SECTION DAS
DRIVER ASSISTANCE SYSTEM

CONTENTS

ADAS CONTROL UNIT

DRIVER ASSISTANCE SYSTEM

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011590506

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.**
- **Do not 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:

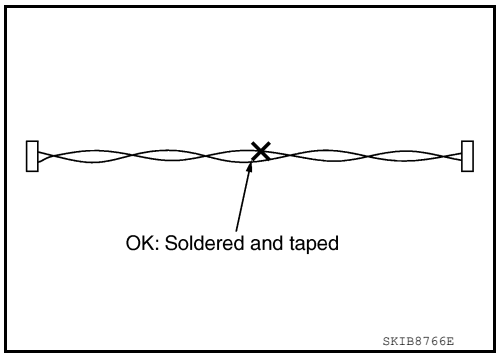
- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.**

Precautions For Harness Repair

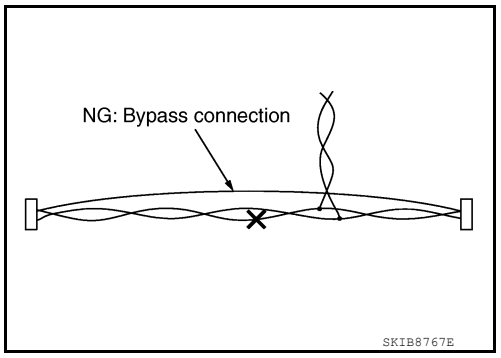
INFOID:0000000011231526

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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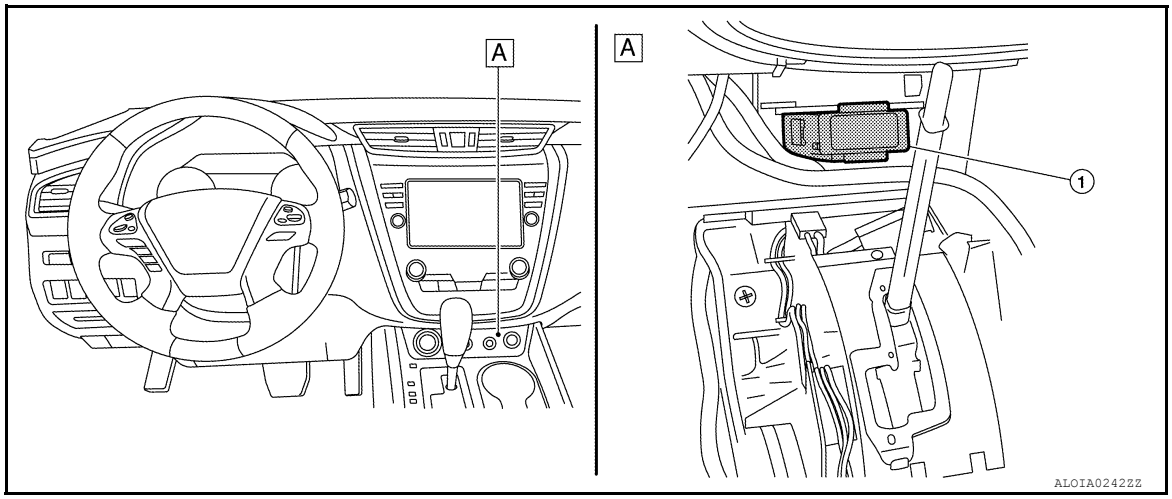


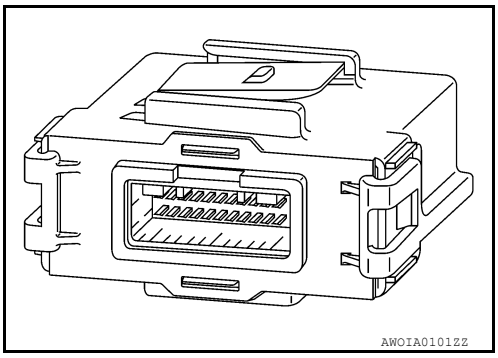
A. View with center console assembly removed.

No.	Component	Description
1.	ADAS control unit	• Controls each system, based on CAN communication and ITS communication signals received from each control unit. • Transmits signals necessary for control between CAN communication and ITS communication.

ADAS Control Unit

INFOID:0000000011231528

- ADAS control unit is installed below the center console assembly.
- Communicates with each control unit via CAN communication and ITS communication.
- ADAS control unit with gateway function, is for system control signals that are transmitted to each control unit between CAN communication and ITS communication by the ADAS control unit.
- ADAS control unit controls each system, based on ITS communication signals and CAN communication signals from each control unit.



SYSTEM

System Description

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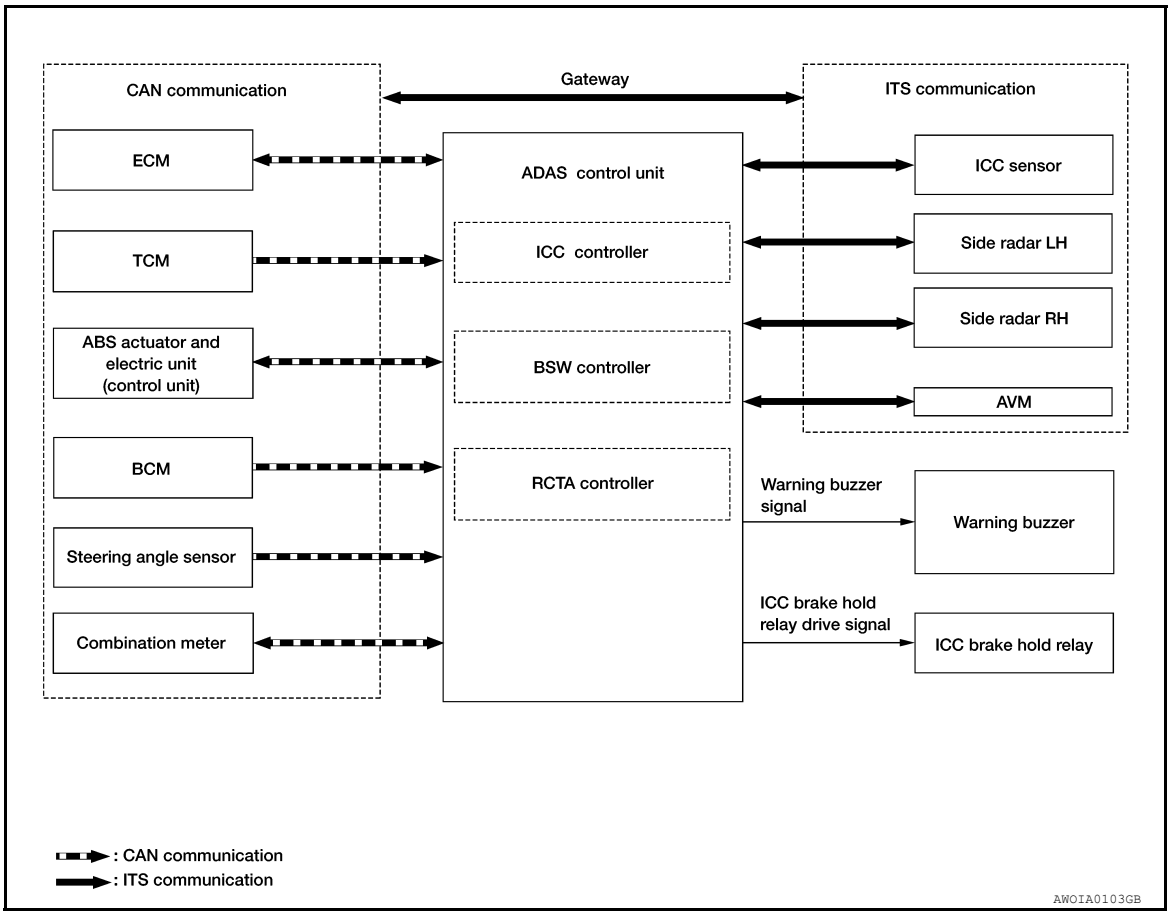
SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ECM	CAN communication	Closed throttle position signal	Receives idle position state (ON/OFF).
		Accelerator pedal position signal	Receives accelerator pedal position (angle).
		ICC prohibition signal	Receives an operable/inoperable state of the ICC system.
		Engine speed signal	Receives engine speed.
		ICC steering switch signal: MAIN switch signal	Receives the operational state of the ICC steering switch.
		ICC steering switch signal: SET/ − switch signal	
		ICC steering switch signal: CANCEL switch signal	
		ICC steering switch signal: RES/ + switch signal	
		ICC steering switch signal: DISTANCE switch signal	
		Stop lamp switch signal	Receives an operational state of the brake pedal.
		Brake pedal position switch signal	Receives an operational state of the brake pedal.

Transmit unit	Signal name		Description
TCM	CAN communication	Input speed signal	Receives the number of revolutions of input shaft.
		Current gear position signal	Receives a current gear position.
		Shift position signal	Receives a select lever position.
		Output shaft revolution signal	Receives the number of revolutions of output shaft.
ABS actuator and electric unit (control unit)	CAN communication	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels.
		Yaw rate signal	Receives yaw rate acting on the vehicle.
		Stop lamp switch signal	Receives an operational state of the brake pedal.
Combination meter	CAN communication	Parking brake switch signal	Receives an operational state of the parking brake.
		System selection signal	Receives a selection state of each item in “Driving Aids” selected with the integral switch of the information display.
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp.
		Dimmer signal	Receives ON/OFF state of dimmer signal.
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.
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.
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.

Output Signal Item

Reception unit	Signal name		Description
ECM	CAN communication	ICC operation signal	Transmits an ICC operation signal necessary for intelligent cruise control.
ABS actuator and electric unit (control unit)	CAN communication	Brake fluid pressure control signal	Transmits a brake fluid pressure control signal to activates the brake.

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.
			Set vehicle speed indicator signal	
			Set distance indicator signal	
			SET switch indicator signal	
			ON/OFF switch indicator signal	
			FEB system display signal	
			PFCW system display signal	
			BSW system display signal	
		FEB warning lamp signal		• Transmits a signal to turn ON the lamp. • Transmits an ON/OFF state of the Forward Emergency Brake.
ICC sensor	ITS communication	ADAS control status		Transmits ADAS status.
Side radar LH, RH	ITS communication	Vehicle speed signal		Transmits a vehicle speed calculated by the ADAS control unit.
		Blind Spot Warning indicator signal		Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator.
		Blind Spot Warning indicator dimmer signal		Transmits a Blind Spot Warning indicator dimmer signal to dimmer Blind Spot Warning indicator.
ICC brake hold relay	ICC brake hold relay drive signal			Activates the brake hold relay and turns ON the stop lamp.

DESCRIPTION

- ADAS* control unit controls the following systems based on ITS communication signal and CAN communication signal from each control unit.

NOTE:

*: Advanced Driver Assistance Systems

- Intelligent Cruise Control (ICC)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

System	Reference
Intelligent Cruise Control (ICC)	CCS-12, "System Description"
Forward Emergency Braking (FEB)	BRC-177, "BRAKE ASSIST (WITH PREVIEW FUNCTION) : System Description-Forward Emergency Braking"
Predictive Forward Collision Warning (PFCW)	DAS-92, "PFCW : System Description"
Blind Spot Warning (BSW)	DAS-94, "BSW : System Description"
Rear Cross Traffic Alert (RCTA)	DAS-96, "RCTA : System Description"

Fail-safe (ADAS Control Unit)

INFOID:0000000011596653

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

System	Buzzer	Warning lamp/Warning display	Description
Intelligent Cruise Control (ICC)	High-pitched tone	ICC system warning	Cancel
Forward Emergency Braking (FEB)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Predictive Forward Collision Warning (PFCW)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Blind Spot Warning (BSW)	Low-pitched tone	BSW system warning	Cancel
Rear Cross Traffic Alert (BSW)	—	BSW system warning	Cancel

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

CONSULT Function (ICC/ADAS)

INFOID:0000000011231533

APPLICATION ITEMS

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

Diagnosis mode	Description
Configuration	• The vehicle specification that is written in ADAS control unit can be displayed or stored. • The vehicle specification can be written when ADAS control unit is replaced.
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.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in ADAS control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the ADAS control unit.
Manual Configuration		Allows the writing of the vehicle specification into the ADAS control unit by hand.

WORK SUPPORT

Work support items	Description
CAUSE OF AUTO-CANCEL	Displays causes of automatic system cancellation occurred during control of the Intelligent Cruise Control (ICC).

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	Intelligent Cruise Control (ICC)	Description
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication.
NO RECORD	×	—

SELF DIAGNOSTIC RESULT

Refer to DAS-22, "DTC Index".

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.
• ODO/TRIP METER (Mileage) and VOLTAGE(IGN voltage) is displayed on FFD (Freeze Frame Data).

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 (BSW/)	Description
MAIN SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch.
SET/COAST SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
CANCEL SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
RESUME/ACC SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
DISTANCE SW [On/Off]	×			Indicates [ON/OFF] status as judged from ICC steering switch.
CRUISE OPE [On/Off]	×	×		Indicates whether controlling or not (ON means “controlling”).
BRAKE SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]	×			Indicates [ON/OFF] status of idle switch read from ADAS control unit through CAN communication (ECM transmits ON/OFF status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	×		Indicates set distance memorized in ADAS control unit.
CRUISE LAMP [On/Off]	×	×		Indicates [ON/OFF] status of MAIN switch indicator output.
OWN VHCL [On/Off]	×			**NOTE:** The item is displayed, but it is not monitored.
VHCL AHEAD [On/Off]	×			Indicates [ON/OFF] status of vehicle ahead detection indicator output.
ICC WARNING [On/Off]	×			Indicates [ON/OFF] status of ICC system warning lamp output.
VHCL SPEED SE [km/h] or [mph]	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication].
SET VHCL SPD [km/h] or [mph]	×	×		Indicates set vehicle speed memorized in ADAS control unit.
BUZZER O/P [On/Off]	×			Indicates [ON/OFF] status of ICC warning chime output.
THRTL SENSOR [deg]	×	×		**NOTE:** The item is displayed, but it is not monitored.
ENGINE RPM [rpm]	×			Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication).
WIPER SW [OFF/LOW/HIGH]	×			Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication).

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
YAW RATE [deg/s]	×			**NOTE:** The item is displayed, but it is not monitored.
BA WARNING [On/Off]	×			Indicates [ON/OFF] status of FEB indicator lamp output.
STP LMP DRIVE [On/Off]	×	×		Indicates [ON/OFF] status of ICC brake hold relay drive output.
D POSITION 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 CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	×		Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×			Indicates CVT gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication).
CLUTCH SW SIG [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from clutch pedal position signal (ECM transmits ICC clutch switch signal through CAN communication).
NP SW SIG [On/Off]	×			Indicates [ON/OFF] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communication).
MODE SIG [OFF, ICC, ASCD]	×			Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].
SET DISP IND [On/Off]	×			Indicates [ON/OFF] status of SET switch indicator output.
DISTANCE [m]	×			Indicates the distance from the vehicle ahead.
RELATIVE SPD [m/s]	×			Indicates the relative speed of the vehicle ahead.
ON ROOT GUIDANCE [On/Off]	×			**NOTE:** The item is displayed, but it is not monitored
DYNA ASIST SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
IBA SW [On/Off]	×	×		**NOTE:** The item is displayed, but it is not monitored.
NAVI ICC DISP [On/Off]				**NOTE:** The item is displayed, but it is not monitored.
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).

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
SIDE G [G]			×	Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication).
FUNC ITEM (FCW) [On/Off]	×	×	×	Indicates systems which can be set to ON/OFF by selecting “Driver Assistance” ⇒“Emergency Brake” of the integral switch Forward Emergency Braking.
FUNC ITEM (BSW) [On/Off]	×	×	×	Indicates systems which can be set to ON/OFF by selecting “Driver Assistance” ⇒“Blind spot” of the integral switch Blind Spot Warning.
FUNC ITEM (NV-ICC) [Off]	×	×	×	**NOTE:** The item is displayed, but it is not monitored
FCW SELECT [On/Off]	×	×	×	Indicates an ON/OFF state of the PFCW system. The PFCW system can be set to ON/OFF by selecting “Driver Assistance”⇒“Emergency Brake” of the integral switch.
BSW SELECT [On/Off]	×	×	×	Indicates an ON/OFF state of the BSW system. The BSW system can be set to ON/OFF by selecting “Driver Assistance”⇒“Blind spot” of the integral switch.
NAVI ICC SELECT [Off]	×	×	×	**NOTE:** The item is displayed, but it is not monitored.
SYS SELECTABILITY [On/Off]	×	×	×	Indicates the availability of ON/OFF switching for “Driving Aids” items received from the integral switch via CAN communication.
BSW/BSI WARN LMP [On/Off]			×	Indicates [ON/OFF] status of Blind Spot warning malfunction.
BSW SYSTEM ON [On/Off]			×	Indicates [ON/OFF] status of BSW system.
FCW SYSTEM ON [On/Off]	×	×		Indicates [ON/OFF] status of PFCW system.
BATTERY CIRCUIT OFF [On/Off]	×			**NOTE:** The item is displayed, but it is not used.
SYSTEM CANCEL MESSAGE [NOREQ/SLIP/VDC OFF]	×	×	×	Indicates [ON/OFF] status of system cancel display output.
BSW ON INDICATOR [On/Off]			×	Indicates [ON/OFF] status of BSW system ON display output.
SIDE RADAR BLOCK COND [On/Off]			×	Indicates [ON/OFF] status of side radar with dirt or foreign materials.
BSW IND BRIGHTNESS [Nothing/Bright/Normal/Dark]			×	Indicates status of brightness of Blind Spot Warning indicator.
SL MAIN SW [On/Off]		×		Indicates [ON/OFF] status as judged from steering switch.
FUNC ITEM(FEB) [On/Off]	×			Indicates systems which can be set to ON/OFF by selecting “Driver Assistance” ⇒“Emergency Brake” of the integral switch. Forward Emergency Braking
FEB SELECT [On/Off]	×			Indicates an ON/OFF state of the FEB system. The FEB system can be set to ON/OFF by selecting “Driver Assistance”⇒“Emergency Brake” of the integral switch.
FEB SW [On/Off]	×			Indicates [ON/OFF] status of FEB system.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
SL TARGET VEHICLE SPEED [km/h] or [mph]	×			Indicates set vehicle speed memorized in ADAS control unit.
SL SET LAMP [On/Off]	×			Indicates [ON/OFF] status of speed limiter SET display output.
SL LIMIT LAMP [On/Off]	×			Indicates [ON/OFF] status of speed limiter MAIN switch display output.
ASCD CANCEL (LOW SPEED) [NON/CUT]	×			Indicates the vehicle cruise condition. • NON: Vehicle speed is maintained at the ASCD set speed. • CUT: Vehicle speed decreased to excessively low, and ASCD operation is cut off.
ASCD CANCEL (SPEED DIFF) [NON/CUT]	×			Indicates the vehicle cruise condition. • NON: Vehicle speed is maintained at the ASCD set speed. • CUT: Vehicle speed decreased to excessively low compared with the ASCD set speed, and ASCD operation is cut off.
KICK DOWN [On/Off]	×			Display Kick Down decision state. • On: Accelerator pedal is depressed. • Off: Accelerator pedal is fully released.

ACTIVE TEST

CAUTION:

- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems malfunction is displayed.**
- **ICC system**
- **Blind Spot Warning/RCTA**
- **PFCW/FEB**
- **The “Active Test” cannot be performed when the FEB warning lamp is illuminated.**
- **The “Active Test” cannot be performed when the ICC System is ON.**

Test item	Description
METER LAMP	The FEB warning 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.
ADAS BUZZER	Sounds a buzzer used for BSW, RCTA by arbitrarily operating ON/OFF.
METER BUZZER	Sounds a buzzer used for ICC, PFCW, FEB by arbitrarily operating ON/OFF.
BRAKE ACTUATOR 1	Activates the brake by an arbitrary operation.
BRAKE ACTUATOR 2	
BRAKE ACTUATOR 3	

METER LAMP

NOTE:

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

Test item	Operation	Description	FEB warning lamp
METER LAMP	Off	Stops sending the FEB warning lamp signal to exit from the test.	OFF
	On	Transmits the FEB warning lamp signal to the combination meter via CAN communication.	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

METER BUZZER

Test item	Operation	Description	Operation sound
METER BUZZER	Off	Stops buzzer output to the combination meter via CAN communication.	—
	On	Starts buzzer output to the combination meter via CAN communication.	—

ADAS BUZZER

Test item	Operation	Description	Operation sound
ADAS BUZZER	On	Starts buzzer output.	—
	Off	Stops buzzer output.	—

BRAKE ACTUATOR

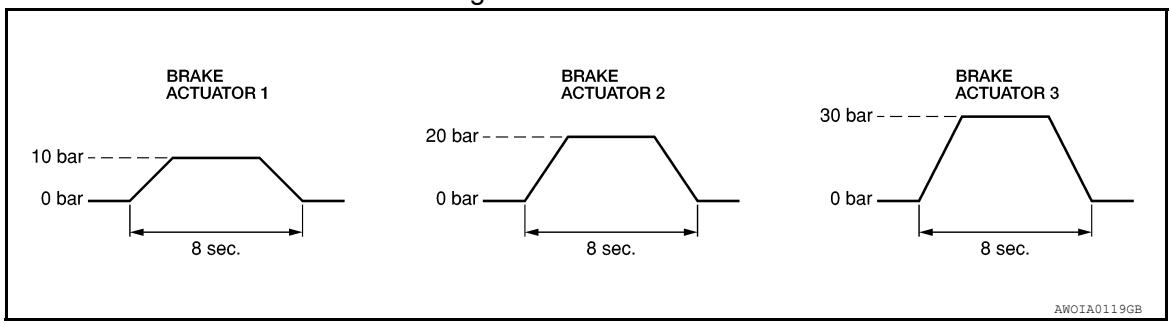
NOTE:

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

Test item	Operation	Description	"PRESS ORDER" value
BRAKE ACTUATOR 1	Off	Stops transmitting the brake fluid pressure control signal to end the test.	—
	On	Starts transmitting the brake fluid pressure control signal to start the test.	10 bar
BRAKE ACTUATOR 2	Off	Stops transmitting the brake fluid pressure control signal to end the test.	—
	On	Starts transmitting the brake fluid pressure control signal to start the test.	20 bar
BRAKE ACTUATOR 3	Off	Stops transmitting the brake fluid pressure control signal to end the test.	—
	On	Starts transmitting the brake fluid pressure control signal to start the test.	30 bar

NOTE:

The test is finished in 10 seconds after starting



ECU IDENTIFICATION

Displays ADAS control unit parts number.

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000011231534

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 (ON/OFF) switch is pressed.	On
		When MAIN (ON/OFF) 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 or clutch pedal is depressed.	Off
		When brake or clutch pedal is not depressed.	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed.	On
		When brake pedal is not depressed.	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting	When set to “long”	Long
		When set to “middle”	Mid
		When set to “short”	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON).	On
		ICC system OFF (MAIN switch indicator OFF).	Off
OWN VHCL	**NOTE:** The item is indicated, but not monitored		Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON).	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF).	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system malfunction ON).	On
		When ICC system is normal (ICC system malfunction OFF).	Off

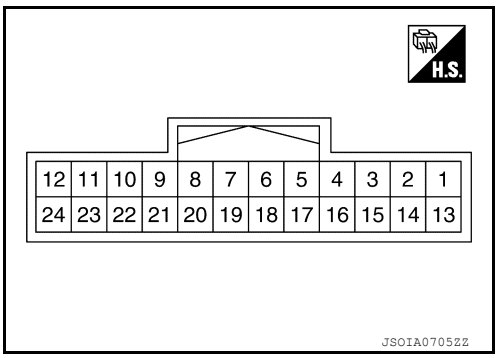
Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set.	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates: • Vehicle-to-vehicle distance control mode. • PFCW system • FEB system	On
		When the buzzer of the following system not operates: • Vehicle-to-vehicle distance control mode • PFCW system • FEB system	Off
THRTL SENSOR	**NOTE:** The item is indicated, but not monitored.		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating.	Off
		Wiper LO operation.	Low
		Wiper HI operation.	High
YAW RATE	**NOTE:** The item is indicated, but not monitored.		0.0
BA WARNING	Engine running	FEB OFF indicator lamp ON. • When FEB system is malfunctioning. • When FEB system is turned to OFF.	On
		FEB OFF indicator lamp OFF. • When FEB system is normal. • When FEB system is turned to ON.	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated.	On
		When ICC brake hold relay is not activated.	Off
D POSITION SW	Engine running	When the selector lever is in “D” position or manual mode.	On
		When the selector lever is in any position other than “D” or manual mode.	Off
NP RANGE SW	Engine running	When the selector lever is in “N”, “P” position.	On
		When the selector lever is in any position other than “N”, “P”.	Off
PKB SW	Ignition switch ON	When the parking brake is applied.	On
		When the parking brake is released.	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of CVT vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal.	Displays the throttle position
GEAR	While driving		Displays the gear position

Monitor item	Condition		Value/Status
CLUTCH SW SIG	Ignition switch ON	When clutch or brake pedal is depressed.	On
		When clutch or brake pedal is not depressed.	Off
NP SW SIG	Ignition switch ON	When the shift lever is in neutral position.	On
		When the shift lever is in any position other than neutral.	Off
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated.	Off
		When vehicle-to-vehicle distance control mode is activated.	ICC
		When conventional (fixed speed) cruise control mode is activated.	ASCD
SET DISP IND	• Drive the vehicle and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch	SET switch indicator ON.	On
		SET switch indicator OFF.	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected.	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected.	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected.	Displays the relative speed.
		When a vehicle ahead is not detected.	0.0
ON ROOT GUIDE	**NOTE:** The item is indicated, but not monitored.		Off
FCW SYSTEM ON	Ignition switch ON	When the PFCW system is ON.	On
		When the PFCW system is OFF.	Off
Shift position	• Engine running • While driving		Displays the shift position
Turn signal	Turn signal lamps OFF.		Off
	Turn signal lamp LH blinking.		LH
	Turn signal lamp RH blinking.		RH
	Turn signal lamp LH and RH blinking.		LH&RH
SIDE G	While driving	Vehicle turning right.	Negative value
		Vehicle turning left.	Positive value
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (FCW)	Engine running		On
FUNC ITEM (BSW)	Engine running		On
FUNC ITEM (NV-ICC)	**NOTE:** The item is indicated, but not monitored		Off
FCW SELECT	Ignition switch ON	“Forward Emergency Braking” set with the integral switch is ON.	On
		“Forward Emergency Braking” set with the integral switch is OFF.	Off
BSW SELECT	Ignition switch ON	“Blind Spot Warning” set with the integral switch is ON.	On
		“Blind Spot Warning” set with the integral switch is OFF.	Off
NAVI ICC SELECT	**NOTE:** The item is indicated, but not monitored.		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the integral switch can be switched normally.	On
		Items set with the integral switch cannot be switched normally.	Off

