SECTION DAS
DRIVER ASSISTANCE SYSTEM

CONTENTS

PRECAUTION

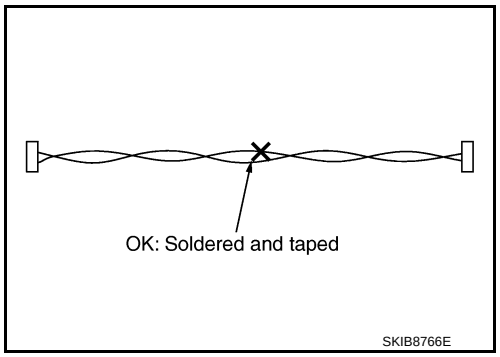
PRECAUTIONS

Precautions For Harness Repair

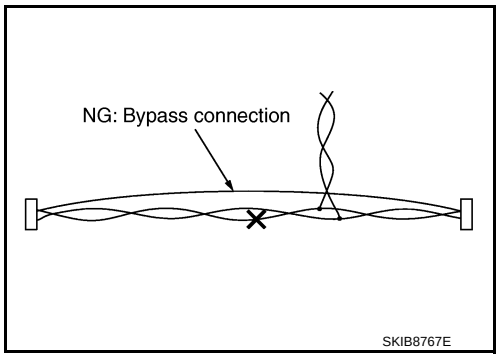
INFOID:0000000008141515

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

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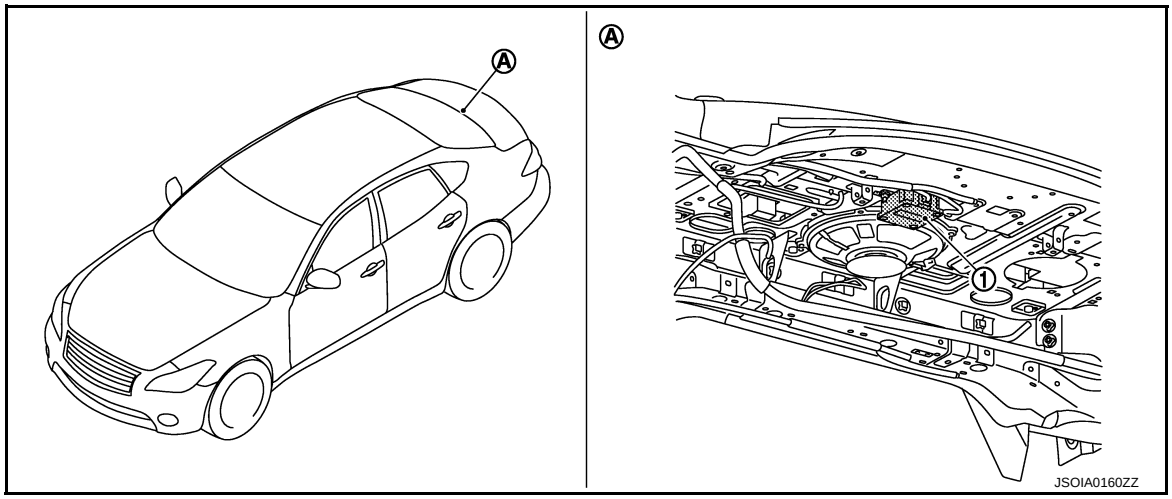


1. ADAS control unit
A. Trunk side of rear parcel shelf

Component Description

INFOID:0000000008141517

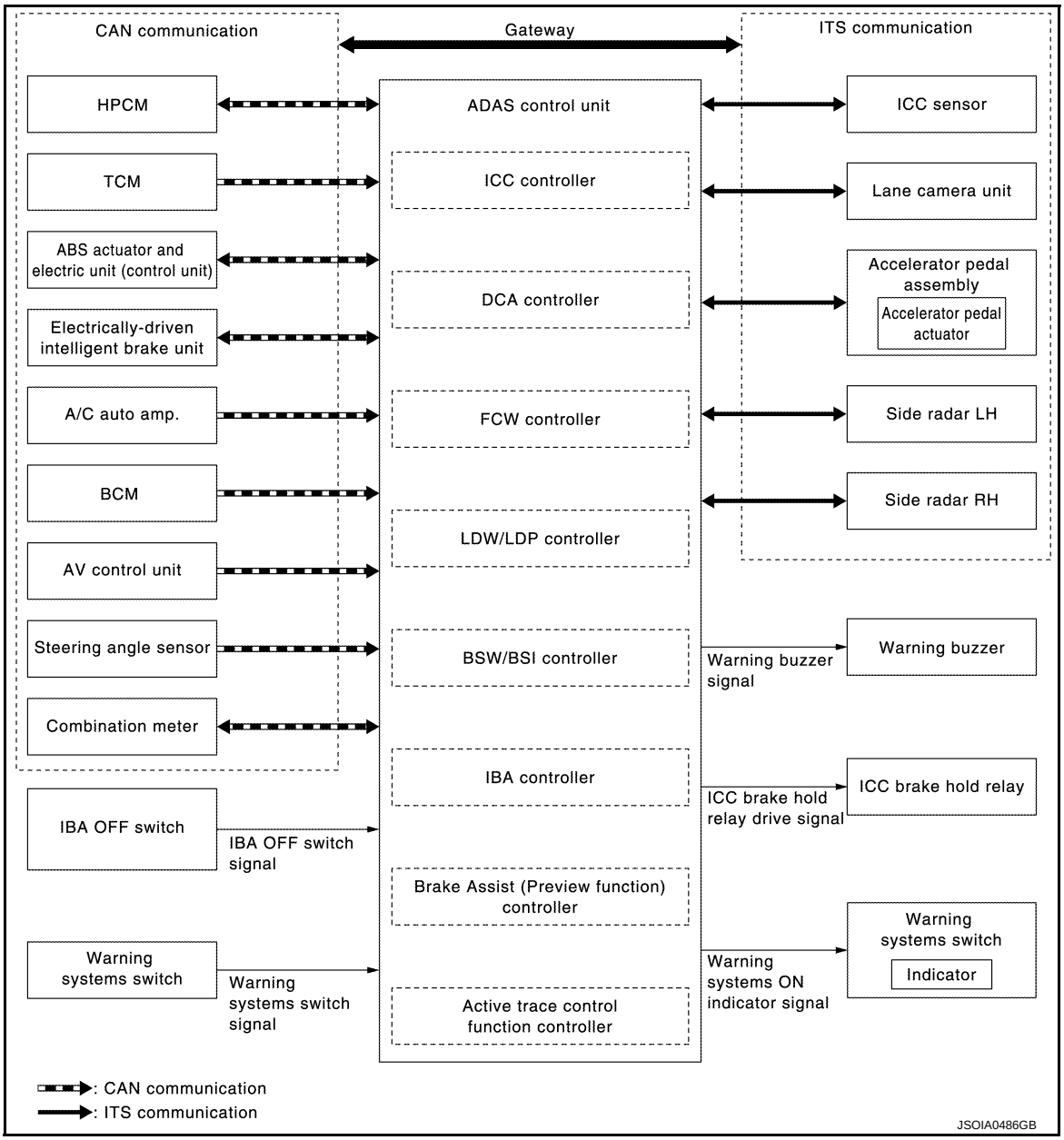
Component	Description
ADAS control unit	• Controls each system, based on ITS communication signals received from the ICC sensor, the accelerator pedal actuator, the lane camera unit, and the side radar LH/RH and CAN communication signals received from each control unit • Transmits signals necessary for control between CAN communication and ITS communication

SYSTEM

System Description

INFOID:0000000008141518

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
HPCM	CAN communication	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
		ICC steering switch signal: Main switch signal	Receives the operational state of the ICC steering switch
		ICC steering switch signal: SET/COAST switch signal	
		ICC steering switch signal: CANCEL switch signal	
		ICC steering switch signal: RESUME/ACCELERATE switch signal	
		ICC steering switch signal: DISTANCE switch signal	
		ICC steering switch signal: Dynamic driver assistance switch signal	
		READY condition signal	Receives READY state of vehicle
		Engine speed signal	Receives engine speed
		ECO pedal reaction force control signal	Receives a reaction force limiting value of the accelerator pedal during ECO mode (ECO pedal ON) selected by operating the drive mode select switch
		Stop lamp switch signal	Receives an operational state of the brake pedal
		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 select lever position
		Output shaft revolution signal	Receives the number of revolutions of output shaft
		Drive mode select signal	Receives a drive mode state of HPCM and TCM
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
		Wheel speed signal	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

Transmit unit	Signal name		Description
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
A/C auto amp.	CAN communication	ECO mode signal	Receives a mode selection state of the drive mode select switch
		SNOW mode signal	
		SPORT mode signal	
		STANDARD mode signal	
Electrically-driven intelligent brake unit	CAN communication	Driver brake operation detection signal	Receives driver's brake operation state
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
Lane camera unit	ITS communication	Detected lane condition signal	Receives detection results of lane marker
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

Output Signal Item

Reception unit	Signal name		Description
HPCM	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 HPCM
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 (via electrically-driven intelligent brake unit)
Electrically-driven intelligent brake unit	CAN communication	Active trace control signal	Transmits an active trace control signal necessary to control the active trace control function
		Brake fluid pressure control signal	Transmits a brake fluid pressure control signal to activates the brake

Reception unit	Signal name			Description
Combination meter	CAN communication	Meter display signal	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	
			MAIN switch indicator signal	
			DCA system switch indicator signal	
		BSW/BSI warning lamp signal		Transmits a BSW/BSI warning lamp signal to turn ON the BSW/BSI warning lamp
		BSI ON indictor lamp signal		Transmits a BSI ON indictor lamp signal to turn ON the BSI ON indictor lamp
		LDP ON indicator lamp signal		Transmits a LDP ON indicator lamp signal to turn ON the LDP ON indicator lamp
		Lane departure warning lamp signal		Transmits a lane departure warning lamp signal to turn ON the lane departure warning lamp
		ICC warning lamp signal		Transmits a ICC warning lamp signal to turn ON the ICC system warning lamp
		IBA OFF indicator lamp signal		• 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 turn ON the buzzer of the following systems: • 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 (ECO pedal reaction force control signal)		• Transmits a target actuation force value calculated by the ADAS control unit • Transfer a signal received from HPCM (ECO pedal ON)
Side radar LH, RH	ITS communication	Vehicle speed signal		Transmits a vehicle speed calculated by the ADAS control unit
		BSW/BSI indicator signal		Transmits a BSW/BSI indicator signal to turn ON the BSW/BSI indicator
		BSW/BSI indicator dimmer signal		Transmits a BSW/BSI indicator dimmer signal to dimmer BSW/BSI indicator
ICC brake hold relay	ICC brake hold relay drive signal			Activates the brake hold relay and turns ON the stop lamp

Reception unit	Signal name	Description
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

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 the 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 (BSI)
- Active trace control function

System	Reference
Intelligent Cruise Control (ICC)	CCS-12, "System Description"
Distance Control Assist (DCA)	DAS-61, "System Description"
Intelligent Brake Assist (IBA)	BRC-179, "INTELLIGENT BRAKE ASSIST : System Description"
Brake Assist (with preview function)	BRC-172, "BRAKE ASSIST (WITH PREVIEW FUNCTION) : System Description"
Forward Collision Warning (FCW)	DAS-206, "System Description"
Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)	• LDW: DAS-258, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description" • LDP: DAS-262, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description"
Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)	• BSW: DAS-390, "BLIND SPOT WARNING (BSW) SYSTEM : System Description" • BSI: DAS-395, "BLIND SPOT INTERVENTION (BSI) SYSTEM : System Description"
Active trace control function	BR-28, "ACTIVE STABILITY ASSIST : Active Trace Control Function"

Fail-safe

INFOID:0000000008141519

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
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel

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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

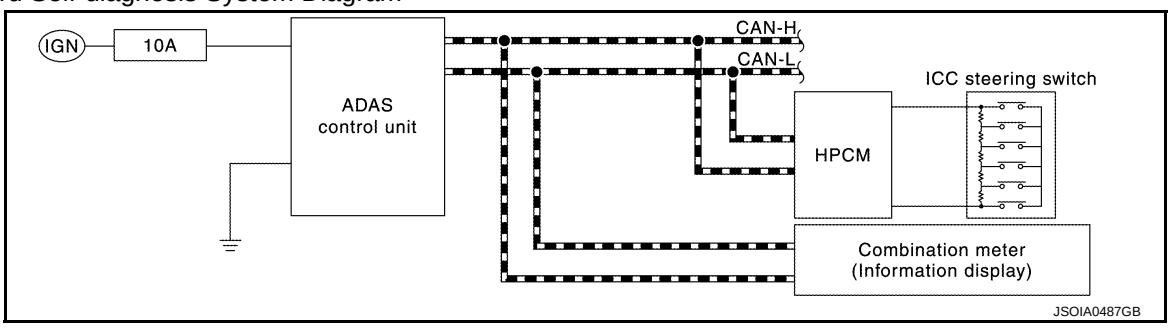
On Board Diagnosis Function

INFOID:0000000008141520

DESCRIPTION

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

On Board Self-diagnosis System Diagram



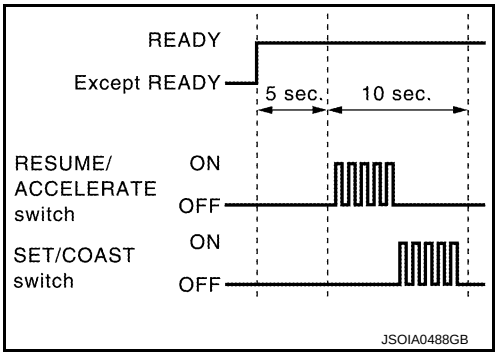
METHOD OF STARTING

NOTE:

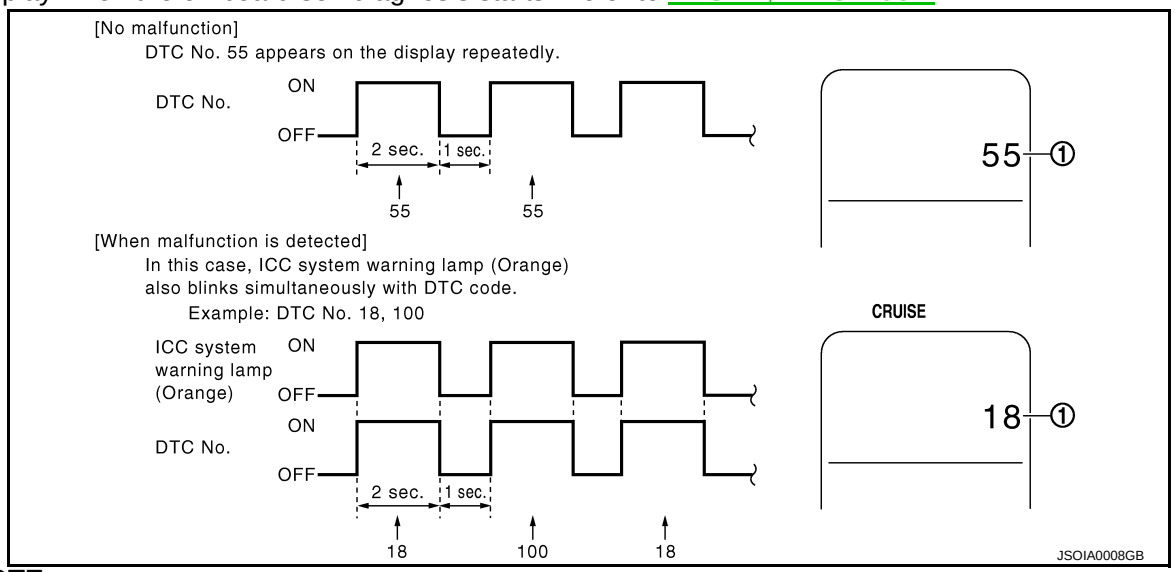
Start condition of on board self-diagnosis

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

1. Turn the ignition switch OFF.
2. Set the vehicle to READY.
3. Wait for 5 seconds after setting the vehicle to READY. 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 setting the vehicle to READY, 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-42, "DTC Index".



NOTE:

- 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.

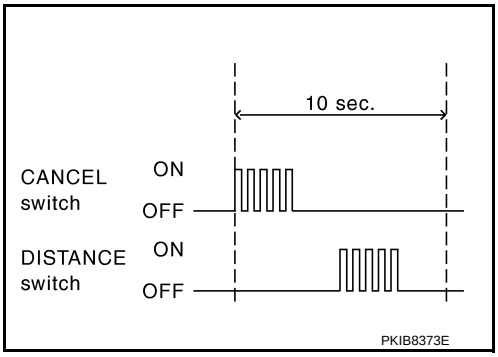
WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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-35, "On Board Diagnosis Function".
ICC steering switch malfunction		Perform the inspection for DTC “C1A06”. Refer to CCS-83, "DTC Logic".
Harness malfunction between ICC steering switch and HPCM		
HPCM malfunction		
ADAS control unit malfunction		• Check power supply and ground circuit of ADAS control unit. Refer to DAS-55, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for “ICC/ADAS”with CONSULT, and then check the malfunctioning parts. Refer to DAS-42, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Set the vehicle to READY, 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:0000000008141521

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

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems • Vehicle-to-vehicle control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems • Lane Departure Prevention (LDP) • Blind Spot Intervention (BSI)

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	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	×		HPCM 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	×	×	Shifting of the drive mode selector to SNOW position
OP SW DOUBLE TOUCH	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	Vehicle speed lower than 24 km/h (15 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
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	×	×	There is a malfunction in the function controlling the brake according to a command issued from the ADAS control unit to the electrically-driven intelligent brake unit
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
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
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	×		Shifting of the drive mode selector to SNOW position
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
BSI WARNING	×		BSI system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during BSI system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
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 BSI 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		×	Shifting of the drive mode selector to SNOW position
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 BSI system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

SELF DIAGNOSTIC RESULT

Refer to DAS-42, "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)	Description
MAIN SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×				Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×			Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from brake switch signal (HPCM transmits brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (HPCM 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 (HPCM 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 wheel speed signal 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 (HPCM transmits engine speed signal through CAN communication)
PRESS SENS [bar]	×	×			Indicates a brake fluid pressure command value
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
RELEASE SW NO [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
RELEASE SW NC [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)
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)
THRTL OPENING [%]	×	×			Indicates throttle position read from ADAS control unit through CAN communication (HPCM 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]	×				Indicates the active mode of ICC
SET DISP IND [Off]	×				**NOTE:** The item is displayed, but it is not monitored
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 (HPCM 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
LDW ON LAMP [On/Off]			×		Indicates [On/Off] status of waning 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
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 communica-tion)
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 (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 communi-cation (Lane camera unit transmits a detected lane condition signal via ITS communica-tion)
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 (BSI)
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 the DCA system. The 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
BSI SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of BSI system. BSI 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
DRIVE MODE STATS [STD/SPORT/ECO/ SNOW/MID/ERROR]	×	×	×	×	Indicates a drive mode selector select position judged from a drive mode select switch position signal read by the ADAS control unit via CAN communication (The A/C auto amp. transmits a switch position signal of the drive mode select switch signal 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 BSW/BSI warning lamp output
BSI ON IND [On/Off]				×	Indicates [On/Off] status of BSI ON indicator output
BSW SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSW system
BSI SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSI system

ACTIVE TEST

CAUTION:

- **To prevent the possibility of accident, never perform “Active Test” while driving the vehicle.**
- **To prevent the possibility of accident, shift the selector lever to “P” position, and then perform the test.**

NOTE:

- The “Active Test” cannot be performed when the following systems warning lamp is illuminated.
- ICC system warning lamp
- Lane departure warning lamp
- BSW/BSI warning lamp
- IBA OFF indicator lamp (IBA system ON)

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 • 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

Test item	Description
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention (BSI)
WARNING SYSTEM IND	The 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 BSW/BSI warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The BSI ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	• MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test • 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 • 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	—

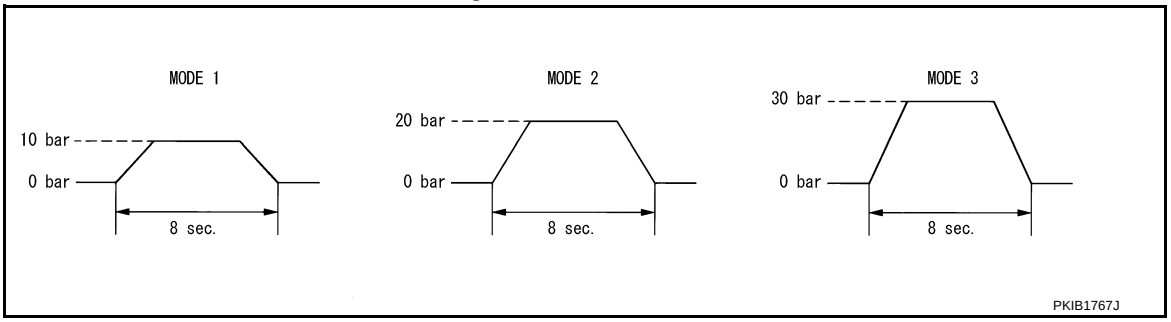
BRAKE ACTUATOR

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the electrically-driven intelligent brake 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:

- **To prevent the possibility of accident, 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.)**

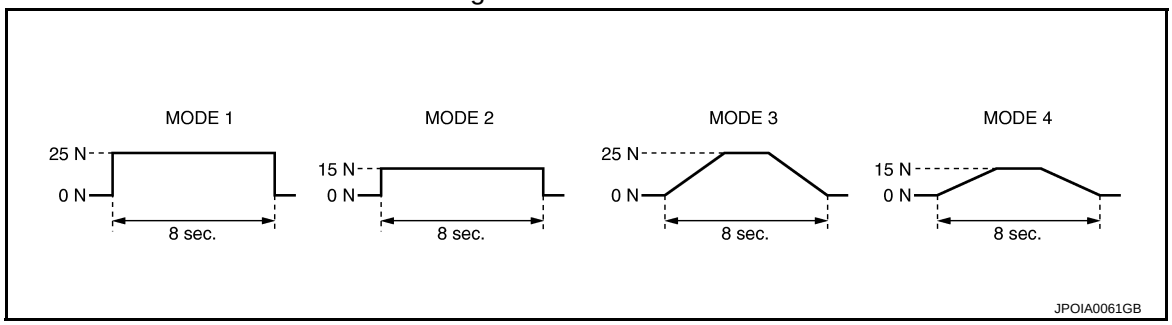
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can performed only when the vehicle is in READY state.

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 performed only when the vehicle is in READY state.

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

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

BSI ON INDICATOR

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

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000008141522

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	READY state	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Set the vehicle to READY 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	Set the vehicle to READY and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Set the vehicle to READY 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	Set the vehicle to READY 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

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	READY state	When the buzzer of the following system operates • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system	On
		When the buzzer of the following system not operates • 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
PRESS SENS	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When the brake is in the deactivated state by the system	0.0
		When the brake is in the activated state by the system	Displays the brake pressure command value
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	READY state	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
RELEASE SW NO	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
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	READY state	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	READY state	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

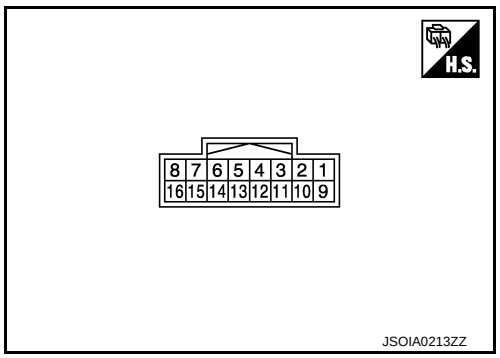
Monitor item	Condition		Value/Status
PWR SUP MONI	READY state		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	READY state	Depress accelerator pedal	Displays the throttle position
GEAR	While driving		Displays the gear position
MODE SIG	When ICC system is deactivated		Off
	When vehicle-to-vehicle distance control mode is activated		ICC
SET DISP IND	**NOTE:** The item is indicated, but not monitored		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	Set the vehicle to READY and press dynamic driver assistance switch (When DCA 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	On
		When the FCW system is OFF	Off
APA TEMP	READY state		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	On
		When the LDW system is OFF	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

Monitor item	Condition		Value/Status
LDP ON IND	Set the vehicle to READY 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 OUTPUT	Drive the vehicle and activate the LDW/LDP system or BSW/BSI system	When the buzzer of the following system operates • LDW/LDP system • BSW/BSI system	On
		When the buzzer of the following system does not operate • LDW/LDP system • BSW/BSI system	Off
LDP SYSTEM ON	Set the vehicle to READY 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	Set the vehicle to READY 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 BSI system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	• READY state • 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 and activate the LDP system	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

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
DRIVE MODE STATS	Ignition switch ON	When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
		When position of drive mode select switch is in following states • In the middle of SNOW-ECO • In the middle of ECO-STANDARD • In the middle of STANDARD-SPORTS	Mid
		A signal other than those above is input	ERROR
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	BSW/BSI warning lamp ON	On
		BSW/BSI warning lamp OFF	Off
BSI ON IND	Ignition switch ON	BSI ON indicator ON	On
		BSI ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON	On
		When the BSW system is OFF	Off
BSI SYSTEM ON	Set the vehicle to READY and press dynamic driver assistance switch (When BSI system setting is ON)	When the BSI system is ON	On
		When the BSI system is OFF	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	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 (BR)		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 (O)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (SB)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At “STOP LAMP” test of “Active test”	0 V
6 (B/R)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (P)		ITS communication-L	—	—	—	—
12 (W)		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 (GR)		Ignition power supply	Input	Ignition switch ON		Battery voltage

Fail-safe

INFOID:0000000008141523

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
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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

DTC Inspection Priority Chart

INFOID:0000000008141524

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

Priority	Detected items (DTC)
1	• U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

Priority	Detected items (DTC)
4	• 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 • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • C1A1A: HPCM CIRCUIT • C1A2A: ICC SEN PWR SUP CIR • C1A2B: ELECTRICAL BRAKE MODE MALF • C1A2C: ELECTRICAL BRAKE PWR SUPLY CIRC • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • 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 INCMP • C1B03: CAM ABNRML TMP DETCT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0424: HVAC 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 • 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 • U151A: ELECTRICAL BRAKE CAN CIRCUIT 2 • U151B: ELECTRICAL BRAKE CAN CIRCUIT 1 • U151C: ELECTRICAL BRAKE CAN CIRCUIT 3 • U151D: HPCM CAN CIRCUIT 2 • U151E: HPCM CAN CIRCUIT 1 • U151F: HPCM CAN CIRCUIT 3
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000008141525

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: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-50
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-51
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-51
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-76
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-78
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	A, B, C, D, E, F	CCS-79
C1A06	6	OPERATION SW BIRC	ON		ON	ON	A, D, E, F	CCS-83
C1A12	12	LASER BEAM OFFCN-TR	ON	ON			A, B, C, D	CCS-85
C1A13	13	STOP LAMP RLY FIX	ON	ON			A, B, C, D	CCS-86
C1A15	15	GEAR POSITION	ON	ON	ON	ON	A, B, C, D, E, F	CCS-92
C1A16	16	RADAR STAIN	ON	ON			A, B, C, D	CCS-94
C1A17	17	ICC SENSOR MALF	ON	ON			A, B, C, D	CCS-96
C1A18	18	LASER AIMING INCMP	ON	ON			A, B, C, D	CCS-97
C1A1A	19	HPCM CIRCUIT	ON		ON	ON	A, D, E, F	CCS-99
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON			A, B, C, D	CCS-100
C1A24	24	NP RANGE	ON	ON	ON	ON	A, B, C, D, E, F	CCS-102
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON			A, B, C, D	CCS-104

Systems for fail-safe
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- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A2B	23	ELECTRICAL BRAKE MODE MALF	ON	ON			A, B, C, D	CCS-105
C1A2C	20	ELECTRICAL BRAKE PWR SUPLY CIR	ON	ON			A, B, C, D	CCS-106
C1A33	33	CAN TRANSMISSION ERR	ON				A, D, G	CCS-107
C1A34	34	COMMAND ERROR	ON				A, D, G	CCS-108
C1A35	35	APA CIR	ON				A, D	CCS-109
C1A36	36	APA CAN COMM CIR	ON				A, D	CCS-110
C1A37	133	APA CAN CIR 2	ON				A, D	CCS-111
C1A38	132	APA CAN CIR 1	ON				A, D	CCS-112
C1A39	39	STRG SEN CIR	ON	ON		ON	A, B, C, D, F, G	CCS-113
C1A40	40	SYSTEM SW CIRC		ON			B, C	CCS-115
C1B00	81	CAMERA UNIT MALF			ON	ON	E, F	DAS-336
C1B01	82	CAM AIMING INCMP			ON	ON	E, F	DAS-338
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK	E, F	DAS-340
C1B53	84	SIDE RDR R MALF				ON	F	DAS-482
C1B54	85	SIDE RDR L MALF				ON	F	DAS-483
C1F01	91	APA MOTOR MALF	ON				A, D	CCS-118
C1F02	92	APA C/U MALF	ON				A, D	CCS-119
C1F05	95	APA PWR SUPLY CIR	ON				A, D	CCS-120
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	A, B, C, D, E, F, G	CCS-122
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	A, B, C, D, F, G	CCS-124
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			A, B, C, D	CCS-126
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F	CCS-127
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-129

Systems for fail-safe
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- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U0424	156	HVAC CAN CIR 1						BR-232
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	A, B, C, D, F, G	CCS-131
U1000[NOTE]	100	CAN COMM CIRCUIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-52
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-53
U1500	145	CAM CAN CIR 2			ON	ON	E, F	DAS-354
U1501	146	CAM CAN CIR 1			ON	ON	E, F	DAS-355
U1502	147	ICC SEN CAN COMM CIR	ON	ON			A, B, C, D	CCS-139
U1503	150	SIDE RDR L CAN CIR 2				ON	F	DAS-503
U1504	151	SIDE RDR L CAN CIR 1				ON	F	DAS-504
U1505	152	SIDE RDR R CAN CIR 2				ON	F	DAS-505
U1506	153	SIDE RDR R CAN CIR 1				ON	F	DAS-506
U1507	154	LOST COMM (SIDE RDR R)				ON	F	DAS-507
U1508	155	LOST COMM (SIDE RDR L)				ON	F	DAS-508
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	CCS-137
U150E	160	BCM CAN CIRC 3	ON		ON	ON	A, D, E, F	CCS-138
U150F	161	AV CAN CIRC 3						DAS-54
U1512	162	HVAC CAN CIRC3			ON	ON	E, F	DAS-356
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	CCS-140
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	A, B, C, D, F, G	CCS-141
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			A, B, C, D	CCS-142
U1516	166	CAM CAN CIRC 3			ON	ON	E, F	DAS-358
U1517	167	APA CAN CIRC 3	ON				A, D	CCS-143
U1518	168	SIDE RDR L CAN CIRC 3				ON	F	DAS-513
U1519	169	SIDE RDR R CAN CIRC 3				ON	F	DAS-514
U151A	170	ELECTRICAL BRAKE CAN CIRCUIT 2	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136

Systems for fail-safe
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- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U151B	171	ELECTRICAL BRAKE CAN CIRCUIT 1	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136
U151C	172	ELECTRICAL BRAKE CAN CIRCUIT 3	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136
U151D	173	HPCM CAN CIRCUIT 2	ON		ON	ON	A, D, E, F	CCS-136
U151E	174	HPCM CAN CIRCUIT 1	ON		ON	ON	A, D, E, F	CCS-136
U1501F	175	HPCM CAN CIRCUIT 3	ON		ON	ON	A, D, E, F	CCS-136

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.

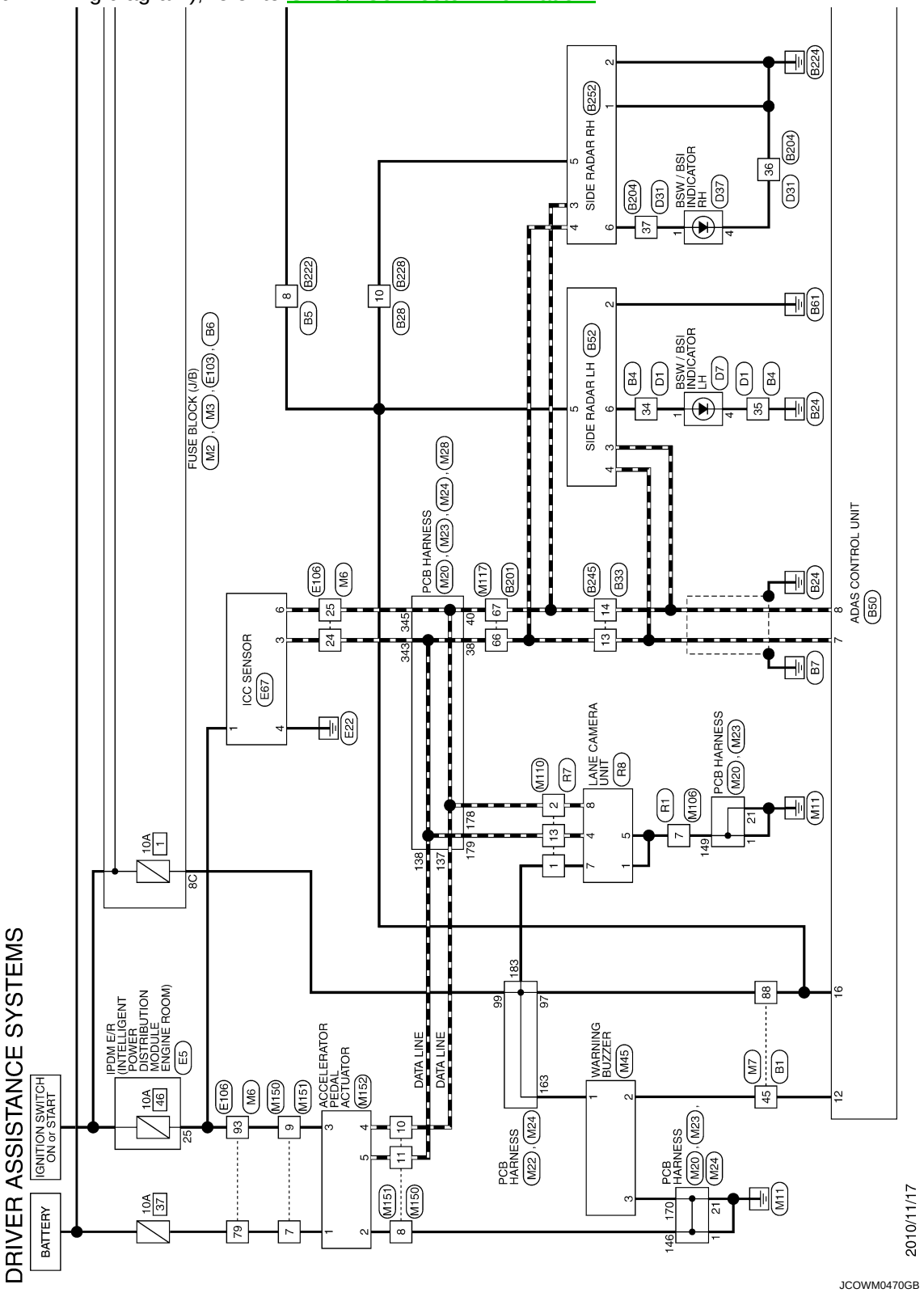
WIRING DIAGRAM

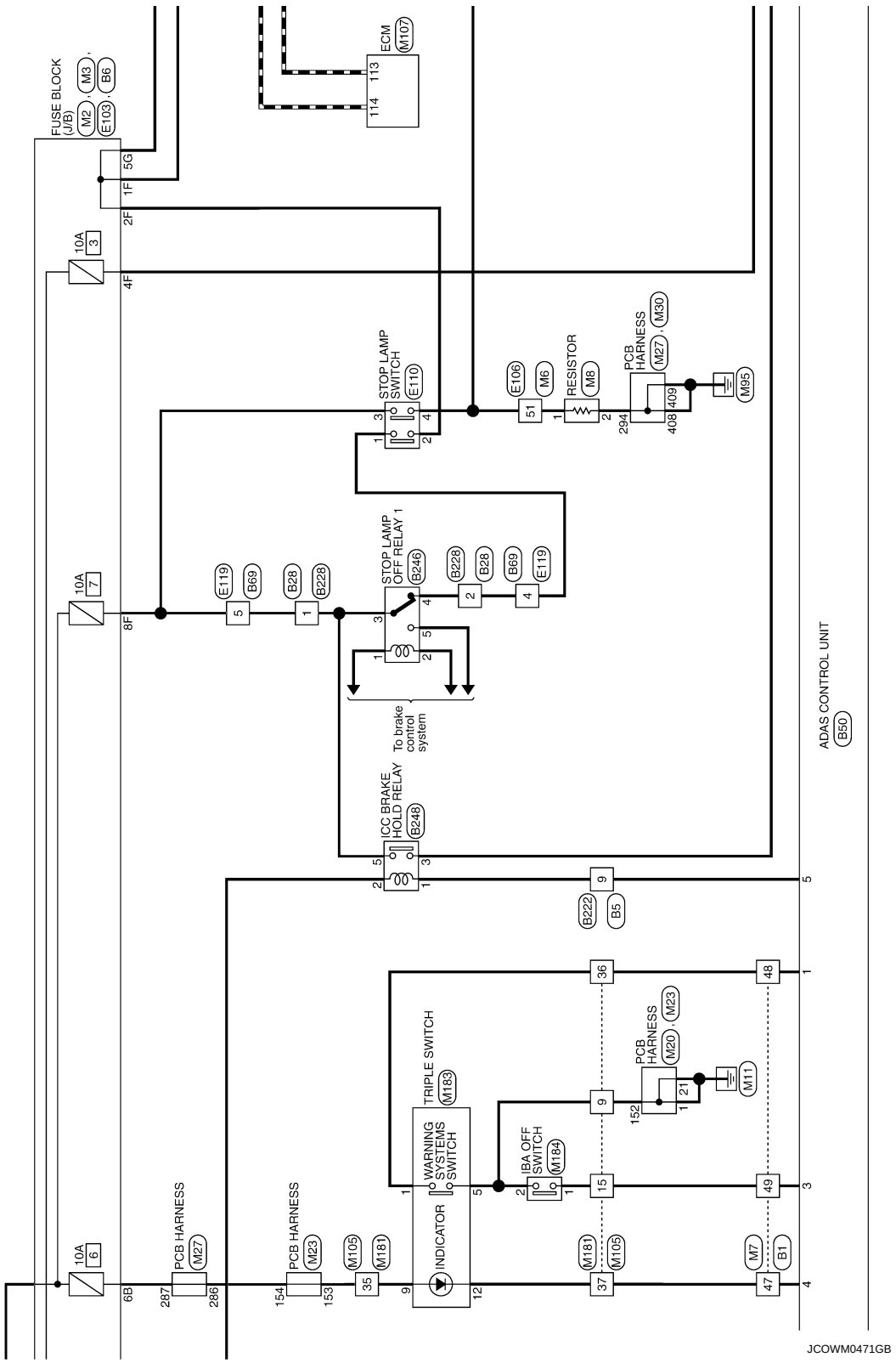
DRIVER ASSISTANCE SYSTEMS

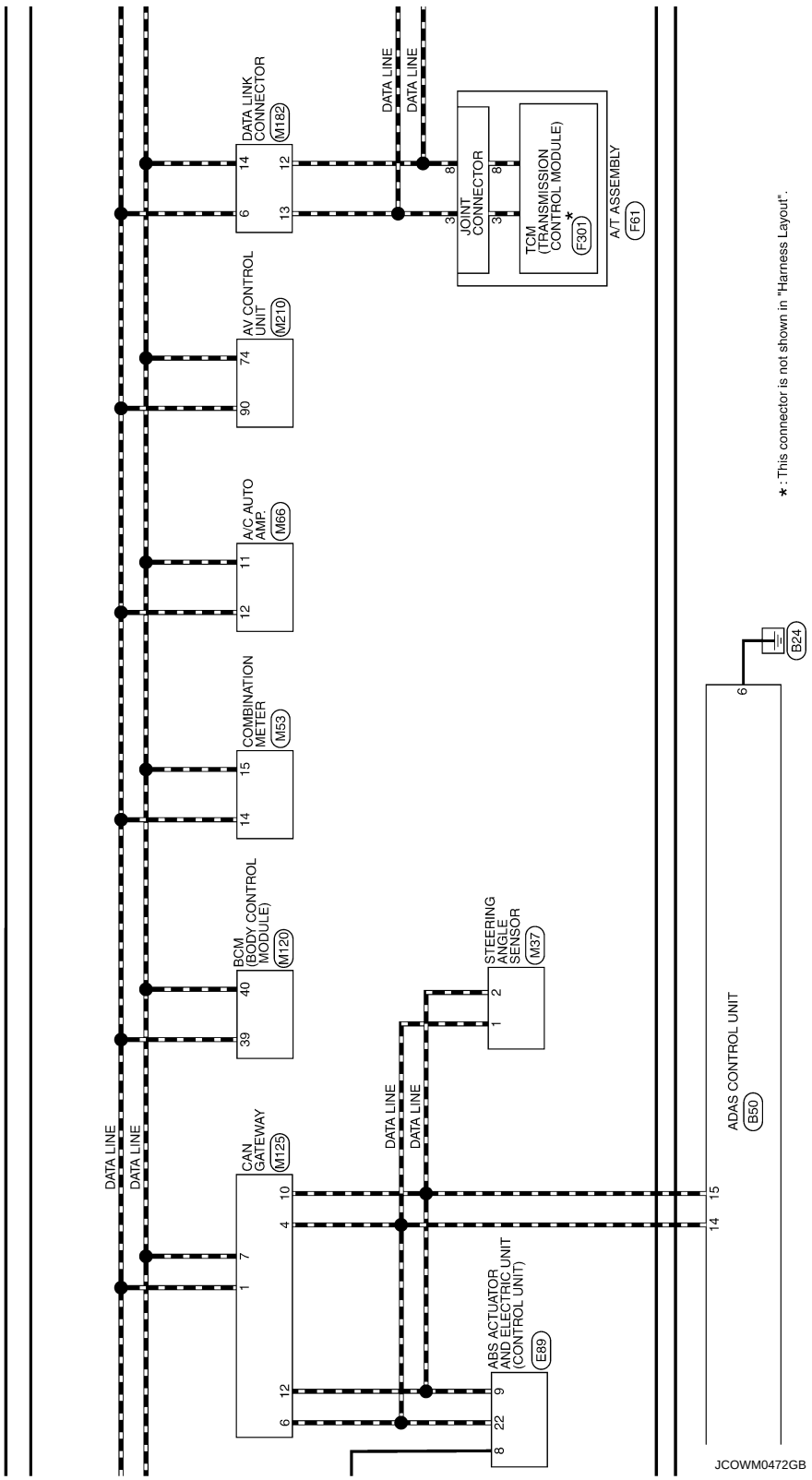
Wiring Diagram

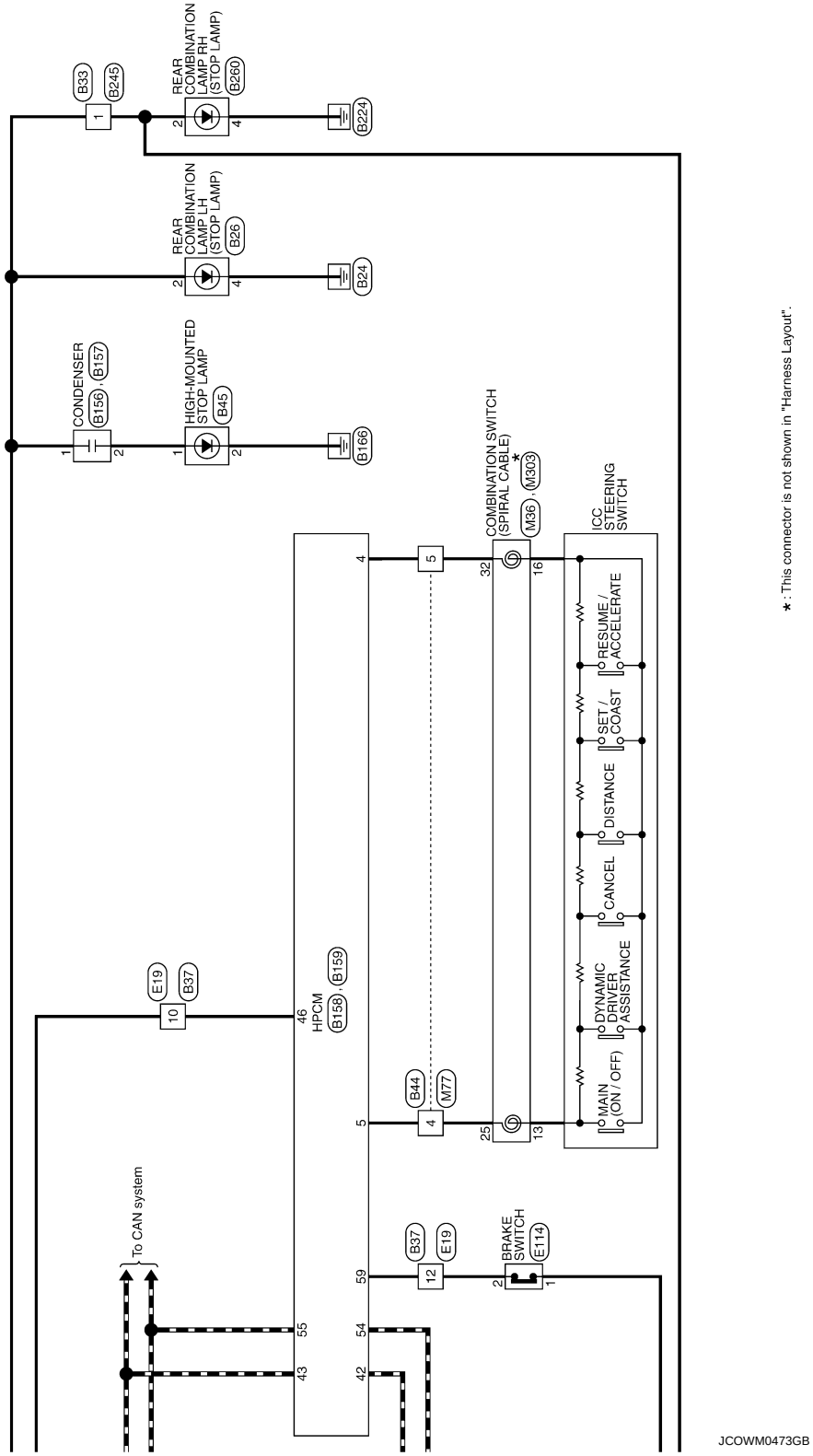
INFOID:0000000008141526

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-13, "Connector Information".




FUSE BLOCK (J/B) M2, M3, B6, E103
ECM M107
113
114
5G
1F
2F
10A 3
4F
STOP LAMP SWITCH E110
E106 M6
RESISTOR M8
PCB HARNESS M27, M30
M95
51
294
408
409
10A 7
8F
E119 B69
B28 B228
STOP LAMP OFF RELAY 1 B246
B228 B28 B69 E119
To brake control system
ICC BRAKE HOLD RELAY B248
ADAS CONTROL UNIT B50
B222 B5
10A 6
6B
PCB HARNESS M27
287
286
PCB HARNESS M23
154
153
M105 M181
35
INDICATOR
9
12
TRIPLE SWITCH M183
WARNING SYSTEMS SWITCH
IBA OFF SWITCH M184
PCB HARNESS M20, M23
M11
152
36
48
15
49
37
47
M181 M105
M7 B1
JCOWM0471GB


DATA LINK CONNECTOR M182
DATA LINE
JOINT CONNECTOR
TCM (TRANSMISSION CONTROL MODULE) F301
A/T ASSEMBLY F61
AV CONTROL UNIT M210
A/C AUTO AMP. M66
COMBINATION METER M53
BCM (BODY CONTROL MODULE) M120
STEERING ANGLE SENSOR M37
CAN GATEWAY M125
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E89
ADAS CONTROL UNIT B50
B24
★: This connector is not shown in "Harness Layout".
JCOWM0472GB


REAR COMBINATION LAMP RH (STOP LAMP)
B260
B33
B245
B224
REAR COMBINATION LAMP LH (STOP LAMP)
B26
B24
CONDENSER
B156
B157
HIGH-MOUNTED STOP LAMP
B45
B166
COMBINATION SWITCH (SPIRAL CABLE)*
M36, M303
ICC STEERING SWITCH
RESUME / ACCELERATE
SET / COAST
DISTANCE
CANCEL
DYNAMIC DRIVER ASSISTANCE
MAIN (ON / OFF)
HPCM
B158, B159
E19
B37
B44
M77
To CAN system
BRAKE SWITCH
E114
*: This connector is not shown in "Harness Layout".
JCOWM0473GB

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:0000000008141527

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. Set the vehicle to READY.
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-50, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141528

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-42, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:0000000008141529

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	• 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. Set the vehicle to READY.
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-51, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141530

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to DAS-55, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> Repair or replace the malfunctioning parts.

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000008141531

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-36, "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:0000000008141532

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	• CAN communication system • ITS communication system

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

Diagnosis Procedure

INFOID:0000000008141533

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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000008141534

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

DTC Logic

INFOID:0000000008141535

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:0000000008141536

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-56, "Removal and Installation".
NO >> INSPECTION END

U150F AV CAN 3

DTC Logic

INFOID:0000000008141537

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-52, "DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the DCA, LDP, or BSI 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-54, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141538

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-52, "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-169, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000008141539

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal			Condition	Voltage (Approx.)
(+)		(–)		
ADAS control unit		Ground	Ignition switch	
Connector	Terminal			
B50	16		OFF	0 V
			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the ADAS control unit power supply circuit.

3.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		
B50	6		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair the ADAS control unit ground circuit.

REMOVAL AND INSTALLATION

ADAS CONTROL UNIT

Removal and Installation

INFOID:0000000008141540

REMOVAL

1. Remove the rear parcel shelf finisher. Refer to INT-41, "Removal and Installation".
2. Remove the trunk finisher front. Refer to INT-52, "TRUNK FINISHER FRONT : Removal and Installation".
3. Disconnect ADAS control unit connector.
4. Remove mounting bolts from ADAS control unit.
5. Remove ADAS control unit.

INSTALLATION

Install in the reverse order of removal.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000008141541

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. 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.

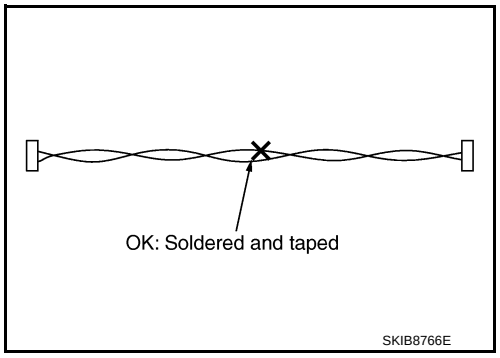
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the 12V battery, and wait at least 3 minutes before performing any service.**

Precautions For Harness Repair

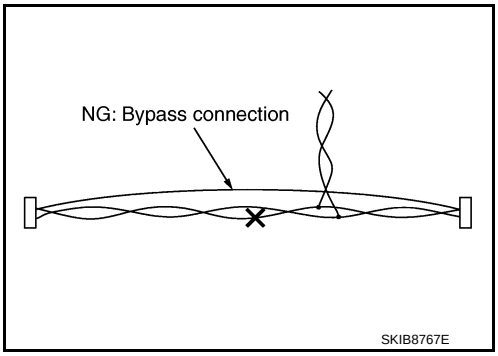
INFOID:0000000008141542

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.



Precautions Concerning On-board Servicing of Hybrid Systems

INFOID:0000000008141543

CAUTION:
Be sure to turn the ignition switch OFF before performing inspection and servicing inside the engine compartment or underneath the vehicle. If the ignition switch is ON (vehicle READY state), even if the engine is stopped, the conditions of the vehicle may cause the engine to start automatically.
If it is necessary to continually operate the engine during inspection or servicing, use the designated inspection mode. HBC-89, "Description".

