meter via CAN communication	ON

DIAGNOSIS SYSTEM (SIDE RADAR LH)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DIAGNOSIS SYSTEM (SIDE RADAR LH)

CONSULT Function (SIDE RADAR LEFT)

INFOID:000000009013827

DESCRIPTION

CONSULT performs the following functions by communicating with the side radar LH.

Select diag mode	Function
Self Diagnostic Result	Displays memorized DTC in the side radar.
Data Monitor	Displays real-time data of side radar.
Active Test	Enables operation check of electrical loads by sending driving signal to them.
Ecu Identification	Displays part number of side radar.

SELF DIAGNOSTIC RESULT

Self Diagnostic Result

Displays memorized DTC in side radar LH. Refer to [DAS-487. "DTC Index"](#).

FFD (Freeze Frame Data)

The side radar records the following data when the malfunction is detected.

Freeze Frame Data item	Description
VHCL SP from ADAS	The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed
TURN SIG STATUS	Turn signal status at the moment a malfunction is detected is displayed

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored Item [unit]		Description
BEAM DISTANCE	—	The item is displayed, but it is not used.
BEAM POSITION	—	The item is displayed, but it is not used.
SIDE RADAR MALF	Off	Side radar is normal.
	On	Side radar is malfunctioning.
BLOCKAGE COND	Off	Side radar is not blocked.
	On	Side radar is blocked.
ACTIVATE OPE	—	The item is displayed, but it is not used.
VEHICLE DETECT	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.
	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.

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DIAGNOSIS SYSTEM (SIDE RADAR RH)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DIAGNOSIS SYSTEM (SIDE RADAR RH)

CONSULT Function (SIDE RADAR RIGHT)

INFOID:000000009013828

DESCRIPTION

CONSULT performs the following functions by communicating with the side radar RH.

Select diag mode	Function
Self Diagnostic Result	Displays memorized DTC in the side radar.
Data Monitor	Displays real-time data of side radar.
Active Test	Enables operation check of electrical loads by sending driving signal to them.
Ecu Identification	Displays part number of side radar.

SELF DIAGNOSTIC RESULT

Self Diagnostic Result

Displays memorized DTC in side radar RH. Refer to [DAS-490. "DTC Index"](#).

FFD (Freeze Frame Data)

The side radar records the following data when the malfunction is detected.

Freeze Frame Data item	Description
VHCL SP from ADAS	The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed
TURN SIG STATUS	Turn signal status at the moment a malfunction is detected is displayed

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored Item [unit]		Description
BEAM DISTANCE	—	The item is displayed, but it is not used.
BEAM POSITION	—	The item is displayed, but it is not used.
SIDE RADAR MALF	Off	Side radar is normal.
	On	Side radar is malfunctioning.
BLOCKAGE COND	Off	Side radar is not blocked.
	On	Side radar is blocked.
ACTIVATE OPE	—	The item is displayed, but it is not used.
VEHICLE DETECT	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.
	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT Function (LANE CAMERA)

INFOID:000000009013829

APPLICATION ITEMS

CONSULT performs the following functions by communicating with the lane camera unit.

Diagnosis mode	Description
Work Support	Performs the camera aiming
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the lane camera unit
Data Monitor	Displays lane camera unit input/output data in real time
Ecu Identification	Displays lane camera unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of ITS communication

WORK SUPPORT

Work support items	Description
AUTO AIM	Outputs camera unit, calculates dislocation of the camera, and displays adjustment direction.
AIM CHECK	NOTE: The item is indicated, but not used

SELF DIAGNOSTIC RESULT

Refer to [DAS-493. "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	Description
LC INACCURAT [On/Off]	Lane camera unit status
AIMING DONE [OK/NG]	Status that camera aiming is done
AIMING RESULT [OK/NOK]	Result of camera aiming
CAM HIGH TEMP [NORMAL/High]	Status of lane camera unit high temperature judgment
VHCL SPD SE [km/h] or [mph]	Vehicle speed received from ADAS control unit via ITS communication
TURN SIGNAL [Off, LH, RH, LH/RH]	Status of "Turn signal" determined from ADAS control unit via ITS communication
LANE DETCT LH [On/Off]	Left side lane marker detection
LANE DETCT RH [On/Off]	Right side lane marker detection
CROSS LANE LH [On/Off]	Condition that the vehicle is crossing left lane marker
CROSS LANE RH [On/Off]	Condition that the vehicle is crossing right lane marker
WARN LANE LH [On/Off]	Warning for left lane marker
WARN LANE RH [On/Off]	Warning for right lane marker
VALID POS LH [VLD/INVLD]	Lateral position for left lane marker is valid
VALID POS RH [VLD/INVLD]	Lateral position for right lane marker is valid
XOFFSET [pixel]	Lane camera unit installation condition
AIM CHECK YAW [deg]	Check result of camera aiming
AIM CHECK ROLL [deg]	Check result of camera aiming
AIM CHECK PITCH [deg]	Check result of camera aiming

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitored item [Unit]	Description
FCTRY AIM YAW [deg]	Lane camera unit installation condition
FCTRY AIM ROL [deg]	Lane camera unit installation condition
FCTRY AIM PIT [deg]	Lane camera unit installation condition
ADAS MALF [On/Off]	ADAS control unit status

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:000000009910908

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> • Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehicle speed calculated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	On
		When the buzzer of the following system not operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
BA WARNING	Engine running	IBA OFF indicator lamp ON <ul style="list-style-type: none"> • When IBA system is malfunctioning • When IBA system is turned to OFF 	On
		IBA OFF indicator lamp OFF <ul style="list-style-type: none"> • When IBA system is normal • When IBA system is turned to ON 	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
		When ICC brake hold relay is not activated	Off
D RANGE SW	Engine running	When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitor item	Condition		Value/Status
GEAR	While driving		Displays the gear position
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> • Drive the vehicle and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch 	SET switch indicator ON	On
		SET switch indicator OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is pressed	On
		When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dynamic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
IBA SW	Ignition switch ON	When the IBA OFF switch is pressed	On
		When the IBA OFF switch is not pressed	Off
FCW SYSTEM ON	Ignition switch ON	When the FCW system is ON (Warning systems ON indicator ON)	On
		When the FCW system is OFF (Warning systems ON indicator OFF)	Off
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator pedal actuator
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON (Warning systems ON indicator ON)	On
		When the LDW system is OFF (Warning systems ON indicator OFF)	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitor item	Condition		Value/Status
LDP ON IND	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp ON	On
		LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Drive the vehicle and activate the LDW system or LDP system	Lane departure warning lamp ON	On
		Lane departure warning lamp OFF	Off
LDW BUZER OUT-PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system	When the buzzer of the following system operates • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	On
		When the buzzer of the following system does not operate • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	Off
LDP SYSTEM ON	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
READY signal	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
Camera lost	Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system	Both side lane markers are detected	Detect
		Deviated side lane marker is lost	Deviated
		Both side lane markers are lost	Both
Shift position	<ul style="list-style-type: none"> • Engine running • While driving 		Displays the shift position
Turn signal	Turn signal lamps OFF		Off
	Turn signal lamp LH blinking		LH
	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH blinking		LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
		Vehicle turning left	Positive value
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off
STATUS signal	Drive the vehicle with the LDP system turned ON	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancel
		When the LDP system is OFF	Off
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV-DCA)	NOTE: The item is indicated, but not monitored		Off
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the navigation system is ON	On
		"Distance Control Assist" set with the navigation system is OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitor item	Condition		Value/Status
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the navigation system is ON	On
		"Lane Departure Prevention" set with the navigation system is OFF	Off
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the navigation system is ON	On
		"Blind Spot Intervention" set with the navigation system is OFF	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored		Off
NAVI DCA SELECT	NOTE: The item is indicated, but not monitored		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the navigation system can be switched normally	On
		Items set with the navigation system cannot be switched normally	Off
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
		Blind Spot Intervention ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON (Warning systems ON indicator ON)	On
		When the BSW system is OFF (Warning systems ON indicator OFF)	Off
BSI SYSTEM ON	Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
		When the Blind Spot Intervention system is OFF	Off
4WD SW	Engine running	4WD shift switch position is in AUTO	AUTO
		4WD shift switch position is in 4H	4H
		4WD shift switch position is in 4L	4L
BCI SWITCH	Ignition switch ON	When BCI switch is pressed	ON
		When BCI switch is not pressed	OFF
BCI SYSTEM ON	Ignition switch ON	When BCI system is ON	ON
		When BCI system is OFF	OFF
BCI ON IND	Ignition switch ON	When BCI ON indicator is ON	ON
		When BCI ON indicator is OFF	OFF
BCI OFF IND	Ignition switch ON	When BCI OFF indicator is ON	ON
		When BCI OFF indicator is OFF	OFF
BCI WARNING IND	Ignition switch ON	When BCI malfunction indicator is ON	ON
		When BCI malfunction indicator is OFF	OFF
BCI HI TEMP WARN IND	Ignition switch ON	When BCI not available indicator is ON	ON
		When BCI not available indicator is OFF	OFF
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not monitored		Off

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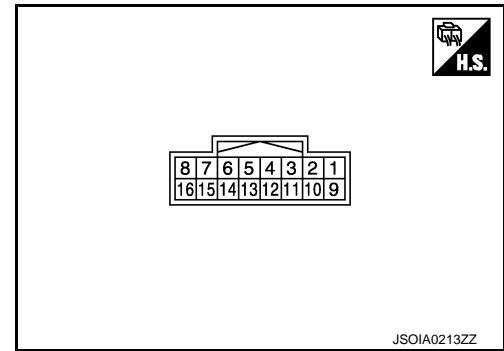
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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (V/W)	Ground	Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed	12 V
					When warning systems switch is pressed	0 V
3 (R/Y)		IBA OFF switch	Input	Ignition switch ON	When IBA OFF switch is not pressed	12 V
					When IBA OFF switch is pressed	0 V
4 (LG/B)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (R)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (Y)		ITS communication-L	—	—	—	—
10 (O)		BCI switch	Input	Ignition switch ON	When BCI OFF switch is not pressed	12 V
					When BCI OFF switch is pressed	0 V
12 (G/R)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	0 V
					Warning buzzer not operating	12 V
14 (L)		CAN -H	—	—	—	—
15 (P)	CAN -L	—	—	—	—	
16 (W/G)	Ignition power supply	Input	Ignition switch ON		Battery Voltage	

Fail-safe

INFOID:000000009910909

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

System	Buzzer	Warning lamp/Indicator lamp	Description	
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel	A
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel	B
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel	C
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel	D
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel	D
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel	E
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel	E
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel	F
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel	F
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel	G

DTC Inspection Priority Chart

INFOID:000000009910910

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)	
1	<ul style="list-style-type: none"> • U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L) 	I
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN) 	J
3	<ul style="list-style-type: none"> • C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF 	K

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Priority	Detected items (DTC)
4	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A2A: ICC SEN PWR SUP CIR • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD PWR SUPPLY CIR • C1A33: CAN TRANSMISSION ERR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR 2 • C1A38: APA CAN CIR 1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1B01: CAM AIMING INCOMP • C1B03: CAM ABNRML TMP DETCT • C1B56: SONOR CIRCUIT • C1B57: AVM CIRCUIT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0428: STRG SEN CAN CIR 2 • U1500: CAM CAN CIR 2 • U1501: CAM CAN CIR 1 • U1502: ICC SEN CAN COMM CIR • U1503: SIDE RDR L CAN CIR 2 • U1504: SIDE RDR L CAN CIR 1 • U1505: SIDE RDR R CAN CIR 2 • U1506: SIDE RDR R CAN CIR 1 • U150B: ECM CAN CIRC 3 • U150C: VDC CAN CIRC 3 • U150D: TCM CAN CIRC 3 • U150E: BCM CAN CIRC 3 • U150F: AV CAN CIRC 3 • U1512: HVAC CAN CIRC3 • U1513: METER CAN CIRC 3 • U1514: STRG SEN CAN CIRC 3 • U1515: ICC SENSOR CAN CIRC 3 • U1516: CAM CAN CIRC 3 • U1517: APA CAN CIRC 3 • U1518: SIDE RDR L CAN CIRC 3 • U1519: SIDE RDR R CAN CIRC 3 • U1520: 4WD CAN CIRC 3 • U1521: SONAR CAN COMMUNICATION 2 • U1522: SONAR CAN COMMUNICATION 1 • U1523: SONAR CAN COMMUNICATION 3 • U1524: AVM CAN COMMUNICATION 1 • U1525: AVM CAN COMMUNICATION 3
5	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Priority	Detected items (DTC)
6	<ul style="list-style-type: none"> • C1A15: GEAR POSITION
7	<ul style="list-style-type: none"> • C1A00: CONTROL UNIT

DTC Index

INFOID:000000009871086

NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-517
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-518
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-519

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ADAS CONTROL UNIT

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-520
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON		A, B, C, D, E, F, G	DAS-521
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	DAS-525
C1A12	12	LASER BEAM OFFCNTR	ON	ON				A, C, D, E	CCS-102
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	CCS-103
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	DAS-527
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-528
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	CCS-112
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	CCS-114
C1A18	18	LASER AIMING INC-MP	ON	ON				A, C, D, E	CCS-115
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	CCS-117
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-530
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	CCS-121
C1A27	27	ECD PWR SUPPLY CIR	ON	ON				A, B, C, D, E	CCS-122
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	CCS-124
C1A34	34	COMMAND ERROR	ON					A, B, E	CCS-125
C1A35	35	APA CIR	ON				ON	A, E, H	CCS-126

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

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DTC			Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp		System	
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	CCS-127
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	CCS-128
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	CCS-129
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	DAS-532
C1A40	40	SYSTEM SW CIRC		ON				C, D	CCS-132
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	CCS-123
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-534
C1B01	82	CAM AIMING INCOMP			ON	ON		F, G	DAS-536
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK		F, G	DAS-538
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-543
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-544
C1B56	87	SONOR CIRCUIT					ON	H	DAS-544
C1B57	88	AVM CIRCUIT					ON	H	DAS-544
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	CCS-135
C1F02	92	APA C/U MALF	ON				ON	A, E, H	CCS-136
C1F05	95	APA PWR SUPPLY CIR	ON				ON	A, E, H	CCS-137
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—	—	ON	—	—

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DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-139
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	—	A, B, C, D, E, G, H	CCS-141
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			ON	A, B, C, D, E	CCS-143
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	CCS-144
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON		A, B, C, D, E, F, G, H	CCS-145
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-147
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-149
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-547
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-550
U1500	145	CAM CAN CIR 2			ON	ON	ON	F, G	DAS-567
U1501	146	CAM CAN CIR 1			ON	ON	ON	F, G	DAS-568
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	CCS-158
U1503	150	SIDE RDR L CAN CIR 2				ON		G, H	DAS-569
U1504	151	SIDE RDR L CAN CIR 1				ON		G, H	DAS-570
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-571

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1506	153	SIDE RDR R CAN CIRC 1				ON	ON	G, H	DAS-572
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-573
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-574
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	DAS-563
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-564
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-565
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	DAS-566
U150F	161	AV CAN CIRC 3					ON		DAS-70
U1512	162	HVAC CAN CIRC3			ON	ON	ON	F, G	DAS-575
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON		A, B, C, D, E, F, G, H	DAS-576
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON		A, B, C, D, E, G, H	DAS-577
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			ON	A, B, C, D, E	CCS-161
U1516	166	CAM CAN CIRC 3			ON	ON	ON	F, G	DAS-578
U1517	167	APA CAN CIRC 3	ON					A, B, E, H	CCS-162
U1518	168	SIDE RDR L CAN CIRC 3				ON		G, H	DAS-579
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-580

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp				BCI malfunction indicator	Fail-safe	Refer-ence
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp			
U1520	176	4WD CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-581
U1521	177	SONAR CAN COMMUNICATION 2					ON	H	DAS-740
U1522	178	SONAR CAN COMMUNICATION 1					ON	H	DAS-741
U1523	179	SONAR CAN COMMUNICATION 3					ON	H	DAS-742
U1524	180	AVM CAN COMMUNICATION 1					ON	H	DAS-743
U1525	181	AVM CAN COMMUNICATION 3					ON	H	DAS-744

NOTE:

With the detection of "U1000" some systems do not perform the fail-safe operation.

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

SIDE RADAR LH

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SIDE RADAR LH

Reference Value

INFOID:000000009013834

VALUES ON THE DIAGNOSIS TOOL

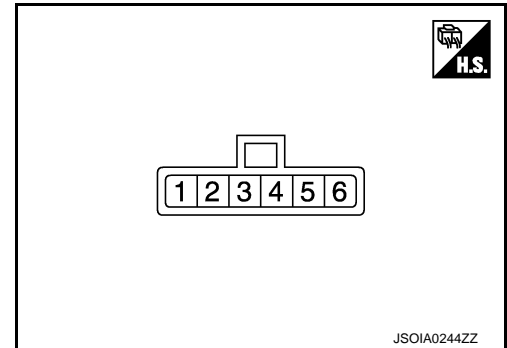
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
BEAM DISTANCE	NOTE: The item is displayed, but it is not used.	—
BEAM POSITION	NOTE: The item is displayed, but it is not used.	—
SIDE RADAR MALF	Side radar is normal.	Off
	Side radar is malfunctioning.	On
BLOCKAGE COND	Side radar is not blocked.	Off
	Side radar is blocked.	On
ACTIVATE OPE	NOTE: The item is displayed, but it is not used.	—
VEHICLE DETECT	Radar does not detect a vehicle.	Off
	Radar detects a vehicle.	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
2 (B)	Ground	Ground	—	—	0 V
3 (Y)	—	ITS communication-L	—	—	—
4 (L)	—	ITS communication-H	—	—	—
5 (W/G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (BR)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V

Fail-safe

INFOID:000000009013835

FAIL-SAFE CONTROL BY DTC

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DAS

SIDE RADAR LH

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning/Blind Spot Intervention warning lamp in the combination meter.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the Blind Spot Warning/Blind Spot Intervention warning in the combination meter.

Back-up Collision Intervention (BCI)

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BCI malfunction indicator in the combination meter (information display).

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Back-up Collision Intervention (BCI)

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and BCI not available indicator in combination meter indicates (information display). Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

DTC Inspection Priority Chart

INFOID:000000009013836

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none">• U1000: CAN COMM CIRCUIT• U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none">• U0104: ADAS CAN CIR 1• U0405: ADAS CAN CIR 2
3	C1B50: SIDE RDR MALFUNCTION
4	<ul style="list-style-type: none">• C1B51: BSW/BSI IND SHORT CIR• C1B52: BSW/BSI IND OPEN CIR• C1B55: RADAR BLOCKAGE

SIDE RADAR LH

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DTC Index

INFOID:000000009013837

×: Applicable

DTC		Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	BCI not available indicator	Fail-safe		Reference page
					Blind Spot Warning/Blind Spot Intervention	BCI	
C1B50	SIDE RDR MALFUNCTION	ON	ON	—	×	×	DAS-539
C1B51	BSW/BSI IND SHORT CIR	ON	ON	—	×	×	DAS-540
C1B52	BSW/BSI IND OPEN CIR	ON	ON	—	×	×	DAS-541
C1B55	RADAR BLOCKAGE	Blink	—	ON	×	×	DAS-545
U1000	CAN COMM CIRCUIT	ON	ON	—	×	×	DAS-546
U1010	CONTROL UNIT (CAN)	ON	ON	—	×	×	DAS-549
U0104	ADAS CAN CIR1	ON	ON	—	×	×	DAS-551
U0405	ADAS CAN CIR2	ON	ON	—	×	×	DAS-558

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SIDE RADAR RH

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SIDE RADAR RH

Reference Value

INFOID:000000009013838

VALUES ON THE DIAGNOSIS TOOL

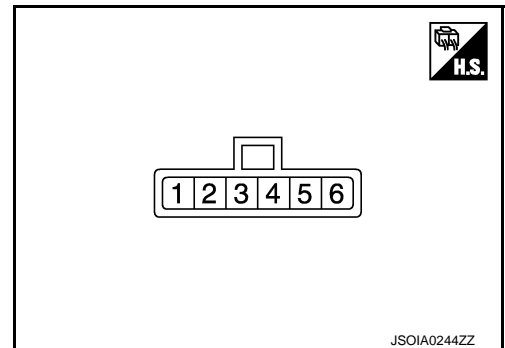
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
BEAM DISTANCE	NOTE: The item is displayed, but it is not used.	—
BEAM POSITION	NOTE: The item is displayed, but it is not used.	—
SIDE RADAR MALF	Side radar is normal.	Off
	Side radar is malfunctioning.	On
BLOCKAGE COND	Side radar is not blocked.	Off
	Side radar is blocked.	On
ACTIVATE OPE	NOTE: The item is displayed, but it is not used.	—
VEHICLE DETECT	Radar does not detect a vehicle.	Off
	Radar detects a vehicle.	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (B/Y)	Ground	Right/Left switching signal	Input	—	0 V
2 (B)	Ground	Ground	—	—	0 V
3 (Y)	—	ITS communication-L	—	—	—
4 (L)	—	ITS communication-H	—	—	—
5 (W/G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (L/R)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V

SIDE RADAR RH

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Fail-safe

INFOID:000000009013839

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning/Blind Spot Intervention warning lamp in the combination meter.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the Blind Spot Warning/Blind Spot Intervention warning in the combination meter.

Back-up Collision Intervention (BCI)

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BCI malfunction indicator in the combination meter (information display).

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Back-up Collision Intervention (BCI)

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and BCI not available indicator in combination meter indicates (information display). Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

DTC Inspection Priority Chart

INFOID:000000009013840

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • U0104: ADAS CAN CIR 1 • U0405: ADAS CAN CIR 2
3	C1B50: SIDE RDR MALFUNCTION
4	<ul style="list-style-type: none"> • C1B51: BSW/BSI IND SHORT CIR • C1B52: BSW/BSI IND OPEN CIR • C1B55: RADAR BLOCKAGE

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SIDE RADAR RH

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DTC Index

INFOID:000000009013841

×: Applicable

DTC		Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	BCI not available indicator	Fail-safe		Reference page
					Blind Spot Warning/Blind Spot Intervention	BCI	
C1B50	SIDE RDR MALFUNCTION	ON	ON	—	×	×	DAS-539
C1B51	BSW/BSI IND SHORT CIR	ON	ON	—	×	×	DAS-540
C1B52	BSW/BSI IND OPEN CIR	ON	ON	—	×	×	DAS-541
C1B55	RADAR BLOCKAGE	Blink	—	ON	×	×	DAS-545
U1000	CAN COMM CIRCUIT	ON	ON	—	×	×	DAS-547
U1010	CONTROL UNIT (CAN)	ON	ON	—	×	×	DAS-549
U0104	ADAS CAN CIR1	ON	ON	—	×	×	DAS-551
U0405	ADAS CAN CIR2	ON	ON	—	×	×	DAS-558

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

LANE CAMERA UNIT

Reference Value

INFOID:000000009013842

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item	Condition	Value/Status
LC INACCURAT	Lane camera unit malfunction	On
	Lane camera unit normal	Off
AIMING DONE	Camera aiming is completed	OK
	Camera aiming is not adjusted	NG
AIMING RESULT	Camera aiming is completed	OK
	Camera aiming is not completed	NOK
CAM HIGH TEMP	When the temperature around lane camera unit is adequate	NORMAL
	When the temperature around the lane camera unit is high	High
VHCL SPD SE	While driving	Approximately equivalent to speedometer reading
TURN SIGNAL	Turn signal lamp LH and RH blinking	LH/RH
	Turn signal lamp LH blinking	LH
	Turn signal lamp RH blinking	RH
	Turn signal lamps OFF	Off
LANE DETCT LH	Left side lane marker is detected	On
	Left side lane marker is not detected	Off
LANE DETCT RH	Right side lane marker is detected	On
	Right side lane marker is not detected	Off
CROSS LANE LH	The vehicle is crossing left side lane marker	On
	The vehicle is not crossing left side lane marker	Off
CROSS LANE RH	The vehicle is crossing right side lane marker	On
	The vehicle is not crossing right side lane marker	Off
WARN LANE LH	Warning for left side lane	On
	Not warning for left side lane	Off
WARN LANE RH	Warning for right side lane	On
	Not warning for right side lane	Off
VALID POS LH	Lateral position for left side lane marker is valid	VLD
	Lateral position for left side lane marker is invalid	INVLD
VALID POS RH	Lateral position for right side lane marker is valid	VLD
	Lateral position for right side lane marker is invalid	INVLD
XOFFSET	Camera aiming is completed	Approx. 180 pixel
AIM CHECK YAW	NOTE: The item is indicated, but not used	—
AIM CHECK ROLL	NOTE: The item is indicated, but not used	—
AIM CHECK PITCH	NOTE: The item is indicated, but not used	—

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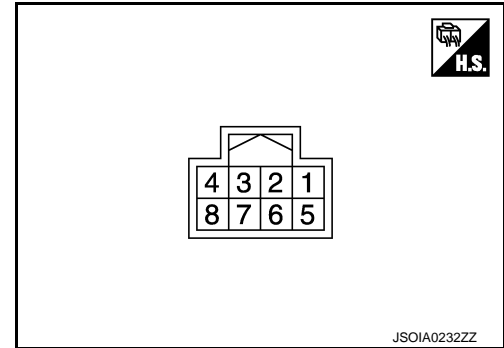
DAS

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitor Item	Condition	Value/Status
FCTRY AIM YAW	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	0 ± 5.0 deg
FCTRY AIM ROL	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	0 ± 5.0 deg
FCTRY AIM PIT	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	0 ± 5.0 deg
ADAS MALF	ADAS control unit malfunction	On
	ADAS control unit normal	Off

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (B)	Ground	Ground	—	—	0 V
4 (L)		ITS communication-H	—	—	—
5 (B)		Ground	—	—	0 V
7 (W/G)		Ignition power supply	Input	Ignition switch ON	Battery voltage
8 (Y)		ITS communication-L	—	—	—

Fail-safe

INFOID:000000009013843

FAIL-SAFE CONTROL BY DTC

Lane Departure Warning (LDW)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the lane departure warning lamp in the combination meter.

Lane Departure Prevention (LDP)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the lane departure warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

Lane Departure Warning (LDW)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the lane departure warning lamp (yellow) in the combination meter will blink.

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- When interior temperature is reduced, the system will resume operation automatically and the lane departure warning lamp (yellow) in the combination meter will stop blinking.

Lane Departure Prevention (LDP)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and lane departure warning lamp (yellow) in the combination meter will blink.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON and the lane departure warning lamp (yellow) in the combination meter will stop blinking.

DTC Inspection Priority Chart

INFOID:000000009013844

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
2	C1A50: ADAS MALFUNCTION
3	<ul style="list-style-type: none"> C1B01: CAM AIMING INCOMP C1B03: ABNRML TEMP DETECT U0104: ADAS CAN CIR1 U0126: STRG SEN CAN CIR1 U0405: ADAS CAN CIR2 U0428: STRG SEN CAN CIR2
4	C1B00: CAMERA UNIT MALF

DTC Index

INFOID:000000009013845

×: Applicable

DTC		Lane departure warning lamp (yellow)	Fail-safe	Reference
C1A50	ADAS MALFUNCTION	ON	—	DAS-406
C1B00	CAMERA UNIT MALF	ON	×	DAS-386
C1B01	CAM AIMING INCOMP	ON	×	DAS-388
C1B03	ABNRML TEMP DETECT	Blink	×	DAS-390
U0104	ADAS CAN CIR1	ON	×	DAS-391
U0126	STRG SEN CAN CIR1	ON	×	DAS-393
U0405	ADAS CAN CIR2	ON	×	DAS-396
U0428	STRG SEN CAN CIR2	ON	×	DAS-398
U1000	CAN COMM CIRCUIT	ON	×	DAS-399
U1010	CONTROL UNIT (CAN)	ON	×	DAS-401

DAS

DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

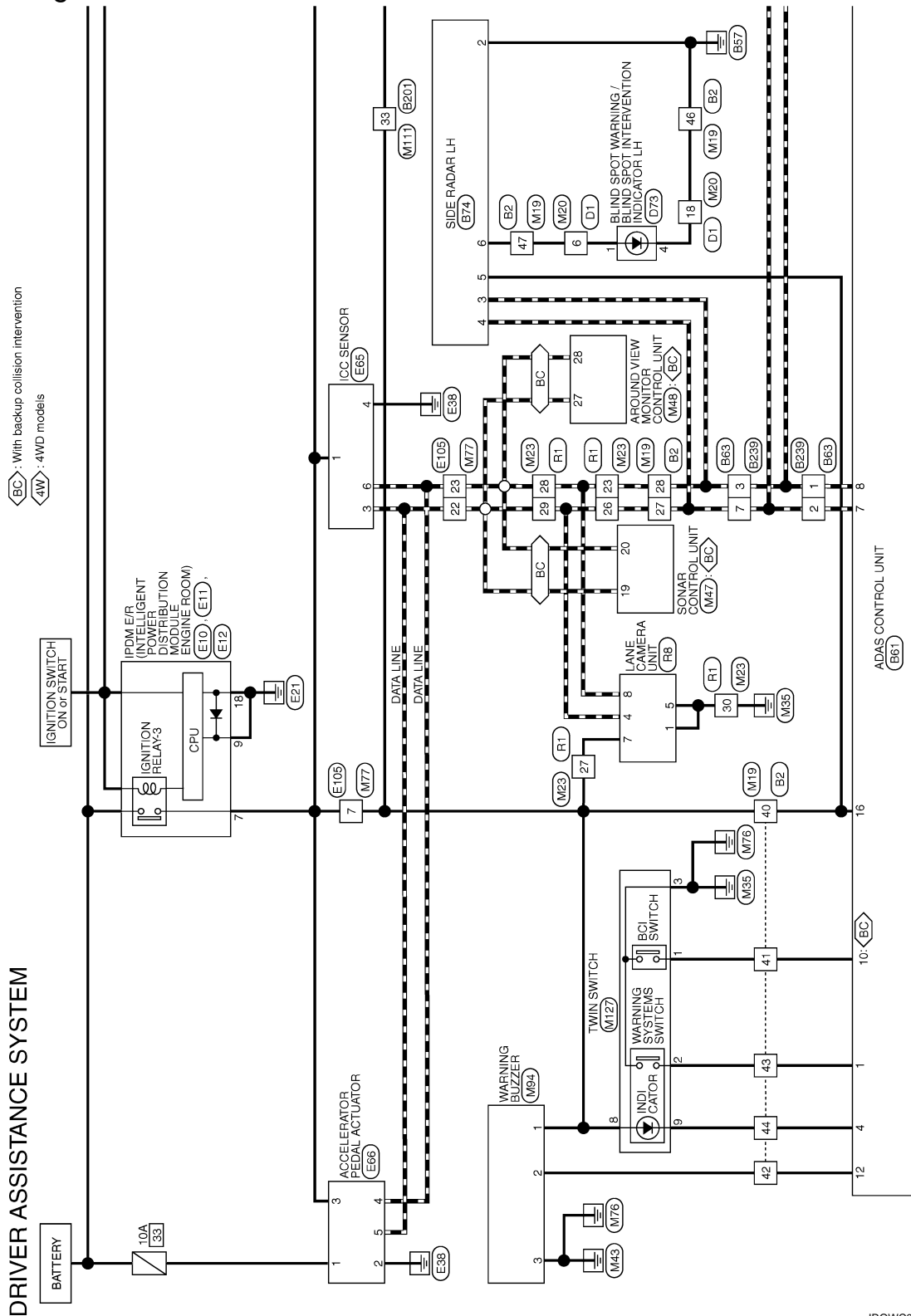
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WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:000000009356142



*: This connector is not shown in "Harness Layout".

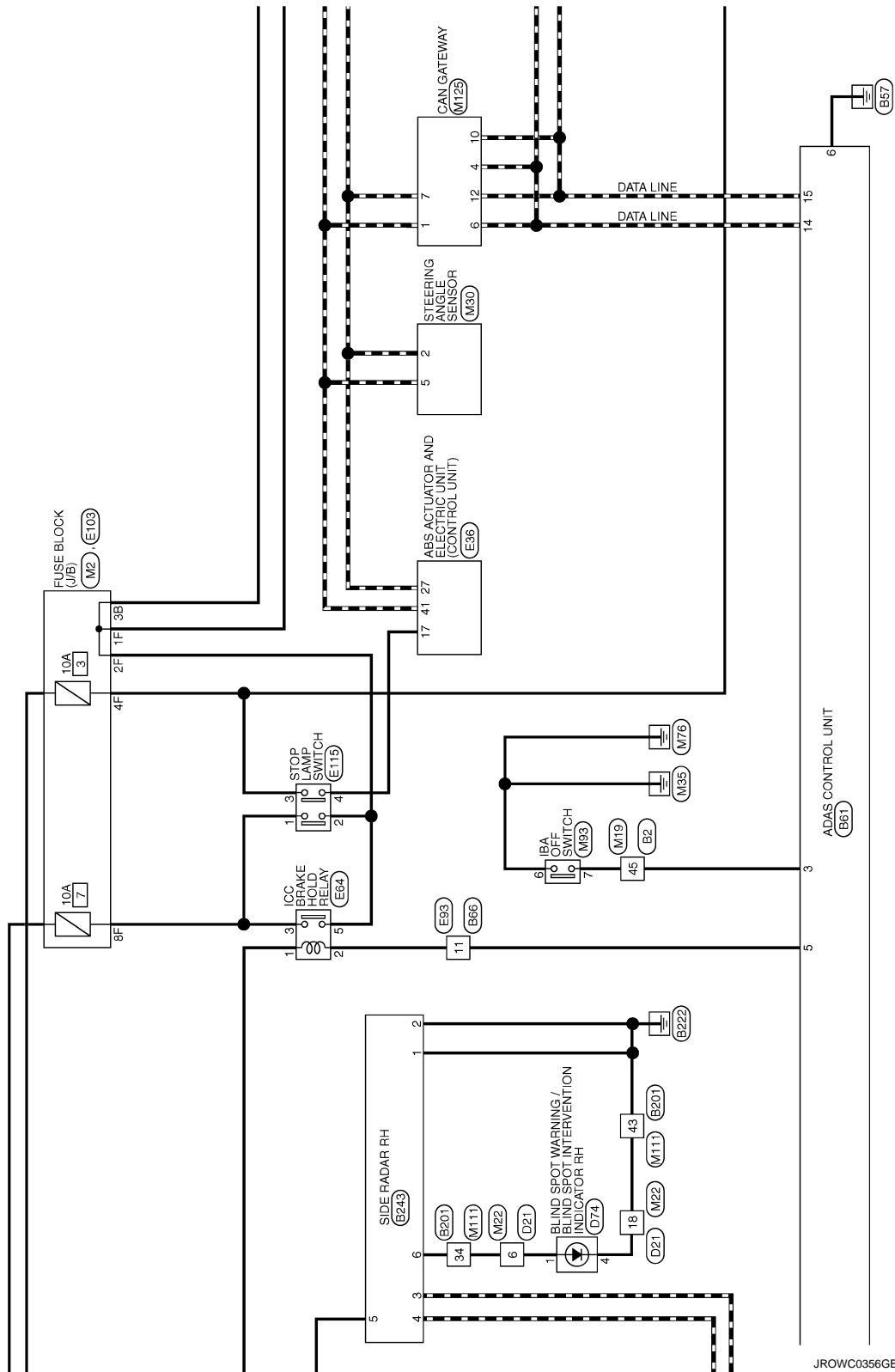
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DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >



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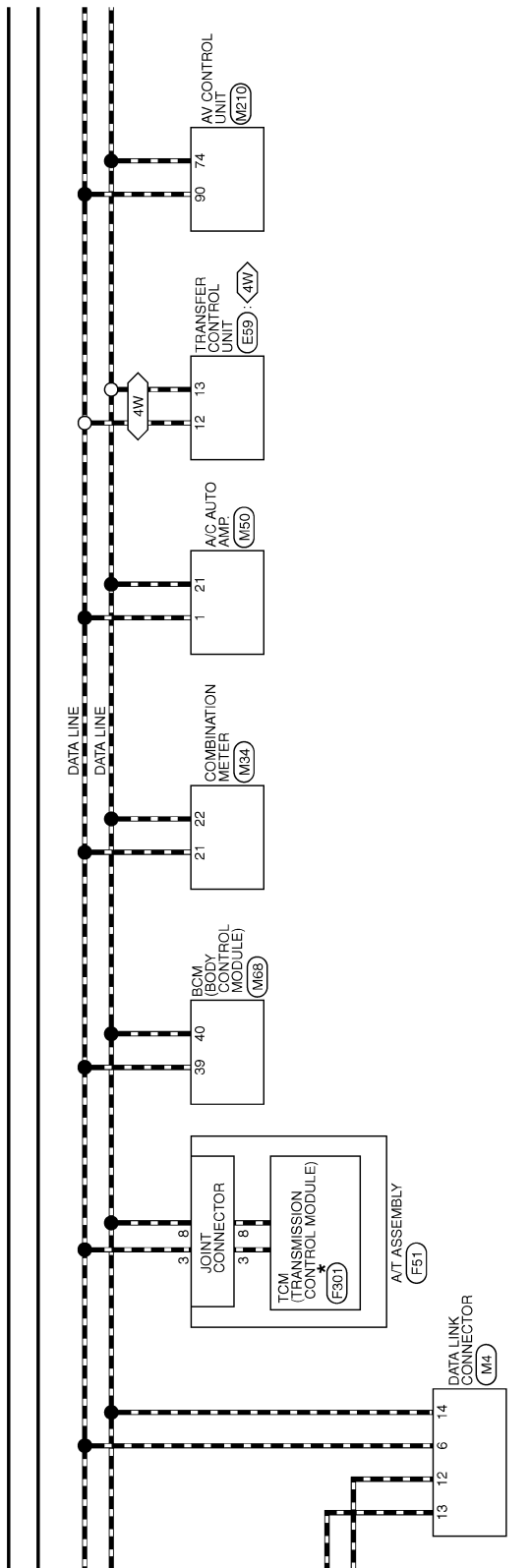
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DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