Monitor item	Condition		Value/Status
BSW WARN LMP	Engine running	When the BSW system is malfunctioning.	On
		When the BSW system is normal.	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON.	On
		When the BSW system is OFF.	Off
FCW SYSTEM ON	Engine running	When the FEB/PFCW system is ON.	On
		When the FEB/PFCW system is OFF.	Off
BATTERY CIRCUIT OFF	**NOTE:** The item is indicated, but not used.		Off
SYSTEM CANCEL MESSAGE	Engine running	System cancel display ON.	On
		System cancel display OFF.	Off
BSW ON INDICATOR	Engine running	BSW system display ON.	On
		BSW system display OFF.	Off
SIDE RADAR BLOCK COND	Engine running	Front bumper or side radar is dirty.	On
		Front bumper and side radar is clean.	Off
BSW IND BRIGHT-NESS	Ignition switch ON	BSW system OFF.	Nothing
		Blind Spot Warning indicator brightness bright.	Bright
		Blind Spot Warning indicator brightness normal.	Normal
		Blind Spot Warning indicator brightness dark.	Dark
SL MAIN SW	Engine running	When speed limiter MAIN switch is pressed.	On
		When speed limiter MAIN switch is not pressed.	Off
FUNC ITEM (FEB)	Engine running		On
FEB SELECT	Ignition switch ON	“Forward Emergency Braking” set with the integral switch is ON.	On
		“Forward Emergency Braking” set with the integral switch is OFF.	Off
FEB SW	Engine running	FEB system ON.	On
		FEB system OFF.	Off
SL TARGET VEHI-CLE SPEED	While driving	When vehicle speed is set.	Displays the set vehicle speed
SL SET LAMP	• Drive the vehicle and activate the speed limiter • Press speed limiter MAIN switch	Speed limiter SET indicator ON.	On
		Speed limiter SET indicator OFF.	Off
SL LIMIT LAMP	• Drive the vehicle and activate the speed limiter • Press speed limiter MAIN switch	Speed limiter system ON.	On
		Speed limiter system OFF.	Off
ASCD CANCEL (LOW SPEED)	Drive the vehicle and activate the ASCD	ASCD cancelled by low vehicle speed.	On
		Other than above.	Off
ASCD CANCEL (SPEED DIFF)	Drive the vehicle and activate the ASCD	ASCD cancelled by difference between set speed and vehicle speed.	On
		Other than above.	Off
KICK DOWN	Drive the vehicle and activate the speed limiter	When accelerator pedal is full depressed.	On
		Other than above.	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	Input	—		0 V
2 (L)		ITS communication-High	—	—		—
3 (LG)		Ignition power supply	Input	Ignition switch ON		Battery voltage
4 (V)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	Battery voltage
					Warning buzzer not operating	0 V
5 (Y)		ITS communication-Low	—	—		—
6 (Y)		3rd CAN Low	Input	—		—
9 (L)		CAN high	—	—		—
10 (P)		CAN low	—	—		—
14 (L)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	Battery voltage
18 (L)		3rd CAN High	Input	—	—	0 V

Fail-safe (ADAS Control Unit)

INFOID:0000000011231535

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

System	Buzzer	Warning lamp/Warning display	Description
Intelligent Cruise Control (ICC)	High-pitched tone	ICC system warning	Cancel
Forward Emergency Braking (FEB)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Predictive Forward Collision Warning (PFCW)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Blind Spot Warning (BSW)	Low-pitched tone	BSW system warning	Cancel
Rear Cross Traffic Alert (BSW)	—	BSW system warning	Cancel

DTC Inspection Priority Chart

INFOID:0000000011231536

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 • U1321: CONFIGURATION
3	• C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF
4	• C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A34: COMMAND ERROR • U0121: VDC CAN CIR 2 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0433: ICC SENSOR CAN CIRC 2 • 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
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000011231537

Systems for fail-safe
- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

DTC	CONSULT display	Fail-safe	Reference
CONSULT		System	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—
U1507	LOST COMM (SIDE RDR R)	D, E	DAS-81
U1508	LOST COMM (SIDE RDR L)	D, E	DAS-82
U1000[NOTE]	CAN COMM CIRCUIT	A, B, C, D, E	DAS-70
U1321	CONFIGURATION	A, B, C, D, E	DAS-73
C1A17	ICC SENSOR MALF	A, B, C	DAS-54
C1B53	SIDE RDR R MALF	D, E	DAS-58
C1B54	SIDE RDR L MALF	D, E	DAS-59
C1A01	POWER SUPPLY CIR	A, B, C, D, E	DAS-44
C1A02	POWER SUPPLY CIR 2	A, B, C, D, E	DAS-44

Systems for fail-safe
- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

DTC	CONSULT display	Fail-safe	Reference
CONSULT		System	
C1A13	STOP LAMP RLY FIX	A, B, C	DAS-47
C1A14	ECM CIRCUIT	A, B, C	DAS-54
C1A34	COMMAND ERROR	A, B, C	DAS-57
U0121	VDC CAN CIR 2	A, B, C, D, E	DAS-60
U0235	ICC SENSOR CAN CIRC 1	A, C, D, E	DAS-62
U0401	ECM CAN CIR 1	A, B, C, D, E	DAS-63
U0402	TCM CAN CIR 1	A, B, C, D, E	DAS-65
U0415	VDC CAN CIR 1	A, B, C, D, E	DAS-67
U0433	ICC SENSOR CAN CIRC 2	A, B, C	DAS-69
U1503	SIDE RDR L CAN CIR 2	D, E	DAS-73
U1504	SIDE RDR L CAN CIR 1	D, E	DAS-75
U1505	SIDE RDR R CAN CIR 2	D, E	DAS-77
U1506	SIDE RDR R CAN CIR 1	D, E	DAS-79
C1A03	VHCL SPEED SE CIRC	D, E	DAS-45
C1A00	CONTROL UNIT	A, B, C, D, E	DAS-43

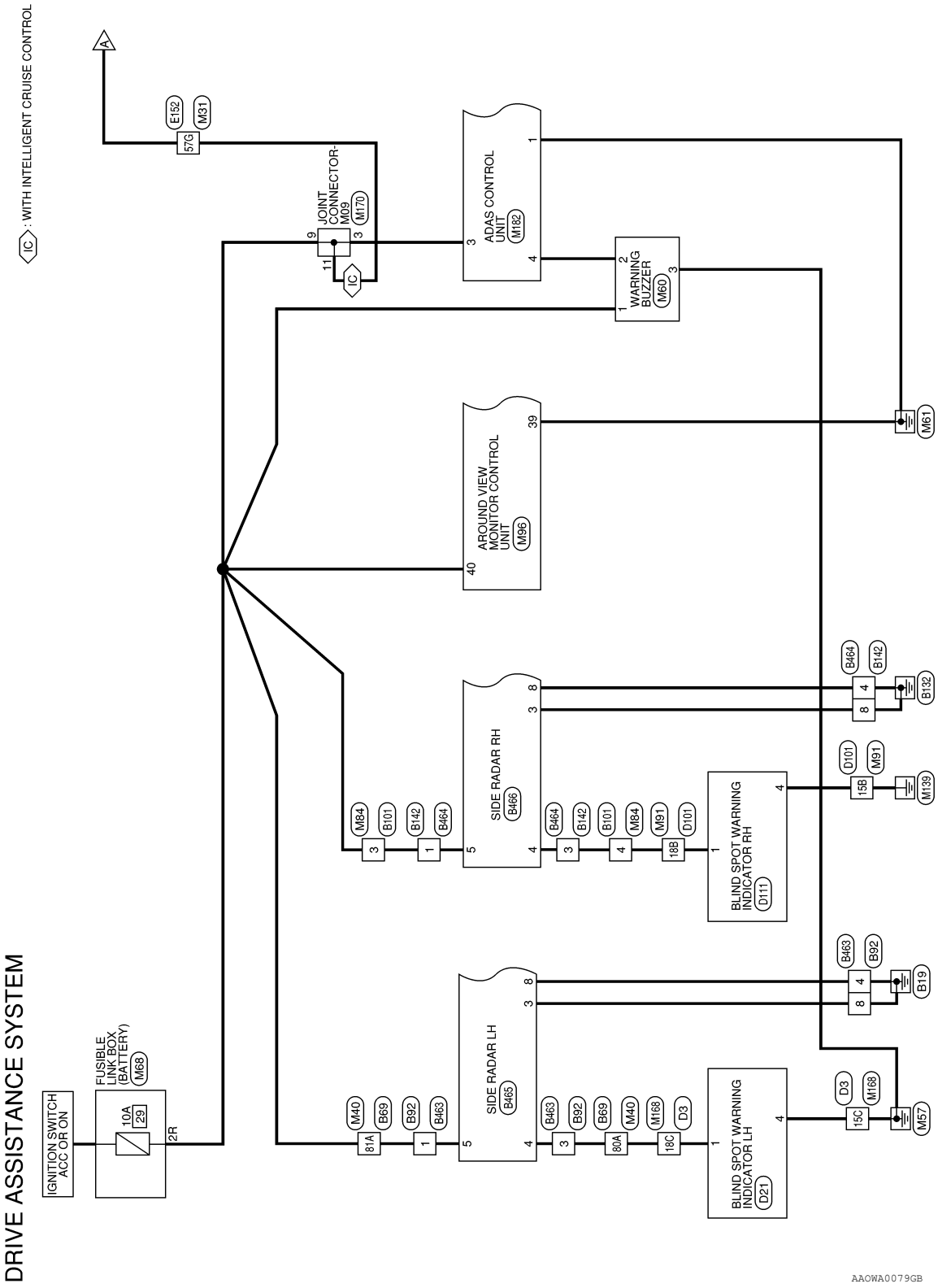
NOTE:
With the detection of “U1000” some systems do not perform the fail-safe operation.
A system controlling based on a signal received from the control unit performs fail-safe operation when the communication with the ADAS control unit becomes inoperable.

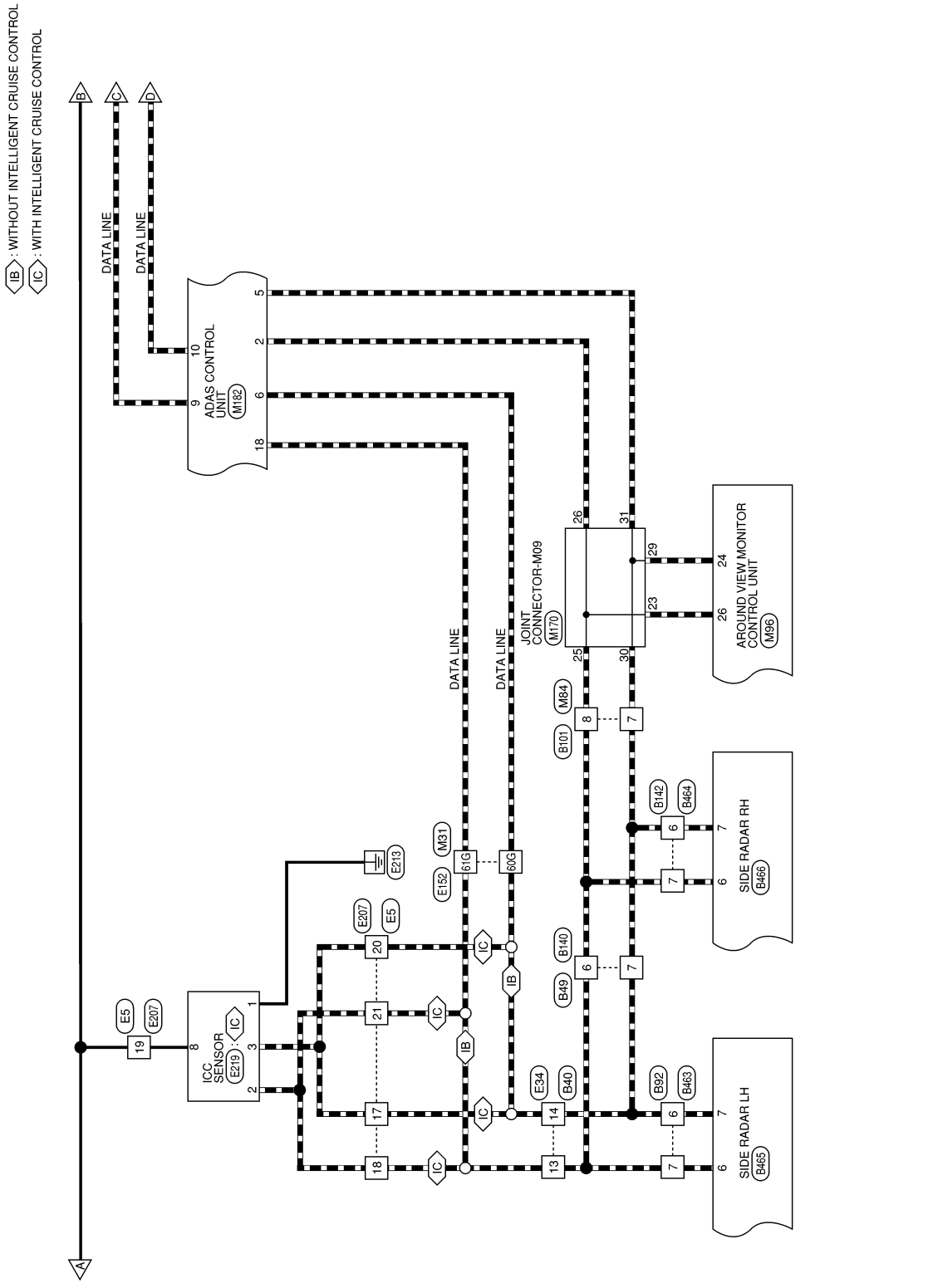
WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:0000000011231538





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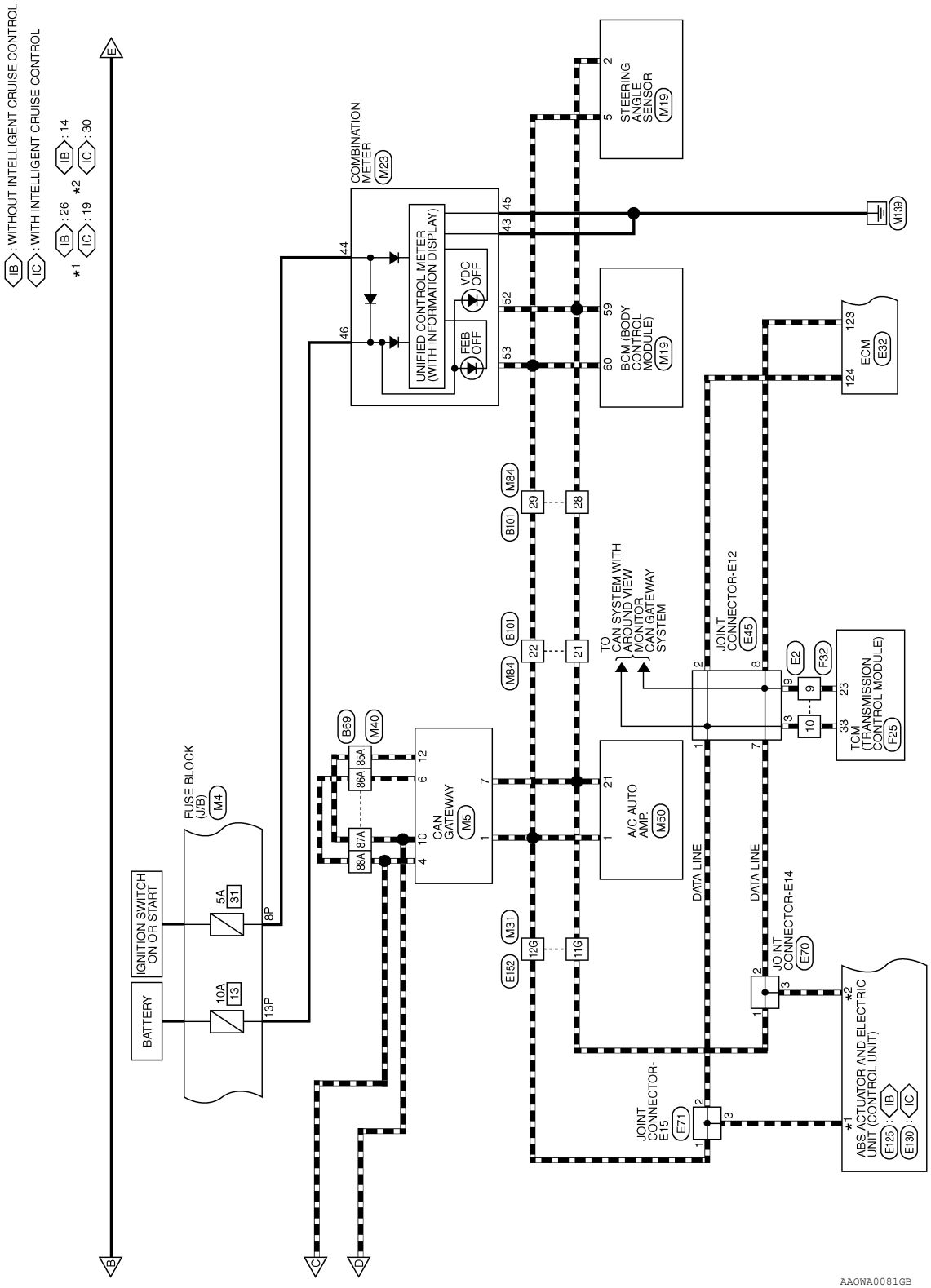
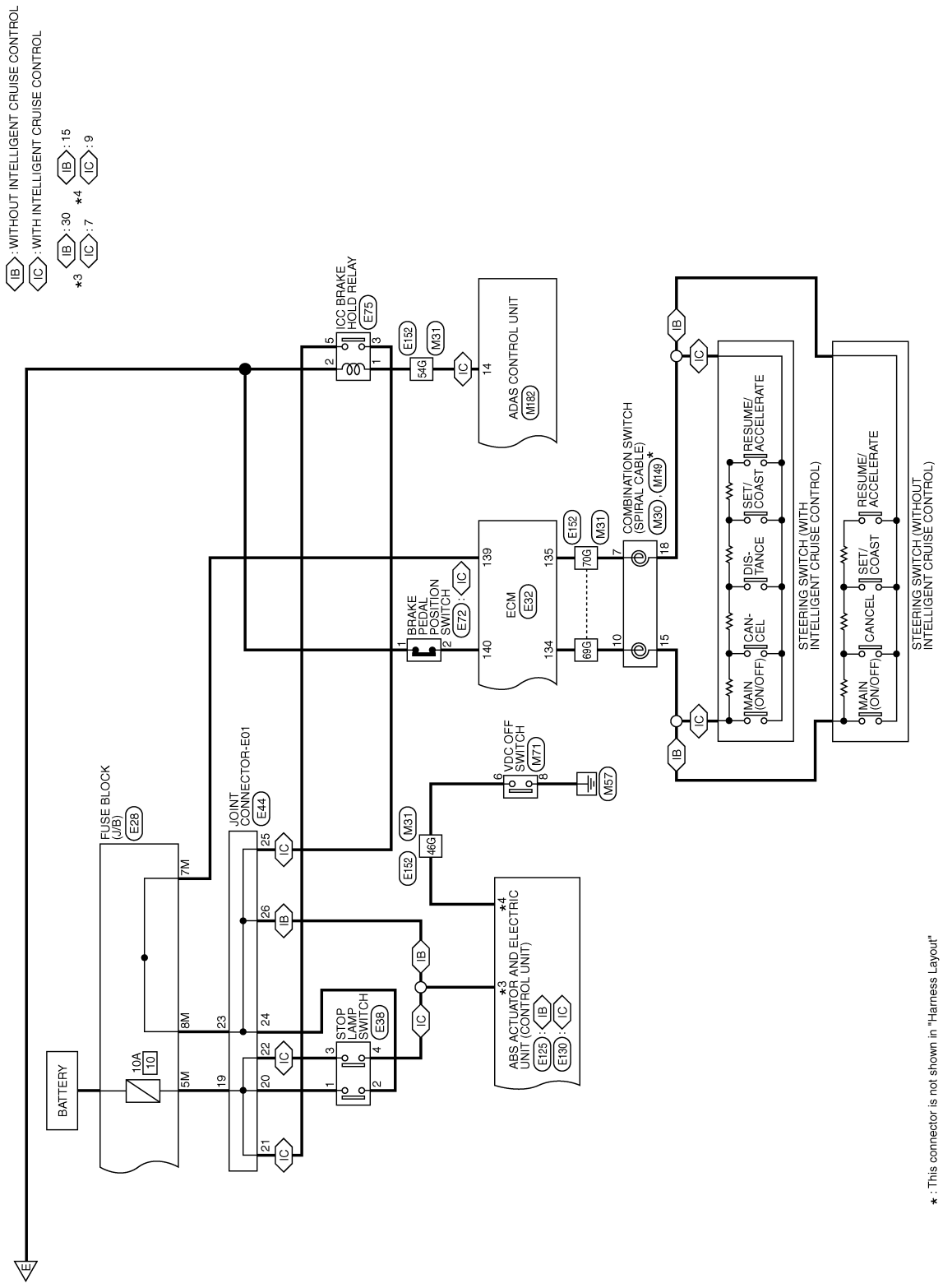

IB : WITHOUT INTELLIGENT CRUISE CONTROL
IC : WITH INTELLIGENT CRUISE CONTROL
IB : 26
IC : 19
*1
IB : 14
*2
IC : 30
COMBINATION METER M23
UNIFIED CONTROL METER (WITH INFORMATION DISPLAY)
VDC OFF
FEB OFF
STEERING ANGLE SENSOR M19
BCM (BODY CONTROL MODULE) M19
ECM E32
M139
TO CAN SYSTEM WITH AROUND VIEW MONITOR CAN GATEWAY SYSTEM
JOINT CONNECTOR-E12 E45
TCM (TRANSMISSION CONTROL MODULE) F25
E2
F32
A/C AUTO AMP M50
CAN GATEWAY M5
B69
M40
FUSE BLOCK (J/B) M4
IGNITION SWITCH ON OR START
BATTERY
5A 31
10A 13
8P
13P
M84
B101
M31
E152
12G
11G
DATA LINE
JOINT CONNECTOR-E14 E70
JOINT CONNECTOR-E15 E71
*1 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E125 E130
*2
IB
IC
E
B
C
D
AAOWA0081GB


IB : WITHOUT INTELLIGENT CRUISE CONTROL
IC : WITH INTELLIGENT CRUISE CONTROL
IB : 30 *3
IC : 7
IB : 15 *4
IC : 9
BATTERY
10A 10
FUSE BLOCK (J/B) E28
JOINT CONNECTOR-E01 E44
STOP LAMP SWITCH E38
ICC BRAKE HOLD RELAY E75
ADAS CONTROL UNIT M182
BRAKE PEDAL POSITION SWITCH E72
ECM E32
COMBINATION SWITCH (SPIRAL CABLE) M149 M30
VDC OFF SWITCH M71
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) *3 *4 E125 E130
STEERING SWITCH (WITH INTELLIGENT CRUISE CONTROL)
STEERING SWITCH (WITHOUT INTELLIGENT CRUISE CONTROL)
MAIN (ON/OFF)
CAN-CEL
DIS-TANCE
SET/ COAST
RESUME/ ACCELERATE
CANCEL
E152 M31 54G 46G 70G 69G
M57
* : This connector is not shown in "Harness Layout"
AAOWA0082GB

DRIVE ASSISTANCE SYSTEM CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

7P	6P	5P	4P		3P	2P	1P
16P	15P	14P	13P	12P	11P	10P	9P	8P

Terminal No.	Color of Wire	Signal Name
8P	BG	–
13P	W	–

Connector No.	M5
Connector Name	CAN GATEWAY
Connector Color	WHITE

H.S.

1	2	3	4	5	6
7	8	9	10	11	12

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
4	L	CAN2-H
6	L	CAN3-H
7	P	CAN-L
10	P	CAN2-L
12	P	CAN3-L

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H

Connector No.	M23
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56

Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

10	9	8	7
14	13	12	11

Terminal No.	Color of Wire	Signal Name
7	G	–
10	W	–

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Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
21	P	CAN-L

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

1A	2A	3A	4A	5A
6A	7A	8A	9A	10A

11A	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A
	22A	23A	24A	25A	26A	27A	28A	29A	30A	

31A	32A	33A	34A	35A	36A	37A	38A	39A	40A	41A
	42A	43A	44A	45A	46A	47A	48A	49A	50A	

51A	52A	53A	54A	55A	56A	57A	58A	59A	60A	61A
	62A	63A	64A	65A	66A	67A	68A	69A	70A	

71A	72A	73A	74A	75A	76A	77A	78A	79A	80A	81A
	82A	83A	84A	85A	86A	87A	88A	89A	90A	

91A	92A	93A	94A	95A
96A	97A	98A	99A	100A

Terminal No.	Color of Wire	Signal Name
80A	W	–
81A	LG	–
85A	P	–
86A	L	–
87A	P	–
88A	L	–

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1G	2G	3G	4G	5G
6G	7G	8G	9G	10G

11G	12G	13G	14G	15G	16G	17G	18G	19G	20G	21G
	22G	23G	24G	25G	26G	27G	28G	29G	30G	

31G	32G	33G	34G	35G	36G	37G	38G	39G	40G	41G
	42G	43G	44G	45G	46G	47G	48G	49G	50G	

51G	52G	53G	54G	55G	56G	57G	58G	59G	60G	61G
	62G	63G	64G	65G	66G	67G	68G	69G	70G	

71G	72G	73G	74G	75G	76G	77G	78G	79G	80G	81G
	82G	83G	84G	85G	86G	87G	88G	89G	90G	

91G	92G	93G	94G	95G
96G	97G	98G	99G	100G

Terminal No.	Color of Wire	Signal Name
11G	P	–
12G	L	–
46G	P	–
54G	L	–
57G	LG	–
60G	Y	–
61G	L	–
69G	W	–
70G	G	–

AAOIA0217GB

Connector No.	M54
Connector Name	STEERING ANGLE SENSOR
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	P	–
5	L	–

Connector No.	M60
Connector Name	WARNING BUZZER
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	V	–
3	B	–

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
2R	LG	–

Connector No.	M71
Connector Name	VDC OFF SWITCH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
6	P	–
8	B	–

Connector No.	M84
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	LG	–
4	G	–
7	Y	–
8	L	–
21	P	–
22	L	–
28	P	–
29	L	–

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
15B	B	–
18B	G	–

AAOIA0285GB

Connector No.	M96
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Color	WHITE

H.S.

2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39

Terminal No.	Color of Wire	Signal Name
24	P	V-CAN L
26	L	V-CAN H
39	B	GND
40	LG	IGN

Connector No.	M149
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

22	21	20	19	18	17	16	15

Terminal No.	Color of Wire	Signal Name
15	R	–
18	B	–

Terminal No.	Color of Wire	Signal Name
3	LG	–
9	LG	–
11	LG	–
23	L	–
25	L	–
26	L	–
29	Y	–
30	Y	–
31	Y	–

Connector No.	M170
Connector Name	JOINT CONNECTOR-M09
Connector Color	WHITE

H.S.