DCA System Service

INFOID:0000000008141544

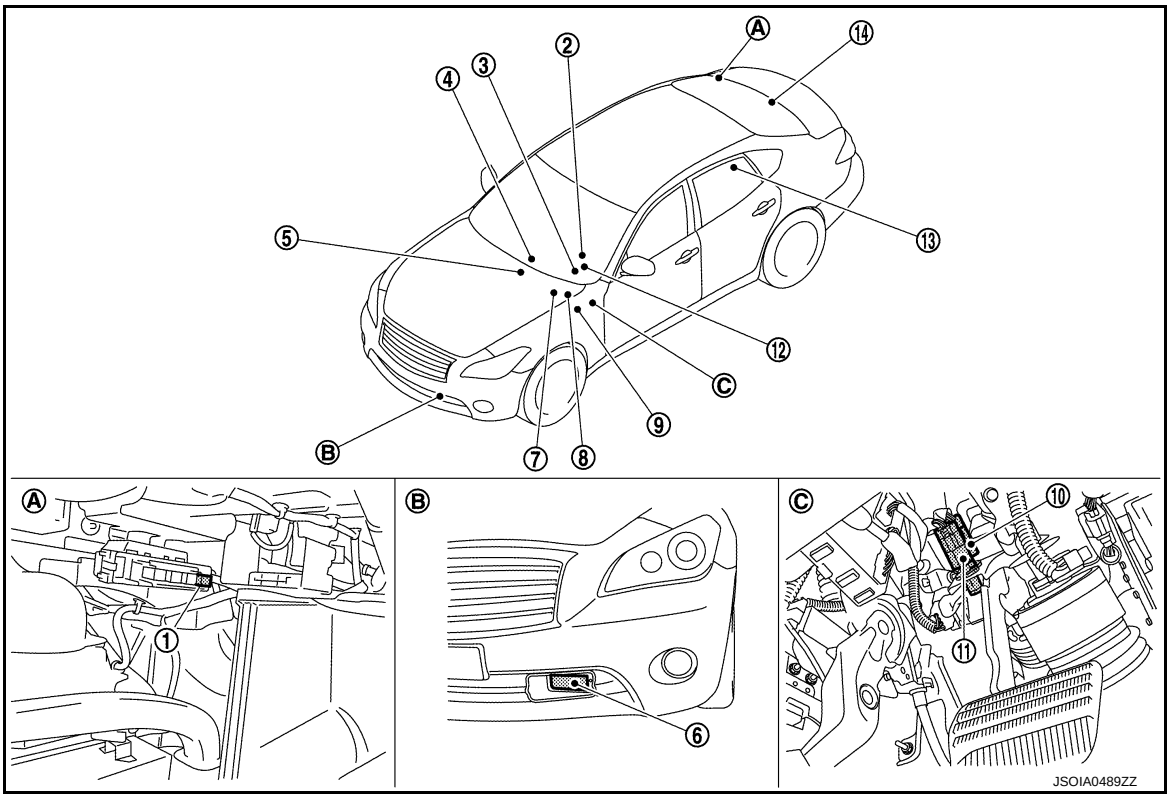
CAUTION:
- **To prevent blindness from occurring, never look straight into the laser beam discharger when adjusting laser beam aiming.**
- **To prevent the possibility of accident, turn the DCA system OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.**
- **To prevent malfunction, never use the ICC sensor removed from vehicle. Never disassemble or remodel.**
- **After an ICC part is replaced, to prevent a system malfunction, erase DTC and adjust the laser beam aiming before performing an operational checkup.**

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000008141545



1. ICC brake hold relay	2. ICC steering switch	3. Information display, ICC system warning lamp, buzzer (On the combination meter)
4. AV control unit Refer to AV-128, "Component Parts Location"	5. TCM Refer to TM-13, "A/T CONTROL SYSTEM : Component Parts Location"	6. ICC sensor
7. ABS actuator and electric unit (control unit) Refer to BRC-11, "Component Parts Location"	8. Electrically-driven intelligent brake unit Refer to BR-10, "Component Parts Location"	9. Accelerator pedal actuator
10. Brake switch	11. Stop lamp switch	12. Steering angle sensor Refer to BRC-11, "Component Parts Location"
13. HPCM Refer to HBC-13, "HYBRID CONTROL SYSTEM : Component Parts Location"	14. ADAS control unit Refer to DAS-14, "Component Parts Location"	
A. Trunk room (RH)	B. Front bumper (LH)	C. Upper side of brake pedal

Component Description

INFOID:0000000008141546

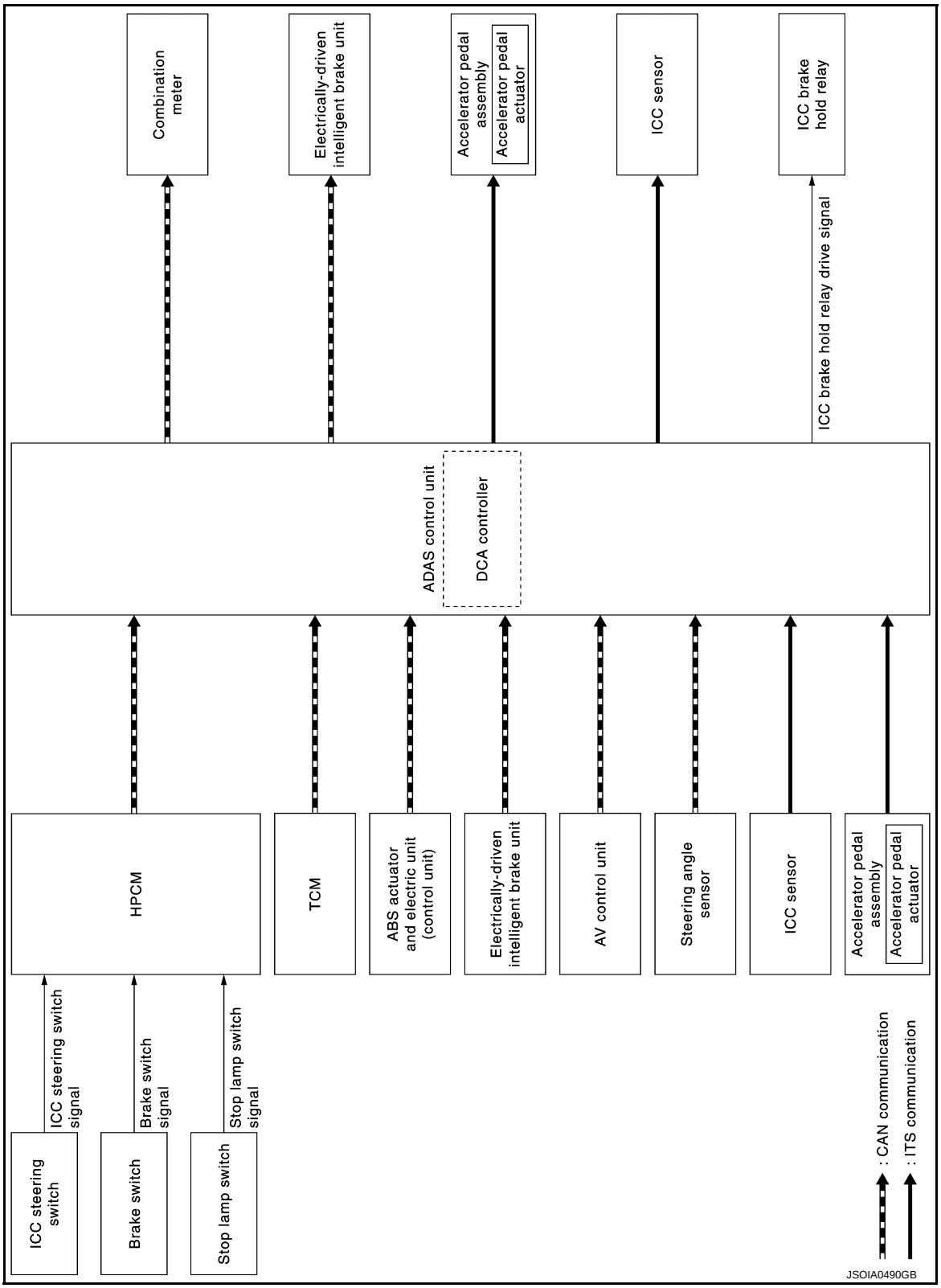
Component	Description
ADAS control unit	• ADAS control unit calculates a target distance between vehicles and a target speed, based on signals received from each sensor and switch to transmit a brake fluid pressure control signal to electrically-driven intelligent brake unit via CAN communication • ADAS 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	• 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
HPCM	HPCM transmits the accelerator pedal position signal, 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)	ABS actuator and electric unit (control unit) transmits the wheel speed signal, stop lamp signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication
Electrically-driven intelligent brake unit	• Electrically-driven intelligent brake unit controls the brake, based on a brake fluid pressure control signal received from ADAS control unit via CAN communication • Electrically-driven intelligent brake unit detects driver's brake operation and transmits a driver brake operation detection signal to the 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	Performs the following operations using the signals received from the ADAS control unit via the CAN communication • 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)	HPCM 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
Brake switch	• Brake switch is turned OFF and stop lamp switch is turned ON, when depressing the brake pedal • Brake switch signal is input to . These signals are transmitted from to ADAS control unit via CAN communication • Stop lamp switch signal is input to and ABS actuator and electric unit (control unit). These signals are transmitted from and ABS actuator and electric unit (control unit) to ADAS control unit via CAN communication
Stop lamp switch	
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:0000000008141547

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
HPCM	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
		READY condition signal	Receives READY state of the vehicle
		Engine speed signal	Receives engine speed
		Stop lamp switch signal	Receives an operational state of the brake pedal
		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
		Wheel speed signal	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 Assistance” selected with the navigation system
Electrically-driven intelligent brake unit	CAN communication	Driver brake operation detection signal	Receives driver's brake operation state
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
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
Electrically-driven intelligent brake unit	CAN communication	Brake fluid pressure control signal		Transmits a brake fluid pressure control signal to activates the brake
Combination meter	CAN communication	Meter display signal	Vehicle ahead detection indicator 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
		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
		Steering angle sensor signal		Transmits a steering angle sensor signal received from the steering angle sensor
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 actuation force value calculated by the ADAS control unit
ICC brake hold relay	ICC brake hold relay drive signal			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.

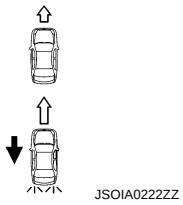
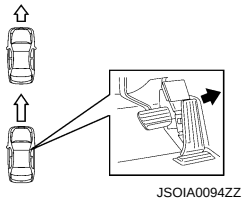
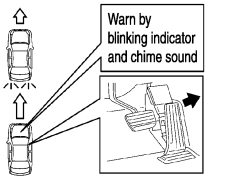
CAUTION:

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 electrically-driven intelligent brake unit via CAN communication.

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	 JSOIA0222ZZ
	If the driver is depressing the accelerator pedal, the system moves the accelerator pedal upward to assist the driver to release the accelerator pedal	 JSOIA0094ZZ
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	 JPOIA0170GB

Deceleration control	It transmits the brake fluid pressure control signal to the electrically-driven intelligent brake unit via CAN communication and performs the brake control
Accelerator pedal actuation control	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

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 drive mode select switch is in SNOW 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.

- When the accelerator pedal is depressed again.

• When the brake pedal is depressed.

Fail-safe (ADAS Control Unit)

INFOID:0000000008141548

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
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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

Fail-safe (ICC Sensor)

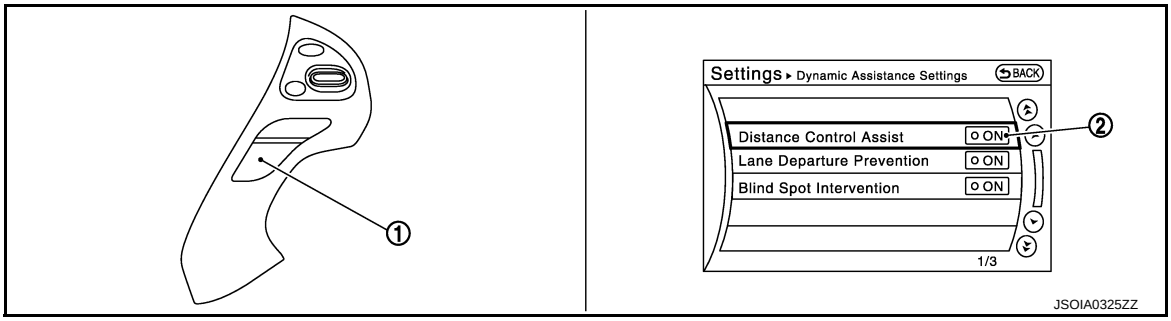
INFOID:0000000008141549

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.

OPERATION

Switch Name and Function

INFOID:0000000008141550

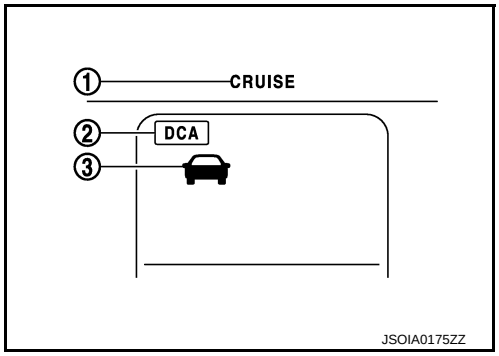


No.	Switch name	Description
1	Dynamic driver assistance switch	Turns DCA system ON/OFF (When the setting of DCA system on the navigation system setting screen is ON)
2	DCA system setting screen (Navigation system settings screen)	The setting of DCA system can be switched between ON and OFF

Menu Displayed by Pressing Each Switch

INFOID:0000000008141551

SYSTEM DISPLAY

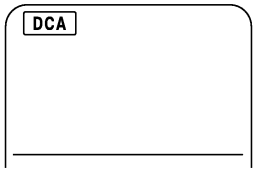
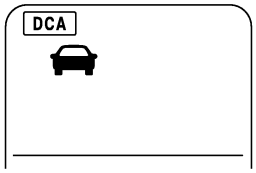


No.	Switch name	Description
1	ICC system warning lamp	This indicates that an abnormal condition is present in DCA system
2	DCA system switch indicator	• Indicates that DCA system is ON • Blinks when the setting of LDP, DCA, and BSI are “OFF” and the dynamic driver assistance switch is pressed
3	Vehicle 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

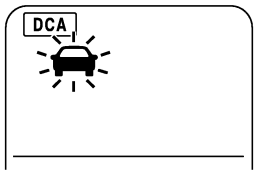
System Control Condition Display

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

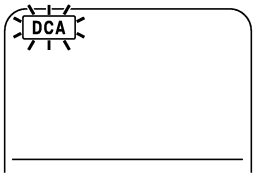
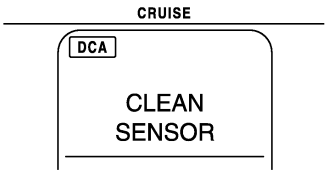
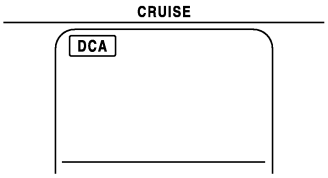
Condition		Display on combination meter
Operation status	Vehicle ahead not detected	 JSOIA0207ZZ
	Vehicle ahead detected	 JSOIA0208ZZ

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	 JSOIA0209ZZ

Warning Lamp Display

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 BSI system OFF	The DCA system is not activated. The DCA system switch indicator blinks	 JSOIA0210ZZ
	• When the VDC or ABS (including the TCS) operates • When the VDC is turned OFF • When the drive mode select switch is in SNOW position • 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	
	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	 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 turn it ON again. If there is no malfunction, it is possible to set the system.	 JSOIA0212ZZ

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

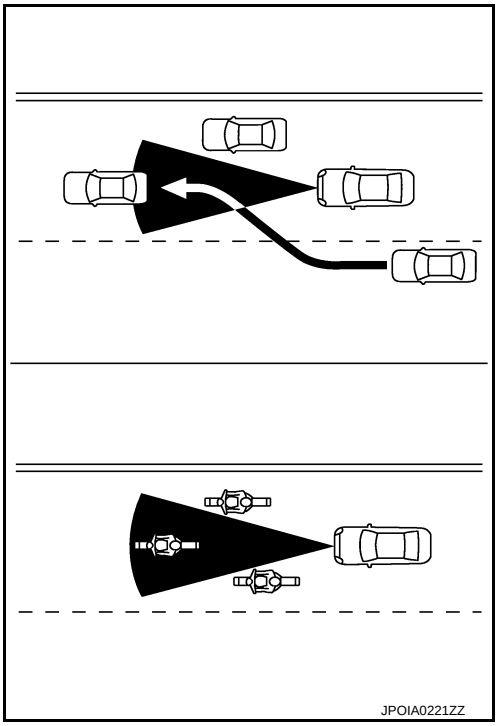
HANDLING PRECAUTION

Precautions for Distance Control Assist

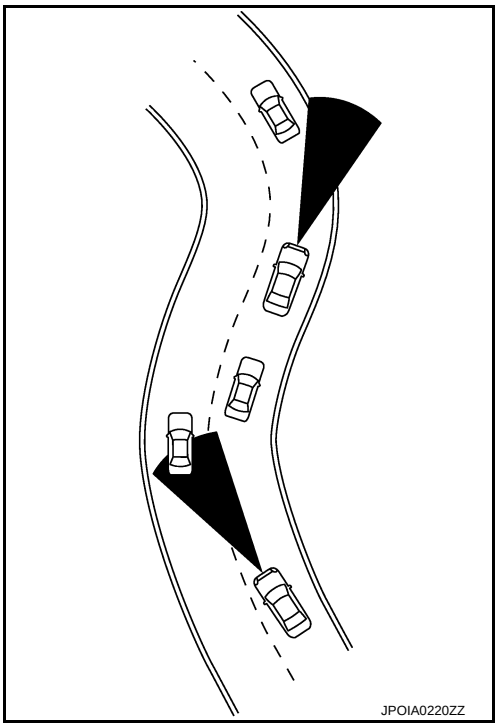
INFOID:0000000008141552

- 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.
- 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
- Do not use the DCA system if own vehicle are towing a trailer. The system may not detect a vehicle ahead.
- 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.

- 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.


JPOIA0221ZZ

- 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).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- 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)

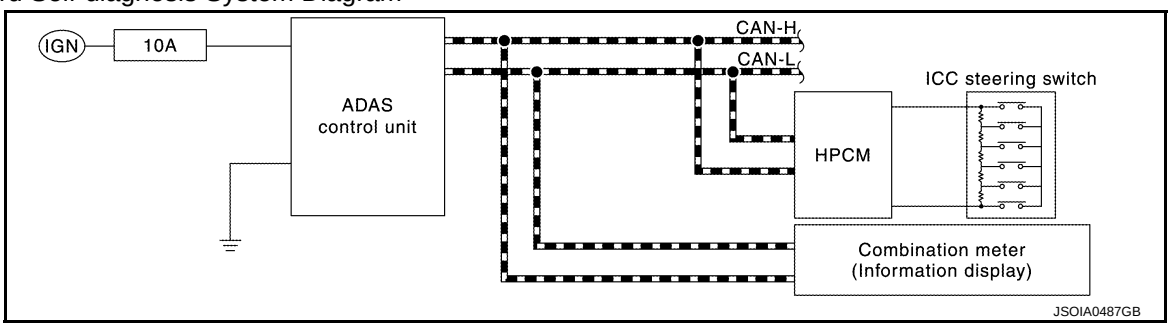
On Board Diagnosis Function

INFOID:0000000008141553

DESCRIPTION

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

On Board Self-diagnosis System Diagram



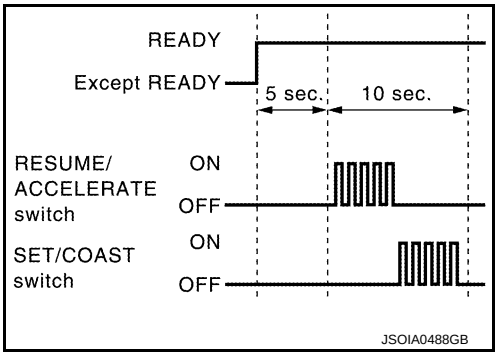
METHOD OF STARTING

NOTE:

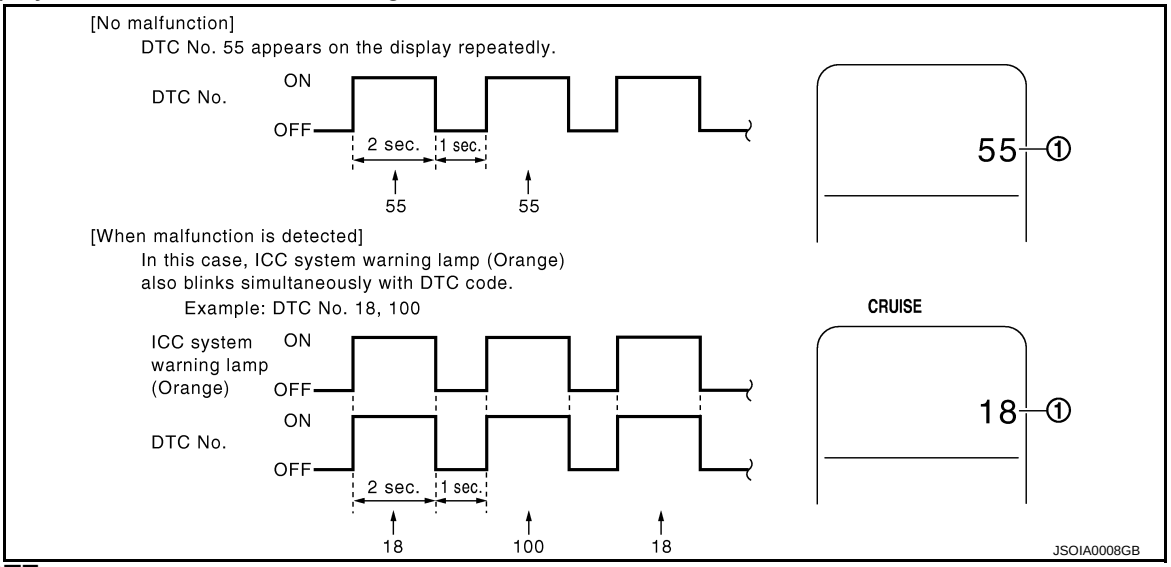
Start condition of on board self-diagnosis

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

1. Turn the ignition switch OFF.
2. Set the vehicle to READY.
3. Wait for 5 seconds after setting the vehicle to READY. 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 setting the vehicle to READY, 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-42, "DTC Index".



NOTE:

- 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.

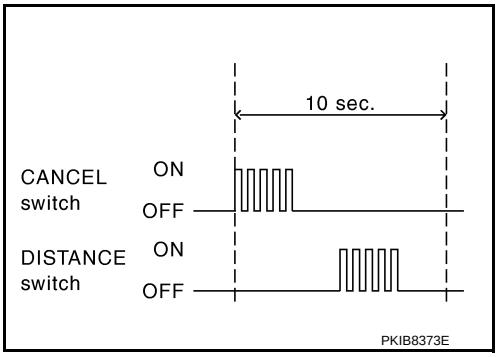
WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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-35, "On Board Diagnosis Function".
ICC steering switch malfunction		Perform the inspection for DTC “C1A06”. Refer to CCS-83, "DTC Logic".
Harness malfunction between ICC steering switch and HPCM		
HPCM malfunction		
ADAS control unit malfunction		• Check power supply and ground circuit of ADAS control unit. Refer to DAS-55, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for “ICC/ADAS”with CONSULT, and then check the malfunctioning parts. Refer to DAS-42, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Set the vehicle to READY, 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:0000000008141554

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

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems • Vehicle-to-vehicle control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems • Lane Departure Prevention (LDP) • Blind Spot Intervention (BSI)

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	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	×		HPCM 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	×	×	Shifting of the drive mode selector to SNOW position
OP SW DOUBLE TOUCH	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	Vehicle speed lower than 24 km/h (15 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
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	×	×	There is a malfunction in the function controlling the brake according to a command issued from the ADAS control unit to the electrically-driven intelligent brake unit
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
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
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	×		Shifting of the drive mode selector to SNOW position
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
BSI WARNING	×		BSI system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during BSI system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
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 BSI 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		×	Shifting of the drive mode selector to SNOW position
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 BSI system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

SELF DIAGNOSTIC RESULT

Refer to DAS-42, "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)	Description
MAIN SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×				Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×			Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from brake switch signal (HPCM transmits brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (HPCM 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 (HPCM 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 wheel speed signal 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 (HPCM transmits engine speed signal through CAN communication)
PRESS SENS [bar]	×	×			Indicates a brake fluid pressure command value
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
RELEASE SW NO [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
RELEASE SW NC [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)
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)
THRTL OPENING [%]	×	×			Indicates throttle position read from ADAS control unit through CAN communication (HPCM 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]	×				Indicates the active mode of ICC
SET DISP IND [Off]	×				**NOTE:** The item is displayed, but it is not monitored
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 (HPCM 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
LDW ON LAMP [On/Off]			×		Indicates [On/Off] status of waning 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
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 communica-tion)
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 (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 communi-cation (Lane camera unit transmits a detected lane condition signal via ITS communica-tion)
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 (BSI)
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 the DCA system. The 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
BSI SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of BSI system. BSI 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
DRIVE MODE STATS [STD/SPORT/ECO/ SNOW/MID/ERROR]	×	×	×	×	Indicates a drive mode selector select position judged from a drive mode select switch position signal read by the ADAS control unit via CAN communication (The A/C auto amp. transmits a switch position signal of the drive mode select switch signal 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 BSW/BSI warning lamp output
BSI ON IND [On/Off]				×	Indicates [On/Off] status of BSI ON indicator output
BSW SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSW system
BSI SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSI system

ACTIVE TEST

CAUTION:

- **To prevent the possibility of accident, never perform “Active Test” while driving the vehicle.**
- **To prevent the possibility of accident, shift the selector lever to “P” position, and then perform the test.**

NOTE:

- The “Active Test” cannot be performed when the following systems warning lamp is illuminated.
- ICC system warning lamp
- Lane departure warning lamp
- BSW/BSI warning lamp
- IBA OFF indicator lamp (IBA system ON)

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 • 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

Test item	Description
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention (BSI)
WARNING SYSTEM IND	The 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 BSW/BSI warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The BSI ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	• MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test • 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 • 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	—

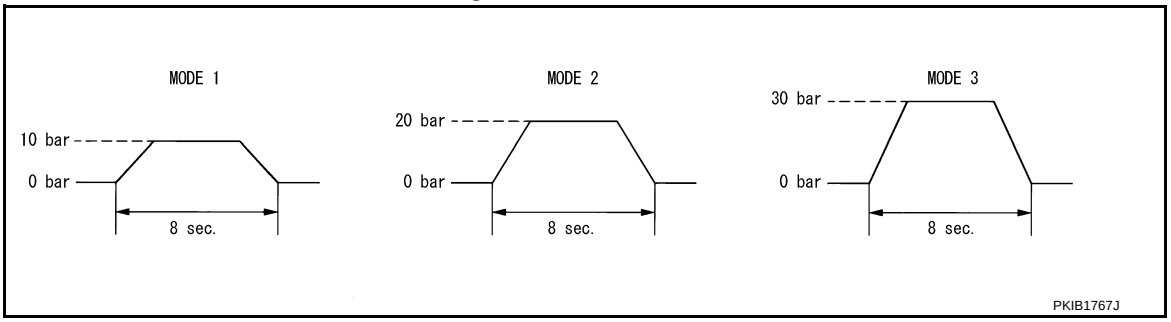
BRAKE ACTUATOR

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the electrically-driven intelligent brake 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:

- **To prevent the possibility of accident, 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.)**

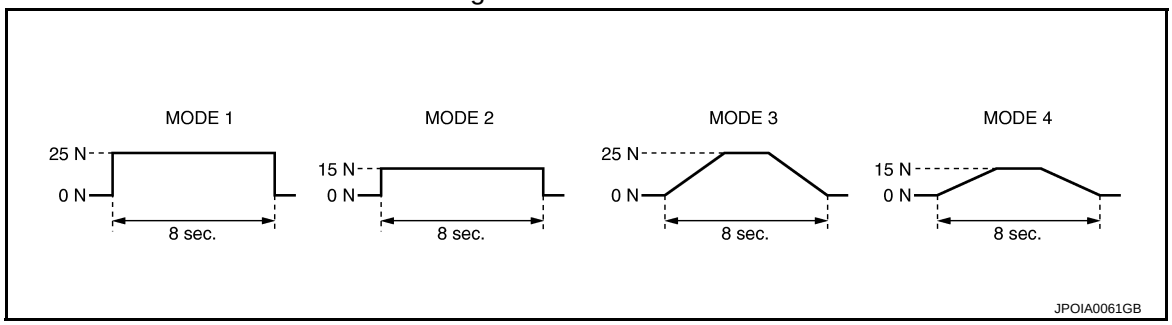
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can performed only when the vehicle is in READY state.

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 performed only when the vehicle is in READY state.

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

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

BSI ON INDICATOR

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

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER)

INFOID:0000000008141555

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-63, "Description".

SELF DIAGNOSTIC RESULT

Refer to CCS-55, "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 wheel 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]	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
STRG ANGLE SPEED [deg/s]	The steering angle speed is displayed

Monitored item [Unit]	Description
L/R ADJUST	The horizontal correction value of the laser beam is displayed
U/D ADJUST	The vertical correction value of the laser beam is displayed

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

CONSULT Function (ACCELERATOR PEDAL ACT)

INFOID:0000000008141556

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	• Displays malfunctioning system memorized in accelerator pedal actuator • Displays 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-104, "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.

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 HPCM 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:

To prevent the possibility of accident, 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.

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000008141557

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	READY state	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Set the vehicle to READY 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	Set the vehicle to READY and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Set the vehicle to READY 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	Set the vehicle to READY 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

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	READY state	When the buzzer of the following system operates • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system	On
		When the buzzer of the following system not operates • 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
PRESS SENS	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When the brake is in the deactivated state by the system	0.0
		When the brake is in the activated state by the system	Displays the brake pressure command value
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	READY state	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
RELEASE SW NO	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
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	READY state	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	READY state	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

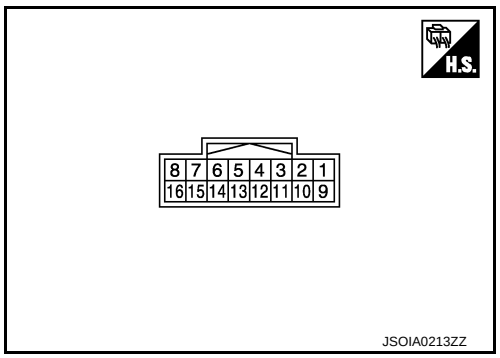
Monitor item	Condition		Value/Status
PWR SUP MONI	READY state		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	READY state	Depress accelerator pedal	Displays the throttle position
GEAR	While driving		Displays the gear position
MODE SIG	When ICC system is deactivated		Off
	When vehicle-to-vehicle distance control mode is activated		ICC
SET DISP IND	**NOTE:** The item is indicated, but not monitored		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	Set the vehicle to READY and press dynamic driver assistance switch (When DCA 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	On
		When the FCW system is OFF	Off
APA TEMP	READY state		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	On
		When the LDW system is OFF	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

Monitor item	Condition		Value/Status
LDP ON IND	Set the vehicle to READY 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 OUTPUT	Drive the vehicle and activate the LDW/LDP system or BSW/BSI system	When the buzzer of the following system operates • LDW/LDP system • BSW/BSI system	On
		When the buzzer of the following system does not operate • LDW/LDP system • BSW/BSI system	Off
LDP SYSTEM ON	Set the vehicle to READY 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	Set the vehicle to READY 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 BSI system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	• READY state • 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 and activate the LDP system	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

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
DRIVE MODE STATS	Ignition switch ON	When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
		When position of drive mode select switch is in following states • In the middle of SNOW-ECO • In the middle of ECO-STANDARD • In the middle of STANDARD-SPORTS	Mid
		A signal other than those above is input	ERROR
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	BSW/BSI warning lamp ON	On
		BSW/BSI warning lamp OFF	Off
BSI ON IND	Ignition switch ON	BSI ON indicator ON	On
		BSI ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON	On
		When the BSW system is OFF	Off
BSI SYSTEM ON	Set the vehicle to READY and press dynamic driver assistance switch (When BSI system setting is ON)	When the BSI system is ON	On
		When the BSI system is OFF	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	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 (BR)		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 (O)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (SB)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At “STOP LAMP” test of “Active test”	0 V
6 (B/R)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (P)		ITS communication-L	—	—	—	—
12 (W)		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 (GR)		Ignition power supply	Input	Ignition switch ON		Battery voltage

Fail-safe

INFOID:0000000008141558

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
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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

DTC Inspection Priority Chart

INFOID:0000000008141559

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

Priority	Detected items (DTC)
1	• U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

Priority	Detected items (DTC)
4	• 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 • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • C1A1A: HPCM CIRCUIT • C1A2A: ICC SEN PWR SUP CIR • C1A2B: ELECTRICAL BRAKE MODE MALF • C1A2C: ELECTRICAL BRAKE PWR SUPLY CIRC • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • 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 INCMP • C1B03: CAM ABNRML TMP DETCT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0424: HVAC 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 • 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 • U151A: ELECTRICAL BRAKE CAN CIRCUIT 2 • U151B: ELECTRICAL BRAKE CAN CIRCUIT 1 • U151C: ELECTRICAL BRAKE CAN CIRCUIT 3 • U151D: HPCM CAN CIRCUIT 2 • U151E: HPCM CAN CIRCUIT 1 • U151F: HPCM CAN CIRCUIT 3
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000008141560

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: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-114
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-115
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-115
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-116
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-118
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	A, B, C, D, E, F	DAS-119
C1A06	6	OPERATION SW BIRC	ON		ON	ON	A, D, E, F	DAS-123
C1A12	12	LASER BEAM OFFCN-TR	ON	ON			A, B, C, D	DAS-125
C1A13	13	STOP LAMP RLY FIX	ON	ON			A, B, C, D	DAS-126
C1A15	15	GEAR POSITION	ON	ON	ON	ON	A, B, C, D, E, F	DAS-132
C1A16	16	RADAR STAIN	ON	ON			A, B, C, D	DAS-134
C1A17	17	ICC SENSOR MALF	ON	ON			A, B, C, D	DAS-135
C1A18	18	LASER AIMING INCMP	ON	ON			A, B, C, D	DAS-136
C1A1A	19	HPCM CIRCUIT	ON		ON	ON	A, D, E, F	DAS-137
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON			A, B, C, D	DAS-138
C1A24	24	NP RANGE	ON	ON	ON	ON	A, B, C, D, E, F	DAS-139
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON			A, B, C, D	DAS-141

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A2B	23	ELECTRICAL BRAKE MODE MALF	ON	ON			A, B, C, D	DAS-142
C1A2C	20	ELECTRICAL BRAKE PWR SUPLY CIR	ON	ON			A, B, C, D	DAS-143
C1A33	33	CAN TRANSMISSION ERR	ON				A, D, G	DAS-144
C1A34	34	COMMAND ERROR	ON				A, D, G	DAS-145
C1A35	35	APA CIR	ON				A, D	DAS-146
C1A36	36	APA CAN COMM CIR	ON				A, D	DAS-147
C1A37	133	APA CAN CIR 2	ON				A, D	DAS-148
C1A38	132	APA CAN CIR 1	ON				A, D	DAS-149
C1A39	39	STRG SEN CIR	ON	ON		ON	A, B, C, D, F, G	DAS-150
C1A40	40	SYSTEM SW CIRC		ON			B, C	CCS-115
C1B00	81	CAMERA UNIT MALF			ON	ON	E, F	DAS-336
C1B01	82	CAM AIMING INCMP			ON	ON	E, F	DAS-338
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK	E, F	DAS-340
C1B53	84	SIDE RDR R MALF				ON	F	DAS-482
C1B54	85	SIDE RDR L MALF				ON	F	DAS-483
C1F01	91	APA MOTOR MALF	ON				A, D	DAS-151
C1F02	92	APA C/U MALF	ON				A, D	DAS-153
C1F05	95	APA PWR SUPLY CIR	ON				A, D	DAS-156
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	A, B, C, D, E, F, G	DAS-160
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	A, B, C, D, F, G	DAS-161
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			A, B, C, D	DAS-162
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F	DAS-163
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-164

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U0424	156	HVAC CAN CIR 1						BR-232
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	A, B, C, D, F, G	DAS-165
U1000[NOTE]	100	CAN COMM CIRCUIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-166
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-168
U1500	145	CAM CAN CIR 2			ON	ON	E, F	DAS-354
U1501	146	CAM CAN CIR 1			ON	ON	E, F	DAS-355
U1502	147	ICC SEN CAN COMM CIR	ON	ON			A, B, C, D	DAS-172
U1503	150	SIDE RDR L CAN CIR 2				ON	F	DAS-503
U1504	151	SIDE RDR L CAN CIR 1				ON	F	DAS-504
U1505	152	SIDE RDR R CAN CIR 2				ON	F	DAS-505
U1506	153	SIDE RDR R CAN CIR 1				ON	F	DAS-506
U1507	154	LOST COMM (SIDE RDR R)				ON	F	DAS-507
U1508	155	LOST COMM (SIDE RDR L)				ON	F	DAS-508
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-169
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	DAS-170
U150E	160	BCM CAN CIRC 3	ON		ON	ON	A, D, E, F	DAS-171
U150F	161	AV CAN CIRC 3						DAS-54
U1512	162	HVAC CAN CIRC3			ON	ON	E, F	DAS-356
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	DAS-173
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	A, B, C, D, F, G	DAS-174
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			A, B, C, D	DAS-175
U1516	166	CAM CAN CIRC 3			ON	ON	E, F	DAS-358
U1517	167	APA CAN CIRC 3	ON				A, D	DAS-176
U1518	168	SIDE RDR L CAN CIRC 3				ON	F	DAS-513
U1519	169	SIDE RDR R CAN CIRC 3				ON	F	DAS-514
U151A	170	ELECTRICAL BRAKE CAN CIRCUIT 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-177

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U151B	171	ELECTRICAL BRAKE CAN CIRCUIT 1	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-178
U151C	172	ELECTRICAL BRAKE CAN CIRCUIT 3	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-179
U151D	173	HPCM CAN CIRCUIT 2	ON		ON	ON	A, D, E, F	DAS-180
U151E	174	HPCM CAN CIRCUIT 1	ON		ON	ON	A, D, E, F	DAS-181
U1501F	175	HPCM CAN CIRCUIT 3	ON		ON	ON	A, D, E, F	DAS-182

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

Reference Value

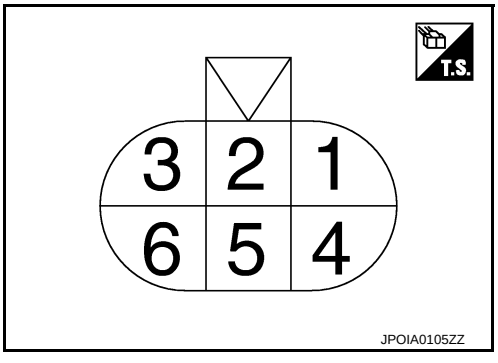
INFOID:0000000008141561

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 (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



PHYSICAL VALUES

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

Fail-safe

INFOID:0000000008141562

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:0000000008141563

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

Priority	Detected items (DTC)
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• C1A50: ADAS MALFUNCTION
3	• C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A12: LASER BEAM OFFCNTR • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • 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	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000008141564

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.

×: Applicable

DTC	CONSULT display	ICC system warning lamp	Fail-safe					Reference
CONSULT			Vehicle-to-vehicle distance control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Intelligent Brake Assist (IBA)	Brake Assist (with Preview Function)	
C1A00	CONTROL UNIT	ON	×	×	×	×	×	CCS-72
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	CCS-74
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	CCS-74
C1A12	LASER BEAM OFFCNTR	ON	×	×	×	×	×	CCS-85
C1A16	RADAR STAIN	ON	×	×	×	×	×	CCS-94
C1A18	LASER AIMING INCMP	ON	×	×	×	×	×	CCS-97
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	×	CCS-100
C1A39	STRG SEN CIR	ON	×	×	×	×	×	CCS-113
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	×	CCS-117
U0104	ADAS CAN CIR1	ON	×	×	×	×	×	CCS-121
U0121	VDC CAN CIR2	ON	×	×	×	×	×	CCS-122
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	CCS-124
U0405	ADAS CAN CIR2	ON	×	×	×	×	×	CCS-128
U0415	VDC CAN CIR1	ON	×	×	×	×	×	CCS-129
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	CCS-131
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	×	CCS-133
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	×	CCS-135

ACCELERATOR PEDAL ACTUATOR

Reference Value

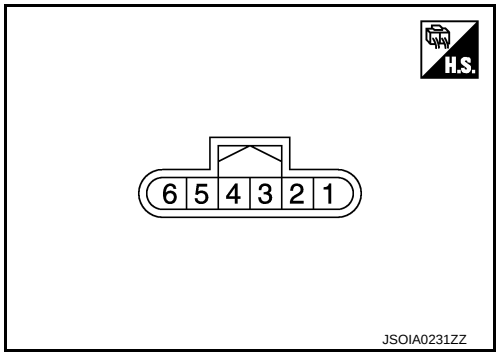
INFOID:0000000008141565

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	READY state	Depress accelerator pedal	It changes according to the depressed amount of accelerator pedal
AP OPEN	READY state	Depress accelerator pedal	It changes according to the depressed amount of accelerator pedal
APA TEMP	READY state		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	READY state	When the accelerator pedal actuator control is permitted	On
		When the accelerator pedal actuator control is invalid	Off
APA STATS	READY state	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

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

DTC Inspection Priority Chart

INFOID:0000000008141566

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

Priority	Detected items (DTC)
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• C1F02: APA C/U MALF
3	• C1F01: APA MOTOR MALF • C1F03: APA HI TEMP • C1F05: APA PWR SUPLY CIR • C1F06: CAN CIR2 • C1F07: CAN CIR1

DTC Index

INFOID:0000000008141567

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.

×: Applicable

CONSULT display	ICC system warning lamp	Fail-safe function	Reference
C1F01: APA MOTOR MALF	ON	×	DAS-151
C1F02: APA C/U MALF	ON	×	DAS-153
C1F03: APA HI TEMP	—	—	DAS-155
C1F05: APA PWR SUPLY CIR	ON	×	DAS-156
C1F06: CAN CIR2	ON	×	DAS-158
C1F07: CAN CIR1	ON	×	DAS-159
U1000: CAN COMM CIRCUIT	ON	×	DAS-166
U1010: CONTROL UNIT (CAN)	ON	×	DAS-168

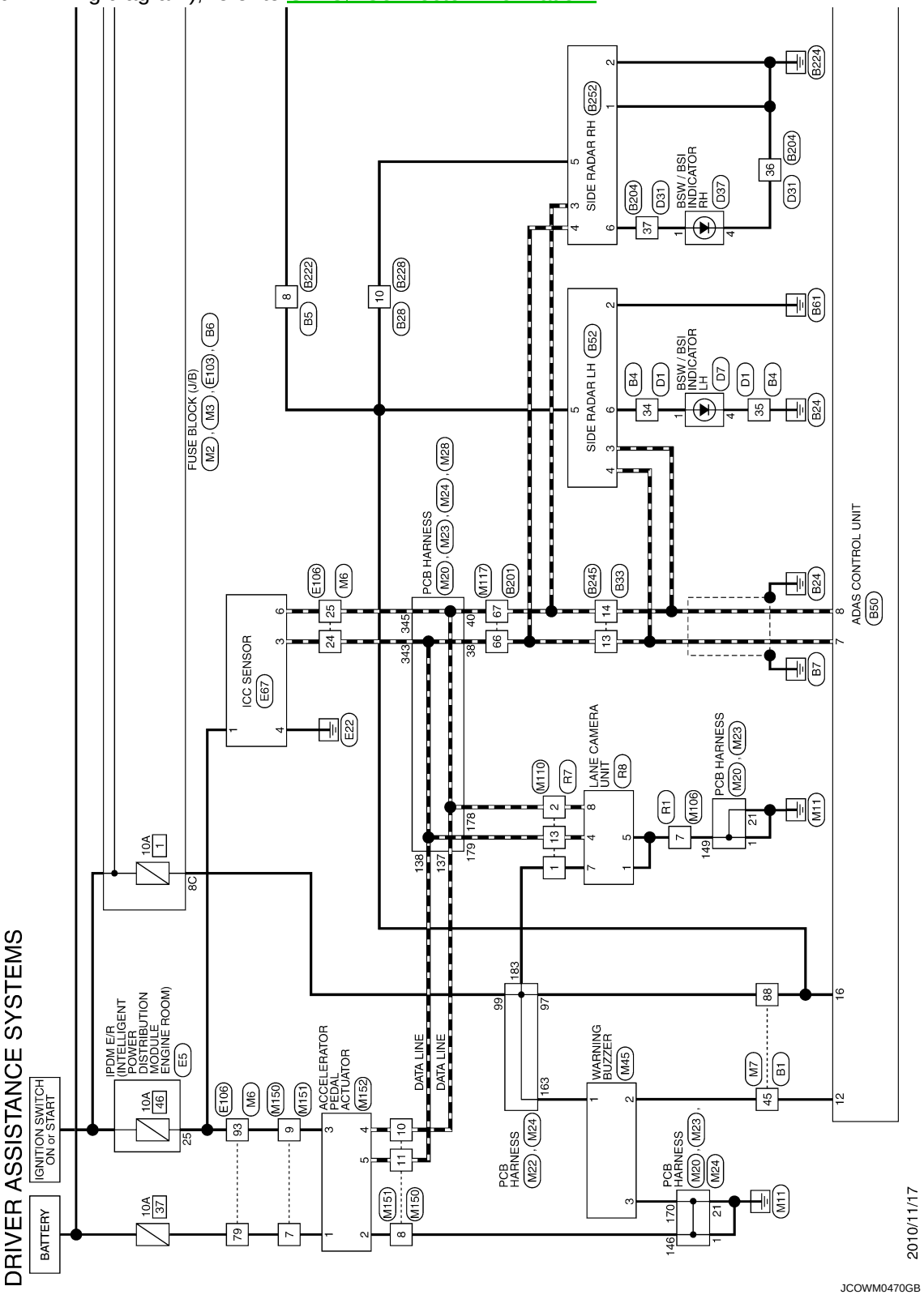
WIRING DIAGRAM

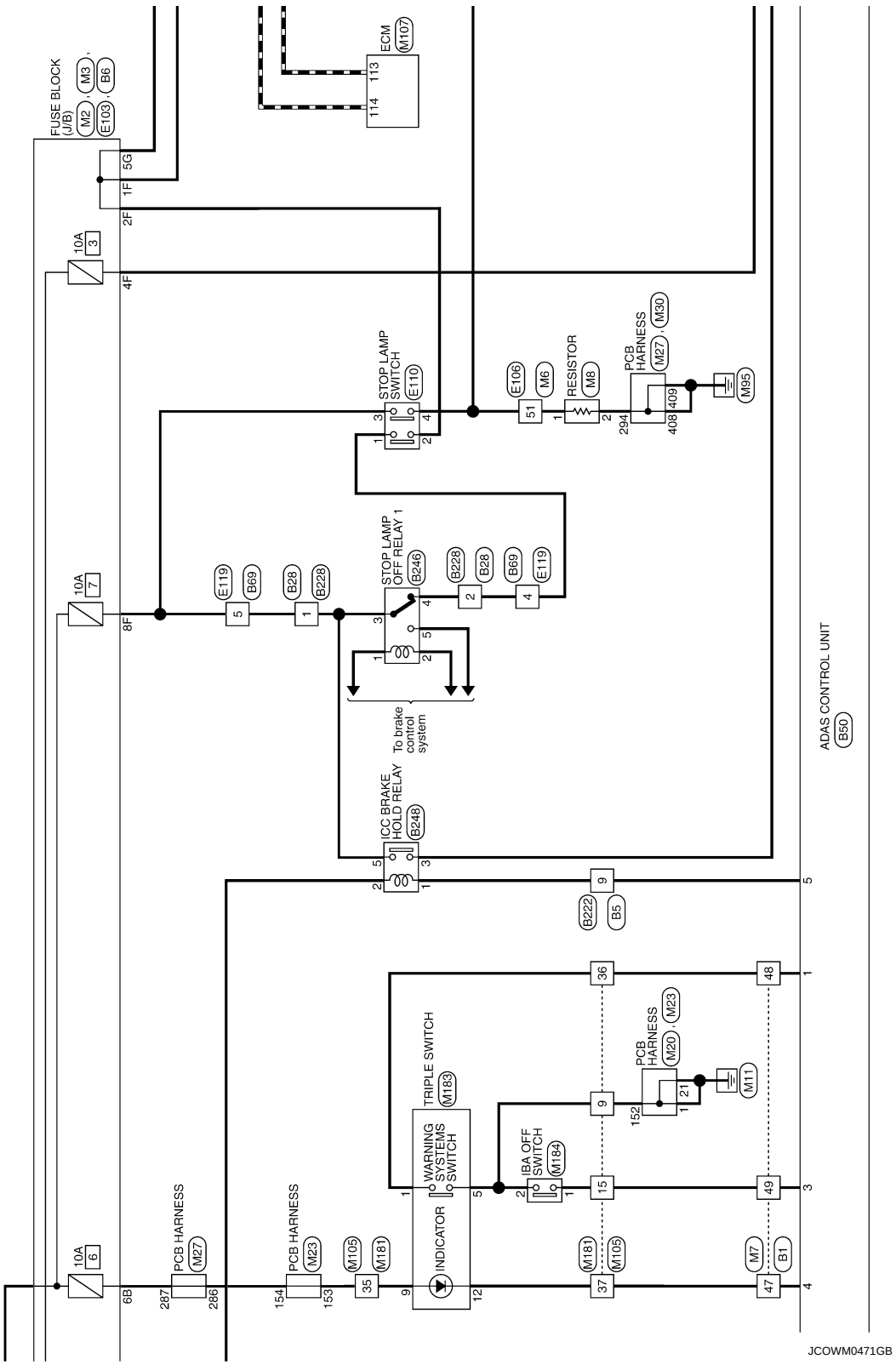
DRIVER ASSISTANCE SYSTEMS

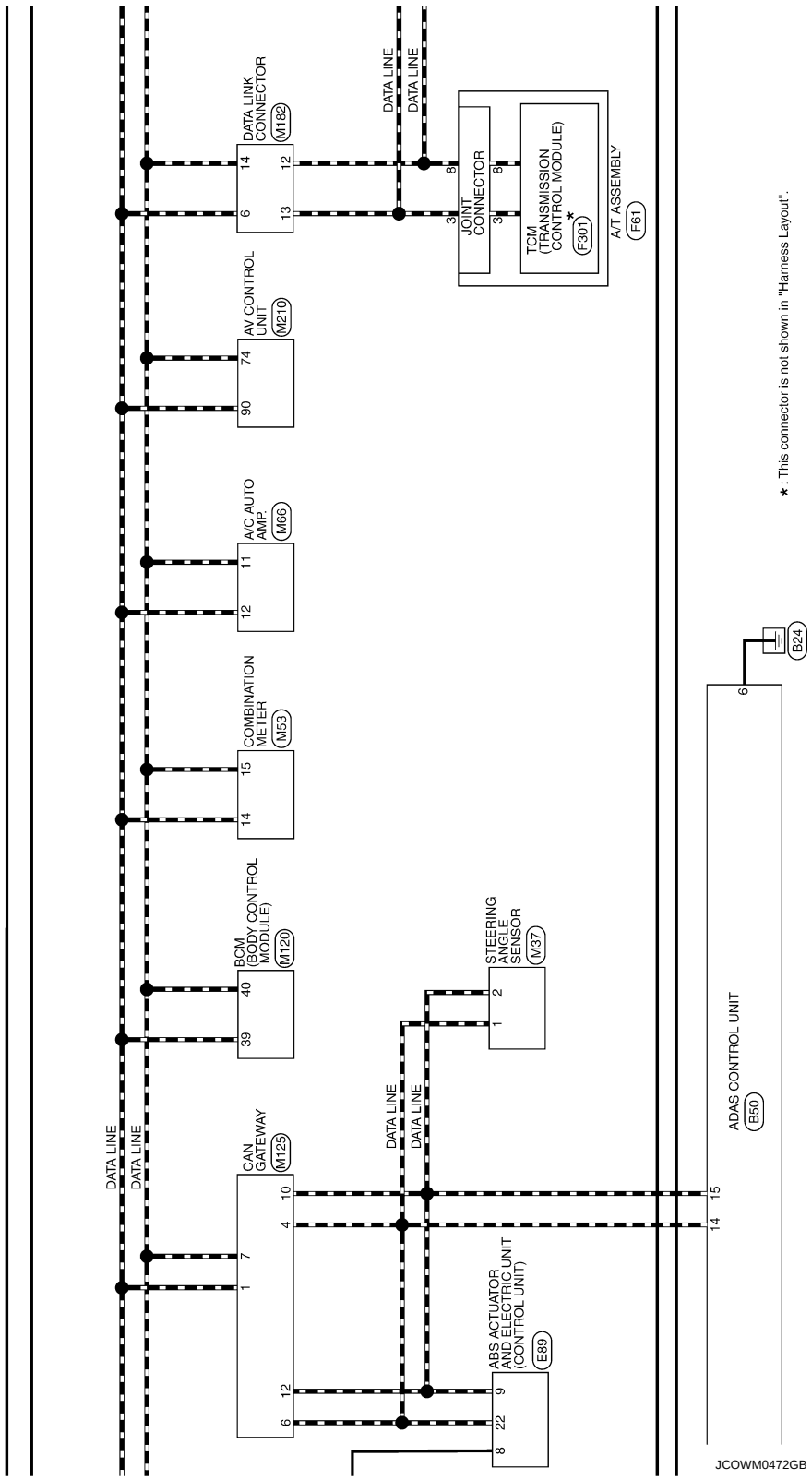
Wiring Diagram

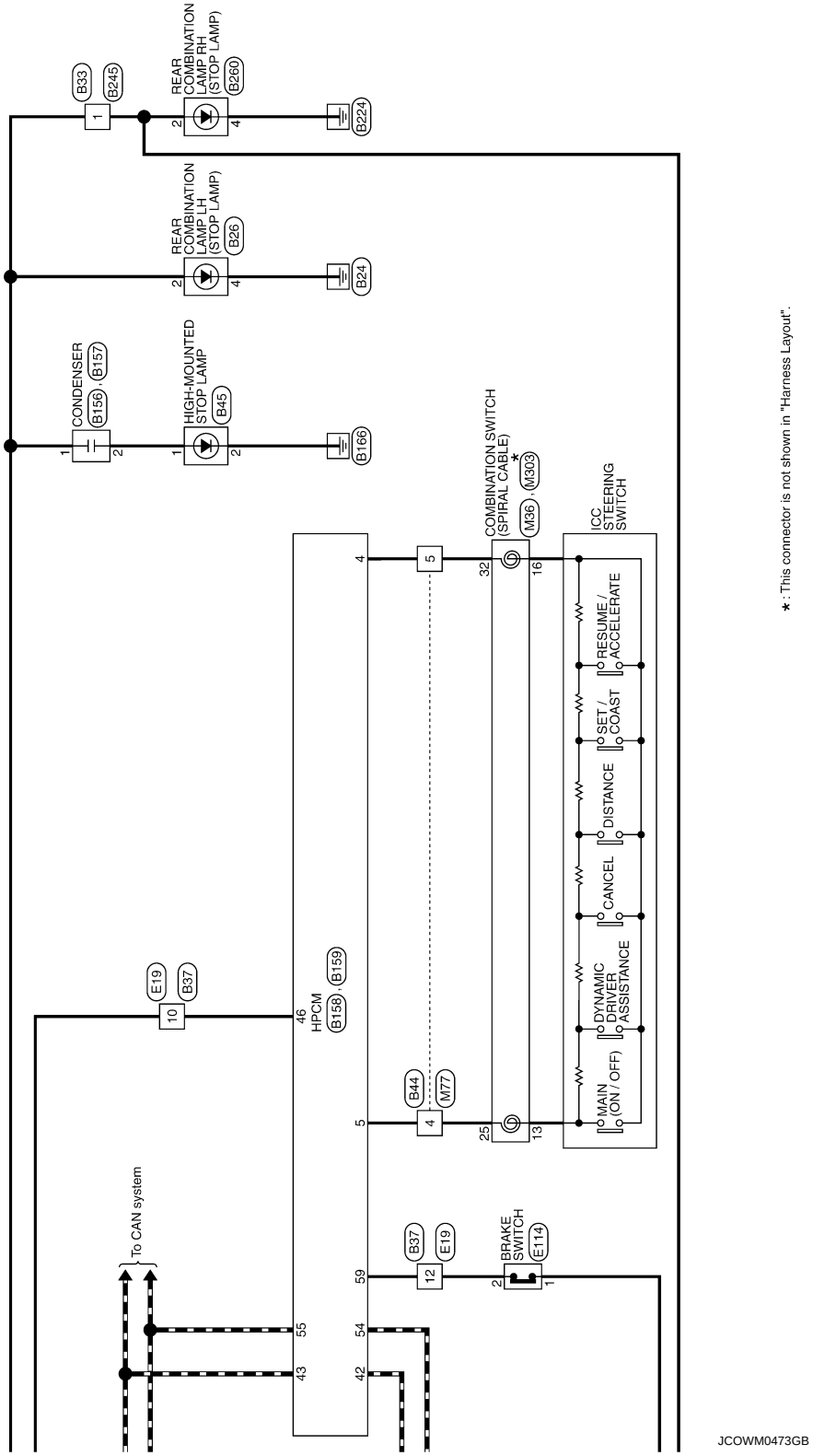
INFOID:0000000008497104

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-13, "Connector Information".




FUSE BLOCK (J/B) M2, M3, B6, E103
ECM M107
113
114
5G
1F
2F
10A 3
4F
STOP LAMP SWITCH E110
E106 M6
RESISTOR M8
PCB HARNESS M27, M30
M95
294
408
409
10A 7
8F
E119 B69
B28 B228
STOP LAMP OFF RELAY 1 B246
B228 B28 B69 E119
To brake control system
ICC BRAKE HOLD RELAY B248
ADAS CONTROL UNIT B50
B222 B5
10A 6
6B
PCB HARNESS M27
287
286
PCB HARNESS M23
154
153
M105 M181
35
TRIPLE SWITCH M183
WARNING SYSTEMS SWITCH
INDICATOR
IBA OFF SWITCH M184
PCB HARNESS M20, M23
M11
152
36
48
15
49
37
47
M181 M105
M7 B1
JCOWM0471GB


DATA LINK CONNECTOR M182
DATA LINE
JOINT CONNECTOR
TCM (TRANSMISSION CONTROL MODULE) F301
A/T ASSEMBLY F61
AV CONTROL UNIT M210
A/C AUTO AMP. M66
COMBINATION METER M53
BCM (BODY CONTROL MODULE) M120
STEERING ANGLE SENSOR M37
CAN GATEWAY M125
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E89
ADAS CONTROL UNIT B50
B24
*: This connector is not shown in "Harness Layout".
JCOWM0472GB


REAR COMBINATION LAMP RH (STOP LAMP)
B260
B33
B245
B224
REAR COMBINATION LAMP LH (STOP LAMP)
B26
B24
CONDENSER
B156
B157
HIGH-MOUNTED STOP LAMP
B45
B166
COMBINATION SWITCH (SPIRAL CABLE) ★
M36
M303
ICC STEERING SWITCH
RESUME / ACCELERATE
SET / COAST
DISTANCE
CANCEL
DYNAMIC DRIVER ASSISTANCE
MAIN (ON / OFF)
HPCM
B158
B159
46
E19
B37
10
B44
M77
4
5
25
13
32
16
59
12
BRAKE SWITCH
E114
2
1
To CAN system
55
43
54
42
★: This connector is not shown in "Harness Layout".
JCOWM0473GB

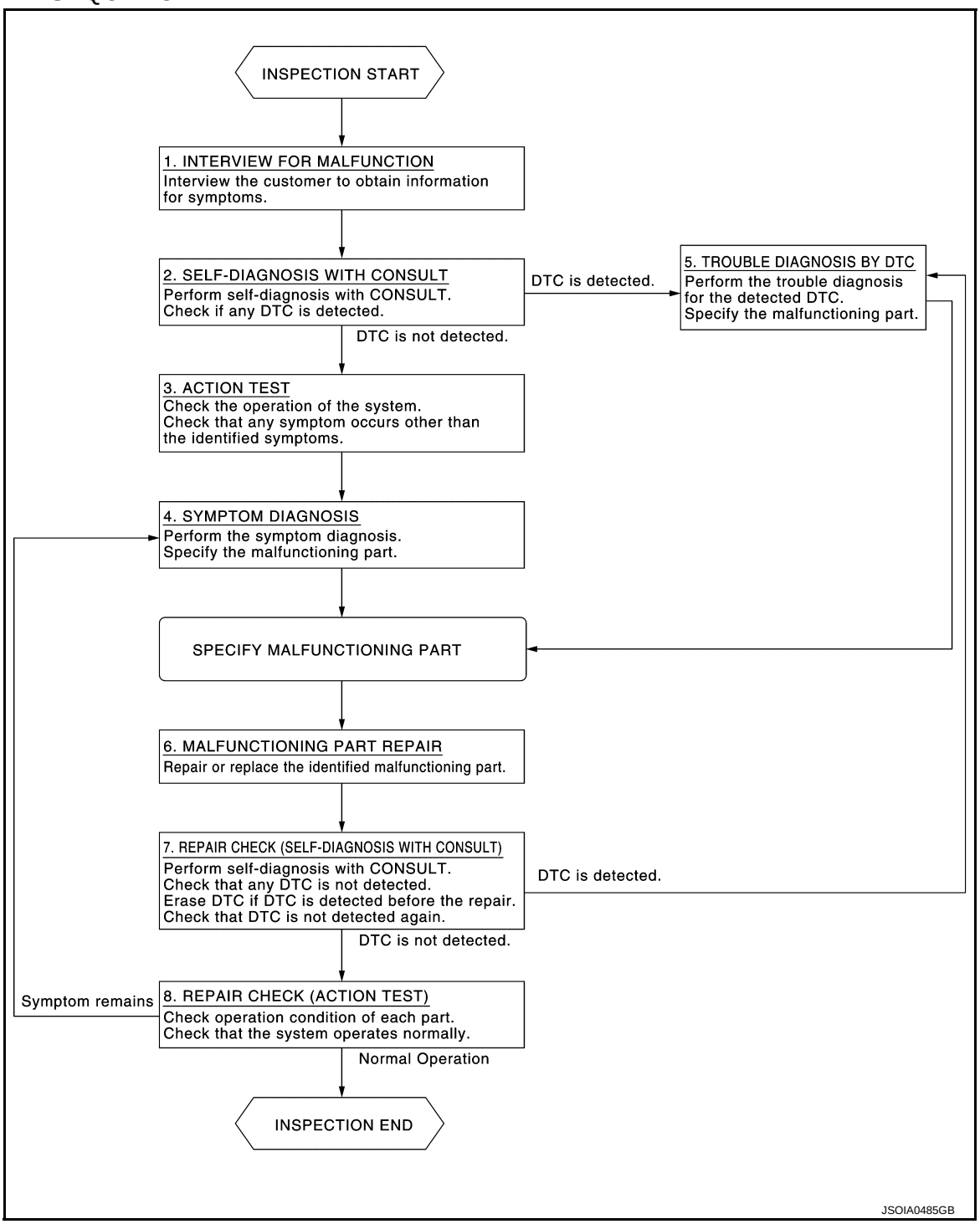
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000008141569

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:
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-113, "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-185, "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-96, "DTC Index" (ICC/ADAS) and/or DAS-104, "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

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

Description

INFOID:0000000008141570

- 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:0000000008141571

1. LASER BEAM AIMING ADJUSTMENT

Adjust the laser beam aiming. Refer to CCS-63, "Description".