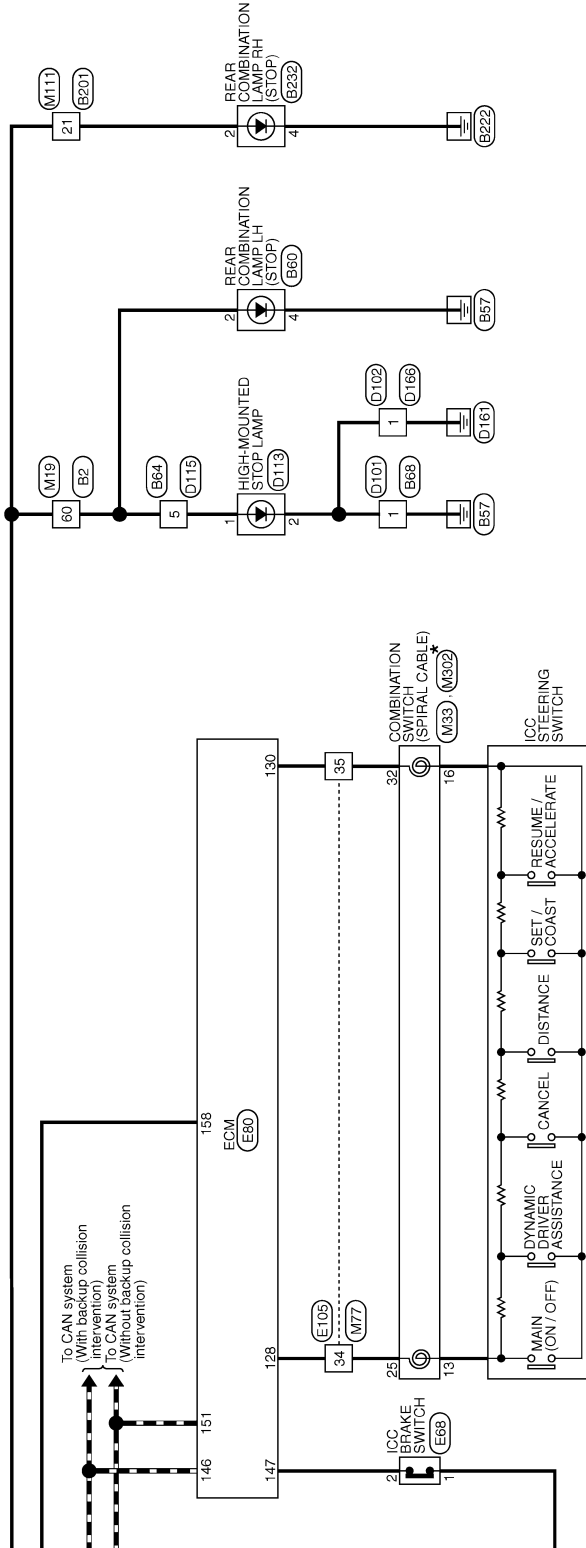


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DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >



JROWC0358GB

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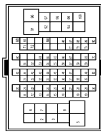
DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	RY	-
6	RY	-
7	V	-
9	G	-
11	WB	-
12	BR	-
13	GR	-
14	BY	-
15	WR	-
16	GR	-
18	GW	-
19	V	-
20	WG	-
21	BW	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	LO	-
28	YR	-
29	L	-
30	R	-
31	GY	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	WG	-
41	O	-

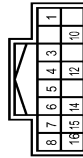
42	GR	-
43	V/W	-
44	LG/B	-
45	RY	-
46	B	-
47	BR	-
49	GR	-
50	R/B	-
51	W/R	-
52	BRY	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	LO	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FM-CS



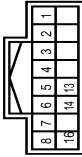
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	R	-
3	G	-
4	B	-

Connector No.	B61
Connector Name	ADAS CONTROL UNIT
Connector Type	TH16FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V/W	WARNING SYSTEMS SW
3	RY	IBA OFF SW
4	LG/B	WARNING SYSTEMS ON IND
5	R	BRAKE HOLD RLY DRIVE SIGNAL
6	B	GND
7	L	ITS COMM-H
8	Y	ITS COMM-L
10	O	B3 SW
12	GR	WARNING BUZZER
14	L	CANL
15	P	CANH
16	W/G	IGNITION

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH16FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y/R	-
4	SB	-
6	LG	-
8	Y	-
7	LO	-
6	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B64
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	RY	-
3	GW	-
4	R	-
5	R	-
7	L/W	-
8	V	-

DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



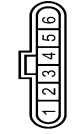
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	Y	ITS COM+LH
4	W	ITS COM+LH
5	SHIELD	IGM/TOR
7	GR	-
8	RW	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



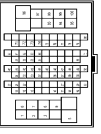
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-

Connector No.	B74
Connector Name	SIDE RADAR LH
Connector Type	AAC36FB-VP-5P



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GND
3	Y	ITS COM+LH
4	L	ITS COM+LH
5	W/G	IGM/TOR
6	BR	BSW INDICATOR

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-

20	GY	-
21	R	-
22	GR	-
27	L/W	-
29	W	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L	-
43	B/W	-
44	L	-
45	P	-
46	SHIELD	-
47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	L/B	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	L/G	-
79	R/B	-
80	W/B	-
83	Y	-
84	L	-
85	L/R	-
96	R	-

97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	-
2	R	-
3	GY	-
4	B	-

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	L/G	-
6	Y	-
7	L	-
8	G	-
13	R/L	-
14	G	-

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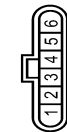
DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

16	W	-
Connector No. B243		
Connector Name SIDE RADAR RH		
Connector Type AAC08FB-WP		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BY	RIGHTLEFT SWITCHING SIGNAL
2	B	GND
3	Y	ITS COMML
4	L	ITS COMMH
5	WG	IGNITION
6	L/R	BSW INDICATOR

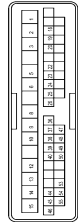
Connector No. D1		
Connector Name WIRE TO WIRE		
Connector Type TH09FW-CS15		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-

14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	Oil	-
31	GR/B	-
32	BR	-
33	V/W	-
36	GO	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR/L	-
45	SHIELD	-
46	W	-
47	LG	-
48	GW	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No. D21		
Connector Name WIRE TO WIRE		
Connector Type TH09FW-CS15		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	BY	-
13	L	-
14	R	-
15	B	-
18	BR/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/O	-
25	R/W	-
26	W/R	-
36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR/L	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No. D73		
Connector Name BLIND SPOT MARKING/BLIND SPOT INTERVENTION INDICATOR L/R		
Connector Type TH04MM-NH		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR/W	-
4	B	-

Connector No. D74		
Connector Name BLIND SPOT MARKING/BLIND SPOT INTERVENTION INDICATOR R/L		
Connector Type TH04MM-NH		



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/R	-
4	B/W	-

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DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	L	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	M01FER-S-LC



H.S.

Terminal Color Of No.	Wire	Signal Name [Specification]
1	B	-

Connector No.	D113
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TK02MBR-P



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-

Connector No.	D115
Connector Name	WIRE TO WIRE
Connector Type	NS08FW-GS



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	RY	-
3	GW	-
4	R	-
5	R	-
7	LW	-
8	V	-

Connector No.	D166
Connector Name	WIRE TO WIRE
Connector Type	M01MBR-FS-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-

Connector No.	E10
Connector Name	IPDM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	M06FW-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	L	-
5	PL	-
7	WG	-
8	W	-

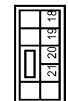
Connector No.	E11
Connector Name	IPDM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	M06FB-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
9	B	-
14	L	-

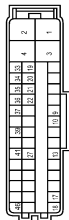
Connector No.	E12
Connector Name	IPDM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS08FB-R-CS



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
18	B	-
19	V	-
20	W	-
21	L	-

Connector No.	E36
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SA242FB-SJ24



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	BAT
2	B	GND
3	B	GND
4	W	MOTOR SUPPLY
9	R/B	YAW RATE / ROLL / PITCH SENSER COMMUNICATION+
10	P/B	YAW RATE / ROLL / PITCH SENSER COMMUNICATION-
13	GR	STP2
17	L/R	IGN
18	W/B	IGN
19	O	DS FR
20	SB	DP FL
21	RO	DS FR
22	V	DP RL
27	P	CAN-L
33	LG	DP FR
34	G	DS FL

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DRIVER ASSISTANCE SYSTEMS

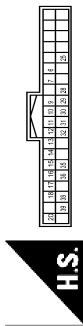
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VDC OFF SW
41	L	CANH
46	W	STOP LAMP SW ON

Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	H-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CANH
13	P	CANH
14	W/R	AUTO SW
15	P/B	ROTALY POSITION SEN PWM
16	LG	ROTALY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	B/R/Y	ROTAY POSITION SEN PWR SUPPLY
20	GR	TRANSFER CU PWR SUPPLY
25	P/L	H-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	H-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL
39	R/W	INTERNAL SPEED SEN PWR SUPPLY

Connector No.	E64
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	R	-
3	L/B	-
5	R	-

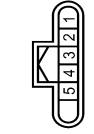
Connector No.	E66
Connector Name	ICC SENSOR
Connector Type	RS08FB-PR



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGNITION
3	L	ITS COMM-L
4	B	GND
6	Y	ITS COMM-H

Connector No.	E66
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH08FLGY



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	BATTERY
2	B	GND
3	W/G	IGNITION
4	Y	ITS COMM-L
5	L	ITS COMM-H

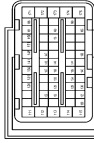
Connector No.	E68
Connector Name	ICC BRAKE SWITCH
Connector Type	MD2FBR-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	G/Y	-

Connector No.	E60
Connector Name	ECM
Connector Type	MB055FB-MEB10-LH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	THROTTLE CONTROL MOTOR RELAY
123	W/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FFCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASD/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FFCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	L/G	ECM RELAY (SELF SHUT-OFF)
165	GR/R	-
166	W	ECM COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT

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DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

Terminal No.	Wire	Signal Name [Specification]
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E033
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E103
Connector Name	FUSE BLOCK (JIB)
Connector Type	NS16FW-CS



H.S.

Terminal No.	Wire	Signal Name [Specification]
10F	G	-
14F	Y	-
15F	G	-
1F	W/B	-
2F	R	-
4F	G	-
6F	Y/G	-
8F	L/B	-
9F	Y	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	L	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	L/B	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	Y/V	-
22	L	-
23	V	-
24	L/W	-
28	O	-

Terminal No.	Wire	Signal Name [Specification]
29	R/W	-
30	L/B	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/R	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GS/L	-
60	W	-
61	B	-
62	R	-
63	G	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	G/R	-
97	R	-
98	G/B	-
100	W/R	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	L/B	-
2	R	-
3	G	-
4	L/R	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CANH
4	SB	K-LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CANL
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



H.S.

Terminal No.	Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CANH
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CANL
9	-	STARTER RELAY
10	-	GROUND

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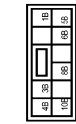
DRIVER ASSISTANCE SYSTEMS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

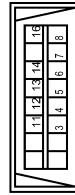
DRIVER ASSISTANCE SYSTEM

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



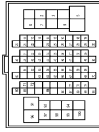
Terminal No.	Color Of Wire	Signal Name [Specification]
10B	W/B	-
11B	R	-
12B	R	-
13B	B	-
14B	BR	-
15B	Y	-
16B	L/O	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

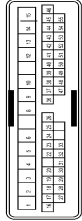
Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	V	-
7	G	-
9	W/B	-
12	GR	-
13	G/R	-
14	B/Y	-
15	W/R	-
16	G/R	-
18	GRW	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	GR	-

Terminal No.	Color Of Wire	Signal Name [Specification]
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	B	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
6	LG/R	-
8	BR/W	-
8	V	-
9	G	-
10	L	-
12	B/Y	-
13	Y	-
14	R	-
15	B	-
16	G/R	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

DRIVER ASSISTANCE SYSTEMS

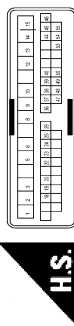
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	M22
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

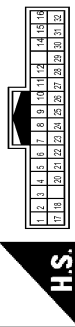


H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	B/Y	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/B	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH22MW-AH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	GR	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-
14	Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-

22	SB	-
23	Y/R	-
24	SHIELD	-
25	Y/G	-
26	L/O	-
27	W/O	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	GR/L	-

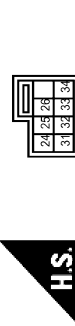
Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-AH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No.	M33
Connector Name	COMBINATION SWITCH (SERIAL CABLE)
Connector Type	TK08FGY-1V

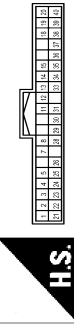


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Terminal No.	Color Of Wire	Signal Name [Specification]
24	Y/G	-
25	Y	-
26	B	-

31	Y/L	-
32	R	-
33	B	-
34	P/B	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	ILL GND
5	B	ILL CONTROL OUTPUT
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	AC/AUTO AMP CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CANH
22	P	CAVH
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BR/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT SENSOR SIGNAL (DRIVERSIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	RY	NON-MANUAL MODE SIGNAL

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DRIVER ASSISTANCE SYSTEMS

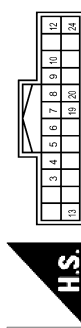
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

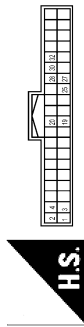
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

Connector No.	M47
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FM-NH



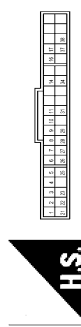
Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	SONAR FR INNER LH
8	Y	SONAR FR INNER RH
9	G	SONAR FR INNER LH
10	Y	SONAR FR INNER RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CANH [Without ADAS]
19	L	ITS-CAN L [With ADAS]
20	R	CANL [Without ADAS]
20	Y	ITS-CAN R [With ADAS]
24	B	GND

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COM1 (H)
20	LG	AV COM1 (L)
25	P	REV
27	L	CANH
28	R	CANL [Without ADAS]
28	Y	CANL [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

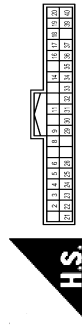
Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Type	SAB40FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	V	ACC POWER SUPPLY
5	W	IONIZER CONTROL SIGNAL
6	V/W	A/C AUTO AMP. CONNECTION SIGNAL
7	WR	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL

9	BR	SUNLOAD SENSOR (DR) SIGNAL <small>(EX GAS / OUTSIDE DOOR DETECTING SENSOR SIGNAL)</small>
10	V/W	COM1 (RR A/C AUTO AMP.-RR A/C CONT.)
11	W/L	FR BLOWER MOTOR CONTROL SIGNAL
14	O/L	EACH DOOR MOTOR LIN SIGNAL
16	R/G	EACH DOOR MOTOR LIN SIGNAL
17	L/Y	EACH DOOR MOTOR POWER SUPPLY
21	P	CANL
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
25	R	-
26	B	SENSOR GROUND
27	GR	FR IN-VEHICLE SENSOR SIGNAL
28	R	INTAKE SENSOR SIGNAL
29	O	SUNLOAD SENSOR (PASS) SIGNAL
31	L/O	COM1 (RR A/C CONT.-A/C AUTO AMP.)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	G/W	RR A/C RELAY CONTROL SIGNAL

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BRY	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	BR	RECEIVER SENSOR GND
19	BR	RECEIVER PWR SPLY
20	GR	KEYLS ENT RECEIVER COMM
21	P	WATS ANT AMP
22	W/B	KEYLS ENT RECEIVER RSSI

23	GR/R	SECURITY IND CONT
24	SB	DONGLE LINK
25	LR/R	NATS ANT AMP.
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	BK DOOR OPNR SW
31	W/G	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/W	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIFT P
39	L	CANH
40	P	CANL

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
6	SB	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	O/L	-
16	SB	-
18	BR	-
19	Y/G	-
20	BRY	-

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DRIVER ASSISTANCE SYSTEMS

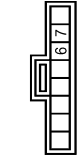
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

21	V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
29	R/W	-
30	O/L	-
31	O/Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/O	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	B	-
62	G	-
63	R	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	R	-
98	O/L	-
100	W/B	-

Connector No.	M93
Connector Name	IBA OFF SWITCH
Connector Type	TK09FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
6	B	-
7	R/Y	-

Connector No.	M94
Connector Name	WARNING BUZZER
Connector Type	NSM4FBRCS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	G/R	-
3	B	-

Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH80FMCS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/R	-
4	W/B	-
5	R	-
6	R/Y	-
7	R	-
8	GR/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	G/Y	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L/W	-
43	B/W	-
44	L	-
45	P	-
46	SHIELD	-

47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	O/L	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
90	W/B	-
93	Y	-
94	L	-
95	L/R	-
96	R	-
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



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DRIVER ASSISTANCE SYSTEMS

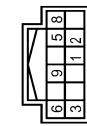
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEM

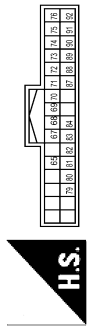
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
3	Y	BATTERY
4	L	CANH
5	B	GND
6	L	CANH
7	P	CANL
9	GR	IGNITION
10	R	CANL
11	B	GND
12	R	CANL

Connector No.	M127
Connector Name	TWIN SWITCH
Connector Type	TH12FY-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	V/W	-
3	B	-
5	L/O	-
6	B/O	-
8	W/G	-
9	LG/B	-

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FM-AH



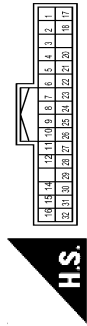
Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
69	O	INTELLIGENT KEY IDENTIFICATION SIGNAL
70	BR	REVERSE 12
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
72	Y/G	MICROPHONE VCC [Without DCM]
73	Y/G	COMM [CONT-DISP]
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	L/O	DIMMER SIGNAL
80	GR/L	IGNITION SIGNAL
81	R/Y	REVERSE SIGNAL
82	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	W/B	COMPOSITE IMAGE SYNC SIGNAL
87	BR	MICROPHONE SIGNAL [With DCM]
87	Y/L	MICROPHONE SIGNAL [Without DCM]
88	SHIELD	SHIELD
89	Y/L	COMM [DISP-CONT]
90	L	CANH
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SPRAL CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH32FM-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	BR	-
6	BY	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-

14	BY	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	Y	-
24	SHIELD	-
25	Y/G	-
26	L	-
27	W/G	-
28	Y	-
29	L	-
30	B/SR	-
31	BR	-
32	BR	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH08FM-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
4	L	ITS COMM-H
5	B	GND
7	W/G	IGNITION
8	Y	ITS COMM-L

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

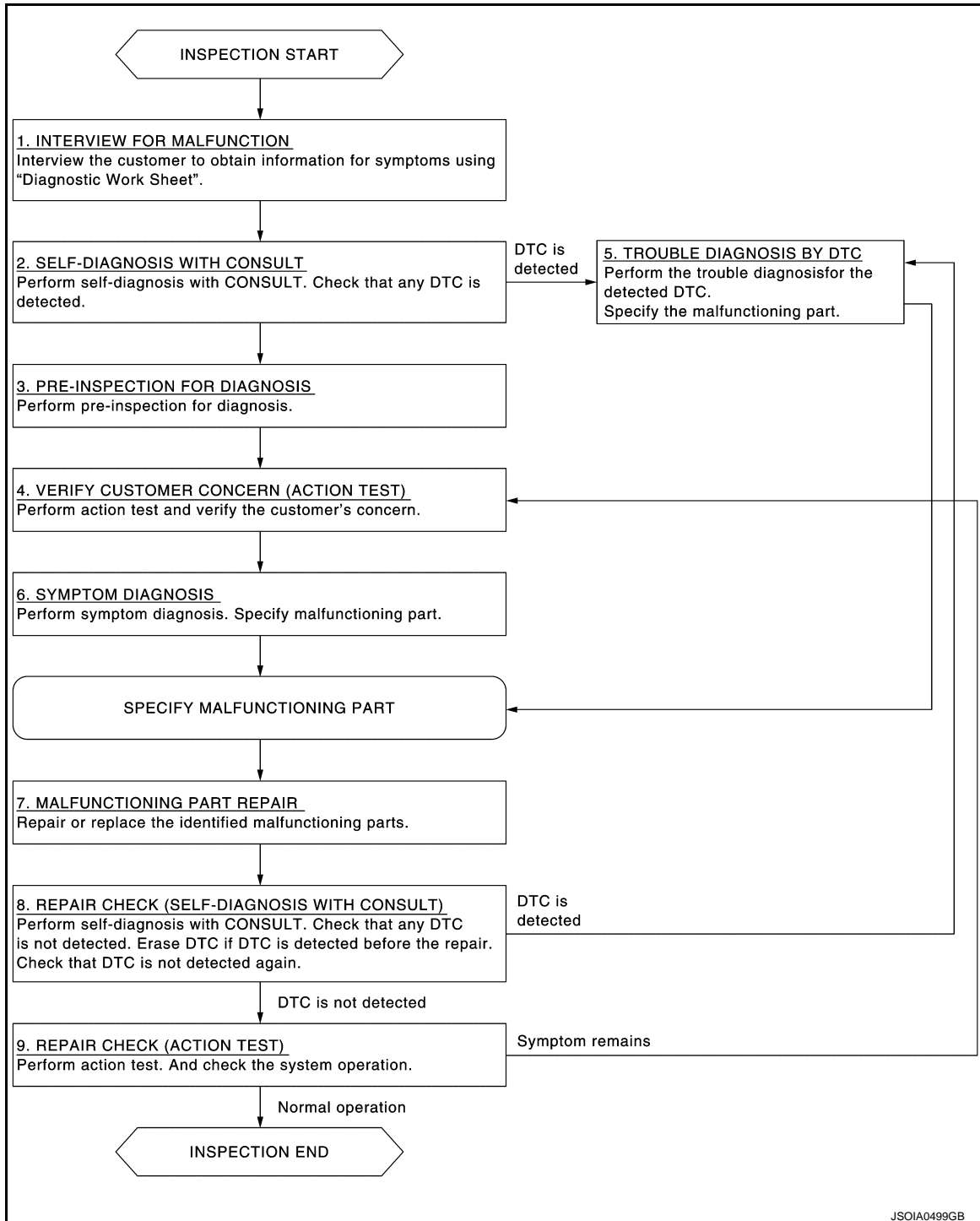
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

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OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT

1. Perform “All DTC Reading” with CONSULT.
2. Check if the DTC is detected on the self-diagnosis results of “SIDE RADAR LEFT/RIGHT” and/or “ICC/ADAS”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 3.

3. PRE-INSPECTION FOR DIAGNOSIS

Perform pre-inspection for diagnosis. Refer to [DAS-512, "Inspection Procedure"](#).

>> GO TO 4.

4. ACTION TEST

Perform Blind Spot Warning and Blind Spot Intervention system action test to check the operation status. Refer to [DAS-514, "Work Procedure"](#).
Check if any other malfunctions occur.

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [DAS-487, "DTC Index"](#) or [DAS-490, "DTC Index"](#)(SIDE RADAR LEFT/RIGHT), [DAS-493, "DTC Index"](#) (LANE CAMERA UNIT) and/or [DAS-479, "DTC Index"](#) (ICC/ADAS).

NOTE:

If “DTC: U1000” is detected, first diagnose the CAN communication system or ITS communication system.

>> GO TO 7.

6. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [DAS-592, "Symptom Table"](#).

>> GO TO 7.

7. MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 8.

8. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of “SIDE RADAR LEFT/RIGHT”, “LANE CAMERA UNIT” and “ICC/ADAS”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 9.

9. REPAIR CHECK (ACTION TEST)

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Perform the Blind Spot Warning and Blind Spot Intervention system action test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

YES >> GO TO 4.

NO >> INSPECTION END

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PRE-INSPECTION FOR DIAGNOSIS

< BASIC INSPECTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

PRE-INSPECTION FOR DIAGNOSIS

Inspection Procedure

INFOID:000000009013848

1. PERFORM PRE-INSPECTION OF LANE CAMERA UNIT

Perform pre-inspection of lane camera unit. Refer to [DAS-360, "Inspection Procedure"](#).

>> GO TO 2.

2. CHECK REAR BUMPER NEAR THE SIDE RADAR

Are rear bumper near the side radar contaminated with foreign materials?

YES >> Clean the rear bumper.

NO >> GO TO 3.

3. CHECK SIDE RADAR AND THE SIDE RADAR OUTSKIRTS

Are side radar and the side radar outskirts contaminated with foreign materials?

YES >> Clean the side radar or side radar outskirts.

NO >> GO TO 4.

4. CHECK SIDE RADAR INSTALLATION CONDITION

Check side radar installation condition (installation position, properly tightened, a bent bracket).

Is it properly installed?

YES >> INSPECTION END

NO >> Install side radar properly.

ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT

< BASIC INSPECTION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT

Description

INFOID:000000009013849

Always adjust the camera aiming after removing and installing or replacing the lane camera unit.

CAUTION:

The system does not operate normally unless the camera aiming adjustment is performed. Always perform it.

Work Procedure

INFOID:000000009013850

1. CAMERA AIMING ADJUSTMENT

Perform the camera aiming adjustment. Refer to [DAS-364, "Work Procedure"](#).

>> GO TO 2.

2. BLIND SPOT WARNING/BLIND SPOT INTERVENTION SYSTEM ACTION TEST

1. Perform the Blind Spot Warning/Blind Spot Intervention system action test. Refer to [DAS-514, "Work Procedure"](#).
2. Check that the Blind Spot Warning/Blind Spot Intervention system operates normally.

>> WORK END

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ACTION TEST

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< BASIC INSPECTION >

ACTION TEST

Description

INFOID:000000009013851

Always perform the Blind Spot Warning and Blind Spot Intervention system action test to check that the system operates normally after replacing the lane camera unit, replacing the side radar left (right), or repairing any Blind Spot Intervention system malfunction.

NOTE:

Perform the Blind Spot Intervention system action test after checking that the LDP system operates normally because the Blind Spot Intervention system shares components with the LDP system.

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-433, "Precaution for Blind Spot Warning/Blind Spot Intervention System Service"](#).
- System description for Blind Spot Warning: Refer to [DAS-437, "BLIND SPOT WARNING \(BSW\) SYSTEM : System Description"](#).
- System description for Blind Spot Intervention: Refer to [DAS-442, "BLIND SPOT INTERVENTION SYSTEM : System Description"](#).
- Normal operating condition: Refer to [DAS-597, "Description"](#).

Work Procedure

INFOID:000000009013852

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-433, "Precaution for Blind Spot Warning/Blind Spot Intervention System Service"](#).
- System description for Blind Spot Warning: Refer to [DAS-437, "BLIND SPOT WARNING \(BSW\) SYSTEM : System Description"](#).
- System description for Blind Spot Intervention: Refer to [DAS-442, "BLIND SPOT INTERVENTION SYSTEM : System Description"](#).
- Normal operating condition: Refer to [DAS-597, "Description"](#).

1. LDW/LDP SYSTEM ACTION TEST

Perform the LDW/LDP system action test. Refer to [DAS-361, "Inspection Procedure"](#).

>> GO TO 2.

2. CHECK BSW SYSTEM SETTING

1. Start the engine.
2. Check that the BSW system setting can be enabled/disabled on the navigation screen.
3. Turn OFF the ignition switch and wait for 5 seconds or more.
4. Check that the previous setting is saved when the engine starts again.

>> GO TO 3.

3. BSW SYSTEM ACTION TEST

1. Enable the setting of the BSW system on the navigation screen.
2. Turn warning systems switch ON (warning systems ON indicator is ON).

NOTE:

Blind Spot Intervention system is OFF.

3. Check BSW operation according to the following table.

ACTION TEST

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< BASIC INSPECTION >

Vehicle condition/ Driver's operation				Action	
Warning systems ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of vehicle detection within detection area	Indication on the Blind Spot Warning/Blind Spot Intervention indicator	Buzzer
OFF	—	—	—	OFF	OFF
ON	Less than approx. 29 (18)	—	—	OFF	OFF
		—	Vehicle is absent	OFF	OFF
	Approx. 32 (20) or more	OFF	Vehicle is detected	ON	OFF
		ON (vehicle detected direction)	Before turn signal operates Vehicle is detected	<p style="text-align: center;">Blink</p>	<p style="text-align: center;">Short continuous beep</p>
ON (vehicle detected direction)	Vehicle is detected after turn signal operates	<p style="text-align: center;">Blink</p>	OFF		

NOTE:

- If vehicle speed exceeds approximately 32 km/h (20MPH), BSW function operates until the vehicle speed becomes lower than approximately 29km/h (18MPH).
- Time shown in the figure is approximate time.
- Always Blind Spot Intervention system operates together with BSW system. Whenever Blind Spot Intervention system is turned on by pushing the dynamic driver assistance switch, BSW system also be turned on even if the BSW system is turned off. However, at this time the warning systems ON indicator remains OFF.

>> GO TO 4.

4. CHECK BLIND SPOT INTERVENTION SYSTEM SETTING

1. Start the engine.
2. Check that the Blind Spot Intervention system setting can be enabled/disabled on the navigation screen.
3. Turn OFF the ignition switch and wait for 5 seconds or more.
4. Check that the previous setting is saved when the engine starts again.

>> GO TO 5.

5. CHECK DYNAMIC DRIVER ASSISTANCE SWITCH

1. Start the engine.
2. After starting the engine wait for 5 seconds or more.
3. Enable the setting of the Blind Spot Intervention system on the navigation screen.
4. Press the dynamic driver assistance switch.
5. Check that the Blind Spot Intervention ON indicator on the combination meter illuminates.
6. Check that the Blind Spot Intervention ON indicator turns OFF when the system is turned OFF by pressing the dynamic driver assistance switch.
7. Check that the Blind Spot Intervention ON indicator turns OFF when the engine starts again.

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ACTION TEST

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< BASIC INSPECTION >

NOTE:

- The Blind Spot Intervention ON indicator does not illuminate even when the dynamic driver assistance switch is turned ON within approximately 5 seconds after starting the engine.
- When the Blind Spot Intervention system setting is disabled on the navigation screen, the Blind Spot Intervention ON indicator is not turned ON by pressing the dynamic driver assistance switch.

>> INSPECTION END

C1A00 CONTROL UNIT

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:000000009013853

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [DAS-517. "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013854

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479. "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

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C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000009013855

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds	<ul style="list-style-type: none">• Connector, harness, fuse• ADAS control unit
C1A02 (2)	POWER SUPPLY CIR 2	The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds	

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A01" or "C1A02" detected as the current malfunction?

- YES >> Refer to [DAS-518. "Diagnosis Procedure"](#).
NO >> Refer to [GI-43. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013856

1. CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [DAS-582. "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
NO >> Repair or replace the malfunctioning parts.

C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000009013857

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) received by the ADAS control unit via CAN communication, are inconsistent	<ul style="list-style-type: none">• Wheel speed sensor• ABS actuator and electric unit (control unit)• ADAS control unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-520, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A03" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A03" detected as the current malfunction?

YES-1 (Blind Spot Warning/Blind Spot Intervention warning lamp: ON)>>Refer to [DAS-519, "Diagnosis Procedure"](#).

YES-2 (Blind Spot Warning/Blind Spot Intervention warning lamp: OFF)>>Refer to [CCS-95, "DTC Logic"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013858

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A04" or "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:000000009013859

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A04 (4)	ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013860

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:000000009013861

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) continues for 10 seconds or more with vehicle speeds at approximately 40 km/h (25 MPH) or more	<ul style="list-style-type: none">• Stop lamp switch circuit• ICC brake switch circuit• Stop lamp switch• ICC brake switch• Incorrect stop lamp switch installation• Incorrect ICC brake switch installation• ECM• ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009013862

1.CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

YES >> GO TO 3.

NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4.

NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3.CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS".

Is the inspection result normal?

YES >> GO TO 14.

NO >> GO TO 9.

4.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check ICC brake switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Adjust ICC brake switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

5.ICC BRAKE SWITCH INSPECTION

1. Disconnect ICC brake switch connector.
2. Check ICC brake switch. Refer to [DAS-524, "Component Inspection \(ICC Brake Switch\)"](#).

Is the inspection result normal?

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C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- YES >> GO TO 6.
NO >> Replace ICC brake switch.

6.CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between ICC brake switch harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
ICC brake switch		Ground
Connector	Terminal	
E68	1	
		Battery voltage

Is the inspection result normal?

- YES >> GO TO 7.
NO >> Repair the harnesses or connectors.

7.CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM connector.
3. Check for continuity between ICC brake switch harness connector and ECM harness connector.

ICC brake switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E68	2	E80	147	Existed

4. Check for continuity between ICC brake switch harness connector and ground.

ICC brake switch		Ground	Continuity
Connector	Terminal		
E68	2		Not existed

Is the inspection result normal?

- YES >> GO TO 8.
NO >> Repair the harnesses or connectors.

8.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (For USA and Canada) or [EC-672. "DTC Index"](#) (For Mexico).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

9.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7. "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Adjust stop lamp switch installation. Refer to [BR-7. "Inspection and Adjustment"](#).

10.STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [DAS-524. "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

YES >> GO TO 11.

NO >> Replace stop lamp switch.

11. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.
2. Check voltage between stop lamp switch harness connector and ground.

Terminals		Voltage (Approx.)	
(+)	(-)		
Stop lamp switch		Ground	Battery voltage
Connector	Terminal		
E115	1		
	3		

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn ignition switch OFF
2. Disconnect ECM, rear combination lamp and high-mounted stop lamp connectors.
3. Check for continuity between stop lamp switch harness connector and ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E115	2	E80	158	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	2		Not existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair the harnesses or connectors.

13. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check for continuity between stop lamp switch harness connector and ABS actuator and electric unit (control unit) harness connector.

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E115	4	E36	17	Existed

3. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	4		Not existed

Is the inspection result normal?

YES >> GO TO 14.

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C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

NO >> Repair the harnesses or connectors.

14.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (For USA and Canada) or [EC-672. "DTC Index"](#) (For Mexico).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> GO TO 15.

15.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to [BRC-50. "DTC Index"](#).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

Component Inspection (ICC Brake Switch)

INFOID:000000009013863

1.CHECK ICC BRAKE SWITCH

Check for continuity between ICC brake switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Not existed
		When brake pedal is released	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:000000009013864

1.CHECK STOP LAMP SWITCH

Check for continuity between stop lamp switch terminals.

Terminal		Condition	Continuity
1	2	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed
3	4	When brake pedal is depressed	Existed
		When brake pedal is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch.

C1A06 OPERATION SW

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

C1A06 OPERATION SW

DTC Logic

INFOID:000000009013865

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	<ul style="list-style-type: none">Any switch of the ICC steering switch is detected as "ON" continuously for 60 secondsAn ON/OFF state judgment of the ICC differs between ECM and ADAS control unit, and the state continues for 2 seconds or more	<ul style="list-style-type: none">ICC steering switch circuitICC steering switchECM

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Wait for approximately 5 minutes after turning the Blind Spot Intervention system ON.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A06" detected as the current malfunction?

- YES >> Refer to [DAS-525, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013866

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A06" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

- Turn the ignition switch OFF.
- Disconnect the ICC steering switch connector.
- Check the ICC steering switch. Refer to [DAS-526, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace the steering wheel.

3. CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

- Disconnect the ECM connector.
- Check for continuity between the spiral cable harness connector and ECM harness connector.

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M33	25	M80	128	Existed
	32		130	

- Check for continuity between spiral cable harness connector and ground.

C1A06 OPERATION SW

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

Spiral cable		Ground	Continuity
Connector	Terminal		
M33	25		Not existed
	32		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK SPIRAL CABLE

Check for continuity between spiral cable terminals.

Spiral cable		Continuity
Terminal		
13	25	Existed
16	32	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace the spiral cable.

5.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect the connectors of ICC steering switch and ECM connector.
2. Turn the ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

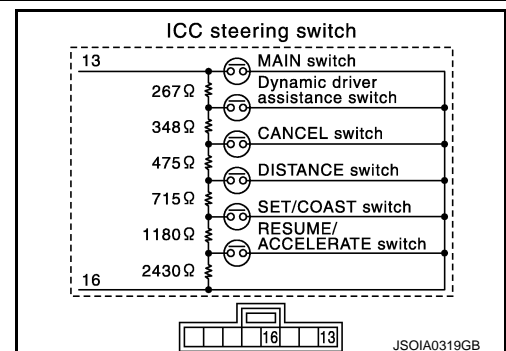
Component Inspection

INFOID:000000009013867

1.CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

Terminal	Switch operation	Resistance [Ω]
13 16	When pressing MAIN switch	Approx. 0
	When pressing dynamic driver assistance switch	Approx. 267
	When pressing CANCEL switch	Approx. 615
	When pressing DISTANCE switch	Approx. 1090
	When pressing SET/COAST switch	Approx. 1805
	When pressing RESUME/ACCELERATE switch	Approx. 2985
	When all switches are not pressed	Approx. 5415



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the steering wheel.

C1A14 ECM

DTC Logic

INFOID:000000009013868

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	<ul style="list-style-type: none"> • Accelerator pedal position sensor • ECM • ADAS control unit

NOTE:

If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the Blind Spot Intervention system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A14" detected as the current malfunction?