11	10	9	8	7	6	5	4	3	2	1
22	21	20	19	18	17	16	15	14	13	12
33	32	31	30	29	28	27	26	25	24	23

Connector No.	M168
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	13C	14C	15C
16C	17C	18C	19C	20C	21C	22C	23C	24C	25C	26C	36C	37C	38C	39C	40C	41C	42C	43C	44C	45C	46C
27C	28C	29C	30C	31C	32C	33C	34C	35C			47C	48C	49C	50C	51C	52C	53C	54C	55C		

Terminal No.	Color of Wire	Signal Name
15C	B	–
18C	W	–

AAOIA0286GB

Connector No.	M182
Connector Name	ADAS CONTROL UNIT
Connector Color	WHITE

H.S.

12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
1	B	GND
2	L	ITS CAN HIGH
3	LG	IGN
4	V	BUZZER OUTPUT
5	Y	ITS CAN LOW
6	Y	3RD CAN LOW
7	–	–
8	–	–
9	L	CAN-H
10	P	CAN-L

Terminal No.	Color of Wire	Signal Name
11	–	–
12	–	–
13	–	–
14	L	STOP LAMP RELAY DRIVE
15	–	–
16	–	–
17	–	–
18	L	3RD CAN HIGH
19	–	–
20	–	–
21	–	–
22	–	–
23	–	–
24	–	–

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Terminal No.	Color of Wire	Signal Name
9	P	–
10	L	–

AAOIA0287GB

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name
17	Y	–
18	L	–
19	G	–
20	Y	–
21	L	–

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

4M	3M		2M	1M
10M	9M	8M	7M	6M	5M

Terminal No.	Color of Wire	Signal Name
5M	W	–
7M	BG	–
8M	P	–

Connector No.	E32
Connector Name	ECM
Connector Color	BLACK

H.S.

121	125	129	133	137	141	145	149
122	126	130	134	138	142	146	150
123	127	131	135	139	143	147	151
124	128	132	136	140	144	148	152

Terminal No.	Color of Wire	Signal Name
123	P	CAN-L
124	L	CAN-H
134	G	ASCD STEERING SWITCH
135	R	SENSOR GROUND (ASCD STEERING SWITCH)
139	P	STOP LAMP SWITCH
140	LG	BRAKE PEDAL POSITION SWITCH

Connector No.	E34
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1
16	15	14	13	12	11	10	9

Terminal No.	Color of Wire	Signal Name
13	L	–
14	Y	–

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE

H.S.

3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	W	–
2	P	–
3	W	–
4	G	–

AAOIA0221GB

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
19	W	–
20	W	–
21	W	–
22	W	–
23	P	–
24	P	–
25	P	–
26	P	–

Connector No.	E45
Connector Name	JOINT CONNECTOR-E12
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
3	L	–
7	P	–
8	P	–
9	P	–

Connector No.	E70
Connector Name	JOINT CONNECTOR-E14
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–
3	P	–

Connector No.	E71
Connector Name	JOINT CONNECTOR-E15
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
3	L	–

Connector No.	E72
Connector Name	BRAKE PEDAL POSITION SWITCH
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
2	LG	–

Connector No.	E75
Connector Name	ICC BRAKE HOLD RELAY
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	R	–
3	P	–
5	W	–

AAOIA0288GB

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITHOUT INTELLIGENT CRUISE CONTROL)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
14	P	CAN-L
15	R	VDC OFF SW
26	L	CAN-H
30	P	STOP LAMP SW

Connector No.	E130
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITH INTELLIGENT CRUISE CONTROL)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
7	G	STOP LAMP SW
9	R	VDC OFF SW
19	L	CAN-H
30	P	CAN-L

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
11G	P	–
12G	L	–
46G	R	–
54G	L	–
57G	R	–
60G	Y	–
61G	L	–
69G	G	–
70G	R	–

Connector No.	E207
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
17	Y	–
18	L	–
19	L/W	–
20	Y	–
21	L	–

AAOIA0289GB

Connector No.	E219
Connector Name	ICC SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	L	–
3	L/R	–
8	L/W	–

Connector No.	B40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
13	L	–
14	Y	–

Connector No.	F25
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
23	P	CAN-L
33	L	CAN-H

Connector No.	B49
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	L	–
7	Y	–

Connector No.	F32
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
9	P	–
10	L	–

AAOIA0290GB

Connector No.	B92
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
3	W	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B140
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	L	–
7	Y	–

Terminal No.	Color of Wire	Signal Name
80A	W	–
81A	R	–
85A	P	–
86A	L	–
87A	P	–
88A	L	–

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
8	L	–
21	P	–
22	L	–
28	P	–
29	L	–

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3	R	–
4	G	–
7	Y	–

AAOIA0293GB

Connector No.	B142
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
3	G	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B463
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
3	G	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B464
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
3	G	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B465
Connector Name	SIDE RADAR LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	B	–
4	G	–
5	R	–
6	L	–
7	Y	–
8	B	–

Connector No.	B466
Connector Name	SIDE RADAR RH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	B	–
4	G	–
5	R	–
6	L	–
7	Y	–
8	B	–

AAOIA0226GB

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

15C	14C	13C	12C	11C	10C	9C	8C	7C	6C	5C	4C	3C	2C	1C
46	45	44	43	42	41	40	39	38	37	36	26	25	24	23	22	21	20	19	18	17	16
55	54	53	52	51	50	49	48	47			35	34	33	32	31	30	29	28	27		

Terminal No.	Color of Wire	Signal Name
15C	B	–
18C	W/L	–

Connector No.	D21
Connector Name	BLIND SPOT WARNING INDICATOR LH
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	W/L	–
4	B	–

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

15B	14B	13B	12B	11B	10B	9B	8B	7B	6B	5B	4B	3B	2B	1B
46	45	44	43	42	41	40	39	38	37	36	26	25	24	23	22	21	20	19	18	17	16
55	54	53	52	51	50	49	48	47			35	34	33	32	31	30	29	28	27		

Terminal No.	Color of Wire	Signal Name
15B	B	–
18B	R	–

Connector No.	D111
Connector Name	BLIND SPOT WARNING INDICATOR RH
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	R	–
4	B	–

AAOIA0227GB

BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING ADAS CONTROL UNIT

Description

INFOID:0000000011231539

Always perform the ADAS control unit configuration after replacing the ADAS control unit.

Work Procedure

INFOID:0000000011231540

1. ADAS CONTROL UNIT CONFIGURATION

CONSULT
Perform the ADAS control unit configuration. Refer to DAS-41, "Description".

>> GO TO 2.

2. PERFORM SELF-DIAGNOSIS

CONSULT
1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “ICC/ADAS”.
3. Check DTC.

Is DTC detected?

YES >> Perform the trouble diagnosis for the detected DTC. Refer to DAS-22, "DTC Index".
NO >> Inspection End.

CONFIGURATION (ADAS CONTROL UNIT)

Description

INFOID:0000000011880259

- Since vehicle specifications are not included in the ADAS control unit after replacement, it is required to write vehicle specifications using CONSULT.
- Configuration has three functions as follows:

Function		Description
Read/Write Configuration	Before ECU	Allows the reading of vehicle specification written in ADAS control unit to store the specification in CONSULT.
	After ECU replacement	Allows the writing of the vehicle information stored in CONSULT into the ADAS control unit.
Manual Configuration		Allows the writing of the vehicle specification into the ADAS control unit by hand.

Work Procedure

INFOID:0000000011231542

CAUTION:
- **Use “Manual Configuration” only when “TYPE ID” of ADAS control unit cannot be read.**
- **If an error occurs during configuration, start over from the beginning.**

1.CHECKING TYPE ID (1)

Use FAST (service parts catalogue) to search ADAS control unit of the applicable vehicle and find “Type ID”.

Is “Type ID” displayed?

YES >> Print out “Type ID” and GO TO 2.
NO >> “Configuration” is not required for ADAS control unit. Replace in the usual manner. Refer to DAS-85, "Removal and Installation".

2.CHECKING TYPE ID (2)

CONSULT Configuration
1. Select “Before Replace ECU” of “Read/Write Configuration”.
2. Check that “Type ID” is displayed on the CONSULT screen.

Is “Type ID” displayed?

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

3.VERIFYING TYPE ID (1)

CONSULT Configuration
Compare a “Type ID” displayed on the CONSULT screen with the one searched by using FAST (service parts catalogue) to check that these “Type ID” agree with each other.

NOTE:
For the “Type ID” searched by using FAST (service parts catalog), use the last five digits of the “Type ID”.

>> GO TO 4.

4.SAVING TYPE ID

CONSULT Configuration
Save “Type ID” on CONSULT.

>> GO TO 5.

5.REPLACING ADAS CONTROL UNIT (1)

Replace ADAS control unit. Refer to DAS-85, "Removal and Installation".

>> GO TO 6.

6.WRITING (AUTOMATIC WRITING)

CONSULT Configuration
1. Select “After Replace ECU” of “Re/programming, Configuration” or that of “Read / Write Configuration”.
2. Select the “Type ID” agreeing with the one stored on CONSULT and the one searched by using FAST (service parts catalogue) to write the “Type ID” into the ADAS control unit.
   NOTE:
   For the “Type ID” searched by using FAST (service parts catalog), use the last five digits of the “Type ID”.

>> GO TO 9.

7. REPLACING ADAS CONTROL UNIT (2)

Replace ADAS control unit. Refer to DAS-85, "Removal and Installation".

>> GO TO 8.

8. WRITING (MANUAL WRITING)

CONSULT Configuration
1. Select “Manual Configuration”.
2. Select the “Type ID” searched by using FAST (service parts catalogue) to write the “Type ID” into the ADAS control unit.
   NOTE:
   For the “Type ID” searched by using FAST (service parts catalog), use the last five digits of the “Type ID”.

>> GO TO 9.

9. VERIFYING TYPE ID (2)

Compare “Type ID” written into the ADAS control unit with the one searched by using FAST (service parts catalogue) to check that these “Type ID” agree with each other.
NOTE:
For the “Type ID” searched by using FAST (service parts catalog), use the last five digits of the “Type ID”.

>> GO TO 10.

10. RESTART ADAS BY IGN OFF/IGN ON

1. Turn the ignition switch OFF.
2. Turn the ignition switch ON.

>> GO TO 11.

11. PERFORMING SUPPLEMENTARY WORK

1. Perform “Self Diagnostic Result” of all systems.
2. Erase “Self Diagnostic Result”.

>> End of work.

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Description

INFOID:0000000011231545

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A00	CONTROL UNIT (Control unit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	-
		Threshold	ADAS control unit internal malfunction
		Diagnosis delay time	-

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

PERFORM SELF DIAGNOSTIC RESULT

1. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Select “All DTC Reading” mode.
3. Check DTC.
4. Check if “C1A00” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1A00” detected as the current malfunction?

YES >> Refer to DAS-43, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231546

1. CHECK SELF DIAGNOSTIC RESULT

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-22, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Description

INFOID:0000000011231547

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
C1A01	POWER SUPPLY CIR (Power supply circuit)	1	Diagnosis condition	When Ignition switch is ON.
			Signal (terminal)	-
			Threshold	Less than 7.9 V
			Diagnosis delay time	5 seconds or more
C1A02	POWER SUPPLY CIR 2 (Power supply circuit 2)	2	Diagnosis condition	When Ignition switch is ON.
			Signal (terminal)	-
			Threshold	More than 19.3 V
			Diagnosis delay time	5 seconds or more

POSSIBLE CAUSE

- Connector, harness, fuse
- ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is “C1A01” or “C1A02” detected as the current malfunction?

YES >> Refer to DAS-44, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231548

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to DAS-84, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".
NO >> Repair or replace the malfunctioning parts.

C1A03 VEHICLE SPEED SENSOR

DTC Description

INFOID:0000000011231549

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A03	VHCL SPEED SE CIRC (Vehicle speed sensor circuit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If the vehicle speed is greater than 19 mph (30km/h) 0.3s and vehicle speed drops to less than 1.8 mph (3km/h) within 200ms and vehicle speed is less than 3km/h continues for 3s.
		Diagnosis delay time	–

POSSIBLE CAUSE

- Wheel speed sensor
- ABS actuator and electric unit (control unit)
- ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “C1A03” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Drive the vehicle at 30 km/h (19 MPH) or more.
   CAUTION:
   Always drive safely.
4. Stop the vehicle.
5. Perform “All DTC Reading” mode.
6. Check if “C1A03” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1A03” detected as the current malfunction?

YES >> Refer to DAS-45, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231550

1.CHECK DTC PRIORITY

If DTC “C1A03” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".

NO >> GO TO 2.

2.CHECK DATA MONITOR

1. Start the engine.
2. Drive the vehicle at 19 mph (30 km/h) or more.
3. Check that the value of “VHCL SPD SE” in “Data Monitor” of “ICC/ADAS” is almost the same as the actual vehicle speed.

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".
NO >> GO TO 3.

3.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF DIAGNOSTIC RESULT

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-50, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

C1A13 STOP LAMP RELAY

DTC Description

INFOID:0000000011231560

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A13	STOP LAMP RLY FIX (Stop lamp relay fix)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	• Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ICC sensor 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 (25 MPH) or more - No stop lamp drive signal output from ADAS control unit - No brake operation
		Diagnosis delay time	–

POSSIBLE CAUSE

- Stop lamp switch circuit
- Brake pedal position switch circuit
- ICC brake hold relay circuit
- Stop lamp switch
- Brake pedal position switch
- ICC brake hold relay
- Incorrect stop lamp switch installation
- Incorrect brake pedal position switch installation
- ECM
- ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “C1A13” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE (1)

CONSULT

1. Start the engine.
2. Perform the “Active Test” item “STOP LAMP”.
3. Perform “All DTC Reading” mode.
4. Check if “C1A13” is detected as the current malfunction in the “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1A13” detected as the current malfunction?

YES >> Refer to DAS-48, "Diagnosis Procedure".
NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE (2)

CONSULT
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” mode.
3. Check if “C1A13” is detected as the current malfunction in the “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1A13” detected as the current malfunction?

YES >> Refer to DAS-48, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231561

Regarding Wiring Diagram information, refer to DAS-24, "Wiring Diagram".

1.CHECK DTC PRIORITY

If DTC “C1A13” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH

CONSULT
1. Select “Data Monitor” mode of “ICC/ADAS”.
2. Select “STOP LAMP SW”.
3. Check that the function operates normally according to the following conditions:

Monitor item	Condition	Status
STOP LAMP SW	When brake pedal is applied	ON
	When brake pedal is released	OFF

Is the inspection result normal?

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

3.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.
2. Check stop lamp switch for correct installation. Refer to BR-7, "Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Adjust stop lamp switch installation. Refer to BR-15, "Adjustment".

4.CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to CCS-93, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace stop lamp switch. Refer to BR-20, "Exploded View".

5.CHECK STOP LAMP FOR ILLUMINATION

1. Remove ICC brake hold relay.

2. Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON.

Is the inspection result normal?

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

6. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

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

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E38	2	E32	139	Yes

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	2		No

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

Is the inspection result normal?

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

8. CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.
2. Check ICC brake hold relay. Refer to DAS-53, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.
NO >> Replace ICC brake hold relay.

9. PERFORM SELF-DIAGNOSIS OF ECM

CONSULT
1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform “All DTC Reading”.
4. Check if any DTC is detected in “Self Diagnostic Result” of “ENGINE”. Refer to EC-107, "DTC Index".

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-85, "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		
E75	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	
E75	1	M182	14	Yes

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

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E75	1		No

Is the inspection result normal?

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

12. CHECK ADAS CONTROL UNIT STANDARD VOLTAGE

CONSULT
1. Connect all connectors again if the connectors are disconnected.
2. Select “STOP LAMP” in “Active Test” mode of “ICC/ADAS”.
3. Perform “Active Test and 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			
M182	14		OFF	Battery voltage
			ON	0 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> Replace ADAS control unit. Refer to DAS-85, "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			
E75	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 ECM

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

ICC brake hold relay		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E75	3	E32	139	Yes

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

ICC brake hold relay		Ground	Continuity
Connector	Terminal		
E75	3		No

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-53, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 16.
NO >> Replace ICC brake hold relay.

16. CHECK STOP LAMP SWITCH

CONSULT
1. Select “Data Monitor” mode of “ICC/ADAS”.
2. Select “STOP LAMP SW”.
3. Check that the function operates normally according to the following conditions:

Monitor item	Condition	Status
STOP LAMP SW	When brake pedal is applied	ON
	When brake pedal is released	OFF

Is the inspection result normal?

YES >> GO TO 21.
NO >> GO TO 17.

17. CHECK STOP LAMP SWITCH INSTALLATION

Check stop lamp switch for correct installation. Refer to BR-7, "Inspection".

Is the inspection result normal?

YES >> GO TO 18.
NO >> Adjust stop lamp switch installation. Refer to BR-15, "Adjustment".

18.CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to CCS-93, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> GO TO 19.
NO >> Replace stop lamp switch. Refer to BR-20, "Exploded View".

19.CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

Terminal			Voltage (Approx.)
(+)		(–)	
Stop lamp switch		Ground	
Connector	Terminal		
E38	1		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 and ABS actuator and electric unit (control unit).
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	
E38	4	E130	7	Yes

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

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E38	4		No

Is the inspection result normal?

YES >> GO TO 21.
NO >> Repair the harnesses or connectors.

21.PERFORM SELF-DIAGNOSIS OF ECM

CONSULT
1. Connect all connectors again if the connectors are disconnected.
2. Turn ignition switch ON.
3. Perform “All DTC Reading”.
4. Check if any DTC is detected in “Self Diagnostic Result” of “ENGINE”. Refer to EC-107, "DTC Index".

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)

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

Is any DTC detected?

YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
NO >> Replace ADAS control unit. Refer to DAS-85, "Removal and Installation".

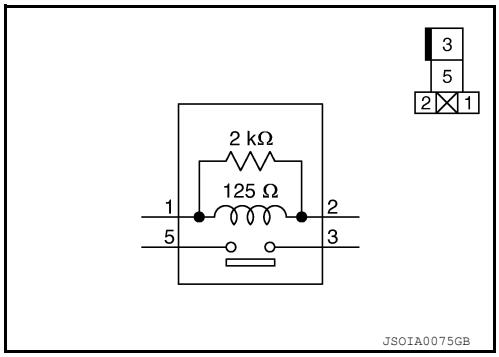
Component Inspection

INFOID:0000000011231562

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	Yes
		When the battery voltage is not applied	No



Is the inspection result normal?

YES >> Inspection End.
NO >> Replace ICC brake hold relay.

C1A14 ECM

DTC Description

INFOID:0000000011231563

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A14	ECM CIRCUIT (ECM circuit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If ECM is malfunctioning
		Diagnosis delay time	–

POSSIBLE CAUSE

- ECM
- ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “C1A14” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Operate the ICC system and drive.
   CAUTION:
   Always drive safely.
3. Stop the vehicle.
4. Perform “All DTC Reading” mode.
5. Check if “C1A14” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1A14” detected as the current malfunction?

YES >> Refer to DAS-54, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231564

1.CHECK DTC PRIORITY

If DTC “C1A14” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK SELF-DIAGNOSIS RESULTS

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

Is “U1000” detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-70, "DTC Description".
NO >> GO TO 3.

3. PERFORM SELF-DIAGNOSIS OF ECM

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to EC-107, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

C1A17 ICC SENSOR

DTC Description

INFOID:0000000011583507

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A17	ICC SENSOR MALF (-)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If ICC sensor is malfunctioning
		Diagnosis delay time	–

NOTE:
If DTC “C1A17” is detected along with DTC “U1000”, first diagnose the DTC “U1000”. Refer to DAS-70, "DTC Description".

POSSIBLE CAUSE
ICC sensor

FAIL-SAFE
The following systems are canceled:
- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

Diagnosis Procedure

INFOID:0000000011583508

1.CHECK ADAS CONTROL UNIT SELF DIAGNOSITIC RESULT

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

Is “U1000”detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK ICC SENSOR SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “LASER/RADAR”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to CCS-124, "DTC Logic".
NO >> Replace ADAS control unit. Refer to DAS-85, "Removal and Installation".

C1A34 COMMAND ERROR

DTC Description

INFOID:0000000011231576

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A34	COMMAND ERROR (Command error)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If an error occurs in the command signal that ADAS control unit transmits to ECM via CAN communication
		Diagnosis delay time	–

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “C1A34” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Operate the ICC system and drive.
   CAUTION:
   Always drive safely.
3. Stop the vehicle.
4. Perform “All DTC Reading” mode.
5. Check if “C1A34” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1A34” detected as the current malfunction?

YES >> Refer to DAS-57, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231577

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-70, "DTC Description".
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

C1B53 SIDE RADAR RIGHT MALFUNCTION

DTC Description

INFOID:0000000011231590

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1B53	SIDE RDR R MALF (Side radar right malfunction)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit detects that side radar RH has a malfunction
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Perform “All DTC Reading” mode.
3. Check if “C1B53” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1B53” detected as the current malfunction?

YES >> Refer to DAS-58, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231591

1.CHECK SELF DIAGNOSTIC RESULT

Check if “U1000” is detected other than “C1B53” in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1000” detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode 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-129, "DTC Index" (Side radar LH), DAS-131, "DTC Index" (Side radar RH).
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

C1B54 SIDE RADAR LEFT MALFUNCTION

DTC Description

INFOID:0000000011231592

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1B54	SIDE RDR L MALF (Side radar left malfunction)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit detects that side radar LH has a malfunction
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Perform “All DTC Reading” mode.
3. Check if “C1B54” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “C1B54” detected as the current malfunction?

YES >> Refer to DAS-58, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231593

1.CHECK SELF DIAGNOSTIC RESULT

Check if “U1000” is detected other than “C1B54” in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1000” detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK SELF DIAGNOSTIC RESULTS

Check if any DTC is detected in “Self Diagnostic Result” mode 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-129, "DTC Index" (Side radar LH), DAS-131, "DTC Index" (Side radar RH).
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U0121 VDC CAN 2

DTC Description

INFOID:0000000011231614

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0121	VDC CAN CIR2 (VDC CAN circuit2)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication
		Diagnosis delay time	–

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled:
- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0121” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT
1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U0121” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0121” detected as the current malfunction?

YES >> Refer to DAS-60, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231615

1.CHECK DTC PRIORITY

If DTC “U0121” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
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” mode of “ABS”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-50, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U0235 ICC SENSOR CAN 1

DTC Description

INFOID:0000000011231618

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0235	ICC SENSOR CAN CIR1 (ICC sensor CAN circuit1)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit detects an error signal that is received from ICC sensor via ITS communication
		Diagnosis delay time	–

POSSIBLE CAUSE

ICC sensor

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0235” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U0235” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0235” detected as the current malfunction?

YES >> Refer to DAS-62, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231619

1.CHECK DTC PRIORITY

If DTC “U0235” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK ICC SENSOR SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “LASER/RADAR”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to CCS-51, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U0401 ECM CAN 1

DTC Description

INFOID:0000000011231620

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0401	ECM CAN CIR1 (ECM CAN circuit1)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If ADAS control unit detects an error signal that is received from ECM via CAN communication
		Diagnosis delay time	–

POSSIBLE CAUSE

ECM

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0401” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U0401” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0401” detected as the current malfunction?

YES >> Refer to DAS-63, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231621

1.CHECK DTC PRIORITY

If DTC “U0401” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK ECM SELF DIAGNOSTIC RESULT

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to EC-107, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U0402 TCM CAN 1

DTC Description

INFOID:0000000011231622

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0402	TCM CAN CIRC1 (TCM CAN circuit1)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If ADAS control unit detects an error signal that is received from TCM via CAN communication
		Diagnosis delay time	–

POSSIBLE CAUSE

TCM

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0402” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U0402” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0402” detected as the current malfunction?

YES >> Refer to DAS-65, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231623

1.CHECK DTC PRIORITY

If DTC “U0402” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK TCM SELF DIAGNOSTIC RESULT

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to TM-59, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U0415 VDC CAN 1

DTC Description

INFOID:0000000011231624

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0415	VDC CAN CIR1 (VDC CAN circuit1)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication
		Diagnosis delay time	–

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled:
- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0415” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT
1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U0415” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0415” detected as the current malfunction?

YES >> Refer to DAS-67, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231625

1.CHECK DTC PRIORITY

If DTC “U0415” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF DIAGNOSTIC RESULT

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-50, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U0433 DIST SEN CAN CIRC 2

DTC Description

INFOID:0000000011607915

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0433	ICC SENSOR CAN CIRC 2 (ICC SENSOR CAN circuit 2)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit received invalid data from ICC sensor via ITS communication
		Diagnosis delay time	–

POSSIBLE CAUSE

ICC sensor
ADAS control unit

FAIL-SAFE

The following systems are canceled:
- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0433” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT
1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U0433” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U0433” detected as the current malfunction?

YES >> Refer to DAS-69, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011607916

1.CHECK DTC PRIORITY

If DTC “U0433” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.CHECK ICC SENSOR SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode of “LASER/RADAR”.

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to CCS-51, "DTC Index".
NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000011231631

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 vehicles are 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-37, "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 Description

INFOID:0000000011231632

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000	CAN COMM CIRCUIT (CAN communication circuit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If ADAS control unit is not transmitting or receiving CAN communication signal or ITS communication
		Diagnosis delay time	2 seconds or more

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

POSSIBLE CAUSE

- CAN communication system
- ITS communication system

FAIL-SAFE

The following systems are canceled:
- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

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.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT
1. Start the engine.
2. Turn the MAIN switch of ICC system ON.
3. Perform “All DTC Reading” mode.
4. Check if the “U1000” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1000” detected as the current malfunction?

YES >> Refer to DAS-63, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231633

1. PERFORM THE SELF DIAGNOSTIC RESULT

CONSULT
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” mode.
4. Check if “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-21, "Trouble Diagnosis Flow Chart".
NO >> Inspection End.

U1321 CONFIGURATION

DTC Description

INFOID:0000000011607913

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	
U1321	NOT CONFIGURED	Diagnosis condition	When ignition switch is on.
		Signal (terminal)	—
		Threshold	If ADAS is not configured.
		Diagnosis delay time	—

POSSIBLE CAUSE

ADAS control unit not configured

FAIL-SAFE

The following systems are canceled:

- Intelligent Cruise Control (ICC)
- Forward Emergency Braking (FEB)
- Predictive Forward Collision Warning (PFCW)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Perform “All DTC Reading” mode.
3. Check if “U1321” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1321” detected as the current malfunction?

YES >> Refer to DAS-72, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000011607914

1.PERFORM CONFIGURATION OF ADAS CONTROL UNIT

Perform configuration of ADAS control unit when DTC “U1321” is detected.

>> Perform configuration of ADAS control unit. Refer to DAS-41, "Work Procedure".