>> GO TO 2.

2. DCA SYSTEM ACTION TEST

1. Perform the DCA system action test. Refer to DAS-113, "Description".
2. Check that the DCA system operates normally.

>> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING ACCELERATOR PEDAL ASSEMBLY

Description

INFOID:0000000008141572

- 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:0000000008141573

1.ACCELERATOR PEDAL RELEASED POSITION LEARNING

Perform accelerator pedal released position learning. Refer to DAS-112, "Description".

>> GO TO 2.

2.DCA SYSTEM ACTION TEST

1. Perform the DCA system action test. Refer to DAS-113, "Description".
2. Check that the DCA system operates normally.

>> INSPECTION END

ACTION TEST

Description

INFOID:0000000008141574

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:0000000008141575

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-68, "Description".

>> GO TO 2.

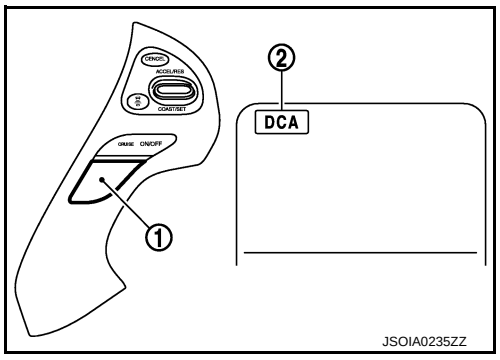
2.CHECK DCA SYSTEM SETTING

1. Set the vehicle to READY.
2. After setting the vehicle to READY 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 vehicle is set in the READY state again.

>> GO TO 3.

3.CHECK DRIVER ASSISTANCE SYSTEMS SWITCH

1. Set the vehicle to READY.
2. After setting the vehicle to READY 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 setting the vehicle to READY 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 setting the vehicle to READY.

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:0000000008141576

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. Set the vehicle to READY.
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-114, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141577

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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:0000000008141578

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	• 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. Set the vehicle to READY.
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-115, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141579

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to DAS-183, "ADAS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> Repair or replace the malfunctioning parts.

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:0000000008141580

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the wheel speed signal 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	• 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-166, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-118, "DTC Logic" for DTC “C1A04”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-116, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141581

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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK DATA MONITOR

1. Set the vehicle to READY.
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:
To prevent the possibility of accident, be careful of the vehicle speed.

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "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”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to TM-80, "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-57, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:0000000008141582

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-166, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141583

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:0000000008141584

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 brake switch signal received from HPCM and a stop lamp signal received from the ABS actuator and electric unit (control unit) continues for 60 seconds or more with vehicle speeds at approximately 40 km/h or more	• Stop lamp switch circuit • Brake switch circuit • Stop lamp switch • Brake switch • Incorrect stop lamp switch installation • Incorrect brake switch installation • HPCM • ABS actuator and electric unit (control unit)

NOTE:
If DTC “C1A05” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-133, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141585

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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK BRAKE SWITCH

Check that “BRAKE SW” operate normally in “DATA MONITOR” of “ICC/ADAS”.

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

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 8.
NO >> GO TO 9.

4.CHECK BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check brake switch for correct installation. Refer to BR-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Adjust brake switch installation. Refer to BR-270, "Inspection and Adjustment".

5.BRAKE SWITCH INSPECTION

1. Disconnect brake switch connector.
2. Check brake switch. Refer to DAS-121, "Component Inspection (Brake Switch)".

Is the inspection result normal?

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

6.CHECK BRAKE SWITCH POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(-)	
Brake switch		Ground	
Connector	Terminal		
E114	1		Battery voltage

Is the inspection result normal?

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

7.CHECK HARNESS BETWEEN BRAKE SWITCH AND HPCM

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

Brake switch		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
E114	2	B159	59	Existed

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

Brake switch		Ground	Continuity
Connector	Terminal		
E114	2		Not existed

Is the inspection result normal?

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

8.PERFORM SELF-DIAGNOSIS OF HPCM

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 “EV/HEV”. Refer to HBC-71, "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-56, "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-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 10.
NO >> Adjust stop lamp switch installation. Refer to BR-270, "Inspection and Adjustment".

10.STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to DAS-122, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

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	
Connector	Terminal		
E110	1		Battery voltage
	3		

Is the inspection result normal?

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

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

1. Turn the ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector and resistor.
3. 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	
E110	4	E89	8	Existed

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E110	4		Not existed

Is the inspection result normal?

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

13. 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-57, "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-56, "Removal and Installation".

Component Inspection (Brake Switch)

INFOID:0000000008141586

1. CHECK BRAKE SWITCH

Check for continuity between 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 brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:0000000008141587

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

DTC Logic

INFOID:0000000008141588

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	• 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 HPCM and ADAS control unit, and the state continues for 2 seconds or more	• ICC steering switch circuit • ICC steering switch • HPCM

NOTE:
If DTC “C1A06” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Wait for approximately 5 minutes after turning the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. 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-123, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141589

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-52, "DTC Logic".
NO >> GO TO 2.

2.CHECK ICC STEERING SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the ICC steering switch connector.
3. Check the ICC steering switch. Refer to DAS-124, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the ICC steering switch.

3.CHECK HARNESS BETWEEN SPIRAL CABLE AND HPCM

1. Disconnect the HPCM connector.
2. Check for continuity between the spiral cable harness connector and HPCM harness connector.

Spiral cable		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
M36	25	B158	5	Existed
	32		4	

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

Spiral cable		Ground	Continuity
Connector	Terminal		
M36	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 HPCM

1. Connect the connectors of ICC steering switch and HPCM connector.
2. Turn the ignition switch ON.
3. Perform “All DTC Reading”.
4. Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

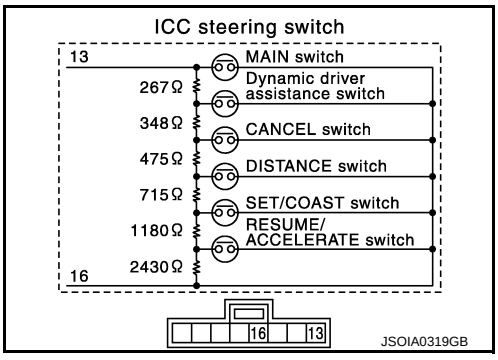
YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

Component Inspection

INFOID:0000000008141590

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 ICC steering switch.

C1A12 LASER BEAM OFF CENTER

DTC Logic

INFOID:0000000008141591

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:0000000008141592

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-85, "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 “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-56, "Removal and Installation".
NO >> INSPECTION END

C1A13 STOP LAMP RELAY

DTC Logic

INFOID:0000000008141593

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A13 (13)	STOP LAMP RLY FIX	• Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ADAS control unit ICC brake hold relay drive signal • The stop lamp remains ON for 60 seconds or more under the following conditions: - Driving at 40 km/h or more - No stop lamp drive signal output from ADAS control unit - No brake operation	• Stop lamp switch circuit • Brake switch circuit • ICC brake hold relay circuit • Stop lamp switch • Brake switch • ICC brake hold relay • Incorrect stop lamp switch installation • Incorrect brake switch installation • HPCM • ABS actuator and electric unit (control unit)

NOTE:
If DTC “C1A13” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE (1)

1. Set the vehicle to READY.
2. Perform the active test item “STOP LAMP” with CONSULT.
3. Perform “All DTC Reading”.
4. 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-126, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE (2)

1. 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.
2. Perform “All DTC Reading”.
3. 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-126, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141594

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-166, "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”.

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-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Adjust stop lamp switch installation. Refer to BR-270, "Inspection and Adjustment".

4. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to DAS-122, "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 TO6.
NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

6. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND HPCM

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

Stop lamp switch		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
E110	2	B159	46	Existed

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E110	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. Connect ICC brake hold relay, HPCM, 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-131, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace ICC brake hold relay.

9. PERFORM SELF-DIAGNOSIS OF HPCM

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 “EV/HEV”. Refer to HBC-71, "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-56, "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		
B248	2		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 ADAS control unit harness connector.

ICC brake hold relay		ADAS control unit		Continuity
Connector	Terminal	Connector	Terminal	
B248	1	B50	5	Existed

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

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
B248	1		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.

Terminal			Condition	Voltage (Approx.)
(+)		(–)		
ADAS control unit		Ground	Active Test item “STOP LAMP”	
Connector	Terminal			
B50	5		Off	Battery voltage
			On	0 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> Replace ADAS control unit. Refer to DAS-56, "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			Voltage (Approx.)
(+)		(–)	
ICC brake hold relay		Ground	
Connector	Terminal		
B248	5		Battery voltage

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 HPCM

1. Disconnect HPCM, 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 HPCM harness connector.

ICC brake hold relay		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
B248	3	B159	46	Existed

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

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
B248	3		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-131, "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”.

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-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 18.
NO >> Adjust stop lamp switch installation. Refer to BR-270, "Inspection and Adjustment".

18. CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to DAS-122, "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		
E110	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	
E110	4	E89	8	Existed

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E110	4		Not existed

Is the inspection result normal?

YES >> GO TO 22.
NO >> Repair the harnesses or connectors.

21. PERFORM SELF-DIAGNOSIS OF HPCM

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 “EV/HEV”. Refer to HBC-71, "DTC Index".

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-57, "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-56, "Removal and Installation".

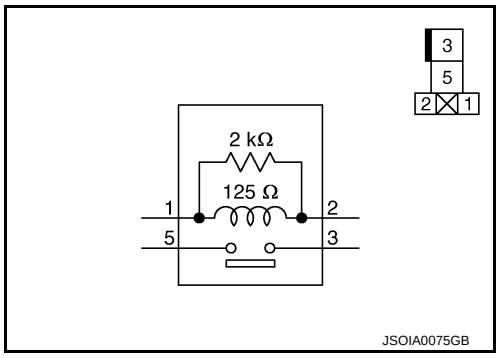
Component Inspection

INFOID:0000000008141595

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.

C1A15 GEAR POSITION

Description

INFOID:0000000008141596

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 wheel speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:0000000008141597

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 • A mismatch between a current gear position signal and shift position signal transmitted from TCM via CAN communication continues for approximately 60 seconds or more	• 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-166, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-116, "DTC Logic" for DTC “C1A03”.
- Refer to DAS-118, "DTC Logic" for DTC “C1A04”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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:
   To prevent the possibility of accident, 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-132, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141598

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-96, "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:

To prevent the possibility of accident, be careful of the vehicle speed.

Is the inspection result normal?

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

3. CHECK GEAR POSITION

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

CAUTION:

To prevent the possibility of accident, 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-56, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A16 RADAR STAIN

DTC Logic

INFOID:0000000008141599

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	• 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:0000000008141600

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-94, "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-56, "Removal and Installation".
NO >> INSPECTION END

C1A17 ICC SENSOR

DTC Logic

INFOID:0000000008141601

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-166, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141602

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 the CAN communication system inspection. Refer to CCS-133, "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-55, "DTC Index".
NO >> Replace ADAS control unit. Refer toDAS-56, "Removal and Installation".

C1A18 LASER AIMING INCMP

DTC Logic

INFOID:0000000008141603

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A18 (18)	LASER AIMING INCMP	Laser beam aiming of ICC sensor is not adjusted	• No laser beam aiming adjustment is performed • Laser beam aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-136, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141604

1.ADJUST LASER BEAM AIMING

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

Is “C1A18” detected?

YES >> Refer to CCS-97, "ICC SENSOR : DTC Logic".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A1A HPCM

DTC Logic

INFOID:0000000008141605

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A1A (19)	HPCM CIRCUIT	If HPCM is malfunctioning	• Accelerator pedal position sensor • HPCM • ADAS control unit

NOTE:
If DTC “C1A1A” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-133, "ADAS CONTROL UNIT : DTC Logic".

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Operate the DCA system and drive.
   CAUTION:
   To prevent the possibility of accident, always drive safely.
3. Stop the vehicle.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “C1A1A” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “C1A1A” detected as the current malfunction?

YES >> Refer to DAS-137, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141606

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “C1A1A” 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-133, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF HPCM

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A21 UNIT HIGH TEMP

DTC Logic

INFOID:0000000008141607

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. Set the vehicle to READY.
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-138, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141608

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-100, "ICC SENSOR : DTC Logic".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A24 NP RANGE

DTC Logic

INFOID:0000000008141609

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	• TCM • Transmission range switch

NOTE:
If DTC “C1A24” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.CHECK DTC REPRODUCE (1)

1. Set the vehicle to READY.
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-139, "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-139, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008473860

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 CCS-133, "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-102, "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?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to TM-80, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A2A ICC SENSOR POWER SUPPLY CIRCUIT

DTC Logic

INFOID:0000000008141611

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A2A (80)	ICC SEN PWR SUP CIR	ICC sensor power supply voltage is malfunction	• Harness, connector, fuse • ICC sensor

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-141, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141612

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 the CAN communication system inspection. Refer to CCS-133, "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-55, "DTC Index".
NO >> Replace ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A2B ELECTRICAL BRAKE MODE MALFUNCTION

DTC Logic

INFOID:0000000008141613

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A2B (23)	ELECTRICAL BRAKE MODE MALF	If an abnormal condition occurs with electrically-driven intelligent brake unit	Electrically-driven intelligent brake unit

NOTE:
If DTC “C1A2B” is detected along with DTC “U1000”, “U0415” or “U0121” first diagnose the DTC “U1000”, “U0415”, or “U0121”.
- DTC “U1000”: Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".
- DTC “U0415”: Refer to DAS-164, "DTC Logic".
- DTC “U0121”: Refer to DAS-160, "DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Wait for approximately 1 minute after turning the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “C1A2B” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “C1A2B” detected as the current malfunction?

YES >> Refer to DAS-142, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141614

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000”, “U0415”, or “U0121” is detected other than “C1A2B” 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-96, "DTC Index".
NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-57, "DTC Index".
NO >> Replace ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A2C ELECTRICAL BRAKE POWER SUPPLY CIRCUIT

DTC Logic

INFOID:0000000008141615

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A2C (20)	ELECTRICAL BRAKE PWR SUPLY CIR	Electrically-driven intelligent brake unit power supply voltage is excessively low	• Electrically-driven intelligent brake unit power supply circuit • Electrically-driven intelligent brake unit

NOTE:
If DTC “C1A2C” is detected along with DTC “U1000”, “U0415”, or “U0121” first diagnose the DTC “U1000”, “U0415”, or “U0121”.
- DTC “U1000”: Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".
- DTC “U0415”: Refer to DAS-164, "DTC Logic".
- DTC “U0121”: Refer to DAS-160, "DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Wait for approximately 1 minute after turning the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “C1A2C” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “C1A2C” detected as the current malfunction?

YES >> Refer to DAS-143, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141616

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000”, “U0415” or “U0121” is detected other than “C1A2C” 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-96, "DTC Index".
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT OF ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Check power supply circuit of electrically-driven intelligent brake unit. Refer to BR-251, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform self-diagnosis of electrically-driven intelligent brake unit. Refer to BR-38, "DTC Index".
NO >> Repair the harnesses or connectors.

C1A33 CAN TRANSMISSION ERROR

DTC Logic

INFOID:0000000008141617

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 HPCM	ADAS control unit

NOTE:
If DTC “C1A33” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-144, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141618

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 CCS-133, "ADAS CONTROL UNIT : DTC Logic".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A34 COMMAND ERROR

DTC Logic

INFOID:0000000008141619

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 HPCM via CAN communication	ADAS control unit

NOTE:
If DTC “C1A34” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-145, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141620

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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A35 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:0000000008141621

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-166, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141622

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-166, "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-104, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

DTC Logic

INFOID:0000000008141623

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	• 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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-147, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141624

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-166, "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-104, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

DTC Logic

INFOID:0000000008141625

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-148, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141626

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-166, "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-56, "Removal and Installation".
NO >> INSPECTION END

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

DTC Logic

INFOID:0000000008141627

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-149, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141628

1.CHECK 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-166, "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 “C1A38” is detected in self-diagnosis results of “ICC/ADAS”.

Is “C1A38” detected?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> INSPECTION END

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000008141629

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-150, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141630

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1F01 ACCELERATOR PEDAL ACTUATOR
ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141631

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-151, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141632

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-166, "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-104, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:0000000008141633

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.

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-152, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:0000000008141634

1. REPLACE ACCELERATOR PEDAL ASSEMBLY

Perform DTC confirmation procedure. If “C1F01” is detected, replace the accelerator pedal assembly. Refer to DAS-201, "Exploded View".

>> INSPECTION END

C1F02 ACCELERATOR PEDAL ACTUATOR
ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141635

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. Set the vehicle to READY.
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-153, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141636

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-166, "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-104, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:0000000008141637

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:0000000008141638

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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?

YES >> Replace the accelerator pedal assembly. Refer to DAS-201, "Exploded View".
NO >> INSPECTION END

C1F03 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:0000000008141639

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F03	APA HI TEMP	• The temperature of the motor integrated in the accelerator pedal actuator remains 100°C (212°F) or more for 0.4 seconds or more. • The 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

1. Turn the ignition switch OFF.
2. Wait for 10 minutes or more and cool the accelerator pedal actuator integrated motor.
3. Drive the vehicle with DCA system ON and operate the system.
   CAUTION:
   Always drive safely.
4. Stop the vehicle.
5. Perform “All DTC Reading” with CONSULT.
6. Check if the DTC “C1F03” is detected as the current malfunction in self-diagnosis results of “ACCELE PEDAL ACT”.

Is “C1F03” detected as the current malfunction?

YES >> Refer to DAS-155, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141640

1.REPLACE ACCELERATOR PEDAL ASSEMBLY

Perform DTC confirmation procedure. If “C1F03” is detected, replace the accelerator pedal assembly. Refer to DAS-201, "Exploded View".

>> INSPECTION END

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141641

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F05 (95)	APA PWR SUPLY CIR	The battery voltage sent to accelerator pedal actuator remains less than 7.9 V or more than 19.3 V for 5 seconds	• Harness, connector, or fuse • Accelerator pedal actuator

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-156, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141642

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-166, "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-166, "ACCELERATOR PEDAL ACTUATOR : DTC Logic".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:0000000008141643

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F05	APA PWR SUPLY CIR	The battery voltage sent to accelerator pedal actuator remains less than 7.9 V or more than 19.3 V for 5 seconds	• Harness, connector, or fuse • Accelerator pedal actuator

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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 “ACCELE PEDAL ACT”.

Is “C1F05” detected as the current malfunction?

YES >> Refer to DAS-167, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:0000000008141644

1.CHECK POWER SUPPLY CIRCUIT

Check the accelerator pedal actuator power supply circuit. Refer toDAS-183, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the accelerator pedal assembly. Refer to DAS-201, "Exploded View".
NO >> Repair or replace the malfunctioning parts.

C1F06 CAN CIRCUIT2

DTC Logic

INFOID:0000000008141645

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-166, "ACCELERATOR PEDAL ACTUATOR : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-158, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141646

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-166, "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-56, "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-201, "Exploded View".
NO >> INSPECTION END

C1F07 CAN CIRCUIT1

DTC Logic

INFOID:0000000008141647

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-166, "ACCELERATOR PEDAL ACTUATOR : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-158, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141648

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-166, "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-56, "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-201, "Exploded View".
NO >> INSPECTION END

U0121 VDC CAN 2

DTC Logic

INFOID:0000000008141649

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-160, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141650

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0126 STRG SEN CAN 1

DTC Logic

INFOID:0000000008141651

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-161, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141652

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0235 ICC SENSOR CAN 1

DTC Logic

INFOID:0000000008141653

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-162, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141654

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-162, "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 DAS-101, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0402 TCM CAN 1

DTC Logic

INFOID:0000000008141655

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-163, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141656

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-166, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0415 VDC CAN 1

DTC Logic

INFOID:0000000008141657

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-164, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141658

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0428 STRG SEN CAN 2

DTC Logic

INFOID:0000000008141659

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-165, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141660

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1000 CAN COMM CIRCUIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000008141661

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-36, "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:0000000008141662

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	• CAN communication system • ITS communication system

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141663

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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Description

INFOID:0000000008141664

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:0000000008141665

DTC DETECTION LOGIC

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

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:0000000008141666

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 “ACCELE PEDAL ACT”.

Is “U1000” detected as the current malfunction?

YES >> Refer to LAN-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000008141667

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

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141668

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:0000000008141669

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-56, "Removal and Installation".
NO >> INSPECTION END

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Description

INFOID:0000000008141670

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

ACCELERATOR PEDAL ACTUATOR : DTC Logic

INFOID:0000000008141671

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:0000000008141672

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 “ACCELE PEDAL ACT”.

Is “U1010” detected as the current malfunction?

YES >> Replace the accelerator pedal actuator. Refer to DAS-201, "Exploded View".
NO >> INSPECTION END

U150C VDC CAN 3

DTC Logic

INFOID:0000000008141673

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-169, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141674

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U150D TCM CAN 3

DTC Logic

INFOID:0000000008141675

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-170, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141676

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-166, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U150E BCM CAN 3

DTC Logic

INFOID:0000000008141677

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-171, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141678

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-166, "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-55, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1502 ICC SENSOR CAN COMM CIRC

DTC Logic

INFOID:0000000008141679

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 ITS communication	ICC sensor

NOTE:
If DTC “U1502” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-172, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141680

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-166, "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 DAS-101, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1513 METER CAN 3

DTC Logic

INFOID:0000000008141681

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-173, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141682

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-166, "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-51, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1514 STRG SEN CAN 3

DTC Logic

INFOID:0000000008141683

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-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-174, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141684

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-166, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1515 ICC SENSOR CAN 3

DTC Logic

INFOID:0000000008141685

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 ITS communication	ICC sensor

NOTE:
If DTC “U1515” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-175, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141686

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-166, "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 DAS-101, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

DTC Logic

INFOID:0000000008141687

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 ITS communication	Accelerator pedal actuator

NOTE:
If DTC “U1517” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-176, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141688

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-52, "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-104, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151A ELECTRICAL BRAKE CAN CIRCUIT 2

DTC Logic

INFOID:0000000008141689

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151A (170)	ELECTRICAL BRAKE CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151A” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151A” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151A” detected as the current malfunction?

YES >> Refer to DAS-177, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141690

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151A” 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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151B ELECTRICAL BRAKE CAN CIRCUIT 1

DTC Logic

INFOID:0000000008141691

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151B (171)	ELECTRICAL BRAKE CAN CIRCUIT 1	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151B” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151B” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151B” detected as the current malfunction?

YES >> Refer to DAS-178, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141692

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151B” 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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151C ELECTRICAL BRAKE CAN CIRCUIT 3

DTC Logic

INFOID:0000000008141693

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151C (172)	ELECTRICAL BRAKE CAN CIRCUIT 3	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151C” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151C” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151C” detected as the current malfunction?

YES >> Refer to DAS-179, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141694

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151C” 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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151D HPCM CAN CIRCUIT 2

DTC Logic

INFOID:0000000008141695

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151D (173)	HPCM CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151D” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151D” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151D” detected as the current malfunction?

YES >> Refer to DAS-180, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141696

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151D” 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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151E HPCM CAN CIRCUIT 1

DTC Logic

INFOID:0000000008141697

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151E (174)	HPCM CAN CIRCUIT 1	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151E” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151E” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151E” detected as the current malfunction?

YES >> Refer to DAS-181, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141698

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151E” 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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151F HPCM CAN CIRCUIT 3

DTC Logic

INFOID:0000000008141699

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151F (175)	HPCM CAN CIRCUIT 3	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151F” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the DCA system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151F” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151F” detected as the current malfunction?

YES >> Refer to DAS-182, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141700

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151F” 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-166, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141701

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal			Condition	Voltage (Approx.)
(+)		(–)		
ADAS control unit		Ground	Ignition switch	
Connector	Terminal			
B50	16		OFF	0 V
			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the ADAS control unit power supply circuit.

3.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		
B50	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:0000000008141702

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Battery power supply	37
Ignition power supply	46

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.

Terminal			Condition	Voltage (Approx.)
(+)		(–)		
Accelerator pedal actuator		Ground	Ignition switch	
Connector	Terminal			
M152	1		OFF	Battery voltage
	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		
M152	2		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair the accelerator pedal actuator ground circuit.

SYMPTOM DIAGNOSIS

DISTANCE CONTROL ASSIST SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000008141703

Symptoms		Reference page
Operation	Switch does not turn ON	Refer to DAS-186, "Description".
	Switch does not turn OFF	
	DCA system setting cannot be turned ON on the navigation screen	Refer to DAS-188, "Description".
	DCA system setting cannot be turned OFF on the navigation screen	
	DCA system not activated (switch is ON)	Refer to DAS-189, "Description".
Display/Chime	Information display is not illuminated (vehicle ahead indicator)	Refer to MWI-35, "On Board Diagnosis Function".
	Chime does not sound	Refer to DAS-191, "Description".
Control	No force generated for putting back the accelerator pedal	Refer to DAS-193, "Description".
Detection of lead vehicle	Frequently cannot detect the vehicle ahead	Refer to DAS-194, "Description".
	Detection zone is short	
	System misidentifies a vehicle even though there is no vehicle ahead	• Adjust laser beam aiming: Refer to CCS-63, "Description". • Perform action test. Refer to DAS-113, "Description".
	System misidentifies a vehicle in the next lane	
	System does not detect the vehicle ahead at all	Refer to DAS-196, "Description".

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

Description

INFOID:0000000008141704

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 ASCD (Automatic Speed Control Device).

Diagnosis Procedure

INFOID:0000000008141705

1.CHECK DCA SYSTEM SETTING

1. Set the vehicle to READY.
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. Set the vehicle to READY.
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. Set the vehicle to READY.
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-51, "DTC Index".

Is any DTC detected?

YES >> GO TO 7.
NO >> GO TO 6.

5.CHECK STEERING SWITCH CIRCUIT

Check the steering switch circuit. Refer to DAS-123, "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-96, "DTC Index".

Is any DTC detected?

YES >> GO TO 7.

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-113, "Description" for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

DCA SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

Description

INFOID:0000000008141706

- 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 set the vehicle to READY, 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 of AV control unit.
- 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:0000000008141707

1.CHECK DCA SYSTEM SETTING

1. Set the vehicle to READY.
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 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-96, "DTC Index"
- MULTI AV: AV-169, "DTC Index"
- METER/M&A: MWI-51, "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-142, "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-56, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

Description

INFOID:0000000008141708

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 drive mode select switch is in SNOW position

Diagnosis Procedure

INFOID:0000000008141709

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-123, "DTC Logic".
“VHCL SPD UNMATCH”>>Refer to DAS-116, "DTC Logic".
“IGN LOW VOLT”>>Refer to DAS-115, "DTC Logic".
“CAN COMM ERROR”>>Refer to DAS-166, "ADAS CONTROL UNIT : DTC Logic".
“ICC SENSOR CAN COMM ERR”>>Refer to DAS-162, "DTC Logic".
“ABS/TCS/VDC CIRC”>>Refer to DAS-118, "DTC Logic".
“APA HI TEMP”>>Refer to DAS-155, "DTC Logic".
“ECD CIRCUIT”>>Refer to DAS-142, "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-96, "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. Set the vehicle to READY.
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?

All items are normal>>GO TO 5.

"VHCL SPEED SE">>Refer to DAS-116, "DTC Logic".
"BRAKE SW">>Refer to DAS-119, "DTC Logic".
"DYNA ASIST SW">>Refer to DAS-123, "DTC Logic".

5. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-56, "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-113, "Description" for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

CHIME DOES NOT SOUND

Description

INFOID:0000000008141710

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-194, "Description".)

Diagnosis Procedure

INFOID:0000000008141711

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-56, "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-166, "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-51, "DTC Index".
NO >> GO TO 6.

6.CHECK ICC WARNING CHIME CIRCUIT

Check meter buzzer. Refer to WCS-38, "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.

>> GO TO 9.

8. REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-56, "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-113, "Description" for action test.)
2. Check if the DCA system is normal.

>> INSPECTION END

NO FORCE GENERATED FOR PUTTING BACK THE ACCELERATOR PEDAL

Description

INFOID:0000000008141712

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:0000000008141713

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-96, "DTC Index" (ICC/ADAS) or DAS-104, "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-194, "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-113, "Description" for action test.)
2. Check if the DCA system is normal.

>> INSPECTION END

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

Description

INFOID:0000000008141714

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:0000000008141715

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-63, "Description".
2. Perform action test. Refer to DAS-113, "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-200, "Removal and Installation".
2. Adjust the laser beam aiming. Refer to CCS-63, "Description".
3. Perform action test. Refer to DAS-113, "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-56, "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-113, "Description" for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:0000000008141716

When DCA system is active, the DCA system does not perform any control even through there is a vehicle ahead.

Diagnosis Procedure

INFOID:0000000008141717

1.CHECK INFORMATION DISPLAY

1. Start the self-diagnosis mode of combination meter. Refer to MWI-35, "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-63, "Description".
2. Perform action test. Refer to DAS-113, "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-200, "Removal and Installation".
2. Adjust the laser beam aiming. Refer to CCS-63, "Description".
3. Perform action test. Refer to DAS-113, "Description".
4. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> INSPECTION END
NO >> GO TO 7.

7.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-56, "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-113, "Description" for action test.)
2. Check that the DCA system is normal.

>> INSPECTION END

NORMAL OPERATING CONDITION

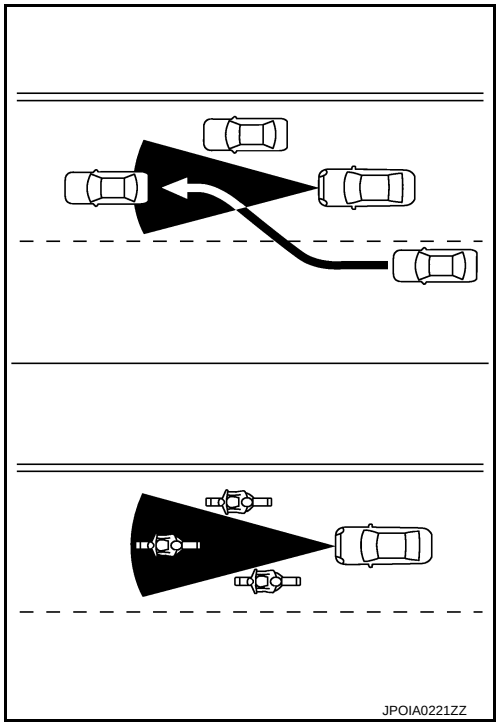
Description

INFOID:0000000008141718

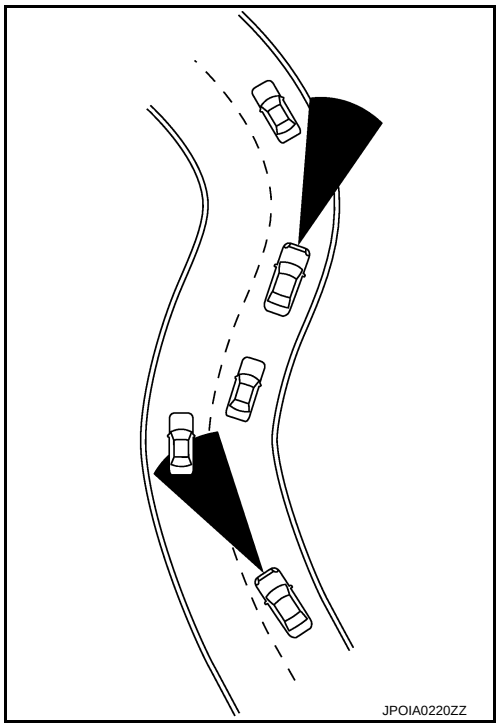
PRECAUTIONS FOR DISTANCE CONTROL ASSIST (DCA) SYSTEM

- 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.
  - 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
- Do not use the DCA system if own vehicle are towing a trailer. The system may not detect a vehicle ahead.
- 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.

- 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)].

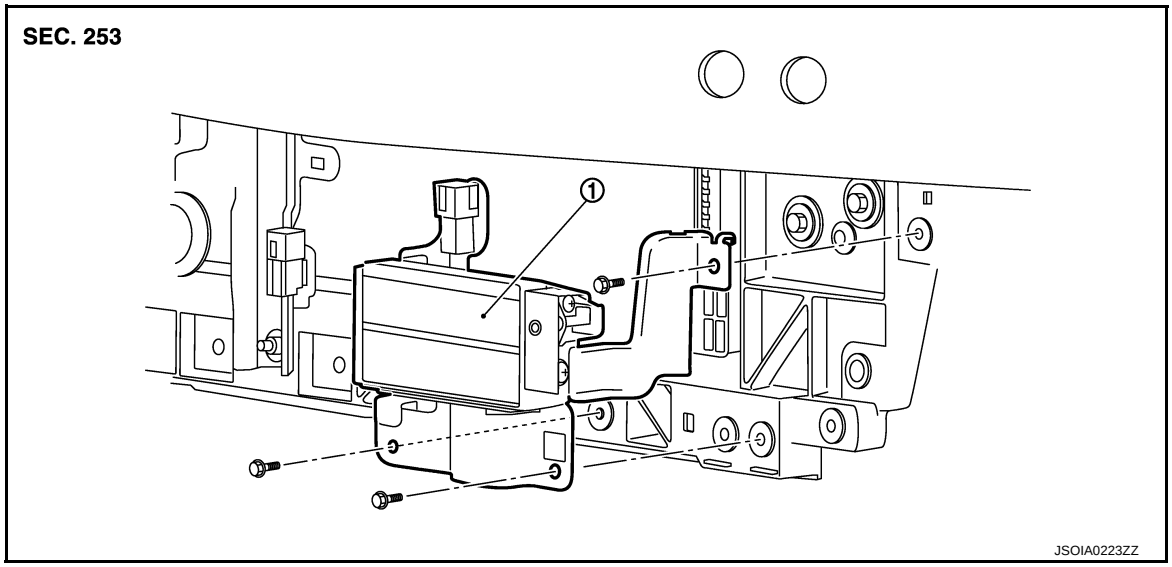
REMOVAL AND INSTALLATION

ICC SENSOR

Exploded View

INFOID:0000000008141719

CAUTION:
To prevent malfunction, always perform the laser beam aiming adjustment and check the operation after the replacement, removal and installation of ICC sensor.



1. ICC sensor

Removal and Installation

INFOID:0000000008141720

REMOVAL

1. Remove front bumper fascia assembly. Refer to EXT-14, "Removal and Installation".
2. Disconnect ICC sensor connector.
3. Remove mounting bolts from ICC sensor.
4. Remove ICC sensor.

INSTALLATION

Install in the reverse order of removal.

CAUTION:
To prevent malfunction, always perform the laser beam aiming adjustment and check the operation after the replacement, removal, and installation of ICC sensor. Refer to CCS-62, "Description".

ACCELERATOR PEDAL ASSEMBLY

Exploded View

INFOID:0000000008141721

Refer to ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View".

CAUTION:

To prevent malfunction, 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-112, "Description".

DYNAMIC DRIVER ASSISTANCE SWITCH

Exploded View

INFOID:0000000008141722

Dynamic driver assistance switch is integrated in the ICC steering switch. Refer to ST-29, "Exploded View".

PRECAUTION

PRECAUTIONS

Precaution for FCW System Service

INFOID:0000000008141723

CAUTION:

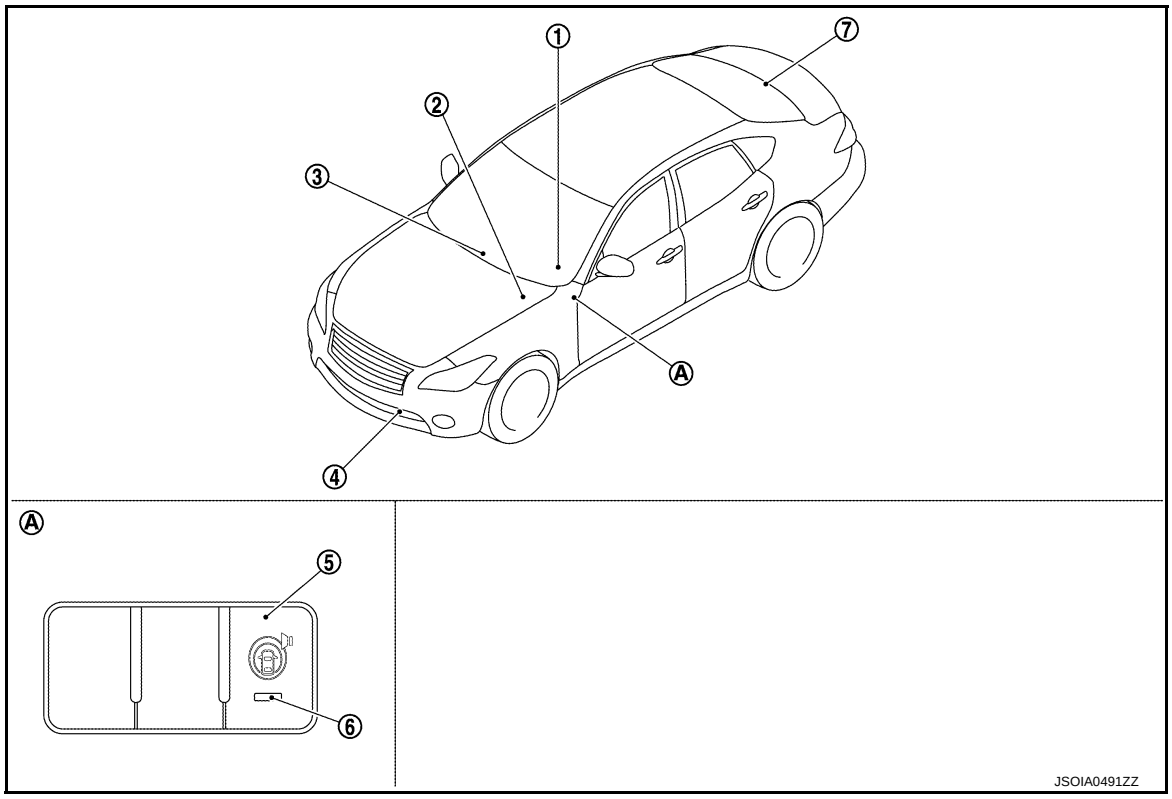
- **To prevent blindness from occurring, never look straight into the laser beam discharger when adjusting laser beam aiming.**
- **To prevent the possibility of accident, turn the warning systems switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.**
- **To prevent malfunction, never use the ICC sensor removed from vehicle. Never disassemble or remodel.**
- **After an ICC part is replaced, to prevent a system malfunction, erase DTC and adjust the laser beam aiming before performing an operational checkup.**
- **Never change FCW initial state ON ⇒ OFF without the consent the customer.**

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000008141724



1. Information display, IBA OFF indicator lamp, buzzer (On the combination meter)
2. ABS actuator and electric unit (control unit) Refer to BRC-11, "Component Parts Location"
3. AV control unit Refer to AV-131, "Component Description"
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-14, "Component Parts Location"

Component Description

INFOID:0000000008141725

Component	Description
ADAS control unit	• 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	• 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 wheel speed signal to ADAS control unit via CAN communication
Warning systems switch	Inputs the warning systems switch signal to ADAS control unit

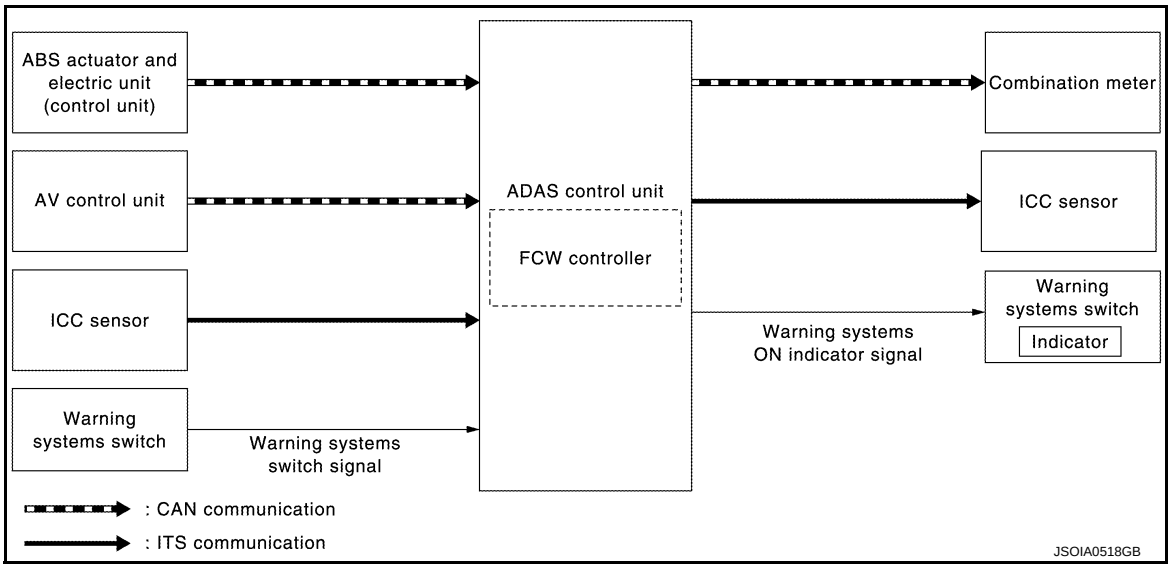
Component	Description
Warning systems ON indicator (On the warning systems switch)	Turns warning systems ON indicator ON/OFF according to the signals from the ADAS control unit
Combination meter	Performs the following operations using the signals received from the ADAS control unit via the CAN communication • 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

SYSTEM

System Description

INFOID:0000000008141726

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	Wheel speed signal	Receives wheel speeds of four wheels
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in “Driver Assistance” 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	Vehicle ahead detection indicator signal	Transmits a signal to display a state of the system on the information display
		IBA OFF indicator lamp signal		• 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

- 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
• When the FCW system malfunctions • When the sensor window is dirty • When driving into a strong light (i.e. sunlight) **NOTE:** Check that the IBA system is not OFF. The indicator lamp is shared with IBA system.	 JPOIA0179ZZ

Fail-safe (ADAS Control Unit)

INFOID:0000000008141727

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
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)	—	BSW/BSI warning lamp	Cancel

System	Buzzer	Warning lamp/Indicator lamp	Description
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

Fail-safe (ICC Sensor)

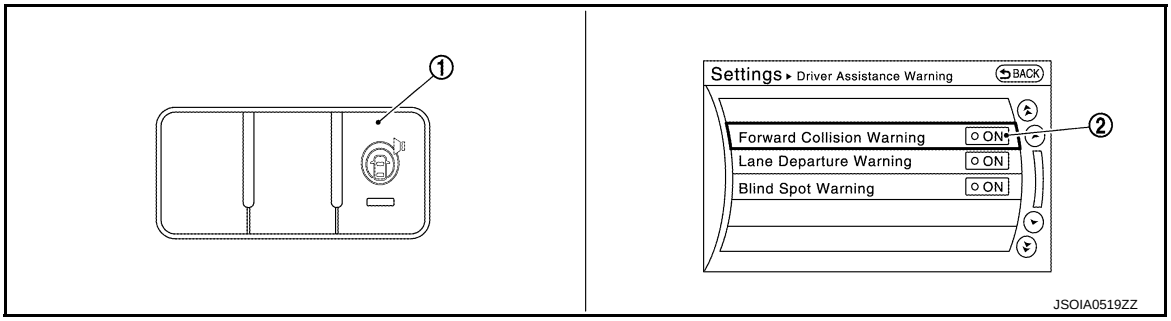
INFOID:0000000008141728

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:0000000008141729

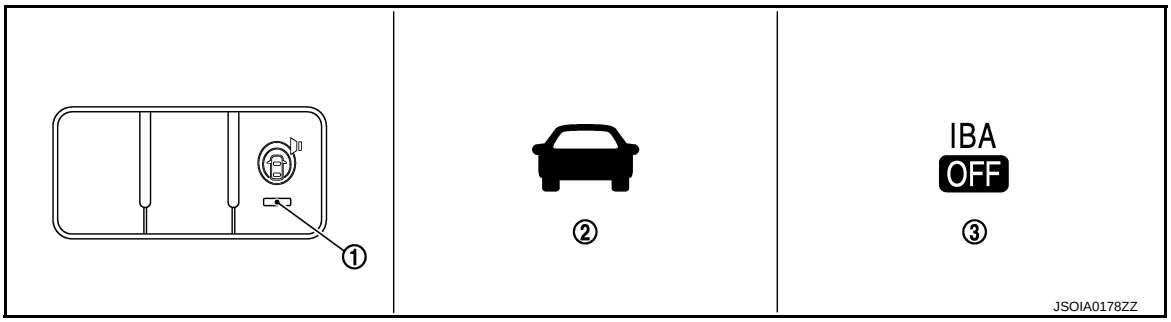


No.	Switch name	Description
1	Warning systems switch	Turns FCW system ON/OFF (When the setting of FCW system on the navigation system setting screen is ON)
2	FCW system setting screen (Navigation system settings screen)	The setting of FCW system can be switched between ON and OFF

Menu Displayed by Pressing Each Switch

INFOID:0000000008141730

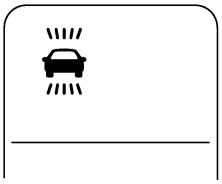
DISPLAY AND WARNING LAMP



No.	Display item	Description
1	Warning systems ON indicator	• 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	IBA OFF indicator lamp turns ON when: • FCW system has a malfunction • ICC sensor window is too dirty to detect a vehicle ahead • Subjected to a strong light (e.g. sunlight) **NOTE:** Shared with IBA system

SYSTEM CONTROL CONDITION DISPLAY

Condition	Warning systems ON indicator	Vehicle ahead detection indicator (In the combination meter)	Buzzer
Set condition	ON	OFF	—

Condition	Warning systems ON indicator	Vehicle ahead detection indicator (In the combination meter)	Buzzer
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	 JSOIA0134ZZ	Beep

HANDLING PRECAUTION

Precautions for Forward Collision Warning

INFOID:0000000008141731

FORWARD COLLISION WARNING (FCW)

- FCW system is intended to warn the driver before a collision but will not avoid a collision. It is the drive'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.
- 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

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

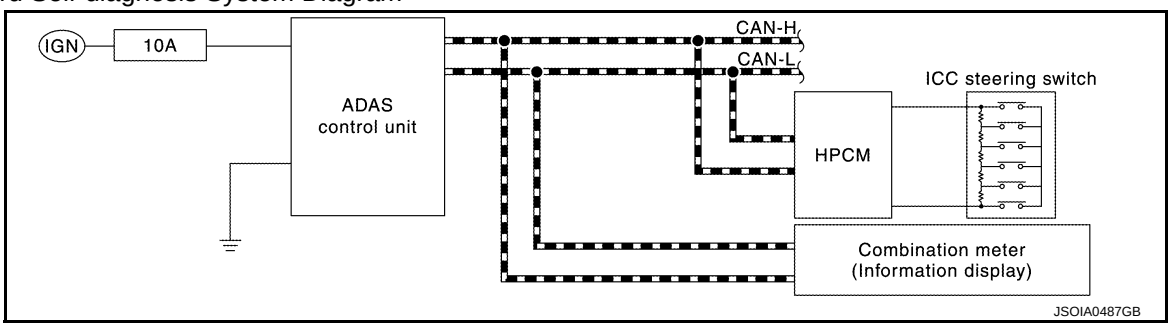
On Board Diagnosis Function

INFOID:0000000008141732

DESCRIPTION

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

On Board Self-diagnosis System Diagram



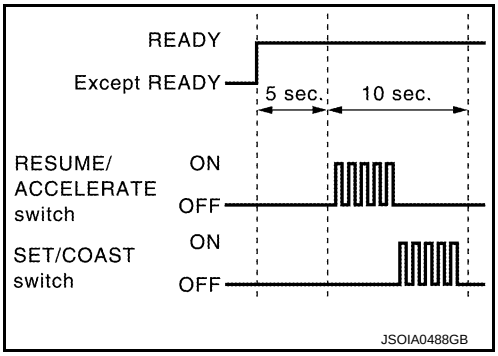
METHOD OF STARTING

NOTE:

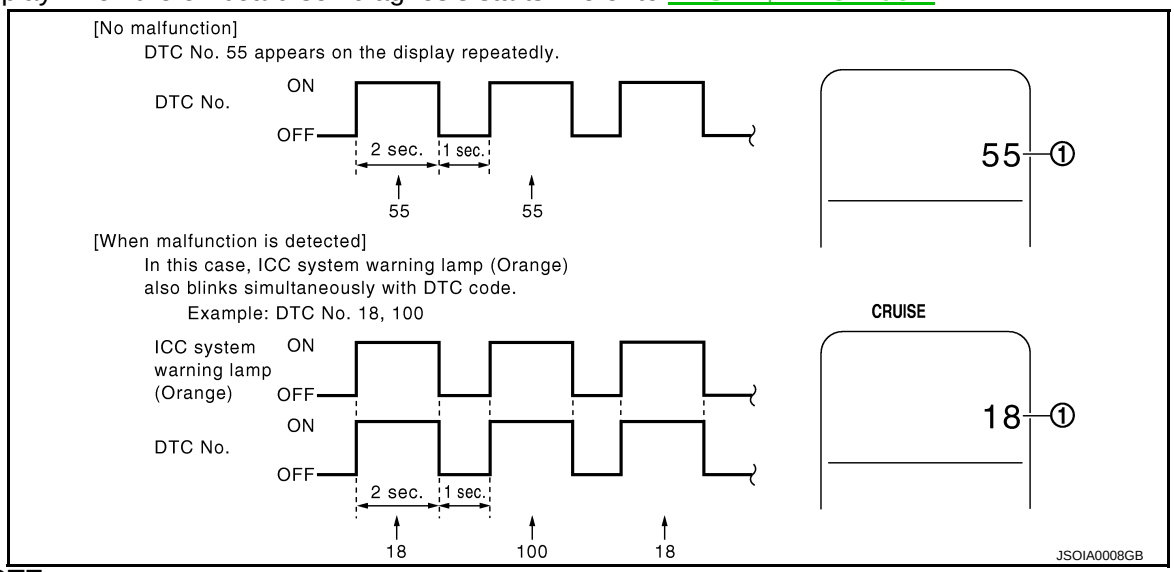
Start condition of on board self-diagnosis

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

1. Turn the ignition switch OFF.
2. Set the vehicle to READY.
3. Wait for 5 seconds after setting the vehicle to READY. 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 setting the vehicle to READY, 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-42, "DTC Index".



NOTE:

- 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.

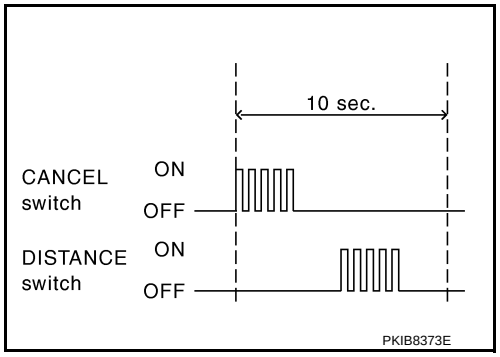
WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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-35, "On Board Diagnosis Function".
ICC steering switch malfunction		Perform the inspection for DTC “C1A06”. Refer to CCS-83, "DTC Logic".
Harness malfunction between ICC steering switch and HPCM		
HPCM malfunction		
ADAS control unit malfunction		• Check power supply and ground circuit of ADAS control unit. Refer to DAS-55, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for “ICC/ADAS”with CONSULT, and then check the malfunctioning parts. Refer to DAS-42, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Set the vehicle to READY, 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:0000000008141733

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

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems • Vehicle-to-vehicle control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems • Lane Departure Prevention (LDP) • Blind Spot Intervention (BSI)

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	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	×		HPCM 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	×	×	Shifting of the drive mode selector to SNOW position
OP SW DOUBLE TOUCH	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	Vehicle speed lower than 24 km/h (15 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
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	×	×	There is a malfunction in the function controlling the brake according to a command issued from the ADAS control unit to the electrically-driven intelligent brake unit
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
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
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	×		Shifting of the drive mode selector to SNOW position
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
BSI WARNING	×		BSI system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during BSI system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
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 BSI 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		×	Shifting of the drive mode selector to SNOW position
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 BSI system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

SELF DIAGNOSTIC RESULT

Refer to DAS-42, "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)	Description
MAIN SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×				Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×			Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from brake switch signal (HPCM transmits brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (HPCM 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 (HPCM 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 wheel speed signal 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 (HPCM transmits engine speed signal through CAN communication)
PRESS SENS [bar]	×	×			Indicates a brake fluid pressure command value
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
RELEASE SW NO [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
RELEASE SW NC [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)
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)
THRTL OPENING [%]	×	×			Indicates throttle position read from ADAS control unit through CAN communication (HPCM 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]	×				Indicates the active mode of ICC
SET DISP IND [Off]	×				**NOTE:** The item is displayed, but it is not monitored
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 (HPCM 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
LDW ON LAMP [On/Off]			×		Indicates [On/Off] status of waning 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
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 (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 (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 (BSI)
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 the DCA system. The 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
BSI SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of BSI system. BSI 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
DRIVE MODE STATS [STD/SPORT/ECO/ SNOW/MID/ERROR]	×	×	×	×	Indicates a drive mode selector select position judged from a drive mode select switch position signal read by the ADAS control unit via CAN communication (The A/C auto amp. transmits a switch position signal of the drive mode select switch signal 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 BSW/BSI warning lamp output
BSI ON IND [On/Off]				×	Indicates [On/Off] status of BSI ON indicator output
BSW SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSW system
BSI SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSI system

ACTIVE TEST

CAUTION:

- **To prevent the possibility of accident, never perform “Active Test” while driving the vehicle.**
- **To prevent the possibility of accident, shift the selector lever to “P” position, and then perform the test.**

NOTE:

- The “Active Test” cannot be performed when the following systems warning lamp is illuminated.
- ICC system warning lamp
- Lane departure warning lamp
- BSW/BSI warning lamp
- IBA OFF indicator lamp (IBA system ON)

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 • 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

Test item	Description
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention (BSI)
WARNING SYSTEM IND	The 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 BSW/BSI warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The BSI ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	• MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test • 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 • 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	—

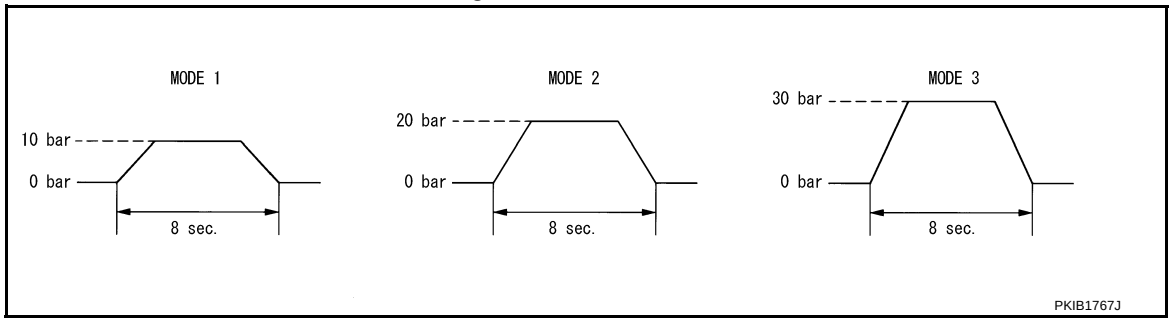
BRAKE ACTUATOR

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the electrically-driven intelligent brake 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:

- **To prevent the possibility of accident, 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.)**

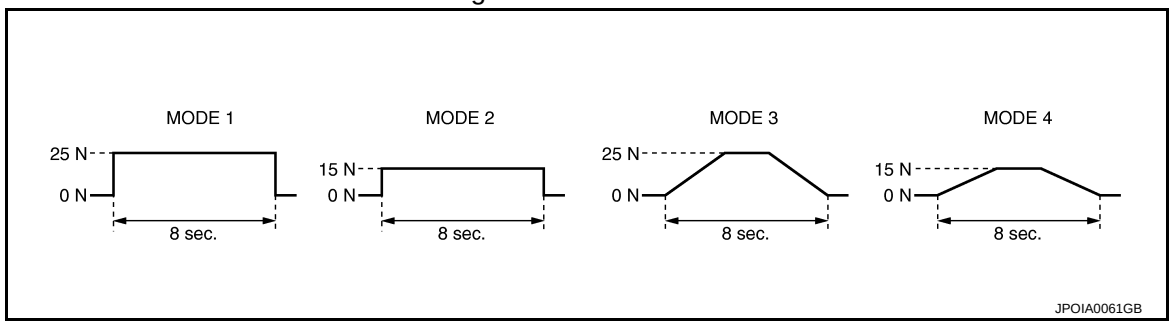
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can performed only when the vehicle is in READY state.