- YES >> Refer to [DAS-527, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013869

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A14" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
 Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A15 GEAR POSITION

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

C1A15 GEAR POSITION

Description

INFOID:000000009013870

ADAS control unit judges the gear position based on the following signals.

- Current gear position signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from input speed signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from the vehicle speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000009013871

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN communication and a gear position calculated by the ADAS control unit continues for approximately 11 minutes or more	<ul style="list-style-type: none">• Input speed sensor• Vehicle speed sensor A/T (output speed sensor)• TCM

NOTE:

If DTC "C1A15" is detected along with DTC "U1000", "C1A03", or "C1A04", first diagnose the DTC "U1000", "C1A03", or "C1A04".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-519, "DTC Logic"](#) for DTC "C1A03".
- Refer to [DAS-520, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A15" detected as the current malfunction?

YES >> Refer to [DAS-528, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013872

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

Check that "VHCL SPEED SE" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

C1A15 GEAR POSITION

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 3.
- NO >> GO TO 7.

3.CHECK GEAR POSITION

Check that "GEAR" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 4.

4.CHECK GEAR POSITION SIGNAL

Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 6.

5.CHECK INPUT SPEED SENSOR SIGNAL

Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
- NO >> GO TO 6.

6.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

7.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

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DAS

C1A24 NP RANGE

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

C1A24 NP RANGE

DTC Logic

INFOID:000000009013873

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communication and a current gear position signal continues for 60 seconds or more	<ul style="list-style-type: none">• TCM• Transmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. CHECK DTC REPRODUCE (1)

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Wait for approximately 5 minutes or more after shifting the selector lever to "P" position.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-530, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. CHECK DTC REPRODUCE (2)

1. Wait for approximately 5 minutes or more after shifting the selector lever to "N" position.
2. Perform "All DTC Reading".
3. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-530, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013874

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A24" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK NP POSITION SWITCH SIGNAL

Check that "NP RANGE SW" operates normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

- YES >> GO TO 3.
NO >> GO TO 4.

3. CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> GO TO 4.

C1A24 NP RANGE

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

4. PERFORM TCM SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000009013875

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to [DAS-532, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013876

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A50 ADAS CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A50 ADAS CONTROL UNIT

DTC Logic

INFOID:000000009013877

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A50	ADAS MALFUNCTION	If ADAS control unit is malfunctioning	ADAS control unit

NOTE:

If DTC "C1A50" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547. "ADAS CONTROL UNIT : DTC Logic"](#).

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A50" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1A50" detected as the current malfunction?

- YES >> Refer to [DAS-533. "Diagnosis Procedure"](#).
NO >> Refer to [GI-43. "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013878

1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A50" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-548. "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479. "DTC Index"](#).
NO >> Replace the lane camera unit. Refer to [DAS-603. "Removal and Installation"](#).

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DAS

C1B00 CAMERA UNIT MALF

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B00 CAMERA UNIT MALF

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013879

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B00 (81)	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B00" detected as the current malfunction?

YES >> Refer to [DAS-534, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

NO >> INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013880

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B00" detected?

YES >> Refer to [DAS-534, "LANE CAMERA UNIT : DTC Logic"](#)

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013881

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B00	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B00" detected as the current malfunction?

YES >> Refer to [DAS-534, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

NO >> INSPECTION END

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013882

1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is any DTC detected?

C1B00 CAMERA UNIT MALF

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-493, "DTC Index"](#).
- NO >> Replace the lane camera unit. Refer to [DAS-603, "Removal and Installation"](#).

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DAS

C1B01 CAM AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B01 CAM AIMING INCOMP

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013883

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01 (82)	CAM AIMING INCOMP	Camera aiming is not completed	<ul style="list-style-type: none">Lane camera aiming is not adjustedLane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Operate the Blind Spot Intervention system and drive.
CAUTION:
Always drive safely.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B01" detected as the current malfunction?

- YES >> Refer to [DAS-536, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013884

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1B01" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B01" detected?

- YES >> Refer to [DAS-536, "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

- Start the engine.
- Check that "OK" is indicated for the value of "AIMING RESULT" in "DATA MONITOR" of "LANE CAMERA".

Is "OK" indicated?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> Replace the lane camera unit. Refer to [DAS-603, "Removal and Installation"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013885

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01	CAM AIMING INCOMP	Camera aiming is not completed	<ul style="list-style-type: none">Lane camera aiming is not adjustedLane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

C1B01 CAM AIMING INCOMP

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B01" detected as the current malfunction?

- YES >> Refer to [DAS-537, "LANE CAMERA UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013886

1. CAMERA AIMING ADJUSTMENT

1. Perform the camera aiming. Refer to [DAS-365, "Description"](#).
2. Erase all self-diagnosis results with CONSULT.
3. Perform "All DTC Reading".
4. Check if the "C1B01" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B01" detected?

- YES >> Replace the lane camera unit. Refer to [DAS-603, "Removal and Installation"](#).
NO >> INSPECTION END

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DAS

C1B03 ABNRML TEMP DETECT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B03 ABNRML TEMP DETECT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013887

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03 (83)	CAM ABNRML TMP DETCT	Temperature around lane camera unit is excessively high	Interior room temperature is excessively high

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013888

1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA"

Is "C1B03" detected?

- YES >> Refer to [DAS-538. "LANE CAMERA UNIT : DTC Logic"](#)
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

1. Erase all self-diagnosis results with CONSULT.
2. Perform "All DTC Reading".
3. Check if the "C1B03" is detected in "Self Diagnostic Result" of "ICC/ADAS"

Is "C1B03" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013889

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03	ABNRML TEMP DETECT	Temperature around lane camera unit is excessively high	Interior room temperature is excessively high

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013890

1. COOLING LANE CAMERA UNIT

1. Wait for 10 minutes or more to cool the lane camera unit.
2. Erase all self-diagnosis results with CONSULT.
3. Perform "All DTC Reading".
4. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B03" detected?

- YES >> Replace the lane camera unit. Refer to [DAS-603. "Removal and Installation"](#).
NO >> INSPECTION END

C1B50 SIDE RADAR MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B50 SIDE RADAR MALFUNCTION

DTC LOGIC

INFOID:000000009013891

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B50	SIDE RDR MALFUNCTION	Side radar malfunction	Side radar

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B50" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the "C1B50" detected as the current malfunction?

- YES >> Refer to [DAS-539, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013892

1. CHECK SELF-DIAGNOSIS RESULT

Check if any DTC other than "C1B50" is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT/RIGHT"

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunction part. Refer to [DAS-490, "DTC Index"](#) (SIDE RADAR RIGHT) or [DAS-487, "DTC Index"](#) (SIDE RADAR LEFT).
NO >> Replace the side radar. Refer to [DAS-601, "Removal and Installation"](#).

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DAS

C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

DTC Logic

INFOID:000000009013893

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B51	BSW/BSI IND SHORT CIR	Short circuit in Blind Spot Warning/Blind Spot Intervention indicator circuit is detected. (Over current is detected)	<ul style="list-style-type: none"> Blind Spot Warning/Blind Spot Intervention indicator circuit. Blind Spot Warning/Blind Spot Intervention indicator. Side radar.

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the "C1B51" detected as the current malfunction?

- YES >> Refer to [DAS-539, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013894

1. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR SHORT

- Turn ignition switch OFF.
- Disconnect side radar harness connector and Blind Spot Warning/Blind Spot Intervention indicator harness connector.
- Check continuity between side radar harness connector and ground.

Side radar		Ground	Continuity
Connector	Terminal		
B80 (LH)	6		Not existed
B81 (RH)			

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the harnesses or connectors.

2. REPLACE THE SIDE RADAR

- Replace the side radar.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"

Is the DTC "C1B51" detected?

- YES >> Replace the side radar. Refer to [DAS-601, "Removal and Installation"](#).
 NO >> INSPECTION END

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

DTC Logic

INFOID:000000009013895

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B52	BSW/BSI IND OPEN CIR	Open circuit in Blind Spot Warning/Blind Spot Intervention indicator circuit is detected.	<ul style="list-style-type: none"> Blind Spot Warning/Blind Spot Intervention indicator circuit. Blind Spot Warning/Blind Spot Intervention indicator. Side radar.

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1B52" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the "C1B52" detected as the current malfunction?

- YES >> Refer to [DAS-539, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009013896

1. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR OPEN 1

- Turn ignition switch OFF.
- Disconnect side radar harness connector and Blind Spot Warning/Blind Spot Intervention indicator harness connector.
- Check continuity between side radar harness connector and Blind Spot Warning/Blind Spot Intervention indicator harness connector.

Side radar		Blind Spot Warning/Blind Spot Intervention indicator		Continuity
Connector	Terminal	Connector	Terminal	
B80 (LH)	6	D77 (LH)	1	Existed
B81 (RH)		D78 (RH)		

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR OPEN 2

Check continuity between Blind Spot Warning/Blind Spot Intervention indicator harness connector and ground.

Blind Spot Warning/Blind Spot Intervention indicator		Ground	Continuity
Connector	Terminal		
D77 (LH)	4		Existed
D78 (RH)			

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C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK SIDE RADAR VOLTAGE OUTPUT

1. Connect side radar harness connector.
2. Check voltage between Blind Spot Warning/Blind Spot Intervention indicator harness connector and ground.

Blind Spot Warning/Blind Spot Intervention indicator		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
D77 (LH)	1		Ignition switch OFF ⇒ ON (Approx. 2 sec.)	6 V
D78 (RH)				

Is the inspection result normal?

YES >> Replace Blind Spot Warning/Blind Spot Intervention indicator.

NO >> Replace side radar. Refer to [DAS-601. "Removal and Installation"](#).

C1B53 SIDE RADAR RIGHT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B53 SIDE RADAR RIGHT MALFUNCTION

DTC Logic

INFOID:000000009013897

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B53 (84)	SIDE RDR R MALF	ADAS control unit detects that side radar RH has a malfunction.	Side radar RH

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B53" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B53" detected as the current malfunction?

- YES >> Refer to [DAS-543, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013898

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B53" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#) (SIDE RADAR LH), [DAS-490, "DTC Index"](#) (SIDE RADAR RH).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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C1B54 SIDE RADAR LEFT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B54 SIDE RADAR LEFT MALFUNCTION

DTC Logic

INFOID:000000009013899

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B54 (85)	SIDE RDR L MALF	ADAS control unit detects that side radar LH has a malfunction.	Side radar LH

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B54" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B54" detected as the current malfunction?

- YES >> Refer to [DAS-543, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013900

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B54" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#) (SIDE RADAR LH), [DAS-490, "DTC Index"](#) (SIDE RADAR RH).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1B55 RADAR BLOCKAGE

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B55 RADAR BLOCKAGE

DTC Logic

INFOID:000000009013901

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B55	RADAR BLOCKAGE	Side radar is blocked.	Stain or foreign materials is deposited.

NOTE:

DTC "C1B55" may be detected under the following conditions except for possible cause. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".)

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.
- Due to the nature of radar technology it is possible to get a blockage warning and not actually be blocked. This is rare and is known as a false blockage warning. A false blocked condition either self-clears or clears after an ignition cycle.

Diagnosis Procedure

INFOID:000000009013902

1.CHECK THE REAR BUMPER

Check rear bumper near the side radar contaminated with foreign materials.

>> GO TO 2.

2.CHECK THE SIDE RADAR

Check side radar and the side radar outskirts contaminated with foreign materials.

>> GO TO 3.

3.CHECK THE SIDE RADAR INSTALL CONDITION

Check side radar installation condition (installation position, properly tightened, a bent bracket).

>> GO TO 4.

4.INTERVIEW

1. Ask if there is stain or foreign materials.
2. Ask if there is any temporary ambient condition such as splashing water, mist or fog.
3. Ask if there is any object such as ice, frost or dirt obstructing the side radar.

Is any of above conditions seen?

- YES >> Explain to the customer about the difference between the blockage detection function and the indication when the malfunction is detected and tell them "This is not malfunction".
- NO >> INSPECTION END

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DAS

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1000 CAN COMM CIRCUIT

SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:000000009013903

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting plural units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

SIDE RADAR LH : DTC Logic

INFOID:000000009013904

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If Side radar LH is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

SIDE RADAR LH : Diagnosis Procedure

INFOID:000000009013905

1. PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43. "Intermittent Incident"](#).

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:000000009013906

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting plural units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

U1000 CAN COMM CIRCUIT

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

SIDE RADAR RH : DTC Logic

INFOID:000000009013907

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If Side radar RH is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

SIDE RADAR RH : Diagnosis Procedure

INFOID:000000009013908

1. PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009013909

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013910

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none">• CAN communication system• ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013911

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

U1000 CAN COMM CIRCUIT

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:000000009013912

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013913

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If lane camera unit is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013914

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the Blind Spot Intervention system ON, and then wait for 2 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1010 CONTROL UNIT (CAN)

SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:000000009013915

CAN controller controls the communication of ITS communication signal and the error detection.

SIDE RADAR LH : DTC Logic

INFOID:000000009013916

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010	CONTROL UNIT (CAN)	If side radar LH detects malfunction by CAN controller initial diagnosis.	Side radar LH

SIDE RADAR LH : Diagnosis Procedure

INFOID:000000009013917

1.CHECK SELF-DIAGNOSIS RESULT

1. Turn the Blind Spot Intervention system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is "U1010" detected as the current malfunction?

YES >> Replace the side radar LH. Refer to [DAS-601, "Removal and Installation"](#).

NO >> INSPECTION END

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:000000009013918

CAN controller controls the communication of ITS communication signal and the error detection.

SIDE RADAR RH : DTC Logic

INFOID:000000009013919

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010	CONTROL UNIT (CAN)	If Side radar RH detects malfunction by CAN controller initial diagnosis.	Side radar RH

SIDE RADAR RH : Diagnosis Procedure

INFOID:000000009013920

1.CHECK SELF-DIAGNOSIS RESULT

1. Turn the Blind Spot Intervention system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is "U1010" detected as the current malfunction?

YES >> Replace the side radar RH. Refer to [DAS-601, "Removal and Installation"](#).

NO >> INSPECTION END

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009013921

CAN controller controls the communication of CAN communication signal and ITS communication signal, and the error detection.

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013923

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013923

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the Blind Spot Intervention system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1010" detected as the current malfunction?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:000000009013924

CAN controller controls the communication of ITS communication signal and the error detection.

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013925

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	If lane camera unit detects malfunction by CAN controller initial diagnosis	Lane camera unit

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013926

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the Blind Spot Intervention system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1010" detected as the current malfunction?

- YES >> Replace the lane camera unit. Refer to [DAS-603. "Removal and Installation"](#).
NO >> INSPECTION END

U0104 ADAS CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0104 ADAS CAN 1

SIDE RADAR

SIDE RADAR : DTC Logic

INFOID:000000009013927

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0104	ADAS CAN CIR1	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit

NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-546, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-547, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT
4. Check if the U0104 is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the DTC "U0104" detected?

- YES >> Refer to [DAS-551, "SIDE RADAR : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

SIDE RADAR : Diagnosis Procedure

INFOID:000000009013928

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-546, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-547, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).
NO >> Replace side radar LH or RH. Refer to [DAS-599, "Removal and Installation"](#)

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013929

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0104	ADAS CAN CIR 1	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).

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U0104 ADAS CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0104" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0104" detected as the current malfunction?

YES >> Refer to [DAS-552, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013930

1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).

NO >> Replace the lane camera unit. Refer to [DAS-603, "Removal and Installation"](#).

U0121 VDC CAN 2

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0121 VDC CAN 2

DTC Logic

INFOID:000000009013931

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0121" detected as the current malfunction?

- YES >> Refer to [DAS-553, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013932

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U0126 STRG SEN CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0126 STRG SEN CAN 1

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013934

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0126" detected as the current malfunction?

- YES >> Refer to [DAS-554, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013934

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013935

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126	STRG SEN CAN CIR1	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).

U0126 STRG SEN CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0126" detected as the current malfunction?

- YES >> Refer to [DAS-555, "LANE CAMERA UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013936

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).
NO >> Replace the lane camera unit. Refer to [DAS-603, "Removal and Installation"](#).

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DAS

U0401 ECM CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0401 ECM CAN 1

DTC Logic

INFOID:000000009013937

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

YES >> Refer to [DAS-556, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013938

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0402 TCM CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0402 TCM CAN 1

DTC Logic

INFOID:000000009013939

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0402" detected as the current malfunction?

- YES >> Refer to [DAS-557, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013940

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U0405 ADAS CAN 2

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0405 ADAS CAN 2

SIDE RADAR

SIDE RADAR : DTC Logic

INFOID:000000009013941

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0405	ADAS CAN CIR2	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit.

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-546, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-547, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT
4. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the DTC "U0405" detected?

- YES >> Refer to [DAS-558, "SIDE RADAR : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

SIDE RADAR : Diagnosis Procedure

INFOID:000000009013942

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-546, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-547, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).
NO >> Replace side radar LH or RH. Refer to [DAS-599, "Removal and Installation"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013943

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0405	ADAS CAN CIR 2	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).

U0405 ADAS CAN 2

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0405" detected as the current malfunction?

YES >> Refer to [DAS-559, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013944

1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.

Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).

NO >> Replace the lane camera unit. Refer to [DAS-603, "Removal and Installation"](#).

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U0415 VDC CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0415 VDC CAN 1

DTC Logic

INFOID:000000009013945

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [DAS-560, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013946

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0428 STRG SEN CAN 2

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U0428 STRG SEN CAN 2

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009013947

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [DAS-561, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013948

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000009013949

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428	STRG SEN CAN CIR2	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).

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U0428 STRG SEN CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA".

Is "U0428" detected as the current malfunction?

YES >> Refer to [DAS-562, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013950

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-548, "LANE CAMERA UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-479, "DTC Index"](#).

NO >> Replace the lane camera unit. Refer to [DAS-603, "Removal and Installation"](#).

U150B ECM CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U150B ECM CAN 3

DTC Logic

INFOID:000000009013951

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150B" detected as the current malfunction?

- YES >> Refer to [DAS-563, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013952

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (For USA and Canada) or [EC-672, "DTC Index"](#) (For Mexico).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

U150C VDC CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U150C VDC CAN 3

DTC Logic

INFOID:000000009013953

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150C" detected as the current malfunction?

- YES >> Refer to [DAS-564, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013954

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U150D TCM CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U150D TCM CAN 3

DTC Logic

INFOID:000000009013955

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150D" detected as the current malfunction?

- YES >> Refer to [DAS-565, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013956

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U150E BCM CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U150E BCM CAN 3

DTC Logic

INFOID:000000009013957

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	BCM

NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150E" detected as the current malfunction?

- YES >> Refer to [DAS-566, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013958

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "BCM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BCS-57, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1500 CAM CAN 2

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U1500 CAM CAN 2

DTC Logic

INFOID:000000009013959

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1500 (145)	CAM CAN CIRC 2	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit

NOTE:

If DTC "U1500" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1500" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1500" detected as the current malfunction?

- YES >> Refer to [DAS-567, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013960

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1500" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-493, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1501 CAM CAN 1

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U1501 CAM CAN 1

DTC Logic

INFOID:000000009013961

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1501 (145)	CAM CAN CIRC 1	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit

NOTE:

If DTC "U1501" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1501" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1501" detected as the current malfunction?

- YES >> Refer to [DAS-568, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013962

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1501" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-493, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1503 SIDE RDR L CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1503 SIDE RDR L CAN 2

DTC Logic

INFOID:000000009013963

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1503 (150)	SIDE RDR L CAN CIR 2	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	Side radar LH

NOTE:

If DTC "U1503" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-574, "DTC Logic"](#) for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1503" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1503" detected as the current malfunction?

- YES >> Refer to [DAS-569, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013964

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1503" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1508 detected: Refer to [DAS-574, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U1504 SIDE RDR L CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1504 SIDE RDR L CAN 1

DTC Logic

INFOID:000000009013965

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1504 (151)	SIDE RDR L CAN CIR 1	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	Side radar LH

NOTE:

If DTC "U1504" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-574, "DTC Logic"](#) for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1504" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1504" detected as the current malfunction?

- YES >> Refer to [DAS-570, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013966

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1504" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1508 detected: Refer to [DAS-574, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1505 SIDE RDR R CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1505 SIDE RDR R CAN 2

DTC Logic

INFOID:000000009013967

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1505 (152)	SIDE RDR R CAN CIR 2	ADAS control unit detects an error signal that is received from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1505" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-573, "DTC Logic"](#) for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1505" detected as the current malfunction?

- YES >> Refer to [DAS-571, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013968

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1505" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1507 detected: Refer to [DAS-574, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U1506 SIDE RDR R CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1506 SIDE RDR R CAN 1

DTC Logic

INFOID:000000009013969

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1506 (153)	SIDE RDR R CAN CIR 1	ADAS control unit detects an error signal that is received from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1506" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-574, "DTC Logic"](#) for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1506" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1506" detected as the current malfunction?

- YES >> Refer to [DAS-570, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013970

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1506" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1507 detected: Refer to [DAS-574, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1507 LOST COMM(SIDE RDR R)

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1507 LOST COMM(SIDE RDR R)

DTC Logic

INFOID:000000009013971

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1507 (154)	LOST COMM(SIDE RDR R)	ADAS control unit cannot receive ITS communication signal from side radar RH for 2 seconds or more	<ul style="list-style-type: none">• Side radar RH right/left switching signal circuit• ITS communication system• Side radar RH

NOTE:

DTC "U1507" is detected along with DTC "U1000", first diagnose the DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1507" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1507" detected as the current malfunction?

- YES >> Refer to [DAS-573, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013972

1. CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check right/left switching signal circuit. Refer to [DAS-585, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).
NO >> Repair right/left switching signal circuit.

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U1508 LOST COMM(SIDE RDR L)

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1508 LOST COMM(SIDE RDR L)

DTC Logic

INFOID:000000009013973

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1508 (155)	LOST COMM(SIDE RDR L)	ADAS control unit cannot receive ITS communication signal from side radar LH for 2 seconds or more	<ul style="list-style-type: none">• Side radar LH harness connector• ITS communication system• Side radar LH

NOTE:

DTC "U1508" is detected along with DTC "U1000", first diagnose the DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1508" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1508" detected as the current malfunction?

- YES >> Refer to [DAS-574, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013974

1. CHECK SIDE RADAR HARNESS CONNECTOR

1. Turn the ignition switch OFF.
2. Check the terminals and connectors of the side radar LH for damage, bend and short (unit side and connector side).

Is the inspection result normal?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).
NO >> Repair the terminal or connector.

U1512 HVAC CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U1512 HVAC CAN 3

DTC Logic

INFOID:000000009013975

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1512 (162)	HVAC CAN CIRC 3	ADAS control unit detects an error signal that is received from A/C auto amp. via CAN communication	A/C auto amp.

NOTE:

If DTC "U1512" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1512" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1512" detected as the current malfunction?

- YES >> Refer to [DAS-575, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013976

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1512" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK A/C AUTO AMP. SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "HVAC".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [HAC-47, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U1513 METER CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U1513 METER CAN 3

DTC Logic

INFOID:000000009013977

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter

NOTE:

If DTC "U1513" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1513" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1513" detected as the current malfunction?

- YES >> Refer to [DAS-576, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013978

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1513" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK COMBINATION METER SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "METER/M&A".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [MWI-44, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1514 STRG SEN CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U1514 STRG SEN CAN 3

DTC Logic

INFOID:000000009013979

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1514 (164)	STRG SEN CAN CIRC 3	ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U1514" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1514" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1514" detected as the current malfunction?

- YES >> Refer to [DAS-577, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013980

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1514" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

U1516 CAM CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U1516 CAM CAN 3

DTC Logic

INFOID:000000009013981

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1516 (166)	CAM CAN CIRC 3	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit

NOTE:

If DTC "U1516" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1516" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1516" detected as the current malfunction?

- YES >> Refer to [DAS-578, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013982

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1516" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-493, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1518 SIDE RDR L CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1518 SIDE RDR L CAN 3

DTC Logic

INFOID:000000009013983

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1518 (168)	SIDE RDR L CAN CIRC 3	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	Side radar LH

NOTE:

If DTC "U1518" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-574, "DTC Logic"](#) for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1518" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1518" detected as the current malfunction?

- YES >> Refer to [DAS-579, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013984

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1518" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1508 detected: Refer to [DAS-579, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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U1519 SIDE RDR R CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1519 SIDE RDR R CAN 3

DTC Logic

INFOID:000000009013985

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1519 (169)	SIDE RDR R CAN CIRC 3	ADAS control unit detects an error signal that is received from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1519" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-573, "DTC Logic"](#) for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1519" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1519" detected as the current malfunction?

- YES >> Refer to [DAS-573, "DTC Logic"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013986

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1519" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1507 detected: Refer to [DAS-573, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-490, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1520 4WD CAN 3

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

U1520 4WD CAN 3

DTC Logic

INFOID:000000009013987

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1520 (176)	4WD CAN CIRC 3	ADAS control unit detects an error signal that is received from transfer control unit via CAN communication	Transfer control unit

NOTE:

If DTC "U1520" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Blind Spot Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1520" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1520" detected as the current malfunction?

- YES >> Refer to [DAS-581, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009013988

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1520" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TRANSFER CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ALL MODE AWD/4WD".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DLN-30, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

POWER SUPPLY AND GROUND CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009013989

1. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Ignition switch	0 V
Connector	Terminal		
B61	16	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ADAS control unit power supply circuit.

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ADAS control unit connector.
3. Check for continuity between ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	6		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

SIDE RADAR LH

SIDE RADAR LH : Diagnosis Procedure

INFOID:000000009013990

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the side radar LH connector.
3. Check voltage between side radar LH harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
Side radar LH		Ignition switch	0 V
Connector	Terminal		
B80	5	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the side radar LH power supply circuit.

2. CHECK GROUND CIRCUIT

Check continuity between side radar LH harness connectors and ground.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Side radar LH		Ground	Continuity
Connector	Terminal		
B80	2		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the side radar LH ground circuit.

SIDE RADAR RH

SIDE RADAR RH : Diagnosis Procedure

INFOID:000000009013991

1.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the side radar RH connector.
3. Check voltage between side radar RH harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
Side radar RH		Ground	Ignition switch
Connector	Terminal		
B81	5	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the side radar RH power supply circuit.

2.CHECK GROUND CIRCUIT

Check continuity between side radar RH harness connectors and ground.

Side radar RH		Ground	Continuity
Connector	Terminal		
B81	2		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the side radar RH ground circuit.

LANE CAMERA UNIT

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000009013992

1.CHECK LANE CAMERA UNIT POWER SUPPLY CIRCUIT

Check voltage between lane camera unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
Lane camera unit		Ground	Ignition switch
Connector	Terminal		
R8	7	OFF	0 V
		ON	Battery voltage

Is the inspection result normal?

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

YES >> GO TO 2.

NO >> Repair the lane camera unit power supply circuit.

2.CHECK LANE CAMERA UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the lane camera unit connector.
3. Check for continuity between lane camera unit harness connector and ground.

Lane camera unit		Ground	Continuity
Connector	Terminal		
R8	1		Existed
	5		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the lane camera unit ground circuit.

RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000009013993

1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Check the terminals and connectors of the side radar RH for damage, bend and short (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal or connector.

2. CHECK CONTINUITY RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

1. Disconnect side radar RH connector.
2. Check continuity between side radar RH harness connectors and ground.

Side radar RH		Ground	Continuity
Connector	Terminal		
B81	1		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

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WARNING SYSTEMS SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

WARNING SYSTEMS SWITCH CIRCUIT

Component Function Check

INFOID:000000009013994

1.CHECK WARNING SYSTEMS SWITCH INPUT SIGNAL

1. Turn the ignition switch ON.
2. Select the DATA MONITOR item "WARN SYS SW" of "ICC/ADAS" with CONSULT.
3. With operating the warning systems switch, check the monitor status.

Monitor item	Condition	Monitor status
WARN SYS SW	Warning systems switch is pressed	On
	Warning systems switch is not pressed	OFF

Is the inspection result normal?

YES >> Warning systems switch circuit is normal.

NO >> Refer to [DAS-586. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000009013995

1.CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT

1. Turn the ignition switch ON.
2. Check voltage between ADAS control unit harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Warning systems switch	
Connector	Terminal		
B61	1	Pressed	
		Released	12 V

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

NO >> GO TO 2.

2.CHECK WARNING SYSTEMS SWITCH

1. Turn ignition switch OFF.
2. Remove warning systems switch.
3. Check warning systems switch. Refer to [DAS-587. "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the warning systems switch. Refer to [DAS-604. "Removal and Installation"](#).

3.CHECK WARNING SYSTEMS SWITCH GROUND CIRCUIT

Check continuity between twin switch harness connector terminal and the ground.

Twin switch		Ground	Continuity
Connector	Terminal		
M127	3		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4.CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

1. Disconnect the ADAS control unit connector.

WARNING SYSTEMS SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

2. Check continuity between the ADAS control unit harness connector and twin switch harness connector.

ADAS control unit		Twin switch		Continuity
Connector	Terminal	Connector	Terminal	
B61	1	M127	2	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5. CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	1		Not existed

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000009013996

1. CHECK WARNING SYSTEMS SWITCH

Check continuity of warning systems switch.

Terminal		Condition	Continuity
2	3	When warning systems switch is pressed	Existed
		When warning systems switch is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace warning systems switch.

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WARNING SYSTEMS ON INDICATOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

WARNING SYSTEMS ON INDICATOR CIRCUIT

Component Function Check

INFOID:000000009013997

1. CHECK WARNING SYSTEMS ON INDICATOR

1. Turn the ignition switch ON.
2. Select the active test item "WARNING SYSTEM IND" of "ICC/ADAS" with CONSULT.
3. With operating the test item, check the operation.

On : Warning systems ON indicator illuminates

Off : Warning systems ON indicator is turned OFF

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [DAS-588, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000009013998

1. CHECK WARNING ON INDICATOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect twin switch connector.
3. Turn ignition switch ON.
4. Check voltage between twin switch harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Twin switch		Ground Battery voltage
Connector	Terminal	
M127	8	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the warning systems ON indicator power supply circuit.

2. CHECK WARNING SYSTEMS ON INDICATOR SIGNAL FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect the ADAS control unit harness connector.
3. Check continuity between the ADAS control unit harness connector and twin switch harness connector.

ADAS control unit		Twin switch		Continuity
Connector	Terminal	Connector	Terminal	
B61	4	M127	9	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK WARNING SYSTEMS ON INDICATOR SIGNAL CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	4		Not existed

Is the inspection result normal?

YES >> GO TO 4.

WARNING SYSTEMS ON INDICATOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

NO >> Repair the harnesses or connectors.

4.CHECK WARNING SYSTEMS ON INDICATOR

Check the warning systems ON indicator. Refer to [DAS-589, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> Replace warning systems switch. [DAS-604, "Removal and Installation"](#).

Component Inspection

INFOID:000000009013999

1.CHECK WARNING SYSTEMS ON INDICATOR

Apply battery voltage to warning systems switch terminals 8 and 9, and then check if the warning systems ON indicator illuminates.

Terminals		Condition	Warning systems ON indicator
(+)	(-)		
8	9	When the battery voltage is applied	On
		When the battery voltage is not applied	Off

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the warning systems switch. Refer to [DAS-604, "Removal and Installation"](#).

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WARNING BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

WARNING BUZZER CIRCUIT

Component Function Check

INFOID:000000009014000

1.CHECK WARNING BUZZER

1. Turn the ignition switch ON.
2. Select the active test item "LDP BUZZER" of "ICC/ADAS" with CONSULT.
3. With operating the test item, check the operation.

On : Warning buzzer is activated.

Off : Warning buzzer is not activated.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to [DAS-590, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000009014001

1.CHECK WARNING BUZZER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the warning buzzer connector.
3. Turn ignition switch ON.
4. Check voltage between the warning buzzer harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Warning buzzer		Ground Battery voltage
Connector	Terminal	
M94	1	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the warning buzzer power supply circuit.

2.CHECK WARNING BUZZER GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between the warning buzzer harness connector and ground.

Warning buzzer		Ground	Continuity
Connector	Terminal		
M94	3		Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR OPEN

1. Disconnect the ADAS control unit connector.
2. Check continuity between the ADAS control unit harness connector and warning buzzer harness connector.

ADAS control unit		Warning buzzer		Continuity
Connector	Terminal	Connector	Terminal	
B61	12	M94	2	Existed

Is the inspection result normal?

WARNING BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- YES >> GO TO 4.
- NO >> Repair the harnesses or connectors.

4.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
M61	12		Not existed

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Repair the harnesses or connectors.

5.CHECK WARNING BUZZER OPERATION

1. Connect the warning buzzer connector.
2. Turn ignition switch ON.
3. Apply ground to warning buzzer terminal 2.
4. Check condition of the warning buzzer.

Does warning buzzer sound?

- YES >> Replace the ADAS control unit.
- NO >> Replace the warning buzzer.

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DAS

SYMPTOM DIAGNOSIS

BLIND SPOT WARNING & BLIND SPOT INTERVENTION SYSTEM SYMPTOMS

Symptom Table

INFOID:000000009014002

CAUTION:

Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

NOTE:

Refer to the following the operation condition of the Blind Spot Warning/Blind Spot Intervention system.

- Blind Spot Warning system: [DAS-437. "BLIND SPOT WARNING \(BSW\) SYSTEM : System Description"](#).
- Blind Spot Intervention system: [DAS-442. "BLIND SPOT INTERVENTION SYSTEM : System Description"](#).

Symptom	Possible cause	Inspection item/Reference page	
Indicator/warning lamps do not illuminate when ignition switch OFF ⇒ ON.	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow) does not illuminate	<ul style="list-style-type: none"> • Blind Spot Warning/Blind Spot Intervention warning lamp signal (CAN) - Combination meter - ADAS control unit • Blind Spot Warning/Blind Spot Intervention warning lamp (combination meter) 	<ul style="list-style-type: none"> • ADAS control unit Active test "BSW/BSI WARNING LAMP" and "BSI ON INDICATOR". Refer to DAS-455. "CONSULT Function (ICC/ADAS)". • ADAS control unit Data monitor "BSW/BSI WARN LMP" and "BSI ON IND". Refer to DAS-455. "CONSULT Function (ICC/ADAS)" • Combination meter Data monitor "BSW W/L" and "BSI IND" Refer to MWI-31. "CONSULT Function"
	Blind Spot Intervention ON indicator (Green) does not illuminate	<ul style="list-style-type: none"> • Blind Spot Intervention ON indicator lamp signal (CAN) - Combination meter - ADAS control unit • Blind Spot Intervention ON indicator (combination meter) 	
	Blind Spot Intervention ON indicator (Green) and Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow) do not illuminate	<ul style="list-style-type: none"> • Combination meter • ADAS control unit 	
	All of indicator/warning lamps do not illuminate; <ul style="list-style-type: none"> • Blind Spot Warning/Blind Spot Intervention warning lamp • Blind Spot Intervention ON indicator • Warning systems ON indicator 	<ul style="list-style-type: none"> • Power supply and ground circuit of ADAS control unit • ADAS control unit • Combination meter 	Power supply and ground circuit of ADAS control unit. Refer to DAS-582. "ADAS CONTROL UNIT : Diagnosis Procedure"
	Warning systems ON indicator (on the warning systems switch) does not illuminate	<ul style="list-style-type: none"> • Harness between ADAS control unit and warning systems switch • Warning systems switch • ADAS control unit 	Warning systems ON indicator circuit. Refer to DAS-588. "Diagnosis Procedure"
	Blind Spot Warning/Blind Spot Intervention indicator does not turn ON	<ul style="list-style-type: none"> • Harness between side radar and Blind Spot Warning/Blind Spot Intervention indicator • Side radar LH/RH • Blind Spot Warning/Blind Spot Intervention indicator 	Perform self-diagnosis of side radar. Refer to DAS-467. "CONSULT Function (SIDE RADAR LEFT)" or DAS-468. "CONSULT Function (SIDE RADAR RIGHT)" .

BLIND SPOT WARNING & BLIND SPOT INTERVENTION SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Symptom		Possible cause	Inspection item/Reference page
BSW system is not activated. (Indicator/warning lamps illuminate when ignition switch OFF ⇒ ON.)	Warning systems ON indicator is not turned ON ⇔ OFF when operating warning systems switch	<ul style="list-style-type: none"> • Harness between ADAS control unit and warning systems switch • Harness between warning systems switch and ground • ADAS control unit • Warning systems switch 	<ul style="list-style-type: none"> • Warning systems switch circuit. Refer to DAS-586. "Diagnosis Procedure". • BSW system setting cannot be turned ON/OFF on the navigation screen. Refer to DAS-596. "Description"
	Buzzer is not sounding	<ul style="list-style-type: none"> • Buzzer power supply circuit. • Harness between ADAS control unit and warning buzzer • Harness between warning buzzer and ground. • Warning buzzer • ADAS control unit 	Warning buzzer circuit. Refer to DAS-590. "Diagnosis Procedure"
Blind Spot Intervention system is not activated. (BSW system is functioning normally)	Blind Spot Intervention ON indicator is not turned ON ⇔ OFF when operating dynamic driver assistance switch.	<ul style="list-style-type: none"> • Dynamic driver assistance switch • Combination meter • ADAS control unit 	<ul style="list-style-type: none"> • Dynamic driver assistance switch does not turn ON/OFF. Refer to DAS-594. "Description" • Blind Spot Intervention system setting cannot be turned ON/OFF on the navigation screen. Refer to DAS-596. "Description"
	Warning is functioning but yawing is not functioning.	—	<ul style="list-style-type: none"> • Check "Cause of auto-cancel 2". Refer to DAS-455. "CONSULT Function (ICC/ADAS)" • Check normal operating condition. Refer to DAS-597. "Description"
Blind Spot Intervention functions are not timely.(BSW system is functioning normally.) (Example)	<ul style="list-style-type: none"> • Does not function when approaching a lane marker while Blind Spot Warning/Blind Spot Intervention indicator lamp is illuminated. • Functions when driving in the middle of lane. 	<ul style="list-style-type: none"> • Camera aiming adjustment • Lane camera unit 	Camera aiming adjustment. Refer to DAS-513. "Work Procedure" .