U1503 SIDE RDR L CAN 2

DTC Description

INFOID:0000000011231649

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1503	SIDE RDR L CAN CIR 2 (Side radar left CAN circuit 2)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit detects an error signal that is received from side radar LH via ITS communication
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1503” is displayed with DTC “U1000” or “U1508”, first diagnose the DTC “U1000” or “U1508”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1508: Refer to DAS-82, "DTC Description".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1503” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1503” detected as the current malfunction?

YES >> Refer to DAS-73, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231650

1.CHECK DTC PRIORITY

If DTC “U1503” is displayed with DTC “U1000” or “U1508”, first diagnose the DTC “U1000” or “U1508”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1508: Refer to DAS-82, "DTC Description".

NO >> GO TO 2.

2.CHECK SIDE RADAR LH SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode 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-129, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U1504 SIDE RDR L CAN 1

DTC Description

INFOID:0000000011231651

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1504	SIDE RDR L CAN CIR 1 (Side radar left CAN circuit 1)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit detects an error signal that is received from side radar LH via ITS communication
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1504” is displayed with DTC “U1000” or “U1508”, first diagnose the DTC “U1000” or “U1508”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1508: Refer to DAS-82, "DTC Description".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1504” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1504” detected as the current malfunction?

YES >> Refer to DAS-75, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231652

1.CHECK DTC PRIORITY

If DTC “U1504” is displayed with DTC “U1000” or “U1508”, first diagnose the DTC “U1000” or “U1508”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1508: Refer to DAS-82, "DTC Description".

NO >> GO TO 2.

2.CHECK SIDE RADAR LH SELF DIAGNOSTIC RESULT

Check if any DTC is detected in “Self Diagnostic Result” mode 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-129, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U1505 SIDE RDR R CAN 2

DTC Description

INFOID:0000000011231653

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1505	SIDE RDR R CAN CIR 2 (Side radar right CAN circuit 2)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit detects an error signal that is received from side radar RH via ITS communication
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1505” is displayed with DTC “U1000” or “U1507”, first diagnose the DTC “U1000” or “U1507”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1507: Refer to DAS-81, "DTC Description".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1505” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1505” detected as the current malfunction?

YES >> Refer to DAS-77, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231654

1.CHECK DTC PRIORITY

If DTC “U1505” is displayed with DTC “U1000” or “U1507”, first diagnose the DTC “U1000” or “U1507”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1507: Refer to DAS-81, "DTC Description".

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF DIAGNOSTIC RESULT

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-131, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U1506 SIDE RDR R CAN 1

DTC Description

INFOID:0000000011231655

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1506	SIDE RDR R CAN CIR 1 (Side radar right CAN circuit 1)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit detects an error signal that is received from side radar RH via ITS communication
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1506” is displayed with DTC “U1000” or “U1507”, first diagnose the DTC “U1000” or “U1507”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1507: Refer to DAS-81, "DTC Description".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1506” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1506” detected as the current malfunction?

YES >> Refer to DAS-75, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231656

1.CHECK DTC PRIORITY

If DTC “U1506” is displayed with DTC “U1000” or “U1507”, first diagnose the DTC “U1000” or “U1507”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to DAS-70, "DTC Description".
- U1507: Refer to DAS-81, "DTC Description".

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF DIAGNOSTIC RESULTS

Check if any DTC is detected in “Self Diagnostic Result” mode 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-131, "DTC Index".

NO >> Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

U1507 LOST COMM(SIDE RDR R)

DTC Description

INFOID:0000000011231657

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1507	LOST COMM(SIDE RDR R) [Lost communication (Side radar right)]	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit cannot receive ITS communication signal from side radar RH
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Side radar RH right/left switching signal circuit
- ITS communication system
- Side radar RH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1507” is displayed with DTC “U1000”, first diagnose the DTC “U1507”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1507” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1507” detected as the current malfunction?

YES >> Refer to DAS-81, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231658

1.CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check right/left switching signal circuit. Refer to DAS-172, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to LAN-21, "Trouble Diagnosis Flow Chart".
NO >> Repair right/left switching signal circuit.

U1508 LOST COMM(SIDE RDR L)

DTC Description

INFOID:0000000011231659

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1508	LOST COMM(SIDE RDR L) [Lost communication (Side radar left)]	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	ADAS control unit cannot receive ITS communication signal from side radar LH
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Side radar LH harness connector
- ITS communication system
- Side radar LH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1508” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1508” is detected as the current malfunction in “Self Diagnostic Result” mode of “ICC/ADAS”.

Is “U1508” detected as the current malfunction?

YES >> Refer to DAS-82, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231660

1.CHECK DTC PRIORITY

If DTC “U1508” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-70, "DTC Description".
NO >> GO TO 2.

2.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-21, "Trouble Diagnosis Flow Chart".

NO >> Repair the terminal or connector.

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000011231695

Regarding Wiring Diagram information, refer to DAS-132, "Wiring Diagram".

1.CHECK FUSES

Check that the following fuse is not blown:

Signal name	Fuse No.
Ignition power supply	29 (10A)

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

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			
M182	3		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		
M182	1		Yes

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

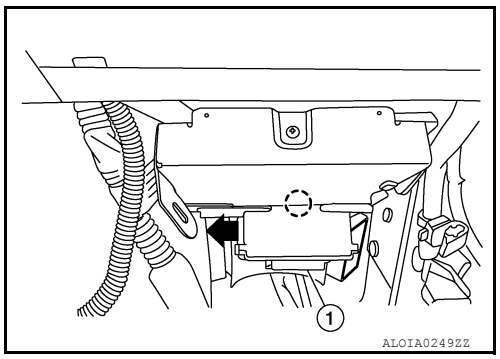
INFOID:0000000011231696

REMOVAL

NOTE:

Before replacing ADAS control unit, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to DAS-40, "Description".

1. Remove the center console assembly. Refer to IP-19, "Removal and Installation".
2. Disconnect the harness connector from ADAS control unit
3. Release the pawl and remove the ADAS control unit (1) in the direction as shown ⬅.
   ◌: Pawl



INSTALLATION

CAUTION:

Be sure to perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” when replacing ADAS control unit. Refer to DAS-40, "Work Procedure".

Installation is in the reverse order of removal.

CAUTION:

Be sure to perform “Configuration (ADAS control unit)” when replacing ADAS control unit. Refer to DAS-41, "Work Procedure".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011590501

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.**
- **Do not 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:

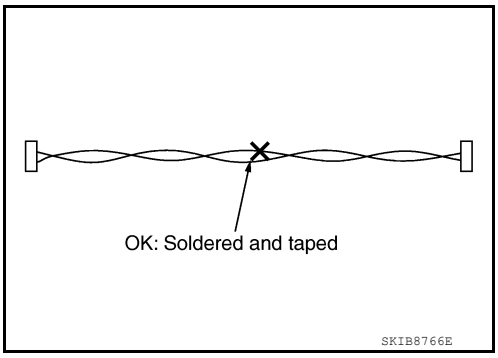
- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.**

Precautions For Harness Repair

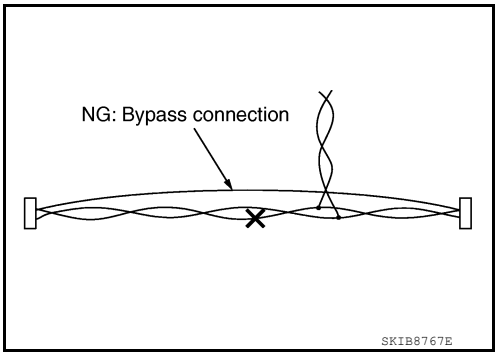
INFOID:0000000011231698

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.



ICC System Service

INFOID:0000000011590508

CAUTION:

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

PFCW/FEB System Service

INFOID:0000000011231700

CAUTION:

- **Turn the PFCW/FEB system OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.**
- **Do not use the ICC sensor removed from vehicle. Never disassemble or remodel.**
- **Erase DTC when replacing parts of ICC system, then check the operation of ICC system after radar alignment if necessary.**
- **Do not change PFCW/FEB initial state ON⇒OFF without consent of the customer.**

Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service

INFOID:0000000011231702

CAUTION:

- **Do not use the Blind Spot Warning/ Rear Cross Traffic Alert (RCTA) system when driving with free rollers or a chassis dynamometer.**
- **Do not perform the active test while driving.**

TO KEEP THE BLIND SPOT WARNING/Rear Cross Traffic Alert (RCTA) SYSTEM OPERATING PROPERLY, BE SURE TO OBSERVE THE FOLLOWING ITEMS:

System Maintenance

The side radars for the Blind Spot Warning and Rear Cross Traffic Alert (RCTA) system are located near the rear bumper.

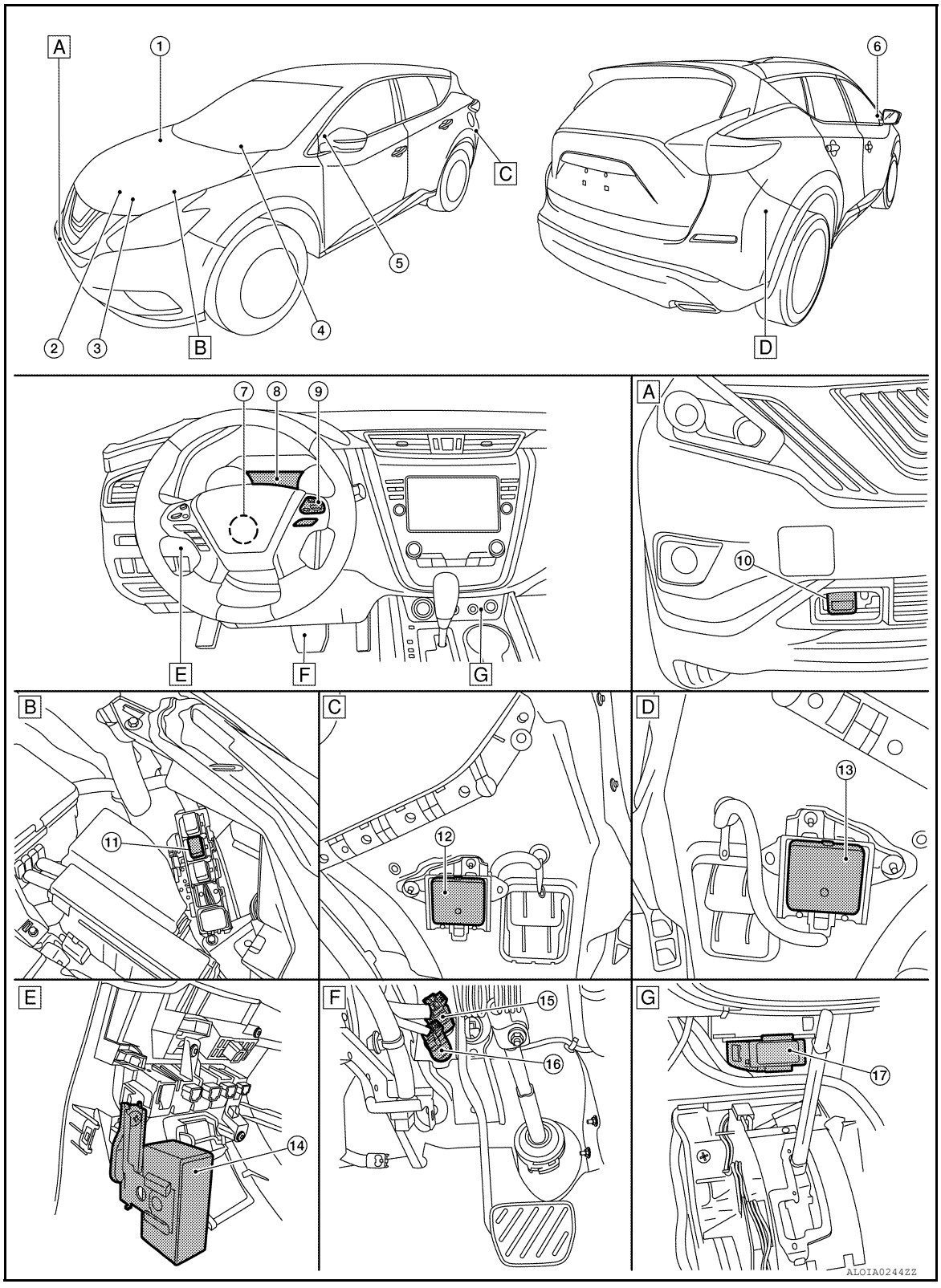
- Be sure to keep the area near the side radars clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the side radars.
- Do not strike or damage the area around the side radars.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011231704



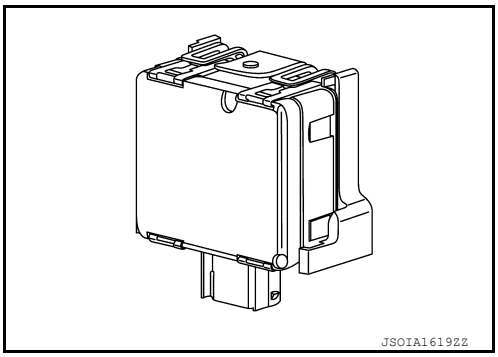
A. Front bumper RH
B. Engine room LH
C. Rear bumper LH
D. Rear bumper RH
E. View with instrument lower panel LH removed
F. Upper side of brake pedal assembly
G. View with center console assembly removed

No.	Component	Description
1.	BCM	• Transmits the turn indicator signal and position light request signal to ADAS control unit via CAN communication. • Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
2.	ABS actuator and electric unit (control unit)	• ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), stop lamp signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication. • ABS actuator and electric unit (control unit) controls the brake, based on a brake fluid pressure control signal received from ADAS control unit via CAN communication. • Refer to BRC-10, "Component Parts Location" for detailed installation location.
3.	ECM	• Transmits the ICC brake switch signal, stop lamp switch signal, ICC steering switch signal, etc. to ADAS control unit via CAN communication. • Refer to EC-15, "ENGINE CONTROL SYSTEM : Component Parts Location" for detailed installation location.
4.	TCM	• TCM transmits the signal related to CVT control to ADAS control unit. • Refer to TM-11, "CVT CONTROL SYSTEM : Component Parts Location" for detailed installation location.
5.	Blind Spot Warning indicator LH	Refer to DAS-91, "Blind Spot Warning Indicator LH/RH".
6.	Blind Spot Warning indicator RH	
7.	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. • Refer to BRC-10, "Component Parts Location" for detailed installation location.
8.	Combination meter	• Description: DAS-91, "Combination Meter". • Refer to MWI-5, "METER SYSTEM : Component Parts Location" for detailed installation location.
9.	ICC steering switch	Refer to DAS-90, "ICC Steering Switch".
10.	ICC sensor	Refer to DAS-90, "ICC Sensor".
11.	ICC brake hold relay	Refer to DAS-91, "ICC Brake Hold Relay".
12.	Side radar LH	Refer to DAS-91, "Side Radar LH/RH".
13.	Side radar RH	
14.	Warning buzzer	Refer to DAS-91, "Warning Buzzer".
15.	Stop lamp switch	Refer to DAS-90, "Brake Pedal Position Switch / Stop Lamp Switch".
16.	Brake pedal position switch	
17.	ADAS control unit	• ADAS control unit controls each system (ICC/PFCW/FEB/BSW/RCTA), based on ITS communication signals and CAN communication signals from each control unit. • ADAS control unit transmits engine torque command value, brake fluid pressure control signal, and buzzer output signal to each units.

ICC Sensor

INFOID:0000000011231705

- ICC sensor is installed behind the front bumper and detects a vehicle ahead by using millimeter waves.
- ICC sensor detects radar reflected from a vehicle ahead by irradiating radar forward and calculates a distance from the vehicle ahead and 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.



ICC Steering Switch

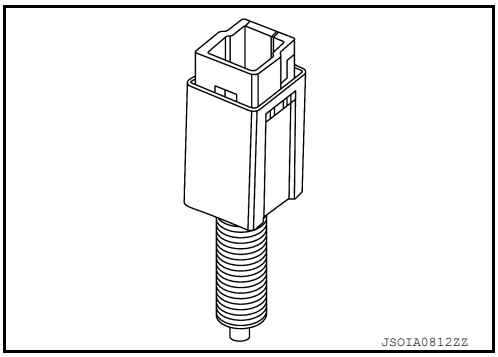
INFOID:0000000011231706

- ICC steering switch is installed to the steering wheel and allows the driver to operate the ICC system by using this switch.
- ICC steering switch allows the ON/OFF of the Intelligent Cruise Control and the settings of a vehicle speed and distance between vehicles.
- ICC steering switch signal is transmitted to ECM. ECM transmits the signal to the ADAS control unit via CAN communication.

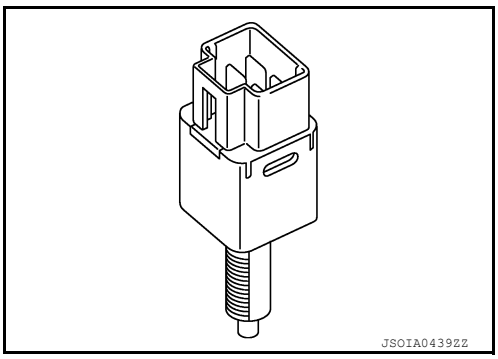
Brake Pedal Position Switch / Stop Lamp Switch

INFOID:0000000011231707

- Brake pedal position switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.
- Brake pedal position switch is turned OFF when depressing the brake pedal.
- Brake pedal position switch signal is input to ECM. Brake pedal position switch signal is transmitted from ECM to ADAS control unit via CAN communication.



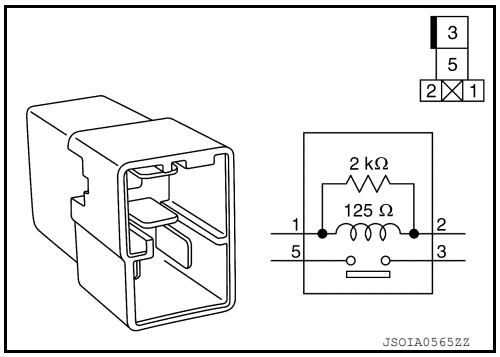
- Stop lamp switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.
- Stop lamp switch is turned ON, when depressing the brake pedal.
- Stop lamp switch signal is input to ECM and ABS actuator and electric unit (control unit). Stop lamp switch signals are transmitted from ECM and ABS actuator and electric unit (control unit) to ADAS control unit via CAN communication.



ICC Brake Hold Relay

INFOID:0000000011231708

- ICC brake hold relay is installed in the engine room (right side).
- When the brake is activated by the system, the ICC brake hold relay turns ON the stop lamp by bypassing the circuit of the stop lamp, according to a signal transmitted from the ADAS control unit.



Combination Meter

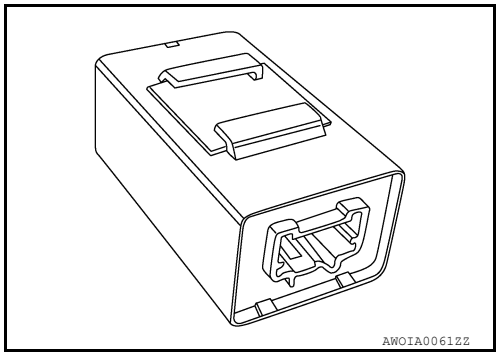
INFOID:0000000011231709

- Receives meter display signal from ADAS control unit via CAN communication.
- Displays the system status according to a signal received from the ADAS control unit.
- Receives a buzzer output signal via CAN communication and sounds the buzzer.

Warning Buzzer

INFOID:0000000011231713

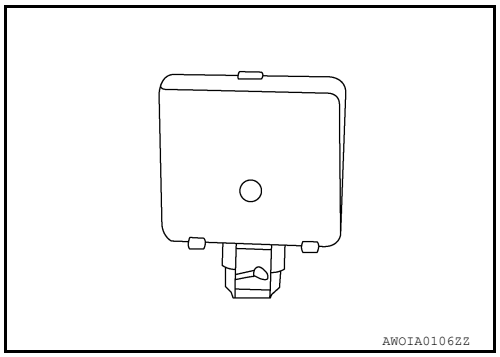
- The warning buzzer is installed behind the instrument lower panel LH.
- When a warning buzzer signal is received from the ADAS control unit, the buzzer sounds.



Side Radar LH/RH

INFOID:0000000011231714

- Installed near the rear bumper, the side radar detects other vehicles beside own vehicle in an adjacent lane.
- Connected with the ADAS control unit via ITS communication, the side radar transmits a vehicle detection signal.
- Receives a Blind Spot Warning indicator signal and a Blind Spot Warning indicator dimmer signal from the ADAS control unit and transmits an indicator operation signal to the Blind Spot Warning indicator LH/RH.
- Since side radar RH and side radar LH have the same specifications, side radar RH has the right/left switching signal circuit for identification.



Blind Spot Warning Indicator LH/RH

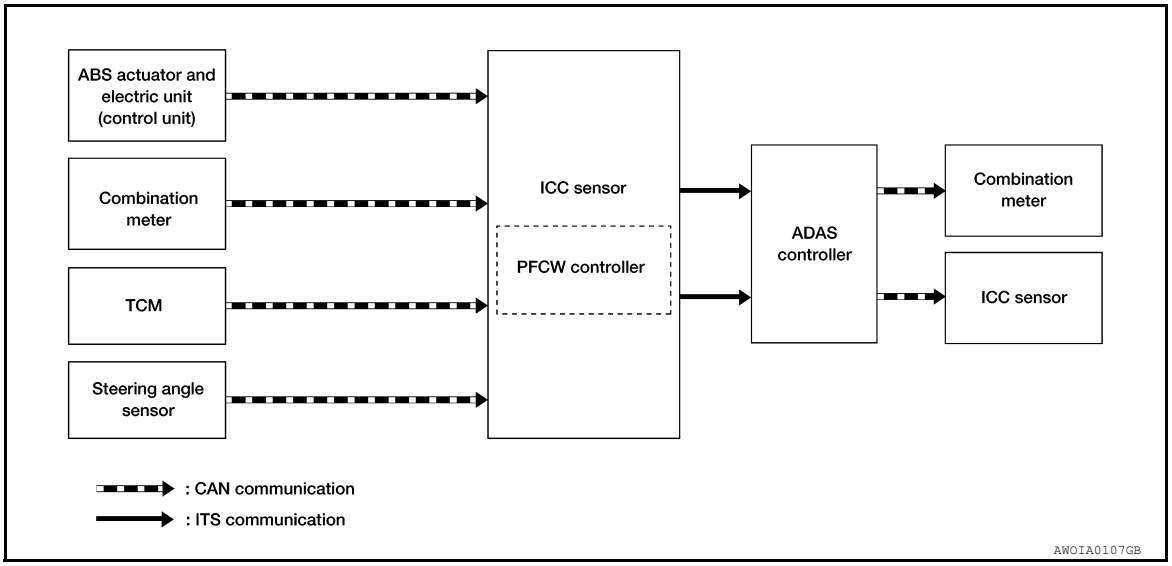
INFOID:0000000011231715

- Installed on the front door corner cover, the Blind Spot Warning indicator warns the driver by lighting/blinking.
- Receives a Blind Spot Warning indicator operation signal from the side radar LH/RH and blinks or turns ON/OFF the Blind Spot Warning indicator.

SYSTEM
PFCW
PFCW : System Description

INFOID:0000000011231718

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	ABS malfunction signal	Receives a malfunction state of ABS.
		ABS operation signal	Receives an operational state of ABS.
		ABS warning lamp signal	Receives an operational state of ABS warning lamp.
		TCS malfunction signal	Receives a malfunction state of TCS.
		TCS operation signal	Receives an operational state of TCS.
		VDC OFF switch signal	Receives an ON/OFF state of VDC.
		VDC malfunction signal	Receives a malfunction state of VDC.
		VDC operation signal	Receives an operational state of VDC.
		Vehicle speed signal (ABS)	Receives wheel speeds of front wheels.
		Yaw rate signal	Receives yaw rate acting on the vehicle.
		Stop lamp switch	Receives stop lamp switch state.
ECM	CAN communication	Engine speed signal	Receives engine speed.
		Stop lamp switch signal	Receives an operational state of the brake pedal.
		Brake pedal position switch signal	Receives an operational state of the brake pedal.
Combination meter	CAN communication	System selection signal	Receives a selection state each item in “Driver Aids” selected with the integral switch.
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.
TCM	CAN communication	Input speed signal	Receives the number of revolutions of input shaft.
		Shift position signal	Receives a selector lever position
		Current gear position signal	Receives a current gear position
		Output shaft revolution signal	Receives the number of revolutions of output shaft.

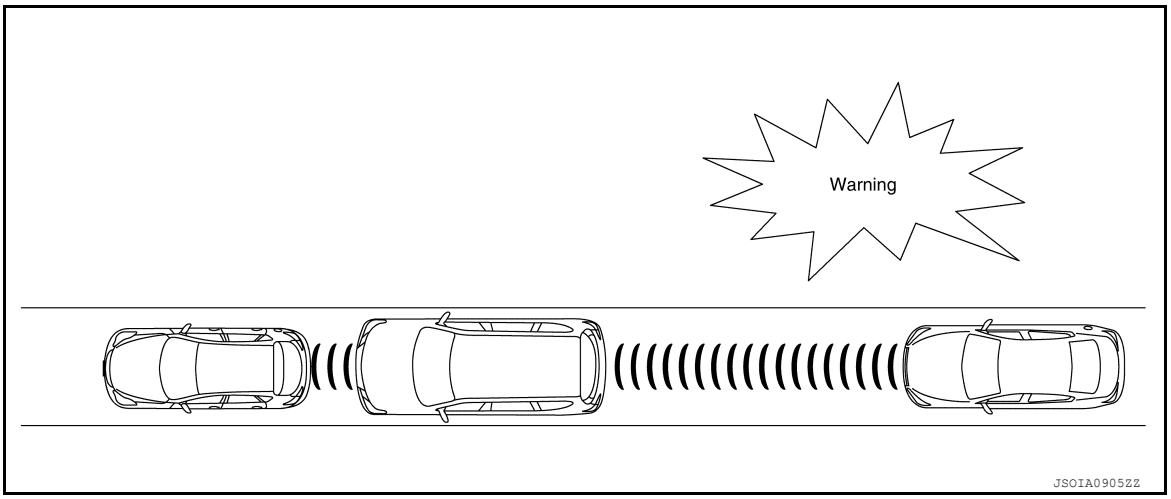
Transmit unit	Signal name		Description
Steering angle sensor	CAN communication	Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor.
		Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel.
		Steering angle speed signal	Receives the turning angle speed of the steering wheel.

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 combination meter.
			PFCW/FEB system indicator signal	Transmits a signal to turn ON the PFCW/FEB system indicator.
		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.

DESCRIPTION

- The PFCW system will function when own vehicle is driven at speeds of approximately 3 MPH (5 km/h) and above.
- The Predictive Forward Collision Warning (PFCW) System alerts the driver, by the vehicle ahead detection indicator and chime, when the distance between own vehicle and a vehicle in front of the vehicle ahead becomes closer.