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 performed only when the vehicle is in READY state.

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

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

BSI ON INDICATOR

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

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER)

INFOID:0000000008141734

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-63, "Description".

SELF DIAGNOSTIC RESULT

Refer to CCS-55, "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 wheel 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]	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
STRG ANGLE SPEED [deg/s]	The steering angle speed is displayed

Monitored item [Unit]	Description
L/R ADJUST	The horizontal correction value of the laser beam is displayed
U/D ADJUST	The vertical correction value of the laser beam is displayed

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000008141735

VALUES ON THE DIAGNOSIS TOOL

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	READY state	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Set the vehicle to READY 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	Set the vehicle to READY and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Set the vehicle to READY 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	Set the vehicle to READY 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

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	READY state	When the buzzer of the following system operates • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system	On
		When the buzzer of the following system not operates • 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
PRESS SENS	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When the brake is in the deactivated state by the system	0.0
		When the brake is in the activated state by the system	Displays the brake pressure command value
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	READY state	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
RELEASE SW NO	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
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	READY state	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	READY state	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

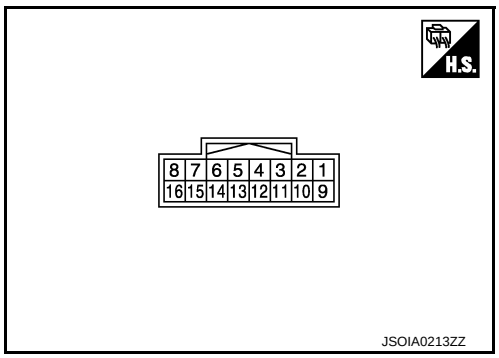
Monitor item	Condition		Value/Status
PWR SUP MONI	READY state		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	READY state	Depress accelerator pedal	Displays the throttle position
GEAR	While driving		Displays the gear position
MODE SIG	When ICC system is deactivated		Off
	When vehicle-to-vehicle distance control mode is activated		ICC
SET DISP IND	**NOTE:** The item is indicated, but not monitored		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	Set the vehicle to READY and press dynamic driver assistance switch (When DCA 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	On
		When the FCW system is OFF	Off
APA TEMP	READY state		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	On
		When the LDW system is OFF	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

Monitor item	Condition		Value/Status
LDP ON IND	Set the vehicle to READY 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 BUZZER OUTPUT	Drive the vehicle and activate the LDW/LDP system or BSW/BSI system	When the buzzer of the following system operates • LDW/LDP system • BSW/BSI system	On
		When the buzzer of the following system does not operate • LDW/LDP system • BSW/BSI system	Off
LDP SYSTEM ON	Set the vehicle to READY 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	Set the vehicle to READY 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 BSI system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	• READY state • 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 and activate the LDP system	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

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
DRIVE MODE STATS	Ignition switch ON	When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
		When position of drive mode select switch is in following states • In the middle of SNOW-ECO • In the middle of ECO-STANDARD • In the middle of STANDARD-SPORTS	Mid
		A signal other than those above is input	ERROR
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	BSW/BSI warning lamp ON	On
		BSW/BSI warning lamp OFF	Off
BSI ON IND	Ignition switch ON	BSI ON indicator ON	On
		BSI ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON	On
		When the BSW system is OFF	Off
BSI SYSTEM ON	Set the vehicle to READY and press dynamic driver assistance switch (When BSI system setting is ON)	When the BSI system is ON	On
		When the BSI system is OFF	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	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 (BR)		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 (O)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (SB)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At “STOP LAMP” test of “Active test”	0 V
6 (B/R)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (P)		ITS communication-L	—	—	—	—
12 (W)		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 (GR)		Ignition power supply	Input	Ignition switch ON		Battery voltage

Fail-safe

INFOID:0000000008141736

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
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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

DTC Inspection Priority Chart

INFOID:0000000008141737

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

Priority	Detected items (DTC)
1	• U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

Priority	Detected items (DTC)
4	• 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 • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • C1A1A: HPCM CIRCUIT • C1A2A: ICC SEN PWR SUP CIR • C1A2B: ELECTRICAL BRAKE MODE MALF • C1A2C: ELECTRICAL BRAKE PWR SUPLY CIRC • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • 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 INCMP • C1B03: CAM ABNRML TMP DETCT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0424: HVAC 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 • 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 • U151A: ELECTRICAL BRAKE CAN CIRCUIT 2 • U151B: ELECTRICAL BRAKE CAN CIRCUIT 1 • U151C: ELECTRICAL BRAKE CAN CIRCUIT 3 • U151D: HPCM CAN CIRCUIT 2 • U151E: HPCM CAN CIRCUIT 1 • U151F: HPCM CAN CIRCUIT 3
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000008141738

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: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-50
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-51
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-51
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-76
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-78
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	A, B, C, D, E, F	CCS-79
C1A06	6	OPERATION SW BIRC	ON		ON	ON	A, D, E, F	CCS-83
C1A12	12	LASER BEAM OFFCN-TR	ON	ON			A, B, C, D	CCS-85
C1A13	13	STOP LAMP RLY FIX	ON	ON			A, B, C, D	CCS-86
C1A15	15	GEAR POSITION	ON	ON	ON	ON	A, B, C, D, E, F	CCS-92
C1A16	16	RADAR STAIN	ON	ON			A, B, C, D	CCS-94
C1A17	17	ICC SENSOR MALF	ON	ON			A, B, C, D	CCS-96
C1A18	18	LASER AIMING INCMP	ON	ON			A, B, C, D	CCS-97
C1A1A	19	HPCM CIRCUIT	ON		ON	ON	A, D, E, F	CCS-99
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON			A, B, C, D	CCS-100
C1A24	24	NP RANGE	ON	ON	ON	ON	A, B, C, D, E, F	CCS-102
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON			A, B, C, D	CCS-104

Systems for fail-safe
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- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A2B	23	ELECTRICAL BRAKE MODE MALF	ON	ON			A, B, C, D	CCS-105
C1A2C	20	ELECTRICAL BRAKE PWR SUPLY CIR	ON	ON			A, B, C, D	CCS-106
C1A33	33	CAN TRANSMISSION ERR	ON				A, D, G	CCS-107
C1A34	34	COMMAND ERROR	ON				A, D, G	CCS-108
C1A35	35	APA CIR	ON				A, D	CCS-109
C1A36	36	APA CAN COMM CIR	ON				A, D	CCS-110
C1A37	133	APA CAN CIR 2	ON				A, D	CCS-111
C1A38	132	APA CAN CIR 1	ON				A, D	CCS-112
C1A39	39	STRG SEN CIR	ON	ON		ON	A, B, C, D, F, G	CCS-113
C1A40	40	SYSTEM SW CIRC		ON			B, C	CCS-115
C1B00	81	CAMERA UNIT MALF			ON	ON	E, F	DAS-336
C1B01	82	CAM AIMING INCMP			ON	ON	E, F	DAS-338
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK	E, F	DAS-340
C1B53	84	SIDE RDR R MALF				ON	F	DAS-482
C1B54	85	SIDE RDR L MALF				ON	F	DAS-483
C1F01	91	APA MOTOR MALF	ON				A, D	CCS-118
C1F02	92	APA C/U MALF	ON				A, D	CCS-119
C1F05	95	APA PWR SUPLY CIR	ON				A, D	CCS-120
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	A, B, C, D, E, F, G	CCS-122
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	A, B, C, D, F, G	CCS-124
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			A, B, C, D	CCS-126
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F	CCS-127
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-129

Systems for fail-safe
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- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U0424	156	HVAC CAN CIR 1						BR-232
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	A, B, C, D, F, G	CCS-131
U1000[NOTE]	100	CAN COMM CIRCUIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-52
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-53
U1500	145	CAM CAN CIR 2			ON	ON	E, F	DAS-354
U1501	146	CAM CAN CIR 1			ON	ON	E, F	DAS-355
U1502	147	ICC SEN CAN COMM CIR	ON	ON			A, B, C, D	CCS-139
U1503	150	SIDE RDR L CAN CIR 2				ON	F	DAS-503
U1504	151	SIDE RDR L CAN CIR 1				ON	F	DAS-504
U1505	152	SIDE RDR R CAN CIR 2				ON	F	DAS-505
U1506	153	SIDE RDR R CAN CIR 1				ON	F	DAS-506
U1507	154	LOST COMM (SIDE RDR R)				ON	F	DAS-507
U1508	155	LOST COMM (SIDE RDR L)				ON	F	DAS-508
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	CCS-137
U150E	160	BCM CAN CIRC 3	ON		ON	ON	A, D, E, F	CCS-138
U150F	161	AV CAN CIRC 3						DAS-54
U1512	162	HVAC CAN CIRC3			ON	ON	E, F	DAS-356
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	CCS-140
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	A, B, C, D, F, G	CCS-141
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			A, B, C, D	CCS-142
U1516	166	CAM CAN CIRC 3			ON	ON	E, F	DAS-358
U1517	167	APA CAN CIRC 3	ON				A, D	CCS-143
U1518	168	SIDE RDR L CAN CIRC 3				ON	F	DAS-513
U1519	169	SIDE RDR R CAN CIRC 3				ON	F	DAS-514
U151A	170	ELECTRICAL BRAKE CAN CIRCUIT 2	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U151B	171	ELECTRICAL BRAKE CAN CIRCUIT 1	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136
U151C	172	ELECTRICAL BRAKE CAN CIRCUIT 3	ON	ON	ON	ON	A, B, C, D, E, F, G	CCS-136
U151D	173	HPCM CAN CIRCUIT 2	ON		ON	ON	A, D, E, F	CCS-136
U151E	174	HPCM CAN CIRCUIT 1	ON		ON	ON	A, D, E, F	CCS-136
U1501F	175	HPCM CAN CIRCUIT 3	ON		ON	ON	A, D, E, F	CCS-136

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

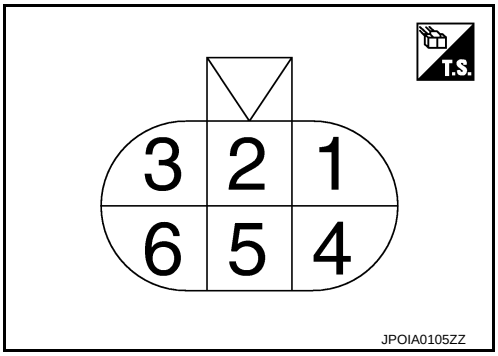
Reference Value

INFOID:0000000008141739

VALUES ON THE DIAGNOSIS TOOL

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Value of vehicle speed (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



PHYSICAL VALUES

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

Fail-safe

INFOID:0000000008141740

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:0000000008141741

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

Priority	Detected items (DTC)
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• C1A50: ADAS MALFUNCTION
3	• C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A12: LASER BEAM OFFCNTR • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • 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	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000008141742

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.

×: Applicable

DTC	CONSULT display	ICC system warning lamp	Fail-safe					Reference
CONSULT			Vehicle-to-vehicle distance control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Intelligent Brake Assist (IBA)	Brake Assist (with Preview Function)	
C1A00	CONTROL UNIT	ON	×	×	×	×	×	CCS-72
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	CCS-74
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	CCS-74
C1A12	LASER BEAM OFFCNTR	ON	×	×	×	×	×	CCS-85
C1A16	RADAR STAIN	ON	×	×	×	×	×	CCS-94
C1A18	LASER AIMING INCMP	ON	×	×	×	×	×	CCS-97
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	×	CCS-100
C1A39	STRG SEN CIR	ON	×	×	×	×	×	CCS-113
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	×	CCS-117
U0104	ADAS CAN CIR1	ON	×	×	×	×	×	CCS-121
U0121	VDC CAN CIR2	ON	×	×	×	×	×	CCS-122
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	CCS-124
U0405	ADAS CAN CIR2	ON	×	×	×	×	×	CCS-128
U0415	VDC CAN CIR1	ON	×	×	×	×	×	CCS-129
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	CCS-131
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	×	CCS-133
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	×	CCS-135

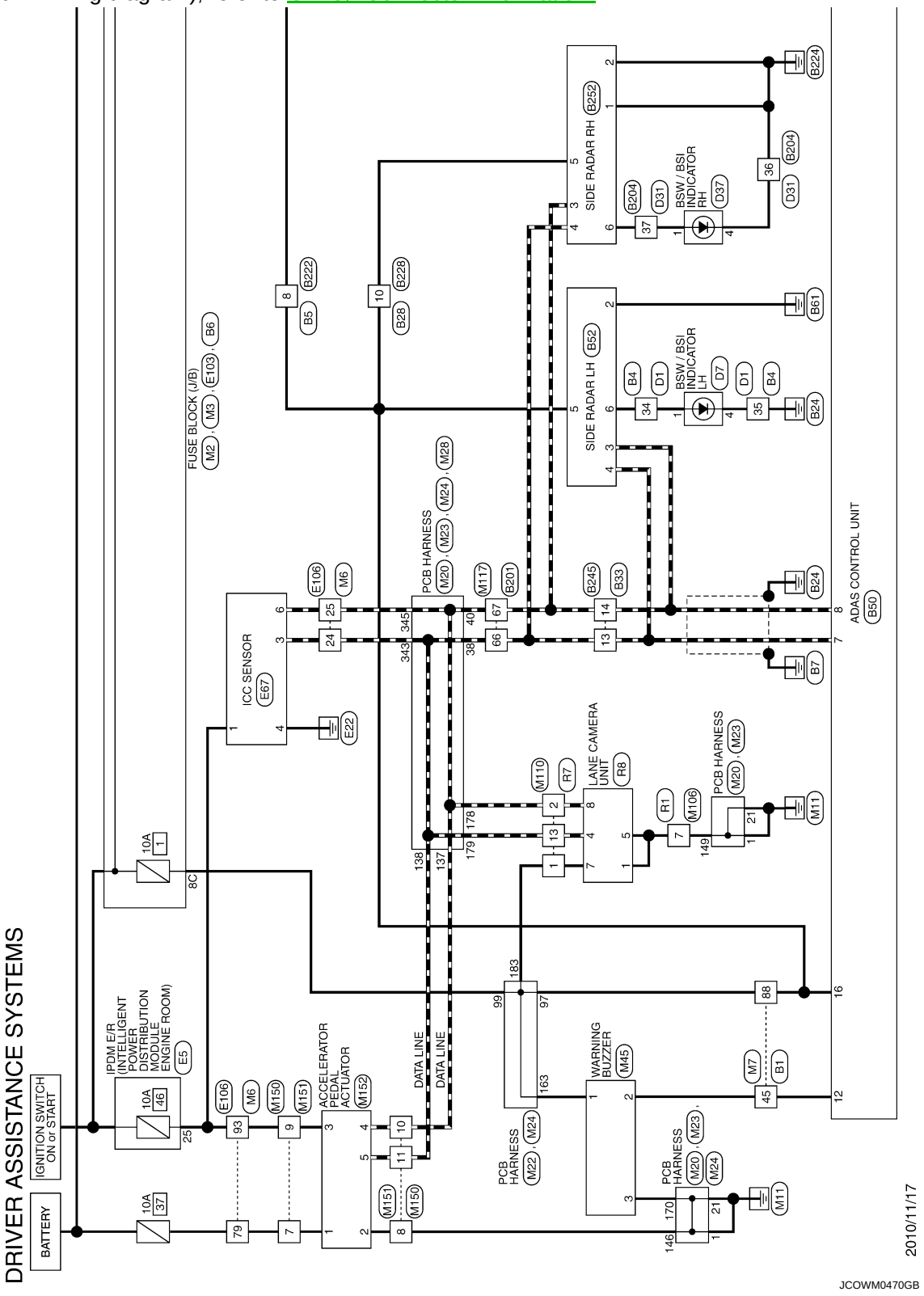
WIRING DIAGRAM

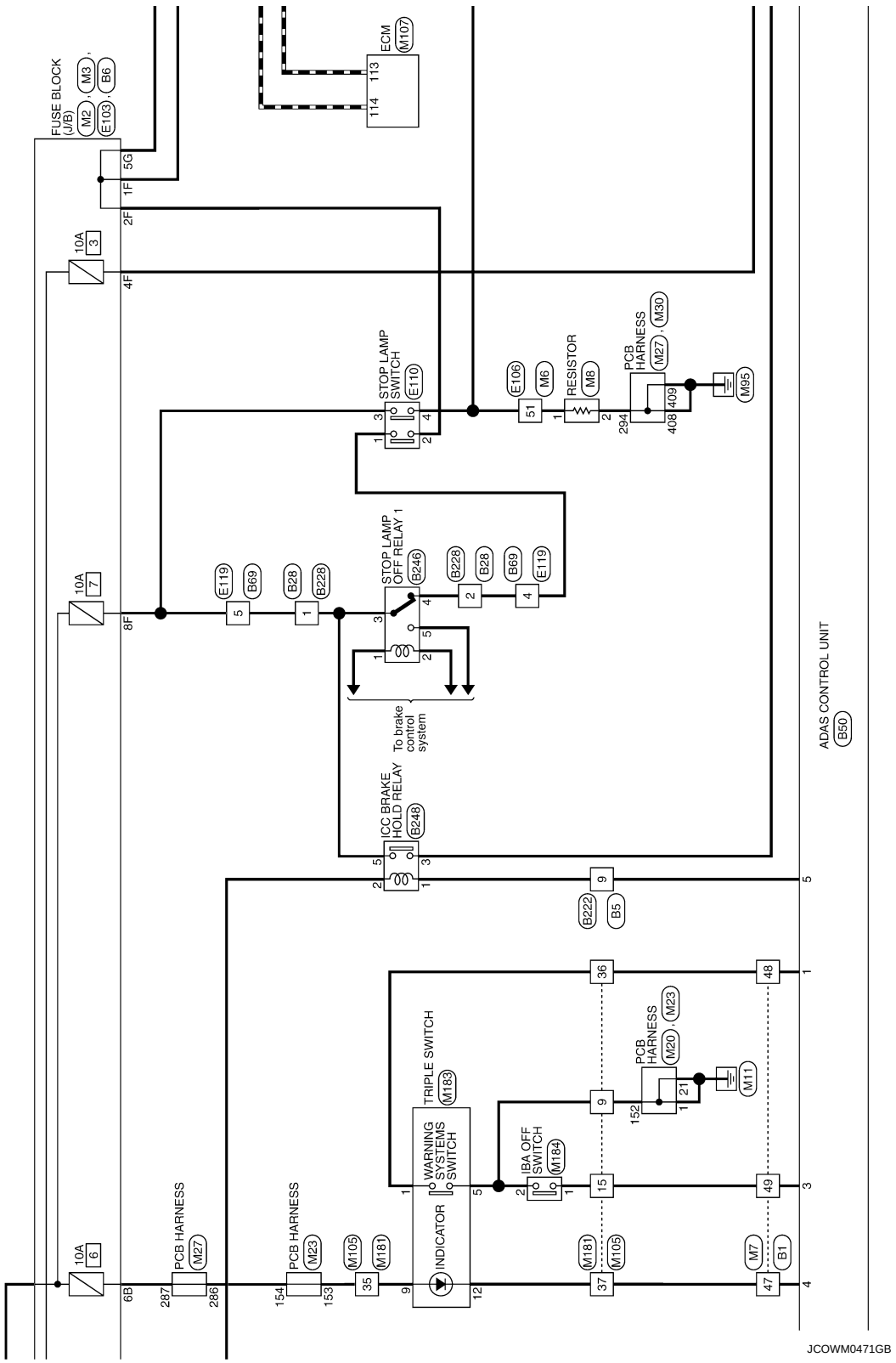
DRIVER ASSISTANCE SYSTEMS

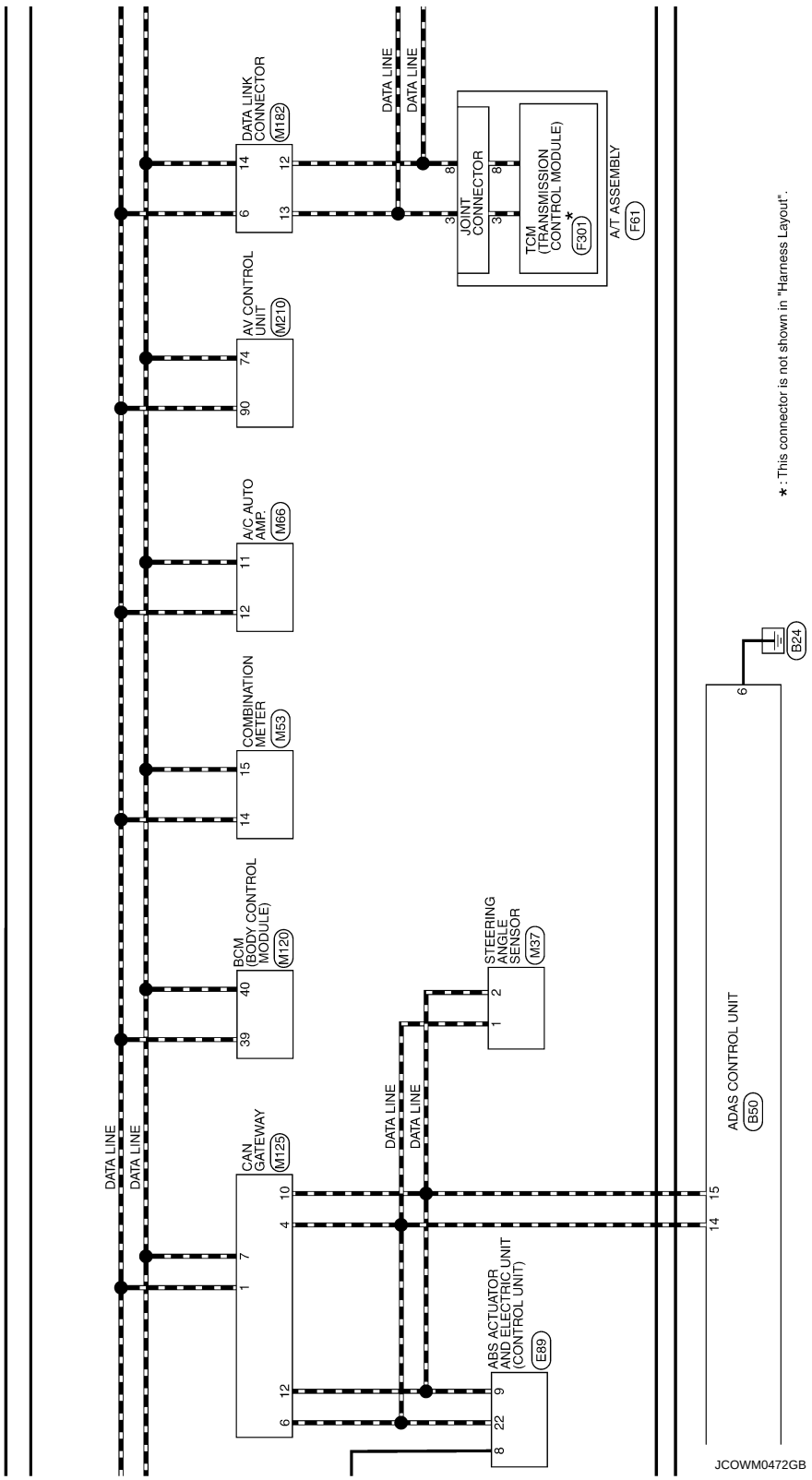
Wiring Diagram

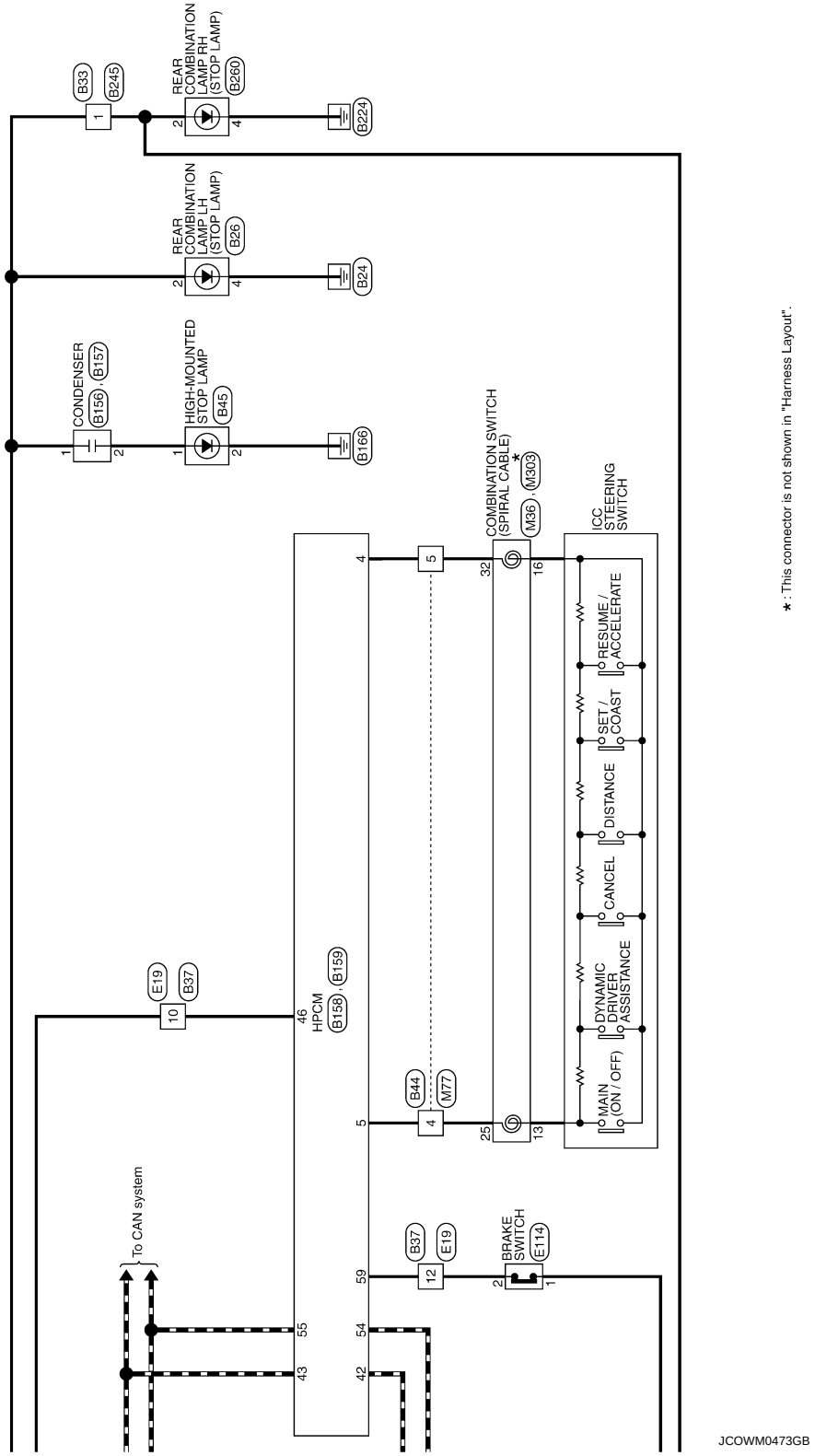
INFOID:0000000008497105

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-13, "Connector Information".




FUSE BLOCK (J/B) M2, M3, B6, E103
ECM M107
113
114
5G
1F
2F
10A 3
4F
STOP LAMP SWITCH E110
E106 M6
RESISTOR M8
PCB HARNESS M27, M30
M95
51
294
408
409
10A 7
8F
E119 B69
B28 B228
STOP LAMP OFF RELAY 1 B246
B228 B28 B69 E119
To brake control system
ICC BRAKE HOLD RELAY B248
ADAS CONTROL UNIT B50
B222 B5
10A 6
6B
PCB HARNESS M27
287
286
PCB HARNESS M23
154
153
M105 M181
35
INDICATOR
TRIPLE SWITCH M183
WARNING SYSTEMS SWITCH
IBA OFF SWITCH M184
PCB HARNESS M20, M23
M11
152
36
48
9
15
49
37
47
M181 M105
M7 B1
JCOWM0471GB


DATA LINK CONNECTOR M182
DATA LINE
JOINT CONNECTOR
TCM (TRANSMISSION CONTROL MODULE) F301
A/T ASSEMBLY F61
AV CONTROL UNIT M210
A/C AUTO AMP. M66
COMBINATION METER M53
BCM (BODY CONTROL MODULE) M120
STEERING ANGLE SENSOR M37
CAN GATEWAY M125
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E89
ADAS CONTROL UNIT B50
B24
★: This connector is not shown in "Harness Layout".
JCOWM0472GB


REAR COMBINATION LAMP RH (STOP LAMP)
B260
B33
B245
B224
REAR COMBINATION LAMP LH (STOP LAMP)
B26
B24
CONDENSER
B156
B157
HIGH-MOUNTED STOP LAMP
B45
B166
COMBINATION SWITCH (SPIRAL CABLE)*
M36, M303
ICC STEERING SWITCH
RESUME / ACCELERATE
SET / COAST
DISTANCE
CANCEL
DYNAMIC DRIVER ASSISTANCE
MAIN (ON / OFF)
HPCM
B158, B159
E19
B37
B44
M77
To CAN system
BRAKE SWITCH
E114
*: This connector is not shown in "Harness Layout".
JCOWM0473GB

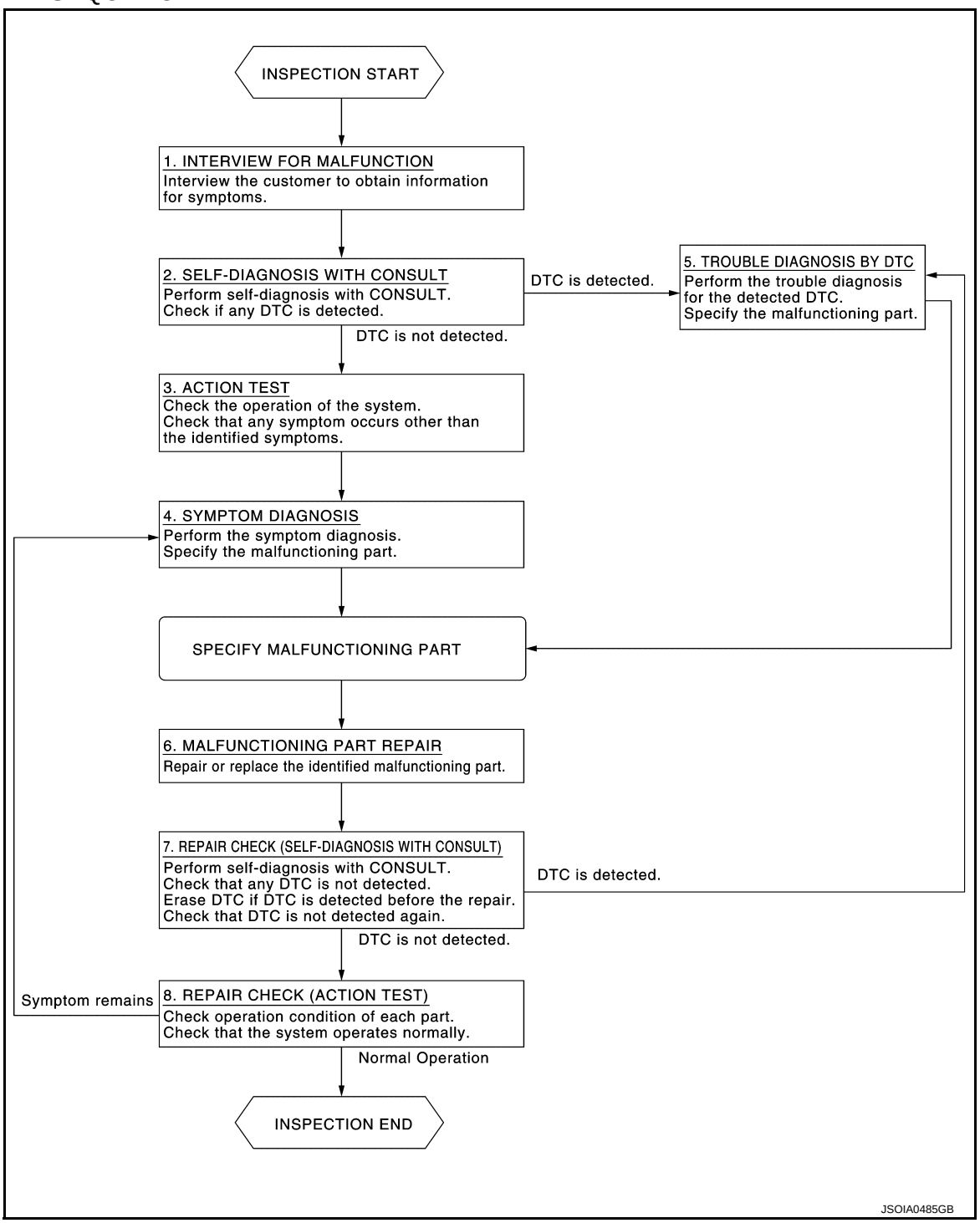
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000008141744

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

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-68, "Description".

>> GO TO 4.

4. SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to DAS-248, "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-235, "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

SYMPTOM DIAGNOSIS

FORWARD COLLISION WARNING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000008141745

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-249, "Description"
	FCW system setting cannot be turned ON on the navigation screen	Refer to DAS-250, "Description"
	FCW system setting cannot be turned OFF on the navigation screen	

FCW SYSTEM IS NOT ACTIVATED

Description

INFOID:0000000008141746

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:0000000008141747

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-235, "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-367, "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

Description

INFOID:0000000008141748

- 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 set the vehicle to READY, 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:0000000008141749

1.CHECK FCW SYSTEM SETTING

1. Set the vehicle to READY.
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-235, "DTC Index"
- MULTI AV: AV-169, "DTC Index"
- METER/M&A: MWI-51, "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-142, "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-56, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

Description

INFOID:0000000008141750

FORWARD COLLISION WARNING (FCW)

- FCW system is intended to warn the driver before a collision but will not avoid a collision. It is the drive'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.
- 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

REMOVAL AND INSTALLATION

WARNING SYSTEMS SWITCH

Removal and Installation

INFOID:0000000008141751

REMOVAL

1. Remove the instrument lower panel LH. Refer to IP-13, "Removal and Installation".
2. Remove warning systems switch from instrument lower panel LH.

NOTE:
Warning systems switch and VDC OFF switch are integrated.

INSTALLATION

Install in the reverse order of removal.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000008141752

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. 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 12V battery, and wait at least 3 minutes before performing any service.**

Precautions Concerning On-board Servicing of Hybrid Systems

INFOID:0000000008141753

CAUTION:

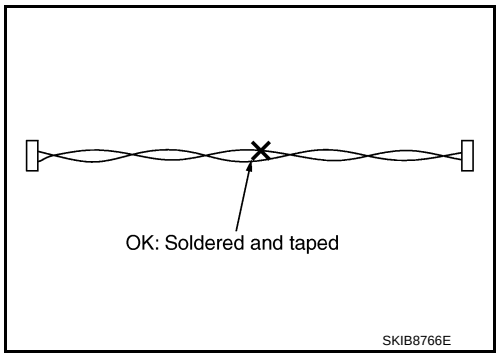
Be sure to turn the ignition switch OFF before performing inspection and servicing inside the engine compartment or underneath the vehicle. If the ignition switch is ON (vehicle READY state), even if the engine is stopped, the conditions of the vehicle may cause the engine to start automatically.
If it is necessary to continually operate the engine during inspection or servicing, use the designated inspection mode. HBC-89, "Description".

Precautions For Harness Repair

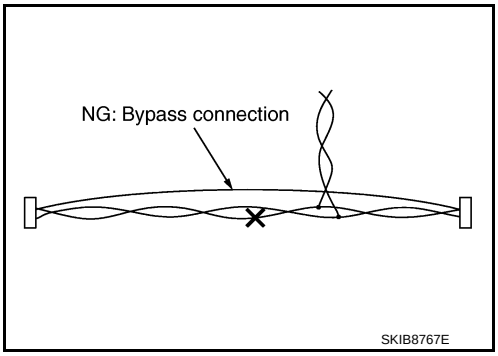
INFOID:0000000008141754

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.



Precaution for LDW/LDP System Service

INFOID:0000000008141755

CAUTION:

- **To prevent the possibility of accident, be careful of traffic conditions and safety around the vehicle when performing road test.**
- **To prevent the possibility of accident, never use the LDP system when driving with free rollers or a chassis dynamometer.**
- **To prevent the possibility of accident, never perform the active test while driving.**
- **To prevent malfunction, never disassemble and remodel the lane camera unit.**
- **Never change LDW initial state ON ⇒ OFF without the consent of the customer.**
- **Do not use the lane camera unit that is removed from the vehicle.**

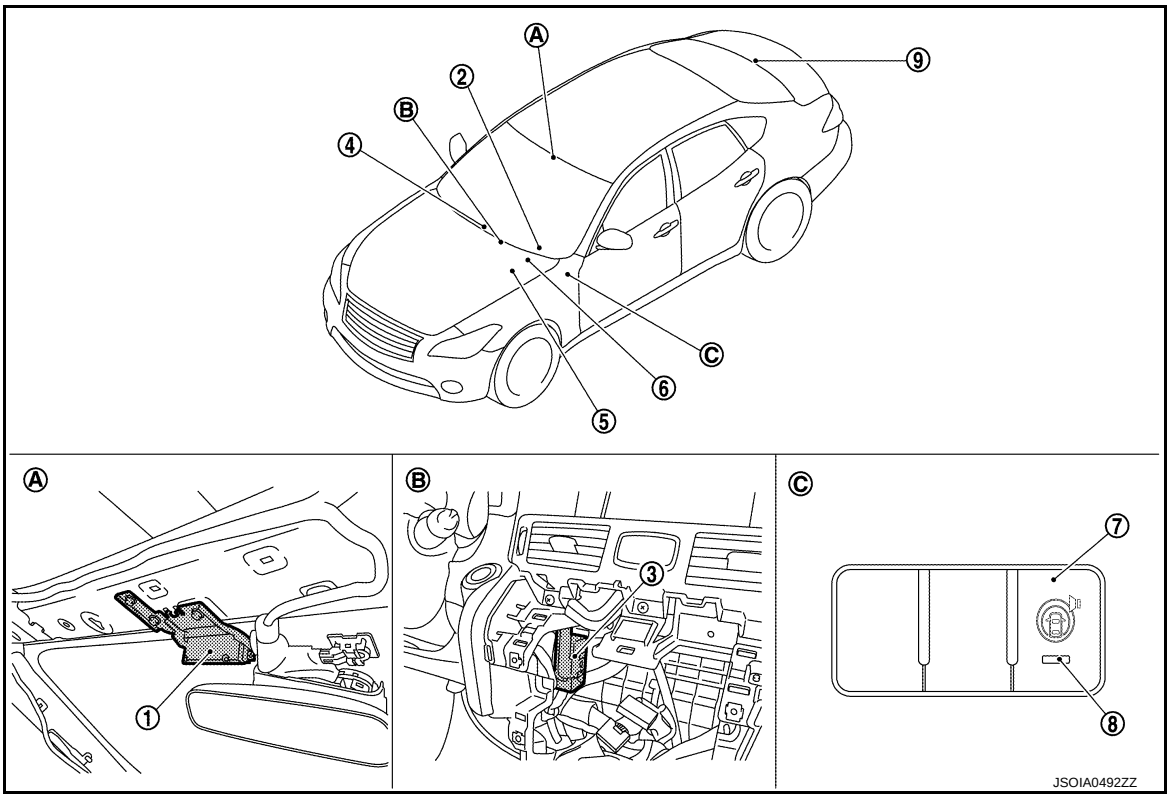
SYSTEM DESCRIPTION

COMPONENT PARTS

LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : Component Parts Location

INFOID:0000000008141756



1.	Lane camera unit	2.	Lane departure warning lamp (Yellow) (On the combination meter)	3.	Warning buzzer
4.	AV control unit Refer to AV-128, "Component Parts Location"	5.	ABS actuator and electric unit (control unit) Refer to BRC-11, "Component Parts Location"	6.	BCM Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"
7.	Warning systems switch	8.	Warning systems ON indicator	9.	ADAS control unit Refer to DAS-14, "Component Parts Location"
A.	Front of the map lamp	B.	Center of the instrument panel	C.	Instrument lower panel LH

LANE DEPARTURE WARNING (LDW) SYSTEM : Component Description

INFOID:0000000008141757

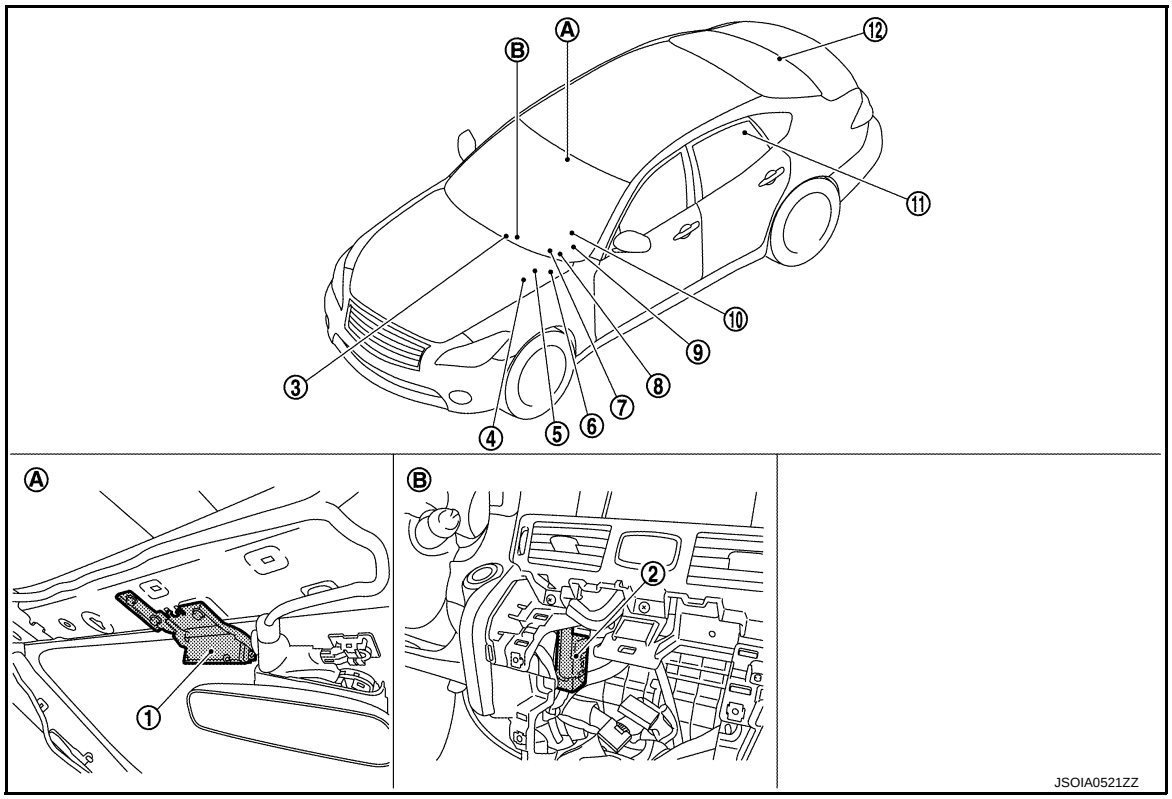
Component	Description
ADAS control unit	• Judges the lane departure depending on the lane detection result and each signals • Controls the warning buzzer and the warning systems ON indicator • Transmits lane departure warning lamp signal to combination meter via CAN communication
Lane camera unit	• Detects the lane marker in travel lane • Transmits the detected lane condition signal to ADAS control unit via ITS communication
AV control unit	Transmits the system selection signal to ADAS control unit via CAN communication

Component	Description
ABS actuator and electric unit (control unit)	Transmits the wheel speed signal 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 an 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

LANE DEPARTURE PREVENTION (LDP) SYSTEM

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Component Parts Location

INFOID:0000000008141758



1. Lane camera unit
2. Warning buzzer
3. AV control unit
   Refer to AV-128, "Component Parts Location"
4. TCM
   Refer to TM-13, "A/T CONTROL SYSTEM : Component Parts Location"
5. ABS actuator and electric unit (control unit)
   Refer to BRC-11, "Component Parts Location"
6. Electrically-driven intelligent brake unit
   Refer to BR-10, "Component Parts Location"
7. BCM
   Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"
8. • Lane departure warning lamp (Yellow)
   • LDP ON indicator lamp (Green)
   (On the combination meter)
9. Steering angle sensor
   Refer to BRC-11, "Component Parts Location"

10. Dynamic driver assistance switch
11. HCPM
Refer to HBC-13, "HYBRID CONTROL SYSTEM : Component Parts Location"
12. ADAS control unit
Refer to DAS-14, "Component Parts Location"

A. Front of the map lamp
B. Center of the instrument panel

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Component Description

INFOID:0000000008141759

Component	Description
ADAS control unit	• Judges lane departure based on each signal and calculates yaw moment necessary to generate force which returns the vehicle to the lane • 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 (through electrically-driven intelligent brake unit) • Transmits the lane departure warning lamp signal and LDP ON indicator lamp signal to combination meter via CAN communication
Lane camera unit	• 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)	• Transmits the wheel speed signal 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 (through electrically-driven intelligent brake unit)
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)	HPCM 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 • LDP ON indicator lamp (Green) • Lane departure warning lamp (Yellow)
BCM	Transmits the turn indicator signal to ADAS control unit via CAN communication
HPCM	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
AV control unit	Transmits the system selection signal to ADAS control unit via CAN communication

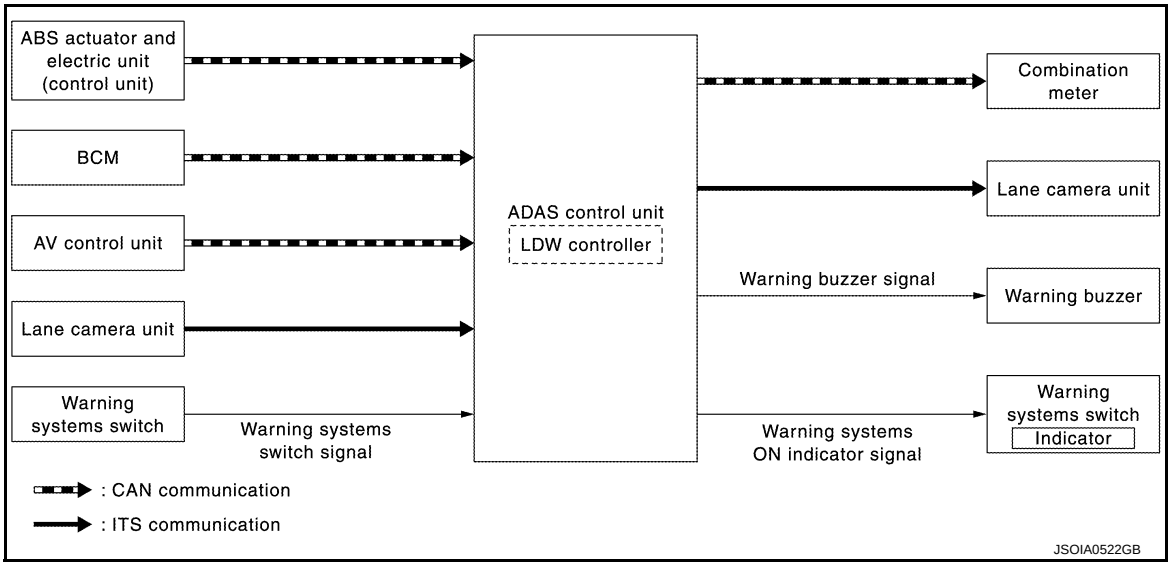
SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : System Description

INFOID:0000000008141760

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	Wheel speed signal	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 Assistance” 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

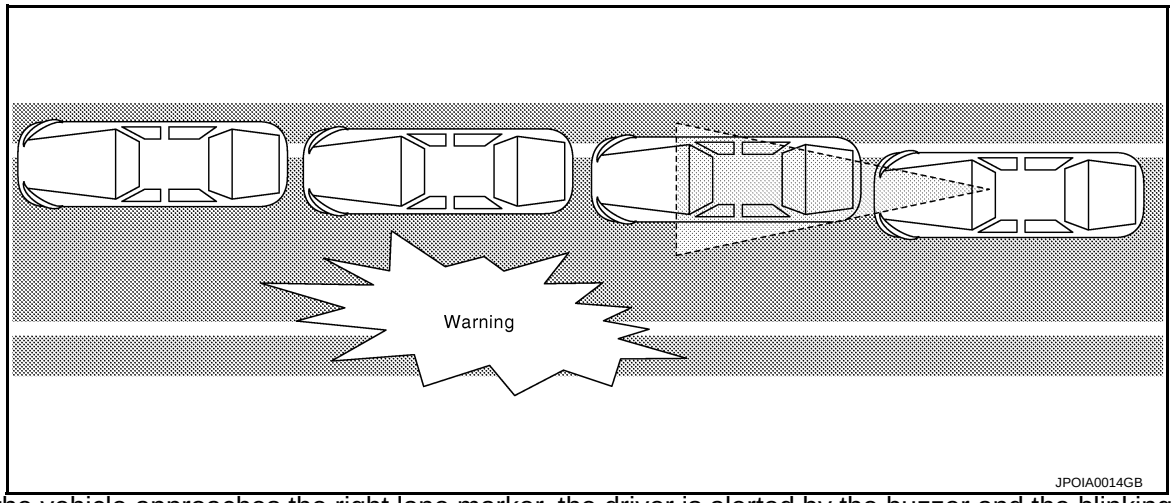
Output Signal Item

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

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).

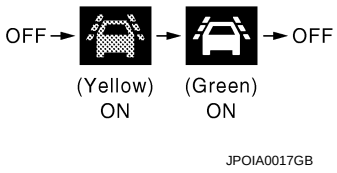
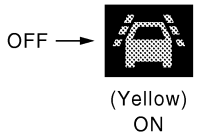
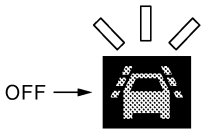
OPERATING CONDITION

- 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-270, "Precautions for Lane Departure Warning/Lane Departure Prevention"

Bulb Check Action and Fail-safe Indication

Vehicle condition/ Driver's operation	Warning systems ON indicator	Indication on the combination meter
Ignition switch OFF ⇒ ON (Bulb check)	Approx. 5 sec. ON	 JPOIA0017GB
When DTC is detected (Except “C1B01” and “C1B03”)	ON	
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	 JPOIA0019GB
Temporary disabled status at high temperature (“C1B03”is detected)	ON	 JPOIA0020GB
When the warning systems system 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:0000000008141761

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
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)	—	BSW/BSI warning lamp	Cancel

System	Buzzer	Warning lamp/Indicator lamp	Description
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

LANE DEPARTURE WARNING (LDW) SYSTEM : Fail-safe (Lane Camera Unit)

INFOID:0000000008141762

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

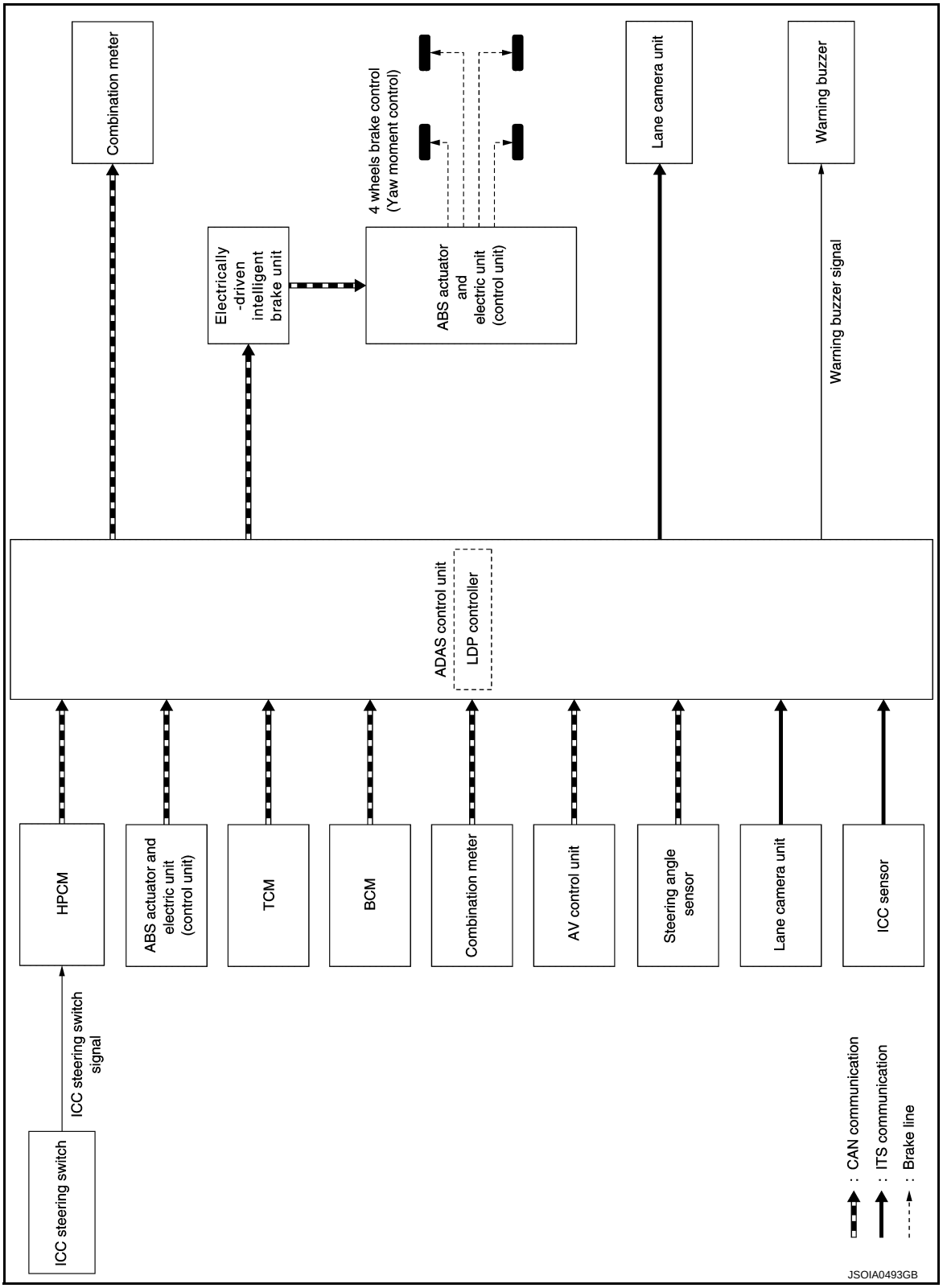
- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the lane departure warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume operation automatically and the 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:0000000008141763

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name			Description
HPCM	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
		READY condition signal		Receives READY state of the vehicle
		Engine speed signal		Receives engine speed
		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
		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
		Wheel speed signal		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
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
Lane camera unit	ITS communication	Detected lane condition signal		Receives detection results of lane marker

Output Signal Item

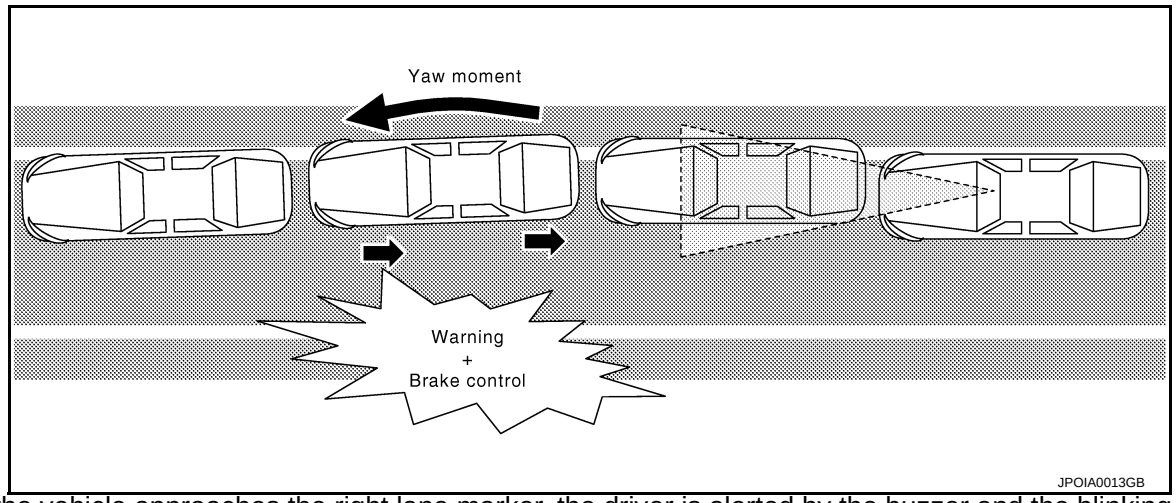
Reception unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Target yaw moment signal	Transmits a target yaw moment signal to generate yaw moment to the vehicle (through electrically-driven intelligent brake unit)

Reception unit	Signal name		Description
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 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

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 which returns the vehicle to the lane.