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SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

Description

INFOID:000000009014003

The switch does not turn ON

- When the Blind Spot Intervention system setting is ON, the Blind Spot Intervention ON indicator does not illuminate even if the dynamic driver assistance switch is depressed.

The switch does not turn OFF

- The Blind Spot Intervention ON indicator does not turn off even if the dynamic driver assistance switch is pressed when the Blind Spot Intervention ON indicator illuminates.

Diagnosis Procedure

INFOID:000000009014004

1. CHECK BLIND SPOT INTERVENTION SYSTEM SETTING

1. Start the engine.
2. After starting the engine wait for 5 seconds or more.
3. Check that Blind Spot Intervention system setting on the navigation screen is ON.

Is Blind Spot Intervention system setting ON?

YES >> GO TO 2.

NO >> Enable the Blind Spot Intervention system setting.

2. DYNAMIC DRIVER ASSISTANCE SWITCH INSPECTION

1. Start the engine.
2. Check that "DYNA ASIST SW" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 5.

3. CHECK BLIND SPOT INTERVENTION ON INDICATOR CIRCUIT

1. Start the engine.
2. Select the active test item "BSI ON IND" of "ICC/ADAS" with CONSULT.
3. Check if the Blind Spot Intervention ON indicator illuminates when the test item is operated.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 4.

4. PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to [MWI-44, "DTC Index"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

5. CHECK STEERING SWITCH CIRCUIT

Check the steering switch circuit. Refer to [DAS-525, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 7.

6. PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to [DAS-479, "DTC Index"](#).

Is any DTC detected?

YES >> GO TO 7.

NO >> GO TO 8.

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

7. REPAIR OR REPLACE MALFUNCTIONING PARTS.

Repair or replace malfunctioning parts.

>> GO TO 8.

8. CHECK BLIND SPOT INTERVENTION SYSTEM

1. Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to [DAS-514, "Description"](#) for action test.)
2. Check that the Blind Spot Intervention system is normal.

>> INSPECTION END

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SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

Description

INFOID:000000009014005

- BSW system setting is not selectable on the navigation screen.
- Blind Spot Intervention system setting is not selectable on the navigation screen.

NOTE:

When the ignition switch is in ACC position, Blind Spot Warning or Blind Spot Intervention system settings cannot be changed.

- "Blind Spot Warning" or "Blind Spot Intervention" is not indicated on the navigation screen.
- The switching between ON and OFF cannot be performed by operating the navigation system.
- The item "Blind Spot Warning" or "Blind Spot Intervention" on the navigation screen is not active.
- The Blind Spot Warning or Blind Spot Intervention system setting differs from the one set at the previous driving.

NOTE:

Turn OFF the ignition switch and wait for 5 seconds or more.

Diagnosis Procedure

INFOID:000000009014006

1. CHECK BLIND SPOT INTERVENTION SYSTEM SETTING

1. Start the engine.
2. Check that the Blind Spot Intervention system settings is selectable on the navigation screen.

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> GO TO 2.

2. PERFORM THE SELF-DIAGNOSIS

1. Perform self-diagnosis with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". Refer to the following.
 - ICC/ADAS: [DAS-479, "DTC Index"](#)
 - MULTI AV: [AV-69, "DTC Index"](#)
 - METER/M&A: [MWI-44, "DTC Index"](#)

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> INSPECTION END

3. CHECK DATA MONITOR OF ADAS CONTROL UNIT

Check that "BSI SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

- YES >> Refer to [AV-37, "On Board Diagnosis Function"](#).
- NO >> GO TO 4.

4. CHECK MULTIFUNCTION SWITCH

Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate properly.

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

NORMAL OPERATING CONDITION

Description

INFOID:000000009014007

PRECAUTIONS FOR BLIND SPOT WARNING (BSW) & BLIND SPOT INTERVENTION

- The Blind Spot Warning and Blind Spot Intervention systems are not a replacement for proper driving procedure and are not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning or Blind Spot Intervention system.
- Using the Blind Spot Intervention system under some road, lane marker or weather conditions could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The Blind Spot Warning and Blind Spot Intervention systems may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the Blind Spot Warning or Blind Spot Intervention systems when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Blind Spot Warning/Blind Spot Intervention when certain objects are present such as:
 - Pedestrians, bicycles, animals.
 - Several types of vehicles such as motorcycles.
 - Oncoming vehicles.
 - Vehicles remaining in the detection zone when driver accelerate from a stop.
 - A vehicle merging into an adjacent lane at a speed approximately the same as vehicle.
 - A vehicle approaching rapidly from behind.
 - A vehicle which vehicle overtakes rapidly.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away.
- The side radar are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

PRECAUTIONS FOR BLIND SPOT INTERVENTION

- Do not use the Blind Spot Intervention system under the following conditions because the system may not function properly.
 - During bad weather (e.g. rain, fog, snow, wind, etc.)
 - When driving on slippery roads, such as on ice or snow, etc.
 - When driving on winding or uneven roads.
 - When there is a lane closure due to road repairs.
 - When driving in a makeshift lane.
 - When driving on roads where the lane width is too narrow.
 - When driving with a tire that is not within normal tire conditions (e.g. tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels).
 - When the vehicle is equipped with non-original brake parts or suspension parts.
- The camera may not detect lane markers in the following situations and the Blind Spot Intervention system may not operate properly.
 - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; nonstandard lane markers; lane markers covered with water, dirt, snow, etc.
 - On roads where discontinued lane markers are still detectable.
 - On roads where there are sharp curves.
 - On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs.
 - On roads where the traveling lane merges or separates.
 - When the vehicle is traveling direction does not align with the lane markers.
 - When traveling close to the vehicle in front of driver, which obstructs the lane camera unit detection range.
 - When rain, snow or dirt adheres to the windshield in front of a lane camera unit.
 - When the headlights are not bright due to dirt on the lens or if aiming is not adjusted properly.
 - When strong light enters a lane camera unit. (e.g. light directly shines on the front of the vehicle at sunrise or sunset.)
 - When a sudden change in brightness occurs. (e.g. when the vehicle enters or exits a tunnel or under a bridge.)

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- The Blind Spot Intervention system will not operate if your vehicle is on a lane marker when another vehicle enters the detection zone. In this case only the BSW system operates.
- Blind Spot Intervention braking will not operate or will stop operating and only a warning chime will sound under the following conditions.
 - When the brake pedal is depressed.
 - When the accelerator pedal is depressed while brake control assist is provided.
 - When steering quickly.
 - When the ICC, DCA, FCW or IBA warnings sound.
 - When the hazard warning flashers are operated.
 - When driving on a curve at a high speed.

SIDE RADAR

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< REMOVAL AND INSTALLATION >

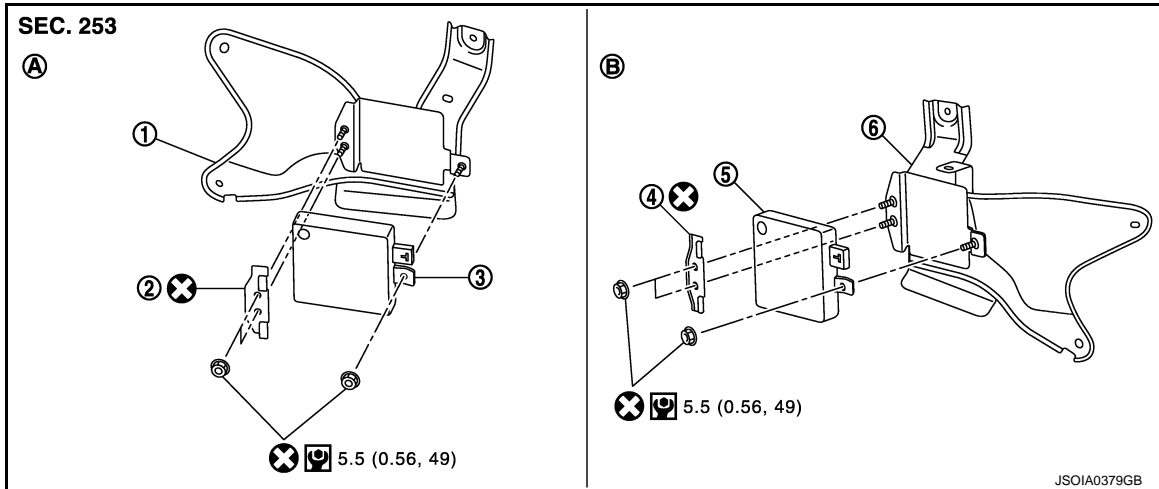
REMOVAL AND INSTALLATION

SIDE RADAR

Removal and Installation

INFOID:000000009014008

EXPLODED VIEW



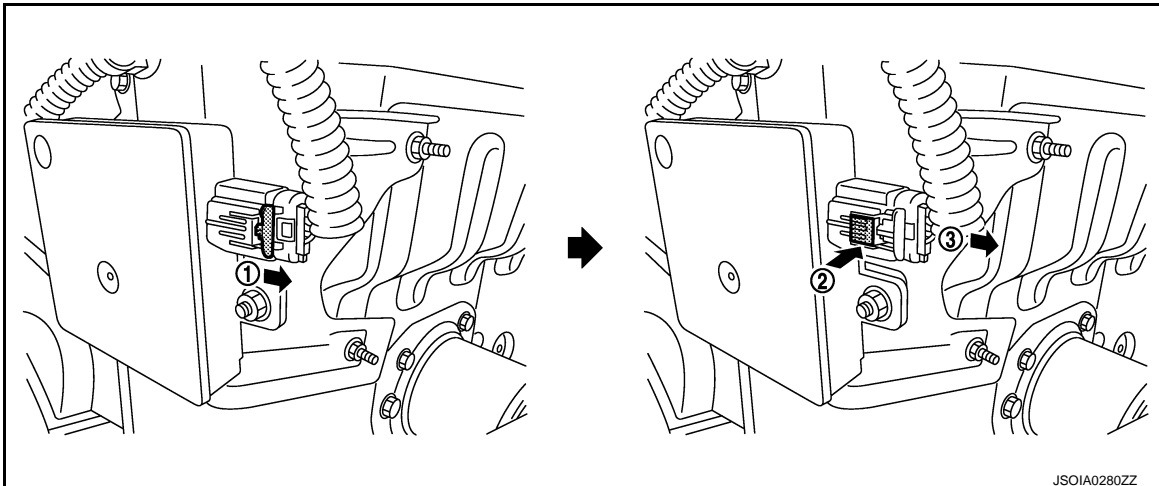
- | | | |
|------------|------------------|------------------|
| 1. Bracket | 2. Bracket | 3. Side radar LH |
| 4. Bracket | 5. Side radar RH | 6. Bracket |
| A. LH side | B. RH side | |

Refer to [GI-4, "Components"](#) for symbol makes in the figure.

REMOVAL AND INSTALLATION

Removal

1. Remove the rear bumper fascia assembly. Refer to [EXT-18, "Removal and Installation"](#).
2. Remove the side radar connector.



NOTE:

This illustration is an example.

3. Remove the mounting nuts to remove the side radar RH/LH.

Installation

Note the following, and install in the reverse order of removal.

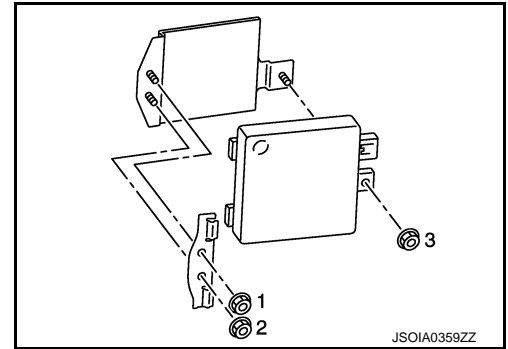
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SIDE RADAR

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< REMOVAL AND INSTALLATION >

- Tighten mounting nuts in the numerical order as shown in the figure.
- Always lock the side radar connector.



SPLASH GUARD

< REMOVAL AND INSTALLATION >

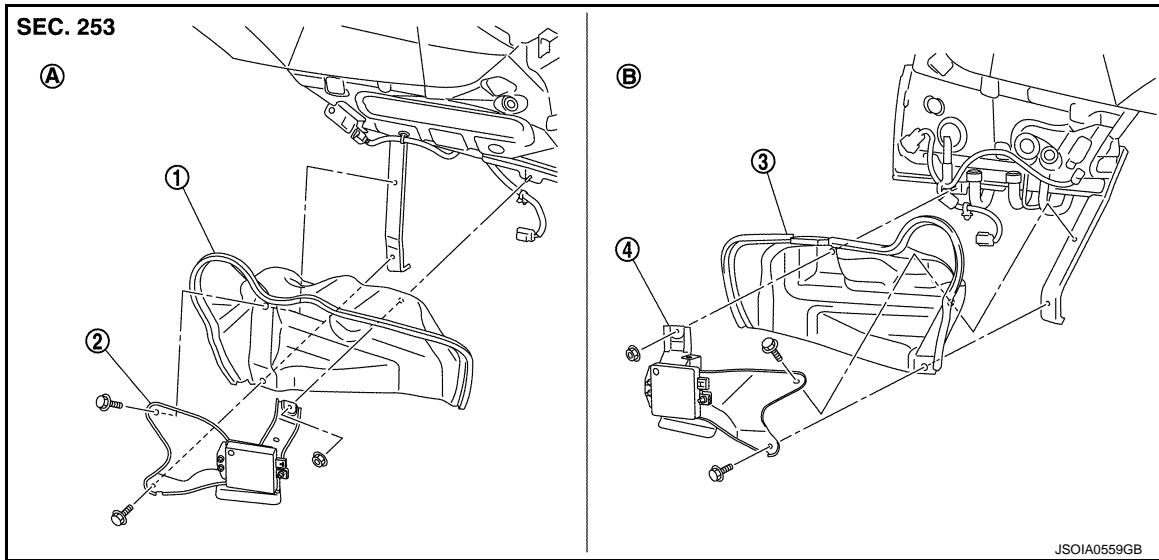
[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SPLASH GUARD

Removal and Installation

INFOID:000000009014009

EXPLODED VIEW



- 1. Splash guard LH
- 2. Side radar LH (With bracket)
- 3. Splash guard RH
- 4. Side radar RH (With bracket)

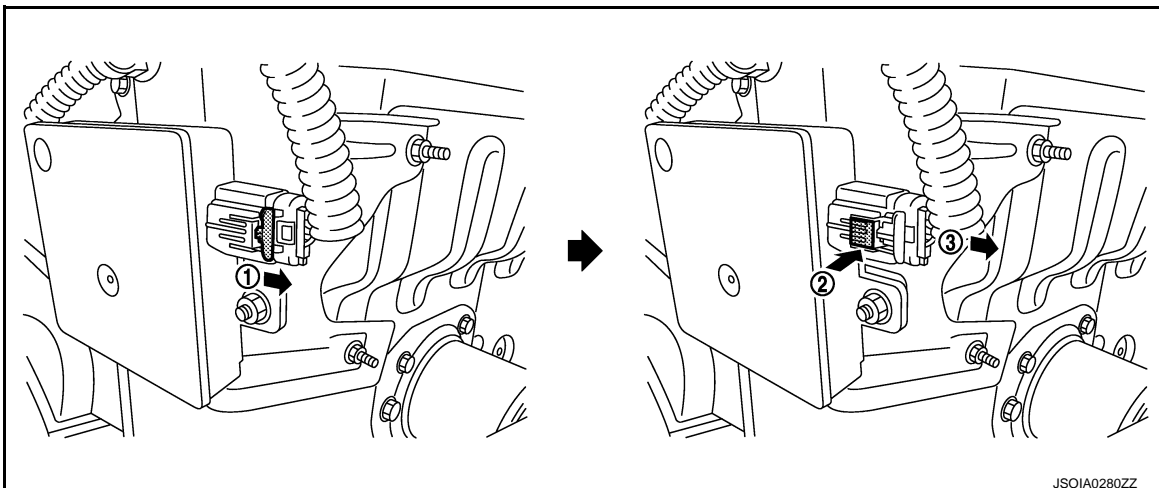
A. LH side B. RH side

Refer to [GI-4, "Components"](#) for symbol makes in the figure.

REMOVAL AND INSTALLATION

Removal

1. Remove the rear bumper fascia assembly. Refer to [EXT-18, "Removal and Installation"](#).
2. Remove the side radar connector.



NOTE:

This illustration is an example.

3. Remove the mounting nut and bolts to remove the side radar RH/LH with the bracket mounted.
4. Remove the splash guard RH/LH.

NOTE:

For splash guard LH, pull out the side radar harness.

Installation

Install in the reverse order of removal.

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DAS

BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

< REMOVAL AND INSTALLATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

Removal and Installation

INFOID:000000009014010

REMOVAL AND INSTALLATION

Removal

1. Remove the front door sash inner cover. Refer to [INT-14, "Removal and Installation"](#).
2. Remove the Blind Spot Warning/Blind Spot Intervention indicator.

Installation

Install in the reverse order of removal.

LANE CAMERA UNIT

< REMOVAL AND INSTALLATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

LANE CAMERA UNIT

Removal and Installation

INFOID:000000009014011

REMOVAL

1. Remove headlining assembly. Refer to [INT-29, "Removal and Installation"](#).
2. Remove map lamp bracket. Refer to [INT-28, "Exploded View"](#).
3. Remove the bolts.
4. Remove lane camera unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

- Remove the camera lens cap for replacement.
- Never give an impact to the lane camera unit.
- Perform the camera aiming every time the lane camera unit is removed and installed. Refer to [DAS-364, "Description"](#).

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WARNING SYSTEMS SWITCH

< REMOVAL AND INSTALLATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

WARNING SYSTEMS SWITCH

Removal and Installation

INFOID:000000009014012

REMOVAL

1. Remove the instrument lower panel (LH). Refer to [IP-14. "Removal and Installation"](#).
2. Remove warning systems switch from instrument driver lower panel.

NOTE:

Warning systems switch and automatic back door switch are integrated.

INSTALLATION

Install in the reverse order of removal.

DYNAMIC DRIVER ASSISTANCE SWITCH

< REMOVAL AND INSTALLATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DYNAMIC DRIVER ASSISTANCE SWITCH

Exploded View

INFOID:000000009014013

Dynamic driver assistance switch is integrated in the ICC steering switch. Refer to [ST-33. "Exploded View"](#).

NOTE:

Always remove ICC steering switch together with steering wheel.

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WARNING BUZZER

< REMOVAL AND INSTALLATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

WARNING BUZZER

Removal and Installation

INFOID:000000009014014

REMOVAL

1. Remove the instrument lower panel (LH). Refer to [IP-14. "Removal and Installation"](#).
2. Remove the screw.
3. Remove warning buzzer.

INSTALLATION

Install in the reverse order of removal.

PRECAUTIONS

< PRECAUTION >

[BCI]

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009898576

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions for Removing of Battery Terminal

INFOID:000000009898575

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

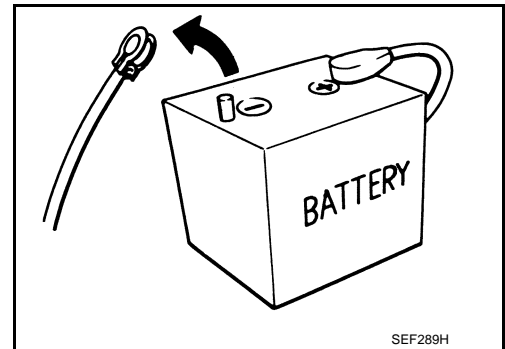
NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.



Precautions For Harness Repair

INFOID:000000009817053

ITS communication uses a twisted pair line. Be careful when repairing it.

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PRECAUTIONS

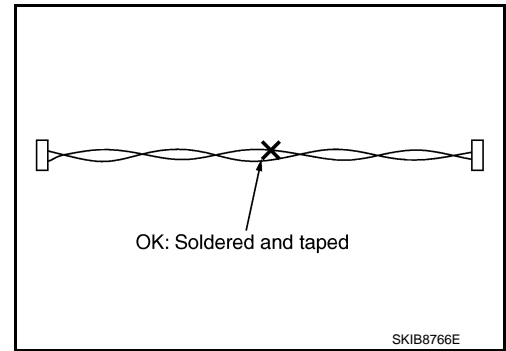
[BCI]

< PRECAUTION >

- Solder the repaired area and wrap tape around the soldered area.

NOTE:

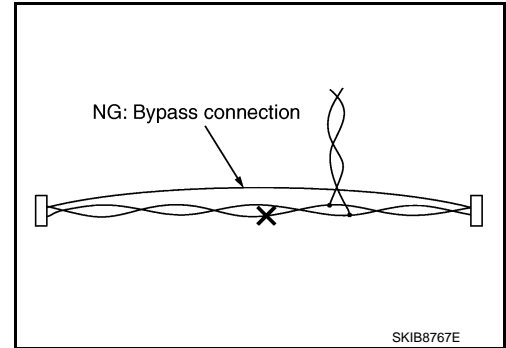
A fray of twisted lines must be within 110 mm (4.33 in).



- Bypass connection is never allowed at the repaired area.

NOTE:

Bypass connection may cause ITS communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



Precaution for Back-up Collision Intervention

INFOID:000000009817054

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

- Do not use the Back-up Collision Intervention system when driving with free rollers or a chassis dynamometer.
- Do not perform the active test while driving.
- Do not change BCI initial state ON ⇒ OFF without the consent of the customer.

TO KEEP THE BACK-UP COLLISION INTERVENTION SYSTEM OPERATING PROPERLY, BE SURE TO OBSERVE THE FOLLOWING ITEMS:

System Maintenance

The two side radars for the Back-up Collision Intervention system are located near the rear bumper.

- Always keep the area near the side radars clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the side radars.
- Do not strike or damage the area around the side radars.

System Maintenance

The four rear sonars for the Backup Collision Intervention system are located in the rear bumper.

- Always keep the area near the rear sonars clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the rear sonars.
- Do not strike or damage the area around the rear sonars.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

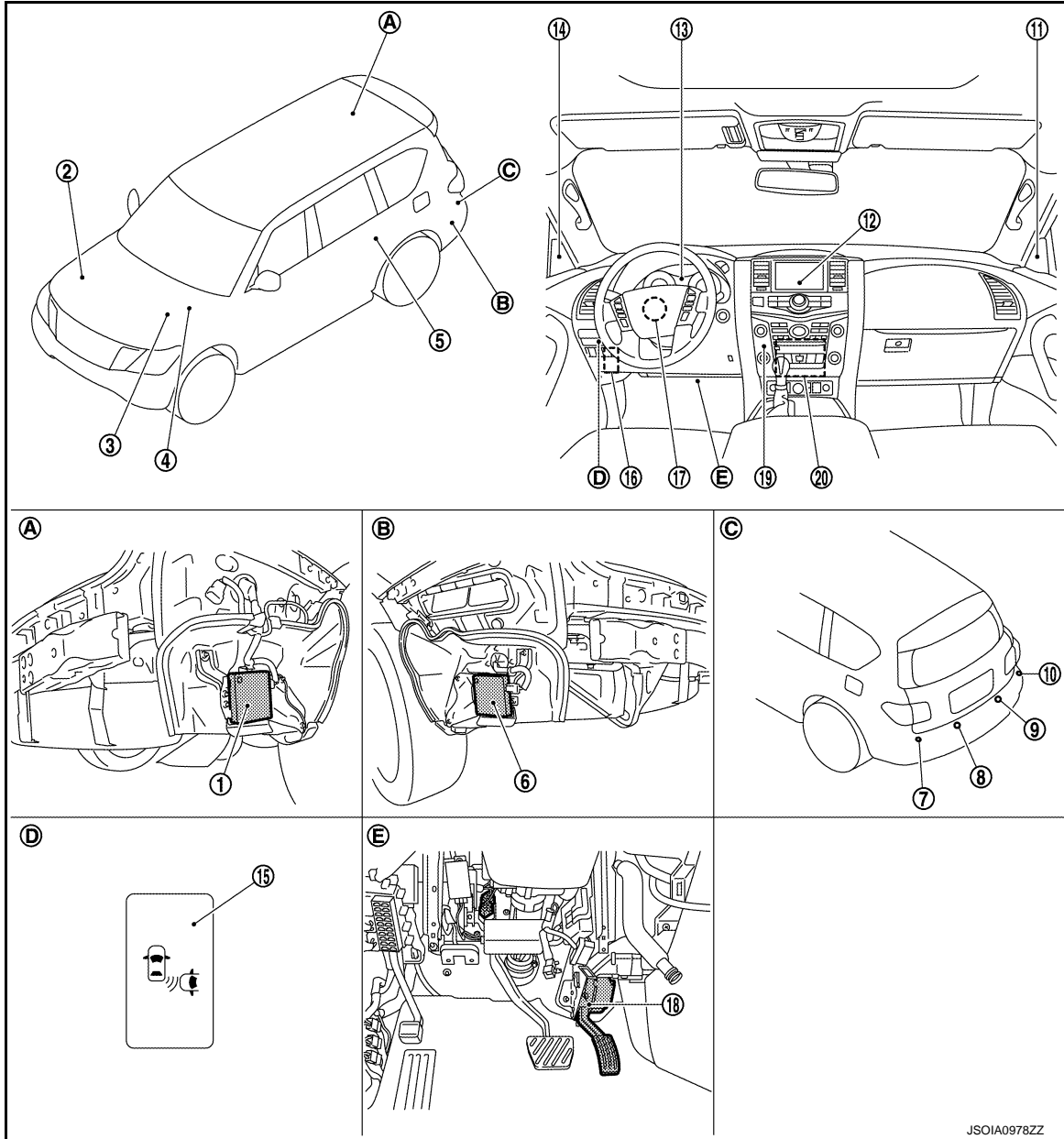
[BCI]

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000009817055



- | | | |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 1. Side radar RH | 2. ECM
Refer to the following
• VK56VD (USA and Canada): EC-23, "Component Parts Location"
• VK56VD (Mexico): EC-593, "Component Parts Location" | 3. TCM
Refer to TM-11, "A/T CONTROL SYSTEM : Component Parts Location" . |
| 4. ABS actuator and electric unit (control unit)
Refer to BRC-9, "Component Parts Location" . | 5. ADAS control unit
Refer to DAS-17, "Component Parts Location" . | 6. Side radar LH |
| 7. Corner sensor rear LH | 8. Center sensor rear LH | 9. Center sensor rear RH |
| 10. Corner sensor rear RH | 11. Blind Spot Warning/Blind Spot Intervention indicator RH | 12. Front display unit |

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COMPONENT PARTS

[BCI]

< SYSTEM DESCRIPTION >

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|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------|
| 13. Combination meter
Refer to MWI-6, "METER SYSTEM : Component Parts Location" . | 14. Blind Spot Warning/Blind Spot Intervention indicator LH | 15. BCI switch |
| 16. Sonar control unit
Refer to AV-12, "Component Parts Location" . | 17. Steering angle sensor
Refer to BRC-9, "Component Parts Location" . | 18. Accelerator pedal actuator |
| 19. Around view monitor control unit
Refer to AV-12, "Component Parts Location" . | 20. AV control unit
Refer to AV-12, "Component Parts Location" . | |
| A. Rear bumper removed condition (RH) | B. Rear bumper removed condition (LH) | C. Rear side of vehicle |
| D. Instrument lower panel (LH) | E. Around the pedal | |

Component Description

INFOID:000000009817056

Component	Description
ADAS control unit	<ul style="list-style-type: none"> Being connected with side radar (LH and RH) via ITS communication, receives vehicle detection signal and transmits Blind Spot Warning/Blind Spot Intervention indicator signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to side radar Receives steering angle sensor signal from steering angle sensor via CAN communication Calculates the approach with the object by the signal from a sensor. Transmits a brake fluid pressure control signal to ABS actuator and electric unit (control unit) via CAN communication. Transmits the buzzer output signal to the sonar control unit via CAN communication. Transmits BCI ON/OFF display signal and BCI system warning lamp signal to combination meter via CAN communication.
Side radar LH/ RH	<ul style="list-style-type: none"> Being connected with ADAS control unit via ITS communication, transmits vehicle detection signal Receives Blind Spot Intervention indicator signal and Blind Spot Intervention indicator dimmer signal from ADAS control unit and transmits an indicator operation signal to Blind Spot Intervention indicator LH/RH RH side radar equips right/left switching signal circuit for identifying LH or RH because the parts of side radar are common for right and left
Blind Spot Warning/Blind Spot Intervention indicator LH/ RH	Receives Blind Spot Warning/Blind Spot Intervention indicator operation signal from side radar LH/ RH and turns OFF, turns ON or blinks
ABS actuator and electric unit (control unit)	<ul style="list-style-type: none"> Transmits vehicle speed signal to ADAS control unit via CAN communication Receives a brake fluid pressure control signal from the ADAS control unit via CAN communication and controls brake pressure.
BCI switch	Inputs the switch signal to ADAS control unit
Sonar sensor (rear)	Monitors the near rear surrounding area of the vehicle and transmits the signal to the sonar control unit which passes it to the ADAS control unit for BCI purposes.
Combination meter (vehicle information display)	<ul style="list-style-type: none"> Turns the BCI ON/OFF display and BCI system indicator according to the signals from the ADAS control unit via CAN communication. Receives meter display signal via CAN communication.
ECM	Transmits the accelerator pedal position signal, engine speed signal to ADAS control unit via CAN communication
TCM	Transmits the current gear position signal and shift position signal to ADAS control unit via CAN communication
Around view monitor control unit	Receives the BCI warning signal via ITS communication, and indicate the yellow/red frame on the front display.
Front display unit	Displays the various system screen signals according to the priority level received via CAN communication
Accelerator pedal actuator	Receives signal from ADAS control unit to push up accelerator via ITS communication.
Sonar control unit	Receives a warning buzzer signal request from the ADAS control unit via ITS communication and sounds buzzer in sonar control unit.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BCI]

Component	Description
AV control unit	AV control unit transmits the system selection signal to the ADAS control unit via CAN communication
Steering angle sensor	Measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ADAS control unit via CAN communication

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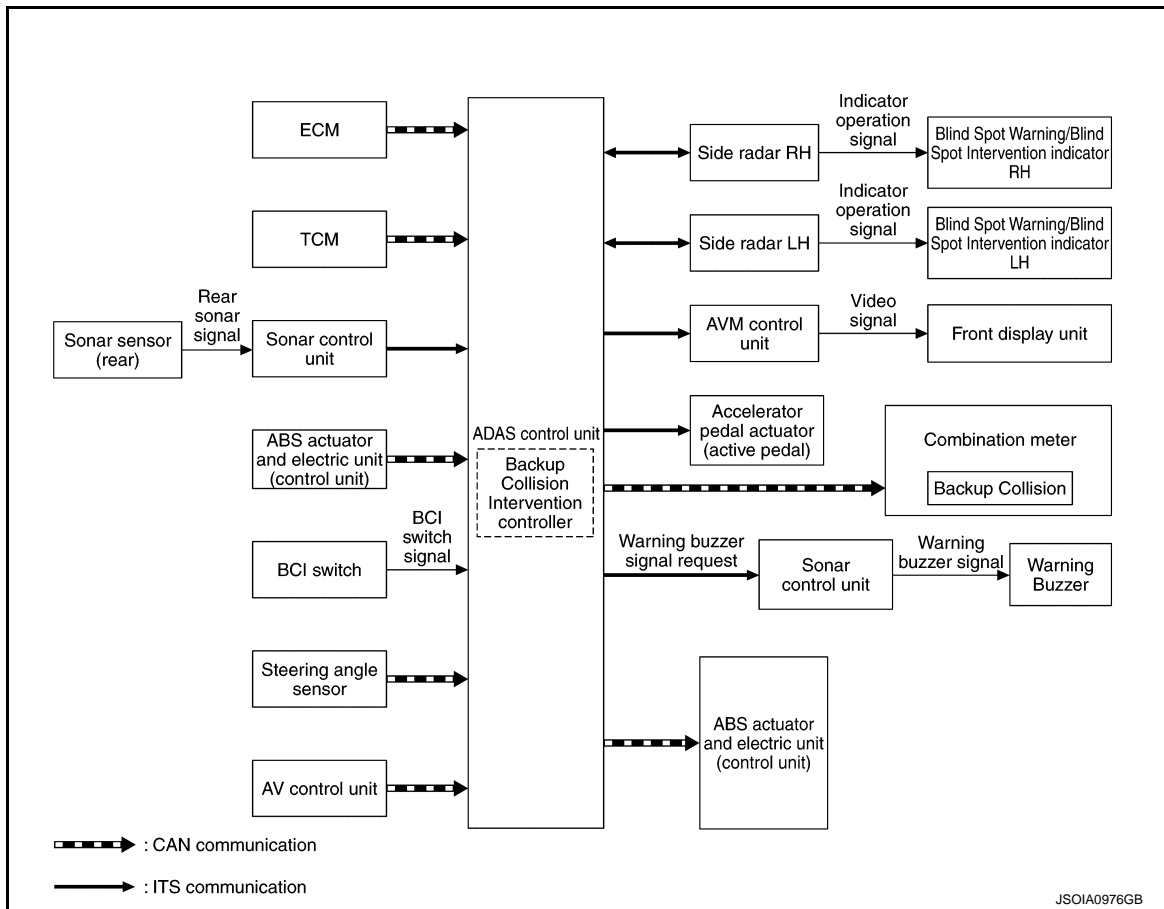
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SYSTEM

System Description

INFOID:000000009817057

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ECM	CAN communication	Accelerator pedal position signal	Receives accelerator pedal position (angle)
		Engine speed signal	Receives engine speed
TCM	CAN communication	Current gear position signal	Receives a current gear position
		Shift position signal	Receives a select lever position
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS
		VDC malfunction signal	Receives a malfunction state of VDC
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
BCI switch	BCI switch signal		Receives the state of the BCI switch
Sonar control unit	ITS communication	Rear object detection signal	Receives objects detection result of rear area behind vehicle
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.

Output Signal Item

SYSTEM

< SYSTEM DESCRIPTION >

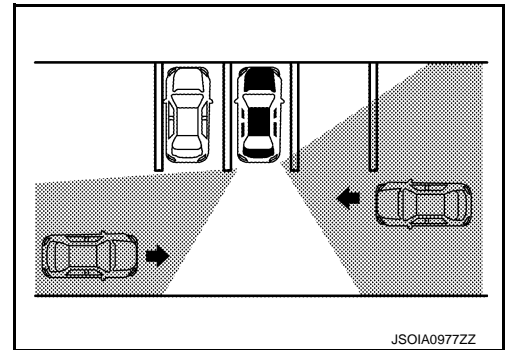
[BCI]

Reception unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Brake fluid pressure control signal.	Transmits a brake fluid pressure control signal to activate the brake.
Combination meter	CAN communication	Meter display signal BCI system display signal	Turns the BCI ON/OFF display and BCI system indicator to display a state of the system on the information display.
Sonar control unit	ITS communication	Warning buzzer signal	Transmits a buzzer drive signal to activate buzzer
Around view monitor control unit	ITS communication	BCI warning signal	Transmits a BCI warning signal to indicate the yellow/red frame on the front display
Accelerator pedal actuator	ITS communication	Push up accelerator signal	While backing up and obstacle appears, transmits a signal to push up the accelerator pedal
Side radar LH, RH	ITS communication	Blind Spot Warning/Blind Spot Intervention indicator signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator signal to turn ON the Blind Spot Warning/Blind Spot Intervention indicator
		Blind Spot Warning/Blind Spot Intervention indicator dimmer signal	Transmits a Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit

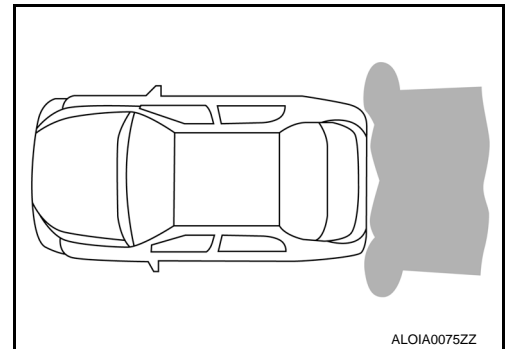
FUNCTION DESCRIPTION

- The Back-up Collision Intervention system can help alert the driver of approaching vehicles or rear objects when the driver is backing out of a parking space.
- The BCI system comprise of to main detection systems. The side radar LH/RH, and the four sonar sensors mounted on the rear bumper.
- The BCI system operates at speeds below 8 km/h (5 MPH) whenever the vehicle is in reverse.

- The BCI system uses the side radar LH/RH installed near the rear bumper to detect approaching vehicles and rear obstacles.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- The radar sensors detect the approaching vehicle from up to approximately 15 m (49 ft) away.



- The sonar sensors can detect rear obstacles of up to approximately 1.5m (4.9 ft).