NOTE:
The PFCW/FEB system shares the diagnosis function with ICC system.

FUNCTION DESCRIPTION

The distance from the vehicle in front of 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 warning buzzer signal and meter display signal to the combination meter via CAN communication.

PFCW Operating Condition

- PFCW/FEB system display (white):ON
- Vehicle speed: Approximately 3 MPH (5 km/h) and above.
- Vehicle in front of the vehicle ahead: Detected.

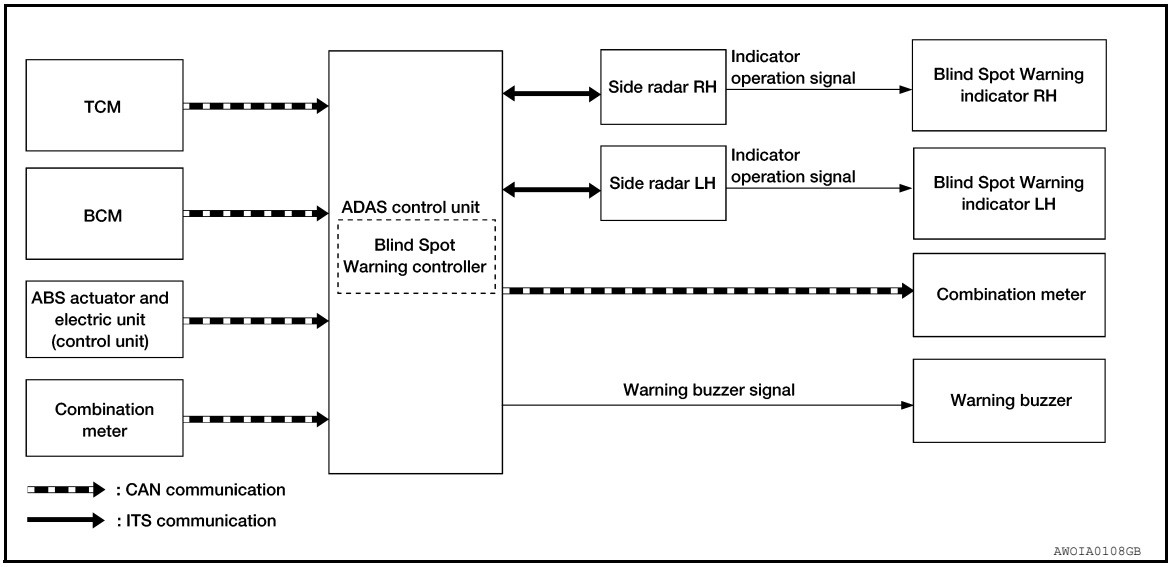
NOTE:
ON/OFF of PFCW/FEB system is performed with the integral switch of the combination meter information display.

BSW

BSW : System Description

INFOID:0000000011231721

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 Blind Spot Warning control.

Input Signal Item

Transmit unit	Signal name		Description
TCM	CAN communication	Shift position signal	Receives a selector lever position.
ABS actuator and electric unit (control unit)	CAN communication	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels.
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp.
		Dimmer signal	Receives ON/OFF state of dimmer signal.
Combination meter	CAN communication	System selection signal	Receives a selection state of each item in “Driver Aids” selected with the integral switch.
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.

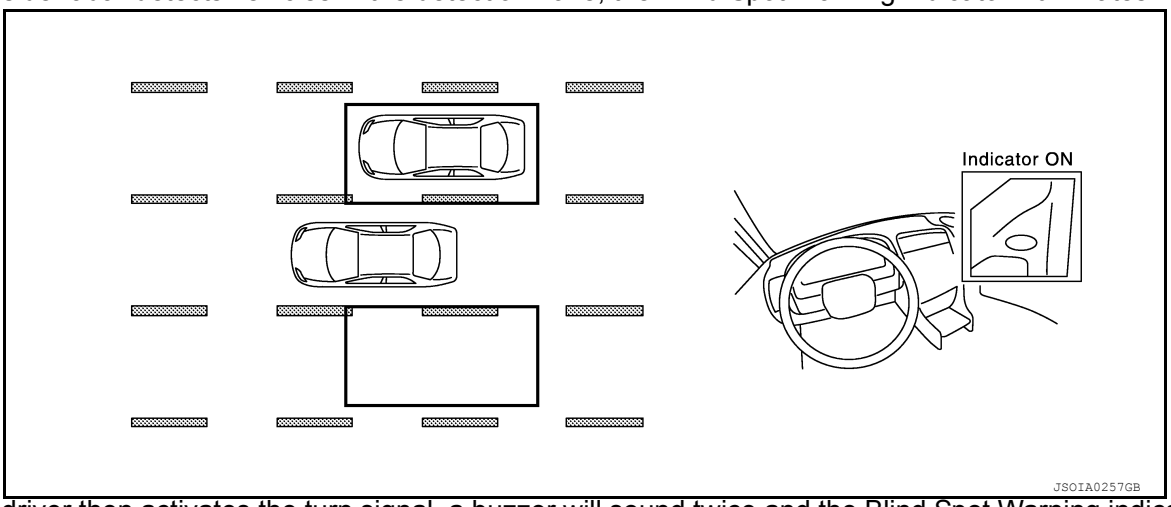
Output Signal Item

Reception unit	Signal name		Description
Combination meter	CAN communication	BSW indicator signal	Transmits a BSW indicator signal to turn ON the BSW indicator on the combination meter.
Warning buzzer	Warning buzzer signal		Activates warning buzzer.
Side radar LH, RH	ITS communication	Blind Spot Warning indicator signal	Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator.
		Blind Spot Warning indicator dimmer signal	Transmits a Blind Spot Warning indicator dimmer signal to dimmer Blind Spot Warning indicator.
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit.

FUNCTION DESCRIPTION

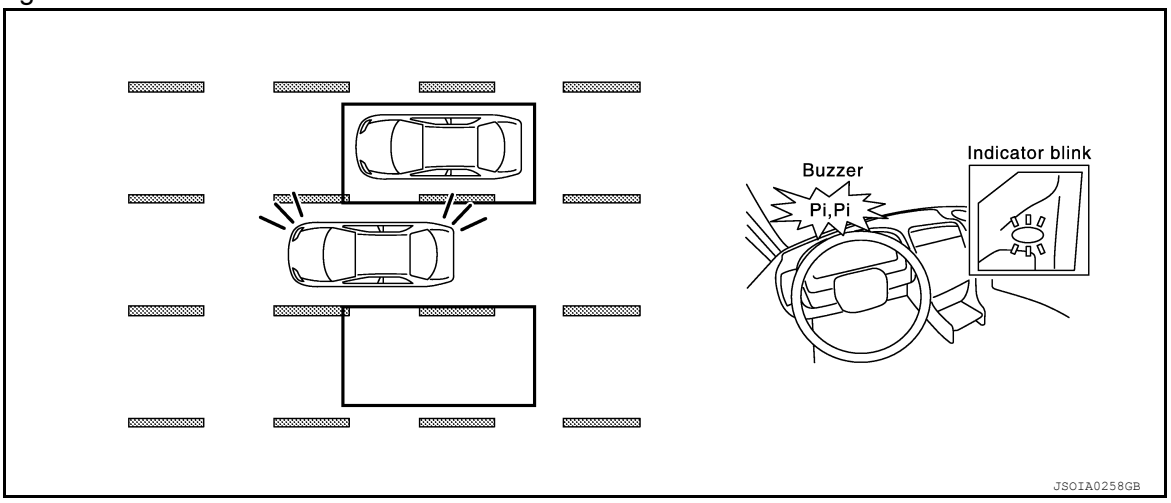
- The BSW system can help alert the driver of other vehicles in adjacent lanes when changing lanes.
- The BSW system uses side radars installed near the rear bumper to detect vehicles in an adjacent lane.
- The side radars can detect vehicles on either side of vehicle within the detection zone shown 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 20 MPH (32 km/h).
- If the side radar detects vehicles in the detection zone, the Blind Spot Warning indicator illuminates.



- If the driver then activates the turn signal, a buzzer will sound twice and the Blind Spot Warning 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 Blind Spot Warning indicator blinks and no buzzer sounds.



BLIND SPOT WARNING SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables BSW system.
- The ADAS control unit turns on the BSW system when the turned ON by integral switch.
- Side radar detects a vehicle in the adjacent lane, and transmits the vehicle detection signal to ADAS control unit via ITS communication.
- ADAS control unit starts the control as follows, based on a vehicle detection signal, turn signal and dimmer signal transmitted from BCM via CAN communication:
  - Blind Spot Warning indicator signal and Blind Spot Warning indicator dimmer signal transmission to side radar.
  - Activates warning buzzer by driver assistance buzzer control module.
- Side radar transmits an indicator operation signal to the Blind Spot Warning indicator according to Blind Spot Warning indicator signal and Blind Spot Warning indicator dimmer signal.

OPERATING CONDITION

- Blind Spot Warning system display (white): ON
- Vehicle speed: Approximately 20 MPH (32 km/h) or more.

NOTE:
ON/OFF of Blind Spot Warning system is performed with the integral switch.

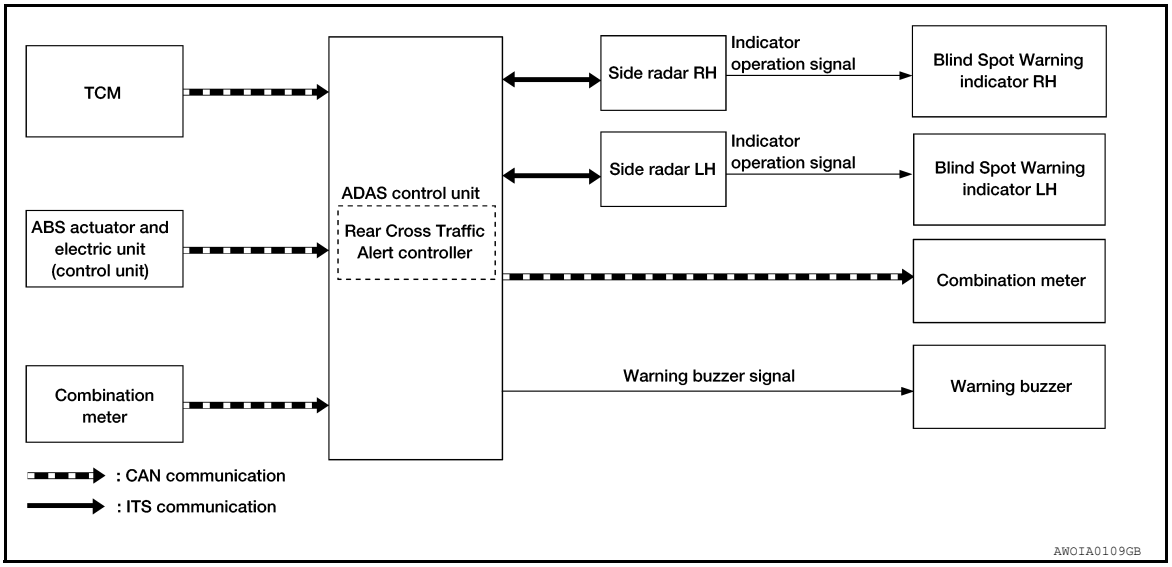
- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 18 MPH (29 km/h)
- The Blind Spot Warning system may not function properly, depending on the situation. Refer to DAS-87, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".

RCTA

RCTA : System Description

INFOID:0000000011231723

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
TCM	CAN communication	Current gear position signal	Receives a current gear position.
		Shift position signal	Receives a select lever position.
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS.
		VDC malfunction signal	Receives a malfunction state of VDC.
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels.
Combination meter	CAN communication	System selection signal	Receives a selection state of each item in “Driver Aids” selected with the integral switch.
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.

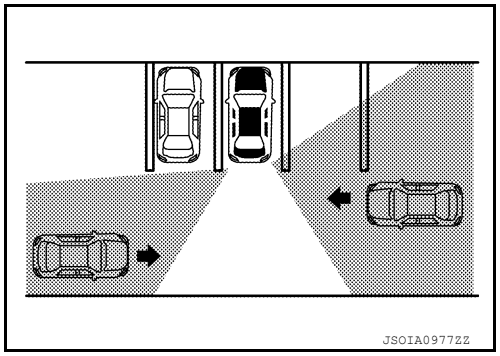
Output Signal Item

Reception unit	Signal name		Description
Combination meter	CAN communication	BSW indicator signal	Transmits a BSW indicator signal to turn ON the BSW indicator on the combination meter.
Warning buzzer	Warning buzzer output signal		Activates warning buzzer.
Side radar LH, RH	ITS communication	Blind Spot Warning indicator signal	Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator.
		Blind Spot Warning indicator dimmer signal	Transmits a Blind Spot Warning indicator dimmer signal to dimmer Blind Spot Warning indicator.
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit.

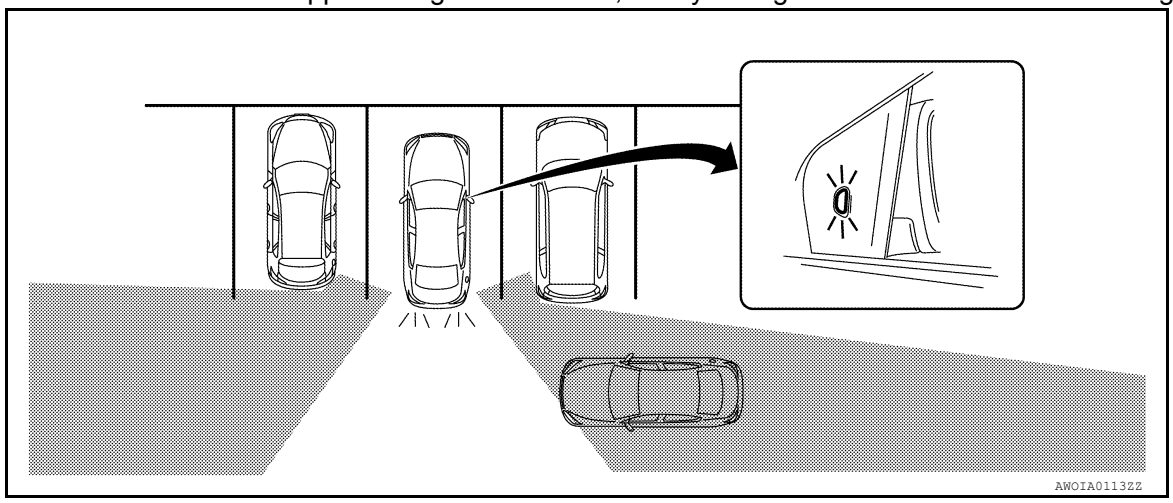
FUNCTION DESCRIPTION

- The Rear Cross Traffic Alert system can help alert the driver of approaching vehicles when the driver is backing out of a parking space.
- The RCTA system uses side radars installed near the rear bumper to detect approaching vehicles.

- The RCTA system operates at speeds below 5 MPH (8 km/h) whenever the vehicle is in reverse.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- The radar sensors detect the approaching vehicle from up to approximately 20 m (66 ft) away.



- If the radar detects a vehicle approaching from the side, the system gives visual and audible warning.



- If the side radar detects an approaching vehicle from the side, the RCTA system sounds a beep (single beep), the Blind Spot Warning indicator on the side of the approaching vehicle flashes.

REAR CROSS TRAFFIC ALERT SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables Rear Cross Traffic Alert system.
- The ADAS control unit turns ON the RCTA system when the BSW system is turned ON by the integral switch.
- ADAS control unit starts the control as follows, based on a reverse gear signal and vehicle detection signal.
- Side radar detects a vehicle approaching, and transmits the vehicle detection signal to ADAS control unit via ITS communication.

Operation Condition of Rear Cross Traffic Alert System.

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

- BSW system: ON (Selected by integral switch)
- When the vehicle is moving in reverse at 5 MPH (8 km/h) or less.

Fail-safe (ADAS Control Unit)

INFOID:0000000011598861

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

System	Buzzer	Warning lamp/Warning display	Description
Intelligent Cruise Control (ICC)	High-pitched tone	ICC system warning	Cancel
Forward Emergency Braking (FEB)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Predictive Forward Collision Warning (PFCW)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Blind Spot Warning (BSW)	Low-pitched tone	BSW system warning	Cancel
Rear Cross Traffic Alert (BSW)	—	BSW system warning	Cancel

Fail-safe

INFOID:0000000011598857

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.

Fail-safe (Side Radar)

INFOID:0000000011598862

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)/Rear Cross Traffic Alert (RCTA)
If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning indicator (orange) on 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 buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. 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.

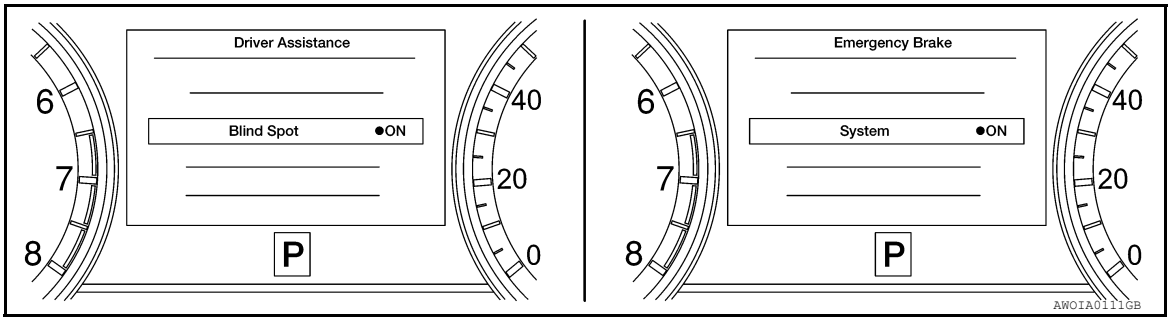
Rear Cross Traffic Alert (RCTA)
When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, the operation may be temporarily cancelled.
- The side 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

PFCW/FEB, BSW/RCTA

PFCW/FEB, BSW/RCTA : Switch Name and Function

INFOID:0000000011231731



No.	Switch name	Description
1.	BSW/RCTA system setting screen (Integral switch settings screen)	The setting of BSW/RCTA system can be switched between ON and OFF on the combination meter information display. **NOTE:** When the Blind Spot Warning system is turned ON or OFF, the Rear Cross Traffic Alert system is also turned ON or OFF simultaneously.
2.	PFCW/FEB system setting screen (Integral switch settings screen)	The setting of PFCW/FEB system can be switched between ON and OFF on the combination meter information display. **NOTE:** When the Forward Emergency Braking system is turned ON or OFF, the Predictive Forward Collision Warning system is also turned ON or OFF simultaneously.

HANDLING PRECAUTION

Precautions for Predictive Forward Collision Warning

INFOID:0000000011231738

- The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The radar sensor does not detect the following objects:
- Pedestrians, animals, or obstacles in the roadway.
- Oncoming vehicles.
- Crossing vehicles.
- The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle.
- The radar sensor may not detect a second vehicle ahead in the following conditions:
- Snow or heavy rain.
- Dirt, ice, snow or other material covering the radar sensor.
- Interference by other radar sources.
- Snow or road spray from traveling vehicles is splashed.
- Driving in a tunnel.
- The radar sensor may not detect a second vehicle when the vehicle ahead is being towed.
- When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed.
- The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves.
- Excessive noise will interfere with the warning tone sound, and it may not be heard.

Precautions for Blind Spot Warning

INFOID:0000000011600558

SIDE RADAR HANDLING

- Side radar for Blind Spot Warning 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 paint work near the side radar.
- Do not strike or damage the areas around the side radar.
- Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair.

BLIND SPOT WARNING

- The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system.
- The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly.
- Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Blind Spot Warning 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 is designed to ignore most stationary objects, however, objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

Precautions for Rear Cross Traffic Alert

INFOID:0000000011600559

SIDE RADAR HANDLING

- Side radar for Rear Cross Traffic Alert 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 paint work 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.

REAR CROSS TRAFFIC ALERT

- Always check surroundings and turn to check what is behind you before backing up. The radar sensors detect approaching (moving) vehicles. The radar sensors cannot detect every object such as:
- Pedestrians, bicycles, motorcycles, animals or child operated toy vehicles.
- A vehicle that passing at speeds greater than approximately 30 KM/H (19 MPH)
- A vehicle that passing at speeds lower than approximately 8 KM/H (5 MPH)
- The radar sensors may not detect approaching vehicles in certain situations:
- When the vehicle that is parked next to you obstructs the beam of the radar sensor.
- When the vehicle is parked in an angled parking space.
- When the vehicle is parked on an incline.
- When an approaching vehicle turns into your vehicles parking lot isle.
- When the angle formed by your vehicle is too small.
- The following conditions may reduce the ability of the radar to detect other vehicles:
- Severe weather
- Road spray
- Ice build up on the vehicle
- Frost on the vehicle
- Dirt build up on the vehicle
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the radar sensors. These conditions may reduce the ability of the radar to detect other vehicles.
- Do not use RCTA 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.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

CONSULT Function (ICC/ADAS)

INFOID:0000000011598860

APPLICATION ITEMS

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

Diagnosis mode	Description
Configuration	• The vehicle specification that is written in ADAS control unit can be displayed or stored. • The vehicle specification can be written when ADAS control unit is replaced.
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.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in ADAS control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the ADAS control unit.
Manual Configuration		Allows the writing of the vehicle specification into the ADAS control unit by hand.

WORK SUPPORT

Work support items	Description
CAUSE OF AUTO-CANCEL	Displays causes of automatic system cancellation occurred during control of the Intelligent Cruise Control (ICC).

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	Intelligent Cruise Control (ICC)	Description
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication.
NO RECORD	×	—

SELF DIAGNOSTIC RESULT

Refer to DAS-22, "DTC Index".

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.
- ODO/TRIP METER (Mileage) and VOLTAGE(IGN voltage) is displayed on FFD (Freeze Frame Data).

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 (BSW/)	Description
MAIN SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch.
SET/COAST SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
CANCEL SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
RESUME/ACC SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
DISTANCE SW [On/Off]	×			Indicates [ON/OFF] status as judged from ICC steering switch.
CRUISE OPE [On/Off]	×	×		Indicates whether controlling or not (ON means “controlling”).
BRAKE SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]	×			Indicates [ON/OFF] status of idle switch read from ADAS control unit through CAN communication (ECM transmits ON/OFF status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	×		Indicates set distance memorized in ADAS control unit.
CRUISE LAMP [On/Off]	×	×		Indicates [ON/OFF] status of MAIN switch indicator output.
OWN VHCL [On/Off]	×			**NOTE:** The item is displayed, but it is not monitored.
VHCL AHEAD [On/Off]	×			Indicates [ON/OFF] status of vehicle ahead detection indicator output.
ICC WARNING [On/Off]	×			Indicates [ON/OFF] status of ICC system warning lamp output.
VHCL SPEED SE [km/h] or [mph]	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN communication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication].
SET VHCL SPD [km/h] or [mph]	×	×		Indicates set vehicle speed memorized in ADAS control unit.
BUZZER O/P [On/Off]	×			Indicates [ON/OFF] status of ICC warning chime output.
THRTL SENSOR [deg]	×	×		**NOTE:** The item is displayed, but it is not monitored.
ENGINE RPM [rpm]	×			Indicates engine speed read from ADAS control unit through CAN communication (ECM transmits engine speed signal through CAN communication).
WIPER SW [OFF/LOW/HIGH]	×			Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication).

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
YAW RATE [deg/s]	×			**NOTE:** The item is displayed, but it is not monitored.
BA WARNING [On/Off]	×			Indicates [ON/OFF] status of FEB indicator lamp output.
STP LMP DRIVE [On/Off]	×	×		Indicates [ON/OFF] status of ICC brake hold relay drive output.
D POSITION 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 CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	×		Indicates throttle position read from ADAS control unit through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
GEAR [1, 2, 3, 4, 5, 6, 7]	×			Indicates CVT gear position read from ADAS control unit through CAN communication (TCM transmits current gear position signal through CAN communication).
CLUTCH SW SIG [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from clutch pedal position signal (ECM transmits ICC clutch switch signal through CAN communication).
NP SW SIG [On/Off]	×			Indicates [ON/OFF] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communication).
MODE SIG [OFF, ICC, ASCD]	×			Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode].
SET DISP IND [On/Off]	×			Indicates [ON/OFF] status of SET switch indicator output.
DISTANCE [m]	×			Indicates the distance from the vehicle ahead.
RELATIVE SPD [m/s]	×			Indicates the relative speed of the vehicle ahead.
ON ROOT GUIDANCE [On/Off]	×			**NOTE:** The item is displayed, but it is not monitored
DYNA ASIST SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
IBA SW [On/Off]	×	×		**NOTE:** The item is displayed, but it is not monitored.
NAVI ICC DISP [On/Off]				**NOTE:** The item is displayed, but it is not monitored.
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).

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
SIDE G [G]			×	Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication).
FUNC ITEM (FCW) [On/Off]	×	×	×	Indicates systems which can be set to ON/OFF by selecting “Driver Assistance” ⇒“Emergency Brake” of the integral switch Forward Emergency Braking.
FUNC ITEM (BSW) [On/Off]	×	×	×	Indicates systems which can be set to ON/OFF by selecting “Driver Assistance” ⇒“Blind spot” of the integral switch Blind Spot Warning.
FUNC ITEM (NV-ICC) [Off]	×	×	×	**NOTE:** The item is displayed, but it is not monitored
FCW SELECT [On/Off]	×	×	×	Indicates an ON/OFF state of the PFCW system. The PFCW system can be set to ON/OFF by selecting “Driver Assistance”⇒“Emergency Brake” of the integral switch.
BSW SELECT [On/Off]	×	×	×	Indicates an ON/OFF state of the BSW system. The BSW system can be set to ON/OFF by selecting “Driver Assistance”⇒“Blind spot” of the integral switch.
NAVI ICC SELECT [Off]	×	×	×	**NOTE:** The item is displayed, but it is not monitored.
SYS SELECTABILITY [On/Off]	×	×	×	Indicates the availability of ON/OFF switching for “Driving Aids” items received from the integral switch via CAN communication.
BSW/BSI WARN LMP [On/Off]			×	Indicates [ON/OFF] status of Blind Spot warning malfunction.
BSW SYSTEM ON [On/Off]			×	Indicates [ON/OFF] status of BSW system.
FCW SYSTEM ON [On/Off]	×	×		Indicates [ON/OFF] status of PFCW system.
BATTERY CIRCUIT OFF [On/Off]	×			**NOTE:** The item is displayed, but it is not used.
SYSTEM CANCEL MESSAGE [NOREQ/SLIP/VDC OFF]	×	×	×	Indicates [ON/OFF] status of system cancel display output.
BSW ON INDICATOR [On/Off]			×	Indicates [ON/OFF] status of BSW system ON display output.
SIDE RADAR BLOCK COND [On/Off]			×	Indicates [ON/OFF] status of side radar with dirt or foreign materials.
BSW IND BRIGHTNESS [Nothing/Bright/Normal/Dark]			×	Indicates status of brightness of Blind Spot Warning indicator.
SL MAIN SW [On/Off]		×		Indicates [ON/OFF] status as judged from steering switch.
FUNC ITEM(FEB) [On/Off]	×			Indicates systems which can be set to ON/OFF by selecting “Driver Assistance” ⇒“Emergency Brake” of the integral switch. Forward Emergency Braking
FEB SELECT [On/Off]	×			Indicates an ON/OFF state of the FEB system. The FEB system can be set to ON/OFF by selecting “Driver Assistance”⇒“Emergency Brake” of the integral switch.
FEB SW [On/Off]	×			Indicates [ON/OFF] status of FEB system.