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

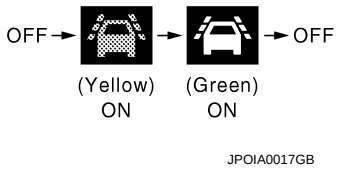
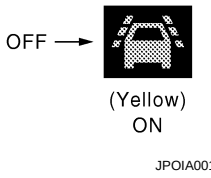
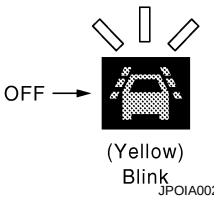
- LDP ON indicator lamp: ON
- Vehicle speed: approximately 70 km/h (45 MPH) or more

- Turn indicator signal: After 2 seconds or more from turned OFF

NOTE:

- When the LDP system setting on the navigation screen is ON.
- 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-270, "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)	 JPOIA0017GB	—
When DTC is detected (Except “C1B01” and “C1B03”)	 JPOIA0019GB	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)	 JPOIA0020GB	Beep
When the dynamic driver assistance system switch is pressed (When the settings of LDP system, DCA system, and BSI system on the navigation screen are “OFF”)	 JPOIA0036GB	—

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:0000000008141764

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
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	IBA OFF indicator lamp	Cancel

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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Fail-safe (Lane Camera Unit)

INFOID:0000000008141765

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

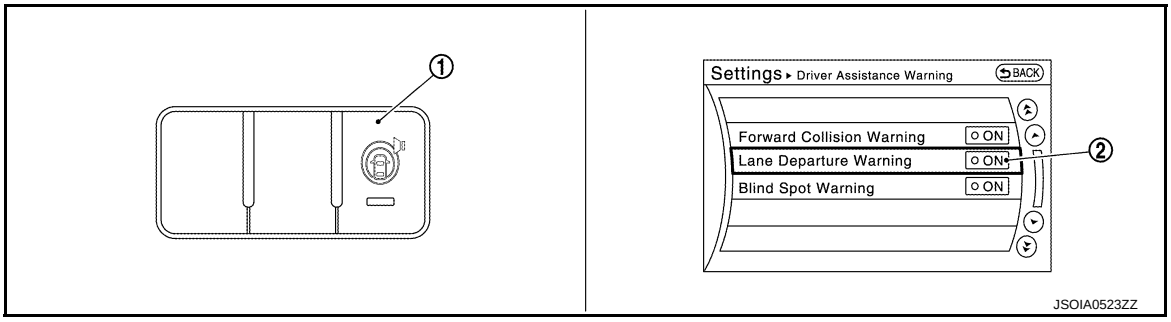
- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and lane departure warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume when dynamic 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:0000000008141766

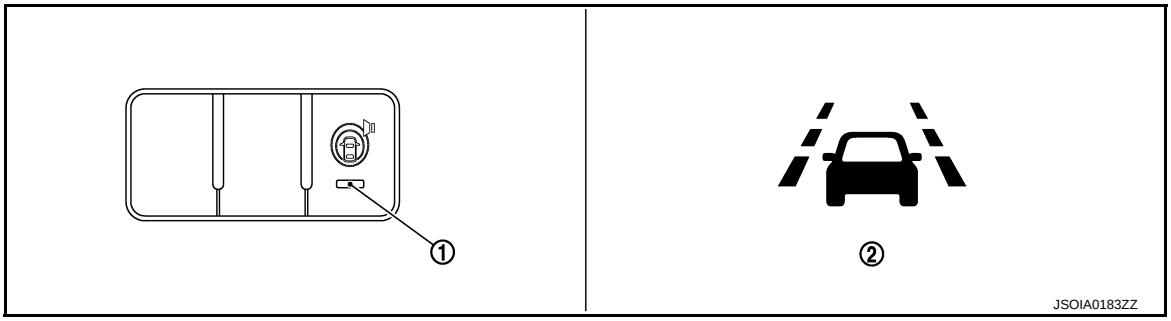


No.	Switch name	Description
1	Warning systems switch	Turns LDW system ON/OFF (When the setting of LDW system on the navigation system setting screen is ON)
2	LDW system settings screen (Navigation system settings screen)	The setting of LDW system can be switched between ON and OFF

LANE DEPARTURE WARNING (LDW) SYSTEM : Menu Displayed by Pressing Each Switch

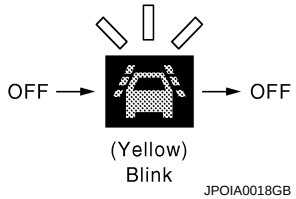
INFOID:0000000008141767

INDICATOR LAMP AND WARNING LAMP



No.	Display item	Description
1	Warning systems ON indicator	• 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	• 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

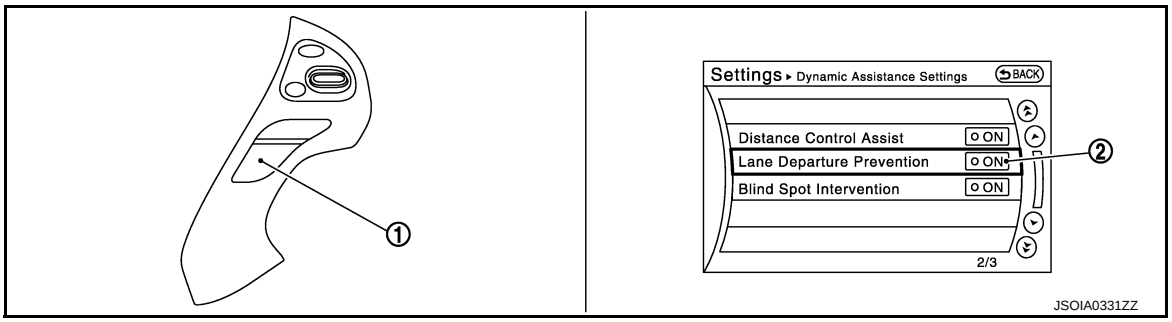
Vehicle condition/ Driver's operation		Action	Warning systems ON indicator	Indication on the combination meter	Buzzer
Less than Approx. 60 km/h (40 MPH)	Close to lane marker	No action	ON	OFF	—
Approx. 70 km/h (45 MPH) or more	Close to lane marker	Warning • Buzzer sounds • Warning lamp blinks	ON		Short continuous beeps
	• 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-258, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description".

LANE DEPARTURE PREVENTION (LDP) SYSTEM

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Switch Name and Function

INFOID:0000000008141768

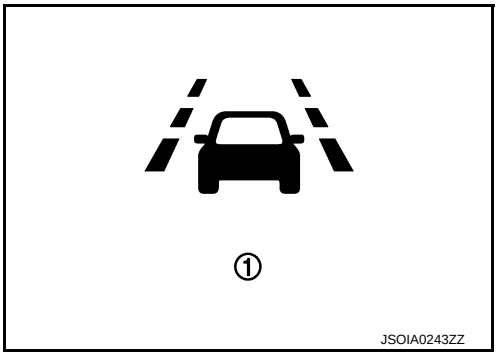


No.	Switch name	Description
1	Dynamic driver assistance switch	Turns LDP system ON/OFF (When the setting of LDP system on the navigation system setting screen is ON)
2	LDP system settings screen (Navigation system settings screen)	The setting of LDP system can be switched between ON and OFF

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Menu Displayed by Pressing Each Switch

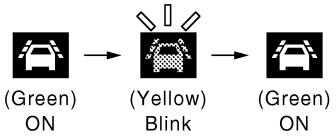
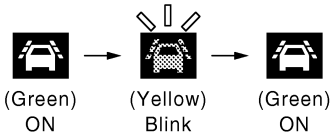
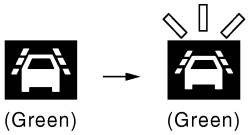
INFOID:0000000008141769

INDICATOR LAMP AND WARNING LAMP



No.	Display item	Description
1	LDP ON indicator (green)	• Indicates that the LDP system is ON • Blinks when the setting of LDP, DCA, and BSI are “OFF” and the dynamic driver assistance switch is pressed
	Lane departure warning lamp (yellow)	• 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	No action	 (Green) ON JPOIA0021GB	—
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 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) • Shifting drive mode select switch to SNOW position	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-262, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description".

HANDLING PRECAUTION

Precautions for Lane Departure Warning/Lane Departure Prevention

INFOID:0000000008141770

LANE CAMERA UNIT HANDLING

To keep the LDW/LDP system operating properly, be sure to observe the following items:
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 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.
- 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.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

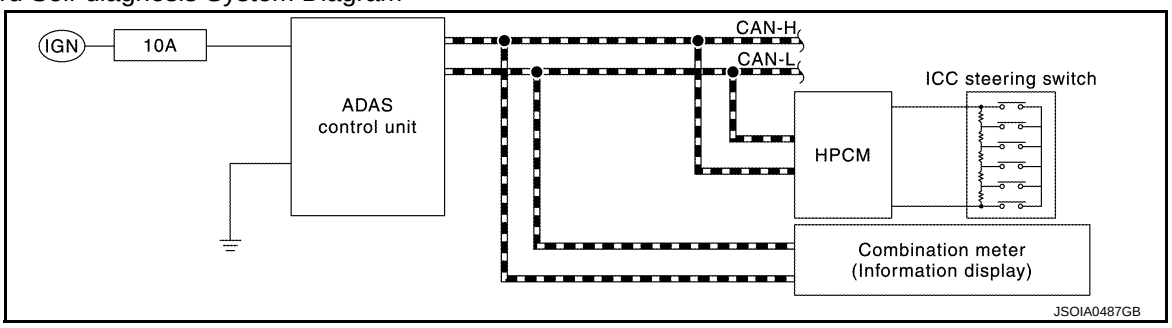
On Board Diagnosis Function

INFOID:0000000008141771

DESCRIPTION

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

On Board Self-diagnosis System Diagram



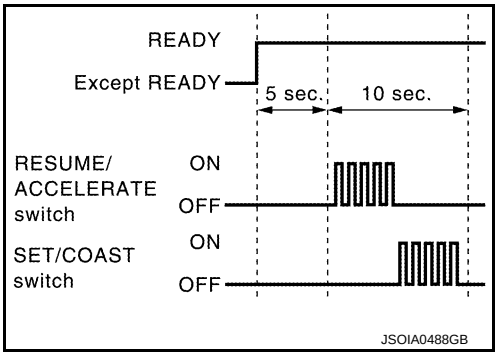
METHOD OF STARTING

NOTE:

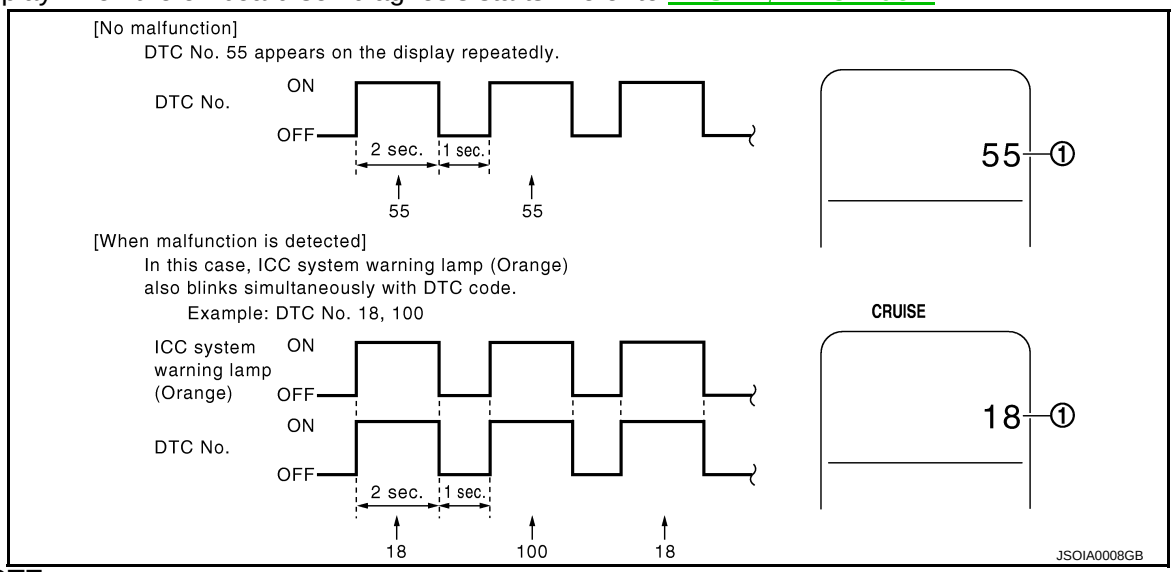
Start condition of on board self-diagnosis

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

1. Turn the ignition switch OFF.
2. Set the vehicle to READY.
3. Wait for 5 seconds after setting the vehicle to READY. 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 setting the vehicle to READY, 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-42, "DTC Index".



NOTE:

- 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.

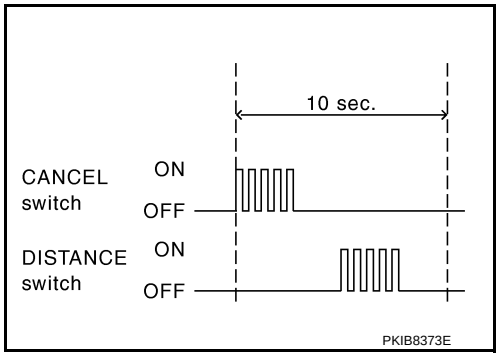
WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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-35, "On Board Diagnosis Function".
ICC steering switch malfunction		Perform the inspection for DTC “C1A06”. Refer to CCS-83, "DTC Logic".
Harness malfunction between ICC steering switch and HPCM		
HPCM malfunction		
ADAS control unit malfunction		• Check power supply and ground circuit of ADAS control unit. Refer to DAS-55, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for “ICC/ADAS”with CONSULT, and then check the malfunctioning parts. Refer to DAS-42, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Set the vehicle to READY, 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:0000000008141772

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

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems • Vehicle-to-vehicle control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems • Lane Departure Prevention (LDP) • Blind Spot Intervention (BSI)

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	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	×		HPCM 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	×	×	Shifting of the drive mode selector to SNOW position
OP SW DOUBLE TOUCH	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	Vehicle speed lower than 24 km/h (15 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
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	×	×	There is a malfunction in the function controlling the brake according to a command issued from the ADAS control unit to the electrically-driven intelligent brake unit
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
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
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	×		Shifting of the drive mode selector to SNOW position
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
BSI WARNING	×		BSI system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during BSI system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
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 BSI 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		×	Shifting of the drive mode selector to SNOW position
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 BSI system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

SELF DIAGNOSTIC RESULT

Refer to DAS-42, "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)	Description
MAIN SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×				Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×			Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from brake switch signal (HPCM transmits brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (HPCM 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 (HPCM 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 wheel speed signal 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 (HPCM transmits engine speed signal through CAN communication)
PRESS SENS [bar]	×	×			Indicates a brake fluid pressure command value
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
RELEASE SW NO [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
RELEASE SW NC [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)
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)
THRTL OPENING [%]	×	×			Indicates throttle position read from ADAS control unit through CAN communication (HPCM 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]	×				Indicates the active mode of ICC
SET DISP IND [Off]	×				**NOTE:** The item is displayed, but it is not monitored
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 (HPCM 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
LDW ON LAMP [On/Off]			×		Indicates [On/Off] status of waning 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
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 (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 (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 (BSI)
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 the DCA system. The 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
BSI SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of BSI system. BSI 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
DRIVE MODE STATS [STD/SPORT/ECO/ SNOW/MID/ERROR]	×	×	×	×	Indicates a drive mode selector select position judged from a drive mode select switch position signal read by the ADAS control unit via CAN communication (The A/C auto amp. transmits a switch position signal of the drive mode select switch signal 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 BSW/BSI warning lamp output
BSI ON IND [On/Off]				×	Indicates [On/Off] status of BSI ON indicator output
BSW SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSW system
BSI SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSI system

ACTIVE TEST

CAUTION:

- **To prevent the possibility of accident, never perform “Active Test” while driving the vehicle.**
- **To prevent the possibility of accident, shift the selector lever to “P” position, and then perform the test.**

NOTE:

- The “Active Test” cannot be performed when the following systems warning lamp is illuminated.
- ICC system warning lamp
- Lane departure warning lamp
- BSW/BSI warning lamp
- IBA OFF indicator lamp (IBA system ON)

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 • 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

Test item	Description
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention (BSI)
WARNING SYSTEM IND	The 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 BSW/BSI warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The BSI ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	• MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test • 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 • 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	—

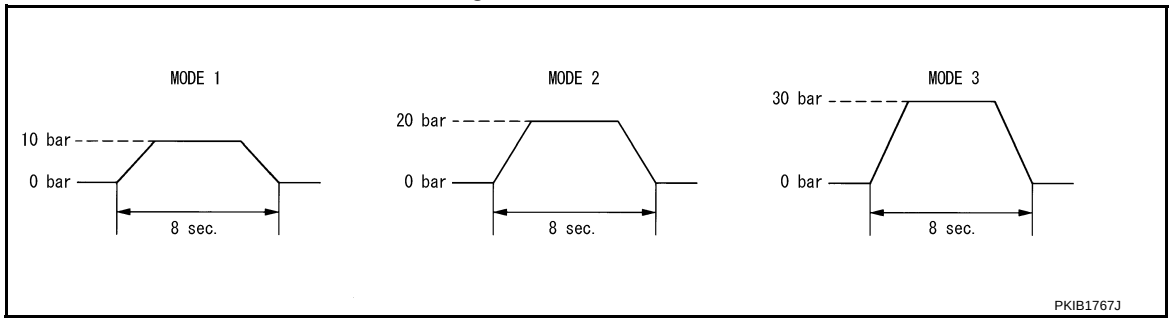
BRAKE ACTUATOR

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the electrically-driven intelligent brake 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:

- **To prevent the possibility of accident, 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.)**

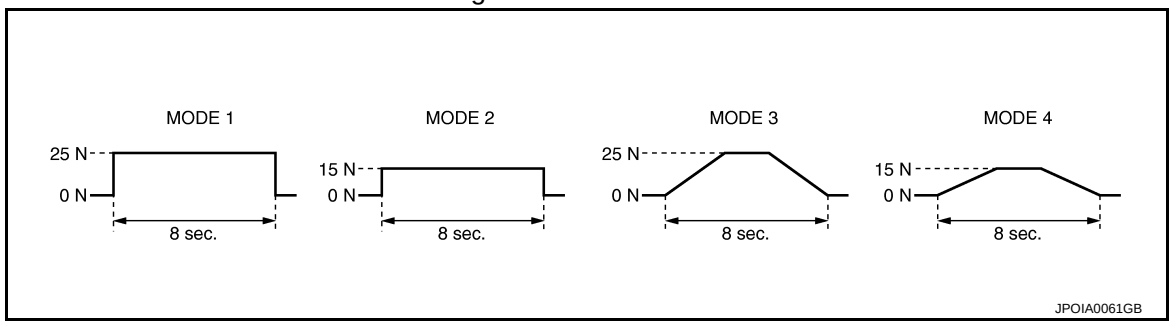
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can performed only when the vehicle is in READY state.

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 performed only when the vehicle is in READY state.

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

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

BSI ON INDICATOR

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

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT Function (LANE CAMERA)

INFOID:0000000008141773

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-301, "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

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

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000008141774

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	READY state	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Set the vehicle to READY 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	Set the vehicle to READY and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Set the vehicle to READY 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	Set the vehicle to READY 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

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	READY state	When the buzzer of the following system operates • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system	On
		When the buzzer of the following system not operates • 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
PRESS SENS	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When the brake is in the deactivated state by the system	0.0
		When the brake is in the activated state by the system	Displays the brake pressure command value
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	READY state	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
RELEASE SW NO	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
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	READY state	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	READY state	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

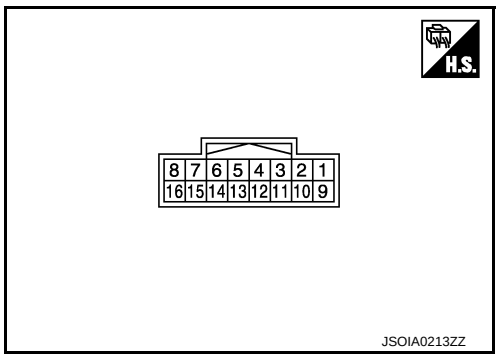
Monitor item	Condition		Value/Status
PWR SUP MONI	READY state		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	READY state	Depress accelerator pedal	Displays the throttle position
GEAR	While driving		Displays the gear position
MODE SIG	When ICC system is deactivated		Off
	When vehicle-to-vehicle distance control mode is activated		ICC
SET DISP IND	**NOTE:** The item is indicated, but not monitored		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	Set the vehicle to READY and press dynamic driver assistance switch (When DCA 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	On
		When the FCW system is OFF	Off
APA TEMP	READY state		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	On
		When the LDW system is OFF	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

Monitor item	Condition		Value/Status
LDP ON IND	Set the vehicle to READY 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 OUTPUT	Drive the vehicle and activate the LDW/LDP system or BSW/BSI system	When the buzzer of the following system operates • LDW/LDP system • BSW/BSI system	On
		When the buzzer of the following system does not operate • LDW/LDP system • BSW/BSI system	Off
LDP SYSTEM ON	Set the vehicle to READY 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	Set the vehicle to READY 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 BSI system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	• READY state • 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 and activate the LDP system	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

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
DRIVE MODE STATS	Ignition switch ON	When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
		When position of drive mode select switch is in following states • In the middle of SNOW-ECO • In the middle of ECO-STANDARD • In the middle of STANDARD-SPORTS	Mid
		A signal other than those above is input	ERROR
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	BSW/BSI warning lamp ON	On
		BSW/BSI warning lamp OFF	Off
BSI ON IND	Ignition switch ON	BSI ON indicator ON	On
		BSI ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON	On
		When the BSW system is OFF	Off
BSI SYSTEM ON	Set the vehicle to READY and press dynamic driver assistance switch (When BSI system setting is ON)	When the BSI system is ON	On
		When the BSI system is OFF	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	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 (BR)		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 (O)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (SB)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At “STOP LAMP” test of “Active test”	0 V
6 (B/R)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (P)		ITS communication-L	—	—	—	—
12 (W)		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 (GR)		Ignition power supply	Input	Ignition switch ON		Battery voltage

Fail-safe

INFOID:0000000008141775

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
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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

DTC Inspection Priority Chart

INFOID:0000000008141776

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

Priority	Detected items (DTC)
1	• U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

Priority	Detected items (DTC)
4	• 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 • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • C1A1A: HPCM CIRCUIT • C1A2A: ICC SEN PWR SUP CIR • C1A2B: ELECTRICAL BRAKE MODE MALF • C1A2C: ELECTRICAL BRAKE PWR SUPLY CIRC • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • 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 INCMP • C1B03: CAM ABNRML TMP DETCT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0424: HVAC 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 • 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 • U151A: ELECTRICAL BRAKE CAN CIRCUIT 2 • U151B: ELECTRICAL BRAKE CAN CIRCUIT 1 • U151C: ELECTRICAL BRAKE CAN CIRCUIT 3 • U151D: HPCM CAN CIRCUIT 2 • U151E: HPCM CAN CIRCUIT 1 • U151F: HPCM CAN CIRCUIT 3
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000008141777

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: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-320
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-321
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-321
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-322
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-323
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	A, B, C, D, E, F	DAS-324
C1A06	6	OPERATION SW BIRC	ON		ON	ON	A, D, E, F	DAS-328
C1A12	12	LASER BEAM OFFCN-TR	ON	ON			A, B, C, D	CCS-85
C1A13	13	STOP LAMP RLY FIX	ON	ON			A, B, C, D	CCS-86
C1A15	15	GEAR POSITION	ON	ON	ON	ON	A, B, C, D, E, F	DAS-330
C1A16	16	RADAR STAIN	ON	ON			A, B, C, D	CCS-94
C1A17	17	ICC SENSOR MALF	ON	ON			A, B, C, D	CCS-96
C1A18	18	LASER AIMING INCMP	ON	ON			A, B, C, D	CCS-97
C1A1A	19	HPCM CIRCUIT	ON		ON	ON	A, D, E, F	DAS-332
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON			A, B, C, D	CCS-100
C1A24	24	NP RANGE	ON	ON	ON	ON	A, B, C, D, E, F	DAS-333
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON			A, B, C, D	CCS-104

Systems for fail-safe
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- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A2B	23	ELECTRICAL BRAKE MODE MALF	ON	ON			A, B, C, D	CCS-105
C1A2C	20	ELECTRICAL BRAKE PWR SUPLY CIR	ON	ON			A, B, C, D	CCS-106
C1A33	33	CAN TRANSMISSION ERR	ON				A, D, G	CCS-107
C1A34	34	COMMAND ERROR	ON				A, D, G	CCS-108
C1A35	35	APA CIR	ON				A, D	CCS-109
C1A36	36	APA CAN COMM CIR	ON				A, D	CCS-110
C1A37	133	APA CAN CIR 2	ON				A, D	CCS-111
C1A38	132	APA CAN CIR 1	ON				A, D	CCS-112
C1A39	39	STRG SEN CIR	ON	ON		ON	A, B, C, D, F, G	CCS-113
C1A40	40	SYSTEM SW CIRC		ON			B, C	CCS-115
C1B00	81	CAMERA UNIT MALF			ON	ON	E, F	DAS-336
C1B01	82	CAM AIMING INCMP			ON	ON	E, F	DAS-338
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK	E, F	DAS-340
C1B53	84	SIDE RDR R MALF				ON	F	DAS-482
C1B54	85	SIDE RDR L MALF				ON	F	DAS-483
C1F01	91	APA MOTOR MALF	ON				A, D	CCS-118
C1F02	92	APA C/U MALF	ON				A, D	CCS-119
C1F05	95	APA PWR SUPLY CIR	ON				A, D	CCS-120
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	A, B, C, D, E, F, G	DAS-342
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	A, B, C, D, F, G	DAS-343
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			A, B, C, D	CCS-126
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F	DAS-344
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-346

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U0424	156	HVAC CAN CIR 1						BR-232
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	A, B, C, D, F, G	CCS-131
U1000[NOTE]	100	CAN COMM CIRCUIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-348
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-350
U1500	145	CAM CAN CIR 2			ON	ON	E, F	DAS-354
U1501	146	CAM CAN CIR 1			ON	ON	E, F	DAS-355
U1502	147	ICC SEN CAN COMM CIR	ON	ON			A, B, C, D	CCS-139
U1503	150	SIDE RDR L CAN CIR 2				ON	F	DAS-503
U1504	151	SIDE RDR L CAN CIR 1				ON	F	DAS-504
U1505	152	SIDE RDR R CAN CIR 2				ON	F	DAS-505
U1506	153	SIDE RDR R CAN CIR 1				ON	F	DAS-506
U1507	154	LOST COMM (SIDE RDR R)				ON	F	DAS-507
U1508	155	LOST COMM (SIDE RDR L)				ON	F	DAS-508
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-351
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	DAS-352
U150E	160	BCM CAN CIRC 3	ON		ON	ON	A, D, E, F	DAS-353
U150F	161	AV CAN CIRC 3						DAS-54
U1512	162	HVAC CAN CIRC3			ON	ON	E, F	DAS-356
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	DAS-357
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	A, B, C, D, F, G	CCS-141
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			A, B, C, D	CCS-142
U1516	166	CAM CAN CIRC 3			ON	ON	E, F	DAS-358
U1517	167	APA CAN CIRC 3	ON				A, D	CCS-143
U1518	168	SIDE RDR L CAN CIRC 3				ON	F	DAS-513
U1519	169	SIDE RDR R CAN CIRC 3				ON	F	DAS-514
U151A	170	ELECTRICAL BRAKE CAN CIRCUIT 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-359

Systems for fail-safe
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- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U151B	171	ELECTRICAL BRAKE CAN CIRCUIT 1	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-360
U151C	172	ELECTRICAL BRAKE CAN CIRCUIT 3	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-361
U151D	173	HPCM CAN CIRCUIT 2	ON		ON	ON	A, D, E, F	DAS-362
U151E	174	HPCM CAN CIRCUIT 1	ON		ON	ON	A, D, E, F	DAS-363
U1501F	175	HPCM CAN CIRCUIT 3	ON		ON	ON	A, D, E, F	DAS-364

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

Reference Value

INFOID:0000000008141778

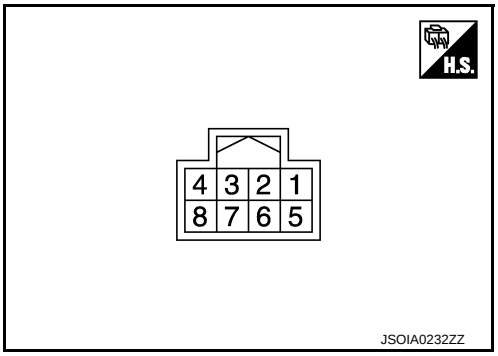
VALUES ON THE DIAGNOSIS TOOL

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 speed-ometer 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	—

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 (G)		Ignition power supply	Input	Ignition switch ON	Battery voltage
8 (Y)		ITS communication-L	—	—	—

Fail-safe

INFOID:0000000008141779

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.

Blind Spot Warning (BSW)
If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the BSW/BSI warning lamp in the combination meter.

Blind Spot Intervention (BSI)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the BSW/BSI warning 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 blinks.
- 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 blinks.
- 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.

Blind Spot Warning (BSW)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the BSW/BSI warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume operation automatically and the BSW/BSI warning lamp (yellow) in the combination meter will stop blinking.

Blind Spot Intervention (BSI)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and BSW/BSI warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON and the BSW/BSI warning lamp (yellow) in the combination meter will stop blinking.

DTC Inspection Priority Chart

INFOID:0000000008141780

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

Priority	Detected items (DTC)
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	C1A50: ADAS MALFUNCTION
3	• C1B01: CAM AIMING INCMP • 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:0000000008141781

×: Applicable

DTC		Warning lamp		Fail-safe		
		Lane departure warning lamp (yellow)	BSW/BSI warning lamp (yellow)	LDW/LDP	BSW/BSI	Reference
C1A50	ADAS MALFUNCTION	ON	ON	—	—	DAS-335
C1B00	CAMERA UNIT MALF	ON	ON	×	×	DAS-336
C1B01	CAM AIMING INCMP	ON	ON	×	×	DAS-338
C1B03	ABNRML TEMP DETECT	Blink	Blink	×	×	DAS-340

DTC		Warning lamp		Fail-safe		
		Lane departure warning lamp (yellow)	BSW/BSI warning lamp (yellow)	LDW/LDP	BSW/BSI	Reference
U0104	ADAS CAN CIR1	ON	ON	×	×	DAS-341
U0126	STRG SEN CAN CIR1	ON	ON	×	×	DAS-343
U0405	ADAS CAN CIR2	ON	ON	×	×	DAS-345
U0428	STRG SEN CAN CIR2	ON	ON	×	×	DAS-347
U1000	CAN COMM CIRCUIT	ON	ON	×	×	DAS-348
U1010	CONTROL UNIT (CAN)	ON	ON	×	×	DAS-350

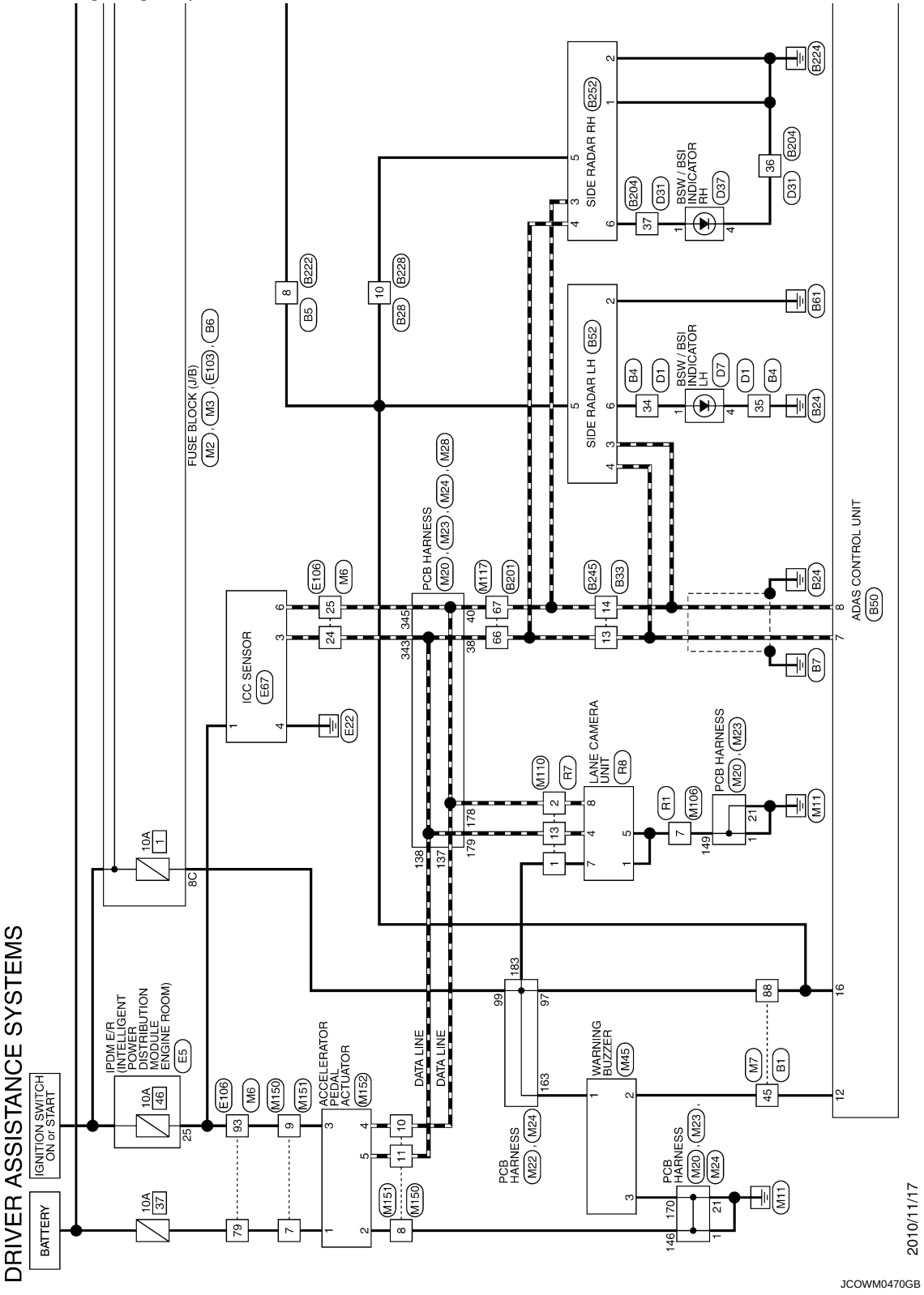
WIRING DIAGRAM

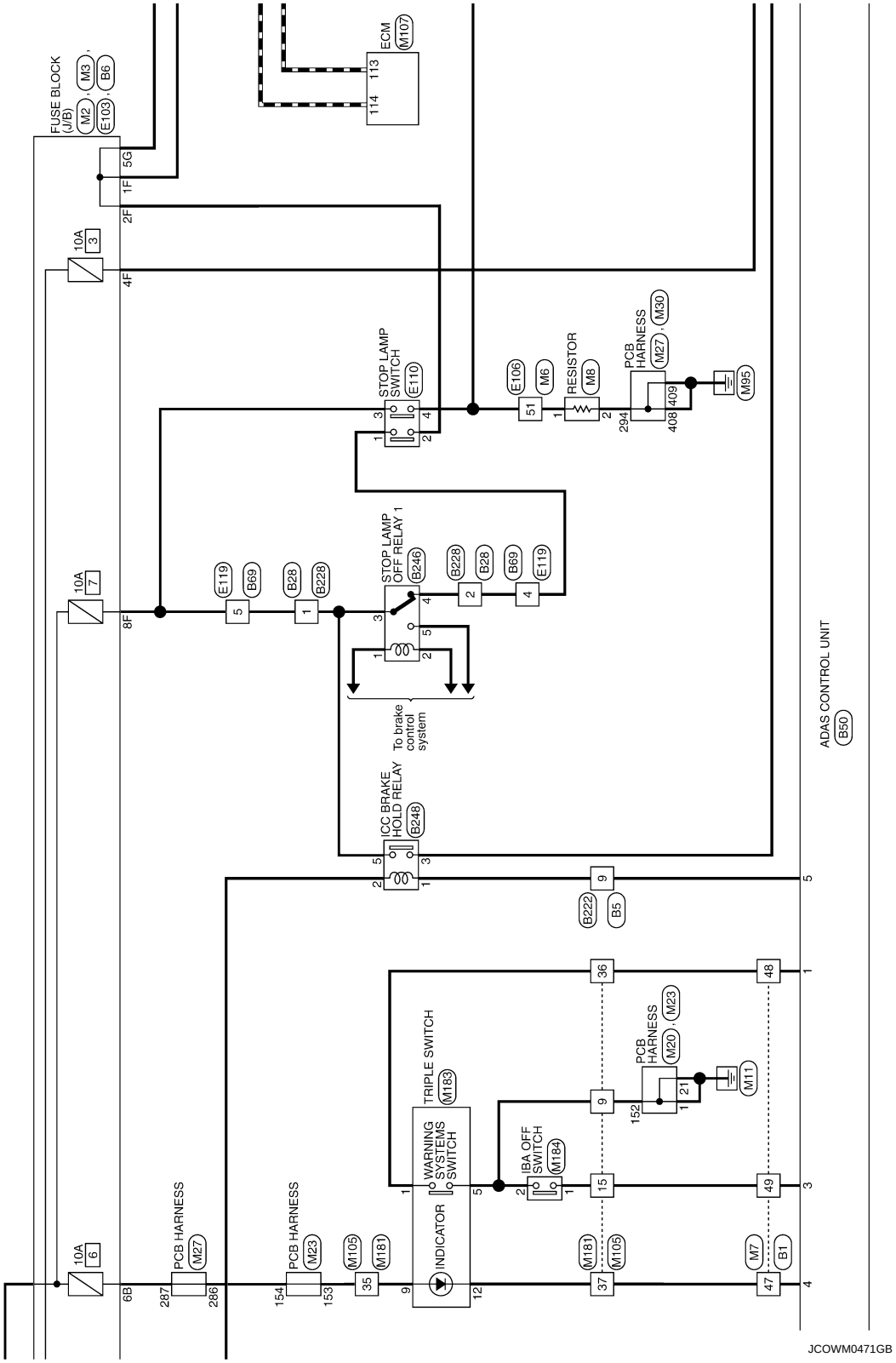
DRIVER ASSISTANCE SYSTEMS

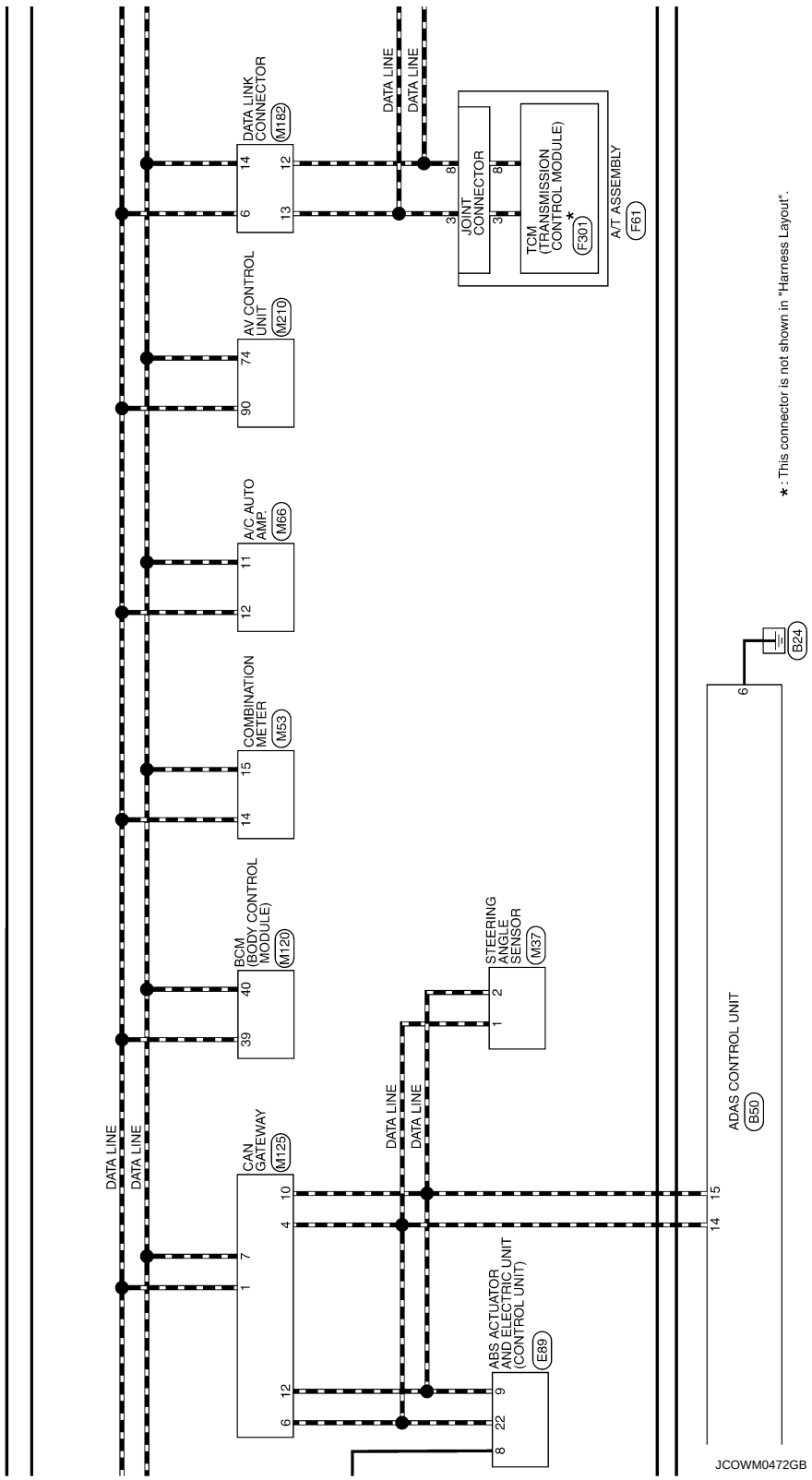
Wiring Diagram

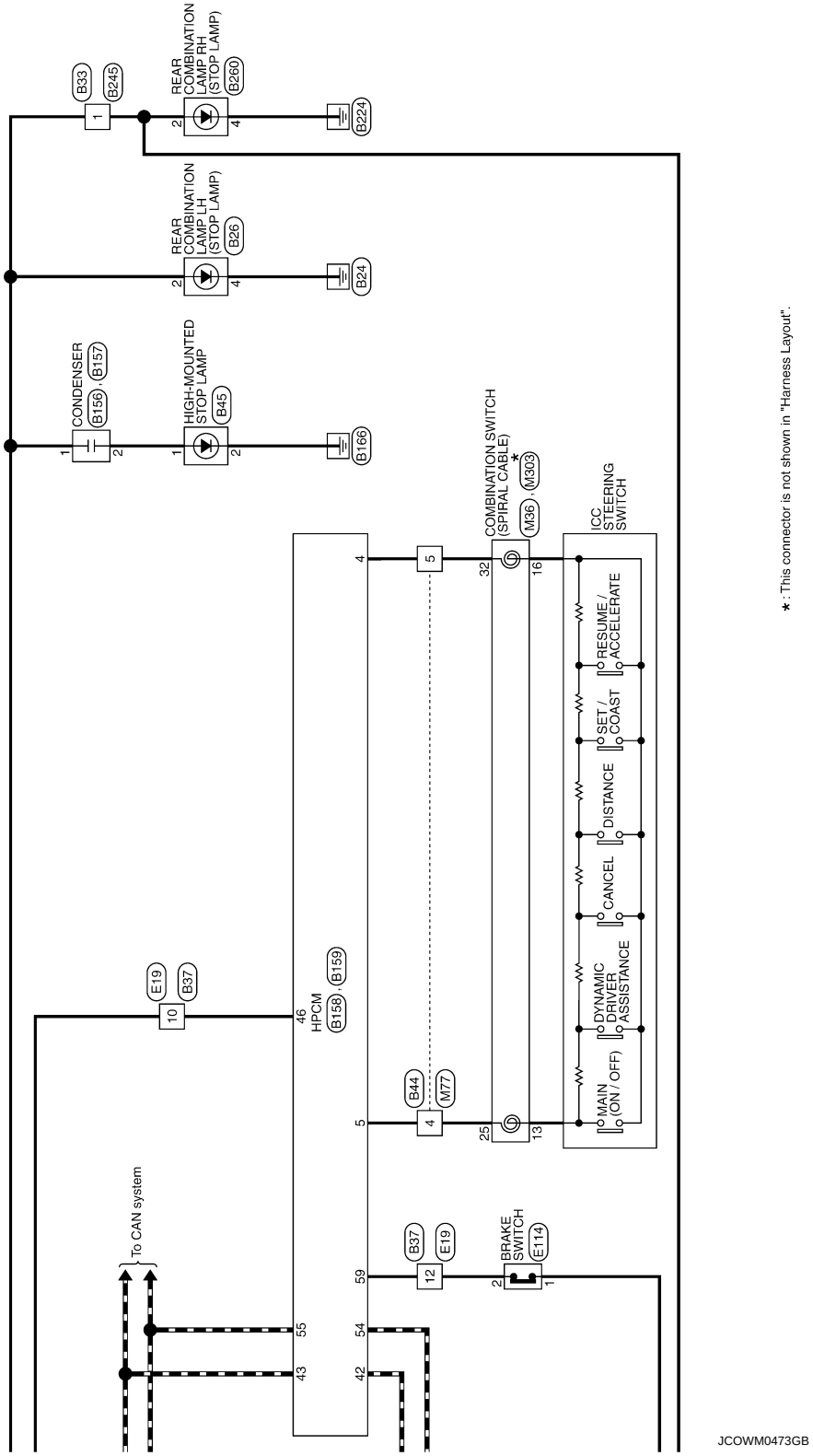
INFOID:0000000008497106

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-13, "Connector Information".




FUSE BLOCK (J/B) M2, M3, B6, E103
ECM M107
113
114
5G
1F
2F
10A 3
4F
STOP LAMP SWITCH E110
E106 M6
RESISTOR M8
PCB HARNESS M27, M30
M95
294
408
409
10A 7
8F
E119 B69
B28 B228
STOP LAMP OFF RELAY 1 B246
B228 B28 B69 E119
To brake control system
ICC BRAKE HOLD RELAY B248
B222 B5
ADAS CONTROL UNIT B50
TRIPLE SWITCH M183
WARNING SYSTEMS SWITCH
INDICATOR
IBA OFF SWITCH M184
PCB HARNESS M20, M23
M11
152
10A 6
PCB HARNESS M27
PCB HARNESS M23
M105 M181
M181 M105
M7 B1
287
286
154
153
35
37
47
6B
9
12
JCOWM0471GB


DATA LINK CONNECTOR (M182)
DATA LINE
JOINT CONNECTOR
TCM (TRANSMISSION CONTROL MODULE) (F301)*
A/T ASSEMBLY (F61)
AV CONTROL UNIT (M210)
A/C AUTO AMP. (M66)
COMBINATION METER (M53)
BCM (BODY CONTROL MODULE) (M120)
STEERING ANGLE SENSOR (M37)
CAN GATEWAY (M125)
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (E89)
ADAS CONTROL UNIT (B50)
B24
*: This connector is not shown in "Harness Layout".
JCOWM0472GB


REAR COMBINATION LAMP RH (STOP LAMP)
B260
B33
B245
B224
REAR COMBINATION LAMP LH (STOP LAMP)
B26
B24
CONDENSER
B156
B157
HIGH-MOUNTED STOP LAMP
B45
B166
COMBINATION SWITCH (SPIRAL CABLE) *
M36
M303
ICC STEERING SWITCH
RESUME / ACCELERATE
SET / COAST
DISTANCE
CANCEL
DYNAMIC DRIVER ASSISTANCE
MAIN (ON / OFF)
HPCM
B158
B159
E19
B37
B44
M77
BRAKE SWITCH
E114
To CAN system
* : This connector is not shown in "Harness Layout".
JCOWM0473GB

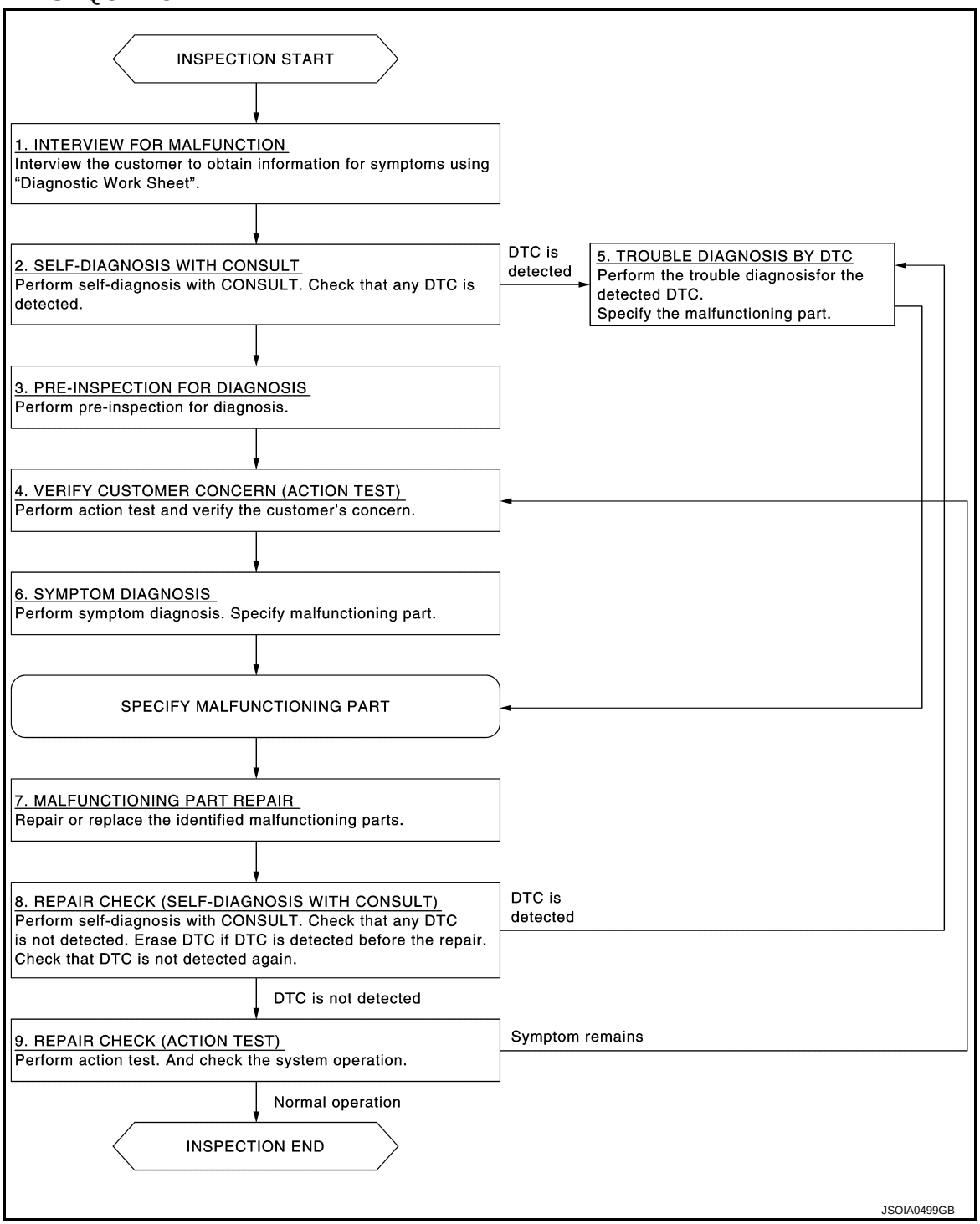
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000008141783

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the customer to obtain information about symptoms using “Diagnostic Work Sheet”. (Refer to DAS-308, "Diagnostic Work Sheet".)

>> 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-310, "Inspection Procedure".

>> GO TO 4.

4.ACTION TEST

Perform LDW/LDP system action test to check the operation status. Refer to DAS-311, "Description".

>> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

Perform trouble diagnosis for the detected DTC. Specify a malfunctioning part. Refer to DAS-295, "DTC Index" (ICC/ADAS) and/or DAS-301, "DTC Index" (LANE CAMERA).

>> GO TO 7.

6.SYMPTOM DIAGNOSIS

Perform symptom diagnosis. Specify malfunctioning part. Refer to DAS-373, "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:0000000008141784

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.

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	☐ Lane departure warning lamp	☐ Stays ON ☐ Turned ON occasionally	☐ Stays OFF ☐ Others ( )	☐ Blinks
	☐ Warning systems ON indicator	☐ Stays ON	☐ Stays OFF ☐ Others ( )	☐ Blinks
	☐ LDP ON indicator lamp	☐ Stays ON ☐ Turned ON occasionally	☐ Stays OFF ☐ Others ( )	☐ Blinks
	☐ Other lamps ( )	☐ Stays ON ☐ Turned ON occasionally	☐ Stays OFF ☐ Others ( )	☐ Blinks
Functions	☐ When using LDW ☐ When using LDP			
	☐ All functions do not operate. ☐ Warning function does not operate. (☐ No sound ☐ No indicator) ☐ Yawing function does not operate. (Warning function is operated.) ☐ Functions when changing the course in the turn signal direction. ☐ Functions are untimely. ☐ Does not function when driving on lane markers. ☐ Functions when driving in a lane. ☐ Functions in a different position from the actual position. ☐ Others ( )			

Conditions			
Frequency	☐ Continuously	☐ Intermittently	
Light conditions	☐ Not affected ☐ In the daytime ☐ Direct light	☐ At night ☐ Backlight	☐ Sunrise/sunset (Strong light) ☐ Others ( )
Driving conditions	☐ Not affected ☐ Vehicle speed	MPH (km/h)	☐ Vehicle is stopped
Weather conditions	☐ Not affected ☐ Fine ☐ Clouding	☐ Raining	☐ Snowing ☐ Others ( )
Road conditions	☐ Not affected ☐ Highway ☐ Uneven roads	☐ In town ☐ Winding roads	☐ Others ( )
Lane maker conditions	☐ Not affected ☐ Clear	☐ Unclear	☐ Others ( )
Other conditions			

JSOIA0287GB

PRE-INSPECTION FOR DIAGNOSIS

Inspection Procedure

INFOID:0000000008141785

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-315, "Description".

3.CHECK VEHICLE HEIGHT

Check vehicle height. Refer to FSU-20, "Wheelarch Height".

Is vehicle height appropriate?

YES >> INSPECTION END
NO >> Repair vehicle to appropriate height.

ACTION TEST

Description

INFOID:0000000008141786

- Perform action test to verify the customer's concern.
- Perform action test and check the system operation after system diagnosis.

CAUTION:
To prevent the possibility of accident, be careful of traffic conditions and safety around the vehicle when performing road test.
NOTE:
- Fully understand the following items well before the road test;
- Precautions: Refer to DAS-254, "Precaution for LDW/LDP System Service".
- System description for LDW: Refer to DAS-258, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description".
- System description for LDP: Refer to DAS-262, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description".
- Handling precaution: Refer to DAS-270, "Precautions for Lane Departure Warning/Lane Departure Prevention".