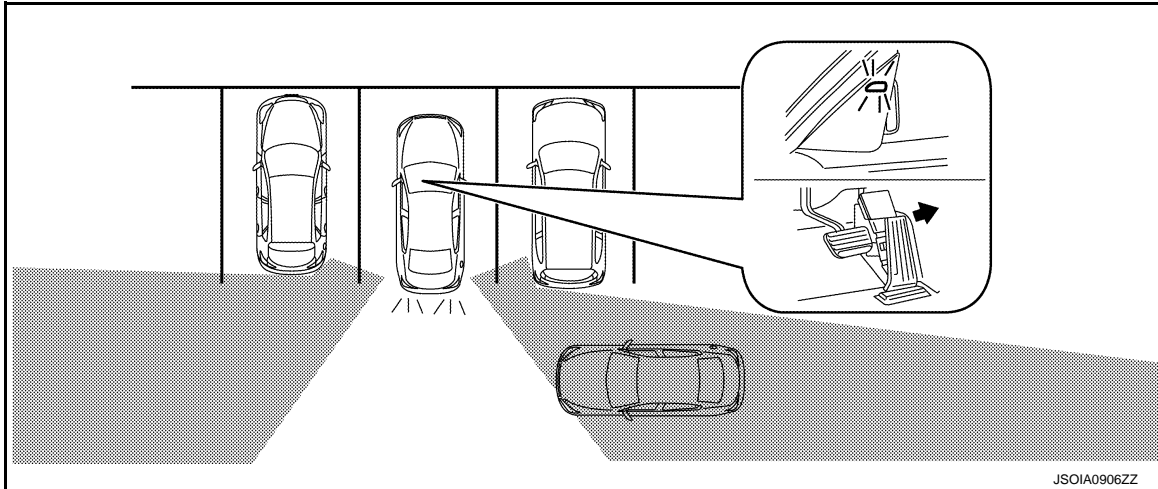
- If the radar detects a vehicle approaching from the side or the sonar detects close objects in the rear, the system gives visual and audible warnings, and applies the brake for a moment when the vehicle is moving

SYSTEM

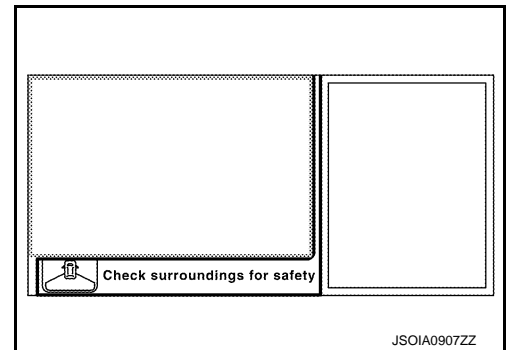
< SYSTEM DESCRIPTION >

[BCI]

backwards. If the driver's foot is on the accelerator pedal, the system pushes the accelerator upward before applying the brake. If the driver continues to press the accelerator, the system will not engage the brake.



- If the side radar detects an approaching vehicle from the side, the BCI system sounds a beep (single beep), the Blind spot warning indicator on the side of the approaching vehicle flashes and the frame of the around view monitor screen is shown in yellow. If the detected vehicle approaches closer and own vehicle is backing up toward the detected vehicle, the system sounds a beep (three times) and the frame of the around view monitor screen is shown in red.



BACK-UP COLLISION INTERVENTION SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables Back-up Collision Intervention system.
- The BCI system is automatically turned ON every time the engine is started.
- Combination meter turns Back-up Collision Intervention ON indicator ON/OFF according to the signals from ADAS control unit via CAN communication.
- Side radar detects a vehicle approaching, and transmits the vehicle detection signal to ADAS control unit via ITS communication.
- Side radar receives vehicle speed signal from ADAS control unit and changes its detecting function.
- ADAS control unit starts the control as follows, based on a vehicle detection signal.

Operation Condition of Back-up Collision Intervention System

ADAS control unit performs the control when the following conditions are satisfied.

- Back-up Collision Intervention: ON
- When the vehicle is moving in reverse at 8 km/h (5 MPH) or less.

NOTE:

When the Back-up Collision Intervention system setting on the navigation screen is ON.

FAIL-SAFE INDICATION

SYSTEM

< SYSTEM DESCRIPTION >

[BCI]

Vehicle condition/Driver's operation	Back-up Collision Intervention indicator	Warning buzzer	Indication on the combination meter
When DTC is detected	OFF	Beep	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p style="text-align: center; margin: 0;">WARNING</p> <p style="text-align: center; margin: 0;">BCI MALFUNCTION</p> <hr style="border: 0; border-top: 1px solid black; margin: 0;"/> <p style="text-align: center; margin: 0;">■NEXT</p> </div> <p style="text-align: right; font-size: small; margin-top: 5px;">JSOIA0964ZZ</p>
When the following conditions are satisfied: <ul style="list-style-type: none"> When the accelerator pedal actuator detects that the internal motor temperature is high [over approximately 100C (212F)]. When radar blockage is detected. 	ON	Beep	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p style="text-align: center; margin: 0;">WARNING</p> <p style="text-align: center; margin: 0;">BCI NOT AVAILABLE</p> <hr style="border: 0; border-top: 1px solid black; margin: 0;"/> <p style="text-align: center; margin: 0;">■NEXT</p> </div> <p style="text-align: right; font-size: small; margin-top: 5px;">JSOIA0963ZZ</p>

Fail-safe (ADAS Control Unit)

INFOID:000000009817058

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Back-up Collision Intervention (BCI)	High-pitched tone	Back-up Collision Intervention warning indicator	Cancel

Fail-safe (Side Radar)

INFOID:000000009817059

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning/Blind Spot Intervention warning lamp in the combination meter.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the Blind Spot Warning/Blind Spot Intervention warning in the combination meter.

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[BCI]

Back-up Collision Intervention (BCI)

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BCI malfunction indicator in the combination meter (information display).

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Back-up Collision Intervention (BCI)

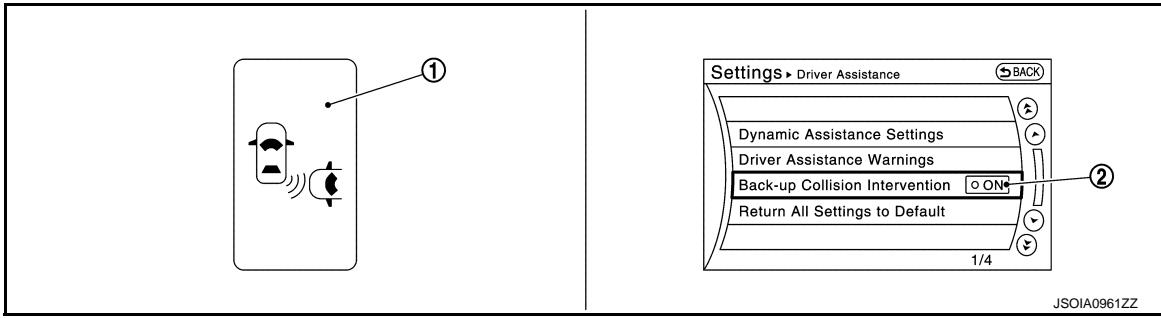
When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and BCI not available indicator in combination meter indicates (information display). Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

OPERATION

Switch Name and Function

INFOID:000000009817060

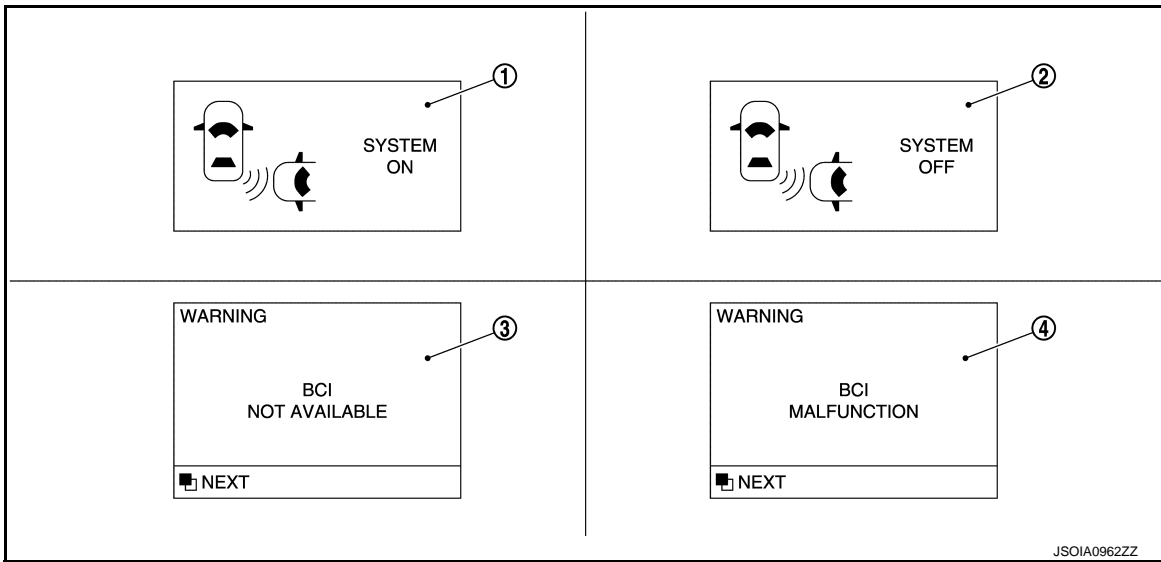


No.	Name	Function
1	BCI switch	Turns Back-up Collision Intervention system ON/OFF
2	BCI setting screen (Navigation setting screen)	Changes setting of Back-up Collision Intervention system (ON/OFF)

System Display and Warning

INFOID:000000009817061

INDICATOR AND WARNING LAMP



No.	Name	Description
1	BCI ON indicator	Turns ON when the selector lever is placed in "R" position.
2	BCI OFF indicator	Turns ON when the Back-up Collision Intervention system is turned off temporarily by pushing the BCI switch.
3	BCI not available indicator	<ul style="list-style-type: none"> Turns ON when the following conditions are satisfied: <ul style="list-style-type: none"> When the accelerator pedal actuator detects that the internal motor temperature is high [over approximately 100°C (212°F)]. When radar blockage is detected.
4	BCI malfunction indicator	Turns ON when Back-up Collision Intervention system is malfunctioning.

DISPLAY AND WARNING OPERATION

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[BCI]

Vehicle condition/Driver's operation						Action		
Selector lever position	Back-up Collision Intervention system	BCI ON indicator	BCI OFF indicator	Vehicle speed	Status of vehicle detection within detection area	Accelerator pedal control	Brake control	Buzzer
Other than "R" position	—	OFF	OFF	—	—	OFF	OFF	OFF
"R" position	OFF	OFF	ON	—	—	OFF	OFF	OFF
	ON	ON	OFF	Vehicle speed = 0 km/h (0 MPH)	Vehicle is detected	OFF	OFF	ON
				0 km/h (0 MPH) < Vehicle speed < 8 km/h (5 MPH)	Vehicle is detected	ON	ON	ON
				8 km/h (5 MPH) ≤ Vehicle speed	Vehicle is detected	OFF	OFF	OFF

NOTE:

When the following conditions are satisfied, the Back-up Collision Intervention system will be turned off automatically, a beep will sound. The Back-up Collision Intervention system will not be available until the conditions no longer exist.

- When the accelerator pedal actuator detects that the internal motor temperature is high [over approximately 100°C (212°F)].
- When side radar blockage is detected.

HANDLING PRECAUTION

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[BCI]

HANDLING PRECAUTION

Precautions for Back-up Collision Intervention

INFOID:000000009817062

SONAR HANDLING

- Always keep the sonar sensors clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork over any of the sonar sensors.
- Do not strike or scratch any of the sonar sensors causing physical damage. to a sensor or the surrounding area

SIDE RADAR HANDLING

- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork near the side radar.
- Do not strike or damage the areas around the side radar.

BACK-UP COLLISION INTERVENTION

- The Back-up Collision Intervention system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When backing up, always look in the direction driver will move to ensure it is safe to proceed. Never rely solely on the Back-up Collision Intervention system.
- Using the Back-up Collision Intervention system under some road or weather condition could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The Back-up Collision Intervention system may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the Back-up Collision Intervention system when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Back-up Collision Intervention when certain objects are present such as:
 - Pedestrians, bicycles or animals.
 - A vehicle passing at a speed greater than approximately 24 km/h (15 MPH).
- A radar sensor may not detect approaching vehicles in certain situations:
 - When the vehicle parked beside obstruct the beam of the radar sensor.
 - When the vehicle is parked in an angled parking space.
 - When the vehicle is parked on an inclined ground.
 - When the vehicle turns around into own vehicle's aisle.
 - When the angle formed by your vehicle and approaching vehicle is small.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The sonar system may not detect:
 - Small or moving object.
 - Wedge-shaped objects.
 - Object closer to the bumper than 30 cm (10 inch).
 - Thin objects such as rope, wire, chain, etc...
- The brakes engaged by the BCI system is relatively weaker on a slope than flat ground. On a steep slope, the system may not function properly.
- Do not use the BCI system under the following conditions because the system may not function properly:
 - When driving with a tire that is not the within normal tire condition (example: tire wear, low pressure, spare tire, chain, non-standard wheels).
 - When the vehicle is equipped with non-original brake parts or suspension parts.

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[BCI]

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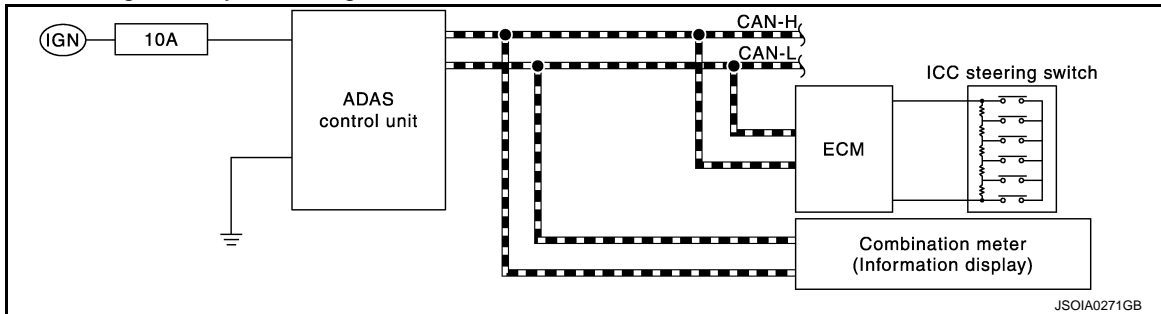
On Board Diagnosis Function

INFOID:000000009817063

DESCRIPTION

The DTC is displayed on the information display by operating the ICC steering switch.

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

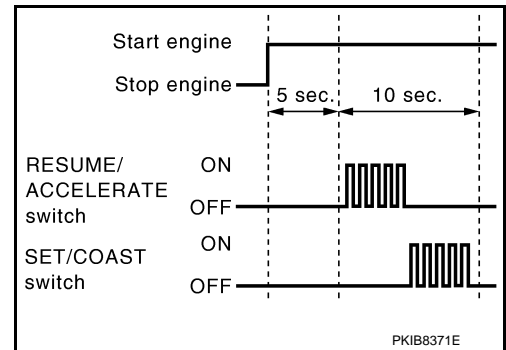
Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)

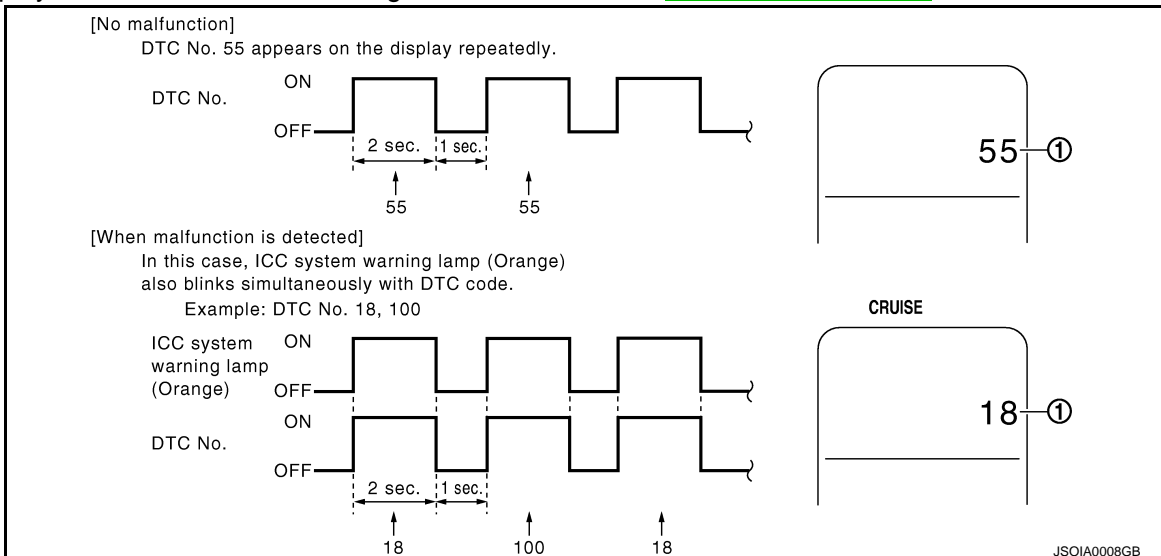
1. Turn the ignition switch OFF.
2. Start the engine.
3. Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.

NOTE:

If the above operation cannot be performed within 10 seconds after waiting for 5 seconds after starting the engine, repeat the procedure from step 1.



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to [DAS-45, "DTC Index"](#).



NOTE:

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[BCI]

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- It displays for up to 5 minutes and then stops.
- If multiple malfunctions exist, up to 6 DTCs can be stored in memory at the most, and the most recent one is displayed first.

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

If the on board self-diagnosis does not start, check the following items.

Assumed abnormal part		Inspection item
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combination meter operates. Refer to MWI-30, "On Board Diagnosis Function"
ICC steering switch malfunction		Perform the inspection for DTC "C1A06". Refer to CCS-100, "Diagnosis Procedure"
Harness malfunction between ICC steering switch and ECM		
ECM malfunction		
ADAS control unit malfunction		<ul style="list-style-type: none"> • Check power supply and ground circuit of ADAS control unit. Refer to DAS-71, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to DAS-45, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Start the engine, and then start the on board self-diagnosis.
3. Press the CANCEL switch 5 times, and then press the DISTANCE switch 5 times under the condition that the on board self-diagnosis starts.

NOTE:

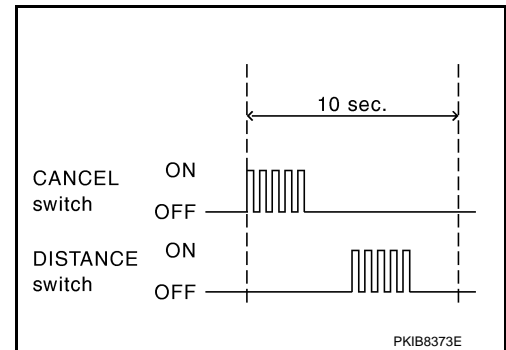
- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.

4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

5. Turn ignition switch OFF, and finish the diagnosis.



CONSULT Function (ICC/ADAS)

INFOID:000000009817064

APPLICATION ITEMS

CONSULT performs the following functions via CAN communication using ADAS control unit.

Diagnosis mode	Description
Work Support	Displays causes of automatic system cancellation occurred during system control
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit
Data Monitor	Displays ADAS control unit input/output data in real time
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load
Ecu Identification	Displays ADAS control unit part number
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication

WORK SUPPORT

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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[BCI]

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • Conventional (fixed speed) cruise control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Lane Departure Prevention (LDP) • Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems <ul style="list-style-type: none"> • Backup Collision Intervention (BCI)

NOTE:

- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description
OPERATING WIPER	×			The wiper operates at HI (it includes when the wiper is operated at HI with the wiper switch AUTO position)
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range
LASER SUNBEAM	×		×	Intense light such as sunlight entered ICC sensor light sensing part
LASER TEMP	×		×	Temperature around ICC sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	×	Vehicle speed lower than the speed as follows <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) • Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH)
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from A/T vehicle speed

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

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[BCI]

TIRE SLIP	×	×		Wheel slipped	A
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	
PARKING BRAKE ON	×	×		The parking brake is operating	
WHEEL SPD UNMATCH	×	×	×	The wheel speeds of 4 wheels are out of the specified values	B
INCHING LOST	×			A vehicle ahead is not detected during the following driving when the vehicle speed is approximately 24 km/h (15 MPH) or less	
CAN COMM ERROR	×	×	×	ADAS control unit received an abnormal signal with CAN communication	C
ABS/TCS/VDC CIRC	×	×	×	An abnormal condition occurs in VDC/TCS/ABS system	
ECD CIRCUIT	×	×	×	An abnormal condition occurs in ECD system	D
ASCD VHCL SPD DTAC		×		Vehicle speed is detached from set vehicle speed	
ASCD DOUBLE COMD		×		Cancel switch and operation switch are detected simultaneously	E
APA HI TEMP			×	The accelerator pedal actuator integrated motor temperature is high	
ICC SENSOR CAN COMM ERR	×		×	Communication error between ADAS control unit and the ICC sensor	F
4WD LOCK MODE	×	×	×	Shifting of the 4WD shift switch to 4H or 4L	
ABS WARNING LAMP	×		×	ABS warning lamp ON	G
NO RECORD	×	×	×	—	

Display Items for The Cause of Automatic Cancellation 2

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description	
OPE VDC/TCS/ABS 1	×		The activation of VDC, TCS, or ABS during LDP system control	K
Vehicle dynamics	×		Vehicle behavior exceeds specified value	
Steering speed	×		Steering speed was more than the specified value in evasive direction	L
End by yaw angle	×		Yaw angle was the end of LDP control	
Departure yaw large	×		Detected more than the specified value of yaw angle in departure direction	
ICC WARNING	×		Target approach warning of ICC system, IBA system, or FCW system was activated	M
CURVATURE	×		Road curve was more than the specified value	
Steering angle large	×		Steering angle was more than the specified value	N
Brake is operated	×		Brake pedal was operated	
IGN LOW VOLT	×		Decrease in ADAS control unit IGN voltage	
Lateral offset	×		Distance of vehicle and lane was detached in lateral direction more than the specified value	DAS
Lane marker lost	×		Lane camera unit lost the trace of lane marker	
Lane marker unclear	×		Detected lane marker was unclear	P
Yaw acceleration	×		Detected yawing speed was more than the specified value	
Deceleration large	×		Deceleration in a longitudinal direction was more than the specified value	
Accel is operated	×		Accelerator pedal was depressed	
Departure steering	×		Steering wheel was steered more than the specified value in departure direction	
Evasive steering	×		Steering wheel was steered more than the specified value in the evasive direction	

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
R range	×		Selector lever was operated to R range
Parking brake drift	×		Rear wheels lock was detected
Not operating condition	×		Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
4WD LOCK MODE	×		Shifting of the 4WD shift switch to 4H or 4L
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker un- clear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
BSI) 4WD LOCK MODE		×	Shifting of the 4WD shift switch to 4H or 4L

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Backup Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	—
APA POWER	×	Decrease in accelerator pedal actuator ignition or battery voltage
VEHICLE SPEED UP	×	Vehicle speed higher than 8 Km/h (5 MPH)

SELF DIAGNOSTIC RESULT

Refer to [DAS-45, "DTC Index"](#).

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
THRTL SENSOR [deg]	×	×				NOTE: The item is displayed, but it is not monitored
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
YAW RATE [deg/s]	×					NOTE: The item is displayed, but it is not monitored
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of “D” or “M” positions read from ADAS control unit through CAN communication; ON when position “D” or “M” (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit
VHCL SPD AT [km/h] or [mph]	×					Indicates vehicle speed calculated from A/T vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication)

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×					Indicates A/T gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication)
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [ON/OFF] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [ON/OFF] of vehicle ahead detection indicator output in DCA system is displayed
IBA SW [On/Off]	×	×				Indicates [On/Off] status of IBA OFF switch
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of warning systems ON indicator output
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUTPUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (ON/OFF) of LDP system
READY signal [On/Off]			×			Indicates LDP system settings
Camera lost [Detect/Deviate/Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection signal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)

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DAS

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
Shift position [Off, P, R, N, D, M/T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)
STATUS signal [Stnby/Warn/Cancl/Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an ON/OFF state of the lane marker. The ON/OFF state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC 1] or [FUNC3]	×	×	×	×		Indicates systems which can be set to ON/OFF by selecting "Driver Assistance" or "Driver Assist" ⇒ "Vehicle Control Features" or "Dynamic Assistance Settings" of the navigation system FUNC1: Distance Control Assist (DCA) and Lane Departure Prevention (LDP) FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
FUNC ITEM (NV-ICC) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
FUNC ITEM (NV-DCA) [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
DCA SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance" or "Driver Assist" ⇒ "Vehicle Control Features" or "Dynamic Assistance Settings" of the navigation system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance" or "Driver Assist" ⇒ "Vehicle Control Features" or "Dynamic Assistance Settings" of the navigation system
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of BSI system. BSI system can be set to ON/OFF by selecting "Driver Assist" ⇒ "Vehicle Control Features" of the navigation system
NAVI ICC SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
NAVI DCA SELECT [Off]	×	×	×	×		NOTE: The item is displayed, but it is not monitored
SYS SELECTABILITY [On/Off]	×	×	×	×		Indicates the availability of ON/OFF switching for "Driver Assist" items received from the AV control unit via CAN communication
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system
4WD SW [AUTO, 4H, 4L]	×		×	×		Indicates [On/Off] status as judged from current 4WD mode signal (Transfer control unit transmits current 4WD mode signal through CAN commu- nication)
BCI SWITCH [On/Off]					×	Indicates [On/Off] status of BCI switch
BCI SYSTEM ON [On/Off]					×	Indicates [On/Off] status of Backup Collision Intervention system
BCI ON IND [On/Off]					×	Indicates [On/Off] status of BCI ON indicator
BCI OFF IND [On/Off]					×	Indicates [On/Off] status of BCI OFF indicator
BCI WARNING IND [On/Off]					×	Indicates [On/Off] status of BCI malfunction indicator
BCI HI TEMP WARN IND [On/Off]					×	Indicates [On/Off] status of BCI not available indicator
BATTERY CIRCUIT OFF [Off]						NOTE: The item is displayed, but it is not monitored

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning lamp/malfunction indicator is illuminated.**
 - ICC system warning lamp
 - Lane departure warning lamp
 - Blind Spot Warning/Blind Spot Intervention warning lamp
 - IBA OFF indicator lamp (IBA system ON)
 - BCI malfunction indicator
- **Shift the selector lever to “P” position, and then perform the test.**

Test item	Description
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
Active Pedal	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF <ul style="list-style-type: none"> • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Test item	Description
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF operations as necessary
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	<ul style="list-style-type: none"> • MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	OFF
	On	Transmits the following signals to the combination meter via CAN communication <ul style="list-style-type: none"> • Meter display signal • ICC warning lamp signal • IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Operation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal below to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ICC BUZZER

Test item	Operation	Description	ICC warning chime operation sound
ICC BUZZER	MODE1	Transmits the buzzer output signals to the combination meter via CAN communication	Intermittent beep sound
	Test start	Starts the tests of "MODE1"	—
	Reset	Stops transmitting the buzzer output signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

BRAKE ACTUATOR

NOTE:

The test can be performed only when the engine is running.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

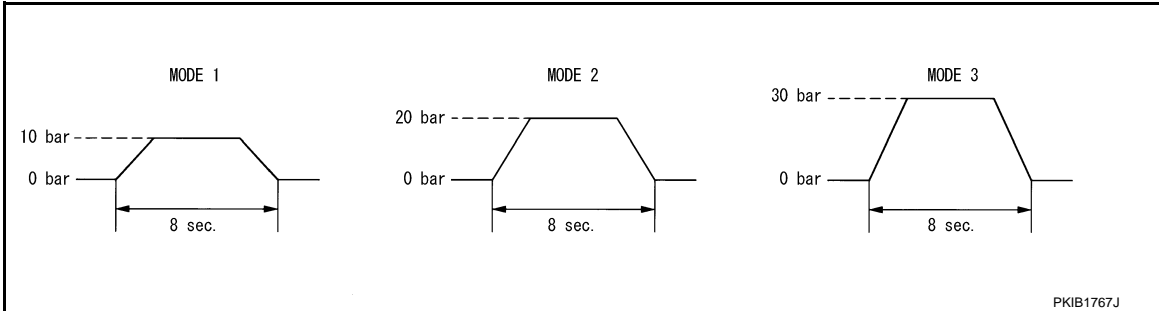
< SYSTEM DESCRIPTION >

[BCI]

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication	10 bar
	MODE2		20 bar
	MODE3		30 bar
	Test start	Starts the tests of "MODE1", "MODE2" and "MODE3"	—
	Reset	Stops transmitting the brake fluid pressure control signal below to end the test	—
	End	Returns to the "SELECT TEST ITEM" screen	—

NOTE:

The test is finished in 10 seconds after starting



Active Pedal

CAUTION:

- Shift the selector lever to "P" position, and then perform the test.
- Never depress the accelerator pedal excessively. (The engine speed may rise unexpectedly when finishing the test.)

NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can be performed only when the engine is running.

Test item	Operation	Description	Accelerator pedal operation
Active Pedal	MODE1	Transmit the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication.	Constant with a force of 25 N for 8 seconds
	MODE2		Constant with a force of 15 N for 8 seconds
	MODE3		Change up to a force of 25 N for 8 seconds
	MODE4		Change up to a force of 15 N for 8 seconds
	Test start	Starts the tests of "MODE1", "MODE2", "MODE3" and "MODE4"	—
	Reset	Stops transmitting the accelerator pedal feedback force control signal below to end the test.	—
	End	Returns to the "SELECT TEST ITEM" screen	—

NOTE:

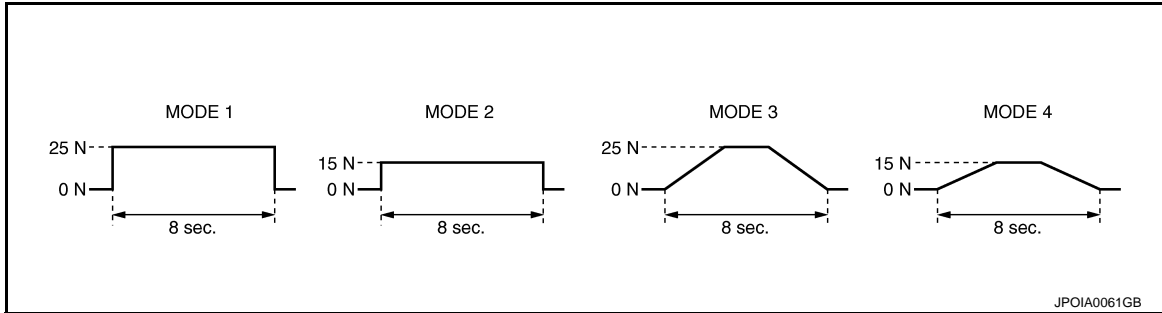
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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[BCI]

< SYSTEM DESCRIPTION >

The test is finished in 10 seconds after starting



DCA INDICATOR

NOTE:

The test can be performed only when the engine is running.

Test item	Operation	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal below to end the test	—
	On	Transmits the DCA system switch indicator signal to the combination meter via CAN communication	ON

LDP BUZZER

Test item	Operation	Description	Warning buzzer
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	—
	On	Transmits the warning buzzer signal to the warning buzzer	ON

WARNING SYSTEM IND

Test item	Operation	Description	Warning systems ON indicator
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	—
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

LDP ON IND

Test item	Operation	Description	LDP ON indicator lamp (Green)
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal below to end the test	—
	On	Transmits the LDP ON indicator lamp signal to the combination meter via CAN communication	ON

LANE DEPARTURE W/L

Test item	Operation	Description	Lane departure warning lamp (Yellow)
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp signal below to end the test	—
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON

BSW/BSI WARNING LAMP

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BCI]

Test item	Operation	Description	Blind Spot Warning/Blind Spot Intervention warning lamp (Yellow)
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot Intervention warning lamp signal below to end the test	—
	On	Transmits the Blind Spot Warning/Blind Spot Intervention warning lamp signal to the combination meter via CAN communication	ON

BSI ON INDICATOR

Test item	Operation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indicator signal below to end the test	—
	On	Transmits the Blind Spot Intervention ON indicator signal to the combination meter via CAN communication	ON

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DIAGNOSIS SYSTEM (SIDE RADAR LH)

[BCI]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (SIDE RADAR LH)

CONSULT Function (SIDE RADAR LEFT)

INFOID:000000009817065

DESCRIPTION

CONSULT performs the following functions by communicating with the side radar LH.

Select diag mode	Function
Self Diagnostic Result	Displays memorized DTC in the side radar.
Data Monitor	Displays real-time data of side radar.
Active Test	Enables operation check of electrical loads by sending driving signal to them.
Ecu Identification	Displays part number of side radar.

SELF DIAGNOSTIC RESULT

Self Diagnostic Result

Displays memorized DTC in side radar LH. Refer to [DAS-487. "DTC Index"](#).

FFD (Freeze Frame Data)

The side radar records the following data when the malfunction is detected.

Freeze Frame Data item	Description
VHCL SP from ADAS	The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed
TURN SIG STATUS	Turn signal status at the moment a malfunction is detected is displayed

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored Item [unit]		Description
BEAM DISTANCE	—	The item is displayed, but it is not used.
BEAM POSITION	—	The item is displayed, but it is not used.
SIDE RADAR MALF	Off	Side radar is normal.
	On	Side radar is malfunctioning.
BLOCKAGE COND	Off	Side radar is not blocked.
	On	Side radar is blocked.
ACTIVATE OPE	—	The item is displayed, but it is not used.
VEHICLE DETECT	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.
	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.

DIAGNOSIS SYSTEM (SIDE RADAR RH)

< SYSTEM DESCRIPTION >

[BCI]

DIAGNOSIS SYSTEM (SIDE RADAR RH)

CONSULT Function (SIDE RADAR RIGHT)

INFOID:000000009817066

DESCRIPTION

CONSULT performs the following functions by communicating with the side radar RH.

Select diag mode	Function
Self Diagnostic Result	Displays memorized DTC in the side radar.
Data Monitor	Displays real-time data of side radar.
Active Test	Enables operation check of electrical loads by sending driving signal to them.
Ecu Identification	Displays part number of side radar.

SELF DIAGNOSTIC RESULT

Self Diagnostic Result

Displays memorized DTC in side radar RH. Refer to [DAS-490. "DTC Index"](#).

FFD (Freeze Frame Data)

The side radar records the following data when the malfunction is detected.

Freeze Frame Data item	Description
VHCL SP from ADAS	The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed
TURN SIG STATUS	Turn signal status at the moment a malfunction is detected is displayed

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored Item [unit]		Description
BEAM DISTANCE	—	The item is displayed, but it is not used.
BEAM POSITION	—	The item is displayed, but it is not used.
SIDE RADAR MALF	Off	Side radar is normal.
	On	Side radar is malfunctioning.
BLOCKAGE COND	Off	Side radar is not blocked.
	On	Side radar is blocked.
ACTIVATE OPE	—	The item is displayed, but it is not used.
VEHICLE DETECT	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:

- Never perform the active test while driving.
- Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.
	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indicator.