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
SL TARGET VEHICLE SPEED [km/h] or [mph]	×			Indicates set vehicle speed memorized in ADAS control unit.
SL SET LAMP [On/Off]	×			Indicates [ON/OFF] status of speed limiter SET display output.
SL LIMIT LAMP [On/Off]	×			Indicates [ON/OFF] status of speed limiter MAIN switch display output.
ASCD CANCEL (LOW SPEED) [NON/CUT]	×			Indicates the vehicle cruise condition. • NON: Vehicle speed is maintained at the ASCD set speed. • CUT: Vehicle speed decreased to excessively low, and ASCD operation is cut off.
ASCD CANCEL (SPEED DIFF) [NON/CUT]	×			Indicates the vehicle cruise condition. • NON: Vehicle speed is maintained at the ASCD set speed. • CUT: Vehicle speed decreased to excessively low compared with the ASCD set speed, and ASCD operation is cut off.
KICK DOWN [On/Off]	×			Display Kick Down decision state. • On: Accelerator pedal is depressed. • Off: Accelerator pedal is fully released.

ACTIVE TEST

CAUTION:

- **Never perform "Active Test" while driving the vehicle.**
- **The "Active Test" cannot be performed when the following systems malfunction is displayed.**
- **ICC system**
- **Blind Spot Warning/RCTA**
- **PFCW/FEB**
- **The "Active Test" cannot be performed when the FEB warning lamp is illuminated.**
- **The "Active Test" cannot be performed when the ICC System is ON.**

Test item	Description
METER LAMP	The FEB warning 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.
ADAS BUZZER	Sounds a buzzer used for BSW, RCTA by arbitrarily operating ON/OFF.
METER BUZZER	Sounds a buzzer used for ICC, PFCW, FEB by arbitrarily operating ON/OFF.
BRAKE ACTUATOR 1	Activates the brake by an arbitrary operation.
BRAKE ACTUATOR 2	
BRAKE ACTUATOR 3	

METER LAMP

NOTE:

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

Test item	Operation	Description	FEB warning lamp
METER LAMP	Off	Stops sending the FEB warning lamp signal to exit from the test.	OFF
	On	Transmits the FEB warning lamp signal to the combination meter via CAN communication.	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

METER BUZZER

Test item	Operation	Description	Operation sound
METER BUZZER	Off	Stops buzzer output to the combination meter via CAN communication.	—
	On	Starts buzzer output to the combination meter via CAN communication.	—

ADAS BUZZER

Test item	Operation	Description	Operation sound
ADAS BUZZER	On	Starts buzzer output.	—
	Off	Stops buzzer output.	—

BRAKE ACTUATOR

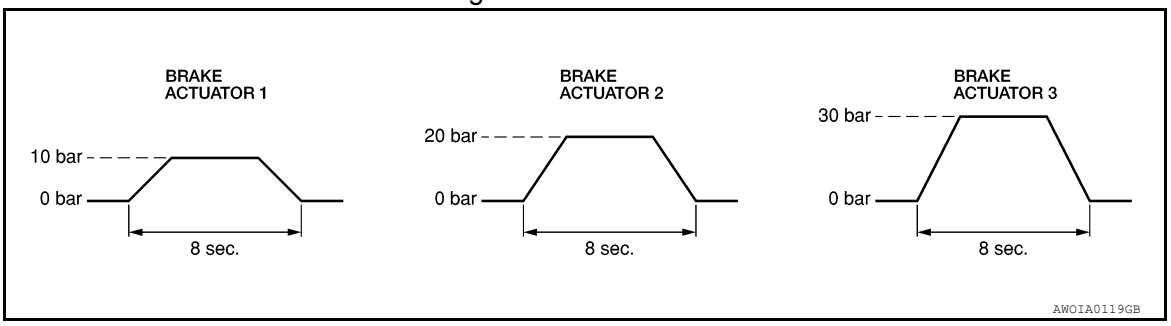
NOTE:

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

Test item	Operation	Description	"PRESS ORDER" value
BRAKE ACTUATOR 1	Off	Stops transmitting the brake fluid pressure control signal to end the test.	—
	On	Starts transmitting the brake fluid pressure control signal to start the test.	10 bar
BRAKE ACTUATOR 2	Off	Stops transmitting the brake fluid pressure control signal to end the test.	—
	On	Starts transmitting the brake fluid pressure control signal to start the test.	20 bar
BRAKE ACTUATOR 3	Off	Stops transmitting the brake fluid pressure control signal to end the test.	—
	On	Starts transmitting the brake fluid pressure control signal to start the test.	30 bar

NOTE:

The test is finished in 10 seconds after starting



ECU IDENTIFICATION

Displays ADAS control unit parts number.

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER/RADAR)

INFOID:0000000011598858

CAUTION:
After disconnecting the CONSULT vehicle interface (VI) from the data link connector, the ignition must be cycled OFF → ON (for at least 5 seconds) → OFF. If this step is not performed, the BCM may not go to "sleep mode", potentially causing a discharged battery and a no-start condition.

APPLICATION ITEMS

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

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

SELF DIAGNOSTIC RESULT

Refer to CCS-51, "DTC Index".

DATA MONITOR

Monitored item [Unit]	Description
VHCL SPEED SE [km/h] or [mph]	Vehicle speed judged from a vehicle speed signal read by the ICC sensor via ITS communication is displayed [ADAS control unit receives a vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated vehicle speed to ICC sensor via ITS communication].
YAW RATE [deg/s]	Indicates yaw rate read from ADAS control unit through ITS communication [ADAS control unit receives yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits yaw rate calculated by the ADAS control unit] Yaw rate judged from a yaw rate signal read by ICC sensor via ITS communication is displayed [ADAS control unit receives a yaw rate signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the calculated yaw rate to ICC sensor via ITS communication].
PWR SUP MONI [V]	Indicates IGN voltage input by ICC sensor
DISTANCE [m]	Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	Indicates the relative speed of the vehicle ahead
RADAR OFFSET [m]	**NOTE:** The item is indicated but not used.
RADAR 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.
L/R ADJUST [deg]	Indicates a horizontal correction value of the radar
U/D ADJUST [deg]	Indicates a vertical correction value of the radar

Monitored item [Unit]	Description
FCW SYSTEM ON	NOTE: The item is indicated, but not used.
FCW SELECT	NOTE: The item is indicated, but not used.
PFCW SELECT	NOTE: The item is indicated, but not used.
FEB SW	NOTE: The item is indicated, but not used.
FEB SELECT	Indicates [ON/OFF] state of the PFCW system.
MAIN SW	Indicates [ON/OFF] status as judged from ICC steering switch.
ICC/ASCD MODE	NOTE: The item is indicated, but not used.
SET/COAST SW	Indicates [ON/OFF] status as judged from ICC steering switch.
CANCEL SW	Indicates [ON/OFF] status as judged from ICC steering switch.
RESUME/ACC SW	Indicates [ON/OFF] status as judged from ICC steering switch.
DISTANCE SW	Indicates [ON/OFF] status as judged from ICC steering switch.
BRAKE SW	Indicates [ON/OFF] status as judged from brake pedal position switch signal [ECM transmits brake pedal position switch signal through CAN communication].
STOP LAMP SW	Indicates [ON/OFF] status as judged from stop lamp switch signal [ABS actuator and electric unit (control unit) transmits stop lamp switch signal through CAN communication].
IDLE SW	Indicates [ON/OFF] status of idle switch read from ICC sensor through CAN communication (ECM transmits ON/OFF status through CAN communication.
CRUISE LAMP	Indicates [ON/OFF] status of MAIN switch indicator output.
OWN VHCL	NOTE: The item is indicated, but not used.
VHCL AHEAD	Indicates [ON/OFF] status of vehicle ahead detection indicator output.
SET DISTANCE	Indicates set distance memorized in ADAS control unit.
SET VHCL SPD [km/h] or [mph]	NOTE: The item is indicated, but not used.
THRTL SENSOR [%]	Indicates throttle position read from ISS sensor through CAN communication (ECM transmits accelerator pedal position signal through CAN communication).
VEHICLE AHEAD DETECT	Indicates [ON/OFF] status of vehicle ahead detection indicator output.
STATIC OBSTACLE DETECT	Indicates [ON/OFF] status of static obstacle detection.
BUZZER O/P	[ON/OFF] Indicates [On/Off] status of warning chime output.
FUNC ITEM (FCW)	NOTE: The item is indicated, but not used.
FUNC ITEM (PFCW)	Indicates systems status
FUNC ITEM (FEB)	Indicates systems status
FUNC ITEM (ICC)	Indicates systems status
PRESS_ORDER [bar]	Indicates status as judged from brake fluid pressure signal [ABS actuator and electric unit (control unit) transmits brake fluid pressure signal through CAN communication].
D RANGE SW	Indicates [ON/OFF] status as judged from D position switch signal (TCM transmits shift position signal through CAN communication).
NP RANGE SW	Indicates [ON/OFF] status as judged from N/P position switch signal (TCM transmits shift position signal through CAN communication).
PKB SW	Parking brake switch status [ON/OFF] judges 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)

Monitored item [Unit]	Description
VHCL SPD AT	NOTE: The item is indicated, but not used.
Shift position	Indicates shift position read from ADAS control unit though CAN communication (TCM transmits shift position signal through CAN communication).
Turn signal	NOTE: The item is indicated, but not used.
SYSTEM CANCEL MESSAGE	Indicates [ON/OFF] status of system cancel display output.
DISP VHCL SPD [km/h] or [mph]	NOTE: The item is indicated, but not used.
VHCL SPD UNIT	Indicates vehicle speed unit read from ICC sensor through CAN communication (combination meter transmits vehicle speed unit through CAN communications).
ADAS AVAILABLE COND	NOTE: The item is indicated, but not used.
ICC SET STATUS	NOTE: The item is indicated, but not used.
ICC MALF	NOTE: The item is indicated, but not used.
ADAS MALF	Indicates [ON/OFF] status of ADAS malfunction.
STOP LAMP RELAY ON	Indicates [ON/OFF] status of stop lamp relay fixed on.
STOP LAMP RELAY OFF	Indicates [ON/OFF] status of stop lamp relay fixed off.
ICC CANCEL	
ACCEL COM VALUE 1 [m/s2]	Indicates accel command calculated from set speed and information of ahead vehicle.
ICC STATUS	Indicates ICC status.
ACCEL COM VALUE 2	NOTE: The item is indicated, but not used.

WORK SUPPORT

Work support items	Description
MILLIWAVE RADAR ADJUST	Outputs millimeter waves, calculates the displacement in radar direction, and indicates an adjustment direction
CAUSE OF AUTO-CANCEL	Displays causes of automatic cancellation occurred during Intelligent Cruise Control system.

ICC sensor Adjust
Refer to DAS-151, "Description".

ECU IDENTIFICATION

ICC sensor part number is displayed.

CAUSE OF AUTO CANCEL

Work support items	Description
OPERATING ABS	ABS function was operated.
OPERATING TCS	TCS function was operated.
OPERATING VDC	VDC function was operated.
ECM CIRCUIT	ECM did not permit ICC operation.
OP SW VOLT CIRC	The ICC steering switch input voltage is not within standard range.
OP SW DOUBLE TOUCH	The ICC steering switches were pressed at the same time.
VHCL SPD DOWN	Vehicle speed is lower than the speed as follows: • Vehicle to vehicle control mode is 24 km/h (15 mph). • Conventional (fixed speed) cruise control mode is 32 km/h (20 mph).

Work support items	Description
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 ICC sensor ignition voltage.
PARKING BRAKE ON	The parking brake is operating.
WHEEL SPD UNMATCH	The wheel speed of all four 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 (15mph) or less.
CAN COMM ERROR	ICC sensor recieved an abnormal signal with CAN communication.
ABS/TCS/VDC CIRC	An abnormal condition occurs in VDC/TCS/ABS system.
ECD CIRCUIT	An abnormal condition occurs in ECD system.
ASCD VHCL SPD DTAC	Vehicle speed is detatched from the set vehicle speed.
ASCD DOUBLE COMD	Cancel switch and operation switch are detected simultaneously.
FEB OPERATED	FEB activated.
VHL AHAD LOST (CLSE RANGE)	A vehicle ahead lost close range.
NO RECORD	—

DIAGNOSIS SYSTEM (SIDE RADAR LH)

CONSULT Function (SIDE RADAR LEFT)

INFOID:0000000011231746

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-129, "DTC Index".

FFD (Freeze Frame Data)
The side radar records the following data when the malfunction is detected.

Freeze Frame Data item	Description
VHCL SP from ADAS	The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed
TURN SIG STATUS	Turn signal status at the moment a malfunction is detected is displayed

DATA MONITOR

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

Monitored Item [unit]		Description
BEAM DISTANCE	—	The item is displayed, but it is not used.
BEAM POSITION	—	The item is displayed, but it is not used.
SIDE RADAR MALF	Off	Side radar is normal.
	On	Side radar is malfunctioning.
BLOCKAGE COND	Off	Side radar is not blocked.
	On	Side radar is blocked.
ACTIVATE OPE	—	The item is displayed, but it is not used.
VEHICLE DETECT	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:
- **Never perform the “Active Test” while driving.**
- **“Active Test” cannot be started while the Blind Spot Warning indicator is illuminated.**

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the Blind Spot Warning indicator.
	Off	Stops the voltage to illuminate the Blind Spot Warning indicator.

DIAGNOSIS SYSTEM (SIDE RADAR RH)

CONSULT Function (SIDE RADAR RIGHT)

INFOID:0000000011231747

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-131, "DTC Index".

FFD (Freeze Frame Data)

The side radar records the following data when the malfunction is detected.

Freeze Frame Data item	Description
VHCL SP from ADAS	The vehicle speed (from ADAS control unit) at the moment a malfunction is detected is displayed
TURN SIG STATUS	Turn signal status at the moment a malfunction is detected is displayed

DATA MONITOR

NOTE:

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

Monitored Item [unit]		Description
BEAM DISTANCE	—	The item is displayed, but it is not used.
BEAM POSITION	—	The item is displayed, but it is not used.
SIDE RADAR MALF	Off	Side radar is normal.
	On	Side radar is malfunctioning.
BLOCKAGE COND	Off	Side radar is not blocked.
	On	Side radar is blocked.
ACTIVATE OPE	—	The item is displayed, but it is not used.
VEHICLE DETECT	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:

- **Never perform the active test while driving.**
- **Active test cannot be started while the Blind Spot Warning indicator is illuminated.**

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the Blind Spot Warning indicator.
	Off	Stops the voltage to illuminate the Blind Spot Warning indicator.

ECU DIAGNOSIS INFORMATION

ADAS CONTROL UNIT

Reference Value

INFOID:0000000011598685

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 (ON/OFF) switch is pressed.	On
		When MAIN (ON/OFF) 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 or clutch pedal is depressed.	Off
		When brake or clutch pedal is not depressed.	On
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed.	On
		When brake pedal is not depressed.	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
SET DISTANCE	• Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the vehicle-to-vehicle distance setting	When set to “long”	Long
		When set to “middle”	Mid
		When set to “short”	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON).	On
		ICC system OFF (MAIN switch indicator OFF).	Off
OWN VHCL	**NOTE:** The item is indicated, but not monitored		Off
VHCL AHEAD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON).	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF).	Off
ICC WARNING	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system malfunction ON).	On
		When ICC system is normal (ICC system malfunction OFF).	Off

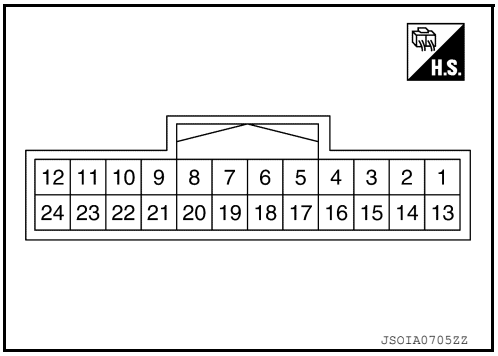
Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays the vehicle speed calculated by ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set.	Displays the set vehicle speed
BUZZER O/P	Engine running	When the buzzer of the following system operates: • Vehicle-to-vehicle distance control mode. • PFCW system • FEB system	On
		When the buzzer of the following system not operates: • Vehicle-to-vehicle distance control mode • PFCW system • FEB system	Off
THRTL SENSOR	**NOTE:** The item is indicated, but not monitored.		0.0
ENGINE RPM	Engine running		Equivalent to tachometer reading
WIPER SW	Ignition switch ON	Wiper not operating.	Off
		Wiper LO operation.	Low
		Wiper HI operation.	High
YAW RATE	**NOTE:** The item is indicated, but not monitored.		0.0
BA WARNING	Engine running	FEB OFF indicator lamp ON. • When FEB system is malfunctioning. • When FEB system is turned to OFF.	On
		FEB OFF indicator lamp OFF. • When FEB system is normal. • When FEB system is turned to ON.	Off
STP LMP DRIVE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated.	On
		When ICC brake hold relay is not activated.	Off
D POSITION SW	Engine running	When the selector lever is in “D” position or manual mode.	On
		When the selector lever is in any position other than “D” or manual mode.	Off
NP RANGE SW	Engine running	When the selector lever is in “N”, “P” position.	On
		When the selector lever is in any position other than “N”, “P”.	Off
PKB SW	Ignition switch ON	When the parking brake is applied.	On
		When the parking brake is released.	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of CVT vehicle speed sensor signal
THRTL OPENING	Engine running	Depress accelerator pedal.	Displays the throttle position
GEAR	While driving		Displays the gear position

Monitor item	Condition		Value/Status
CLUTCH SW SIG	Ignition switch ON	When clutch or brake pedal is depressed.	On
		When clutch or brake pedal is not depressed.	Off
NP SW SIG	Ignition switch ON	When the shift lever is in neutral position.	On
		When the shift lever is in any position other than neutral.	Off
MODE SIG	Start the engine and press MAIN switch	When ICC system is deactivated.	Off
		When vehicle-to-vehicle distance control mode is activated.	ICC
		When conventional (fixed speed) cruise control mode is activated.	ASCD
SET DISP IND	• Drive the vehicle and activate the conventional (fixed speed) cruise control mode • Press SET/COAST switch	SET switch indicator ON.	On
		SET switch indicator OFF.	Off
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected.	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected.	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected.	Displays the relative speed.
		When a vehicle ahead is not detected.	0.0
ON ROOT GUIDE	**NOTE:** The item is indicated, but not monitored.		Off
FCW SYSTEM ON	Ignition switch ON	When the PFCW system is ON.	On
		When the PFCW system is OFF.	Off
Shift position	• Engine running • While driving		Displays the shift position
Turn signal	Turn signal lamps OFF.		Off
	Turn signal lamp LH blinking.		LH
	Turn signal lamp RH blinking.		RH
	Turn signal lamp LH and RH blinking.		LH&RH
SIDE G	While driving	Vehicle turning right.	Negative value
		Vehicle turning left.	Positive value
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (FCW)	Engine running		On
FUNC ITEM (BSW)	Engine running		On
FUNC ITEM (NV-ICC)	**NOTE:** The item is indicated, but not monitored		Off
FCW SELECT	Ignition switch ON	“Forward Emergency Braking” set with the integral switch is ON.	On
		“Forward Emergency Braking” set with the integral switch is OFF.	Off
BSW SELECT	Ignition switch ON	“Blind Spot Warning” set with the integral switch is ON.	On
		“Blind Spot Warning” set with the integral switch is OFF.	Off
NAVI ICC SELECT	**NOTE:** The item is indicated, but not monitored.		Off
SYS SELECTABILITY	Ignition switch ON	Items set with the integral switch can be switched normally.	On
		Items set with the integral switch cannot be switched normally.	Off

Monitor item	Condition		Value/Status
BSW WARN LMP	Engine running	When the BSW system is malfunctioning.	On
		When the BSW system is normal.	Off
BSW SYSTEM ON	Ignition switch ON	When the BSW system is ON.	On
		When the BSW system is OFF.	Off
FCW SYSTEM ON	Engine running	When the FEB/PFCW system is ON.	On
		When the FEB/PFCW system is OFF.	Off
BATTERY CIRCUIT OFF	**NOTE:** The item is indicated, but not used.		Off
SYSTEM CANCEL MESSAGE	Engine running	System cancel display ON.	On
		System cancel display OFF.	Off
BSW ON INDICATOR	Engine running	BSW system display ON.	On
		BSW system display OFF.	Off
SIDE RADAR BLOCK COND	Engine running	Front bumper or side radar is dirty.	On
		Front bumper and side radar is clean.	Off
BSW IND BRIGHT-NESS	Ignition switch ON	BSW system OFF.	Nothing
		Blind Spot Warning indicator brightness bright.	Bright
		Blind Spot Warning indicator brightness normal.	Normal
		Blind Spot Warning indicator brightness dark.	Dark
SL MAIN SW	Engine running	When speed limiter MAIN switch is pressed.	On
		When speed limiter MAIN switch is not pressed.	Off
FUNC ITEM (FEB)	Engine running		On
FEB SELECT	Ignition switch ON	“Forward Emergency Braking” set with the integral switch is ON.	On
		“Forward Emergency Braking” set with the integral switch is OFF.	Off
FEB SW	Engine running	FEB system ON.	On
		FEB system OFF.	Off
SL TARGET VEHI-CLE SPEED	While driving	When vehicle speed is set.	Displays the set vehicle speed
SL SET LAMP	• Drive the vehicle and activate the speed limiter • Press speed limiter MAIN switch	Speed limiter SET indicator ON.	On
		Speed limiter SET indicator OFF.	Off
SL LIMIT LAMP	• Drive the vehicle and activate the speed limiter • Press speed limiter MAIN switch	Speed limiter system ON.	On
		Speed limiter system OFF.	Off
ASCD CANCEL (LOW SPEED)	Drive the vehicle and activate the ASCD	ASCD cancelled by low vehicle speed.	On
		Other than above.	Off
ASCD CANCEL (SPEED DIFF)	Drive the vehicle and activate the ASCD	ASCD cancelled by difference between set speed and vehicle speed.	On
		Other than above.	Off
KICK DOWN	Drive the vehicle and activate the speed limiter	When accelerator pedal is full depressed.	On
		Other than above.	Off

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
1 (B)	Ground	Ground	Input	—		0 V
2 (L)		ITS communication-High	—	—		—
3 (LG)		Ignition power supply	Input	Ignition switch ON		Battery voltage
4 (V)		Warning buzzer signal	Output	Ignition switch ON	Warning buzzer operation	Battery voltage
					Warning buzzer not operating	0 V
5 (Y)		ITS communication-Low	—	—		—
6 (Y)		3rd CAN Low	Input	—		—
9 (L)		CAN high	—	—		—
10 (P)		CAN low	—	—		—
14 (L)		ICC brake hold relay drive signal	Output	Ignition switch ON	—	Battery voltage
18 (L)		3rd CAN High	Input	—	—	0 V

Fail-safe (ADAS Control Unit)

INFOID:0000000011598686

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

System	Buzzer	Warning lamp/Warning display	Description
Intelligent Cruise Control (ICC)	High-pitched tone	ICC system warning	Cancel
Forward Emergency Braking (FEB)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Predictive Forward Collision Warning (PFCW)	High-pitched tone	FEB warning lamp (Yellow)	Cancel
Blind Spot Warning (BSW)	Low-pitched tone	BSW system warning	Cancel
Rear Cross Traffic Alert (BSW)	—	BSW system warning	Cancel

DTC Inspection Priority Chart

INFOID:0000000011598687

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 • U1321: CONFIGURATION
3	• C1A17: ICC SENSOR MALF • C1B53: SIDE RDR R MALF • C1B54: SIDE RDR L MALF
4	• C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A13: STOP LAMP RLY FIX • C1A14: ECM CIRCUIT • C1A34: COMMAND ERROR • U0121: VDC CAN CIR 2 • U0235: ICC SENSOR CAN CIRC 1 • U0401: ECM CAN CIR 1 • U0402: TCM CAN CIR 1 • U0415: VDC CAN CIR 1 • U0433: ICC SENSOR CAN CIRC 2 • 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
5	• C1A03: VHCL SPEED SE CIRC
6	• C1A00: CONTROL UNIT

DTC Index

INFOID:0000000011598688

Systems for fail-safe
- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

DTC	CONSULT display	Fail-safe	Reference
CONSULT		System	
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	—	—
U1507	LOST COMM (SIDE RDR R)	D, E	DAS-81
U1508	LOST COMM (SIDE RDR L)	D, E	DAS-82
U1000[NOTE]	CAN COMM CIRCUIT	A, B, C, D, E	DAS-70
U1321	CONFIGURATION	A, B, C, D, E	DAS-73
C1A17	ICC SENSOR MALF	A, B, C	DAS-54
C1B53	SIDE RDR R MALF	D, E	DAS-58
C1B54	SIDE RDR L MALF	D, E	DAS-59
C1A01	POWER SUPPLY CIR	A, B, C, D, E	DAS-44
C1A02	POWER SUPPLY CIR 2	A, B, C, D, E	DAS-44

Systems for fail-safe
- A: Intelligent Cruise Control (ICC)
- B: Forward Emergency Braking (FEB)
- C: Predictive Forward Collision Warning (PFCW)
- D: Blind Spot Warning (BSW)
- E: Rear Cross Traffic Alert (RCTA)

DTC	CONSULT display	Fail-safe	Reference
CONSULT		System	
C1A13	STOP LAMP RLY FIX	A, B, C	DAS-47
C1A14	ECM CIRCUIT	A, B, C	DAS-54
C1A34	COMMAND ERROR	A, B, C	DAS-57
U0121	VDC CAN CIR 2	A, B, C, D, E	DAS-60
U0235	ICC SENSOR CAN CIRC 1	A, C, D, E	DAS-62
U0401	ECM CAN CIR 1	A, B, C, D, E	DAS-63
U0402	TCM CAN CIR 1	A, B, C, D, E	DAS-65
U0415	VDC CAN CIR 1	A, B, C, D, E	DAS-67
U0433	ICC SENSOR CAN CIRC 2	A, B, C	DAS-69
U1503	SIDE RDR L CAN CIR 2	D, E	DAS-73
U1504	SIDE RDR L CAN CIR 1	D, E	DAS-75
U1505	SIDE RDR R CAN CIR 2	D, E	DAS-77
U1506	SIDE RDR R CAN CIR 1	D, E	DAS-79
C1A03	VHCL SPEED SE CIRC	D, E	DAS-45
C1A00	CONTROL UNIT	A, B, C, D, E	DAS-43