Inspection Procedure

INFOID:0000000008141787

CAUTION:
To prevent the possibility of accident, be careful of traffic conditions and safety around the vehicle when performing road test.
NOTE:
- Fully understand the following items well before the road test;
- Precautions: Refer to DAS-254, "Precaution for LDW/LDP System Service".
- System description for LDW: Refer to DAS-258, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description".
- System description for LDP: Refer to DAS-262, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description".
- Handling precaution: Refer to DAS-270, "Precautions for Lane Departure Warning/Lane Departure Prevention".

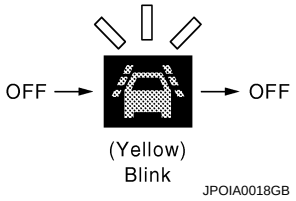
1. CHECK LDW SYSTEM SETTING

1. Set the vehicle to READY.
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 vehicle is set in the READY state 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.

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 • Buzzer sounds • Warning lamp blinks	ON		Short continuous beeps
	• 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-258, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description".

>> GO TO 3.

3. CHECK LDP SYSTEM SETTING

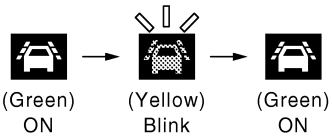
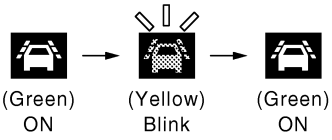
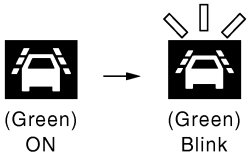
1. Set the vehicle to READY.
2. Check that the LDP system setting can be enabled/disabled on the navigation screen.
3. Turn OFF the ignition switch and wait for 30 seconds or more.
4. Check that the previous setting is saved when the vehicle is set in the READY state again.

>> 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		—

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	 JPOIA0022GB	Short continuous beeps
	• Close to lane marker • Turn signal ON (Deviate side)	No action	 JPOIA0021GB	—
	Close to lane marker with soft braking	Warning • Buzzer sounds • Warning lamp blinks	 JPOIA0022GB	Short continuous beeps
	• VDC OFF switch: OFF ⇒ ON • Shifting drive mode select switch to SNOW position	Cancellation • Buzzer sounds • Indicator lamp blinks **NOTE:** When dynamic driver assistance switch is ON ⇒ OFF, indicator lamp is turned OFF	 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-262, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description".

>> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT

Description

INFOID:0000000008141788

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:0000000008141789

1.CAMERA AIMING ADJUSTMENT

Perform the camera aiming adjustment with CONSULT. Refer to DAS-315, "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-301, "DTC Index".
NO >> GO TO 3.

3.LDW/LDP SYSTEM ACTION TEST

1. Perform the LDW/LDP system action test. Refer to DAS-311, "Description".
2. Check that the LDW/LDP system operates normally.

>> WORK END

CAMERA AIMING ADJUSTMENT

Description

INFOID:0000000008141790

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:0000000008141791

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-295, "DTC Index" (ICC/ADAS) or DAS-301, "DTC Index"(LANE CAMERA).

“C1B01” or no DTC>>GO TO 2.

2. PREPARATION BEFORE CAMERA AIMING ADJUSTMENT

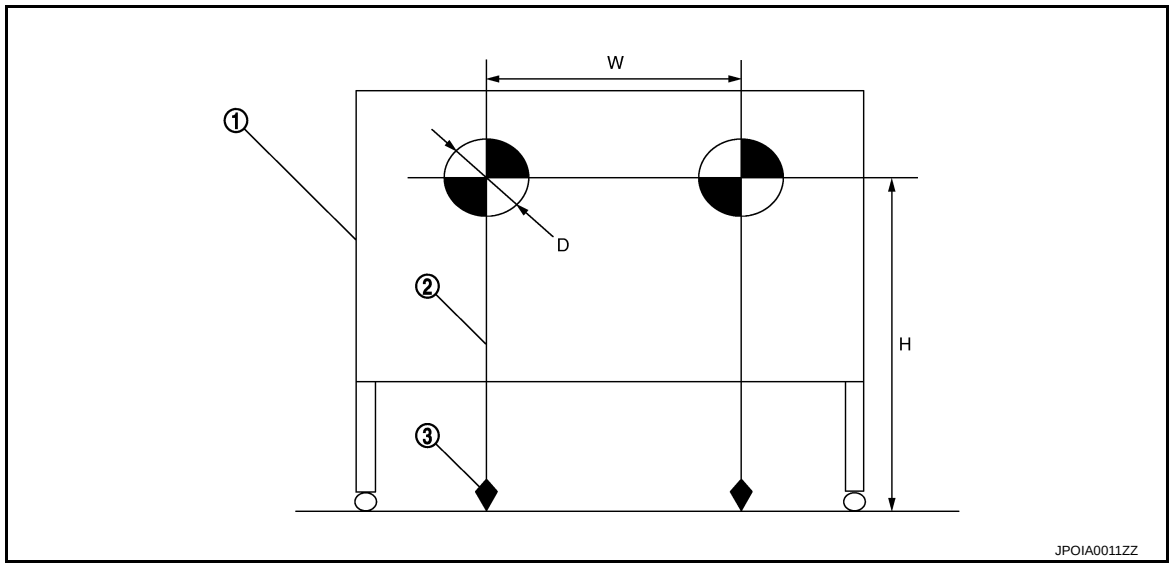
1. Perform pre-inspection for diagnosis. Refer to DAS-310, "Inspection Procedure".
2. Adjust the tire pressure to the specified pressure value.
3. Maintain no-load in vehicle.
4. Check if coolant and engine oil are filled up to correct level and fuel tank is full.
5. Shift the selector lever to “P” position 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-318, "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.



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-316, "Work Procedure (Target Setting)".

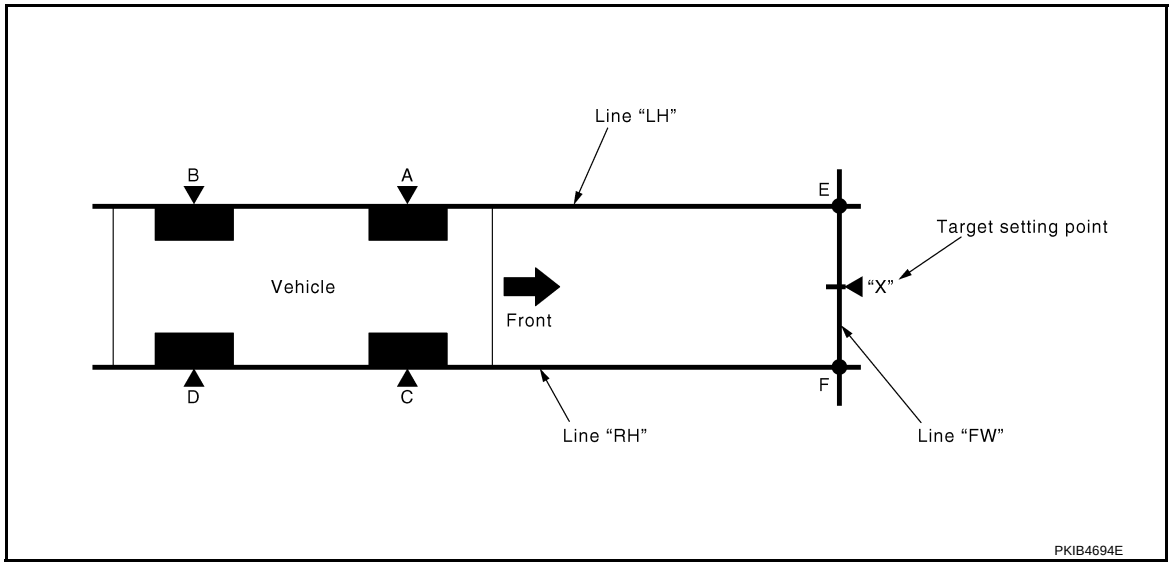
Work Procedure (Target Setting)

INFOID:0000000008141792

CAUTION:

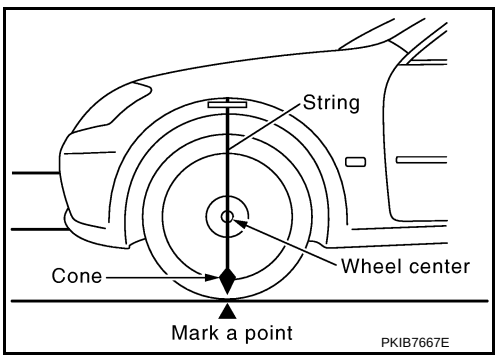
- **Perform this operation in a horizontal position where there is a clear view for 5 m (16.4 ft) forward and 3 m (9.84 ft) wide.**
- **Place the target in a well-lighted location. (Poor lighting may make it hard to adjust.)**
- **The target may not be detected when there is a light source within 1.5 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

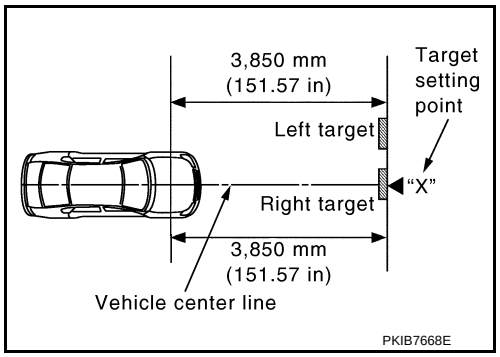


“A” – “E” (“C” – “F”) : 3850 mm (151.57 in)

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.



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-317, "Work Procedure (Camera Aiming Adjustment)".

Work Procedure (Camera Aiming Adjustment)

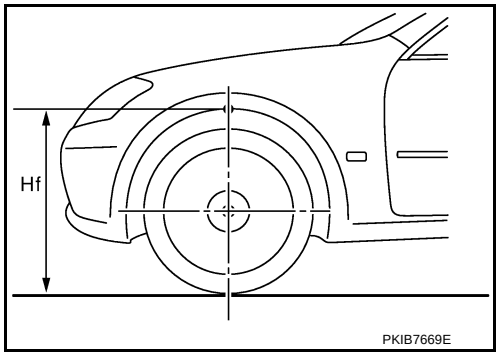
INFOID:0000000008141793

CAUTION:
Perform the adjustment under unloaded vehicle condition.

1. CHECK VEHICLE HEIGHT

Measure the wheelarch height. Calculate “Dh”.

Dh [mm] = (Hfl + Hfr) ÷ 2 – 756
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.

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-316, "Work Procedure (Target Setting)"
	10H Writing error	• Temporary malfunction in internal processing of the lane camera unit. • Lane camera unit malfunction.	
X AIMING NG Y (X: 0 - 7, Y: 1 - 8)	—	• A target is not-yet-placed. (The lane camera unit cannot detect a target.) • The position of the lane camera unit is not correct. • Inappropriate work environment. • Inappropriate vehicle condition.	Position the target appropriately again. Perform the aiming again. Refer to DAS-315, "Work Procedure (Preparation)".
ABNORMALLY COMPLETED	—		

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-301, "DTC Index".

NO >> GO TO 4.

4.ACTION TEST

Test the LDW/LDP system operation by action test. Refer to DAS-311, "Description".

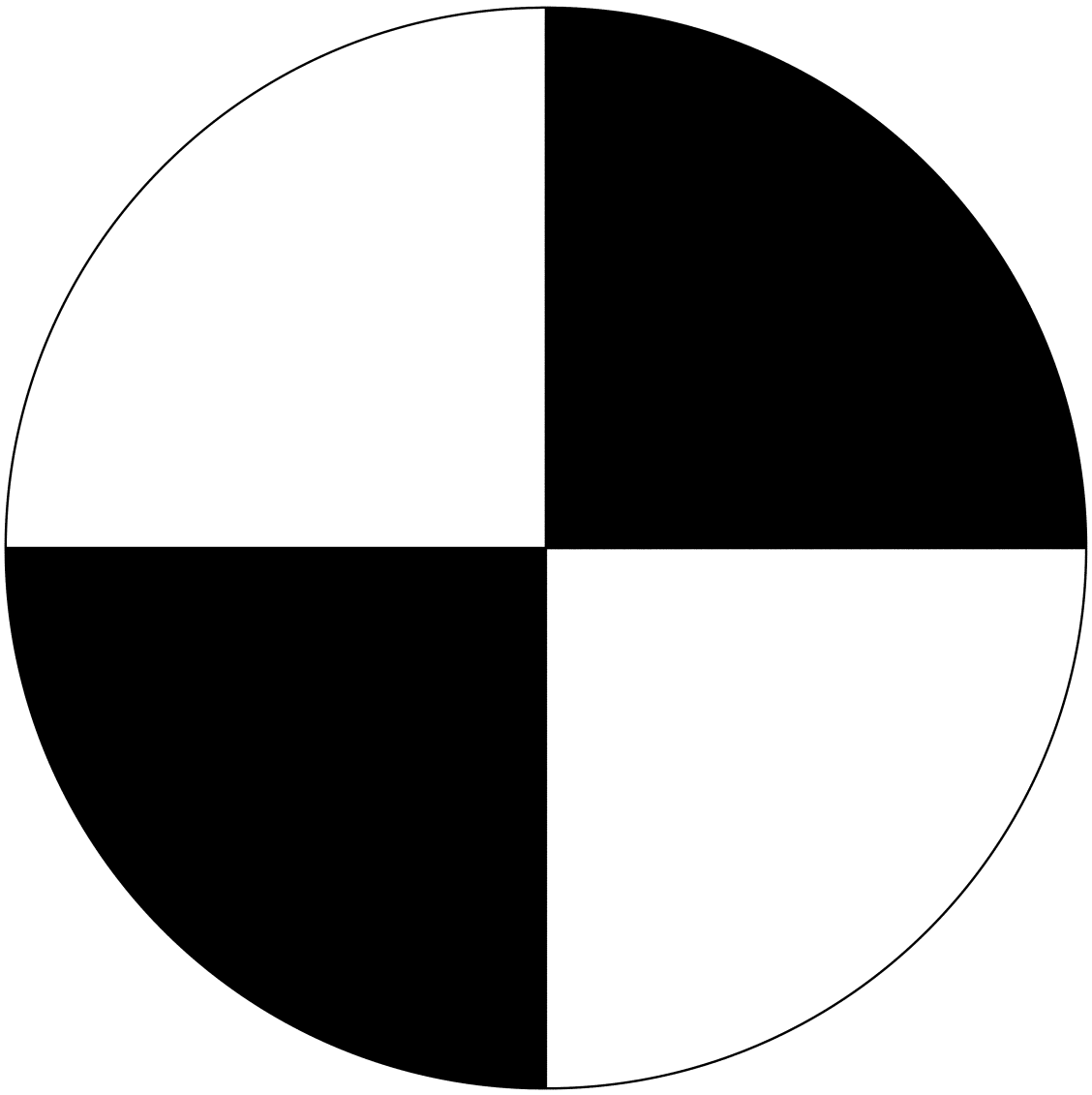
>> WORK END

Work Procedure (Target Mark Sample)

INFOID:0000000008141794

NOTE:

Print this illustration so that the diameter of the circle is 200 mm (7.87 in).



PGIA0105J

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:0000000008141795

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. Set the vehicle to READY.
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-320, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141796

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-295, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:0000000008141797

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	• 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. Set the vehicle to READY.
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-321, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141798

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to DAS-365, "ADAS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> Repair or replace the malfunctioning parts.

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:0000000008141799

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the wheel speed signal from ABS actuator and electric unit (control unit) received by the ADAS control unit via CAN communication, are inconsistent	• 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-348, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-323, "DTC Logic" for DTC “C1A04”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-322, "Diagnosis Procedure".
YES-2 (Lane departure warning lamp: OFF)>>Refer to CCS-76, "DTC Logic".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141800

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-295, "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 BRC-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:0000000008141801

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-348, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141802

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-348, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:0000000008141803

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 brake switch signal received from HPCM and a stop lamp signal received from the ABS actuator and electric unit (control unit) continues for 60 seconds or more with vehicle speeds at approximately 40 km/h or more	• Stop lamp switch circuit • Brake switch circuit • Stop lamp switch • Brake switch • Incorrect stop lamp switch installation • Incorrect brake switch installation • HPCM • 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-348, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141804

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-348, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK BRAKE SWITCH

Check that “BRAKE SW” operate normally in “DATA MONITOR” of “ICC/ADAS”.

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

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 8.
NO >> GO TO 9.

4.CHECK BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check brake switch for correct installation. Refer to BR-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Adjust brake switch installation. Refer to BR-270, "Inspection and Adjustment".

5.BRAKE SWITCH INSPECTION

1. Disconnect brake switch connector.
2. Check brake switch. Refer to DAS-326, "Component Inspection (Brake Switch)".

Is the inspection result normal?

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

6.CHECK BRAKE SWITCH POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(-)	
Brake switch		Ground	
Connector	Terminal		
E114	1		Battery voltage

Is the inspection result normal?

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

7.CHECK HARNESS BETWEEN BRAKE SWITCH AND HPCM

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

Brake switch		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
E114	2	B159	59	Existed

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

Brake switch		Ground	Continuity
Connector	Terminal		
E114	2		Not existed

Is the inspection result normal?

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

8.PERFORM SELF-DIAGNOSIS OF HPCM

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 “EV/HEV”. Refer to HBC-71, "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-56, "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-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 10.
NO >> Adjust stop lamp switch installation. Refer to BR-270, "Inspection and Adjustment".

10.STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to DAS-327, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

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	
Connector	Terminal		
E110	1		Battery voltage
	3		

Is the inspection result normal?

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

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

1. Turn the ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector and resistor.
3. 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	
E110	4	E89	8	Existed

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E110	4		Not existed

Is the inspection result normal?

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

13. 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-57, "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-56, "Removal and Installation".

Component Inspection (Brake Switch)

INFOID:0000000008141805

1. CHECK BRAKE SWITCH

Check for continuity between 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 brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:0000000008141806

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

DTC Logic

INFOID:0000000008141807

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	• 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 HPCM and ADAS control unit, and the state continues for 2 seconds or more	• ICC steering switch circuit • ICC steering switch • HPCM

NOTE:
If DTC “C1A06” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Wait for approximately 5 minutes after turning the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. 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-328, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141808

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-52, "DTC Logic".
NO >> GO TO 2.

2.CHECK ICC STEERING SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the ICC steering switch connector.
3. Check the ICC steering switch. Refer to DAS-329, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the ICC steering switch.

3.CHECK HARNESS BETWEEN SPIRAL CABLE AND HPCM

1. Disconnect the HPCM connector.
2. Check for continuity between the spiral cable harness connector and HPCM harness connector.

Spiral cable		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
M36	25	B158	5	Existed
	32		4	

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

Spiral cable		Ground	Continuity
Connector	Terminal		
M36	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 HPCM

1. Connect the connectors of ICC steering switch and HPCM connector.
2. Turn the ignition switch ON.
3. Perform “All DTC Reading”.
4. Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

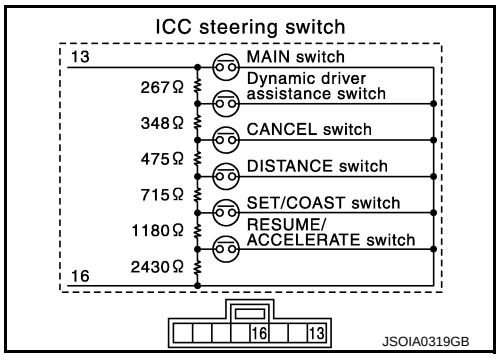
YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

Component Inspection

INFOID:0000000008141809

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 ICC steering switch.

C1A15 GEAR POSITION

Description

INFOID:0000000008141810

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 wheel speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:0000000008141811

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 • A mismatch between a current gear position signal and shift position signal transmitted from TCM via CAN communication continues for approximately 60 seconds or more	• 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-348, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-322, "DTC Logic" for DTC “C1A03”.
- Refer to DAS-323, "DTC Logic" for DTC “C1A04”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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:
   To prevent the possibility of accident, 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-330, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141812

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-295, "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:

To prevent the possibility of accident, be careful of the vehicle speed.

Is the inspection result normal?

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

3. CHECK GEAR POSITION

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

CAUTION:

To prevent the possibility of accident, 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-56, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A1A HPCM

DTC Logic

INFOID:0000000008141813

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A1A (19)	HPCM CIRCUIT	If HPCM is malfunctioning	• Accelerator pedal position sensor • HPCM • ADAS control unit

NOTE:
If DTC “C1A1A” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Operate the LDP system and drive.
   CAUTION:
   To prevent the possibility of accident, always drive safely.
3. Stop the vehicle.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “C1A1A” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “C1A1A” detected as the current malfunction?

YES >> Refer to DAS-332, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141814

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “C1A1A” 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-348, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF HPCM

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A24 NP RANGE

DTC Logic

INFOID:0000000008141815

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	• TCM • Transmission range switch

NOTE:
If DTC “C1A24” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.CHECK DTC REPRODUCE (1)

1. Set the vehicle to READY.
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-333, "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-333, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008473861

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 CCS-133, "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-102, "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?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to TM-80, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A50 ADAS CONTROL UNIT

DTC Logic

INFOID:0000000008141817

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-348, "LANE CAMERA UNIT : DTC Logic".

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-335, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141818

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-301, "DTC Index".
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-295, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

C1B00 CAMERA UNIT MALF

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141819

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. Set the vehicle to READY.
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-336, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141820

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “C1B00” is detected in “Self Diagnostic Result” of “LANE CAMERA”.

Is “C1B00” detected?

YES >> Refer to DAS-336, "LANE CAMERA UNIT : DTC Logic"
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008141821

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. Set the vehicle to READY.
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-336, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> INSPECTION END

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008141822

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?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-301, "DTC Index".

NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

C1B01 CAM AIMING INCMP

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141823

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01 (82)	CAM AIMING INCMP	Camera aiming is not completed	• Lane camera aiming is not adjusted • Lane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Operate the LDP system and drive.
   CAUTION:
   Always drive safely.
3. Perform “All DTC Reading” with CONSULT.
4. 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-338, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141824

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “C1B01” is detected in “Self Diagnostic Result” of “LANE CAMERA”.

Is “C1B01” detected?

YES >> Refer to DAS-338, "LANE CAMERA UNIT : DTC Logic"
NO >> GO TO 2.

2.CHECK DATA MONITOR

1. Set the vehicle to READY.
2. 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-56, "Removal and Installation".
NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008141825

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01	CAM AIMING INCMP	Camera aiming is not completed	• Lane camera aiming is not adjusted • Lane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-339, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008141826

1.CAMERA AIMING ADJUSTMENT

1. Perform the camera aiming. Refer to DAS-315, "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-381, "Removal and Installation".
NO >> INSPECTION END

C1B03 ABNRML TEMP DETECT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141827

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:0000000008141828

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-340, "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-381, "Removal and Installation".
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008141829

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:0000000008141830

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-381, "Removal and Installation".
NO >> INSPECTION END

U0104 ADAS CAN 1

DTC Logic

INFOID:0000000008141831

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-348, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-341, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141832

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-348, "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-295, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

U0121 VDC CAN 2

DTC Logic

INFOID:0000000008141833

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-342, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141834

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-348, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0126 STRG SEN CAN 1

DTC Logic

INFOID:0000000008141835

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-348, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-343, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141836

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-348, "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-295, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

U0402 TCM CAN 1

DTC Logic

INFOID:0000000008141837

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-344, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141838

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-348, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0405 ADAS CAN 2

DTC Logic

INFOID:0000000008141839

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-348, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-345, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141840

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-348, "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-295, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

U0415 VDC CAN 1

DTC Logic

INFOID:0000000008141841

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-346, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141842

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-348, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0428 STRG SEN CAN 2

DTC Logic

INFOID:0000000008141843

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-348, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-347, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141844

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-348, "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-295, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

U1000 CAN COMM CIRCUIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000008141845

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-36, "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:0000000008141846

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	• CAN communication system • ITS communication system

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141847

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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:0000000008141848

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:0000000008141849

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:0000000008141850

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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000008141851

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

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141852

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:0000000008141853

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-56, "Removal and Installation".
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:0000000008141854

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

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008141855

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:0000000008141856

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-381, "Removal and Installation".
NO >> INSPECTION END

U150C VDC CAN 3

DTC Logic

INFOID:0000000008141857

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-351, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141858

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-348, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U150D TCM CAN 3

DTC Logic

INFOID:0000000008141859

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-352, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141860

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-348, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U150E BCM CAN 3

DTC Logic

INFOID:0000000008141861

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-353, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141862

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-348, "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-55, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1500 CAM CAN 2

DTC Logic

INFOID:0000000008141863

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-354, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141864

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-348, "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-301, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1501 CAM CAN 1

DTC Logic

INFOID:0000000008141865

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-355, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141866

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-348, "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-301, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1512 HVAC CAN 3

DTC Logic

INFOID:0000000008141867

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-356, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141868

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-348, "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-51, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1513 METER CAN 3

DTC Logic

INFOID:0000000008141869

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-357, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141870

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-348, "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-51, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1516 CAM CAN 3

DTC Logic

INFOID:0000000008141871

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-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-358, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141872

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-348, "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-301, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151A ELECTRICAL BRAKE CAN CIRCUIT 2

DTC Logic

INFOID:0000000008141873

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151A (170)	ELECTRICAL BRAKE CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151A” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151A” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151A” detected as the current malfunction?

YES >> Refer to DAS-359, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141874

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151A” 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-348, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151B ELECTRICAL BRAKE CAN CIRCUIT 1

DTC Logic

INFOID:0000000008141875

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151B (171)	ELECTRICAL BRAKE CAN CIRCUIT 1	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151B” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151B” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151B” detected as the current malfunction?

YES >> Refer to DAS-360, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141876

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151B” 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-348, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151C ELECTRICAL BRAKE CAN CIRCUIT 3

DTC Logic

INFOID:0000000008141877

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151C (172)	ELECTRICAL BRAKE CAN CIRCUIT 3	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151C” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151C” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151C” detected as the current malfunction?

YES >> Refer to DAS-361, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141878

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151C” 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-133, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151D HPCM CAN CIRCUIT 2

DTC Logic

INFOID:0000000008141879

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151D (173)	HPCM CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151D” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151D” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151D” detected as the current malfunction?

YES >> Refer to DAS-362, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141880

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151D” 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-348, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151E HPCM CAN CIRCUIT 1

DTC Logic

INFOID:0000000008141881

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151E (174)	HPCM CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151E” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151E” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151E” detected as the current malfunction?

YES >> Refer to DAS-363, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141882

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151E” 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-348, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151F HPCM CAN CIRCUIT 3

DTC Logic

INFOID:0000000008141883

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151F (175)	HPCM CAN CIRCUIT 3	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151F” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-348, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the LDP system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151F” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151F” detected as the current malfunction?

YES >> Refer to DAS-364, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141884

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151F” 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-348, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141885

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal			Condition	Voltage (Approx.)
(+)		(–)		
ADAS control unit		Ground	Ignition switch	
Connector	Terminal			
B50	16		OFF	0 V
			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the ADAS control unit power supply circuit.

3.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		
B50	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:0000000008141886

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 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?

YES >> GO TO 3.
NO >> Repair the lane camera unit power supply circuit.

3.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.

WARNING SYSTEMS SWITCH CIRCUIT

Component Function Check

INFOID:0000000008141887

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-367, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008141888

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		Ground	Warning systems switch	
Connector	Terminal			
B50	1		Pressed	0 V
			Released	12 V

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "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-368, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the warning systems switch. Refer to DAS-382, "Removal and Installation".

3.CHECK WARNING SYSTEMS SWITCH GROUND CIRCUIT

Check continuity between triple switch harness connector terminal and the ground.

Triple switch		Ground	Continuity
Connector	Terminal		
M183	5		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.

2. Check continuity between the ADAS control unit harness connector and triple switch harness connector.

ADAS control unit		Triple switch		Continuity
Connector	Terminal	Connector	Terminal	
B50	1	M183	1	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		
B50	1		Not existed

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:0000000008141889

1. CHECK WARNING SYSTEMS SWITCH

Check continuity of warning systems switch.

Terminal		Condition	Continuity
1	5	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.

WARNING SYSTEMS ON INDICATOR CIRCUIT

Component Function Check

INFOID:0000000008141890

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-369, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008141891

1.CHECK WARNING ON INDICATOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect triple switch connector.
3. Turn ignition switch ON.
4. Check voltage between triple switch harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Triple switch		Ground	
Connector	Terminal		
M183	9		Battery voltage

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 triple switch harness connector.

ADAS control unit		Triple switch		Continuity
Connector	Terminal	Connector	Terminal	
B50	4	M183	12	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		
B50	4		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4. CHECK WARNING SYSTEMS ON INDICATOR

Check the warning systems ON indicator. Refer to DAS-370, "Component Inspection".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> Replace warning systems switch. DAS-382, "Removal and Installation".

Component Inspection

INFOID:0000000008141892

1. CHECK WARNING SYSTEMS ON INDICATOR

Apply battery voltage to warning systems switch terminals 9 and 12, and then check if the warning systems ON indicator illuminates.

Terminals		Condition	Warning systems ON indicator
(+)	(-)		
9	12	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-382, "Removal and Installation".

WARNING BUZZER CIRCUIT

Component Function Check

INFOID:0000000008141893

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-371, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008141894

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	
Connector	Terminal		
M45	1		Battery voltage

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		
M45	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	
B50	12	M45	2	Existed

Is the inspection result normal?

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		
B50	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. Refer to DAS-56, "Removal and Installation".
NO >> Replace the warning buzzer. Refer to DAS-384, "Removal and Installation".

SYMPTOM DIAGNOSIS

LDW & LDP SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000008141895

NOTE:
For the operational conditions of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP), refer to the following descriptions.
- LDW: DAS-258, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description"
- LDP: DAS-262, "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.	• Combination meter • ADAS control unit	Lane departure warning lamp does not turned ON Refer to DAS-375, "Description"
	LDP ON indicator lamp (Green) does not illuminate.	• Combination meter • ADAS control unit	LDP ON indicator lamp does not turned ON Refer to DAS-375, "Description"
	Warning systems ON indicator does not illuminate.	• Harness between ADAS control unit and warning systems switch • Warning systems switch • ADAS control unit	Warning systems ON indicator circuit Refer to DAS-369, "Component Function Check"
	Lane departure warning lamp (Yellow) and LDP ON indicator lamp (Green) does not illuminate.	• Combination meter • ADAS control unit	• Lane departure warning lamp does not turned ON Refer to DAS-375, "Description" • LDP ON indicator lamp does not turned ON Refer to DAS-375, "Description"
	All of indicator/warning lamps does not illuminate; • Lane departure warning lamp (Yellow) • LDP ON indicator lamp (Green) • Warning systems ON indicator	• Power supply and ground circuit of ADAS control unit • ADAS control unit	Power supply and ground circuit of ADAS control unit Refer to DAS-375, "Description"
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	• Harness between ADAS control unit and warning systems switch • Harness between warning systems switch and ground • Warning systems switch • ADAS control unit	• Warning systems switch circuit Refer to DAS-367, "Component Function Check" • LDW system setting can not be turned ON/OFF on the navigation screen Refer to DAS-378, "Description"
	Warning buzzer is not sounding. (Lane departure warning lamp is activated.)	• 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-371, "Component Function Check"

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	• Dynamic driver assistance switch • Combination meter • ADAS control unit • AV control unit	• Dynamic driver assistance switch (ICC steering switch) Refer to DAS-329, "Component Inspection" • LDP system setting can not be turned ON/OFF on the navigation screen Refer to DAS-378, "Description"
	Warning is functioning but yawing is not functioning.	—	• Cause of auto-cancel 2 Refer to DAS-273 • Normal operating condition Refer to DAS-379
Warning functions are not timely (Example) • Does not function when driving on lane markers • Functions when driving in a lane • Functions in a different position from the actual position.		• Camera aiming adjustment • Lane camera unit • ADAS control unit	Camera aiming adjustment DAS-315, "Description"
Functions when changing the course in direction of the turn signal		Turn indicator signal (CAN) • BCM • ADAS control unit	System operates even when using turn signal Refer to DAS-377, "Description"

LANE DEPARTURE WARNING LAMP DOES NOT TURNED ON

Description

INFOID:0000000008141896

The lane departure warning lamp in the combination meter does not turn ON when turning on the ignition switch

Diagnosis Procedure

INFOID:0000000008141897

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-81, "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-51, "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-295, "DTC Index".

Is any DTC detected?

YES >> Repair or replace malfunctioning parts.
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

LDP ON INDICATOR LAMP DOES NOT TURNED ON

Description

INFOID:0000000008141898

The LDP ON indicator lamp in the combination meter does not turn ON when turning on the ignition switch.

Diagnosis Procedure

INFOID:0000000008141899

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-81, "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-51, "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-295, "DTC Index".

Is any DTC detected?

YES >> Repair or replace malfunctioning parts.
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

THE SYSTEM OPERATES EVEN WHEN USING TURN SIGNAL

Description

INFOID:0000000008141900

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-258, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description"
- LDP: DAS-262, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description"

Diagnosis Procedure

INFOID:0000000008141901

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 EXL-93, "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-295, "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-56, "Removal and Installation".

LDW/LDP SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

Description

INFOID:0000000008141902

- 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 set the vehicle to READY, 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:0000000008141903

1.CHECK LDP SYSTEM SETTING

1. Set the vehicle to READY.
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 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-295, "DTC Index"
- MULTI AV: AV-169, "DTC Index"
- METER/M&A: MWI-51, "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-142, "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-56, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

Description

INFOID:0000000008141904

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 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.

- 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.

REMOVAL AND INSTALLATION

LANE CAMERA UNIT

Removal and Installation

INFOID:0000000008141905

REMOVAL

1. Remove headlining assembly. Refer to INT-47, "Removal and Installation".
2. Remove the bolts.
3. Remove lane camera unit.

INSTALLATION

Install in the reverse order of removal.

NOTE:

Remove the camera lens cap for replacement.

CAUTION:

- **To prevent malfunction, never give an impact to the lane camera unit.**
- **To prevent malfunction, perform the camera aiming every time the lane camera unit is removed and installed. Refer to DAS-315, "Description".**

WARNING SYSTEMS SWITCH

Removal and Installation

INFOID:0000000008141906

REMOVAL

1. Remove the instrument lower panel LH. Refer to IP-13, "Removal and Installation".
2. Remove warning systems switch from instrument lower panel LH.

NOTE:
Warning systems switch and VDC OFF switch are integrated.

INSTALLATION

Install in the reverse order of removal.

DYNAMIC DRIVER ASSISTANCE SWITCH

Exploded View

INFOID:0000000008141907

Dynamic driver assistance switch is integrated in the ICC steering switch. Refer to ST-29, "Exploded View".

WARNING BUZZER

Removal and Installation

INFOID:0000000008141908

REMOVAL

1. Remove the AV control unit. Refer to AV-264, "Removal and Installation".
2. Remove the screw.
3. Remove warning buzzer.

INSTALLATION

Install in the reverse order of removal.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000008141909

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. 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 12V battery, and wait at least 3 minutes before performing any service.**

Precautions Concerning On-board Servicing of Hybrid Systems

INFOID:0000000008141910

CAUTION:

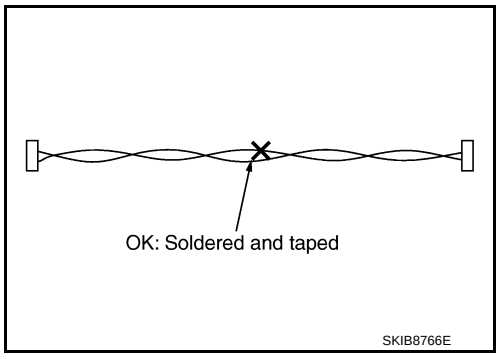
Be sure to turn the ignition switch OFF before performing inspection and servicing inside the engine compartment or underneath the vehicle. If the ignition switch is ON (vehicle READY state), even if the engine is stopped, the conditions of the vehicle may cause the engine to start automatically.
If it is necessary to continually operate the engine during inspection or servicing, use the designated inspection mode. HBC-89, "Description".

Precautions For Harness Repair

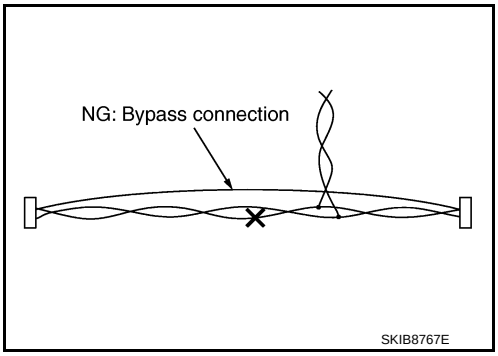
INFOID:0000000008141911

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.



Precaution for BSW/BSI System Service

INFOID:0000000008141912

CAUTION:

- **To prevent the possibility of accident, be careful of traffic conditions and safety around the vehicle when performing road test.**
- **To prevent the possibility of accident, never use the BSI system when driving with free rollers or a chassis dynamometer.**
- **To prevent the possibility of accident, never perform the active test while driving.**
- **To prevent malfunction, never disassemble and remodel the lane camera unit.**
- **Never change BSW initial state ON ⇒ OFF without the consent of the customer.**
- **Do not use the lane camera unit that is removed from the vehicle.**

TO KEEP THE BSW/BSI 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 BSW and BSI systems are located near the rear bumper.

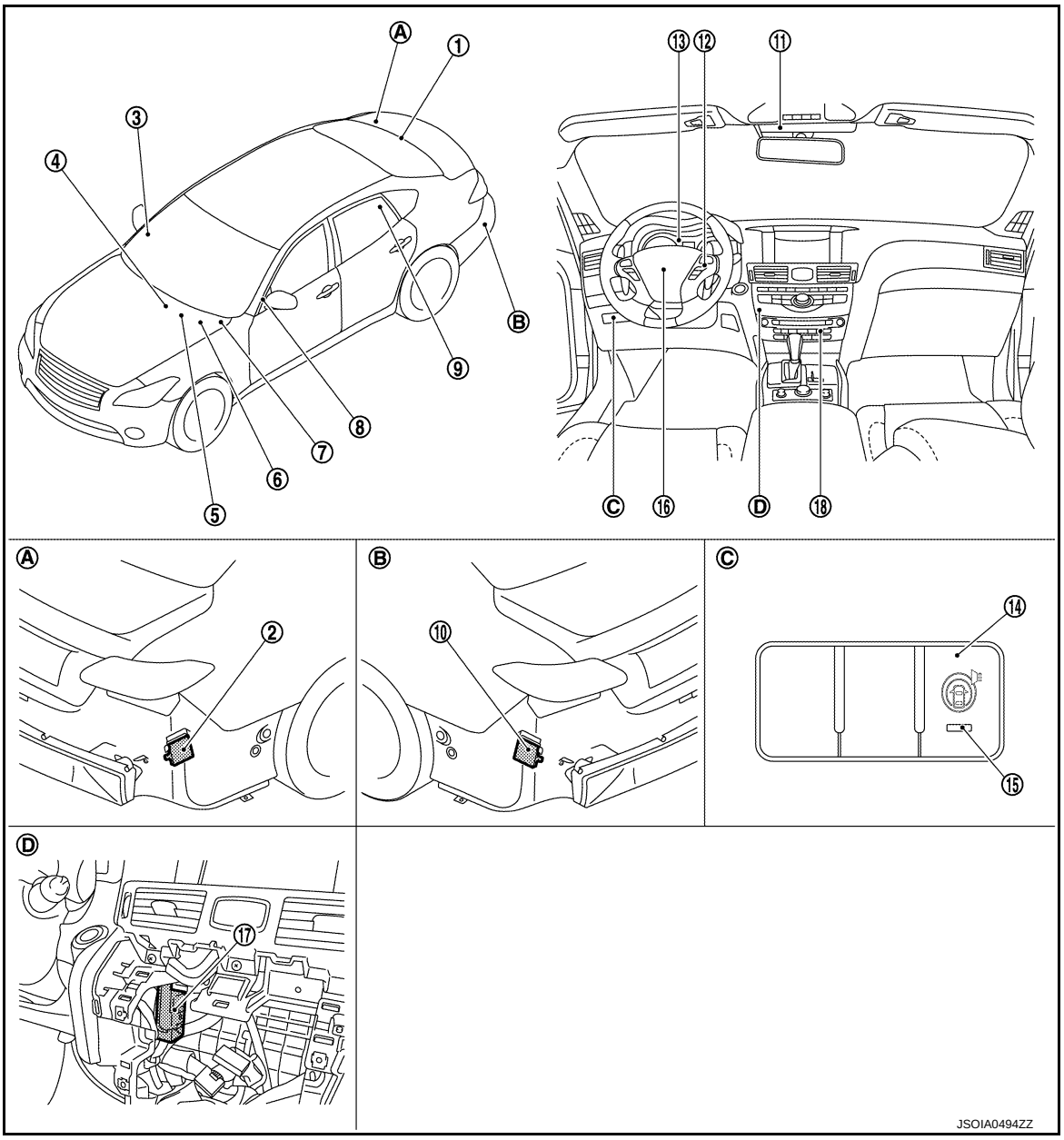
- Always keep the area near the side radar clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the side radar.
- Do not strike or damage the area around the side radar.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000008141913



1. ADAS control unit
   Refer to DAS-14, "Component Parts Location".
2. Side radar RH
3. BSW/BSI indicator RH
4. BCM
   Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location".
5. TCM
   Refer to TM-13, "A/T CONTROL SYSTEM : Component Parts Location".
6. ABS actuator and electric unit (control unit)
   Refer to BRC-11, "Component Parts Location".
7. Electrically-driven intelligent brake unit
   Refer to BR-10, "Component Parts Location".
8. BSW/BSI indicator LH
9. HPCM
   Refer to HBC-13, "HYBRID CONTROL SYSTEM : Component Parts Location".

10. Side radar LH
11. Lane camera unit
    Refer to DAS-255, "LANE DEPARTURE WARNING (LDW) SYSTEM : Component Parts Location".
12. Dynamic driver assistance switch
13. Combination meter
    - BSI ON indicator (Green)
    - BSW/BSI warning lamp (Yellow)
14. Warning systems switch
15. Warning systems ON indicator
16. Steering angle sensor
    Refer to BRC-11, "Component Parts Location".
17. Warning buzzer
18. AV control unit
    Refer to AV-128, "Component Parts Location".

A. Rear bumper removed condition
B. Rear bumper removed condition
C. Instrumet lower panel (LH)
D. Center of the instrument panel

Component Description

INFOID:0000000008141914

Component	Description
ADAS control unit	• Being connected with side radar (LH and RH) via ITS communication, receives vehicle detection signal and transmits BSW/BSI indicator signal and BSW/BSI 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 BSW/BSI 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). (through electrically-driven intelligent brake unit) • Activates the warning buzzer and warning systems ON indicator • Transmits BSI ON indicator signal and BSW/BSI warning lamp signal to combination meter via CAN communication
Side radar LH/ RH	• Being connected with ADAS control unit via ITS communication, transmits vehicle detection signal • Receives BSW/BSI indicator signal and BSW/BSI indicator dimmer signal from ADAS control unit and transmits an indicator operation signal to BSW/BSI 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
BSW/BSI indicator LH/ RH	Receives BSW/BSI indicator operation signal from side radar LH/RH and turns OFF, turns ON or blinks
Lane camera unit	• 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)	• Transmits wheel 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 (through electrically-driven intelligent brake unit)
Warning systems switch	Inputs the switch signal to ADAS control unit
Dynamic driver assistance switch	Inputs the switch signal to HPCM
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	• Turns the BSW/ BSI warning lamp and BSI ON indicator ON/OFF according to the signals from the ADAS control unit via CAN communication • Receives BSI ON indicator signal, and BSW/BSI warning lamp signal via CAN communication.
Steering angle sensor	Transmits steering angle sensor signal to ADAS control unit via CAN communication
BCM	• Transmits turn indicator signal to ADAS control unit via CAN communication • Transmits dimmer signal to ADAS control unit via CAN communication
HPCM	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

Component	Description
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

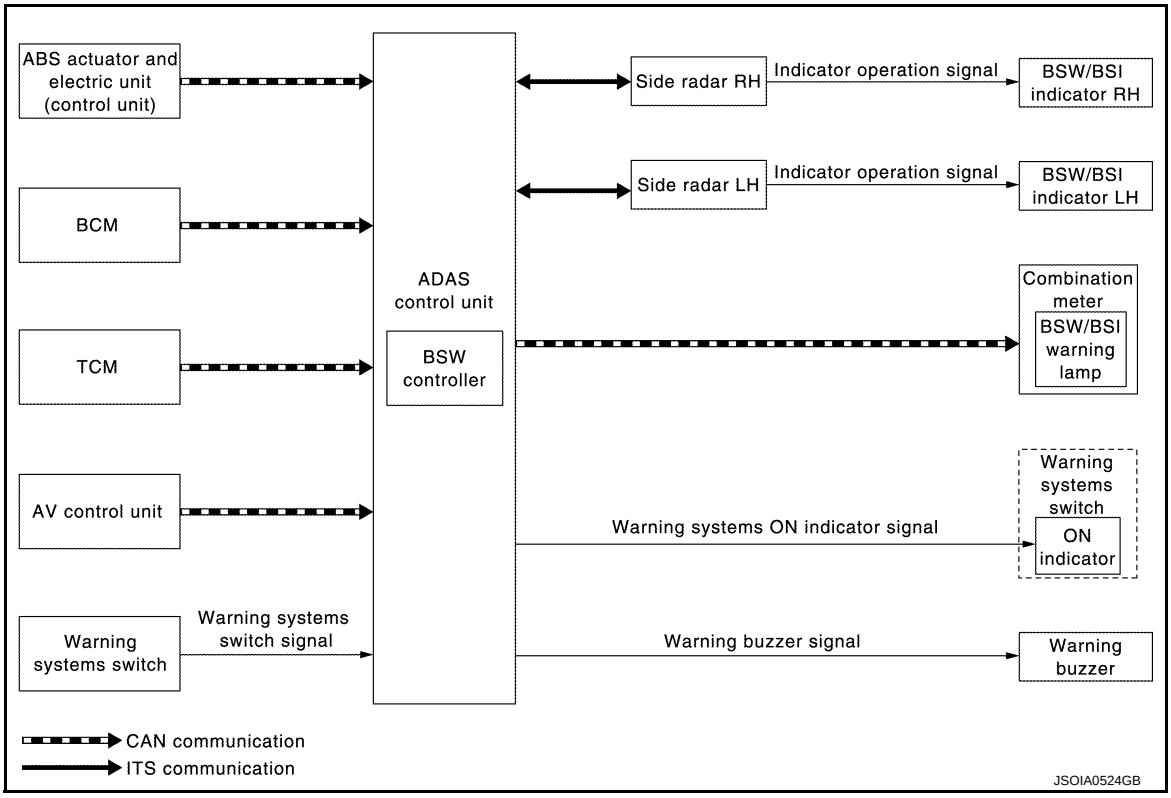
SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM : System Description

INFOID:0000000008141915

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

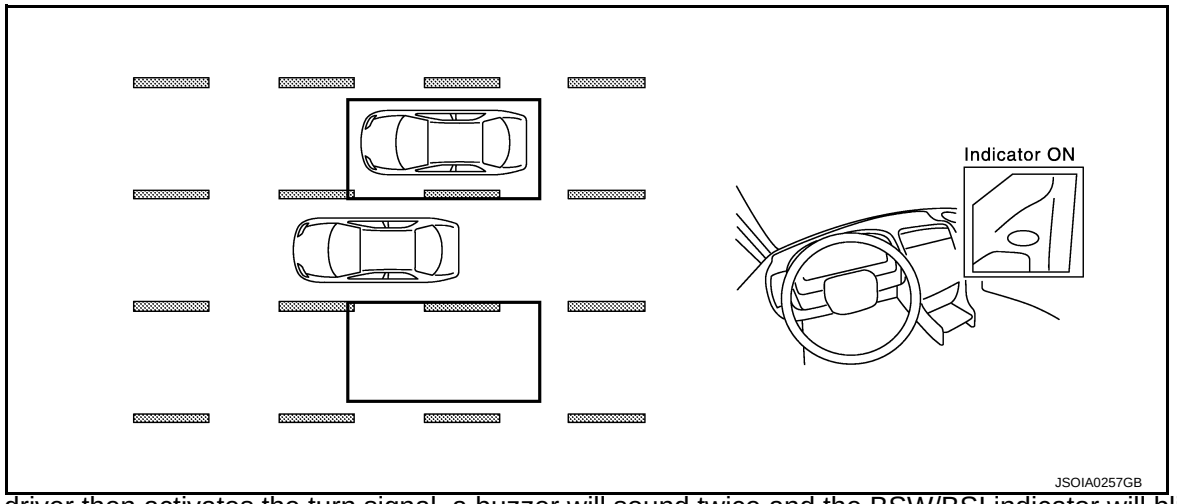
Transmit unit	Signal name		Description
TCM	CAN communication	Shift position signal	Receives a selector lever position
ABS actuator and electric unit (control unit)	CAN communication	Wheel speed signal	Receives wheel speeds of four wheels
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
		Dimmer signal	Receives an ON/OFF state of dimmer signal
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in “Driver Assistance” 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

Reception unit	Signal name		Description
Combination meter	CAN communication	BSW/BSI warning lamp signal	Transmits a BSW/BSI warning lamp signal to turn ON the BSW/BSI warning lamp
		BSI ON indictor signal	Transmits a BSI ON indictor lamp signal to turn ON the BSI ON indictor lamp
Side radar LH, RH	ITS communication	BSW/BSI indicator signal	Transmits a BSW/BSI indicator signal to turn ON the BSW/BSI indicator
		BSW/BSI indicator dimmer signal	Transmits a BSW/BSI indicator dimmer signal to dimmer BSW/BSI 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

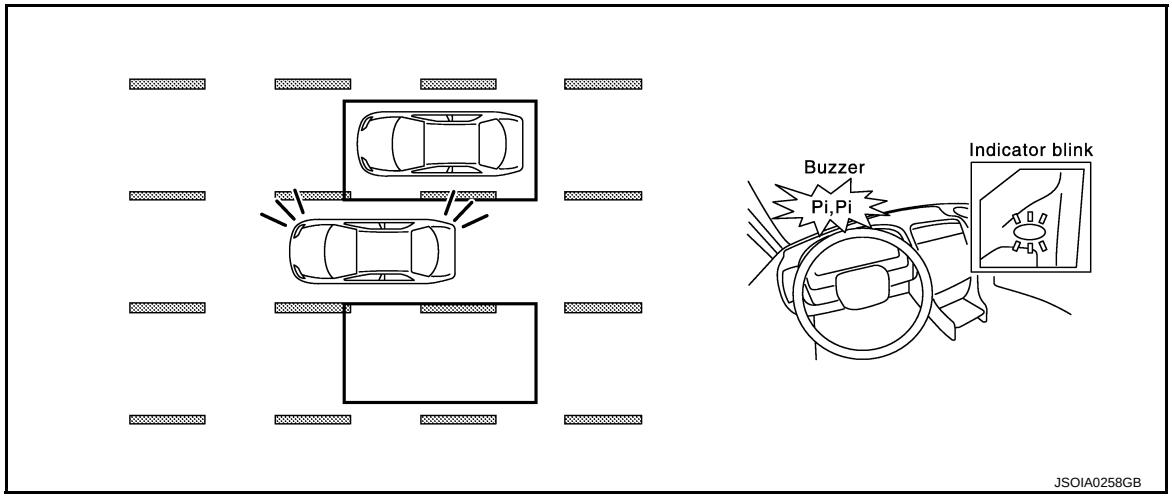
- The BSW system can help alert the driver of other vehicles in adjacent lanes when changing lanes.
- The BSW system uses side radar installed near the rear bumper to detect vehicles in an adjacent lane.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as 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 BSW/BSI indicator illuminates.



- If the driver then activates the turn signal, a buzzer will sound twice and the BSW/BSI indicator will blink.

NOTE:

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 BSW/BSI 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:
- BSW/BSI indicator signal and BSW/BSI indicator dimmer signal transmission to side radar.
- Buzzer signal transmission to warning buzzer.
- Side radar transmits an indicator operation signal to the BSW/BSI indicator according to BSW/BSI indicator signal and BSW/BSI indicator dimmer signal.

Operation Condition of BSW System

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

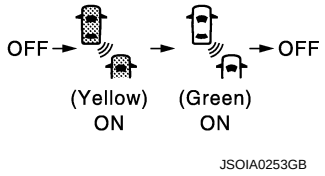
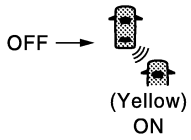
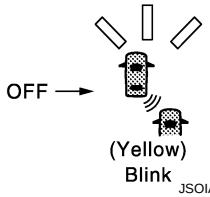
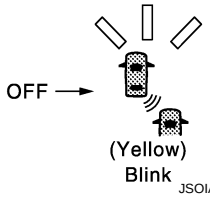
- When the warning systems switch in turned ON* or BSI system turned ON.
- When the vehicle drives at 32 km/h (20 MPH) or more to the forward direction.

NOTE:

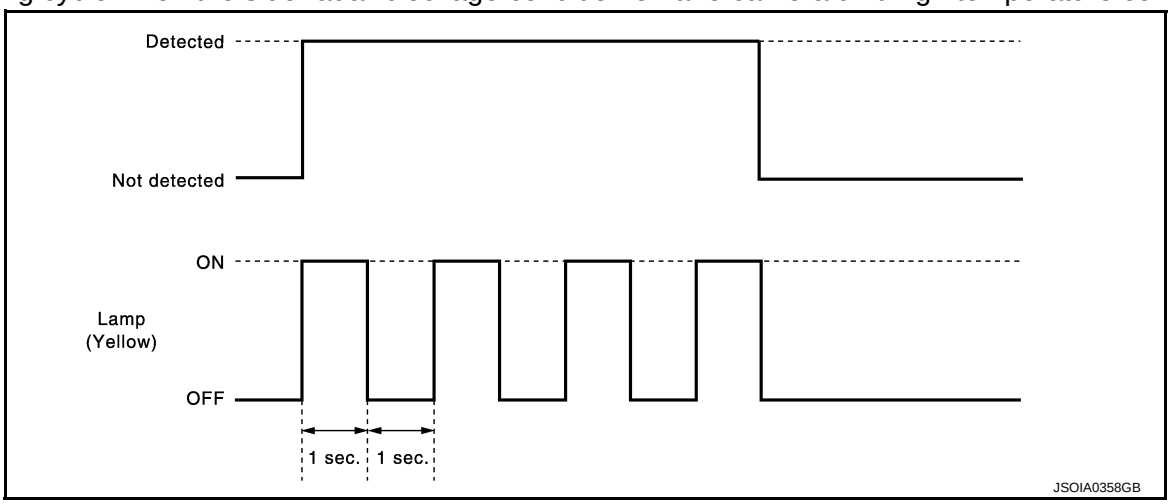
*: When the BSW system setting on the navigation screen is ON.

- 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-405, "Precautions for Blind Spot Warning/Blind Spot Intervention".

BULB CHECK ACTION AND FAIL-SAFE INDICATION

Vehicle condition/Driver's operation	BSW/BSI indicator	Warning systems ON indicator	Indication on the combination meter
Ignition switch: OFF ⇒ ON	Approx. 2 sec. ON	Approx. 5 sec. ON	 JSOIA0253GB
When DTC is detected	OFF	ON	 JSOIA0254GB
When the camera detects that interior temperature is high	OFF	ON	 JSOIA0255GB
When radar blockage is detected	OFF	ON	 JSOIA0255GB
When the warning systems system 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



JSOIA0358GB

NOTE:
Time shown in the figure is approximate time.

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:0000000008141916

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
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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (Lane Camera Unit)

INFOID:0000000008141917

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the BSW/BSI 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 BSW/BSI warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume operation automatically and the BSW/BSI warning lamp (yellow) in the combination meter will stop blinking.