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:000000009817067

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition	Value/Status	
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
		When SET/COAST switch is not pressed	Off
CANCEL SW	Ignition switch ON	When CANCEL switch is pressed	On
		When CANCEL switch is not pressed	Off
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is pressed	On
		When RESUME/ACCELERATE switch is not pressed	Off
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
CRUISE OPE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC system is controlling	On
		When ICC system is not controlling	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	<ul style="list-style-type: none"> • Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting 	When set to "long"	Long
		When set to "middle"	Mid
		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Start the engine and press MAIN switch	ICC system ON (Own vehicle indicator ON)	On
		ICC system OFF (Own vehicle indicator OFF)	Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system warning lamp ON)	On
		When ICC system is normal (ICC system warning lamp OFF)	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehicle speed calculated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	On
		When the buzzer of the following system not operates <ul style="list-style-type: none"> • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system 	Off
THRTL SENSOR	NOTE: The item is indicated, but not monitored		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating	Off
		Wiper LO operation	Low
		Wiper HI operation	High
YAW RATE	NOTE: The item is indicated, but not monitored		0.0
BA WARNING	Engine running	IBA OFF indicator lamp ON <ul style="list-style-type: none"> • When IBA system is malfunctioning • When IBA system is turned to OFF 	On
		IBA OFF indicator lamp OFF <ul style="list-style-type: none"> • When IBA system is normal • When IBA system is turned to ON 	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
		When ICC brake hold relay is not activated	Off
D RANGE SW	Engine running	When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in "N", "P" position	On
		When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Monitor item	Condition		Value/Status
GEAR	While driving		Displays the gear position
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated	Off
		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
SET DISP IND	<ul style="list-style-type: none"> • Drive the vehicle and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch 	SET switch indicator ON	On
		SET switch indicator OFF	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the relative speed.
		When a vehicle ahead is not detected	0.0
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is pressed	On
		When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dynamic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
IBA SW	Ignition switch ON	When the IBA OFF switch is pressed	On
		When the IBA OFF switch is not pressed	Off
FCW SYSTEM ON	Ignition switch ON	When the FCW system is ON (Warning systems ON indicator ON)	On
		When the FCW system is OFF (Warning systems ON indicator OFF)	Off
APA TEMP	Engine running		Display the accelerator pedal actuator integrated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator pedal actuator
LDW SYSTEM ON	Ignition switch ON	When the LDW system is ON (Warning systems ON indicator ON)	On
		When the LDW system is OFF (Warning systems ON indicator OFF)	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Monitor item	Condition		Value/Status
LDP ON IND	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp ON	On
		LDP ON indicator lamp OFF	Off
LANE DPRT W/L	Drive the vehicle and activate the LDW system or LDP system	Lane departure warning lamp ON	On
		Lane departure warning lamp OFF	Off
LDW BUZER OUT-PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Intervention system	When the buzzer of the following system operates • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	On
		When the buzzer of the following system does not operate • LDW/LDP system • Blind Spot Warning/Blind Spot Intervention system	Off
LDP SYSTEM ON	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
READY signal	Start the engine and press dynamic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
		When the LDP system is OFF	Off
Camera lost	Drive the vehicle and activate the LDW system, LDP system or Blind Spot Intervention system	Both side lane markers are detected	Detect
		Deviated side lane marker is lost	Deviated
		Both side lane markers are lost	Both
Shift position	<ul style="list-style-type: none"> • Engine running • While driving 		Displays the shift position
Turn signal		Turn signal lamps OFF	Off
		Turn signal lamp LH blinking	LH
		Turn signal lamp RH blinking	RH
		Turn signal lamp LH and RH blinking	LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
		Vehicle turning left	Positive value
WARN REQ	Drive the vehicle and activate the LDP system	Lane departure warning is operating	On
		Lane departure warning is not operating	Off
STATUS signal	Drive the vehicle with the LDP system turned ON	When the LDP system is ON	Stnby
		When the LDP system is operating	Warn
		When the LDP system is canceled	Cancel
		When the LDP system is OFF	Off
Lane unclear	While driving	Lane marker is unclear	On
		Lane marker is clear	Off
FUNC ITEM	Ignition switch ON	Models with DCA and LDP system	FUNC1
		Models with DCA, LDP, and Blind Spot Intervention system	FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV-DCA)	NOTE: The item is indicated, but not monitored		Off

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Monitor item	Condition		Value/Status
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the navigation system is ON	On
		"Distance Control Assist" set with the navigation system is OFF	Off
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the navigation system is ON	On
		"Lane Departure Prevention" set with the navigation system is OFF	Off
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the navigation system is ON	On
		"Blind Spot Intervention" set with the navigation system is OFF	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored		Off
NAVI DCA SELECT	NOTE: The item is indicated, but not monitored		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the navigation system can be switched normally	On
		Items set with the navigation system cannot be switched normally	Off
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On
		When warning systems switch is not pressed	Off
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
		Blind Spot Intervention ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON (Warning systems ON indicator ON)	On
		When the BSW system is OFF (Warning systems ON indicator OFF)	Off
BSI SYSTEM ON	Start the engine and press dynamic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
		When the Blind Spot Intervention system is OFF	Off
4WD SW	Engine running	4WD shift switch position is in AUTO	AUTO
		4WD shift switch position is in 4H	4H
		4WD shift switch position is in 4L	4L
BCI SWITCH	Ignition switch ON	When BCI switch is pressed	ON
		When BCI switch is not pressed	OFF
BCI SYSTEM ON	Ignition switch ON	When BCI system is ON	ON
		When BCI system is OFF	OFF
BCI ON IND	Ignition switch ON	When BCI ON indicator is ON	ON
		When BCI ON indicator is OFF	OFF
BCI OFF IND	Ignition switch ON	When BCI OFF indicator is ON	ON
		When BCI OFF indicator is OFF	OFF
BCI WARNING IND	Ignition switch ON	When BCI malfunction indicator is ON	ON
		When BCI malfunction indicator is OFF	OFF

ADAS CONTROL UNIT

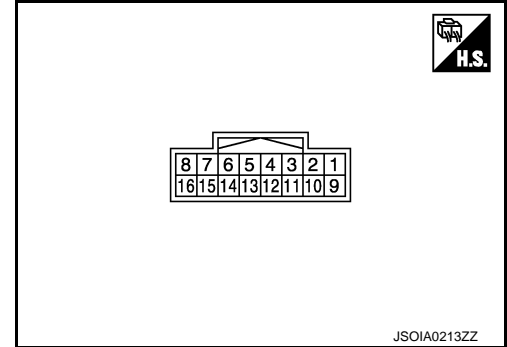
< ECU DIAGNOSIS INFORMATION >

[BCI]

Monitor item	Condition		Value/Status
BCI HI TEMP WARN IND	Ignition switch ON	When BCI not available indicator is ON	ON
		When BCI not available indicator is OFF	OFF
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not monitored		Off

TERMINAL LAYOUT

PHYSICAL VALUES



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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (V/W)	Ground	Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed	12 V
					When warning systems switch is pressed	0 V
3 (R/Y)		IBA OFF switch	Input	Ignition switch ON	When IBA OFF switch is not pressed	12 V
					When IBA OFF switch is pressed	0 V
4 (LG/B)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (R)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (Y)		ITS communication-L	—	—	—	—
10 (O)		BCI switch	Input	Ignition switch ON	When BCI OFF switch is not pressed	12 V
					When BCI OFF switch is pressed	0 V
12 (G/R)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	0 V
					Warning buzzer not operating	12 V
14 (L)		CAN -H	—	—	—	—
15 (P)	CAN -L	—	—	—	—	
16 (W/G)	Ignition power supply	Input	Ignition switch ON		Battery Voltage	

Fail-safe

INFOID:000000009817068

If a malfunction occurs in each system, ADAS control unit cancels each control, sounds a beep, and turns ON the warning lamp or indicator lamp.

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

System	Buzzer	Warning lamp/Indicator lamp	Description
Distance Control Assist (DCA)	High-pitched tone	ICC system warning lamp	Cancel
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000009817069

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Priority	Detected items (DTC)
4	<ul style="list-style-type: none"> • C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A12: LASER BEAM OFFCNTR • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCOMP • C1A2A: ICC SEN PWR SUP CIR • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD PWR SUPPLY CIR • C1A33: CAN TRANSMISSION ERR • C1A34: COMMAND ERROR • C1A35: APA CIR • C1A36: APA CAN COMM CIR • C1A37: APA CAN CIR 2 • C1A38: APA CAN CIR 1 • C1A39: STRG SEN CIR • C1A40: SYSTEM SW CIRC • C1B01: CAM AIMING INCOMP • C1B03: CAM ABNRML TMP DETCT • C1B56: SONOR CIRCUIT • C1B57: AVM CIRCUIT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0428: STRG SEN CAN CIR 2 • U1500: CAM CAN CIR 2 • U1501: CAM CAN CIR 1 • U1502: ICC SEN CAN COMM CIR • U1503: SIDE RDR L CAN CIR 2 • U1504: SIDE RDR L CAN CIR 1 • U1505: SIDE RDR R CAN CIR 2 • U1506: SIDE RDR R CAN CIR 1 • U150B: ECM CAN CIRC 3 • U150C: VDC CAN CIRC 3 • U150D: TCM CAN CIRC 3 • U150E: BCM CAN CIRC 3 • U150F: AV CAN CIRC 3 • U1512: HVAC CAN CIRC3 • U1513: METER CAN CIRC 3 • U1514: STRG SEN CAN CIRC 3 • U1515: ICC SENSOR CAN CIRC 3 • U1516: CAM CAN CIRC 3 • U1517: APA CAN CIRC 3 • U1518: SIDE RDR L CAN CIRC 3 • U1519: SIDE RDR R CAN CIRC 3 • U1520: 4WD CAN CIRC 3 • U1521: SONAR CAN COMMUNICATION 2 • U1522: SONAR CAN COMMUNICATION 1 • U1523: SONAR CAN COMMUNICATION 3 • U1524: AVM CAN COMMUNICATION 1 • U1525: AVM CAN COMMUNICATION 3
5	<ul style="list-style-type: none"> • C1A03: VHCL SPEED SE CIRC

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Priority	Detected items (DTC)
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:000000009817070

NOTE:

- The details of time display are as per the following.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past
- IGN counter is displayed on FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now
CAN communication system (U1000, U1010)
- 1 - 39: It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased.
Other than CAN communication system (Other than U1000, U1010)
- 1 - 49: It increases like 0 → 1 → 2 ... 38 → 49 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp/Malfunction indicator					Fail-safe	Reference
	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	System	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-66
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-67
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-93

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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DTC		CONSULT display	Warning lamp/Malfunction indicator					Fail-safe	Reference
CONSULT	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	System	
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-95
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON		A, B, C, D, E, F, G	CCS-96
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	CCS-100
C1A12	12	LASER BEAM OFFCN-TR	ON	ON				A, C, D, E	CCS-102
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	CCS-103
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	CCS-109
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-110
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	CCS-112
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	CCS-114
C1A18	18	LASER AIMING INCOMP	ON	ON				A, C, D, E	CCS-115
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	CCS-117
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-119
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	CCS-121
C1A27	27	ECD PWR SUPPLY CIR	ON	ON				A, B, C, D, E	CCS-122
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	CCS-124
C1A34	34	COMMAND ERROR	ON					A, B, E	CCS-125
C1A35	35	APA CIR	ON				ON	A, E, H	CCS-126
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	CCS-127
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	CCS-128
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	CCS-129

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp/Malfunction indicator					Fail-safe	Reference
CONSULT	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	System	
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-130
C1A40	40	SYSTEM SW CIRC		ON				C, D	CCS-132
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	CCS-123
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-386
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	DAS-388
C1B03	83	CAM ABNRML TMP DE-TCT			BLINK	BLINK		F, G	DAS-390
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-543
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-544
C1B56	87	SONOR CIRCUIT					ON	H	DAS-544
C1B57	88	AVM CIRCUIT					ON	H	DAS-544
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	CCS-135
C1F02	92	APA C/U MALF	ON				ON	A, E, H	CCS-136
C1F05	95	APA PWR SUPPLY CIR	ON				ON	A, E, H	CCS-137
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—	—	—	—	—	—
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-139
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-141
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	CCS-143
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	CCS-144

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp/Malfunction indicator					Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	System	
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-145
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-147
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	CCS-149
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-68
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-69
U1500	145	CAM CAN CIR 2			ON	ON		F, G	DAS-406
U1501	146	CAM CAN CIR 1			ON	ON		F, G	DAS-407
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	CCS-158
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	DAS-569
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-570
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-571
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-572
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-573
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-574
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-154
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-155
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-156

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

Systems for fail-safe

- A: Vehicle-to-vehicle distance control mode
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- H: Back-up Collision Intervention

DTC		CONSULT display	Warning lamp/Malfunction indicator					Fail-safe	Reference
CONSULT	Onboard display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	System	
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	CCS-157
U150F	161	AV CAN CIRC 3							DAS-70
U1512	162	HVAC CAN CIRC3			ON	ON		F, G	DAS-408
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-409
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	DAS-577
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	CCS-161
U1516	166	CAM CAN CIRC 3			ON	ON		F, G	DAS-410
U1517	167	APA CAN CIRC 3	ON				ON	A, B, E, H	CCS-162
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	DAS-579
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-580
U1520	176	4WD CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	CCS-163
U1521	177	SONAR CAN COMMUNICATION 2					ON	H	DAS-740
U1522	178	SONAR CAN COMMUNICATION 1					ON	H	DAS-741
U1523	179	SONAR CAN COMMUNICATION 3					ON	H	DAS-742
U1524	180	AVM CAN COMMUNICATION 1					ON	H	DAS-743
U1525	181	AVM CAN COMMUNICATION 3					ON	H	DAS-744

NOTE:

With the detection of "U1000" some systems do not perform the fail-safe operation.

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ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BCI]

A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

SIDE RADAR LH

< ECU DIAGNOSIS INFORMATION >

[BCI]

SIDE RADAR LH

Reference Value

INFOID:000000009817071

VALUES ON THE DIAGNOSIS TOOL

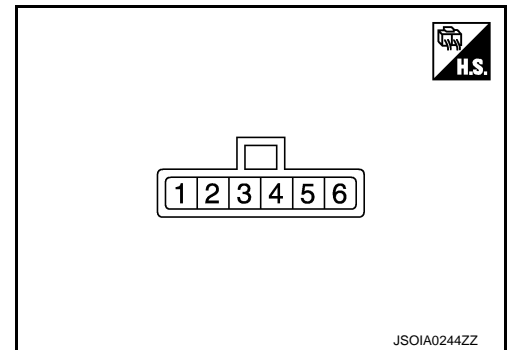
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
BEAM DISTANCE	NOTE: The item is displayed, but it is not used.	—
BEAM POSITION	NOTE: The item is displayed, but it is not used.	—
SIDE RADAR MALF	Side radar is normal.	Off
	Side radar is malfunctioning.	On
BLOCKAGE COND	Side radar is not blocked.	Off
	Side radar is blocked.	On
ACTIVATE OPE	NOTE: The item is displayed, but it is not used.	—
VEHICLE DETECT	Radar does not detect a vehicle.	Off
	Radar detects a vehicle.	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
2 (B)	Ground	Ground	—	—	0 V
3 (Y)	—	ITS communication-L	—	—	—
4 (L)	—	ITS communication-H	—	—	—
5 (W/G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (BR)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V

Fail-safe

INFOID:000000009817072

FAIL-SAFE CONTROL BY DTC

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DAS

SIDE RADAR LH

< ECU DIAGNOSIS INFORMATION >

[BCI]

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning/Blind Spot Intervention warning lamp in the combination meter.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the Blind Spot Warning/Blind Spot Intervention warning in the combination meter.

Back-up Collision Intervention (BCI)

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BCI malfunction indicator in the combination meter (information display).

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Back-up Collision Intervention (BCI)

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and BCI not available indicator in combination meter indicates (information display). Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

DTC Inspection Priority Chart

INFOID:000000009817073

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none">• U1000: CAN COMM CIRCUIT• U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none">• U0104: ADAS CAN CIR 1• U0405: ADAS CAN CIR 2
3	C1B50: SIDE RDR MALFUNCTION
4	<ul style="list-style-type: none">• C1B51: BSW/BSI IND SHORT CIR• C1B52: BSW/BSI IND OPEN CIR• C1B55: RADAR BLOCKAGE

SIDE RADAR LH

< ECU DIAGNOSIS INFORMATION >

[BCI]

DTC Index

INFOID:000000009817074

x: Applicable

DTC		Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	BCI not available indicator	Fail-safe		Reference page
					Blind Spot Warning/Blind Spot Intervention	BCI	
C1B50	SIDE RDR MALFUNCTION	ON	ON	—	x	x	DAS-539
C1B51	BSW/BSI IND SHORT CIR	ON	ON	—	x	x	DAS-540
C1B52	BSW/BSI IND OPEN CIR	ON	ON	—	x	x	DAS-541
C1B55	RADAR BLOCKAGE	Blink	—	ON	x	x	DAS-545
U1000	CAN COMM CIRCUIT	ON	ON	—	x	x	DAS-546
U1010	CONTROL UNIT (CAN)	ON	ON	—	x	x	DAS-549
U0104	ADAS CAN CIR1	ON	ON	—	x	x	DAS-551
U0405	ADAS CAN CIR2	ON	ON	—	x	x	DAS-558

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DAS

SIDE RADAR RH

< ECU DIAGNOSIS INFORMATION >

[BCI]

SIDE RADAR RH

Reference Value

INFOID:000000009817075

VALUES ON THE DIAGNOSIS TOOL

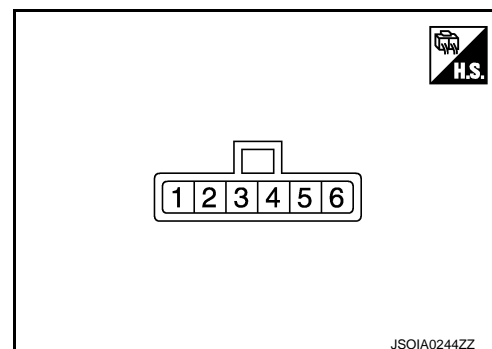
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
BEAM DISTANCE	NOTE: The item is displayed, but it is not used.	—
BEAM POSITION	NOTE: The item is displayed, but it is not used.	—
SIDE RADAR MALF	Side radar is normal.	Off
	Side radar is malfunctioning.	On
BLOCKAGE COND	Side radar is not blocked.	Off
	Side radar is blocked.	On
ACTIVATE OPE	NOTE: The item is displayed, but it is not used.	—
VEHICLE DETECT	Radar does not detect a vehicle.	Off
	Radar detects a vehicle.	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (B/Y)	Ground	Right/Left switching signal	Input	—	0 V
2 (B)	Ground	Ground	—	—	0 V
3 (Y)	—	ITS communication-L	—	—	—
4 (L)	—	ITS communication-H	—	—	—
5 (W/G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (L/R)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V

SIDE RADAR RH

< ECU DIAGNOSIS INFORMATION >

[BCI]

Fail-safe

INFOID:000000009817076

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning/Blind Spot Intervention warning lamp in the combination meter.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the Blind Spot Warning/Blind Spot Intervention warning in the combination meter.

Back-up Collision Intervention (BCI)

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BCI malfunction indicator in the combination meter (information display).

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and Blind Spot Warning/Blind Spot Intervention warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

Back-up Collision Intervention (BCI)

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and BCI not available indicator in combination meter indicates (information display). Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

DTC Inspection Priority Chart

INFOID:000000009817077

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • U0104: ADAS CAN CIR 1 • U0405: ADAS CAN CIR 2
3	C1B50: SIDE RDR MALFUNCTION
4	<ul style="list-style-type: none"> • C1B51: BSW/BSI IND SHORT CIR • C1B52: BSW/BSI IND OPEN CIR • C1B55: RADAR BLOCKAGE

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DAS

SIDE RADAR RH

< ECU DIAGNOSIS INFORMATION >

[BCI]

DTC Index

INFOID:000000009817078

x: Applicable

DTC		Blind Spot Warning/Blind Spot Intervention warning lamp	BCI malfunction indicator	BCI not available indicator	Fail-safe		Reference page
					Blind Spot Warning/Blind Spot Intervention	BCI	
C1B50	SIDE RDR MALFUNCTION	ON	ON	—	x	x	DAS-539
C1B51	BSW/BSI IND SHORT CIR	ON	ON	—	x	x	DAS-540
C1B52	BSW/BSI IND OPEN CIR	ON	ON	—	x	x	DAS-541
C1B55	RADAR BLOCKAGE	Blink	—	ON	x	x	DAS-545
U1000	CAN COMM CIRCUIT	ON	ON	—	x	x	DAS-547
U1010	CONTROL UNIT (CAN)	ON	ON	—	x	x	DAS-549
U0104	ADAS CAN CIR1	ON	ON	—	x	x	DAS-551
U0405	ADAS CAN CIR2	ON	ON	—	x	x	DAS-558

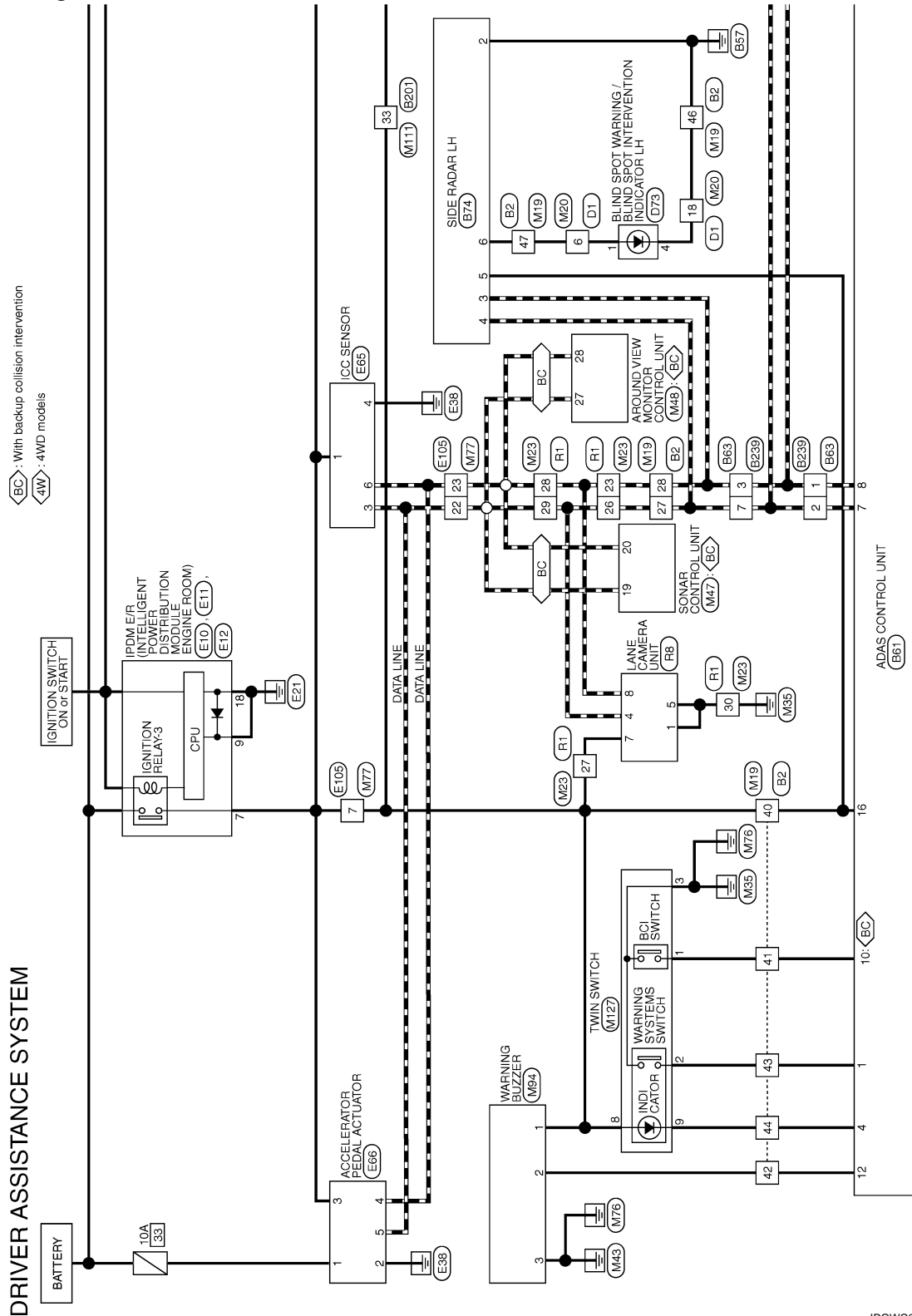
< WIRING DIAGRAM >

WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:000000009899002



*: This connector is not shown in "Harness Layout".

2013/01/30

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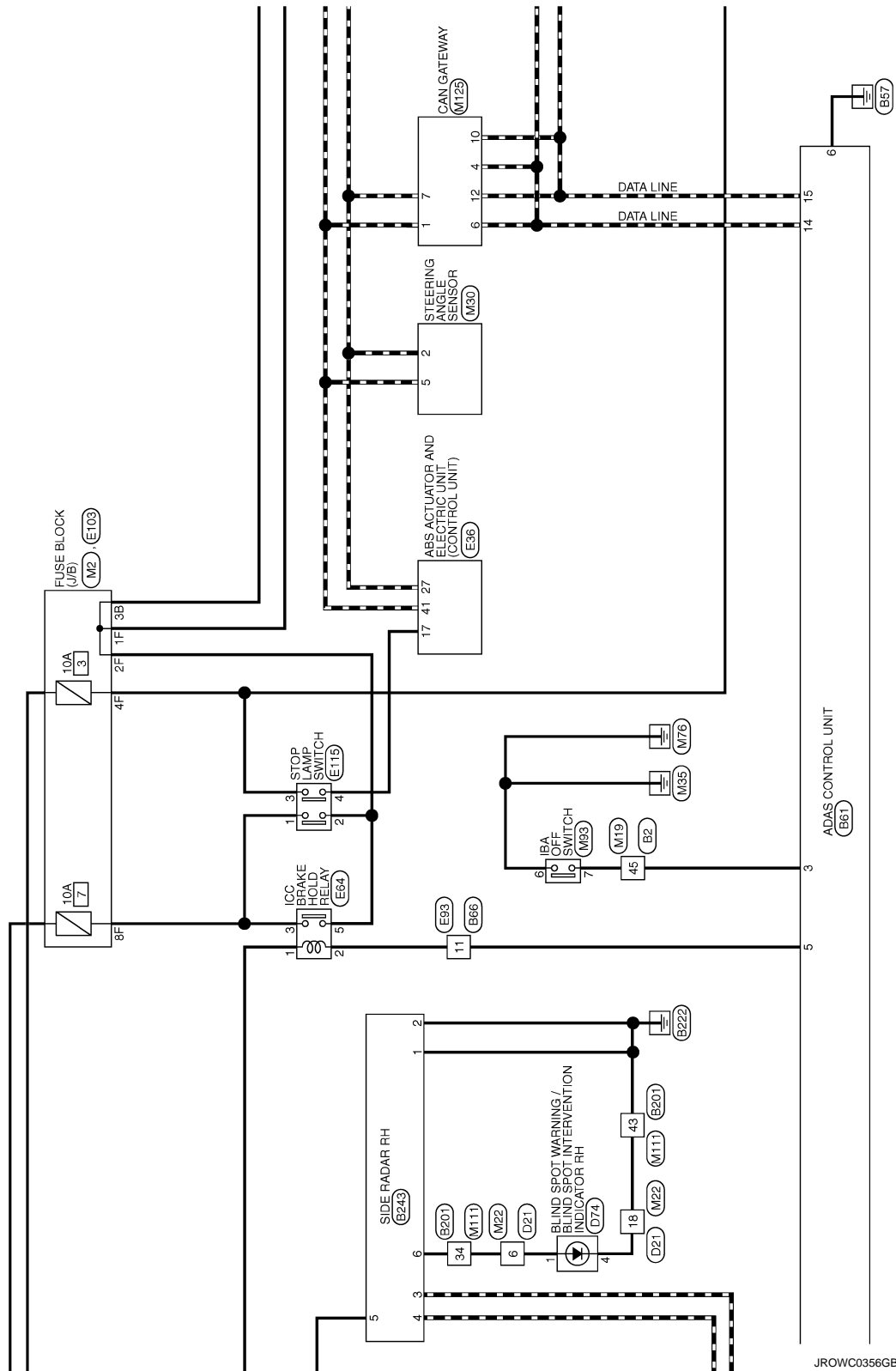
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[BCI]

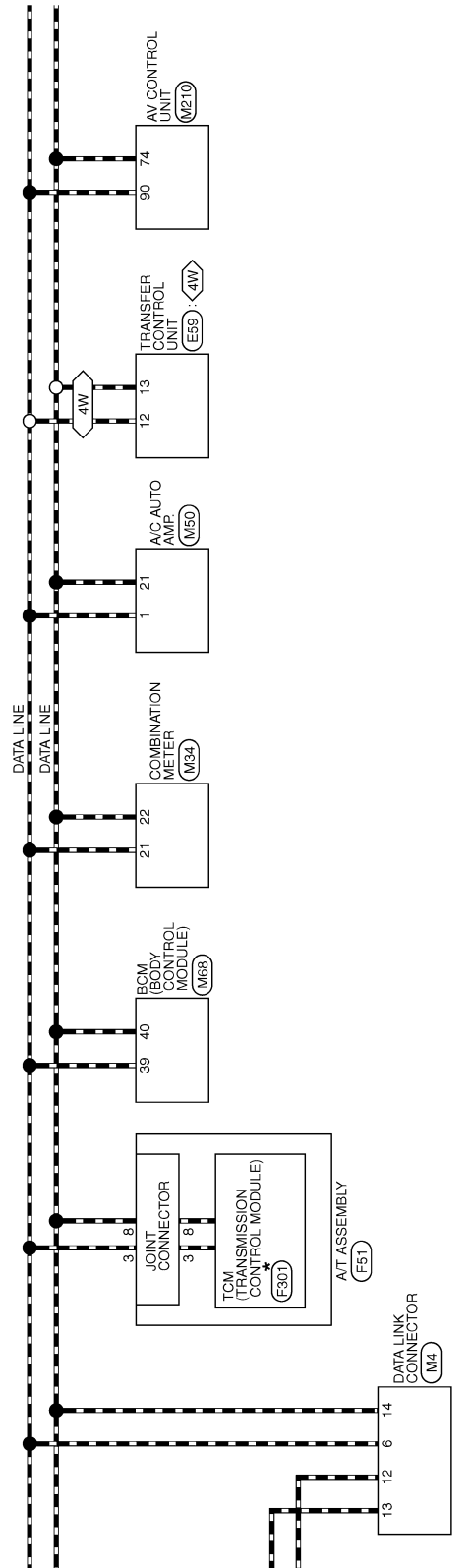


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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[BCI]



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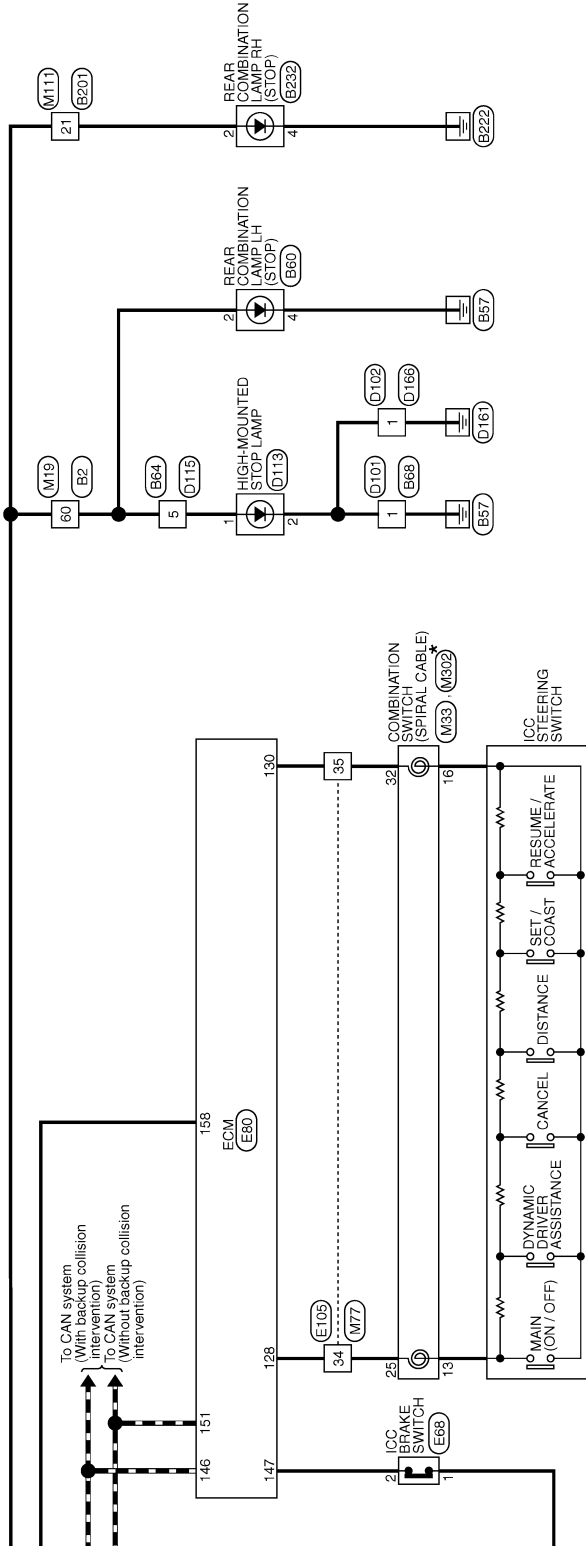
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[BCI]



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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[BCI]

DRIVER ASSISTANCE SYSTEM

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	
3	BR	
5	RW	
6	RW	
7	V	
9	G	
11	WB	
12	BR	
13	GR	
14	BY	
15	WR	
16	GR	
18	GW	
19	V	
20	WG	
21	BW	
22	V	
24	G	
25	O	
26	Y	
27	LO	
28	YR	
29	L	
30	R	
31	GY	
32	B/SB	
33	LG/R	
34	BR/W	
35	GR/R	
36	SB	
37	LG	
38	B	
39	P	
40	WG	
41	O	

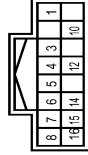
42	GR	
43	VW	
44	LG/B	
45	RY	
46	B	
47	BR	
49	GR	
50	R/B	
51	WR	
52	BRY	
53	O/B	
54	G/O	
55	R/B	
56	LG/R	
57	GR/R	
58	Y/G	
59	VW	
60	R	
63	B	
64	R	
65	W	
66	G	
67	SHIELD	
69	LG/B	
70	P/L	
71	L	
72	R	
77	Y/B	
78	Y/L	
79	Y	
80	WR	
81	Y/L	
84	L/O	
86	O	
87	WR	
88	O	
89	W/L	
90	GR/L	
91	W	
92	G	
94	WR	
96	LW	
97	R	
14	V	
89	LW	
100	P/B	

Connector No.	B60
Connector Name	REAR COMBINATION LAMP LH
Connector Type	NS04FM-CS



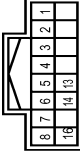
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/W	
2	R	
3	G	
4	B	

Connector No.	B61
Connector Name	ADAS CONTROL UNIT
Connector Type	TH18FM-NH



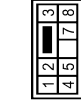
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V/W	WARNING SYSTEMS SW
3	R/Y	IBA OFF SW
4	LG/B	WARNING SYSTEMS ON IND
5	R	BRAKE HOLD RLY DRIVE SIGNAL
6	B	GND
7	L	ITS COMM-H
8	Y	ITS COMM-L
10	O	BCI SW
12	GR	WARNING BUZZER
14	R	CANH
15	P	CANL
16	W/G	IGNITION

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH18FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	
2	L	
3	Y/B	
4	SB	
6	G	
6	Y	
7	L/O	
8	G	
13	R/L	
14	G	
16	W	

Connector No.	B64
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
2	R/Y	
3	G/W	
4	R	
5	R	
7	LW	
8	V	

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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[BCI]

DRIVER ASSISTANCE SYSTEM

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



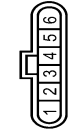
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	RW	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-

Connector No.	B74
Connector Name	SIDE RADAR LH
Connector Type	AA036FB-VP-5P



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GND
3	Y	ITS COM+L
4	L	ITS COM+H
5	W/G	IGNITION
6	BR	BSW INDICATOR

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	RG	-
19	L/Y	-

20	GY	-
21	R	-
22	GR	-
27	L/W	-
29	W	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L	-
43	B/W	-
44	B	-
45	P	-
46	SHIELD	-
47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	L/B	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
80	W/B	-
83	Y	-
84	L	-
85	LR	-
86	LR	-
87	R	-

97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	B232
Connector Name	REAR COMBINATION LAMP RH
Connector Type	NS04FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LW	-
2	R	-
3	GY	-
4	B	-

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	LG	-
6	Y	-
7	L	-
8	G	-
13	R/L	-
14	G	-

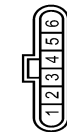
DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[BCI]

DRIVER ASSISTANCE SYSTEM

Terminal No.	16	W	-
Connector No.	B243		
Connector Name	SIDE RADAR RH		
Connector Type	AAQ3BFB-WP		



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BY	RIGHT/LEFT SWITCHING SIGNAL
2	B	GND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	WG	IGNITION
6	L/R	BSW INDICATOR

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-

14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	O/L	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR/L	-
45	SHIELD	-
46	W	-
47	LG	-
48	GW	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
6	P/L	-
8	L/R	-
9	L/W	-
9	G/Y	-
10	L	-
12	BY	-
13	L	-
14	R	-
15	B	-
18	BR/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/O	-
25	R/W	-
26	W/R	-
36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR/L	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	D73
Connector Name	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR LH
Connector Type	TH40MW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR/W	-
4	B	-

Connector No.	D74
Connector Name	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR RH
Connector Type	TH40MW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/R	-
4	B/W	-

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DRIVER ASSISTANCE SYSTEMS

DRIVER ASSISTANCE SYSTEM

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	M02FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	L	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	M07FER-S-LC



Terminal No.	1	Color Of Wire	B	Signal Name [Specification]	-
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Connector No.	D113
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Type	TK02MBR-P



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-

Connector No.	D115
Connector Name	WIRE TO WIRE
Connector Type	NS08FV-GS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	RY	-
3	GW	-
4	R	-
5	R	-
7	LW	-
8	V	-

Connector No.	D166
Connector Name	WIRE TO WIRE
Connector Type	M01MBR-PS-LC



Terminal No.	1	Color Of Wire	B	Signal Name [Specification]	-
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Connector No.	E10
Connector Name	FROM INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	M06FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	L	-
5	P/L	-
7	W/G	-
8	W	-

Connector No.	E11
Connector Name	FROM INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	M06FB-LC



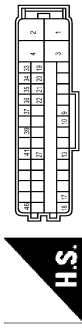
Terminal No.	9	Color Of Wire	B	Signal Name [Specification]	-
14	L	-	-	-	-

Connector No.	E12
Connector Name	FROM INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS08FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
18	B	-
19	V	-
20	W	-
21	L	-

Connector No.	E36
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ42FB-SJ24



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	BAT
2	B	GND
3	B	GND
4	W	MOTOR SUPPLY
9	R/B	YAW RATE / SIDE / DECEL G SENSOR COMMUNICATION+
10	P/B	YAW RATE / SIDE / DECEL G SENSOR COMMUNICATION-
13	GR	BRAKE FLUID LEVEL SW
17	L/R	STP2
18	W/B	IGN
19	O	DS FR
20	SB	DP FL
21	R/O	DS RR
22	V	DP RL
27	P	CANL
33	LG	DP FR
34	G	DS FL

DRIVER ASSISTANCE SYSTEMS

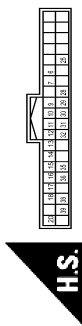
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DRIVER ASSISTANCE SYSTEM

35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VDC OFF SW
41	L	CANH
46	W	STOP LAMP SW ON

Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	H-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CANH
13	P	CAN-L
14	W/R	AUTO SW
15	P/B	ROTALY POSITION SEN PWM
16	LG	ROTALY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	B/R/Y	ROTALY POSITION SEN PWR SUPPLY
20	GR	TRANSFER CU PWR SUPPLY
25	P/L	H-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	H-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL
39	R/W	INTERNAL SPEED SEN PWR SUPPLY

Connector No.	E64
Connector Name	ICC BRAKE HOLD RELAY
Connector Type	MS02FL-M2-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	R	-
3	LB	-
5	R	-

Connector No.	E65
Connector Name	ICC SENSOR
Connector Type	RS08FB-FR



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGNITION
3	L	ITS COMM-L
4	B	GND
6	Y	ITS COMM-H

Connector No.	E66
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH08FLGY



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	BATTERY
2	B	GND
3	W/G	IGNITION
4	Y	ITS COMM-L
5	L	ITS COMM-H

Connector No.	E68
Connector Name	ICC BRAKE SWITCH
Connector Type	IM02FBR-LC



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	G/Y	-

Connector No.	E80
Connector Name	ECM
Connector Type	MA855FB-MEB-10-LH



H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	(W/L) FUEL PUMP CONTROL MODULE (FFCM) (W/R)
123	W/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FFCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASCD/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FFCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASCD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	LG	ECM RELAY (SELF SHUT-OFF)
165	GR/R	ECM COMMUNICATION LINE
166	W	ECM COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT

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DRIVER ASSISTANCE SYSTEMS

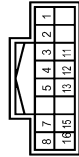
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DRIVER ASSISTANCE SYSTEM

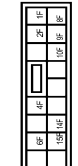
Terminal No.	Wire	Signal Name [Specification]
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E93
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



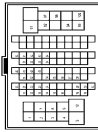
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E103
Connector Name	FUSE BLOCK (JIB)
Connector Type	NS16FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10F	G	-
14F	Y	-
15F	G	-
1F	W/B	-
2F	R	-
4F	G	-
6F	Y/G	-
8F	L/B	-
9F	Y	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	L/B	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	Y/V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CANH
4	SB	K LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CANL
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CANH
4	-	K LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CANL
9	-	STARTER RELAY
10	-	GROUND

Terminal No.	Wire	Signal Name [Specification]
29	R/W	-
30	L/B	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/R	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	B	-
62	R	-
63	G	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	G/R	-
97	R	-
98	G/B	-
100	W/R	-

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	MD4FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L/B	-
2	R	-
3	G	-
4	L/R	-

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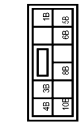
DRIVER ASSISTANCE SYSTEMS

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DRIVER ASSISTANCE SYSTEM

Connector No.	M2
Connector Name	FUSE BLOCK (UB)
Connector Type	NS10FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10B	W/B	-
1B	R	-
2B	R	-
3B	B	-
4B	B	-
5B	BR	-
6B	Y	-
8B	L/O	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

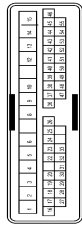
Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	GR	-
14	BY	-
15	WR	-
16	GR	-
18	GW	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	GY	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	GR	-

43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	BY	-
13	Y	-
14	R	-
15	B	-
16	GR	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

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DRIVER ASSISTANCE SYSTEMS

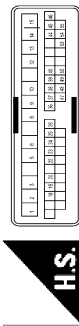
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DRIVER ASSISTANCE SYSTEM

42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	M22
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



H.S.