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:0000000011598618

VALUES ON THE DIAGNOSIS TOOL

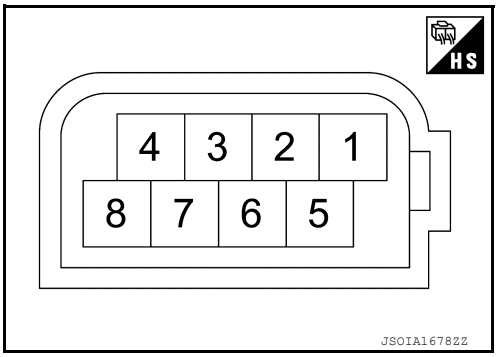
Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
YAW RATE	While driving	Vehicle stopped	0.0
		Vehicle turning right	Positive value
		Vehicle turning left	Negative value
PWR SUP MONI	Ignition switch ON		Power supply voltage value of ICC sensor
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance control mode.	When a vehicle ahead is detected	Displays the relative speed
		When a vehicle ahead is not detected	0.0
RADAR OFFSET	**NOTE:** The item is indicated but not used.		—
RADAR 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 radar alignment adjustment	Horizontal correction value is displayed
U/D ADJUST	Ignition switch ON	At the completion of radar alignment adjustment	Vertical correction value is displayed
FCW SYSTEM ON	NOTE: The item is indicated, but not used	—	OFF
FCW SELECT	NOTE: The item is indicated, but not used		–
PFCW SYSTEM ON	NOTE: The item is indicated, but not used		OFF
PFCW SELECT	Engine running	PFCW system set with the information display is ON	ON
		PFCW system set with the information display is OFF	OFF
FEB SW	NOTE: The item is indicated, but not used	—	—
FEB SELECT	Engine running	PFCW system set with the information display is ON	ON
		PFCW system set with the information display is OFF	OFF

Monitor item	Condition		Value/Status
MAIN SW	Ignition switch ON	When MAIN switch is pressed	On
		When MAIN switch is not pressed	Off
ICC/ASCD MODE	Engine running	Intelligent Cruise Control System MAIN switch status	On
			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
DISTANCE SW	Ignition switch ON	When DISTANCE switch is pressed	On
		When DISTANCE switch is not pressed	Off
BRAKE SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
STOP LAMP SW	Ignition switch ON	When brake pedal is depressed	On
		When brake pedal is not depressed	Off
IDLE SW	Engine running	Idling	On
		Except idling (depress accelerator pedal)	Off
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
OWN VHCL	NOTE: The item is indicated, but not used.	—	Off
VHCL AHEAD	Drive the vehicle and activate the Intelligent Cruise Control System	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is detected (vehicle ahead detection indicator OFF)	Off
SET DISTANCE	• Start the engine and turn the ICC system ON • Press the DISTANCE switch to change the distance setting	When set to “long”	LONG
		When set to “middle”	MID
		When set to “short”	SHORT
SET VHCL SPD	NOTE: The item is indicated, but not used.	—	—
THRT SENSOR [%]	Engine running	Depress accelerator pedal	Displays the throttle position
VEHICLE AHEAD DETECT	Engine running	—	—
STATIC OBSTACLE DETECT	Indicates [ON/Off] status of static obstacle detection		
BUZZER O/P	Engine running	When the buzzer of the following system operates: • Intelligent Cruise Control System • PFCW system • FEB system	On
		When the buzzer of the following system does not operate: • Intelligent Cruise Control System • PFCW system • FEB system	Off

Monitor item	Condition		Value/Status
FUNC ITEM (FCW)	Ignition switch ON	—	—
FUNC ITEM (PFCW)			On
FUNC ITEM (FEB)			
FUNC ITEM (ICC)			
PRESS_ORDER	Engine running	—	
D RANGE SW	Engine running	When the selector lever is in “D” position or manual mode	On
		When the selector lever is in any other than “D” or manual mode	Off
NP RANGE SW	Engine running	When the selector lever is in “N” “P”	On
		When the selector lever is in any other than “N” “P”	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
VHCL SPD AT	While driving	—	Value of A/T vehicle speed sensor signal
Shift position	• Engine running • While driving	—	Displays the shift position
Turn signal	NOTE: The item is indicated, but not used	—	Off
SYSTEM CANCEL MESSAGE	Engine running	System cancel display OFF	NO REQ
		System cancel reason is slippery road	SLIP
		System cancel reason is VDC OFF	VDC OFF
DISP VHCL SPD UNIT			
VHCL SPD UNIT	Engine running	Meter indicates km/h	km/h
		Meter indicates mph	mph
ADAS AVAILABLE COND	NOTE: The item is indicated, but not used	—	—
ICC SET STATUS			
ICC MALF			
ADAS MALF	Engine running	ADAS is malfunction	On
		ADAS is not malfunction	Off
STOP LAMP RELAY ON	Engine running	Stop lamp relay is fixed on	On
		Stop lamp relay is not fixed on	Off
STOP LAMP RELAY OFF	Engine running	Stop lamp relay is fixed off	On
		Stop lamp relay is not fixed off	Off
ICC CANCEL	NOTE: The item is indicated, but not used	—	—
ACCEL COM VALUE 1 [m/s2]	Engine running	—	ICC sensor request accel command to ADAS controller

Monitor item	Condition		Value/Status
ICC STATUS	Engine running	Intelligent Cruise Control System Off	Off
		Intelligent Cruise Control System On	ICC
		Intelligent Cruise Control System On and vehicle is stopped	STOP1
		Intelligent Cruise Control System On and Driver depressed accelerator pedal	ACCEL
ACCCEL COM VALUE 2	NOTE: The item is indicated, but not used		—

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	8 (L/W)	Ground	—	Ignition switch ON	0 - 0.1 V	0 V
2 (L)	—	ITS communication-L	—	—	—	—
3 (L/R)		ITS communication-H	—	—	—	—
8 (L/W)	Ground	Ignition power supply	Input	Ignition switch ON	9.5 - 16 V	Battery voltage

Fail-safe

INFOID:0000000011598619

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:0000000011598620

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 • C1A0C: ADAS MSG COUNTER • C1A0C: ADAS CRC ERROR

Priority	Detected items (DTC)
3	• C1A01: POWER SUPPLY CIR • C1A02: POWER SUPPLY CIR 2 • C1A04: ABS/TCS/VDC CIRC • C1A05: BRAKE SW/STOP L SW • C1A06: OPERATION SW CIRC • C1A07:CVT CIRCUIT • C1A12 :LASER BEAM OFFCNTR • C1A13 :STOP_LAMP_RLY_FIX • C1A14 :ECM_CIRCUIT • C1A16: RADAR STAIN • C1A18: LASER AIMING INCMP • C1A21: UNIT HIGH TEMP • C1A24: NP RANGE • C1A26: ECD MODE MALF • C1A27: ECD POWER SUPPLY CIRC • C1A39: STRG SEN CIR • C1B5D: FEB OPE COUNT LIMIT • C10B7: YAW RATE SENSOR • U0121: VDC CAN CIR2 • U153A: TCM CAN CIR 1 • U153B: TCM CAN CIR 2 • U153D: ECM CAN CIR 2 • U0126: STRG SEN CAN CIR1 • U0401: ECM CAN CIR 1 • U0415: VDC CAN CIR1 • U0428: STRG SEN CAN CIR2
4	• C1A03: VEHC_SPEED_SE_CIRC
5	• C1A15: GEAR POSITION
6	• C1A00: CONTROL UNIT • C1A17: ICC SENSOR MALF • C1A0D: RADAR CAN CIR

DTC Index

INFOID:0000000011844010

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 is switched 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 ··· 48 → 49 after returning to the normal condition whenever the ignition is switched 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 function				Reference
CONSULT			Intelligent Cruise Control	Conventional (fixed speed) cruise control mode	Predictive Forward Collision Control	Forward Emergency Brake (FEB)	
C1A00	CONTROL UNIT	ON	×	×	×	×	CCS-84, "DTC Logic"
C1A0C	ADAS CAN CIR 1	ON	×	×	×	×	CCS-130, "DTC Logic"
C1A0D	RADAR CAN CIR	ON	×		×	×	CCS-131, "DTC Logic"
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	CCS-85, "DTC Logic"
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	CCS-85, "DTC Logic"
C1A03	VHCL SPEED SE CIRC	ON	×	×	×	×	CCS-86, "DTC Logic"
C1A04	ABS/TCS/VDC CIRC	ON	×	×	×	×	CCS-88, "DTC Logic"
C1A05	BRAKE SW/STOP L SW	ON	×	×	×	×	CCS-89, "DTC Logic"
C1A06	OPERATION SW CIRC	ON	×	×			CCS-94, "DTC Logic"
C1A07	CVT CIRCUIT	ON	×	×	×	×	CCS-127, "DTC Logic"
C1A12	LASER BEAM OFFCNTR	ON	×		×	×	CCS-97, "DTC Logic"
C1A13	STOP LAMP RLY FIX	ON	×	×	×	×	CCS-98, "DTC Logic"
C1A14	ECM CIRCUIT	ON	×		×	×	CCS-100, "DTC Logic"
C10B7	YAW RATE SENSOR	ON	×		×	×	CCS-118, "DTC Logic"
C1A15	GEAR POSITION	ON	×		×	×	CCS-102, "DTC Logic"
C1A16	RADAR BLOCKED	ON	×		×	×	CCS-104, "DTC Logic"
C1A17	ICC SENSOR MALF	ON	×		×	×	CCS-106, "DTC Logic"
C1A18	LASER ALIGNMENT INCMPT	ON	×		×	×	CCS-107, "DTC Logic"
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	CCS-108, "DTC Logic"

DTC	CONSULT display	ICC system warning lamp	Fail-safe function				Reference
CONSULT			Intelligent Cruise Control	Conventional (fixed speed) cruise control mode	Predictive Forward Collision Control	Forward Emergency Brake (FEB)	
C1A24	NP RANGE	ON	×	×	×	×	CCS-109, "DTC Logic"
C1A26	ECD MODE MALF	ON	×		×	×	CCS-111, "DTC Logic"
C1A27	ECD POWER SUPPLY CIRCUIT	ON	×		×	×	CCS-113, "DTC Logic"
C1A39	STRG SENS CIR	ON	×		×	×	CCS-115, "DTC Logic"
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	CCS-117, "DTC Logic"
C1B5D	FEB OPE COUNT LIMIT	ON	×	×	×	×	CCS-116, "DTC Logic"
C10B7	YAW RATE SENSOR	ON	×	×	×	×	CCS-118, "DTC Logic"
U153A	TCM CAN CIR 1	ON	×		×	×	CCS-128, "DTC Logic"
U153B	TCM CAN CIR 2	ON	×		×	×	CCS-129, "DTC Logic"
U153D	ECM CAN CIR 2	ON	×		×	×	CCS-129, "DTC Logic"
U0121	VDC CAN CIR2	ON	×	×	×	×	CCS-119, "DTC Logic"
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	CCS-120, "DTC Logic"
U0401	ECM CAN CIR1	ON	×	×	×	×	CCS-121, "DTC Logic"
U0415	VDC CAN CIR1	ON	×	×	×	×	CCS-122, "DTC Logic"
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	CCS-123, "DTC Logic"
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	CCS-124, "DTC Logic"
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	CCS-125, "DTC Logic"

SIDE RADAR LH

Reference Value

INFOID:0000000011231762

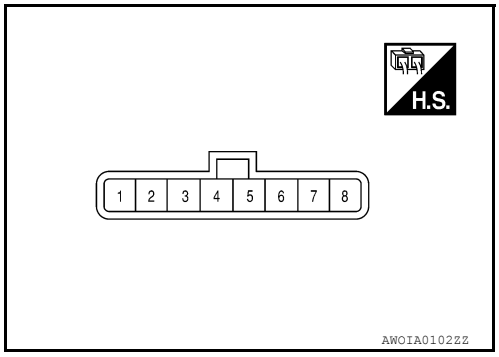
VALUES ON THE DIAGNOSIS TOOL

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		
3 (B)	Ground	Ground	—	—	0 V
4 (G)	Ground	Blind Spot Warning indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (L)	—	ITS communication high	—	—	—
7 (Y)	—	ITS communication low	—	—	—
8 (B)	Ground	Ground	—	—	0 V

Fail-safe (Side Radar)

INFOID:0000000011231763

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)/Rear Cross Traffic Alert (RCTA)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning indicator (orange) on 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 buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. 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.

Rear Cross Traffic Alert (RCTA)

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. 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:0000000011231764

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:0000000011231765

×: Applicable

DTC		Fail-safe	Reference page
		Blind Spot Warning/Rear Cross Traffic Alert	
C1B50	SIDE RDR MALFUNCTION	×	DAS-154
C1B51	BSW/BSI IND SHORT CIR	×	DAS-155
C1B52	BSW/BSI IND OPEN CIR	×	DAS-157
C1B55	RADAR BLOCKAGE	×	DAS-159
U1000	CAN COMM CIRCUIT	×	DAS-165
U1010	CONTROL UNIT (CAN)	×	DAS-168
U0104	ADAS CAN CIR1	×	DAS-161
U0405	ADAS CAN CIR2	×	DAS-163

SIDE RADAR RH

Reference Value

INFOID:0000000011231766

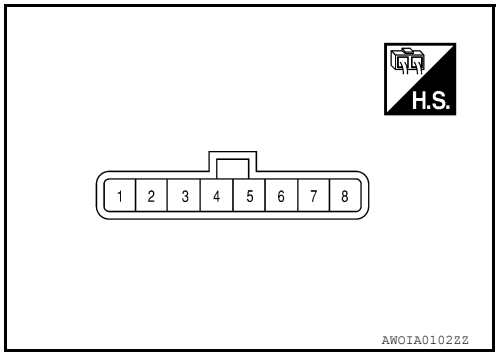
VALUES ON THE DIAGNOSIS TOOL

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		
3 (B)	Ground	Right/Left switching signal	Input	—	0 V
4 (G)	Ground	Blind Spot Warning indicator	Output	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	6 V
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
6 (L)	—	ITS communication high	—	—	—
7 (Y)	—	ITS communication low	—	—	—
8 (B)	Ground	Ground	—	—	0 V

Fail-safe (Side Radar)

INFOID:0000000011598863

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)/Rear Cross Traffic Alert (RCTA)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning indicator (orange) on 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 buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. 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.

Rear Cross Traffic Alert (RCTA)

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. 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:0000000011231768

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:0000000011231769

×: Applicable

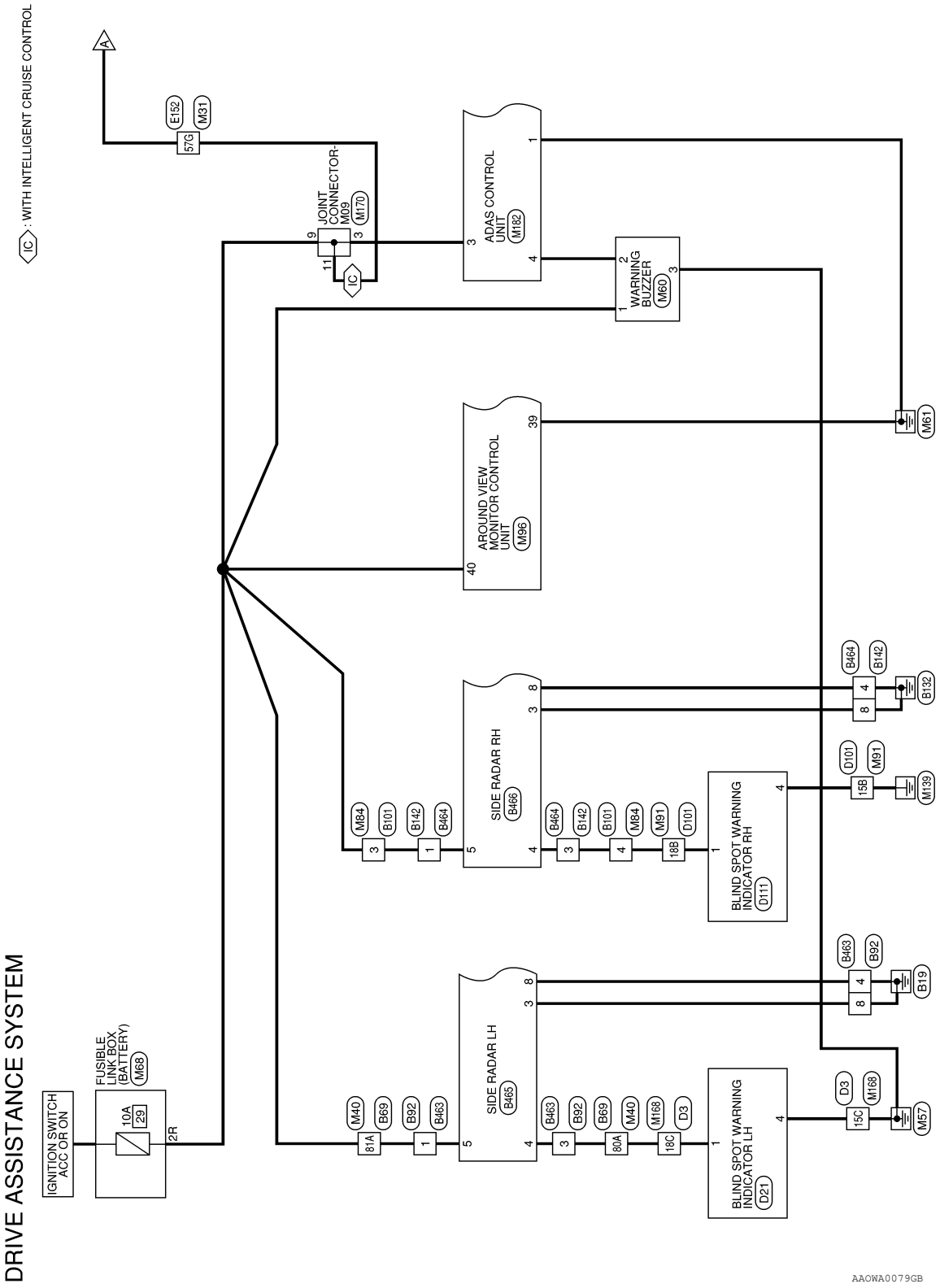
DTC		Fail-safe	Reference page
		Blind Spot Warning/Rear Cross Traffic Alert	
C1B50	SIDE RDR MALFUNCTION	×	DAS-154
C1B51	BSW/BSI IND SHORT CIR	×	DAS-155
C1B52	BSW/BSI IND OPEN CIR	×	DAS-157
C1B55	RADAR BLOCKAGE	×	DAS-159
U1000	CAN COMM CIRCUIT	×	DAS-166
U1010	CONTROL UNIT (CAN)	×	DAS-169
U0104	ADAS CAN CIR1	×	DAS-161
U0405	ADAS CAN CIR2	×	DAS-163

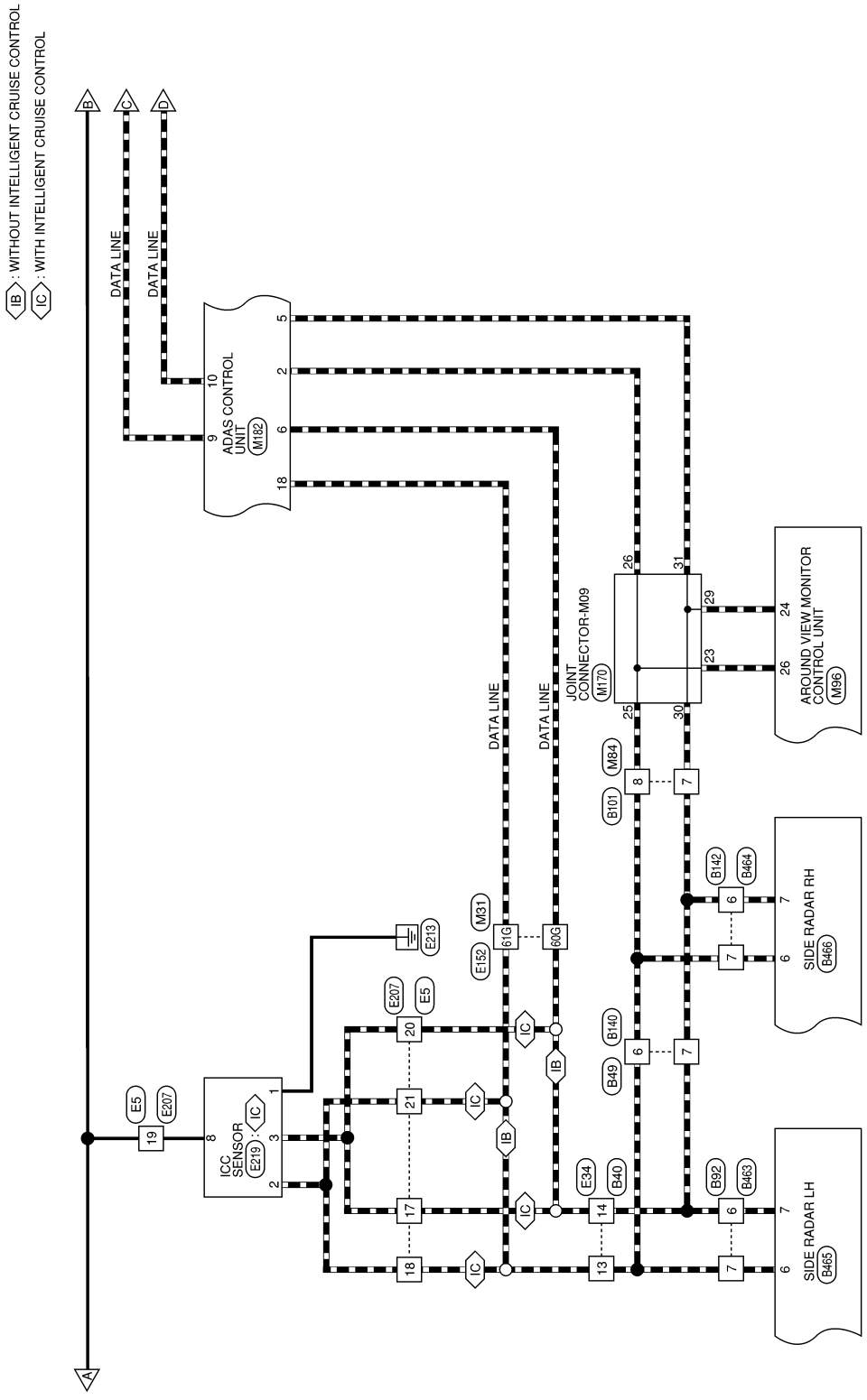
WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:0000000011565252





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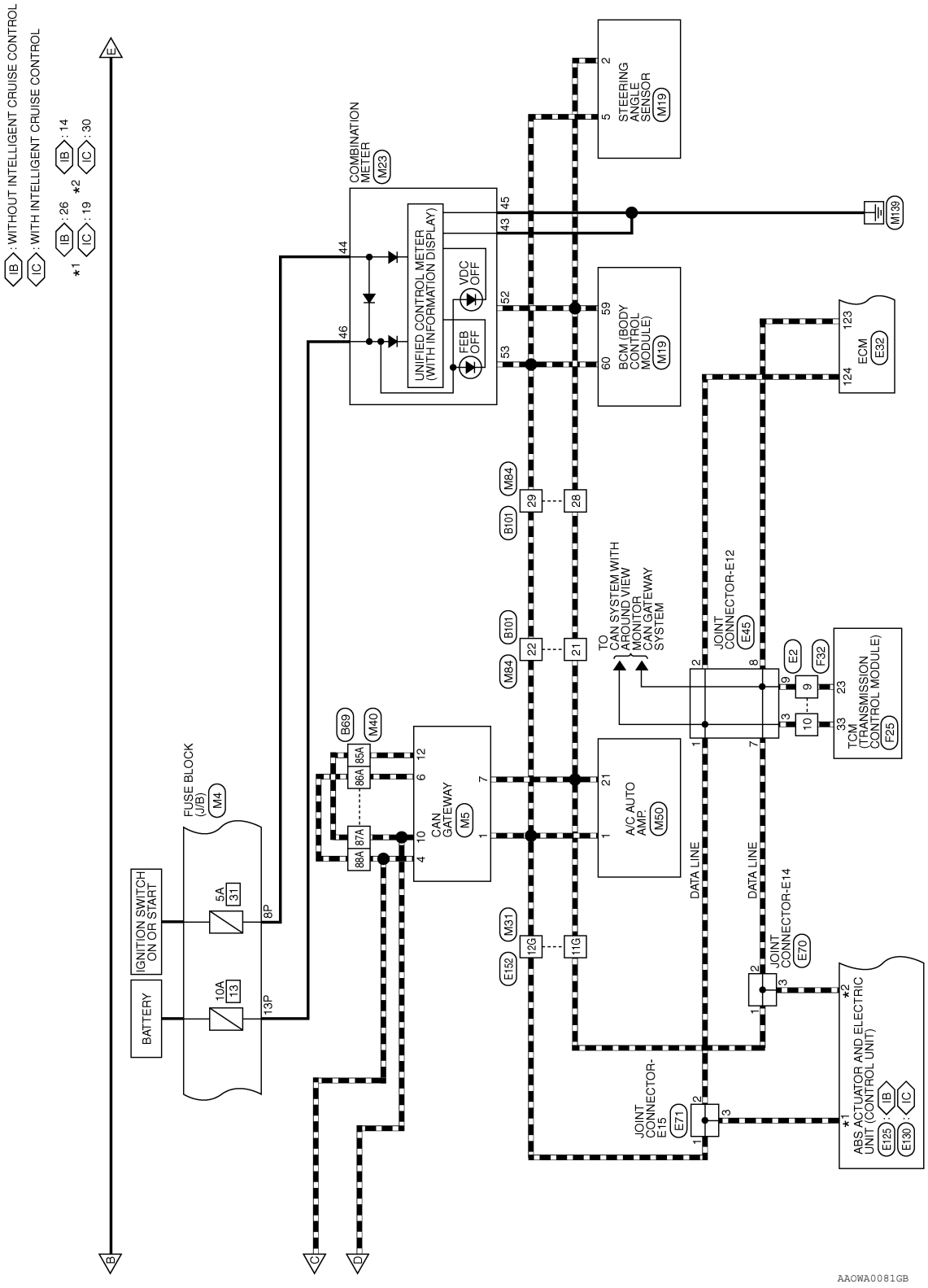
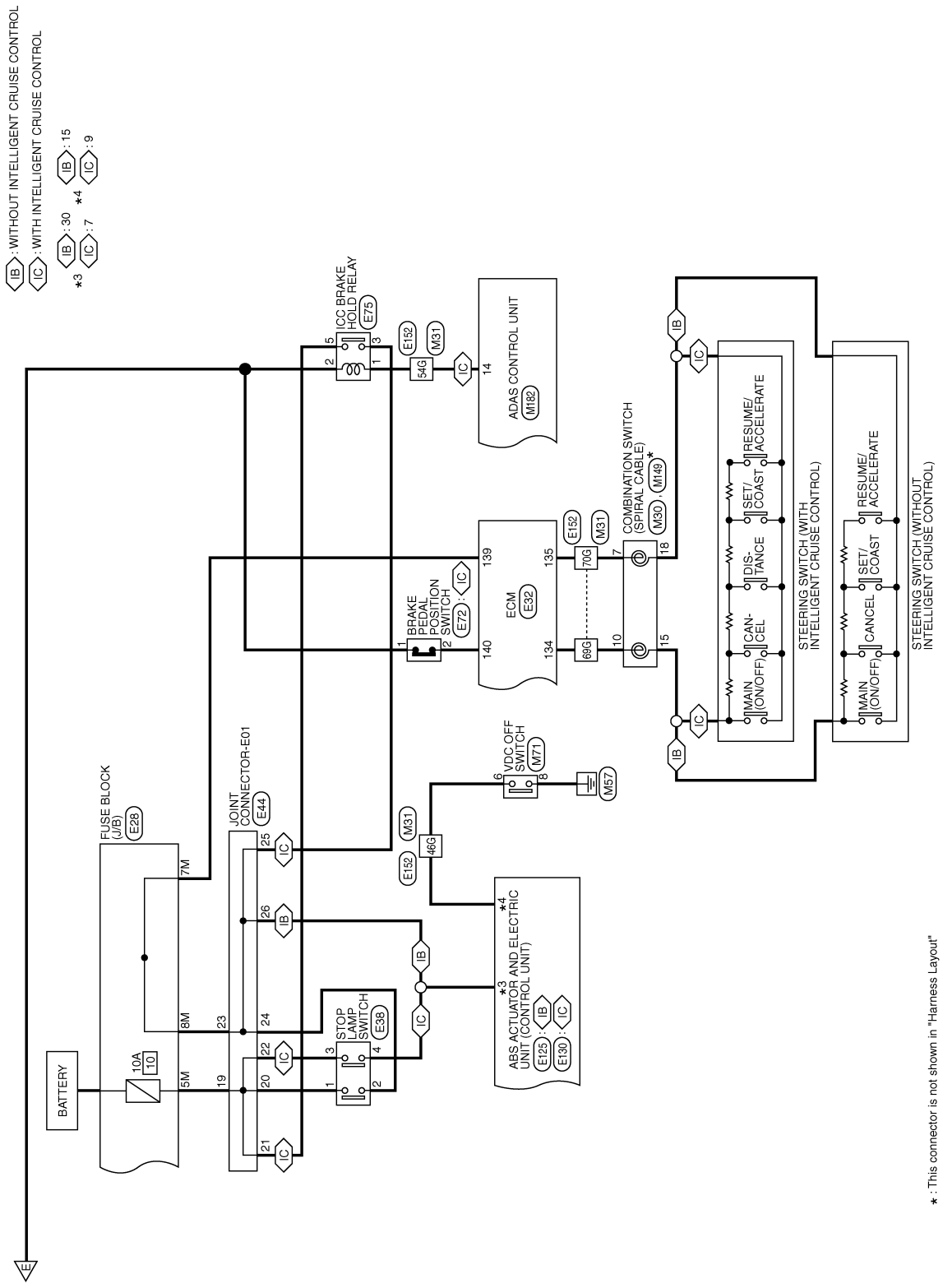
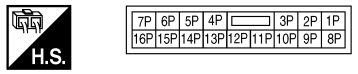