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (Side Radar)

INFOID:0000000008141918

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the BSW/BSI warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then the BSW/BSI warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

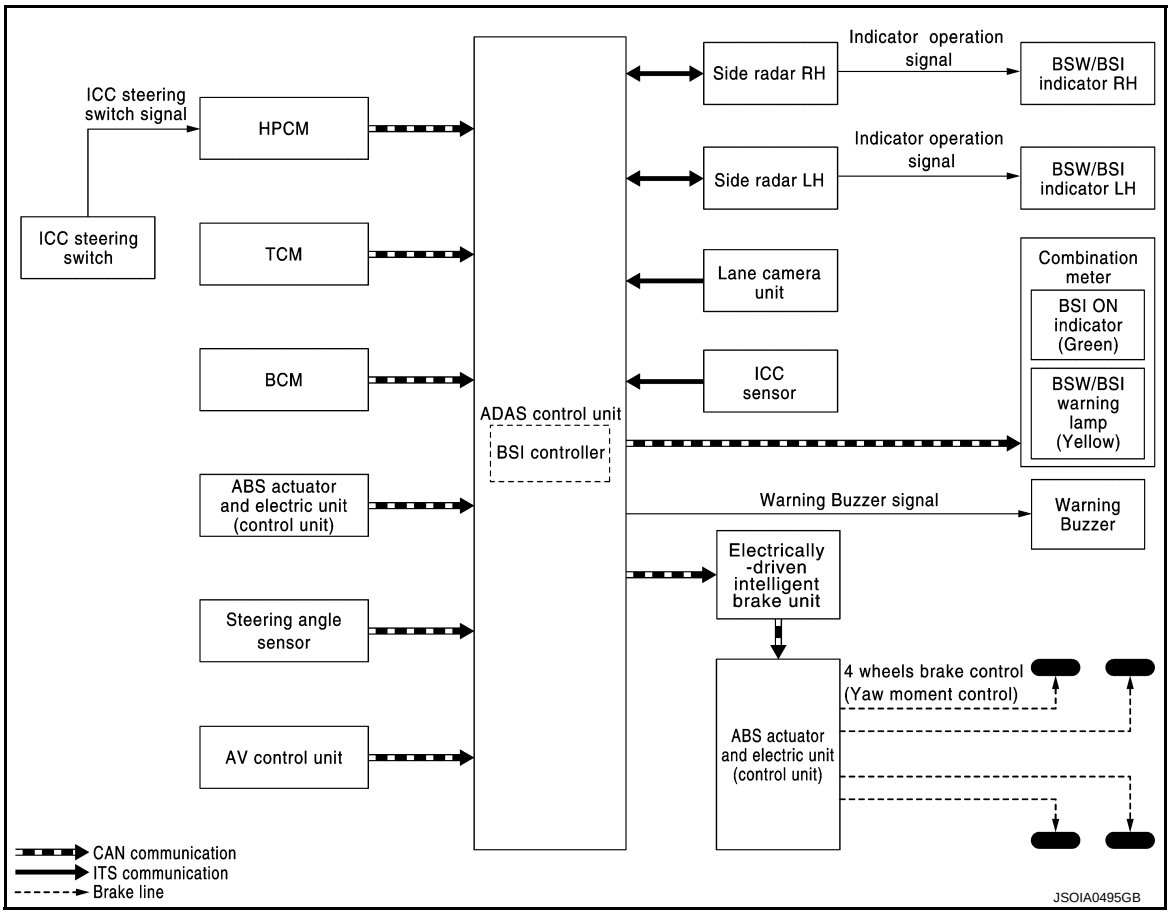
- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

BLIND SPOT INTERVENTION (BSI) SYSTEM

BLIND SPOT INTERVENTION (BSI) SYSTEM : System Description

INFOID:0000000008141919

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name			Description
HPCM	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
		READY condition signal		Receives READY state of the vehicle
		Engine speed signal		Receives engine speed
		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 select lever position
		Output shaft revolution signal		Receives the number of revolutions of output shaft

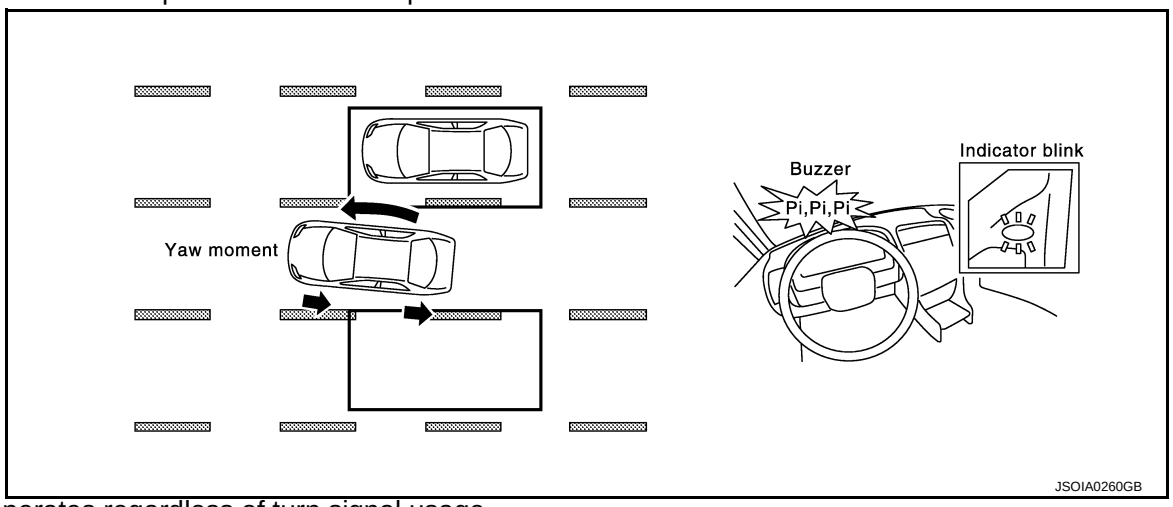
Transmit unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS
		ABS operation signal	Receives an operational state of ABS
		TCS malfunction signal	Receives a malfunction state of TCS
		TCS operation signal	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
		Wheel speed signal	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
		Dimmer signal	Receives an 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
AV control unit	CAN communication	System selection signal	Receives a selection state of each item in “Driver Assistance” 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
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.

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 (through electrically-driven intelligent brake unit)
Combination meter	CAN communication	BSW/BSI warning lamp signal	Transmits a BSW/BSI warning lamp signal to turn ON the BSW/BSI warning lamp
		BSI ON indictor lamp signal	Transmits a BSI ON indictor lamp signal to turn ON the BSI ON indictor 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
Side radar LH, RH	ITS communication	BSW/BSI indicator signal	Transmits a BSW/BSI indicator signal to turn ON the BSW/BSI indicator
		BSW/BSI indicator dimmer signal	Transmits a BSW/BSI indicator dimmer signal to dimmer BSW/BSI 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 BSI system can help alert the driver of other vehicles in adjacent lanes when changing lanes. BSI always operates together with BSW.
- The BSI system operates above approximately 60 km/h (37 MPH).
- The BSI 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 BSW/BSI indicator is illuminated while vehicle is approaching a lane marker, the BSW/BSI 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.



- BSI operates regardless of turn signal usage.
- The brightness of BSW/BSI indicator lights is adjusted automatically depending on the brightness of the ambient light.

NOTE:

- BSI is typically activated earlier than LDP when getting closer to the lane marker.
- Warning and brake control will only be activated if the BSW/BSI 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.

BSI SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables BSI system.
- Turn ON the dynamic driver assistance switch, and BSI system setting on the navigation screen. Then BSI ON indicator comes on.
- Combination meter turns BSI 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.
- 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:
  - BSW/BSI indicator signal and BSW/BSI 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 BSW/BSI indicator according to BSW/BSI indicator operation signal and BSW/BSI 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 BSI System

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

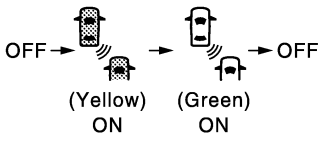
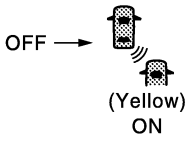
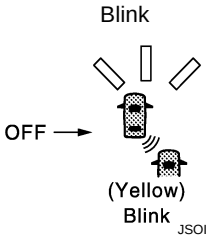
- BSI ON indicator: ON

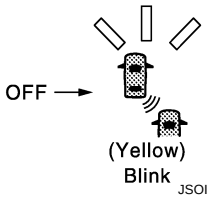
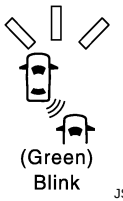
• When the vehicle drives at 60 km/h (37 MPH) or more to the forward direction.

NOTE:

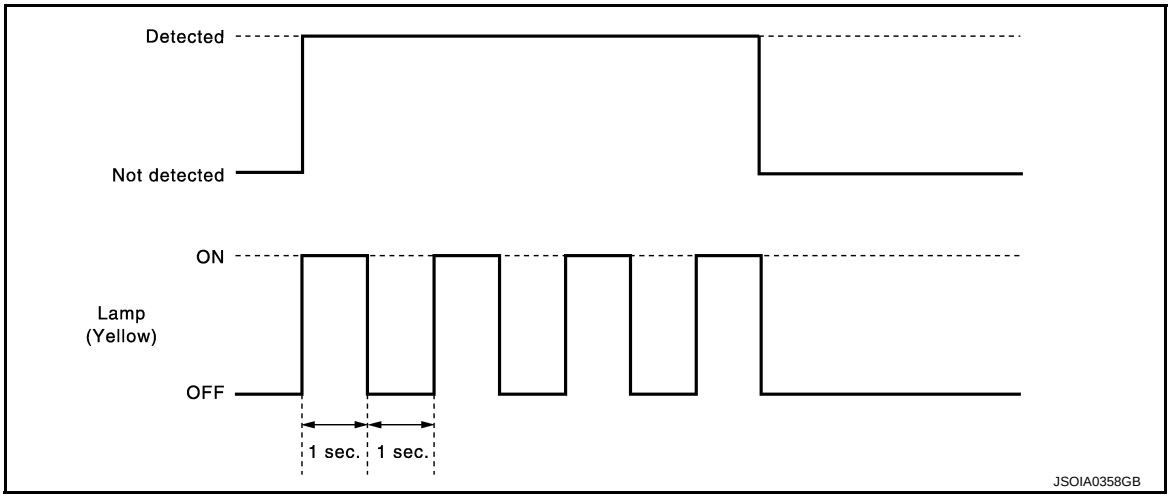
• When the BSI system setting on the navigation screen is ON.
• The BSI system may not function properly, depending on the situation. Refer to DAS-405, "Precautions for Blind Spot Warning/Blind Spot Intervention".
• BSI braking will not operate or will stop operating and only a warning chime will sound 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 BSI system will be turned off automatically, a beep will sound and the BSI ON indicator will blink. The BSW system is still available, but the BSI 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 drive mode select switch is turned to the SNOW mode.

BULB CHECK ACTION AND FAIL-SAFE INDICATION.

Vehicle condition/Driver's operation	BSW/BSI indicator	Warning buzzer	Indication on the combination meter
Ignition switch: OFF ⇒ ON	Approx. 2 sec. ON	OFF	 JSOIA0253GB
When DTC is detected	OFF	Beep	 JSOIA0254GB
When radar blockage is detected	OFF	Beep	 JSOIA0255GB

Vehicle condition/Driver's operation	BSW/BSI indicator	Warning buzzer	Indication on the combination meter
When the camera detects that the interior temperature is high	OFF	Beep	Blink  JSOIA0255GB
When the dynamic driver assistance switch is turned ON with settings of DCA system, LDP system and BSI system OFF	OFF	—	Blink (Approx. 3 sec.)  JSOIA0261GB

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 (BSI) SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:0000000008141920

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
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

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

BLIND SPOT INTERVENTION (BSI) SYSTEM : Fail-safe (Lane Camera Unit)

INFOID:0000000008141921

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 BSW/BSI 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 BSW/BSI warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON and the BSW/BSI warning lamp (yellow) in the combination meter will stop blinking.

BLIND SPOT INTERVENTION (BSI) SYSTEM : Fail-safe (Side Radar)

INFOID:0000000008141922

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 BSW/BSI 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 BSW/BSI warning lamp (yellow) in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

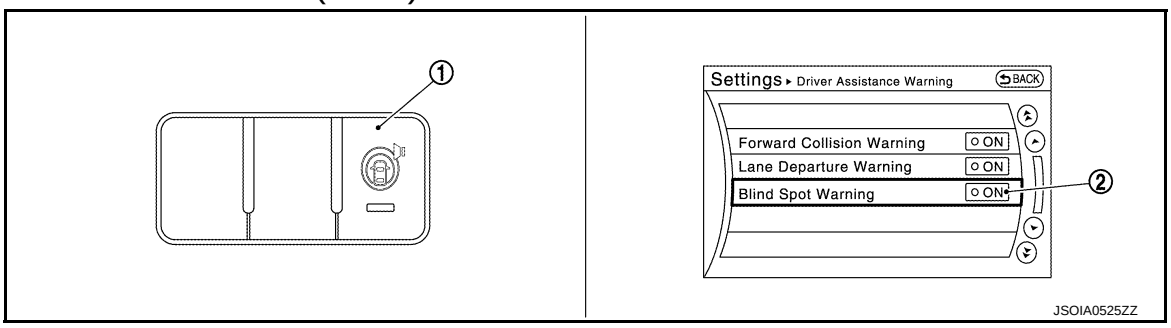
- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

OPERATION

BLIND SPOT WARNING (BSW) SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM : Switch Name and Function

INFOID:0000000008141923

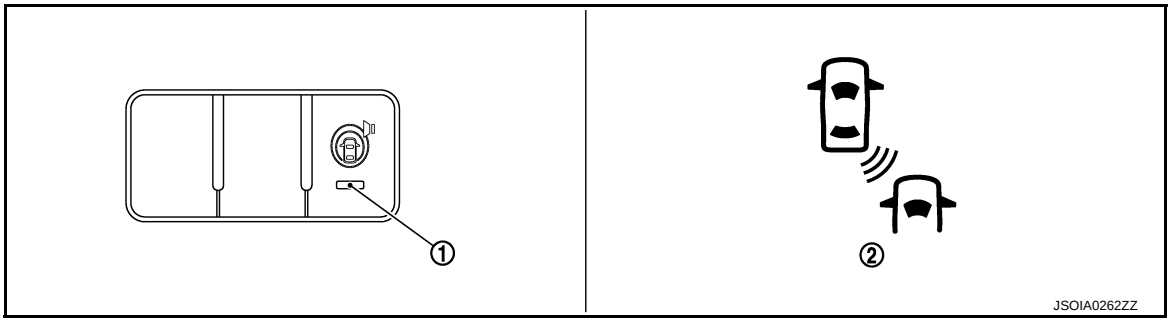


No.	Name	Function
1	Warning systems switch	Turns BSW system ON/OFF (When the setting of BSW system on the navigation system setting screen is ON)
2	BSW setting screen (Navigation setting screen)	Changes setting of BSW system (ON/OFF)

BLIND SPOT WARNING (BSW) SYSTEM : System Display and Warning

INFOID:0000000008141924

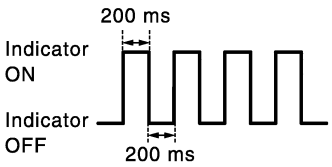
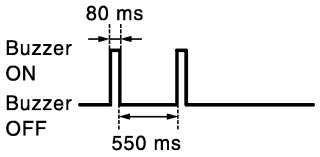
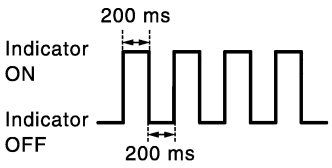
INDICATOR AND WARNING LAMP



No.	Name	Description
1	Warning systems ON indicator	• 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	BSW/BSI warning lamp (yellow)	• Turns ON when BSW/BSI system is malfunctioning • Blinks when the following conditions: - 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 BSW/BSI indicator	Buzzer
OFF	—	—	—	OFF	OFF

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 BSW/BSI 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 
			Vehicle is detected after turn signal operates	Blink 	OFF

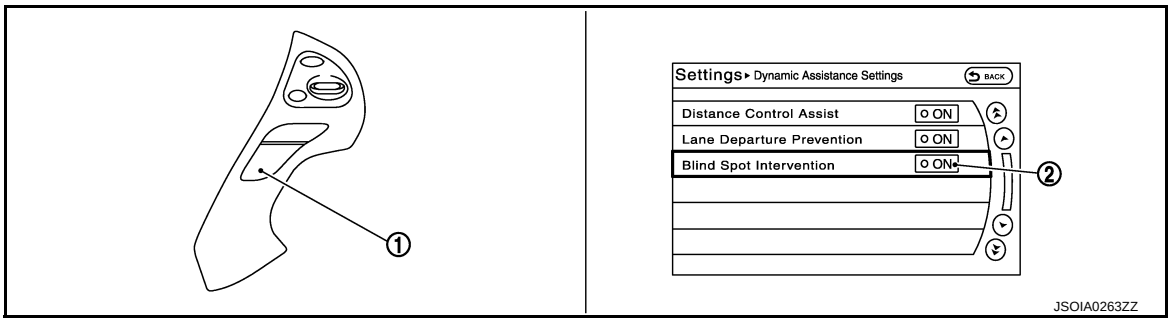
NOTE:

- 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 BSI system operates together with BSW system. Whenever BSI 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 (BSI) SYSTEM

BLIND SPOT INTERVENTION (BSI) SYSTEM : Switch Name and Function

INFOID:0000000008141925

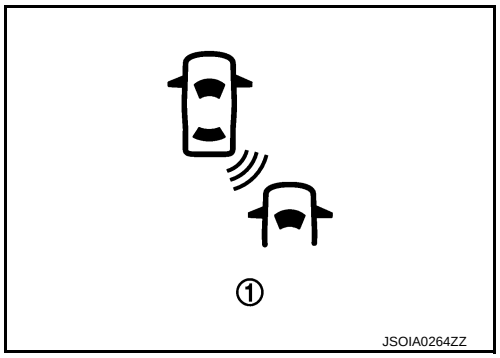


No.	Name	Function
1	Dynamic driver assistance switch	Turns BSI system ON/OFF
2	BSI setting screen (Navigation setting screen)	Changes setting of BSI system (ON/OFF)

BLIND SPOT INTERVENTION (BSI) SYSTEM : System Display and Warning

INFOID:0000000008141926

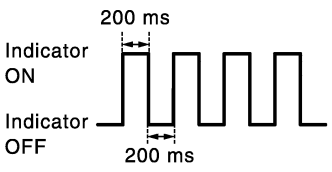
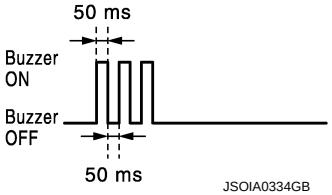
INDICATOR AND WARNING LAMP



No.	Name	Description
1	BSI ON indicator (green)	• Turns ON while BSI system is ON • Blinks when the setting of LDP, DCA, and BSI are “OFF” and the dynamic driver assistance switch is pressed • Under the following conditions, the BSI ON indicator (green) will blink. - When the VDC system (except TCS function) or ABS operates. - When the VDC system is turned off. - When the drive mode select switch is turned to the SNOW mode.
	BSW/BSI warning lamp (yellow)	• Turns ON when BSW/BSI system is malfunctioning • Blinks when the following conditions: - When the camera detects that interior temperature is high. - When radar blockage is detected.

DISPLAY AND WARNING OPERATION

Whenever the BSI system is turned on, the BSW system will also be on.

Vehicle condition/Driver's operation				Action		
BSI ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Status of vehicle detection within detection area	Status of approach to adjacent lane	Indication on the BSW/BSI indicator	Brake control	Buzzer
OFF	—	—	—	OFF	OFF	OFF
Green	Less than approx. 60 (37)	—	—	OFF	OFF	OFF
	Approx. 60 (37) or more	Vehicle is absent	—	OFF	OFF	OFF
		Vehicle is detected	Not approaching	ON	OFF	OFF
		Vehicle is detected	Approaching	Blink  JSOIA0251GB Time shown in the figure is approximate time.	ON	Short continuous beeps  JSOIA0334GB Time shown in the figure is approximate time.

Under the following conditions, the BSI system will be turned off automatically, a beep will sound and the BSI ON indicator (green) will blink. The BSW system is still available, but the BSI 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 drive mode select switch is turned to the SNOW mode.

HANDLING PRECAUTION

Precautions for Blind Spot Warning/Blind Spot Intervention

INFOID:0000000008141927

LANE CAMERA UNIT HANDLING

Refer to DAS-270, "Precautions for Lane Departure Warning/Lane Departure Prevention".

SIDE RADAR HANDLING

- Side radar for BSW/BSI 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.

BSW & BSI

- The BSW and BSI 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 BSW or BSI system.
- Using the BSI 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 BSW and BSI systems may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the BSW or BSI 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 BSI/BSW 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.

BSI

- Do not use the BSI 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 BSI 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.)

• The BSI 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.
• BSI 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.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

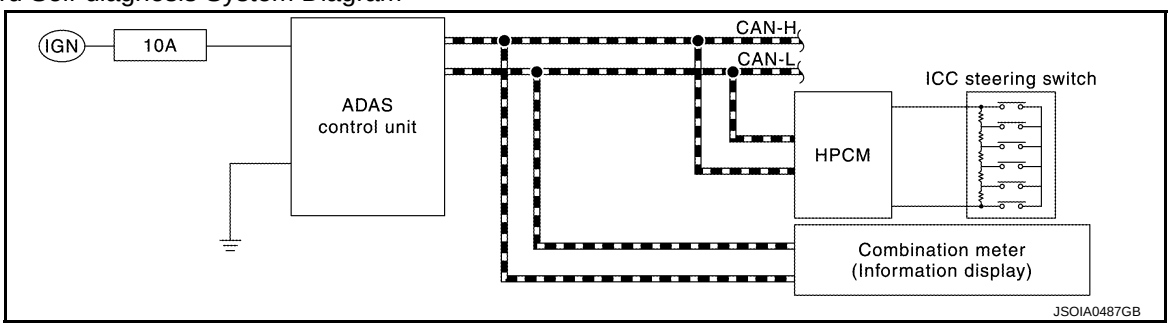
On Board Diagnosis Function

INFOID:0000000008141928

DESCRIPTION

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

On Board Self-diagnosis System Diagram



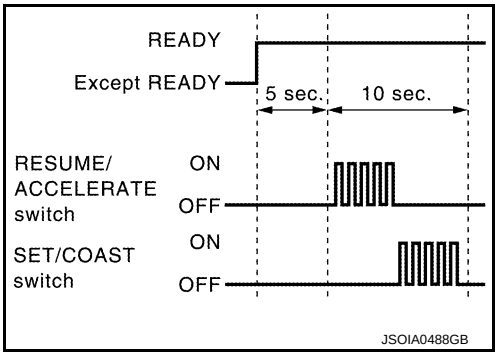
METHOD OF STARTING

NOTE:

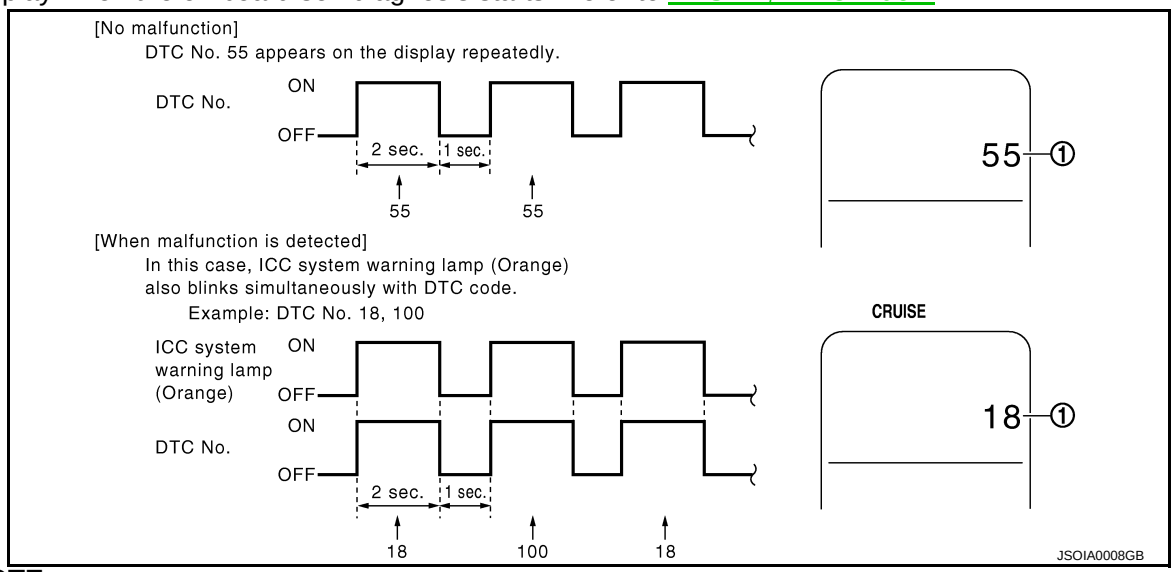
Start condition of on board self-diagnosis

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

1. Turn the ignition switch OFF.
2. Set the vehicle to READY.
3. Wait for 5 seconds after setting the vehicle to READY. 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 setting the vehicle to READY, 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-42, "DTC Index".



NOTE:

- 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.

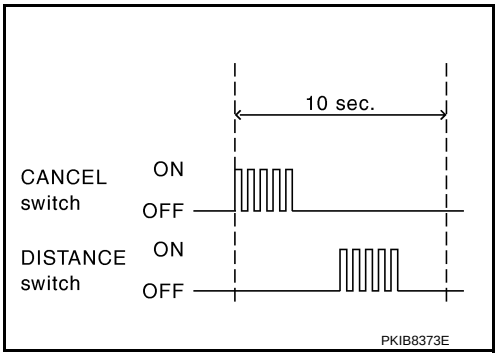
WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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-35, "On Board Diagnosis Function".
ICC steering switch malfunction		Perform the inspection for DTC “C1A06”. Refer to CCS-83, "DTC Logic".
Harness malfunction between ICC steering switch and HPCM		
HPCM malfunction		
ADAS control unit malfunction		• Check power supply and ground circuit of ADAS control unit. Refer to DAS-55, "Diagnosis Procedure". • Perform SELF-DIAGNOSIS for “ICC/ADAS”with CONSULT, and then check the malfunctioning parts. Refer to DAS-42, "DTC Index".

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

1. Turn the ignition switch OFF.
2. Set the vehicle to READY, 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:0000000008141929

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

Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following systems • Vehicle-to-vehicle control mode • Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following systems • Lane Departure Prevention (LDP) • Blind Spot Intervention (BSI)

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	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	×		HPCM 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	×	×	Shifting of the drive mode selector to SNOW position
OP SW DOUBLE TOUCH	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	Vehicle speed lower than 24 km/h (15 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
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	×	×	There is a malfunction in the function controlling the brake according to a command issued from the ADAS control unit to the electrically-driven intelligent brake unit
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
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
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	×		Shifting of the drive mode selector to SNOW position
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
BSI WARNING	×		BSI system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during BSI system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
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 BSI 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		×	Shifting of the drive mode selector to SNOW position
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 BSI system control
BSI) Not operating condition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	—

SELF DIAGNOSTIC RESULT

Refer to DAS-42, "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)	Description
MAIN SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×			Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×				Indicates [On/Off] status as judged from ICC steering switch signal (HPCM transmits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×			Indicates whether controlling or not (ON means “controlling”)
BRAKE SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from brake switch signal (HPCM transmits brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (HPCM 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 (HPCM 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 wheel speed signal 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 (HPCM transmits engine speed signal through CAN communication)
PRESS SENS [bar]	×	×			Indicates a brake fluid pressure command value
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
RELEASE SW NO [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
RELEASE SW NC [On/Off]	×		×	×	Indicates a brake operation state read by ADAS control unit via CAN communication (Electrically-driven intelligent brake unit transmits driver brake detection signal via CAN communication)
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)
THRTL OPENING [%]	×	×			Indicates throttle position read from ADAS control unit through CAN communication (HPCM 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]	×				Indicates the active mode of ICC
SET DISP IND [Off]	×				**NOTE:** The item is displayed, but it is not monitored
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 (HPCM 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
LDW ON LAMP [On/Off]			×		Indicates [On/Off] status of waning 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
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 communica-tion)
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 (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 communi-cation (Lane camera unit transmits a detected lane condition signal via ITS communica-tion)
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 (BSI)
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 the DCA system. The 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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	Description
BSI SELECT [On/Off]	×	×	×	×	Indicates an ON/OFF state of BSI system. BSI 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
DRIVE MODE STATS [STD/SPORT/ECO/ SNOW/MID/ERROR]	×	×	×	×	Indicates a drive mode selector select position judged from a drive mode select switch position signal read by the ADAS control unit via CAN communication (The A/C auto amp. transmits a switch position signal of the drive mode select switch signal 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 BSW/BSI warning lamp output
BSI ON IND [On/Off]				×	Indicates [On/Off] status of BSI ON indicator output
BSW SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSW system
BSI SYSTEM ON [On/Off]				×	Indicates [On/Off] status of BSI system

ACTIVE TEST

CAUTION:

- **To prevent the possibility of accident, never perform “Active Test” while driving the vehicle.**
- **To prevent the possibility of accident, shift the selector lever to “P” position, and then perform the test.**

NOTE:

- The “Active Test” cannot be performed when the following systems warning lamp is illuminated.
- ICC system warning lamp
- Lane departure warning lamp
- BSW/BSI warning lamp
- IBA OFF indicator lamp (IBA system ON)

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 • 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

Test item	Description
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention (BSI)
WARNING SYSTEM IND	The 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 BSW/BSI warning lamp can be illuminated by ON/OFF operations as necessary
BSI ON INDICATOR	The BSI ON indicator can be illuminated by ON/OFF operations as necessary

METER LAMP

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	• MAIN switch indicator • ICC system warning lamp • IBA OFF indicator lamp
METER LAMP	Off	Stops sending the following signals to exit from the test • 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 • 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	—

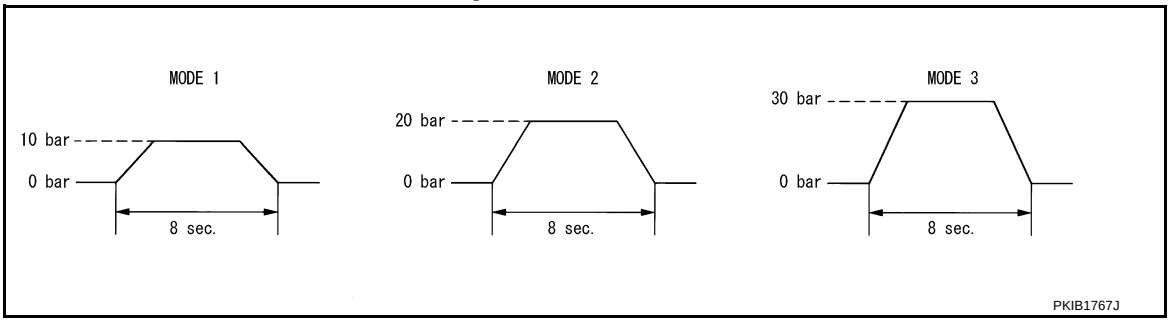
BRAKE ACTUATOR

NOTE:

The test can performed only when the vehicle is in READY state.

Test item	Operation	Description	"PRESS SENS" value
BRAKE ACTUATOR	MODE1	Transmits the brake fluid pressure control signal to the electrically-driven intelligent brake 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:

- **To prevent the possibility of accident, 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.)**

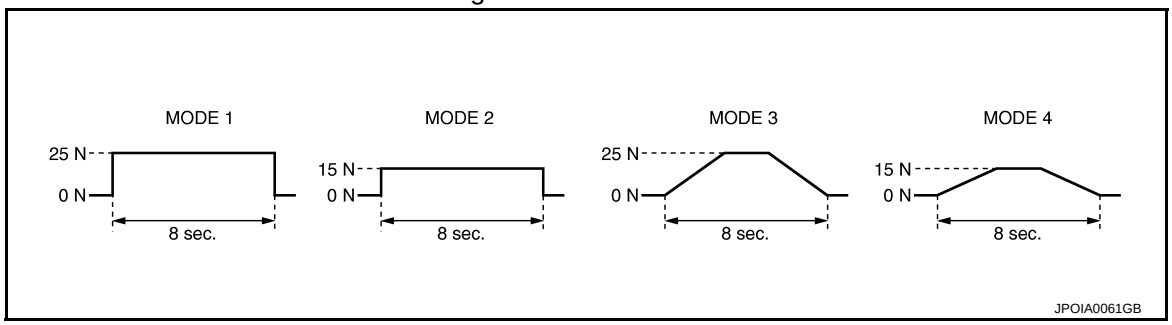
NOTE:

- Depress the accelerator pedal to check when performing the test.
- The test can performed only when the vehicle is in READY state.

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 performed only when the vehicle is in READY state.

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

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

BSI ON INDICATOR

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

DIAGNOSIS SYSTEM (SIDE RADAR LH)

CONSULT Function (SIDE RADAR LEFT)

INFOID:0000000008141930

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-437, "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 BSW/BSI indicator is illuminated.**

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the BSW/BSI indicator.
	Off	Stops the voltage to illuminate the BSW/BSI indicator.

DIAGNOSIS SYSTEM (SIDE RADAR RH)

CONSULT Function (SIDE RADAR RIGHT)

INFOID:0000000008141931

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-439, "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 BSW/BSI indicator is illuminated.**

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the BSW/BSI indicator.
	Off	Stops the voltage to illuminate the BSW/BSI indicator.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT Function (LANE CAMERA)

INFOID:0000000008141932

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-301, "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

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

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000008141933

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	READY state	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Set the vehicle to READY 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	Set the vehicle to READY and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	Set the vehicle to READY 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	Set the vehicle to READY 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

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	READY state	When the buzzer of the following system operates • Vehicle-to-vehicle distance control mode • DCA system • FCW system • IBA system	On
		When the buzzer of the following system not operates • 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
PRESS SENS	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When the brake is in the deactivated state by the system	0.0
		When the brake is in the activated state by the system	Displays the brake pressure command value
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	READY state	IBA OFF indicator lamp ON • When IBA system is malfunctioning • When IBA system is turned to OFF	On
		IBA OFF indicator lamp OFF • When IBA system is normal • When IBA system is turned to ON	Off
RELEASE SW NO	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
RELEASE SW NC	Ignition switch ON	When brake pedal is depressed	Off
		When brake pedal is not depressed	On
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	READY state	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	READY state	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

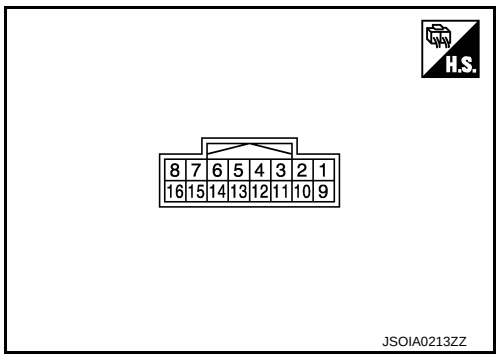
Monitor item	Condition		Value/Status
PWR SUP MONI	READY state		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of A/T vehicle speed sensor signal
THRTL OPENING	READY state	Depress accelerator pedal	Displays the throttle position
GEAR	While driving		Displays the gear position
MODE SIG	When ICC system is deactivated		Off
	When vehicle-to-vehicle distance control mode is activated		ICC
SET DISP IND	**NOTE:** The item is indicated, but not monitored		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	Set the vehicle to READY and press dynamic driver assistance switch (When DCA 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	On
		When the FCW system is OFF	Off
APA TEMP	READY state		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	On
		When the LDW system is OFF	Off
LDW ON LAMP	Ignition switch ON	Warning systems ON indicator ON	On
		Warning systems ON indicator OFF	Off

Monitor item	Condition		Value/Status
LDP ON IND	Set the vehicle to READY 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 OUTPUT	Drive the vehicle and activate the LDW/LDP system or BSW/BSI system	When the buzzer of the following system operates • LDW/LDP system • BSW/BSI system	On
		When the buzzer of the following system does not operate • LDW/LDP system • BSW/BSI system	Off
LDP SYSTEM ON	Set the vehicle to READY 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	Set the vehicle to READY 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 BSI system	Both side lane markers are detected	Detect
		Deviate side lane marker is lost	Deviate
		Both side lane markers are lost	Both
Shift position	• READY state • 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 and activate the LDP system	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

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
DRIVE MODE STATS	Ignition switch ON	When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
		When position of drive mode select switch is in following states • In the middle of SNOW-ECO • In the middle of ECO-STANDARD • In the middle of STANDARD-SPORTS	Mid
		A signal other than those above is input	ERROR
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	BSW/BSI warning lamp ON	On
		BSW/BSI warning lamp OFF	Off
BSI ON IND	Ignition switch ON	BSI ON indicator ON	On
		BSI ON indicator OFF	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON	On
		When the BSW system is OFF	Off
BSI SYSTEM ON	Set the vehicle to READY and press dynamic driver assistance switch (When BSI system setting is ON)	When the BSI system is ON	On
		When the BSI system is OFF	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	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 (BR)		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 (O)		Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 V
					Warning systems ON indicator OFF	12 V
5 (SB)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	12 V
					At “STOP LAMP” test of “Active test”	0 V
6 (B/R)		Ground	—	Ignition switch ON	—	0 V
7 (L)		ITS communication-H	—	—	—	—
8 (P)		ITS communication-L	—	—	—	—
12 (W)		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 (GR)		Ignition power supply	Input	Ignition switch ON		Battery voltage

Fail-safe

INFOID:0000000008141934

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
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)	—	BSW/BSI warning lamp	Cancel
Blind Spot Intervention (BSI)	Low-pitched tone	BSW/BSI warning lamp	Cancel
Active trace control function	—	IBA OFF indicator lamp	• Cancel • If a communication error occurs between the A/C auto amp. and CAN communication line, a mode at the instant of error occurrence is maintained until the mode is fixed to STANDARD after turning the ignition switch from OFF to ON

DTC Inspection Priority Chart

INFOID:0000000008141935

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

Priority	Detected items (DTC)
1	• U1507: LOST COMM (SIDE RDR R) • U1508: LOST COMM (SIDE RDR L)
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• C1B00: CAMERA UNIT MALF • C1F02: APA C/U MALF • C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF

Priority	Detected items (DTC)
4	• 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 • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • C1A1A: HPCM CIRCUIT • C1A2A: ICC SEN PWR SUP CIR • C1A2B: ELECTRICAL BRAKE MODE MALF • C1A2C: ELECTRICAL BRAKE PWR SUPLY CIRC • C1A21: ICC SENSOR HIGH TEMP • C1A24: NP RANGE • 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 INCMP • C1B03: CAM ABNRML TMP DETCT • C1F01: APA MOTOR MALF • C1F05: APA PWR SUPLY CIR • U0121: VDC CAN CIR 2 • U0126: STRG SEN CAN CIR 1 • U0235: ICC SENSOR CAN CIRC 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0424: HVAC 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 • 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 • U151A: ELECTRICAL BRAKE CAN CIRCUIT 2 • U151B: ELECTRICAL BRAKE CAN CIRCUIT 1 • U151C: ELECTRICAL BRAKE CAN CIRCUIT 3 • U151D: HPCM CAN CIRCUIT 2 • U151E: HPCM CAN CIRCUIT 1 • U151F: HPCM CAN CIRCUIT 3
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A15: GEAR POSITION
7	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000008141936

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: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-456
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-457
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-457
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-458
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-459
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	A, B, C, D, E, F	DAS-460
C1A06	6	OPERATION SW BIRC	ON		ON	ON	A, D, E, F	DAS-464
C1A12	12	LASER BEAM OFFCN-TR	ON	ON			A, B, C, D	CCS-85
C1A13	13	STOP LAMP RLY FIX	ON	ON			A, B, C, D	CCS-86
C1A15	15	GEAR POSITION	ON	ON	ON	ON	A, B, C, D, E, F	DAS-466
C1A16	16	RADAR STAIN	ON	ON			A, B, C, D	CCS-94
C1A17	17	ICC SENSOR MALF	ON	ON			A, B, C, D	CCS-96
C1A18	18	LASER AIMING INCMP	ON	ON			A, B, C, D	CCS-97
C1A1A	19	HPCM CIRCUIT	ON		ON	ON	A, D, E, F	DAS-468
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON			A, B, C, D	CCS-100
C1A24	24	NP RANGE	ON	ON	ON	ON	A, B, C, D, E, F	DAS-469
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON			A, B, C, D	CCS-104

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
C1A2B	23	ELECTRICAL BRAKE MODE MALF	ON	ON			A, B, C, D	CCS-105
C1A2C	20	ELECTRICAL BRAKE PWR SUPLY CIR	ON	ON			A, B, C, D	CCS-106
C1A33	33	CAN TRANSMISSION ERR	ON				A, D, G	CCS-107
C1A34	34	COMMAND ERROR	ON				A, D, G	CCS-108
C1A35	35	APA CIR	ON				A, D	CCS-109
C1A36	36	APA CAN COMM CIR	ON				A, D	CCS-110
C1A37	133	APA CAN CIR 2	ON				A, D	CCS-111
C1A38	132	APA CAN CIR 1	ON				A, D	CCS-112
C1A39	39	STRG SEN CIR	ON	ON		ON	A, B, C, D, F, G	DAS-471
C1A40	40	SYSTEM SW CIRC		ON			B, C	CCS-115
C1B00	81	CAMERA UNIT MALF			ON	ON	E, F	DAS-473
C1B01	82	CAM AIMING INCMP			ON	ON	E, F	DAS-475
C1B03	83	CAM ABNRML TMP DETCT			BLINK	BLINK	E, F	DAS-477
C1B53	84	SIDE RDR R MALF				ON	F	DAS-482
C1B54	85	SIDE RDR L MALF				ON	F	DAS-483
C1F01	91	APA MOTOR MALF	ON				A, D	CCS-118
C1F02	92	APA C/U MALF	ON				A, D	CCS-119
C1F05	95	APA PWR SUPLY CIR	ON				A, D	CCS-120
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	A, B, C, D, E, F, G	DAS-492
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	A, B, C, D, F, G	DAS-493
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON			A, B, C, D	CCS-126
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F	DAS-495
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-498

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U0424	156	HVAC CAN CIR 1						BR-232
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	A, B, C, D, F, G	DAS-499
U1000[NOTE]	100	CAN COMM CIRCUIT	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-486
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-489
U1500	145	CAM CAN CIR 2			ON	ON	E, F	DAS-501
U1501	146	CAM CAN CIR 1			ON	ON	E, F	DAS-502
U1502	147	ICC SEN CAN COMM CIR	ON	ON			A, B, C, D	CCS-139
U1503	150	SIDE RDR L CAN CIR 2				ON	F	DAS-503
U1504	151	SIDE RDR L CAN CIR 1				ON	F	DAS-504
U1505	152	SIDE RDR R CAN CIR 2				ON	F	DAS-505
U1506	153	SIDE RDR R CAN CIR 1				ON	F	DAS-506
U1507	154	LOST COMM (SIDE RDR R)				ON	F	DAS-507
U1508	155	LOST COMM (SIDE RDR L)				ON	F	DAS-508
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-515
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	DAS-516
U150E	160	BCM CAN CIRC 3	ON		ON	ON	A, D, E, F	DAS-517
U150F	161	AV CAN CIRC 3						DAS-54
U1512	162	HVAC CAN CIRC3			ON	ON	E, F	DAS-509
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	A, B, C, D, E, F	DAS-510
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	A, B, C, D, F, G	DAS-511
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON			A, B, C, D	CCS-142
U1516	166	CAM CAN CIRC 3			ON	ON	E, F	DAS-512
U1517	167	APA CAN CIRC 3	ON				A, D	CCS-143
U1518	168	SIDE RDR L CAN CIRC 3				ON	F	DAS-513
U1519	169	SIDE RDR R CAN CIRC 3				ON	F	DAS-514
U151A	170	ELECTRICAL BRAKE CAN CIRCUIT 2	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-518

Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Intelligent Brake Assist (IBA)
- C: Forward Collision Warning (FCW)
- D: Distance Control Assist (DCA)
- E: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- F: Blind Spot Warning (BSW)/Blind Spot Intervention (BSI)
- G: Active trace control function

DTC		CONSULT display	Warning lamp				Fail-safe	Reference
CONSULT	On board display		ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	BSW/BSI warning lamp	System	
U151B	171	ELECTRICAL BRAKE CAN CIRCUIT 1	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-519
U151C	172	ELECTRICAL BRAKE CAN CIRCUIT 3	ON	ON	ON	ON	A, B, C, D, E, F, G	DAS-520
U151D	173	HPCM CAN CIRCUIT 2	ON		ON	ON	A, D, E, F	DAS-521
U151E	174	HPCM CAN CIRCUIT 1	ON		ON	ON	A, D, E, F	DAS-522
U1501F	175	HPCM CAN CIRCUIT 3	ON		ON	ON	A, D, E, F	DAS-523

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

Reference Value

INFOID:0000000008141937

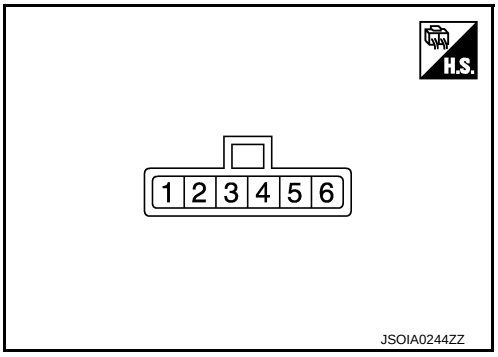
VALUES ON THE DIAGNOSIS TOOL

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/Y)	Ground	Ground	—	—	0 V
3 (Y)	—	ITS communication-L	—	—	—
4 (L)	—	ITS communication-H	—	—	—
5 (GR)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (BR)	Ground	BSW/BSI indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V

Fail-safe

INFOID:0000000008141938

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 BSW/BSI warning lamp in the combination meter.

Blind Spot Intervention (BSI)
If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSW/BSI warning in the combination meter.

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)
When the side radar is blocked, the operation is temporarily cancelled. Then the BSW/BSI 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 (BSI)
When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and BSW/BSI 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.

DTC Inspection Priority Chart

INFOID:0000000008141939

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	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• U0104: ADAS CAN CIR 1 • U0405: ADAS CAN CIR 2
3	C1B50: SIDE RDR MALFUNCTION
4	• C1B51: BSW/BSI IND SHORT CIR • C1B52: BSW/BSI IND OPEN CIR • C1B55: RADAR BLOCKAGE

DTC Index

INFOID:0000000008141940

×: Applicable

DTC		BSW/BSI warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	DAS-478
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-479
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-480
C1B55	RADAR BLOCKAGE	Blink	×	DAS-484
U1000	CAN COMM CIRCUIT	ON	×	DAS-485
U1010	CONTROL UNIT (CAN)	ON	×	DAS-488
U0104	ADAS CAN CIR1	ON	×	DAS-490
U0405	ADAS CAN CIR2	ON	×	DAS-496

SIDE RADAR RH

Reference Value

INFOID:0000000008141941

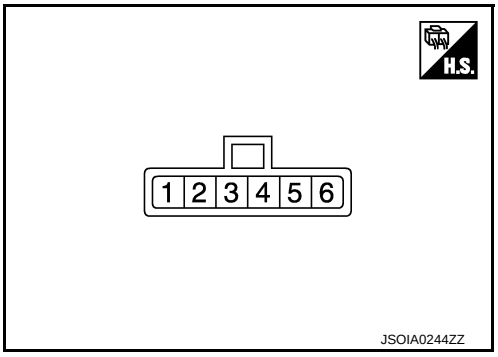
VALUES ON THE DIAGNOSIS TOOL

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/R)	Ground	Right/Left switching signal	Input	—	0 V
2 (B/R)	Ground	Ground	—	—	0 V
3 (Y)	—	ITS communication-L	—	—	—
4 (L)	—	ITS communication-H	—	—	—
5 (G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (BR)	Ground	BSW/BSI indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V

Fail-safe

INFOID:0000000008141942

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 BSW/BSI warning lamp in the combination meter.

Blind Spot Intervention (BSI)
If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSW/BSI warning in the combination meter.

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)
When the side radar is blocked, the operation is temporarily cancelled. Then the BSW/BSI 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 (BSI)
When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and BSW/BSI 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.

DTC Inspection Priority Chart

INFOID:0000000008141943

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	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• U0104: ADAS CAN CIR 1 • U0405: ADAS CAN CIR 2
3	C1B50: SIDE RDR MALFUNCTION
4	• C1B51: BSW/BSI IND SHORT CIR • C1B52: BSW/BSI IND OPEN CIR • C1B55: RADAR BLOCKAGE

DTC Index

INFOID:0000000008141944

×: Applicable

DTC		BSW/BSI warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	DAS-478
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-479
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-480
C1B55	RADAR BLOCKAGE	Blink	×	DAS-484
U1000	CAN COMM CIRCUIT	ON	×	DAS-486
U1010	CONTROL UNIT (CAN)	ON	×	DAS-488
U0104	ADAS CAN CIR1	ON	×	DAS-490
U0405	ADAS CAN CIR2	ON	×	DAS-496

LANE CAMERA UNIT

Reference Value

INFOID:0000000008141945

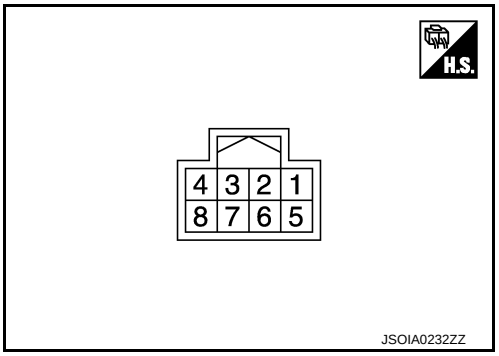
VALUES ON THE DIAGNOSIS TOOL

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 speed-ometer 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	—

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 (G)		Ignition power supply	Input	Ignition switch ON	Battery voltage
8 (Y)		ITS communication-L	—	—	—

Fail-safe

INFOID:0000000008141946

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.

Blind Spot Warning (BSW)
If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the BSW/BSI warning lamp in the combination meter.

Blind Spot Intervention (BSI)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the BSW/BSI warning 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 blinks.
- 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 blinks.
- 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.

Blind Spot Warning (BSW)
- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the BSW/BSI warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume operation automatically and the BSW/BSI warning lamp (yellow) in the combination meter will stop blinking.

Blind Spot Intervention (BSI)
- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and BSW/BSI warning lamp (yellow) in the combination meter will blinks.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON and the BSW/BSI warning lamp (yellow) in the combination meter will stop blinking.