Terminal No.	Color Of Wire	Signal Name (Specification)
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	B/Y	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

36	G/O	-
37	Y/B	-
38	V	-
39	W/L	-
40	L/O	-
44	GR	-
45	G	-
46	W	-
47	LG	-
48	L/R	-
49	Y	-
50	R/B	-
53	SHIELD	-
54	B	-
55	R	-

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH22MW-AH

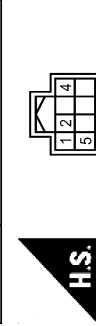


H.S.

Terminal No.	Color Of Wire	Signal Name (Specification)
1	W	-
2	V	-
3	B	-
4	Y	-
5	GR	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-
14	Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-

22	SB	-
23	Y/R	-
24	SHIELD	-
25	Y/G	-
26	L/O	-
27	W/O	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	GR/L	-

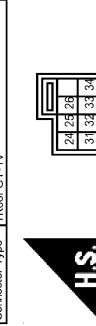
Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH28FW-AH



H.S.

Terminal No.	Color Of Wire	Signal Name (Specification)
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No.	M33
Connector Name	COMBINATION SWITCH (SFRAL CABLE)
Connector Type	TK28FGY-1V

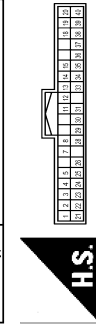


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Terminal No.	Color Of Wire	Signal Name (Specification)
24	Y/G	-
25	Y	-
26	B	-

31	Y/L	-
32	R	-
33	B	-
34	P/B	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-AH



H.S.

Terminal No.	Color Of Wire	Signal Name (Specification)
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	ILL GND
5	B	ILL CONTROL OUTPUT
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	AC AUTO AMP CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CANH
22	P	CANL
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BE/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT buckle SWITCH SIGNAL (DRIVER SIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	R/Y	NON-MANUAL MODE SIGNAL

DRIVER ASSISTANCE SYSTEMS

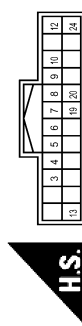
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DRIVER ASSISTANCE SYSTEM

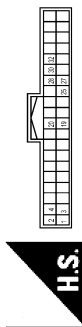
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

Connector No.	M47
Connector Name	SOMAR CONTROL UNIT
Connector Type	TH24FM-NH



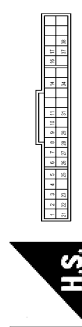
Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	SOMAR RR INNER LH
8	Y	SOMAR RR INNER RH
9	G	SOMAR FR INNER LH
10	Y	SOMAR FR INNER RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CANH [Without ADAS]
19	L	ITS-CAN H [With ADAS]
20	R	CANH [Without ADAS]
20	Y	ITS-CAN L [With ADAS]
24	B	GND

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	W	ACC POWER SUPPLY
19	SB	AV COMM (H)
20	LG	AV COMM (L)
25	P	REV
27	L	CANH
28	R	CANH [Without ADAS]
28	Y	CANH [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

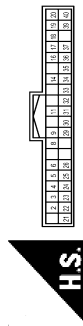
Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Type	SAB40FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	W	ACC POWER SUPPLY
6	W	IONIZER CONTROL SIGNAL
6	W	AC AUTO AMP CORNER SENSOR SIGNAL
7	WR	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL

9	BR	SUNLOAD SENSOR (DR) SIGNAL (PHASE) (ON/ISBE DOOR DETECTING SENSOR SIGNAL)
10	V/W	COMM (A/C AUTO AMP-RR A/C CONT)
11	W	FR BLOWER MOTOR CONTROL SIGNAL
14	OIL	EACH DOOR MOTOR LIN SIGNAL
16	R/G	EACH DOOR MOTOR POWER SUPPLY
17	L/Y	EACH DOOR MOTOR CONTROL SIGNAL
21	P	CANH
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
25	R	-
26	B	SENSOR GROUND
27	GR	FR IN-VEHICLE SENSOR SIGNAL
28	R	INTAKE SENSOR SIGNAL
29	O	SUNLOAD SENSOR (PASS) SIGNAL
31	OIL	COMM (RR A/C CONT-A/C AUTO AMP)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	GW	RR A/C RELAY CONTROL SIGNAL

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BRY	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	B/Y	RECEIVER PWR SPLY
19	BR	RECEIVER PWR SPLY
20	GR	KYLS ENT RECEIVER COMM
21	P	WATS ANT AMP
21	W/B	KYLS ENT RECEIVER RSSI

23	GR/R	SECURITY IND CONT
24	SB	DOUBLE LINK
25	LGR	NATS ANT AMP
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	DR DOOR UNLOCK SENSOR
31	W/G	COMBI SW OUTPUT 5
32	LG	COMBI SW OUTPUT 4
34	Y	COMBI SW OUTPUT 3
35	RAW	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	GY	SHIFT P
39	L	CANH
40	P	CANH

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
6	SB	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	OIL	-
16	SB	-
18	BR	-
19	Y/G	-
20	BRY	-

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JROWC1015GB

DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[BCI]

DRIVER ASSISTANCE SYSTEM

21	V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
29	R/W	-
30	O/L	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/O	-
37	GY	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
51	L/O	-
52	BR/W	-
53	BR/Y	-
54	GR/L	-
60	W	-
61	B	-
62	G	-
63	R	-
64	SHIELD	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	R	-
98	O/L	-
100	W/B	-

Connector No.	M93
Connector Name	IBA OFF SWITCH
Connector Type	TK08FGY



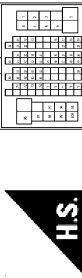
Terminal No.	Color Of Wire	Signal Name [Specification]
6	B	-
7	R/Y	-

Connector No.	M94
Connector Name	WARNING BUZZER
Connector Type	NS04FBRCS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	-
2	G/R	-
3	B	-

Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH09FWCS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/R	-
5	W/B	-
6	L/Y	-
7	B	-
8	GR	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	G/Y	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-
39	P/B	-
40	W/R	-
41	R	-
42	L/W	-
43	B/W	-
44	B	-
45	P	-
46	SHIELD	-

47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	O/L	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
90	W/B	-
93	Y	-
94	L	-
95	L/R	-
96	R	-
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



JROWC1016GB

DRIVER ASSISTANCE SYSTEMS

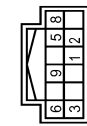
< WIRING DIAGRAM >

[BCI]

DRIVER ASSISTANCE SYSTEM

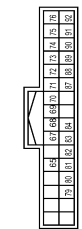
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
3	Y	BATTERY
4	L	CANH
5	B	GND
6	L	CANH
7	P	CANL
9	GR	IGNITION
10	R	CANL
11	B	GND
12	R	CANL

Connector No.	M127
Connector Name	TWIN SWITCH
Connector Type	TH2F5V-NH



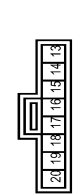
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	V/W	-
3	B	-
5	L/O	-
6	B/O	-
8	W/G	-
9	LG/B	-

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH32FM-NH



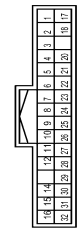
Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
69	O	INTELLIGENT VEHICLE IDENTIFICATION SIGNAL
70	BR	REVERSE L2
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
73	Y/G	MICROPHONE VCC [Without DCM]
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	L/O	DIMMER SIGNAL
80	GR/L	IGNITION SIGNAL
81	R/Y	REVERSE SIGNAL
82	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
83	SHIELD	SHIELD
84	W/B	COMPOSITE IMAGE SYNC SIGNAL
87	BR	MICROPHONE SIGNAL [With DCM]
87	Y/L	MICROPHONE SIGNAL [Without DCM]
88	SHIELD	SHIELD
89	Y/L	COMM (DISP-COMT)
90	L	CAN-H
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SPRAL. CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	B/R	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-

14	BY	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	Y	-
24	SHIELD	-
25	Y/G	-
26	L	-
27	W/G	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	BR	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH08FV-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
4	L	ITS COMM-H
5	B	GND
7	W/G	IGNITION
8	Y	ITS COMM-L

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[BCI]

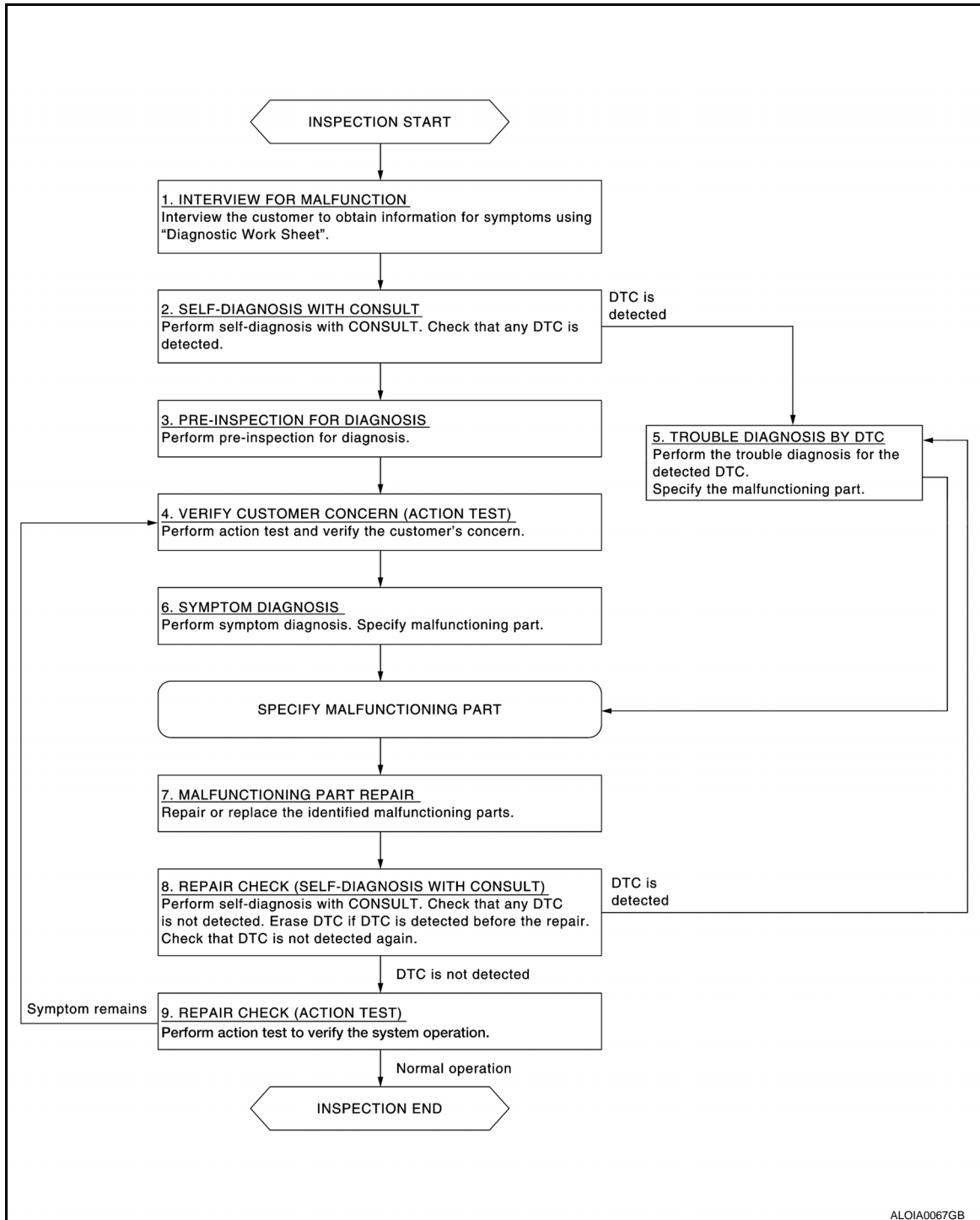
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009817080

OVERALL SEQUENCE



ALOIA0067GB

DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

DIAGNOSIS AND REPAIR WORK FLOW

[BCI]

< BASIC INSPECTION >

The customers are not professionals. Never assume that “maybe the customer means...” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2. SELF-DIAGNOSIS WITH CONSULT

1. Perform “All DTC Reading” with CONSULT.
2. Check if the DTC is detected on the self-diagnosis results of “SIDE RADAR LEFT/RIGHT”, and/or “ICC/ADAS”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 3.

3. PRE-INSPECTION FOR DIAGNOSIS

Perform pre-inspection for diagnosis. Refer to [DAS-675, "Inspection Procedure"](#).

>> GO TO 4.

4. ACTION TEST

Perform Back-up Collision Intervention system action test to check the operation status. Refer to [DAS-676, "Work Procedure"](#).

Check if any other malfunctions occur.

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

1. Check the DTC in the self-diagnosis results.
2. Perform trouble diagnosis for the detected DTC. Refer to [DAS-653, "DTC Index"](#) or [DAS-656, "DTC Index"](#) (SIDE RADAR LEFT/RIGHT), and/or [DAS-645, "DTC Index"](#) (ICC/ADAS).

NOTE:

If “DTC: U1000” is detected, first diagnose the CAN communication system or ITS communication system.

>> GO TO 7.

6. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to [DAS-749, "Symptom Table"](#).

>> GO TO 7.

7. MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 8.

8. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

1. Erases self-diagnosis results.
2. Perform “All DTC Reading” again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of “SIDE RADAR LEFT/RIGHT”, and “ICC/ADAS”.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 9.

9. REPAIR CHECK (ACTION TEST)

Perform the Back-up Collision Intervention system action test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[BCI]

YES >> GO TO 4.
NO >> INSPECTION END

PRE-INSPECTION FOR DIAGNOSIS

< BASIC INSPECTION >

[BCI]

PRE-INSPECTION FOR DIAGNOSIS

Inspection Procedure

INFOID:000000009817081

1.CHECK SONAR SENSORS INSTALLATION ON THE REAR BUMPER

Are there any foreign materials obstructing the view of any sonar sensor?

- YES >> Clean the rear bumper and the sonar sensor.
- NO >> GO TO 2.

2.CHECK REAR BUMPER NEAR THE SIDE RADAR

Are rear bumper near the side radar contaminated with foreign materials?

- YES >> Clean the rear bumper.
- NO >> GO TO 3.

3.CHECK SIDE RADAR AND THE SIDE RADAR OUTSKIRTS

Are side radar and the side radar outskirts contaminated with foreign materials?

- YES >> Clean the side radar or side radar outskirts.
- NO >> GO TO 4.

4.CHECK SIDE RADAR INSTALLATION CONDITION

Check side radar installation condition (installation position, properly tightened, a bent bracket).

Is it properly installed?

- YES >> INSPECTION END
- NO >> Install side radar properly.

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ACTION TEST

Description

INFOID:000000009817082

Always perform the Back-up Collision Intervention system action test to check that the system operates normally after replacing the side radar (left or right), or repairing any Back-up Collision Intervention system malfunction.

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-608, "Precaution for Back-up Collision Intervention"](#).
- System description for Back-up Collision Intervention: Refer to [DAS-612, "System Description"](#).
- Normal operating condition: Refer to [DAS-753, "Description"](#).

Work Procedure

INFOID:000000009817083

WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test.

CAUTION:

Fully understand the following items well before the road test;

- Precautions: Refer to [DAS-608, "Precaution for Back-up Collision Intervention"](#).
- System description for Back-up Collision Intervention: Refer to [DAS-612, "System Description"](#).
- Normal operating condition: Refer to [DAS-753, "Description"](#).

1. CHECK SONAR SYSTEM OPERATION

Check the sonar system operation. Refer to [AV-17, "MULTI AV SYSTEM : System Description"](#) .

>> GO TO 2.

2. CHECK BCI SYSTEM SETTING

1. Start the engine.
2. Check that the BCI system setting can be enabled/disabled on the navigation screen.
3. Turn OFF the ignition switch and wait for 30 seconds or more.
4. Check that the previous setting is saved when the engine starts again.

>> GO TO 3.

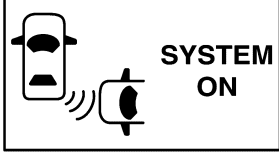


3. ACTION TEST FOR BCI

1. Enable the setting of the BCI system on the navigation screen.
2. Turn BCI switch OFF (Back-up Collision Intervention system ON indicator is ON).
3. Check the BCI operation according to the following table.

ACTION TEST

< BASIC INSPECTION >

[BCI]

	Vehicle condition	Action	Indication on the combination meter	Buzzer
0 km/h (0 MPH) R range	If the radar detects an approaching vehicle from the side.	<ul style="list-style-type: none"> • Chime sound (single beep) • Flashes Blind Spot Warning/ Blind Spot Intervention indicator on the side of the approaching vehicle is detected. • Yellow rectangular frame appears in the display. 	 <p style="text-align: right; font-size: small;">JSOIA0965ZZ</p>	single beep
	No approaching vehicle	No action	 <p style="text-align: right; font-size: small;">JSOIA0965ZZ</p>	—
		BCI system OFF	 <p style="text-align: right; font-size: small;">JSOIA0971ZZ</p>	—

NOTE:

After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches a speed above 8 km/h (5 MPH). Refer to [DAS-297. "LANE DEPARTURE WARNING \(LDW\) SYSTEM : System Description"](#).

>> INSPECTION END

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DAS

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:000000009817084

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A00" detected as the current malfunction?

- YES >> Refer to [DAS-678, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009817085

1. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000009817086

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	POWER SUPPLY CIR	The battery voltage sent to ADAS control unit remains less than 7.9 V for 5 seconds	<ul style="list-style-type: none">• Connector, harness, fuse• ADAS control unit
C1A02 (2)	POWER SUPPLY CIR 2	The battery voltage sent to ADAS control unit remains more than 19.3 V for 5 seconds	

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A01" or "C1A02" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A01" or "C1A02" detected as the current malfunction?

- YES >> Refer to [DAS-679, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817087

1. CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to [CCS-164, "ADAS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> Repair or replace the malfunctioning parts.

DAS

C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000009817088

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the A/T vehicle speed sensor signal (output shaft revolution signal) from TCM, received by the ADAS control unit via CAN communication, are inconsistent	<ul style="list-style-type: none">• Wheel speed sensor• ABS actuator and electric unit (control unit)• Vehicle speed sensor A/T (output speed sensor)• TCM• ADAS control unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04".

- Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-682, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the "C1A03" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A03" detected as the current malfunction?

- YES >> Refer to [DAS-680, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817089

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A04" or "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK DATA MONITOR

1. Start the engine.
2. Drive the vehicle.
3. Check that the value of "VHCL SPD AT" is almost the same as the value of "VHCL SPEED SE" in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> GO TO 3.

3. CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

C1A03 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82. "DTC Index"](#).

NO >> GO TO 4.

4. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50. "DTC Index"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

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C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:000000009817090

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A04 (4)	ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009817091

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A13 STOP LAMP RELAY

DTC Logic

INFOID:000000009817092

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A13 (13)	STOP LAMP RLY FIX	<ul style="list-style-type: none">Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ICC sensor ICC brake hold relay drive signalThe stop lamp remains ON for 60 seconds or more under the following conditions:<ul style="list-style-type: none">- Driving at 40 km/h or more- No stop lamp drive signal output from ICC sensor- No brake operation	<ul style="list-style-type: none">Stop lamp switch circuitICC brake switch circuitICC brake hold relay circuitStop lamp switchICC brake switchICC brake hold relayIncorrect stop lamp switch installationIncorrect ICC brake switch installationECMABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A13" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE (1)

- Start the engine.
- Perform the active test item "STOP LAMP" with CONSULT.
- Perform "All DTC Reading".
- Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

- YES >> Refer to [DAS-683, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

- Drive at the vehicle speed of 40 km/h (25 MPH) or more for approximately 60 seconds or more without the brake pedal depressed.

CAUTION:

Always drive safely.

NOTE:

If it is outside the above condition, repeat step 1.

- Perform "All DTC Reading".
- Check if the "C1A13" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A13" detected as the current malfunction?

- YES >> Refer to [DAS-683, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817093

DAS

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A13" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-45, "DTC Index"](#).
NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ICC/ADAS".

C1A13 STOP LAMP RELAY

[BCI]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 10.
- NO >> GO TO 3.

3.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Adjust stop lamp switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

4.CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [CCS-101, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace stop lamp switch.

5.CHECK STOP LAMP FOR ILLUMINATION

1. Turn the ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON.

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

6.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn the ignition switch OFF.
2. Disconnect stop lamp switch, ECM, rear combination lamp, and high-mounted stop lamp connectors.
3. Check for continuity between the stop lamp switch harness connector and the ECM harness connector.

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E115	2	M80	158	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	2		Not existed

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair the harnesses or connectors.

7.CHECK ICC BRAKE HOLD RELAY CIRCUIT

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors.
2. Check that the stop lamp does not illuminate when brake pedal is not depressed.

Is the inspection result normal?

- YES >> GO TO 9.
- NO >> GO TO 8.

8.CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay
2. Check ICC brake hold relay. Refer to [DAS-688, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 9.

C1A13 STOP LAMP RELAY

[BCI]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace ICC brake hold relay.

9.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107, "DTC Index"](#) (VK56VD for USA and CANADA) or [EC-672, "DTC Index"](#) (VK56VD for MEXICO).

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

10.CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
ICC brake hold relay		Ground
Connector	Terminal	
E64	1	
		Battery voltage

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace ICC brake hold relay power supply circuit.

11.CHECK HARNESS BETWEEN AND ICC BRAKE HOLD RELAY AND ADAS CONTROL UNIT

1. Disconnect ADAS control unit connectors.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

ICC brake hold relay		ADAS control unit		Continuity
Connector	Terminal	Connector	Terminal	
E64	2	B61	5	Existed

3. Check for continuity between ADAS control unit harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E64	2		Not existed

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12.CHECK ADAS CONTROL UNIT STANDARD VOLTAGE

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "STOP LAMP" on "Active Test" of "ICC/ADAS", and then check the voltage between ADAS control unit harness connector and ground.

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DAS

C1A13 STOP LAMP RELAY

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Active Test item "STOP LAMP"	Battery voltage
Connector	Terminal		
B61	5	Off	Battery voltage
		On	0 V

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

13.CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Check the voltage between ICC brake hold relay harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ICC brake hold relay		Ground	Battery voltage
Connector	Terminal		
E64	3		

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair or replace ICC brake hold relay power supply circuit.

14.CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors and remove ICC brake hold relay.
2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E64	5	M80	158	Existed

3. Check for continuity between ICC brake hold relay harness connector and ground.

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E64	5		Not existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair the harnesses or connectors.

15.CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check ICC brake hold relay. Refer to [DAS-688, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace ICC brake hold relay.

16.CHECK STOP LAMP SWITCH

Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS".

C1A13 STOP LAMP RELAY

[BCI]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 21.

NO >> GO TO 17.

17.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to [BR-7, "Inspection and Adjustment"](#).

Is the inspection result normal?

YES >> GO TO 18.

NO >> Adjust stop lamp switch installation. Refer to [BR-7, "Inspection and Adjustment"](#).

18.CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to [CCS-99, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace stop lamp switch.

19.CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Connect stop lamp switch connector.
2. Check the voltage between stop lamp switch harness connector and ground.

Terminal		Voltage (Approx.)
(+)	(-)	
Stop lamp switch		Ground
Connector	Terminal	
E115	3	
		Battery voltage

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair or replace stop lamp switch power supply circuit.

20.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Turn the ignition switch OFF.
2. Disconnect stop lamp switch, ABS actuator and electric unit (control unit) connectors.
3. Check for continuity between the stop lamp switch harness connector and the ABS actuator and electric unit (control unit) harness connector.

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E115	4	E36	17	Existed

4. Check for continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E115	4		Not existed

Is the inspection result normal?

YES >> GO TO 21.

NO >> Repair the harnesses or connectors.

21.PERFORM SELF-DIAGNOSIS OF ECM

1. Connect all connectors again if the connectors are disconnected.

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DAS

C1A13 STOP LAMP RELAY

[BCI]

< DTC/CIRCUIT DIAGNOSIS >

2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to [EC-107. "DTC Index"](#) (VK56VD for USA and CANADA) or [EC-672. "DTC Index"](#) (VK56VD for MEXICO).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
 NO >> GO TO 22.

22.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform "All DTC Reading".
4. Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to [BRC-50. "DTC Index"](#).

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
 NO >> Replace ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

Component Inspection

INFOID:000000009817094

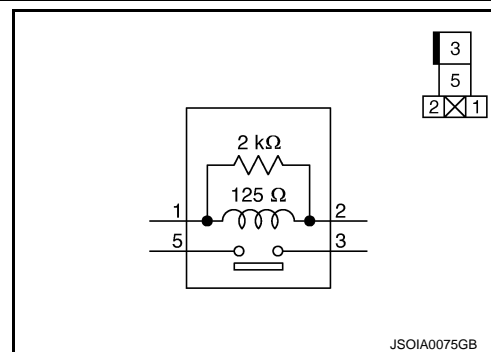
1.CHECK ICC BRAKE HOLD RELAY

Apply battery voltage to ICC brake hold relay terminals 1 and 2, and then check for continuity under the following conditions.

Terminal		Condition	Continuity
3	5	When the battery voltage is applied	Existed
		When the battery voltage is not applied	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace ICC brake hold relay.



C1A14 ECM

DTC Logic

INFOID:000000009817095

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	<ul style="list-style-type: none"> • Accelerator pedal position sensor • ECM • ADAS control unit

NOTE:

If DTC “C1A14” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Operate the ICC system and drive.
CAUTION:
Always drive safely.
3. Stop the vehicle.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “C1A14” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “C1A14” detected as the current malfunction?

- YES >> Refer to [DAS-689, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817096

1. CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “C1A14” in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U1000” detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

Check if any DTC is detected in “Self Diagnostic Result” of “ENGINE”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (VK56VD for USA and CANADA) or [EC-672, "DTC Index"](#) (VK56VD for MEXICO).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A15 GEAR POSITION

Description

INFOID:000000009817097

ADAS control unit judges the gear position based on the following signals.

- Current gear position signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from input speed signal transmitted from TCM via CAN communication.
- Value of gear ratio calculated from the vehicle speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:000000009817098

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	A mismatch between an current gear position signal transmitted from TCM via CAN communication and a gear position calculated by the ADAS control unit continues for approximately 11 minutes or more	<ul style="list-style-type: none">• Input speed sensor• Vehicle speed sensor A/T (output speed sensor)• TCM

NOTE:

If DTC "C1A15" is detected along with DTC "U1000", "C1A03", or "C1A04", first diagnose the DTC "U1000", "C1A03", or "C1A04".

- Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-680, "DTC Logic"](#) for DTC "C1A03".
- Refer to [DAS-682, "DTC Logic"](#) for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more.

CAUTION:

Always drive safely.

4. Stop the vehicle.
5. Perform "All DTC Reading" with CONSULT.
6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A15" detected as the current malfunction?

YES >> Refer to [DAS-690, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817099

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

Check that "VHCL SPEED SE" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

- YES >> GO TO 3.
- NO >> GO TO 7.

3.CHECK GEAR POSITION

Check that "GEAR" operates normally in "DATA MONITOR" of "ICC/ADAS".

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 4.

4.CHECK GEAR POSITION SIGNAL

Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 6.

5.CHECK INPUT SPEED SENSOR SIGNAL

Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
- NO >> GO TO 6.

6.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

7.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50. "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).

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DAS

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A24 NP RANGE

DTC Logic

INFOID:000000009817100

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communication and an current gear position signal continues for 60 seconds or more	<ul style="list-style-type: none">• TCM• Transmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. CHECK DTC REPRODUCE (1)

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Wait for approximately 5 minutes or more after shifting the selector lever to "P" position.
4. Perform "All DTC Reading" with CONSULT.
5. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-692, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. CHECK DTC REPRODUCE (2)

1. Wait for approximately 5 minutes or more after shifting the selector lever to "N" position.
2. Perform "All DTC Reading".
3. Check if the "C1A24" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A24" detected as the current malfunction?

- YES >> Refer to [DAS-692, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817101

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A24" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Perform diagnosis for transmission range switch circuit and repair or replace the malfunctioning parts. Refer to [TM-108, "Diagnosis Procedure"](#).

3. PERFORM TCM SELF-DIAGNOSIS

1. Perform "All DTC Reading".
2. Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A35 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A35 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000009817102

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A35 (35)	APA CIR	If the accelerator pedal actuator is malfunctioning	Accelerator pedal actuator

NOTE:

If DTC "C1A35" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

Diagnosis Procedure

INFOID:000000009817103

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A35" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A35" detected as the current malfunction?

- YES >> GO TO 2.
NO >> INSPECTION END

2. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A35" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 3.

3. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-122, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

DTC Logic

INFOID:000000009817104

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A36 (36)	APA CAN COMM CIR	If an error occurs in the signal that the accelerator pedal actuator transmits via ITS communication	<ul style="list-style-type: none">• ADAS control unit• Accelerator pedal actuator• ITS communication system

NOTE:

If DTC "C1A36" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A36" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A36" detected as the current malfunction?

- YES >> Refer to [DAS-695, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817105

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A36" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-122, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

DTC Logic

INFOID:000000009817106

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A37 (133)	APA CAN CIR2	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A37" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A37" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected as the current malfunction?

- YES >> Refer to [DAS-696, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817107

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A37" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Turn the ignition switch ON.
4. Erases all self-diagnosis results.
5. Perform "All DTC Reading" again.
6. Check if the DTC "C1A37" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> INSPECTION END

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

DTC Logic

INFOID:000000009817108

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A38 (132)	APA CAN CIR1	If ADAS control unit detects an error signal that is received from accelerator pedal actuator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A38" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A38" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A38" detected as the current malfunction?

- YES >> Refer to [DAS-697, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817109

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A38" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Turn the ignition switch OFF.
2. Replace the accelerator pedal assembly.
3. Erases All self-diagnosis results.
4. Perform "All DTC Reading" again.
5. Check if the "C1A38" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A38" detected?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
NO >> INSPECTION END

DAS

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000009817110

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to [DAS-698, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817111

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1B50 SIDE RADAR MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B50 SIDE RADAR MALFUNCTION

DTC LOGIC

INFOID:000000009817112

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B50	SIDE RDR MALFUNCTION	Side radar malfunction	Side radar

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B50" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the "C1B50" detected as the current malfunction?

- YES >> Refer to [DAS-699, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009817113

1. CHECK SELF-DIAGNOSIS RESULT

Check if any DTC other than "C1B50" is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT/RIGHT"

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunction part. Refer to [DAS-656, "DTC Index"](#) (SIDE RADAR RIGHT) or [DAS-653, "DTC Index"](#) (SIDE RADAR LEFT).
NO >> Replace the side radar. Refer to [DAS-754, "Removal and Installation"](#).

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DAS

C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

DTC Logic

INFOID:000000009817114

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B51	BSW/BSI IND SHORT CIR	Short circuit in Blind Spot Warning/Blind Spot Intervention indicator circuit is detected. (Over current is detected)	<ul style="list-style-type: none">Blind Spot Warning/Blind Spot Intervention indicator circuit.Blind Spot Warning/Blind Spot Intervention indicator.Side radar.

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the "C1B51" detected as the current malfunction?

- YES >> Refer to [DAS-699, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009817115

1. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR SHORT

- Turn ignition switch OFF.
- Disconnect side radar harness connector and Blind Spot Warning/Blind Spot Intervention indicator harness connector.
- Check continuity between side radar harness connector and ground.

Side radar		Ground	Continuity
Connector	Terminal		
B80 (LH)	6		Not existed
B81 (RH)			

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2. REPLACE THE SIDE RADAR

- Replace the side radar.
- Perform "All DTC Reading" with CONSULT.
- Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"

Is the DTC "C1B51" detected?

- YES >> Replace the side radar. Refer to [DAS-601, "Removal and Installation"](#).
NO >> INSPECTION END

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

DTC Logic

INFOID:000000009817116

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B52	BSW/BSI IND OPEN CIR	Open circuit in Blind Spot Warning/Blind Spot Intervention indicator circuit is detected.	<ul style="list-style-type: none"> • Blind Spot Warning/Blind Spot Intervention indicator circuit. • Blind Spot Warning/Blind Spot Intervention indicator. • Side radar.

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B52" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the "C1B52" detected as the current malfunction?

- YES >> Refer to [DAS-699, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009817117

1. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR OPEN 1

1. Turn ignition switch OFF.
2. Disconnect side radar harness connector and Blind Spot Warning/Blind Spot Intervention indicator harness connector.
3. Check continuity between side radar harness connector and Blind Spot Warning/Blind Spot Intervention indicator harness connector.

Side radar		Blind Spot Warning/Blind Spot Intervention indicator		Continuity
Connector	Terminal	Connector	Terminal	
B80 (LH)	6	D77 (LH)	1	Existed
B81 (RH)		D78 (RH)		

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the harnesses or connectors.

2. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR OPEN 2

Check continuity between Blind Spot Warning/Blind Spot Intervention indicator harness connector and ground.

Blind Spot Warning/Blind Spot Intervention indicator		Ground	Continuity
Connector	Terminal		
D77 (LH)	4		Existed
D78 (RH)			

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK SIDE RADAR VOLTAGE OUTPUT

1. Connect side radar harness connector.
2. Check voltage between Blind Spot Warning/Blind Spot Intervention indicator harness connector and ground.

Blind Spot Warning/Blind Spot Intervention indicator		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
D77 (LH)	1		Ignition switch OFF ⇒ ON (Approx. 2 sec.)	6 V
D78 (RH)				

Is the inspection result normal?

YES >> Replace Blind Spot Warning/Blind Spot Intervention indicator.

NO >> Replace side radar. Refer to [DAS-601. "Removal and Installation"](#).

C1B53 SIDE RADAR RIGHT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B53 SIDE RADAR RIGHT MALFUNCTION

DTC Logic

INFOID:000000009817118

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B53 (84)	SIDE RDR R MALF	ADAS control unit detects that side radar RH has a malfunction.	Side radar RH

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B53" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B53" detected as the current malfunction?

- YES >> Refer to [DAS-703, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817119

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B53" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-68, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#) (SIDE RADAR LH), [DAS-490, "DTC Index"](#) (SIDE RADAR RH).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1B54 SIDE RADAR LEFT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B54 SIDE RADAR LEFT MALFUNCTION

DTC Logic

INFOID:000000009817120

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B54 (85)	SIDE RDR L MALF	ADAS control unit detects that side radar LH has a malfunction.	Side radar LH

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B54" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B54" detected as the current malfunction?