DTC Inspection Priority Chart

INFOID:0000000008141947

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

Priority	Detected items (DTC)
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	C1A50: ADAS MALFUNCTION
3	• C1B01: CAM AIMING INCMP • 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:0000000008141948

×: Applicable

DTC		Warning lamp		Fail-safe		
		Lane departure warning lamp (yellow)	BSW/BSI warning lamp (yellow)	LDW/LDP	BSW/BSI	Reference
C1A50	ADAS MALFUNCTION	ON	ON	—	—	DAS-335
C1B00	CAMERA UNIT MALF	ON	ON	×	×	DAS-336
C1B01	CAM AIMING INCMP	ON	ON	×	×	DAS-338
C1B03	ABNRML TEMP DETECT	Blink	Blink	×	×	DAS-340

DTC		Warning lamp		Fail-safe		
		Lane departure warning lamp (yellow)	BSW/BSI warning lamp (yellow)	LDW/LDP	BSW/BSI	Reference
U0104	ADAS CAN CIR1	ON	ON	×	×	DAS-341
U0126	STRG SEN CAN CIR1	ON	ON	×	×	DAS-343
U0405	ADAS CAN CIR2	ON	ON	×	×	DAS-345
U0428	STRG SEN CAN CIR2	ON	ON	×	×	DAS-347
U1000	CAN COMM CIRCUIT	ON	ON	×	×	DAS-348
U1010	CONTROL UNIT (CAN)	ON	ON	×	×	DAS-350

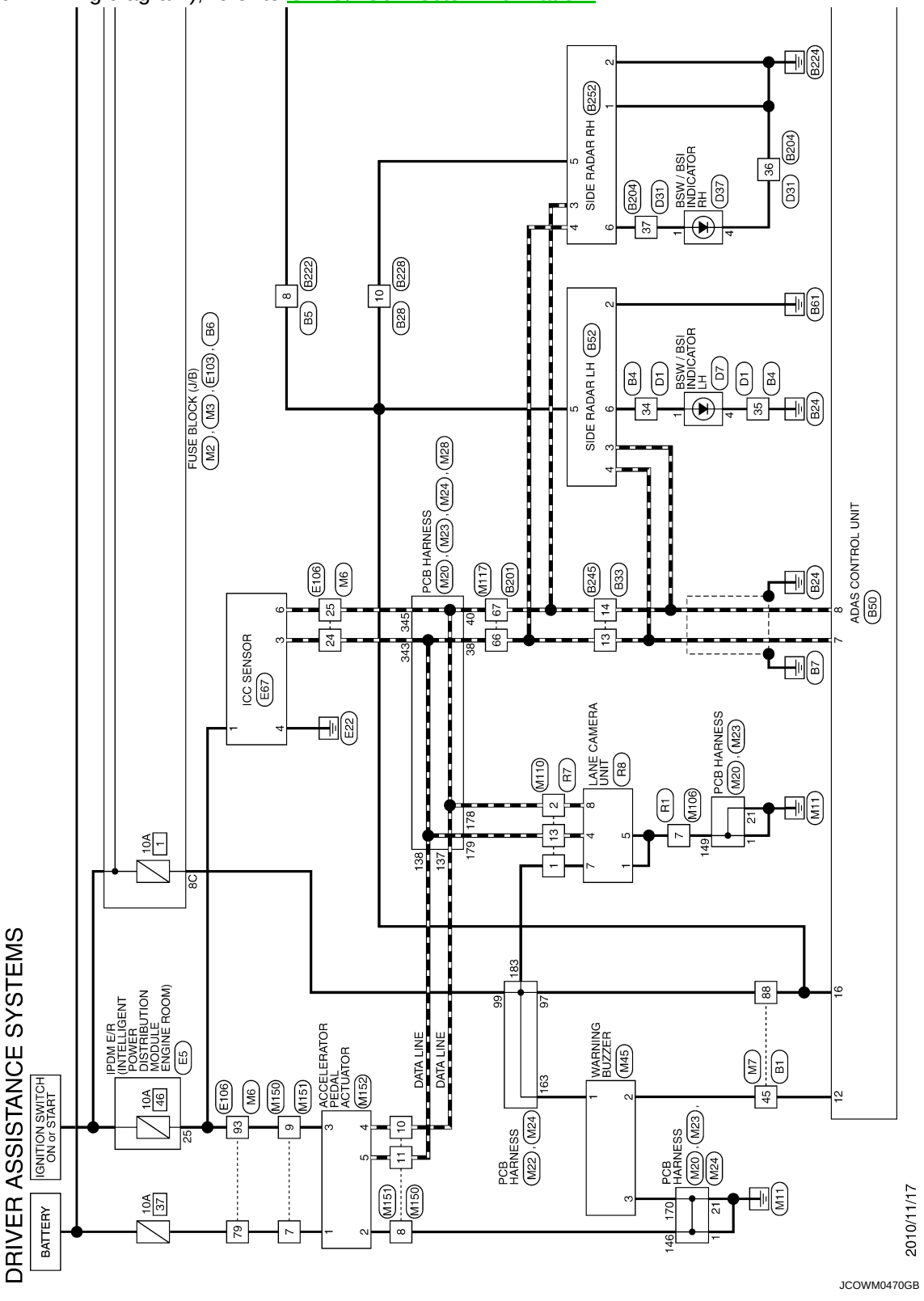
WIRING DIAGRAM

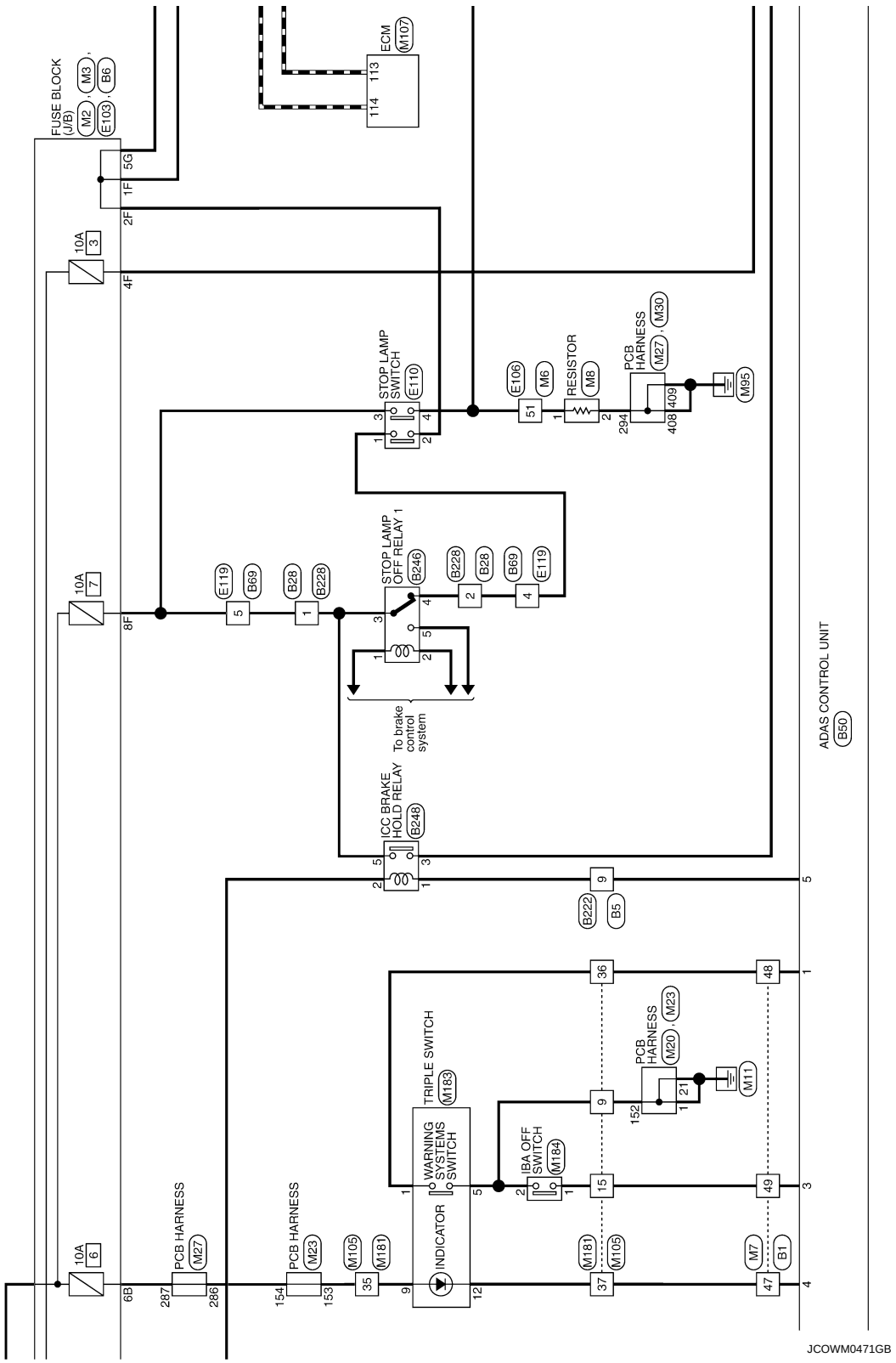
DRIVER ASSISTANCE SYSTEMS

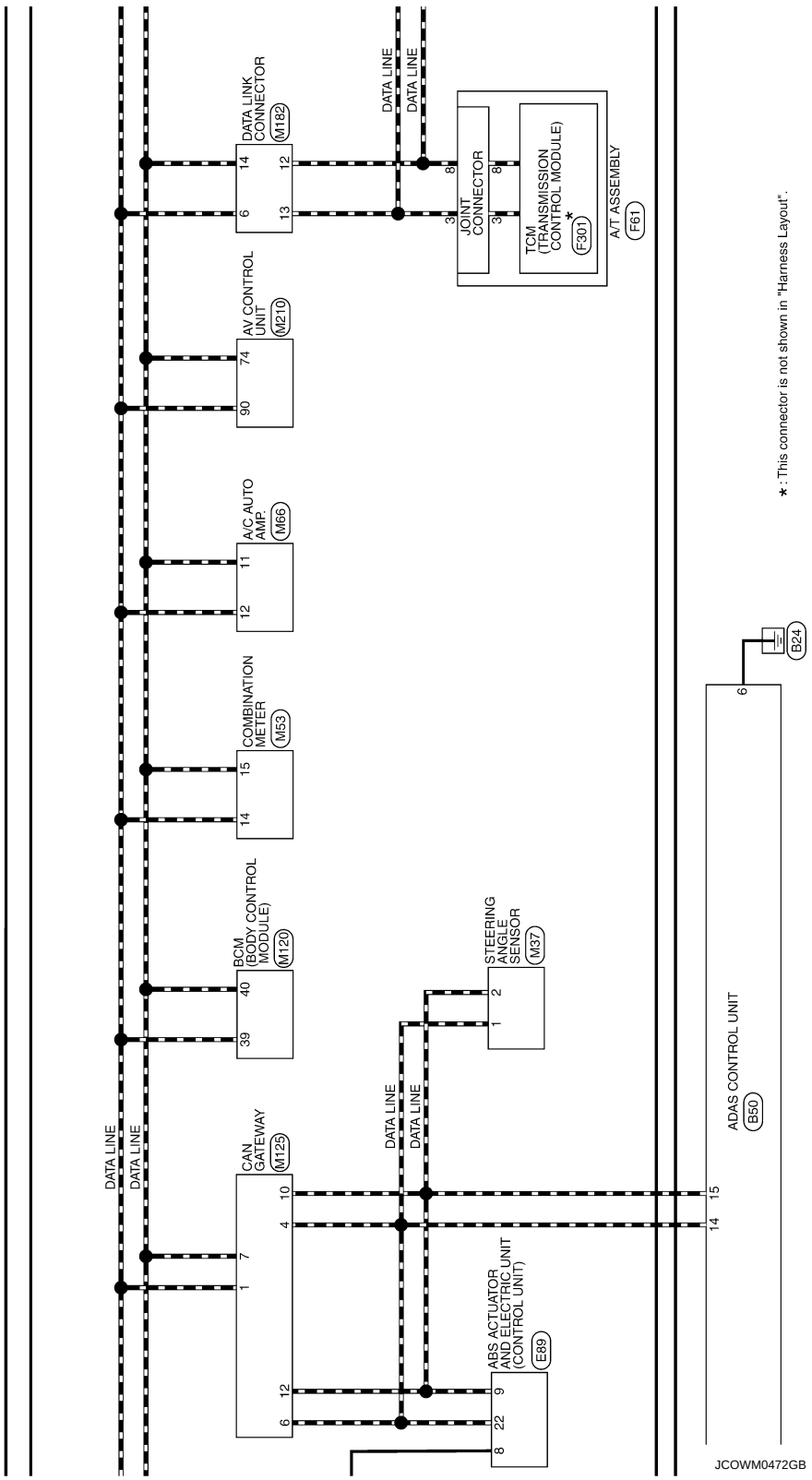
Wiring Diagram

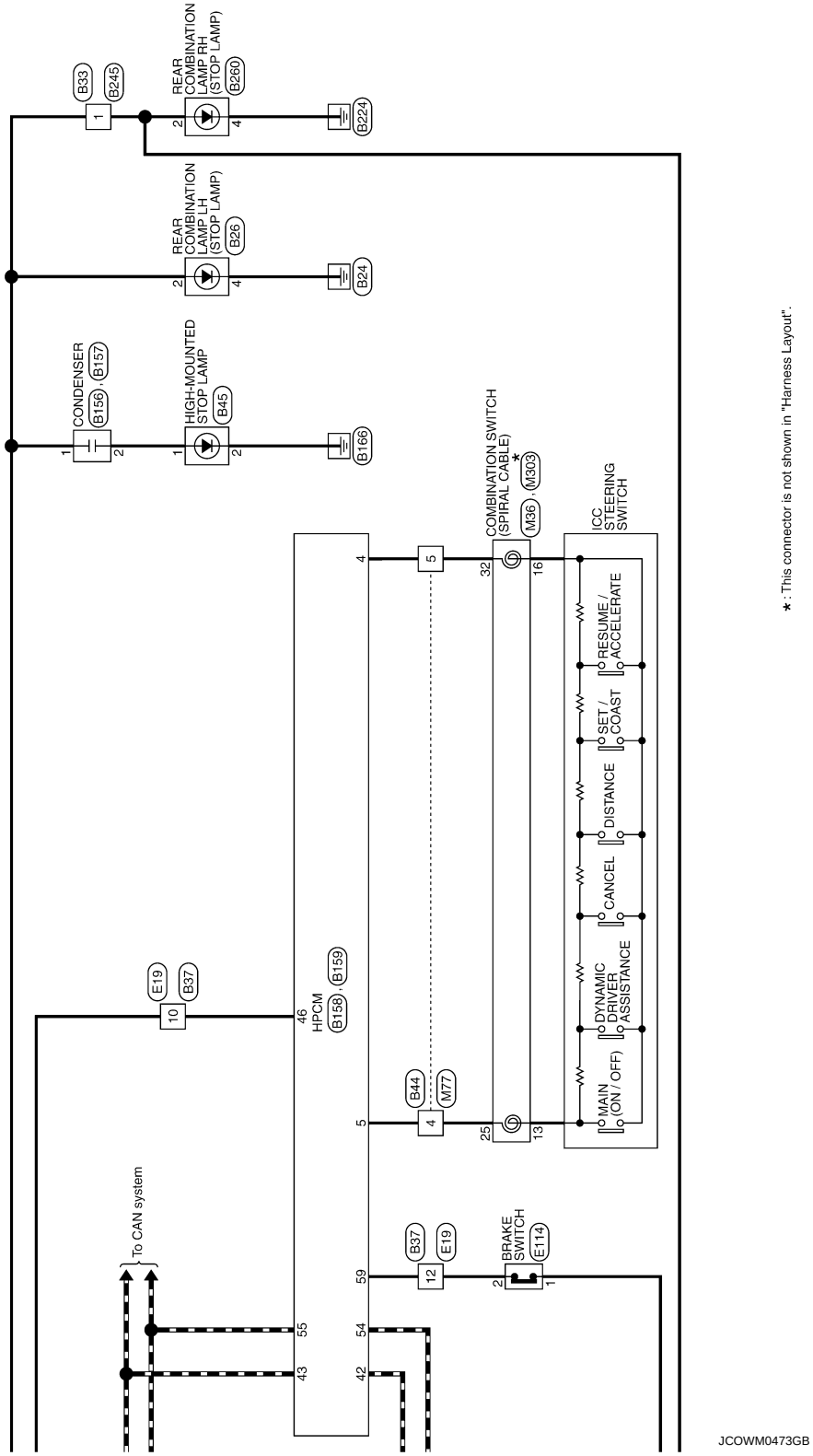
INFOID:0000000008497107

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-13, "Connector Information".




FUSE BLOCK (J/B) M2, M3, B6, E103
ECM M107
113
114
5G
1F
2F
10A 3
4F
STOP LAMP SWITCH E110
E106 M6
RESISTOR M8
PCB HARNESS M27, M30
M95
294
408
409
51
10A 7
8F
E119 B69
B28 B228
STOP LAMP OFF RELAY 1 B246
B228 B28 B69 E119
To brake control system
ICC BRAKE HOLD RELAY B248
ADAS CONTROL UNIT B50
B222 B5
10A 6
6B
PCB HARNESS M27
287
286
PCB HARNESS M23
154
153
M105 M181
35
TRIPLE SWITCH M183
WARNING SYSTEMS SWITCH
INDICATOR
IBA OFF SWITCH M184
PCB HARNESS M20, M23
M11
152
36
48
15
49
37
47
M181 M105
M7 B1
JCOWM0471GB


DATA LINK CONNECTOR M182
DATA LINE
JOINT CONNECTOR
TCM (TRANSMISSION CONTROL MODULE) F301
A/T ASSEMBLY F61
AV CONTROL UNIT M210
A/C AUTO AMP. M66
COMBINATION METER M53
BCM (BODY CONTROL MODULE) M120
STEERING ANGLE SENSOR M37
CAN GATEWAY M125
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E89
ADAS CONTROL UNIT B50
B24
: This connector is not shown in "Harness Layout".
JCOWM0472GB


REAR COMBINATION LAMP RH (STOP LAMP)
B260
B33
B245
B224
REAR COMBINATION LAMP LH (STOP LAMP)
B26
B24
CONDENSER
B156
B157
HIGH-MOUNTED STOP LAMP
B45
B166
COMBINATION SWITCH (SPIRAL CABLE)*
M36, M303
ICC STEERING SWITCH
RESUME / ACCELERATE
SET / COAST
DISTANCE
CANCEL
DYNAMIC DRIVER ASSISTANCE
MAIN (ON / OFF)
HPCM
B158, B159
46
E19
B37
10
B44
M77
4
5
25
13
32
16
To CAN system
55
43
54
42
59
12
BRAKE SWITCH
E114
2
1
*: This connector is not shown in "Harness Layout".
JCOWM0473GB

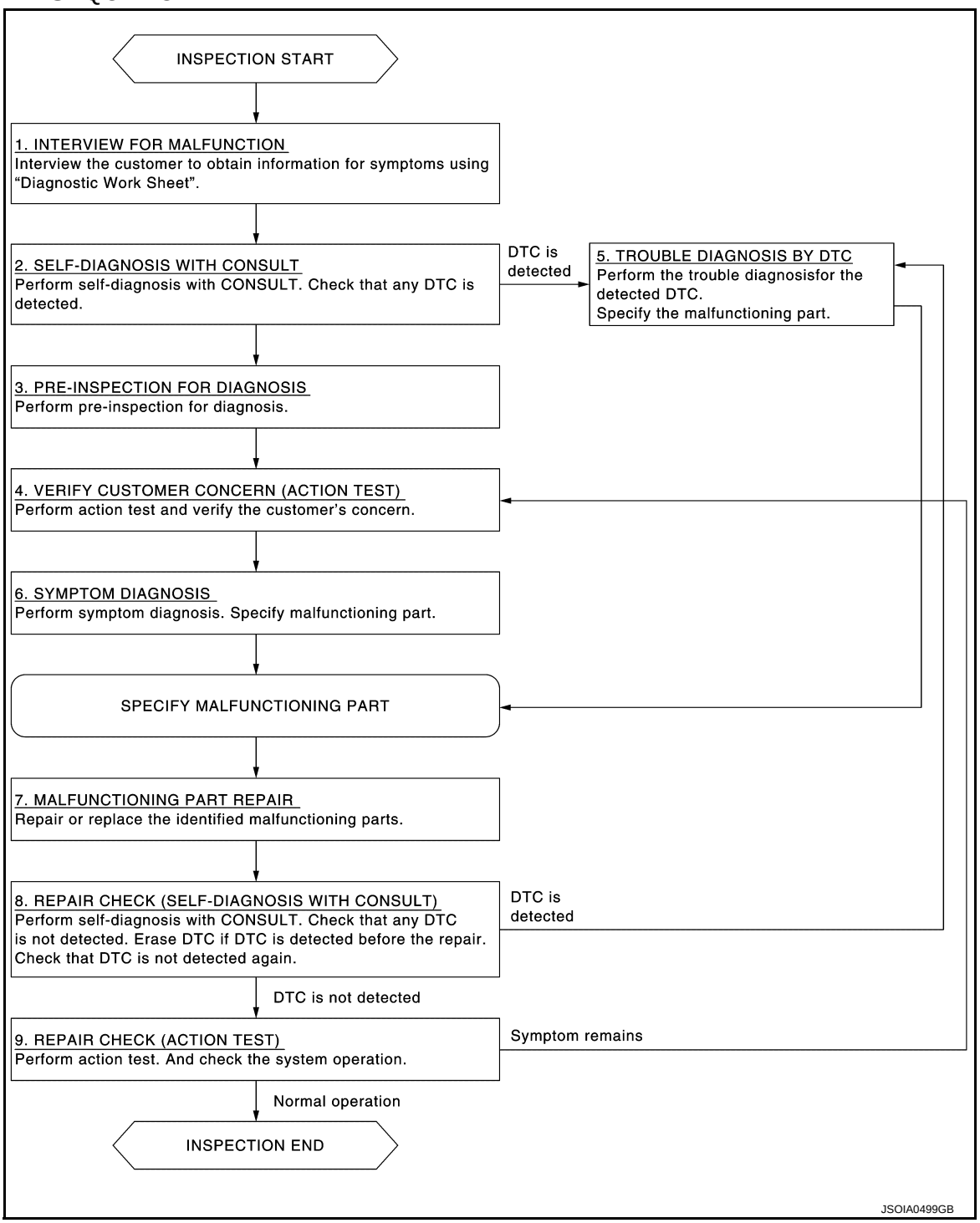
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000008141950

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:

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-451, "Inspection Procedure".

>> GO TO 4.

4.ACTION TEST

Perform BSW and BSI system action test to check the operation status. Refer to DAS-453, "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-437, "DTC Index" or DAS-439, "DTC Index"(SIDE RADAR LEFT/RIGHT), DAS-442, "DTC Index" (LANE CAMERA UNIT) and/or DAS-432, "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-534, "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)

Perform the BSW and BSI 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

PRE-INSPECTION FOR DIAGNOSIS

Inspection Procedure

INFOID:0000000008141951

1.PERFORM PRE-INSPECTION OF LANE CAMERA UNIT

Perform pre-inspection of lane camera unit. Refer to DAS-310, "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

Description

INFOID:0000000008141952

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:0000000008141953

1. CAMERA AIMING ADJUSTMENT

Perform the camera aiming adjustment. Refer to DAS-314, "Work Procedure".

>> GO TO 2.

2. BSW/BSI SYSTEM ACTION TEST

1. Perform the BSW/BSI system action test. Refer to DAS-453, "Work Procedure".
2. Check that the BSW/BSI system operates normally.

>> WORK END

ACTION TEST

Description

INFOID:0000000008141954

Always perform the BSW and BSI 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 BSI system malfunction.

NOTE:

Perform the BSI system action test after checking that the LDP system operates normally because the BSI system shares components with the LDP system.

CAUTION:

To prevent the possibility of accident, be careful of traffic conditions and safety around the vehicle when performing road test.

NOTE:

Fully understand the following items well before the road test;

- Precautions: Refer to DAS-386, "Precaution for BSW/BSI System Service".
- System description for BSW: Refer to DAS-390, "BLIND SPOT WARNING (BSW) SYSTEM : System Description".
- System description for BSI: Refer to DAS-395, "BLIND SPOT INTERVENTION (BSI) SYSTEM : System Description".
- Normal operating condition: Refer to DAS-539, "Description".

Work Procedure

INFOID:0000000008141955

CAUTION:

Be careful of traffic conditions and safety around the vehicle when performing road test.

NOTE:

Fully understand the following items well before the road test;

- Precautions: Refer to DAS-386, "Precaution for BSW/BSI System Service".
- System description for BSW: Refer to DAS-390, "BLIND SPOT WARNING (BSW) SYSTEM : System Description".
- System description for BSI: Refer to DAS-395, "BLIND SPOT INTERVENTION (BSI) SYSTEM : System Description".
- Normal operating condition: Refer to DAS-539, "Description".

1. LDW/LDP SYSTEM ACTION TEST

Perform the LDW/LDP system action test. Refer to DAS-311, "Inspection Procedure".

>> GO TO 2.

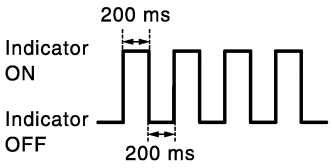
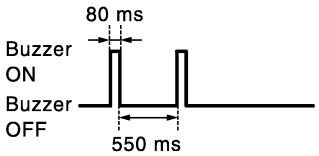
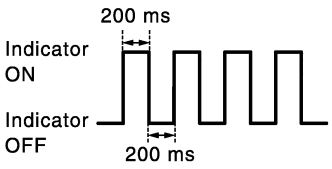
2. CHECK BSW SYSTEM SETTING

1. Set the vehicle to READY.
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 vehicle is set in the READY state 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:
   BSI system is OFF.
3. Check BSW operation according to the following table.

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 BSW/BSI indicator	Buzzer
OFF	—	—	—	OFF	OFF
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 
			Vehicle is detected after turn signal operates	Blink 	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 BSI system operates together with BSW system. Whenever BSI 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 BSI SYSTEM SETTING

1. Set the vehicle to READY.
2. Check that the BSI 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 vehicle is set in the READY state again.

>> GO TO 5.

5. CHECK DYNAMIC DRIVER ASSISTANCE SWITCH

1. Set the vehicle to READY.
2. After setting the vehicle to READY wait for 5 seconds or more.
3. Enable the setting of the BSI system on the navigation screen.
4. Press the dynamic driver assistance switch.
5. Check that the BSI ON indicator on the combination meter illuminates.
6. Check that the BSI ON indicator turns OFF when the system is turned OFF by pressing the dynamic driver assistance switch.
7. Check that the BSI ON indicator turns OFF when the after setting the vehicle to READY again.

NOTE:

- The BSI 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 BSI system setting is disabled on the navigation screen, the BSI ON indicator is not turned ON by pressing the dynamic driver assistance switch.

>> INSPECTION END

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:0000000008141956

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. Set the vehicle to READY.
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-456, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141957

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-432, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:0000000008141958

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	• 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. Set the vehicle to READY.
2. Turn the BSI 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-457, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141959

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to DAS-524, "ADAS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-55, "Diagnosis Procedure".
NO >> Repair or replace the malfunctioning parts.

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:0000000008141960

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the wheel speed signal from ABS actuator and electric unit (control unit) received by the ADAS control unit via CAN communication, are inconsistent	• 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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-459, "DTC Logic" for DTC “C1A04”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-458, "Diagnosis Procedure".
YES-2 (Lane departure warning lamp: OFF)>>Refer to CCS-76, "DTC Logic".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141961

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-432, "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 BRC-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:0000000008141962

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-486, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141963

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:0000000008141964

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 brake switch signal received from HPCM 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	• Stop lamp switch circuit • Brake switch circuit • Stop lamp switch • Brake switch • Incorrect stop lamp switch installation • Incorrect brake switch installation • HPCM • 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-486, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000008141965

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-486, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK BRAKE SWITCH

Check that “BRAKE SW” operate normally in “DATA MONITOR” of “ICC/ADAS”.

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

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 8.
NO >> GO TO 9.

4.CHECK BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check brake switch for correct installation. Refer to BR-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Adjust brake switch installation. Refer to BR-270, "Inspection and Adjustment".

5.BRAKE SWITCH INSPECTION

1. Disconnect brake switch connector.
2. Check brake switch. Refer to DAS-462, "Component Inspection (Brake Switch)".

Is the inspection result normal?

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

6.CHECK BRAKE SWITCH POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(-)	
Brake switch		Ground	
Connector	Terminal		
E114	1		Battery voltage

Is the inspection result normal?

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

7.CHECK HARNESS BETWEEN BRAKE SWITCH AND HPCM

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

Brake switch		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
E114	2	B159	59	Existed

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

Brake switch		Ground	Continuity
Connector	Terminal		
E114	2		Not existed

Is the inspection result normal?

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

8.PERFORM SELF-DIAGNOSIS OF HPCM

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 “EV/HEV”. Refer to HBC-71, "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-56, "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-270, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 10.
NO >> Adjust stop lamp switch installation. Refer to BR-270, "Inspection and Adjustment".

10.STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.
2. Check stop lamp switch. Refer to DAS-463, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

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	
Connector	Terminal		
E110	1		Battery voltage
	3		

Is the inspection result normal?

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

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

1. Turn the ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector and resistor.
3. 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	
E110	4	E89	8	Existed

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E110	4		Not existed

Is the inspection result normal?

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

13. 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-57, "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-56, "Removal and Installation".

Component Inspection (Brake Switch)

INFOID:0000000008141966

1. CHECK BRAKE SWITCH

Check for continuity between 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 brake switch.

Component Inspection (Stop Lamp Switch)

INFOID:0000000008141967

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

DTC Logic

INFOID:0000000008141968

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	• 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 HPCM and ADAS control unit, and the state continues for 2 seconds or more	• ICC steering switch circuit • ICC steering switch • HPCM

NOTE:
If DTC “C1A06” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Wait for approximately 5 minutes after turning the BSI system ON.
3. Perform “All DTC Reading” with CONSULT.
4. 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-464, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141969

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-52, "DTC Logic".
NO >> GO TO 2.

2.CHECK ICC STEERING SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the ICC steering switch connector.
3. Check the ICC steering switch. Refer to DAS-465, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the ICC steering switch.

3.CHECK HARNESS BETWEEN SPIRAL CABLE AND HPCM

1. Disconnect the HPCM connector.
2. Check for continuity between the spiral cable harness connector and HPCM harness connector.

Spiral cable		HPCM		Continuity
Connector	Terminal	Connector	Terminal	
M36	25	B158	5	Existed
	32		4	

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

Spiral cable		Ground	Continuity
Connector	Terminal		
M36	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 HPCM

1. Connect the connectors of ICC steering switch and HPCM connector.
2. Turn the ignition switch ON.
3. Perform “All DTC Reading”.
4. Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

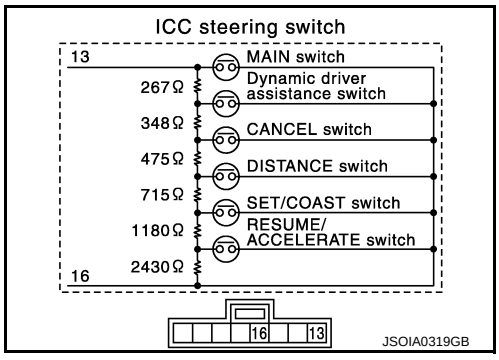
YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

Component Inspection

INFOID:0000000008141970

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 ICC steering switch.

C1A15 GEAR POSITION

Description

INFOID:0000000008141971

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 wheel speed signal transmitted from ABS actuator and electric unit (control unit) via CAN communication.

DTC Logic

INFOID:0000000008141972

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	• 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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-458, "DTC Logic" for DTC “C1A03”.
- Refer to DAS-459, "DTC Logic" for DTC “C1A04”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-466, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141973

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-432, "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?

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-56, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A1A HPCM

DTC Logic

INFOID:0000000008141974

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A1A (19)	HPCM CIRCUIT	If HPCM is malfunctioning	• Accelerator pedal position sensor • HPCM • ADAS control unit

NOTE:
If DTC “C1A1A” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Operate the BSI system and drive.
   CAUTION:
   To prevent the possibility of accident, always drive safely.
3. Stop the vehicle.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “C1A1A” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “C1A1A” detected as the current malfunction?

YES >> Refer to DAS-468, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141975

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “C1A1A” 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-486, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF HPCM

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A24 NP RANGE

DTC Logic

INFOID:0000000008141976

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	• TCM • Transmission range switch

NOTE:
If DTC “C1A24” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.CHECK DTC REPRODUCE (1)

1. Set the vehicle to READY.
2. Turn the BSI 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-469, "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-469, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008473862

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 CCS-133, "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-102, "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?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to TM-80, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000008141978

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-471, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141979

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1A50 ADAS CONTROL UNIT

DTC Logic

INFOID:0000000008141980

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-486, "ADAS CONTROL UNIT : DTC Logic".

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-472, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008141981

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-487, "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-42, "DTC Index".
NO >> Replace the lane camera unit. Refer to CCS-168, "Exploded View".

C1B00 CAMERA UNIT MALF

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141982

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. Set the vehicle to READY.
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-473, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> INSPECTION END

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141983

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “C1B00” is detected in “Self Diagnostic Result” of “LANE CAMERA”.

Is “C1B00” detected?

YES >> Refer to DAS-473, "LANE CAMERA UNIT : DTC Logic"
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008141984

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. Set the vehicle to READY.
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-473, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> INSPECTION END

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008141985

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?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-442, "DTC Index".

NO >> Replace the lane camera unit. Refer to DAS-544, "Removal and Installation".

C1B01 CAM AIMING INCMP

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141986

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01 (82)	CAM AIMING INCMP	Camera aiming is not completed	• Lane camera aiming is not adjusted • Lane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Operate the BSI system and drive.
   CAUTION:
   Always drive safely.
3. Perform “All DTC Reading” with CONSULT.
4. 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-475, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008141987

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “C1B01” is detected in “Self Diagnostic Result” of “LANE CAMERA”.

Is “C1B01” detected?

YES >> Refer to DAS-475, "LANE CAMERA UNIT : DTC Logic"
NO >> GO TO 2.

2.CHECK DATA MONITOR

1. Set the vehicle to READY.
2. 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-56, "Removal and Installation".
NO >> Replace the lane camera unit. Refer to DAS-544, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008141988

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01	CAM AIMING INCMP	Camera aiming is not completed	• Lane camera aiming is not adjusted • Lane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-476, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008141989

1.CAMERA AIMING ADJUSTMENT

1. Perform the camera aiming. Refer to DAS-315, "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-544, "Removal and Installation".
NO >> INSPECTION END

C1B03 ABNRML TEMP DETECT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008141990

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:0000000008141991

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-477, "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-381, "Removal and Installation".
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008141992

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:0000000008141993

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-544, "Removal and Installation".
NO >> INSPECTION END

C1B50 SIDE RADAR MALFUNCTION

DTC LOGIC

INFOID:0000000008141994

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B50	SIDE RDR MALFUNC-TION	Side radar malfunction	Side radar

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-478, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141995

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-439, "DTC Index" (SIDE RADAR RIGHT) or DAS-437, "DTC Index" (SIDE RADAR LEFT).
NO >> Replace the side radar. Refer to DAS-541, "Removal and Installation".

C1B51 BSW/BSI INDICATOR SHORT CIRCUIT

DTC Logic

INFOID:0000000008141996

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B51	BSW/BSI IND SHORT CIR	Short circuit in BSW/BSI indicator circuit is detected. (Over current is detected)	• BSW/BSI indicator circuit. • BSW/BSI indicator. • Side radar.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Perform “All DTC Reading” with CONSULT.
3. 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-478, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141997

1.CHECK BSW/BSI INDICATOR CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Disconnect side radar harness connector and BSW/BSI indicator harness connector.
3. Check continuity between side radar harness connector and ground.

Side radar		Ground	Continuity
Connector	Terminal		
B52 (LH)	6		Not existed
B252 (RH)			

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.REPLACE THE SIDE RADAR

1. Replace the side radar.
2. Perform “All DTC Reading” with CONSULT.
3. 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-541, "Removal and Installation".
NO >> INSPECTION END

C1B52 BSW/BSI INDICATOR OPEN CIRCUIT

DTC Logic

INFOID:0000000008141998

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B52	BSW/BSI IND OPEN CIR	Open circuit in BSW/BSI indicator circuit is detected.	• BSW/BSI indicator circuit. • BSW/BSI indicator. • Side radar.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
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-478, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008141999

1.CHECK BSW/BSI INDICATOR CIRCUIT FOR OPEN 1

1. Turn ignition switch OFF.
2. Disconnect side radar harness connector and BSW/BSI indicator harness connector.
3. Check continuity between side radar harness connector and BSW/BSI indicator harness connector.

Side radar		BSW/BSI indicator		Continuity
Connector	Terminal	Connector	Terminal	
B52 (LH)	6	D7 (LH)	1	Existed
B252 (RH)		D37 (RH)		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK BSW/BSI INDICATOR CIRCUIT FOR OPEN 2

Check continuity between BSW/BSI indicator harness connector and ground.

BSW/BSI indicator		Ground	Continuity
Connector	Terminal		
D7 (LH)	4		Existed
D37 (RH)			

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 BSW/BSI indicator harness connector and ground.

BSW/BSI indicator		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
D7 (LH)	1		Ignition switch OFF ⇒ ON (Approx. 2 sec.)	6 V
D37 (RH)				

Is the inspection result normal?

YES >> Replace BSW/BSI indicator.
NO >> Replace side radar. Refer to DAS-541, "Removal and Installation".

C1B53 SIDE RADAR RIGHT MALFUNCTION

DTC Logic

INFOID:0000000008142000

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. Set the vehicle to READY.
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-482, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142001

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-486, "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-437, "DTC Index" (SIDE RADAR LH), DAS-439, "DTC Index" (SIDE RADAR RH).
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1B54 SIDE RADAR LEFT MALFUNCTION

DTC Logic

INFOID:0000000008142002

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. Set the vehicle to READY.
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-482, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142003

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-486, "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-437, "DTC Index" (SIDE RADAR LH), DAS-439, "DTC Index" (SIDE RADAR RH).
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

C1B55 RADAR BLOCKAGE

DTC Logic

INFOID:0000000008142004

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:0000000008142005

1.CHECK THE REAR BUMPER

Check rear bumper near the side radar contaminated with foreign materials.

>> GO TO 2.

2.CHECK THE SIDERADAR

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

U1000 CAN COMM CIRCUIT

SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:0000000008142006

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-36, "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:0000000008142007

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:0000000008142008

1.PERFORM THE SELF-DIAGNOSIS

1. Set the vehicle to READY.
2. Turn the BSI 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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:0000000008142009

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-36, "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 RH : DTC Logic

INFOID:0000000008142010

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:0000000008142011

1.PERFORM THE SELF-DIAGNOSIS

1. Set the vehicle to READY.
2. Turn the BSI 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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000008142012

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-36, "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:0000000008142013

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	• CAN communication system • ITS communication system

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008142014

1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the BSI 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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:0000000008142015

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:0000000008142016

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:0000000008142017

1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.
2. Turn the BSI 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-19, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-49, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:0000000008142018

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

SIDE RADAR LH : DTC Logic

INFOID:0000000008142019

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:0000000008142020

1.CHECK SELF-DIAGNOSIS RESULT

1. Turn the BSI 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. DAS-541, "Removal and Installation".
NO >> INSPECTION END

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:0000000008142021

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

SIDE RADAR RH : DTC Logic

INFOID:0000000008142022

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:0000000008142023

1.CHECK SELF-DIAGNOSIS RESULT

1. Turn the BSI 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. DAS-541, "Removal and Installation".
NO >> INSPECTION END

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

INFOID:0000000008142024

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

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008142025

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:0000000008142026

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the BSI 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-56, "Removal and Installation".
NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:0000000008142027

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

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008142028

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:0000000008142029

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the BSI 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-381, "Removal and Installation".
NO >> INSPECTION END

U0104 ADAS CAN 1
SIDE RADAR

SIDE RADAR : DTC Logic

INFOID:0000000008142030

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-485, "SIDE RADAR LH : DTC Logic" (SIDE RADAR LH), DAS-486, "SIDE RADAR RH : DTC Logic" (SEDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-490, "SIDE RADAR : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

SIDE RADAR : Diagnosis Procedure

INFOID:0000000008142031

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-485, "SIDE RADAR LH : DTC Logic" (SIDE RADAR LH), DAS-486, "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-432, "DTC Index".
NO >> Replace side radar LH or RH. Refer to DAS-541, "Removal and Installation"

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008142032

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-487, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-491, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008142033

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-487, "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-432, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-544, "Removal and Installation".

U0121 VDC CAN 2

DTC Logic

INFOID:0000000008142034

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-492, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142035

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0126 STRG SEN CAN 1

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008142036

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-493, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008142037

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008142038

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-487, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-494, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008142039

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-487, "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-432, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-381, "Removal and Installation".

U0402 TCM CAN 1

DTC Logic

INFOID:0000000008142040

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-495, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142041

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-486, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0405 ADAS CAN 2

SIDE RADAR

SIDE RADAR : DTC Logic

INFOID:0000000008142042

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-485, "SIDE RADAR LH : DTC Logic" (SIDE RADAR LH), DAS-486, "SIDE RADAR RH : DTC Logic" (SIDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-496, "SIDE RADAR : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

SIDE RADAR : Diagnosis Procedure

INFOID:0000000008142043

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-485, "SIDE RADAR LH : DTC Logic" (SIDE RADAR LH), DAS-486, "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-432, "DTC Index".
NO >> Replace side radar LH or RH. Refer to DAS-541, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008142044

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-487, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-497, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008142045

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-487, "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-432, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-544, "Removal and Installation".

U0415 VDC CAN 1

DTC Logic

INFOID:0000000008142046

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-498, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142047

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U0428 STRG SEN CAN 2

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:0000000008142048

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-499, "ADAS CONTROL UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008142049

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:0000000008142050

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-487, "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-500, "LANE CAMERA UNIT : Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:0000000008142051

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-487, "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-432, "DTC Index".
NO >> Replace the lane camera unit. Refer to DAS-544, "Removal and Installation".

U1500 CAM CAN 2

DTC Logic

INFOID:0000000008142052

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-501, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142053

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-486, "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-442, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1501 CAM CAN 1

DTC Logic

INFOID:0000000008142054

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-502, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142055

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-486, "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-442, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1503 SIDE RDR L CAN 2

DTC Logic

INFOID:0000000008142056

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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-508, "DTC Logic" for DTC “U1508”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-503, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142057

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-486, "ADAS CONTROL UNIT : DTC Logic".
YES-2 >> U1508 detected: Refer to DAS-508, "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-437, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1504 SIDE RDR L CAN 1

DTC Logic

INFOID:0000000008142058

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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-508, "DTC Logic" for DTC “U1508”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-504, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142059

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-486, "ADAS CONTROL UNIT : DTC Logic".
YES-2 >> U1508 detected: Refer to DAS-508, "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-437, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1505 SIDE RDR R CAN 2

DTC Logic

INFOID:0000000008142060

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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-507, "DTC Logic" for DTC “U1507”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-505, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142061

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-486, "ADAS CONTROL UNIT : DTC Logic".
YES-2 >> U1507 detected: Refer to DAS-508, "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-437, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1506 SIDE RDR R CAN 1

DTC Logic

INFOID:0000000008142062

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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-508, "DTC Logic" for DTC “U1507”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-504, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142063

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-486, "ADAS CONTROL UNIT : DTC Logic".
YES-2 >> U1507 detected: Refer to DAS-508, "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-437, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1507 LOST COMM(SIDE RDR R)

DTC Logic

INFOID:0000000008142064

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	• 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. Set the vehicle to READY.
2. Turn the BSI 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-507, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142065

1.CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check right/left switching signal circuit. Refer to DAS-527, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to LAN-19, "Trouble Diagnosis Flow Chart".
NO >> Repair right/left switching signal circuit.

U1508 LOST COMM(SIDE RDR L)

DTC Logic

INFOID:0000000008142066

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	• 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. Set the vehicle to READY.
2. Turn the BSI 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-508, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142067

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-19, "Trouble Diagnosis Flow Chart".
NO >> Repair the terminal or connector.

U1512 HVAC CAN 3

DTC Logic

INFOID:0000000008142068

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-509, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142069

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-486, "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-51, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1513 METER CAN 3

DTC Logic

INFOID:0000000008142070

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-510, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142071

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-486, "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-51, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1514 STRG SEN CAN 3

DTC Logic

INFOID:0000000008142072

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-511, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142073

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1516 CAM CAN 3

DTC Logic

INFOID:0000000008142074

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 CAN communication	Lane camera unit

NOTE:
If DTC “U1516” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-512, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142075

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-486, "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-442, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1518 SIDE RDR L CAN 3

DTC Logic

INFOID:0000000008142076

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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-508, "DTC Logic" for DTC “U1508”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-513, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142077

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-486, "ADAS CONTROL UNIT : DTC Logic".
YES-2 >> U1508 detected: Refer to DAS-513, "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-437, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U1519 SIDE RDR R CAN 3

DTC Logic

INFOID:0000000008142078

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-486, "ADAS CONTROL UNIT : DTC Logic" for DTC “U1000”.
- Refer to DAS-507, "DTC Logic" for DTC “U1507”.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-507, "DTC Logic".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142079

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-486, "ADAS CONTROL UNIT : DTC Logic".
YES-2 >> U1507 detected: Refer to DAS-507, "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-439, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U150C VDC CAN 3

DTC Logic

INFOID:0000000008142080

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-515, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142081

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-486, "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-57, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U150D TCM CAN 3

DTC Logic

INFOID:0000000008142082

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-516, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142083

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-486, "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-80, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U150E BCM CAN 3

DTC Logic

INFOID:0000000008142084

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-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI 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-517, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142085

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-486, "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-55, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151A ELECTRICAL BRAKE CAN CIRCUIT 2

DTC Logic

INFOID:0000000008142086

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151A (170)	ELECTRICAL BRAKE CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151A” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to CCS-133, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151A” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151A” detected as the current malfunction?

YES >> Refer to DAS-518, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142087

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151A” 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-133, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151B ELECTRICAL BRAKE CAN CIRCUIT 1

DTC Logic

INFOID:0000000008142088

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151B (171)	ELECTRICAL BRAKE CAN CIRCUIT 1	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151B” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151B” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151B” detected as the current malfunction?

YES >> Refer to DAS-519, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142089

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151B” 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-486, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151C ELECTRICAL BRAKE CAN CIRCUIT 3

DTC Logic

INFOID:0000000008142090

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151C (172)	ELECTRICAL BRAKE CAN CIRCUIT 3	ADAS control unit detects an error signal that is received from electrically-driven intelligent brake unit via CAN communication	Electrically-driven intelligent brake unit

NOTE:
If DTC “U151C” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151C” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151C” detected as the current malfunction?

YES >> Refer to DAS-520, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142091

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151C” 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-486, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “BRAKE”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BR-38, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151D HPCM CAN CIRCUIT 2

DTC Logic

INFOID:0000000008142092

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151D (173)	HPCM CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151D” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151D” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151D” detected as the current malfunction?

YES >> Refer to DAS-521, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142093

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151D” 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-486, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151E HPCM CAN CIRCUIT 1

DTC Logic

INFOID:0000000008142094

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151E (174)	HPCM CAN CIRCUIT 2	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151E” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151E” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151E” detected as the current malfunction?

YES >> Refer to DAS-522, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142095

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151E” 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-486, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

U151F HPCM CAN CIRCUIT 3

DTC Logic

INFOID:0000000008142096

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U151F (175)	HPCM CAN CIRCUIT 3	ADAS control unit detects an error signal that is received from HPCM via CAN communication	HPCM

NOTE:
If DTC “U151F” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-486, "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Set the vehicle to READY.
2. Turn the BSI system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U151F” is detected as the current malfunction in “Self Diagnostic Result” of “ICC/ADAS”.

Is “U151F” detected as the current malfunction?

YES >> Refer to DAS-523, "Diagnosis Procedure".
NO >> Refer to GI-49, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000008142097

1.CHECK SELF-DIAGNOSIS RESULTS

Check if “U1000” is detected other than “U151F” 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-486, "ADAS CONTROL UNIT : DTC Logic".
NO >> GO TO 2.

2.CHECK HPCM SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in “Self Diagnostic Result” of “EV/HEV”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to HBC-71, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008142098

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

Terminal			Condition	Voltage (Approx.)
(+)		(–)		
ADAS control unit		Ground	Ignition switch	
Connector	Terminal			
B50	16		OFF	0 V
			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the ADAS control unit power supply circuit.

3.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		
B50	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:0000000008142099

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 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		Ground	Ignition switch	
Connector	Terminal			
B52	5		OFF	0 V
			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the side radar LH power supply circuit.

3.CHECK GROUND CIRCUIT

Check continuity between side radar LH harness connectors and ground.

Side radar LH		Ground	Continuity
Connector	Terminal		
B52	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:0000000008142100

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 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			
B252	5		OFF	0 V
			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the side radar RH power supply circuit.

3.CHECK GROUND CIRCUIT

Check continuity between side radar RH harness connectors and ground.

Side radar RH		Ground	Continuity
Connector	Terminal		
B252	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:0000000008142101

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	1

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 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?

YES >> GO TO 3.
NO >> Repair the lane camera unit power supply circuit.

3.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

Diagnosis Procedure

INFOID:0000000008142102

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		
B252	1		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

WARNING SYSTEMS SWITCH CIRCUIT

Component Function Check

INFOID:0000000008142103

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-528, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008142104

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		Ground	Warning systems switch	
Connector	Terminal			
B50	1		Pressed	0 V
			Released	12 V

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "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-529, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the warning systems switch. Refer to DAS-382, "Removal and Installation".

3.CHECK WARNING SYSTEMS SWITCH GROUND CIRCUIT

Check continuity between triple switch harness connector terminal and the ground.

Triple switch		Ground	Continuity
Connector	Terminal		
M183	5		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.

2. Check continuity between the ADAS control unit harness connector and triple switch harness connector.

ADAS control unit		Triple switch		Continuity
Connector	Terminal	Connector	Terminal	
B50	1	M183	1	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		
B50	1		Not existed

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:0000000008142105

1. CHECK WARNING SYSTEMS SWITCH

Check continuity of warning systems switch.

Terminal		Condition	Continuity
1	5	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.

WARNING SYSTEMS ON INDICATOR CIRCUIT

Component Function Check

INFOID:0000000008142106

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-530, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008142107

1.CHECK WARNING ON INDICATOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect triple switch connector.
3. Turn ignition switch ON.
4. Check voltage between triple switch harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Triple switch		Ground	
Connector	Terminal		
M183	9		Battery voltage

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 triple switch harness connector.

ADAS control unit		Triple switch		Continuity
Connector	Terminal	Connector	Terminal	
B50	4	M183	12	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		
B50	4		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4. CHECK WARNING SYSTEMS ON INDICATOR

Check the warning systems ON indicator. Refer to DAS-531, "Component Inspection".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-56, "Removal and Installation".
NO >> Replace warning systems switch. DAS-382, "Removal and Installation".

Component Inspection

INFOID:0000000008142108

1. CHECK WARNING SYSTEMS ON INDICATOR

Apply battery voltage to warning systems switch terminals 9 and 12, and then check if the warning systems ON indicator illuminates.

Terminals		Condition	Warning systems ON indicator
(+)	(-)		
9	12	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-382, "Removal and Installation".

WARNING BUZZER CIRCUIT

Component Function Check

INFOID:0000000008142109

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-532, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008142110

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	
Connector	Terminal		
M45	1		Battery voltage

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		
M45	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	
B50	12	M45	2	Existed

Is the inspection result normal?

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		
B50	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. Refer to DAS-56, "Removal and Installation".
NO >> Replace the warning buzzer. Refer to DAS-384, "Removal and Installation".

SYMPTOM DIAGNOSIS

BSW & BSI SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000008142111

NOTE:
- Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.
- Refer to the following the operation condition of the BSW/BSI system.
- BSW system: DAS-390, "BLIND SPOT WARNING (BSW) SYSTEM : System Description".
- BSI system: DAS-395, "BLIND SPOT INTERVENTION (BSI) SYSTEM : System Description".

Symptom		Possible cause	Inspection item/Reference page
Indicator/warning lamps do not illuminate when ignition switch OFF ⇒ ON	BSW/BSI warning lamp (Yellow) does not illuminate	• BSW/BSI warning lamp signal (CAN) - Combination meter - ADAS control unit • BSW/BSI warning lamp (combination meter)	• ADAS control unit Active test “BSW/BSI WARNING LAMP” and “BSI ON INDICATOR”. Refer to DAS-408, "CONSULT Function (ICC/ADAS)". • ADAS control unit Data monitor “BSW/BSI WARN LMP” and “BSI ON IND”. Refer to DAS-408, "CONSULT Function (ICC/ADAS)" • Combination meter Data monitor “BSW W/L” and “BSI IND” Refer to MWI-36, "CONSULT Function"
	BSI ON indicator (Green) does not illuminate	• BSI ON indicator lamp signal (CAN) - Combination meter - ADAS control unit • BSI ON indicator (combination meter)	
	BSI ON indicator (Green) and BSW/BSI warning lamp (Yellow) do not illuminate	• Combination meter • ADAS control unit	
	All of indicator/warning lamps do not illuminate; • BSW/BSI warning lamp • BSI ON indicator • Warning systems ON indicator	• 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-524, "ADAS CONTROL UNIT : Diagnosis Procedure"
	Warning systems ON indicator (on the warning systems switch) does not illuminate	• Harness between ADAS control unit and warning systems switch • Warning systems switch • ADAS control unit	Warning systems ON indicator circuit. Refer to DAS-530, "Diagnosis Procedure"
	BSW/BSI indicator does not turn ON	• Harness between side radar and BSW/BSI indicator • Side radar LH/RH • BSW/BSI indicator	Perform self-diagnosis of side radar. Refer to DAS-420, "CONSULT Function (SIDE RADAR LEFT)" or DAS-421, "CONSULT Function (SIDE RADAR RIGHT)".

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	• Harness between ADAS control unit and waning systems switch • Harness between warning systems switch and ground • ADAS control unit • Warning systems switch	• Warning systems switch circuit. Refer to DAS-528, "Diagnosis Procedure". • BSW system setting cannot be turned ON/OFF on the navigation screen. Refer to DAS-538, "Description"
	Buzzer is not sounding	• 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-532, "Diagnosis Procedure"
BSI system is not activated (BSW system is functioning normally)	BSI ON indicator is not turned ON ⇔ OFF when operating dynamic driver assistance switch	• Dynamic driver assistance switch • Combination meter • ADAS control unit	• Dynamic driver assistance switch does not turn ON/OFF. Refer to DAS-536, "Description" • BSI system setting cannot be turned ON/OFF on the navigation screen. Refer to DAS-538, "Description"
	Warning is functioning but yawing is not functioning	—	• Check “Cause of auto-cancel2”. Refer to DAS-408, "CONSULT Function (ICC/ADAS)" • Check normal operating condition. Refer to DAS-539, "Description"
BSI functions are not timely (BSW system is functioning normally) (Example) • Does not function when approaching a lane marker while BSW/BSI indicator lamp is illuminated • Functions when driving in the middle of lane		• Camera aiming adjustment • Lane camera unit	Camera aiming adjustment. Refer to DAS-452, "Work Procedure".

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

Description

INFOID:0000000008142112

The switch does not turn ON
- When the BSI system setting is ON, the BSI ON indicator does not illuminate even if the dynamic driver assistance switch is depressed.

The switch does not turn OFF
- The BSI ON indicator does not turn off even if the dynamic driver assistance switch is pressed when the BSI ON indicator illuminates.

Diagnosis Procedure

INFOID:0000000008142113

1.CHECK BSI SYSTEM SETTING

1. Set the vehicle to READY.
2. After set the vehicle to READY wait for 5 seconds or more.
3. Check that BSI system setting on the navigation screen is ON.

Is BSI system setting ON?

YES >> GO TO 2.
NO >> Enable the BSI system setting.

2.DYNAMIC DRIVER ASSISTANCE SWITCH INSPECTION

1. Set the vehicle to READY.
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 BSI ON INDICATOR CIRCUIT

1. Set the vehicle to READY.
2. Select the active test item “BSI ON IND” of “ICC/ADAS” with CONSULT.
3. Check if the BSI 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-51, "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-464, "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-432, "DTC Index".

Is any DTC detected?

YES >> GO TO 7.
NO >> GO TO 8.

7. REPAIR OR REPLACE MALFUNCTIONING PARTS.

Repair or replace malfunctioning parts.

>> GO TO 8.

8. CHECK BSI SYSTEM

1. Erase “self-diagnosis result”, and then perform “All DTC Reading” again after performing the action test. (Refer to DAS-453, "Description" for action test.)
2. Check that the BSI system is normal.

>> INSPECTION END

BSW/BSI SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE NAVIGATION SCREEN

Description

INFOID:0000000008142114

- BSW system setting is not selectable on the navigation screen.
- BSI system setting is not selectable on the navigation screen.
  NOTE:
  When the ignition switch is in ACC position, BSW or BSI 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 BSW or BSI 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:0000000008142115

1. CHECK BSI SYSTEM SETTING

1. Set the vehicle to READY.
2. Check that the BSI 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-432, "DTC Index"
- MULTI AV: AV-169, "DTC Index"
- METER/M&A: MWI-51, "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-142, "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-56, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

Description

INFOID:0000000008142116

BSW & BSI

- The BSW and BSI 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 BSW or BSI system.
- Using the BSI 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 BSW and BSI systems may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the BSW or BSI 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 BSI/BSW 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.

BSI

- Do not use the BSI 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 BSI 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.)
- The BSI 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.

- BSI 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.

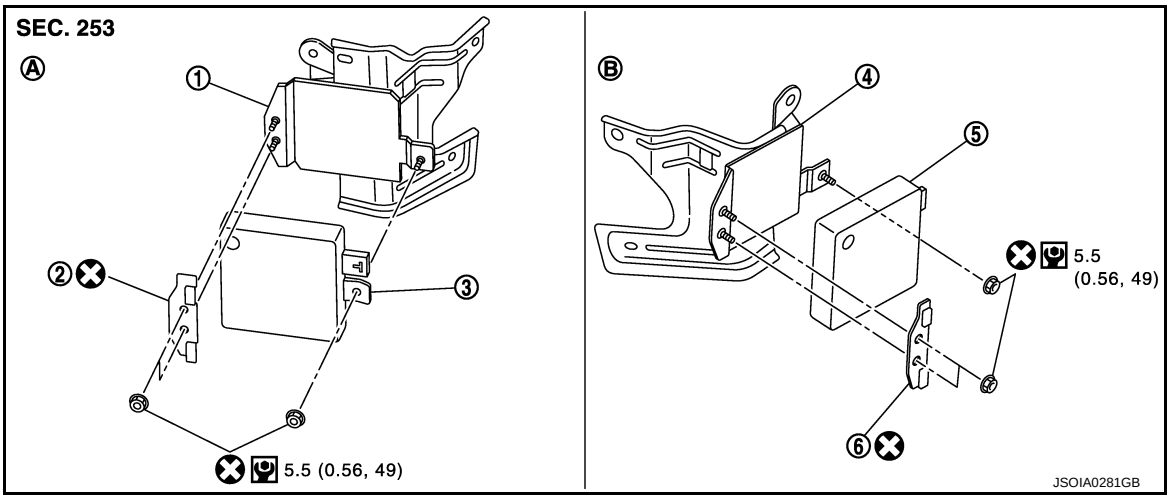
REMOVAL AND INSTALLATION

SIDE RADAR

Removal and Installation

INFOID:0000000008142117

EXPLODED VIEW



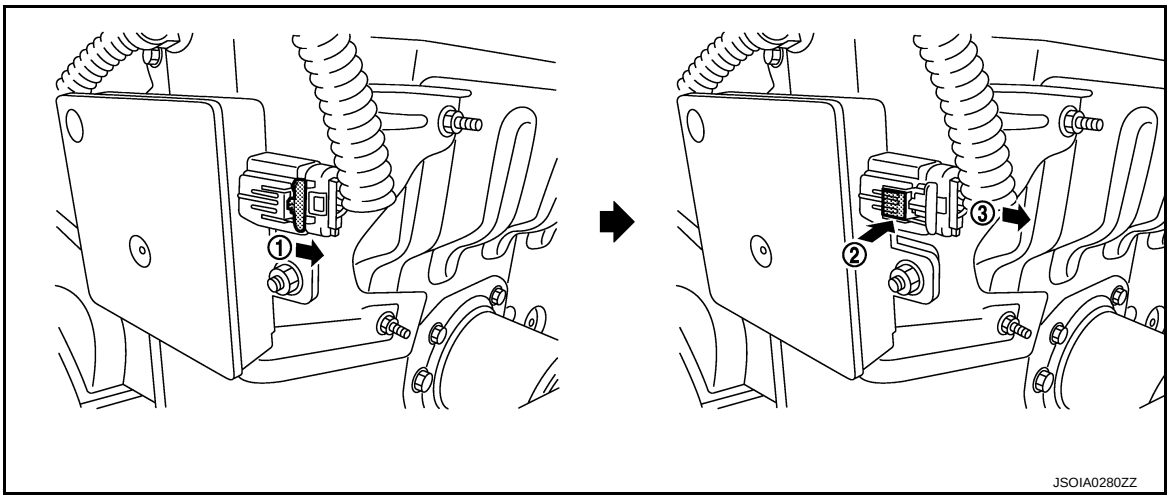
1. Bracket
2. Bracket
3. Side radar LH
4. Bracket
5. Side radar RH
6. Bracket
A. LH side
B. RH side

Refer to GI-5, "Components" for symbol makes in the figure.

REMOVAL AND INSTALLATION

Removal

1. Remove the rear bumper fascia.
2. Remove the side radar connector.

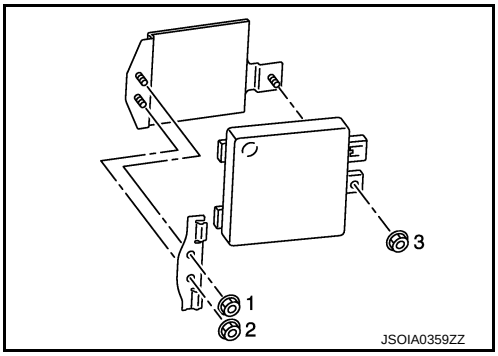


3. Remove the mounting nut.
4. Remove the side radar RH/LH.

Installation

Note the following, and install in the reverse order of removal.

- Tighten mounting nuts in the numerical order as shown in the figure.
- Always lock the side radar connector.



BSW/BSI INDICATOR

Removal and Installation

INFOID:0000000008142118

REMOVAL AND INSTALLATION

Removal

1. Remove the front door sash inner cover. Refer to INT-25, "Exploded View".
2. Remove the BSW/BSI indicator.

Installation

Install in the reverse order of removal.

LANE CAMERA UNIT

Removal and Installation

INFOID:0000000008142119

REMOVAL

1. Remove headlining assembly. Refer to INT-47, "Removal and Installation".
2. Remove the bolts.
3. Remove lane camera unit.

INSTALLATION

Install in the reverse order of removal.

NOTE:

Remove the camera lens cap for replacement.

CAUTION:

- **To prevent malfunction, never give an impact to the lane camera unit.**
- **To prevent malfunction, perform the camera aiming every time the lane camera unit is removed and installed. Refer to DAS-315, "Description".**

WARNING BUZZER

Removal and Installation

INFOID:0000000008142120

REMOVAL

1. Remove the AV control unit. Refer to AV-264, "Removal and Installation".
2. Remove the screw.
3. Remove warning buzzer.

INSTALLATION

Install in the reverse order of removal.

WARNING SYSTEMS SWITCH

Removal and Installation

INFOID:0000000008142121

REMOVAL

1. Remove the instrument lower panel LH. Refer to IP-13, "Removal and Installation".
2. Remove warning systems switch from instrument lower panel LH.

NOTE:
Warning systems switch and VDC OFF switch are integrated.

INSTALLATION

Install in the reverse order of removal.

DYNAMIC DRIVER ASSISTANCE SWITCH

Exploded View

INFOID:0000000008142122

Dynamic driver assistance switch is integrated in the ICC steering switch. Refer to ST-29, "Exploded View".