- YES >> Refer to [DAS-703, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817121

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B54" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#) (SIDE RADAR LH), [DAS-490, "DTC Index"](#) (SIDE RADAR RH).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1B55 RADAR BLOCKAGE

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B55 RADAR BLOCKAGE

DTC Logic

INFOID:000000009817122

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B55	RADAR BLOCKAGE	Side radar is blocked.	Stain or foreign materials is deposited.

NOTE:

DTC "C1B55" may be detected under the following conditions except for possible cause. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".)

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.
- Due to the nature of radar technology it is possible to get a blockage warning and not actually be blocked. This is rare and is known as a false blockage warning. A false blocked condition either self-clears or clears after an ignition cycle.

Diagnosis Procedure

INFOID:000000009817123

1.CHECK THE REAR BUMPER

Check rear bumper near the side radar contaminated with foreign materials.

>> GO TO 2.

2.CHECK THE SIDE RADAR

Check side radar and the side radar outskirts contaminated with foreign materials.

>> GO TO 3.

3.CHECK THE SIDE RADAR INSTALL CONDITION

Check side radar installation condition (installation position, properly tightened, a bent bracket).

>> GO TO 4.

4.INTERVIEW

1. Ask if there is stain or foreign materials.
2. Ask if there is any temporary ambient condition such as splashing water, mist or fog.
3. Ask if there is any object such as ice, frost or dirt obstructing the side radar.

Is any of above conditions seen?

- YES >> Explain to the customer about the difference between the blockage detection function and the indication when the malfunction is detected and tell them "This is not malfunction".
- NO >> INSPECTION END

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DAS

C1B56 SONAR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B56 SONAR CIRCUIT

DTC Logic

INFOID:000000009817124

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B56 (87)	SONAR CIRCUIT	ADAS control unit detects that rear sonar circuit has a malfunction.	<ul style="list-style-type: none">• Sonar control unit• Sonar sensor (rear circuit)• ADAS control unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B56" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B56" detected as the current malfunction?

- YES >> Refer to [DAS-706, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817125

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B56" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SONAR".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1B57 AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1B57 AVM CIRCUIT

DTC Logic

INFOID:000000009817126

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B57 (88)	AVM CIRCUIT	ADAS control unit detects that around view monitor control unit has a malfunction.	<ul style="list-style-type: none">• Around view monitor control unit control unit• ADAS control unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "C1B57" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B57" detected as the current malfunction?

- YES >> Refer to [DAS-707, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817127

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B57" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "AVM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1F01 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000009817128

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F01 (91)	APA MOTOR MALF	If the accelerator pedal actuator motor error is detected	Accelerator pedal actuator integrated motor malfunction

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON.
3. Slowly depress the accelerator pedal completely, and then release it.
4. Repeat step 3 several times.
5. Perform "All DTC Reading" with CONSULT.
6. Check if the DTC "C1F01" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F01" detected as the current malfunction?

- YES >> Refer to [DAS-708, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817129

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F01" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F01" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F01" detected?

- YES >> Refer to [DAS-180, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

C1F02 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1F02 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000009817130

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F02 (92)	APA C/U MALF	If the accelerator pedal actuator integrated control unit error is detected	Accelerator pedal actuator integrated control unit malfunction

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F02" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F02" detected as the current malfunction?

- YES >> Refer to [DAS-709, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817131

1.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F02" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2.CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F02" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F02" detected?

- YES >> Refer to [DAS-182, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

DTC Logic

INFOID:000000009817132

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F05 (95)	APA PWR SUPPLY CIR	The battery voltage sent to accelerator pedal actuator remains less than 7.9 V or more than 19.3 V for 5 seconds	<ul style="list-style-type: none">• Harness, connector, or fuse• Accelerator pedal actuator

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "C1F05" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F05" detected as the current malfunction?

YES >> Refer to [DAS-710, "Diagnosis Procedure"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817133

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F05" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F05" detected?

YES >> Refer to [DAS-185, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"](#).

NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1000 CAN COMM CIRCUIT

SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:000000009817134

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting plural units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

SIDE RADAR LH : DTC Logic

INFOID:000000009817135

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If Side radar LH is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

SIDE RADAR LH : Diagnosis Procedure

INFOID:000000009817136

1. PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22. "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43. "Intermittent Incident"](#).

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:000000009817137

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting plural units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

SIDE RADAR RH : DTC Logic

INFOID:000000009817138

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If Side radar RH is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

SIDE RADAR RH : Diagnosis Procedure

INFOID:000000009817139

1. PERFORM THE SELF-DIAGNOSIS

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009817140

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only.

CAN communication signal chart. Refer to [LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

ITS COMMUNICATION

- ITS communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009817141

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication signal for 2 seconds or more	<ul style="list-style-type: none">• CAN communication system• ITS communication system

NOTE:

If "U1000" is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009817142

1. PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the Back-up Collision Intervention system ON, and then wait for 30 seconds or more.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

Is "U1000" detected as the current malfunction?

YES >> Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-43, "Intermittent Incident"](#).

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U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1010 CONTROL UNIT (CAN)

SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:000000009817143

CAN controller controls the communication of ITS communication signal and the error detection.

SIDE RADAR LH : DTC Logic

INFOID:000000009817144

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010	CONTROL UNIT (CAN)	If side radar LH detects malfunction by CAN controller initial diagnosis.	Side radar LH

SIDE RADAR LH : Diagnosis Procedure

INFOID:000000009817145

1.CHECK SELF-DIAGNOSIS RESULT

1. Turn the Back-up Collision Intervention system system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is "U1010" detected as the current malfunction?

YES >> Replace the side radar LH. Refer to [DAS-754, "Removal and Installation"](#).

NO >> INSPECTION END

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:000000009817146

CAN controller controls the communication of ITS communication signal and the error detection.

SIDE RADAR RH : DTC Logic

INFOID:000000009817147

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010	CONTROL UNIT (CAN)	If Side radar RH detects malfunction by CAN controller initial diagnosis.	Side radar RH

SIDE RADAR RH : Diagnosis Procedure

INFOID:000000009817148

1.CHECK SELF-DIAGNOSIS RESULT

1. Turn the Back-up Collision Intervention system system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is "U1010" detected as the current malfunction?

YES >> Replace the side radar RH. Refer to [DAS-754, "Removal and Installation"](#).

NO >> INSPECTION END

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:000000009817149

CAN controller controls the communication of CAN communication signal and ITS communication signal, and the error detection.

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

ADAS CONTROL UNIT : DTC Logic

INFOID:000000009817150

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000009817151

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the Back-up Collision Intervention system ON.
2. Perform "All DTC Reading" with CONSULT.
3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1010" detected as the current malfunction?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
NO >> INSPECTION END

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DAS

U0104 ADAS CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U0104 ADAS CAN 1

DTC Logic

INFOID:000000009817152

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0104	ADAS CAN CIR1	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit

NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-711, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-712, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT
4. Check if the U0104 is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the DTC "U0104" detected?

- YES >> Refer to [DAS-716, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817153

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-711, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-712, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).
NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace side radar LH or RH. Refer to [DAS-754, "Removal and Installation"](#)

U0121 VDC CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U0121 VDC CAN 2

DTC Logic

INFOID:000000009817154

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0121" detected as the current malfunction?

- YES >> Refer to [DAS-717, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817155

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U0126 STRG SEN CAN 1

DTC Logic

INFOID:000000009817156

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC “U0126” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U0126” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U0126” detected as the current malfunction?

- YES >> Refer to [DAS-718, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817157

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U0126” in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U1000” detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
- NO >> GO TO 2.

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “ABS”.

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
- NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U0401 ECM CAN 1

DTC Logic

INFOID:000000009817158

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

- YES >> Refer to [DAS-719, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817159

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (VK56VD for USA and CANADA) or [EC-672, "DTC Index"](#) (VK56VD for MEXICO).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

U0402 TCM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U0402 TCM CAN 1

DTC Logic

INFOID:000000009817160

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0402" detected as the current malfunction?

- YES >> Refer to [DAS-720, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817161

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0405 ADAS CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U0405 ADAS CAN 2

DTC Logic

INFOID:000000009817162

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0405	ADAS CAN CIR2	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit.

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-711, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-712, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT
4. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the DTC "U0405" detected?

- YES >> Refer to [DAS-721, "Diagnosis Procedure"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817163

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-711, "SIDE RADAR LH : DTC Logic"](#) (SIDE RADAR LH), [DAS-712, "SIDE RADAR RH : DTC Logic"](#) (SIDE RADAR RH).
- NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
- NO >> Replace side radar LH or RH. Refer to [DAS-754, "Removal and Installation"](#).

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U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U0415 VDC CAN 1

DTC Logic

INFOID:000000009817164

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to [DAS-722, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817165

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U0428 STRG SEN CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U0428 STRG SEN CAN 2

DTC Logic

INFOID:000000009817166

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0428" detected as the current malfunction?

- YES >> Refer to [DAS-723, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817167

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

U150B ECM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U150B ECM CAN 3

DTC Logic

INFOID:000000009817168

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150B" detected as the current malfunction?

- YES >> Refer to [DAS-724, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817169

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [EC-107, "DTC Index"](#) (VK56VD for USA and CANADA) or [EC-672, "DTC Index"](#) (VK56VD for MEXICO).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U150C VDC CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U150C VDC CAN 3

DTC Logic

INFOID:000000009817170

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150C" detected as the current malfunction?

- YES >> Refer to [DAS-725, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817171

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U150D TCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U150D TCM CAN 3

DTC Logic

INFOID:000000009817172

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	TCM

NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150D" detected as the current malfunction?

- YES >> Refer to [DAS-726, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817173

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [TM-82, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U150E BCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U150E BCM CAN 3

DTC Logic

INFOID:000000009817174

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	BCM

NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150E" detected as the current malfunction?

- YES >> Refer to [DAS-727, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817175

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK BCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "BCM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

U1503 SIDE RDR L CAN 2

DTC Logic

INFOID:000000009817176

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1503 (150)	SIDE RDR L CAN CIR 2	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	<ul style="list-style-type: none"> • Side radar LH • ADAS control unit

NOTE:

If DTC "U1503" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-733, "DTC Logic"](#) for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1503" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1503" detected as the current malfunction?

- YES >> Refer to [DAS-728, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817177

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1503" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
 YES-2 >> U1508 detected: Refer to [DAS-733, "DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1504 SIDE RDR L CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1504 SIDE RDR L CAN 1

DTC Logic

INFOID:000000009817178

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1504 (151)	SIDE RDR L CAN CIR 1	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	<ul style="list-style-type: none">Side radar LHADAS control unit

NOTE:

If DTC "U1504" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-733, "DTC Logic"](#) for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Turn the Back-up Collision Intervention system ON.
- Perform "All DTC Reading" with CONSULT.
- Check if the "U1504" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1504" detected as the current malfunction?

- YES >> Refer to [DAS-729, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817179

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1504" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [CCS-151, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1508 detected: Refer to [DAS-733, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1505 SIDE RDR R CAN 2

DTC Logic

INFOID:000000009817180

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1505 (152)	SIDE RDR R CAN CIR 2	ADAS control unit detects an error signal that is received from side radar RH via ITS communication	<ul style="list-style-type: none"> • Side radar RH • ADAS control unit

NOTE:

If DTC "U1505" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-732, "DTC Logic"](#) for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1505" detected as the current malfunction?

- YES >> Refer to [DAS-730, "Diagnosis Procedure"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817181

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1505" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
 YES-2 >> U1507 detected: Refer to [DAS-730, "DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1506 SIDE RDR R CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1506 SIDE RDR R CAN 1

DTC Logic

INFOID:000000009817182

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1506 (153)	SIDE RDR R CAN CIR 1	ADAS control unit detects an error signal that is received from side radar RH via ITS communication	<ul style="list-style-type: none">Side radar RHADAS control unit

NOTE:

If DTC "U1506" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-733, "DTC Logic"](#) for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Turn the Back-up Collision Intervention system ON.
- Perform "All DTC Reading" with CONSULT.
- Check if the "U1506" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1506" detected as the current malfunction?

- YES >> Refer to [DAS-729, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817183

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1506" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1507 detected: Refer to [DAS-733, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1507 LOST COMM(SIDE RDR R)

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1507 LOST COMM(SIDE RDR R)

DTC Logic

INFOID:000000009817184

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1507 (154)	LOST COMM(SIDE RDR R)	ADAS control unit cannot receive ITS communication signal from side radar RH for 2 seconds or more	<ul style="list-style-type: none">• Side radar RH right/left switching signal circuit• ITS communication system• Side radar RH

NOTE:

DTC "U1507" is detected along with DTC "U1000", first diagnose the DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1507" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1507" detected as the current malfunction?

- YES >> Refer to [DAS-732, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817185

1. CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check right/left switching signal circuit. Refer to [DAS-746, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).
NO >> Repair right/left switching signal circuit.

U1508 LOST COMM(SIDE RDR L)

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1508 LOST COMM(SIDE RDR L)

DTC Logic

INFOID:000000009817186

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1508 (155)	LOST COMM(SIDE RDR L)	ADAS control unit cannot receive ITS communication signal from side radar LH for 2 seconds or more	<ul style="list-style-type: none">Side radar LH harness connectorITS communication systemSide radar LH

NOTE:

DTC "U1508" is detected along with DTC "U1000", first diagnose the DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1508" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1508" detected as the current malfunction?

- YES >> Refer to [DAS-733, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817187

1. CHECK SIDE RADAR HARNESS CONNECTOR

1. Turn the ignition switch OFF.
2. Check the terminals and connectors of the side radar LH for damage, bend and short (unit side and connector side).

Is the inspection result normal?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).
NO >> Repair the terminal or connector.

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DAS

U1513 METER CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1513 METER CAN 3

DTC Logic

INFOID:000000009817188

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter

NOTE:

If DTC "U1513" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1513" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1513" detected as the current malfunction?

- YES >> Refer to [DAS-734, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817189

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1513" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK COMBINATION METER SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "METER/M&A".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [MWI-44, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1514 STRG SEN CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1514 STRG SEN CAN 3

DTC Logic

INFOID:000000009817190

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1514 (165)	STRG SEN CAN CIRC 3	ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U1514" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1514" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1514" detected as the current malfunction?

- YES >> Refer to [DAS-735, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817191

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1514" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ABS".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [BRC-50, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

DAS

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

DTC Logic

INFOID:000000009817192

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1517 (167)	APA CAN CIRC 3	ADAS control unit detects an error signal that is received from accelerator pedal actuator via CAN communication	Accelerator pedal actuator

NOTE:

If DTC "U1517" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1517" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1517" detected as the current malfunction?

- YES >> Refer to [DAS-736, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817193

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1517" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-122, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1518 SIDE RDR L CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1518 SIDE RDR L CAN 3

DTC Logic

INFOID:000000009817194

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1518 (168)	SIDE RDR L CAN CIRC 3	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	Side radar LH

NOTE:

If DTC "U1518" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".

- Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#) for DTC "U1000".
- Refer to [DAS-733, "DTC Logic"](#) for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1518" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1518" detected as the current malfunction?

- YES >> Refer to [DAS-737, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817195

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1518" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
YES-2 >> U1508 detected: Refer to [DAS-737, "DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-487, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1519 SIDE RDR R CAN 3

DTC Logic

INFOID:000000009817196

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1519 (169)	SIDE RDR R CAN CIRC 3	ADAS control unit detects an error signal that is received from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1519" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507".

- Refer to [DAS-487, "DTC Index"](#) for DTC "U1000".
- Refer to [DAS-732, "DTC Logic"](#) for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1519" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1519" detected as the current malfunction?

- YES >> Refer to [DAS-732, "DTC Logic"](#).
 NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817197

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1519" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-547, "ADAS CONTROL UNIT : DTC Logic"](#).
 YES-2 >> U1507 detected: Refer to [DAS-732, "DTC Logic"](#).
 NO >> GO TO 2.

2. CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-490, "DTC Index"](#).
 NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1520 4WD CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1520 4WD CAN 3

DTC Logic

INFOID:000000009817198

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1520 (176)	4WD CAN CIRC 3	ADAS control unit detects an error signal that is received from transfer control unit via CAN communication	Transfer control unit

NOTE:

If DTC "U1520" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1520" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1520" detected as the current malfunction?

- YES >> Refer to [DAS-739, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817199

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1520" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK TRANSFER CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ALL MODE AWD/4WD".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DLN-30, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1521 SONAR CAN 2

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1521 SONAR CAN 2

DTC Logic

INFOID:000000009817200

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1521 (177)	SONAR CAN COMMUNICATION 2	ADAS control unit detects an error signal that is received from sonar control unit via CAN communication	<ul style="list-style-type: none">• Sonar control unit• ADAS control unit

NOTE:

If DTC "U1521" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1521" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1521" detected as the current malfunction?

- YES >> Refer to [DAS-740, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817201

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1521" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts.
Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SONAR SYSTEM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SONAR".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1522 SONAR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1522 SONAR CAN 1

DTC Logic

INFOID:000000009817202

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1522 (178)	SONAR CAN COMMUNICATION 1	ADAS control unit detects an error signal that is received from sonar control unit via CAN communication	<ul style="list-style-type: none">• Sonar control unit• ADAS control unit

NOTE:

If DTC "U1522" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1522" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1522" detected as the current malfunction?

- YES >> Refer to [DAS-741, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817203

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1522" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SONAR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SONAR".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1523 SONAR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1523 SONAR CAN 3

DTC Logic

INFOID:000000009817204

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1523 (179)	SONAR CAN COMMUNICATION 3	ADAS control unit detects an error signal that is received from sonar control unit via CAN communication	<ul style="list-style-type: none">• Sonar control unit• ADAS control unit

NOTE:

If DTC "U1523" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1523" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1523" detected as the current malfunction?

- YES >> Refer to [DAS-742, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817205

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1523" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SONAR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SONAR".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

U1524 AVM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1524 AVM CAN 1

DTC Logic

INFOID:000000009817206

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1524 (180)	AVM CAN COMMUNICATION 1	ADAS control unit detects an error signal that is received from around view monitor control unit via CAN communication	<ul style="list-style-type: none">• Around view monitor control unit• ADAS control unit

NOTE:

If DTC "U1524" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1524" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1524" detected as the current malfunction?

- YES >> Refer to [DAS-743, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817207

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1524" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SONAR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "AVM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

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DAS

U1525 AVM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

U1525 AVM CAN 3

DTC Logic

INFOID:000000009817208

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1525 (181)	AVM CAN COMMUNICATION 3	ADAS control unit detects an error signal that is received from around view monitor control unit via CAN communication	<ul style="list-style-type: none">• Around view monitor control unit• ADAS control unit

NOTE:

If DTC "U1525" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the Back-up Collision Intervention system ON.
3. Perform "All DTC Reading" with CONSULT.
4. Check if the "U1525" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1525" detected as the current malfunction?

- YES >> Refer to [DAS-744, "Diagnosis Procedure"](#).
NO >> Refer to [GI-43, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000009817209

1. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1525" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to [DAS-712, "ADAS CONTROL UNIT : DTC Logic"](#).
NO >> GO TO 2.

2. CHECK SONAR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "AVM".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to [DAS-645, "DTC Index"](#).
NO >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000009817210

1. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		Ignition switch	0 V
Connector	Terminal		
B61	16	OFF	
		ON	Battery volt- age

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the ADAS control unit power supply circuit.

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the ADAS control unit connector.
3. Check for continuity between ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	6		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

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DAS

RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000009817211

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Check the terminals and connectors of the side radar RH for damage, bend and short (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the terminal or connector.

2.CHECK CONTINUITY RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

1. Disconnect side radar RH connector.
2. Check continuity between side radar RH harness connectors and ground.

Side radar RH		Ground	Continuity
Connector	Terminal		
B81	1		Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Repair harness or connector.

BCI SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

BCI SWITCH CIRCUIT

Component Function Check

INFOID:000000009817212

1.CHECK BCI SWITCH INPUT SIGNAL

1. Turn the ignition switch ON.
2. Select the DATA MONITOR item "WARN SYS SW" of "ICC/ADAS" with CONSULT.
3. With operating the BCI switch, check the monitor status.

Monitor item	Condition	Monitor status
BCI SW	BCI switch is pressed	On
	BCI switch is not pressed	OFF

Is the inspection result normal?

- YES >> BCI switch circuit is normal.
NO >> Refer to [DAS-747. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000009817213

1.CHECK BCI SWITCH SIGNAL INPUT

1. Turn the ignition switch ON.
2. Check voltage between ADAS control unit harness connector and ground.

Terminals		Condition	Voltage (Approx.)
(+)	(-)		
ADAS control unit		BCI switch	
Connector	Terminal		
B61	10	Pressed	
		Released	12 V

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72. "Removal and Installation"](#).
NO >> GO TO 2.

2.CHECK BCI SWITCH

1. Turn ignition switch OFF.
2. Remove BCI switch.
3. Check BCI switch. Refer to [DAS-748. "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace the BCI switch. Refer to [DAS-429. "Removal and Installation"](#).

3.CHECK BCI SWITCH GROUND CIRCUIT

Check continuity between twin switch harness connector terminal and the ground.

Twin switch		Ground	Continuity
Connector	Terminal		
M127	3		Existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK BCI SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

1. Disconnect the ADAS control unit connector.
2. Check continuity between the ADAS control unit harness connector and twin switch harness connector.

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DAS

BCI SWITCH CIRCUIT

[BCI]

< DTC/CIRCUIT DIAGNOSIS >

ADAS control unit		Twin switch		Continuity
Connector	Terminal	Connector	Terminal	
B61	10	M127	1	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5.CHECK BCI SWITCH SIGNAL INPUT CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS control unit		Ground	Continuity
Connector	Terminal		
B61	10		Not existed

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000009817214

1.CHECK BCI SWITCH

Check continuity of BCI switch.

Terminal		Condition	Continuity
1	3	When BCI switch is pressed	Existed
		When BCI switch is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace BCI switch.

BACK-UP COLLISION INTERVENTION SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BCI]

SYMPTOM DIAGNOSIS

BACK-UP COLLISION INTERVENTION SYSTEM SYMPTOMS

Symptom Table

INFOID:000000009817215

CAUTION:

Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

NOTE:

Refer to the following the operation condition of the Back-up Collision Intervention system.

- Back-up Collision Intervention system: [DAS-612. "System Description"](#).

Symptom		Possible cause	Action to take/Reference page	
BCI system does not operation	BCI ON indicator/BCI OFF indicator does not display	<ul style="list-style-type: none"> • Meter display signal (CAN) - Combination meter - ADAS control unit • BCI switch 	BCI system does not activate. Refer to DAS-752. "Description" .	
	<ul style="list-style-type: none"> • BCI system setting is not selectable on the navigation screen • BCI system setting differs from the one set at the previous driving 	<ul style="list-style-type: none"> • ADAS control unit • AV control unit • Combination meter 	BCI system setting cannot be turned ON/OFF. Refer to DAS-752. "Description" .	
	Blind Spot Warning/Blind Spot Intervention indicator does not turn ON	<ul style="list-style-type: none"> • Harness between side radar and Blind Spot Warning/Blind Spot Intervention indicator • Side radar LH/RH • Blind Spot Warning/Blind Spot Intervention indicator 	Perform self-diagnosis of side radar. Refer to DAS-634. "CONSULT Function (SIDE RADAR LEFT)" or DAS-635. "CONSULT Function (SIDE RADAR RIGHT)" .	
	Buzzer does not sound	Buzzer does not sound both in sonar system and Back-up Collision Intervention system	Sonar control unit	Replace the sonar control unit. Refer to AV-309. "Removal and Installation" .
		Buzzer does not sound only in Back-up Collision Intervention system	ADAS control unit	Replace the ADAS control unit. Refer to DAS-72. "Removal and Installation" .

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BCI SYSTEM DOES NOT ACTIVATE

[BCI]

< SYMPTOM DIAGNOSIS >

BCI SYSTEM DOES NOT ACTIVATE

Description

INFOID:000000009817216

The switch does not turn ON

- When the BCI system setting is ON and BCI system is OFF, the BCI ON indicator does not illuminate even if the BCI switch is depressed.

The switch does not turn OFF

- When the BCI system setting is ON and BCI system ON, the BCI OFF indicator does not illuminate even if the BCI switch is depressed.

Diagnosis Procedure

INFOID:000000009817217

1. CHECK BACK-UP COLLISION INTERVENTION SYSTEM SETTING

1. Start the engine.
2. After starting the engine wait for 5 seconds or more.
3. Check that Back-up Collision Intervention system setting on the navigation screen is ON.

Is Back-up Collision Intervention system setting ON?

YES >> GO TO 2.

NO >> Enable the Back-up Collision Intervention system setting.

2. BCI SWITCH INSPECTION

Check that "BCI SWITCH" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the BCI switch circuit. Refer to [DAS-747, "Component Function Check"](#).

3. CHECK BCI ON INDICATOR

1. Turn the BCI system ON/OFF.
2. Check the data monitor item "BCI ON IND" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 7.

4. PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to [MWI-44, "DTC Index"](#).

Is any DTC detected?

YES >> GO TO 6.

NO >> GO TO 5.

5. PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to [DAS-645, "DTC Index"](#).

Is any DTC detected?

YES >> GO TO 6.

NO >> GO TO 8.

6. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

>> GO TO 8.

7. REPLACE ADAS CONTROL UNIT

Replace ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).

BCI SYSTEM DOES NOT ACTIVATE

< SYMPTOM DIAGNOSIS >

[BCI]

>> GO TO 8.

8. CHECK BACK-UP COLLISION INTERVENTION SYSTEM

1. Erase “self-diagnosis result”, and then perform “All DTC Reading” again after performing the action test.
Refer to [DAS-676. "Description"](#).
2. Check that the Back-up Collision Intervention system is normal.

>> INSPECTION END

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DAS

BCI SYSTEM SETTING CANNOT BE TURNED ON/OFF

< SYMPTOM DIAGNOSIS >

[BCI]

BCI SYSTEM SETTING CANNOT BE TURNED ON/OFF

Description

INFOID:0000000098172.18

- BCI system setting is not selectable on the navigation screen.
- Back-up Collision Intervention system setting is not selectable on the navigation screen.

NOTE:

When the ignition switch is in ACC position, Back-up Collision Intervention system settings cannot be changed.

- "Back-up Collision Intervention" is not indicated on the navigation screen.
- The switching between ON and OFF cannot be performed by operating the navigation system.
- The item "Back-up Collision Intervention" on the navigation screen is not active.
- The Back-up Collision Intervention system setting differs from the one set at the previous driving.

NOTE:

Turn OFF the ignition switch and wait for 5 seconds or more.

Diagnosis Procedure

INFOID:0000000098172.19

1. CHECK BACK-UP COLLISION INTERVENTION SYSTEM SETTING

1. Start the engine.
2. Check that the Back-up Collision Intervention system settings is selectable on the navigation screen.

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> GO TO 2.

2. PERFORM THE SELF-DIAGNOSIS

1. Perform self-diagnosis with CONSULT.
2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". Refer to the following.
 - ICC/ADAS: [DAS-645, "DTC Index"](#)
 - MULTI AV: [AV-69, "DTC Index"](#)
 - METER/M&A: [MWI-44, "DTC Index"](#)

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> Inspection End.

3. CHECK DATA MONITOR OF ADAS CONTROL UNIT

Check that "BCI SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

- YES >> Refer to [DAS-620, "On Board Diagnosis Function"](#).
- NO >> GO TO 4.

4. CHECK MULTIFUNCTION SWITCH

Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate properly.

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to [DAS-72, "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BCI]

NORMAL OPERATING CONDITION

Description

INFOID:000000009817220

SONAR HANDLING

- Always keep the sonar sensors clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork over any of the sonar sensors.
- Do not strike or scratch any of the sonar sensors causing physical damage. to a sensor or the surrounding area

SIDE RADAR HANDLING

- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork near the side radar.
- Do not strike or damage the areas around the side radar.

BACK-UP COLLISION INTERVENTION

- The Back-up Collision Intervention system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When backing up, always look in the direction driver will move to ensure it is safe to proceed. Never rely solely on the Back-up Collision Intervention system.
- Using the Back-up Collision Intervention system under some road or weather condition could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The Back-up Collision Intervention system may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the Back-up Collision Intervention system when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Back-up Collision Intervention when certain objects are present such as:
 - Pedestrians, bicycles or animals.
 - A vehicle passing at a speed greater than approximately 24 km/h (15 MPH).
- A radar sensor may not detect approaching vehicles in certain situations:
 - When the vehicle parked beside obstruct the beam of the radar sensor.
 - When the vehicle is parked in an angled parking space.
 - When the vehicle is parked on an inclined ground.
 - When the vehicle turns around into own vehicle's aisle.
 - When the angle formed by your vehicle and approaching vehicle is small.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The sonar system may not detect:
 - Small or moving object.
 - Wedge-shaped objects.
 - Object closer to the bumper than 30 cm (10 inch).
 - Thin objects such as rope, wire, chain, etc...
- The brakes engaged by the BCI system is relatively weaker on a slope than flat ground. On a steep slope, the system may not function properly.
- Do not use the BCI system under the following conditions because the system may not function properly:
 - When driving with a tire that is not the within normal tire condition (example: tire wear, low pressure, spare tire, chain, non-standard wheels).
 - When the vehicle is equipped with non-original brake parts or suspension parts.

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SIDE RADAR

< REMOVAL AND INSTALLATION >

[BCI]

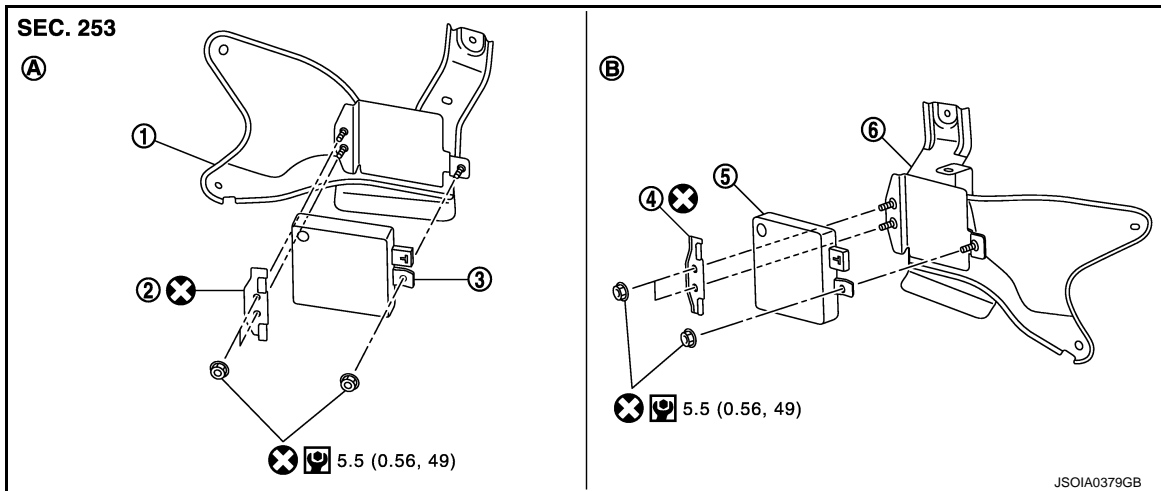
REMOVAL AND INSTALLATION

SIDE RADAR

Removal and Installation

INFOID:000000009817221

EXPLODED VIEW



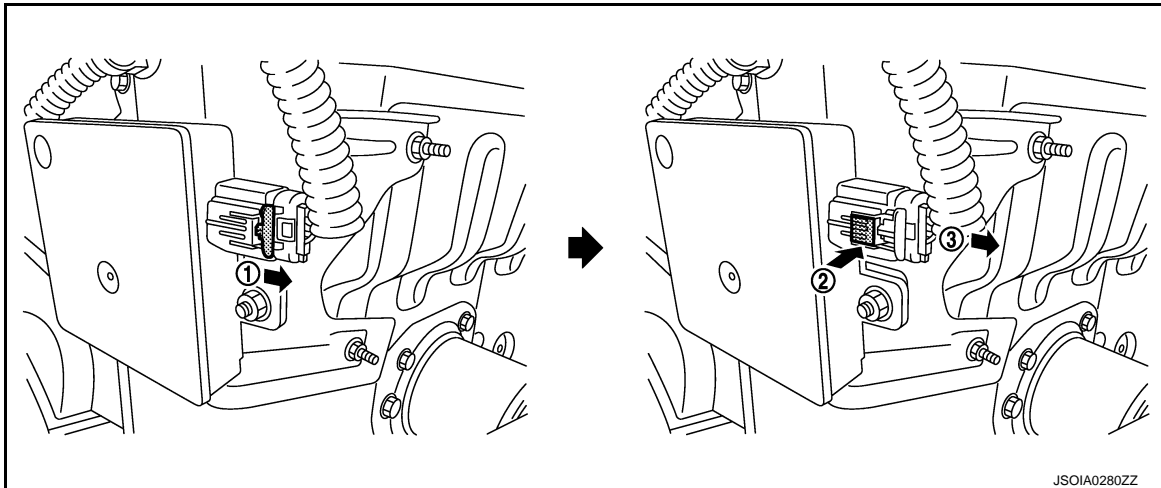
- | | | |
|------------|------------------|------------------|
| 1. Bracket | 2. Bracket | 3. Side radar LH |
| 4. Bracket | 5. Side radar RH | 6. Bracket |
| A. LH side | B. RH side | |

Refer to [GI-4, "Components"](#) for symbol makes in the figure.

REMOVAL AND INSTALLATION

Removal

1. Remove the rear bumper fascia assembly. Refer to [EXT-18, "Removal and Installation"](#).
2. Remove the side radar connector.



NOTE:

This illustration is an example.

3. Remove the mounting nuts to remove the side radar RH/LH.

Installation

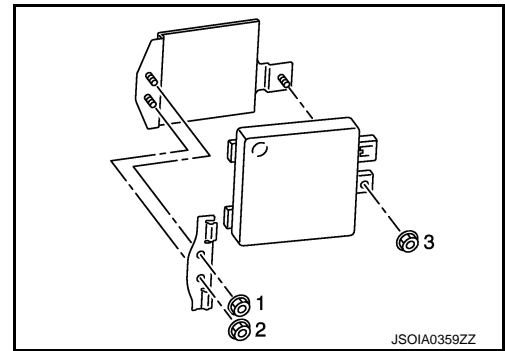
Note the following, and install in the reverse order of removal.

SIDE RADAR

[BCI]

< REMOVAL AND INSTALLATION >

- Tighten mounting nuts in the numerical order as shown in the figure.
- Always lock the side radar connector.



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SONAR SENSOR

< REMOVAL AND INSTALLATION >

[BCI]

SONAR SENSOR

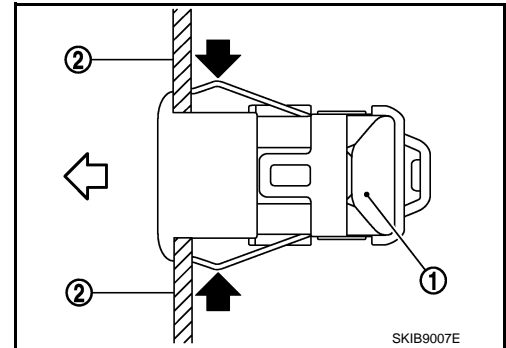
Removal and Installation

INFOID:000000009817222

REMOVAL

1. Press the spring fixing the sonar sensor (1) (black arrows).
2. Remove the sonar sensor from front bumper or rear bumper to the white arrow direction.
3. Disconnect sonar sensor connector to remove sonar sensor.

(2) : Bumper



INSTALLATION

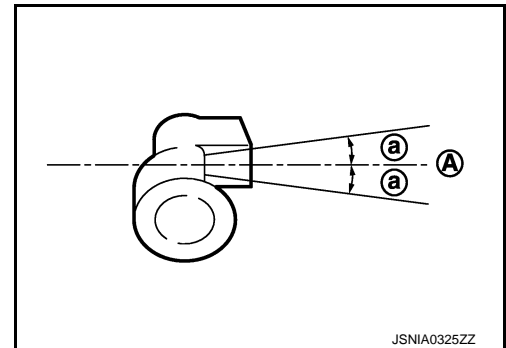
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within $\pm 10^\circ$ from the horizontal position when assembling the bumper.

A : Horizontal position

a : 10°



REAR CAMERA

< REMOVAL AND INSTALLATION >

[BCI]

REAR CAMERA

Removal and Installation

INFOID:000000009817223

REMOVAL

1. Remove back door finisher center upper. Refer to [EXT-45. "Exploded View"](#).
2. Remove rear camera mounting screws to remove rear camera.

INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-142. "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Special Repair Requirement"](#).

CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

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BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

< REMOVAL AND INSTALLATION >

[BCI]

BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

Removal and Installation

INFOID:000000009817224

REMOVAL AND INSTALLATION

Removal

1. Remove the front door sash inner cover. Refer to [INT-14, "Removal and Installation"](#).
2. Remove the Blind Spot Warning/Blind Spot Intervention indicator.

Installation

Install in the reverse order of removal.

BCI SWITCH

Removal and Installation

INFOID:000000009817225

REMOVAL

1. Remove the instrument lower panel (LH). Refer to [IP-14, "Removal and Installation"](#).
2. Remove BCI switch from instrument driver lower panel.

NOTE:

BCI switch and warning systems switch are integrated.

INSTALLATION

Install in the reverse order of removal.

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