IB : WITHOUT INTELLIGENT CRUISE CONTROL
IC : WITH INTELLIGENT CRUISE CONTROL
IB : 26
IC : 19
*1
IB : 14
IC : 30
*2
E
B
C
D
BATTERY
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B) M4
5A 31
10A 13
8P
13P
B69
M40
85A
86A
87A
88A
CAN GATEWAY M5
COMBINATION METER M23
UNIFIED CONTROL METER (WITH INFORMATION DISPLAY)
VDC OFF
FEB OFF
STEERING ANGLE SENSOR M19
BCM (BODY CONTROL MODULE) M19
M84
B101
TO CAN SYSTEM WITH AROUND VIEW MONITOR CAN GATEWAY SYSTEM
A/C AUTO AMP M50
M31
E152
12G
11G
DATA LINE
JOINT CONNECTOR-E12 E45
JOINT CONNECTOR-E14 E70
JOINT CONNECTOR-E15 E71
TCM (TRANSMISSION CONTROL MODULE) F25
E2
F32
ECM E32
M139
*1 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E125 E130
*2
AAOWA0081GB


IB : WITHOUT INTELLIGENT CRUISE CONTROL
IC : WITH INTELLIGENT CRUISE CONTROL
IB : 30
IC : 7
*3
IB : 15
IC : 9
*4
ICC BRAKE HOLD RELAY
E75
E152
M31
54G
ADAS CONTROL UNIT
M182
COMBINATION SWITCH (SPIRAL CABLE)
M30
M149
*
RESUME/ ACCELERATE
SET/ COAST
DIS- TANCE
CAN- CEL
MAIN (ON/OFF)
STEERING SWITCH (WITH INTELLIGENT CRUISE CONTROL)
CANCEL
STEERING SWITCH (WITHOUT INTELLIGENT CRUISE CONTROL)
BRAKE PEDAL POSITION SWITCH
E72
ECM
E32
70G
69G
VDC OFF SWITCH
M71
M57
46G
FUSE BLOCK (J/B)
E28
JOINT CONNECTOR-E01
E44
BATTERY
10A
10
STOP LAMP SWITCH
E38
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
*3
*4
E125
E130
* : This connector is not shown in "Harness Layout"
AAOWA0082GB

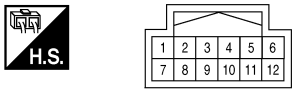
DRIVE ASSISTANCE SYSTEM CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



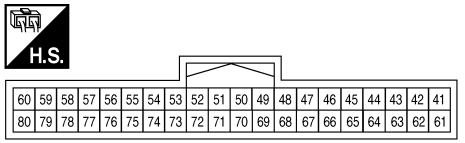
Terminal No.	Color of Wire	Signal Name
8P	BG	–
13P	W	–

Connector No.	M5
Connector Name	CAN GATEWAY
Connector Color	WHITE



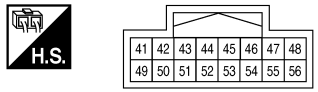
Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
4	L	CAN2-H
6	L	CAN3-H
7	P	CAN-L
10	P	CAN2-L
12	P	CAN3-L

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



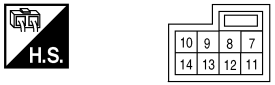
Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H

Connector No.	M23
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
7	G	–
10	W	–

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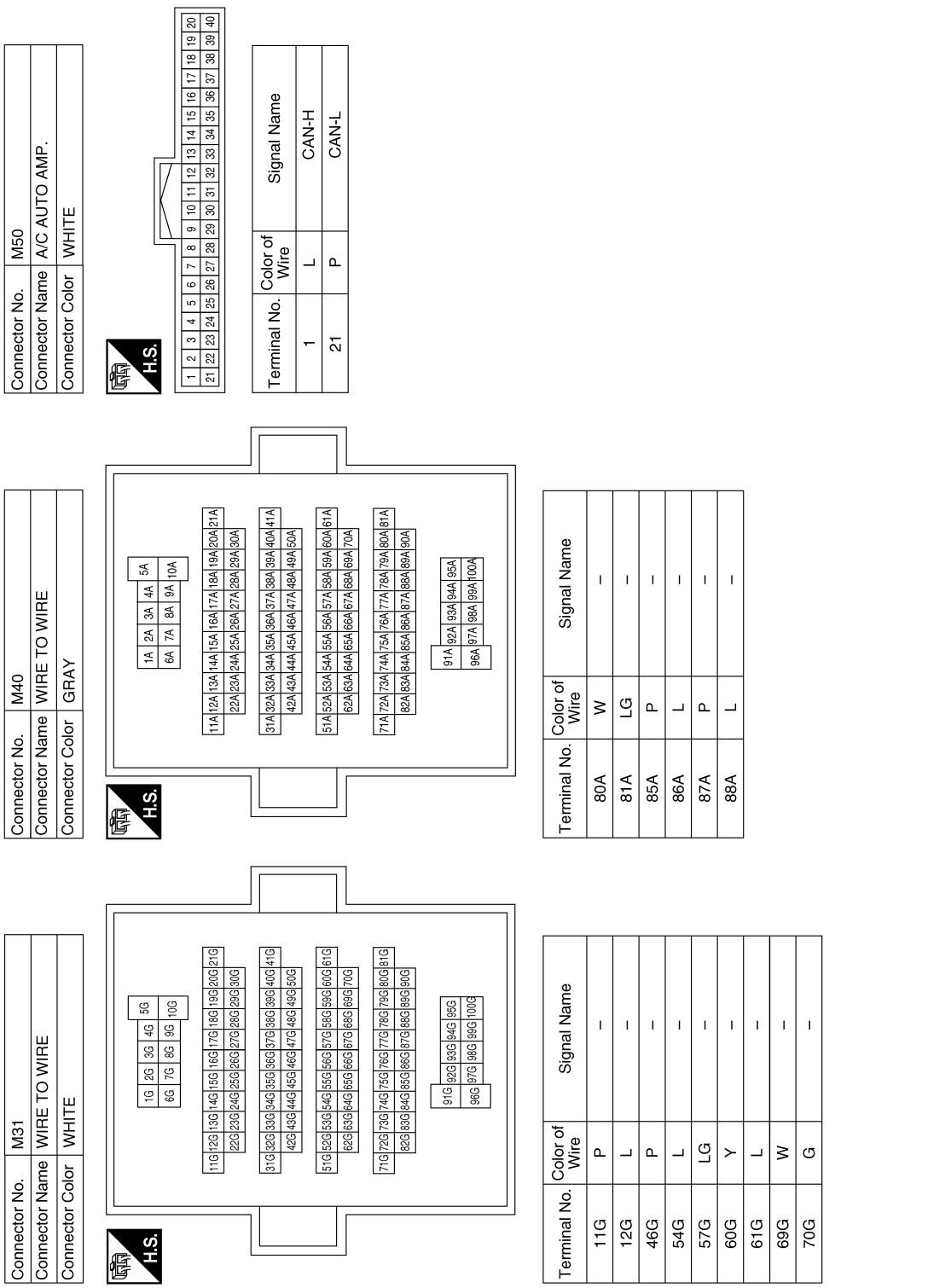


AAOIA0217GB

Connector No.	M54
Connector Name	STEERING ANGLE SENSOR
Connector Color	WHITE

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
2	P	–
5	L	–

Connector No.	M60
Connector Name	WARNING BUZZER
Connector Color	BROWN

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	V	–
3	B	–

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN

H.S.

7R	6R	5R	4R		3R	2R	1R
16R	15R	14R	13R	12R	11R	10R	9R	8R

Terminal No.	Color of Wire	Signal Name
2R	LG	–

Connector No.	M71
Connector Name	VDC OFF SWITCH
Connector Color	BLACK

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
6	P	–
8	B	–

Connector No.	M84
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
3	LG	–
4	G	–
7	Y	–
8	L	–
21	P	–
22	L	–
28	P	–
29	L	–

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	11B	12B	13B	14B	15B
16B	17B	18B	19B	20B	21B	22B	23B	24B	25B	26B	36B	37B	38B	39B	40B	41B	42B	43B	44B	45B	46B
27B	28B	29B	30B	31B	32B	33B	34B	35B	47B	48B	49B	50B	51B	52B	53B	54B	55B

Terminal No.	Color of Wire	Signal Name
15B	B	–
18B	G	–

AAOIA0285GB

Connector No.	M96
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Color	WHITE

H.S.

2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39

Terminal No.	Color of Wire	Signal Name
24	P	V-CAN L
26	L	V-CAN H
39	B	GND
40	LG	IGN

Connector No.	M149
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

22	21	20	19	18	17	16	15

Terminal No.	Color of Wire	Signal Name
15	R	–
18	B	–

Terminal No.	Color of Wire	Signal Name
3	LG	–
9	LG	–
11	LG	–
23	L	–
25	L	–
26	L	–
29	Y	–
30	Y	–
31	Y	–

Connector No.	M170
Connector Name	JOINT CONNECTOR-M09
Connector Color	WHITE

H.S.

11	10	9	8	7	6	5	4	3	2	1
22	21	20	19	18	17	16	15	14	13	12
33	32	31	30	29	28	27	26	25	24	23

Connector No.	M168
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	13C	14C	15C
16C	17C	18C	19C	20C	21C	22C	23C	24C	25C	26C	36C	37C	38C	39C	40C	41C	42C	43C	44C	45C	46C
27C	28C	29C	30C	31C	32C	33C	34C	35C			47C	48C	49C	50C	51C	52C	53C	54C	55C		

Terminal No.	Color of Wire	Signal Name
15C	B	–
18C	W	–

AAOIA0286GB

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Terminal No.	Color of Wire	Signal Name
9	P	–
10	L	–

Connector No.	M182
Connector Name	ADAS CONTROL UNIT
Connector Color	WHITE

H.S.

12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
1	B	GND
2	L	ITS CAN HIGH
3	LG	IGN
4	V	BUZZER OUTPUT
5	Y	ITS CAN LOW
6	Y	3RD CAN LOW
7	–	–
8	–	–
9	L	CAN-H
10	P	CAN-L

Terminal No.	Color of Wire	Signal Name
11	–	–
12	–	–
13	–	–
14	L	STOP LAMP RELAY DRIVE
15	–	–
16	–	–
17	–	–
18	L	3RD CAN HIGH
19	–	–
20	–	–
21	–	–
22	–	–
23	–	–
24	–	–

AAOIA0287GB

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name
17	Y	–
18	L	–
19	G	–
20	Y	–
21	L	–

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

4M	3M		2M	1M
10M	9M	8M	7M	6M	5M

Terminal No.	Color of Wire	Signal Name
5M	W	–
7M	BG	–
8M	P	–

Connector No.	E32
Connector Name	ECM
Connector Color	BLACK

H.S.

121	125	129	133	137	141	145	149
122	126	130	134	138	142	146	150
123	127	131	135	139	143	147	151
124	128	132	136	140	144	148	152

Terminal No.	Color of Wire	Signal Name
123	P	CAN-L
124	L	CAN-H
134	G	ASCD STEERING SWITCH
135	R	SENSOR GROUND (ASCD STEERING SWITCH)
139	P	STOP LAMP SWITCH
140	LG	BRAKE PEDAL POSITION SWITCH

Connector No.	E34
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1
16	15	14	13	12	11	10	9

Terminal No.	Color of Wire	Signal Name
13	L	–
14	Y	–

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE

H.S.

3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	W	–
2	P	–
3	W	–
4	G	–

AAOIA0221GB

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
19	W	–
20	W	–
21	W	–
22	W	–
23	P	–
24	P	–
25	P	–
26	P	–

Connector No.	E45
Connector Name	JOINT CONNECTOR-E12
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
3	L	–
7	P	–
8	P	–
9	P	–

Connector No.	E70
Connector Name	JOINT CONNECTOR-E14
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	–
2	P	–
3	P	–

Connector No.	E71
Connector Name	JOINT CONNECTOR-E15
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	L	–
3	L	–

Connector No.	E72
Connector Name	BRAKE PEDAL POSITION SWITCH
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
2	LG	–

Connector No.	E75
Connector Name	ICC BRAKE HOLD RELAY
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	R	–
3	P	–
5	W	–

AAOIA0288GB

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITHOUT INTELLIGENT CRUISE CONTROL)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
14	P	CAN-L
15	R	VDC OFF SW
26	L	CAN-H
30	P	STOP LAMP SW

Connector No.	E130
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITH INTELLIGENT CRUISE CONTROL)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
7	G	STOP LAMP SW
9	R	VDC OFF SW
19	L	CAN-H
30	P	CAN-L

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
11G	P	–
12G	L	–
46G	R	–
54G	L	–
57G	R	–
60G	Y	–
61G	L	–
69G	G	–
70G	R	–

Connector No.	E207
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
17	Y	–
18	L	–
19	L/W	–
20	Y	–
21	L	–

AAOIA0289GB

Connector No.	F32
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
9	P	–
10	L	–

Connector No.	F25
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
23	P	CAN-L
33	L	CAN-H

Connector No.	B49
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	L	–
7	Y	–

Connector No.	E219
Connector Name	ICC SENSOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	L	–
3	L/R	–
8	L/W	–

Connector No.	B40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
13	L	–
14	Y	–

AAOIA0290GB

Connector No.	B92
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
1	R	–
3	W	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B140
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7
8	9	10	11	12	13	14	15	16

Terminal No.	Color of Wire	Signal Name
6	L	–
7	Y	–

Terminal No.	Color of Wire	Signal Name
80A	W	–
81A	R	–
85A	P	–
86A	L	–
87A	P	–
88A	L	–

Terminal No.	Color of Wire	Signal Name
8	L	–
21	P	–
22	L	–
28	P	–
29	L	–

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

5A	4A	3A	2A	1A
10A	9A	8A	7A	6A

21A	20A	19A	18A	17A	16A	15A	14A	13A	12A	11A
	30A	29A	28A	27A	26A	25A	24A	23A	22A	

41A	40A	39A	38A	37A	36A	35A	34A	33A	32A	31A
	50A	49A	48A	47A	46A	45A	44A	43A	42A	

61A	60A	59A	58A	57A	56A	55A	54A	53A	52A	51A
	70A	69A	68A	67A	66A	65A	64A	63A	62A	

81A	80A	79A	78A	77A	76A	75A	74A	73A	72A	71A
	90A	89A	88A	87A	86A	85A	84A	83A	82A	

95A	94A	93A	92A	91A
100A	99A	98A	97A	96A

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Terminal No.	Color of Wire	Signal Name
3	R	–
4	G	–
7	Y	–

AAOIA0293GB

Connector No.	B142
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
3	G	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B463
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
3	G	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B464
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
3	G	–
4	B	–
6	Y	–
7	L	–
8	B	–

Connector No.	B465
Connector Name	SIDE RADAR LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	B	–
4	G	–
5	R	–
6	L	–
7	Y	–
8	B	–

Connector No.	B466
Connector Name	SIDE RADAR RH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
3	B	–
4	G	–
5	R	–
6	L	–
7	Y	–
8	B	–

AAOIA0226GB

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

15C	14C	13C	12C	11C	10C	9C	8C	7C	6C	5C	4C	3C	2C	1C
46	45	44	43	42	41	40	39	38	37	36	26	25	24	23	22	21	20	19	18	17	16
55	54	53	52	51	50	49	48	47			35	34	33	32	31	30	29	28	27		

Terminal No.	Color of Wire	Signal Name
15C	B	–
18C	W/L	–

Connector No.	D21
Connector Name	BLIND SPOT WARNING INDICATOR LH
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	W/L	–
4	B	–

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

15B	14B	13B	12B	11B	10B	9B	8B	7B	6B	5B	4B	3B	2B	1B
46	45	44	43	42	41	40	39	38	37	36	26	25	24	23	22	21	20	19	18	17	16
55	54	53	52	51	50	49	48	47			35	34	33	32	31	30	29	28	27		

Terminal No.	Color of Wire	Signal Name
15B	B	–
18B	R	–

Connector No.	D111
Connector Name	BLIND SPOT WARNING INDICATOR RH
Connector Color	WHITE

H.S.

4	3	2	1

Terminal No.	Color of Wire	Signal Name
1	R	–
4	B	–

AAOIA0227GB

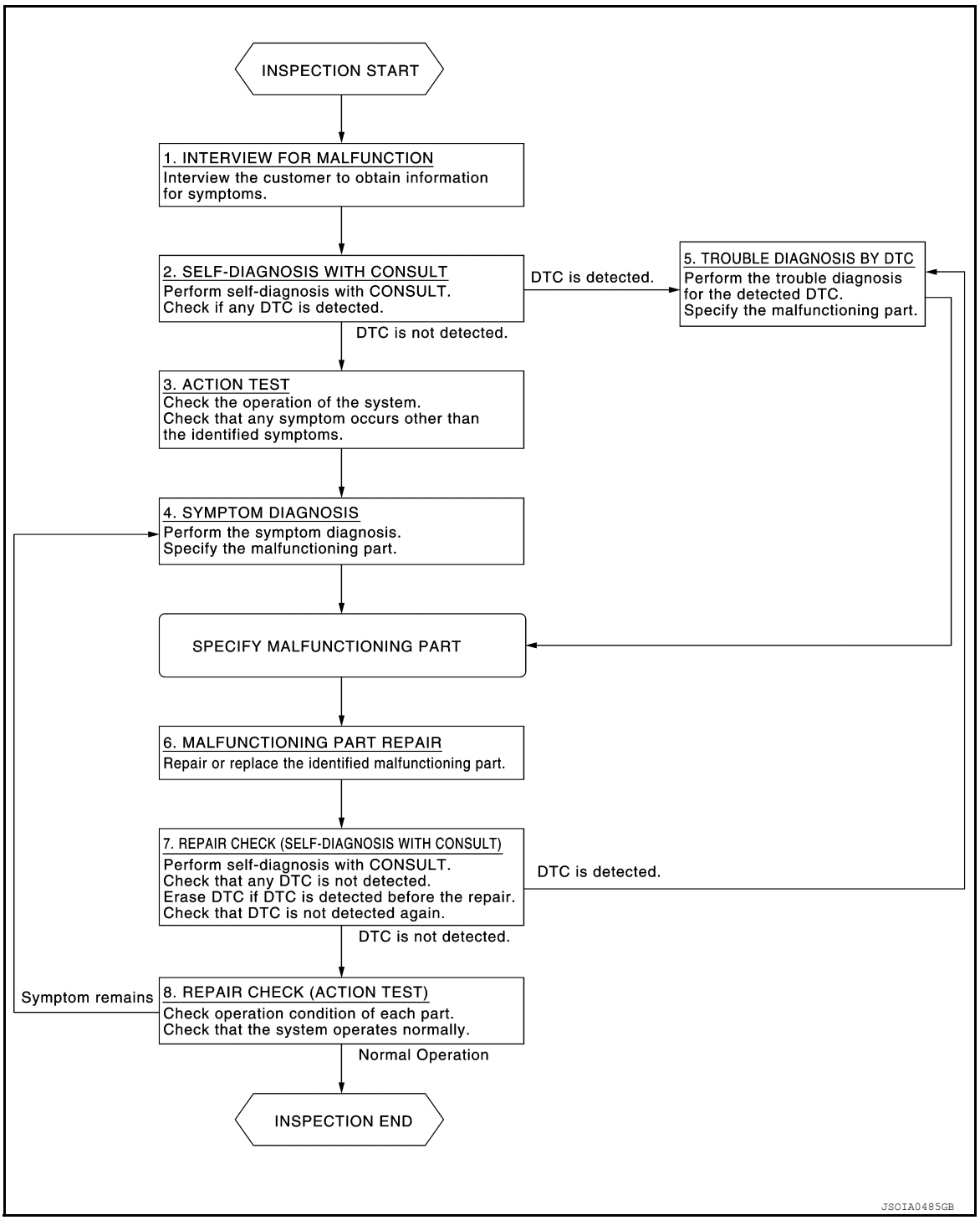
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000011231782

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

CONSULT
1. Perform “All DTC Reading” mode.
2. Check if the DTC is detected on the “Self Diagnostic Results” of the following:
- “ICC/ADAS”
- “LASER/RADAR”
- “SIDE RADAR LEFT”
- “SIDE RADAR RIGHT”

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 3.

3.ACTION TEST

1. Perform the system action test to check the operation status of the following:
- BSW: Refer to DAS-152, "BLIND SPOT WARNING : Description".
- RCTA: Refer to DAS-153, "RCTA : Description".
2. 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-175, "Symptom Table".

>> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

CONSULT
1. Check the DTC in the “Self Diagnosis Results”.
2. Perform trouble diagnosis for the following detected DTC:
- “ICC/ADAS”: Refer to DAS-119, "DTC Index".
- “LASER/RADAR” Refer to CCS-51, "DTC Index".
- “SIDE RADAR LEFT”: Refer to DAS-129, "DTC Index".
- “SIDE RADAR RIGHT”: Refer to DAS-131, "DTC Index".

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. Erase “Self Diagnosis Results”.
2. Perform “All DTC Reading” mode again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of the following:
- “ICC/ADAS”
- “LASER/RADAR”
- “SIDE RADAR LEFT”
- “SIDE RADAR RIGHT”

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 8.

8. REPAIR CHECK (ACTION TEST)

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

- BSW: Refer to DAS-152, "BLIND SPOT WARNING : Description".
- RCTA: Refer to DAS-153, "RCTA : Description".

Is there a malfunction symptom?

YES >> GO TO 4.
NO >> Inspection End.

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

Description

INFOID:0000000011231783

- Always perform the radar alignment 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 PFCW system action test, check that the PFCW system operates normally.

Work Procedure

INFOID:0000000011231784

1.RADAR ALIGNMENT

Perform the radar alignment. Refer to CCS-71, "Description".

>> GO TO 2.

2.ICC SYSTEM ACTION TEST

1. Perform the ICC system action test. Refer to CCS-78, "Description".
2. Check that the ICC system operates normally.

>> Inspection End.

ACTION TEST
BLIND SPOT WARNING
BLIND SPOT WARNING : Description

INFOID:0000000011231791

Always perform the Blind Spot Warning system action test to check that the system operates normally after replacing the side radar LH/RH, or repairing any Blind Spot Warning system malfunction.

WARNING:
Be careful of traffic conditions and safety around the vehicle when performing road test.
CAUTION:
Fully understand the following items well before the road test;
- **Precautions: Refer to DAS-87, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".**
- **System description for Blind Spot Warning: Refer to DAS-94, "BSW : System Description".**
- **Normal operating condition: Refer to DAS-181, "Description".**

BLIND SPOT WARNING : Work Procedure

INFOID:0000000011231792

WARNING:
Be careful of traffic conditions and safety around the vehicle when performing road test.
CAUTION:
Fully understand the following items well before the road test;
- **Precautions: Refer to DAS-87, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".**
- **System description for Blind Spot Warning: Refer to DAS-94, "BSW : System Description".**
- **Normal operating condition: Refer to DAS-181, "Description".**

1.CHECK BSW SYSTEM SETTING

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

>> GO TO 2.

2.BSW SYSTEM ACTION TEST

1. Enable the setting of the BSW system on the integral switch.
2. Check BSW operation according to the following table:

Vehicle condition/ Driver's operation			Action			
Vehicle speed (Approx.)	Turn signal condition	Status of vehicle detection within detection area	Indication on the Blind Spot Warning indicator	Indication on the combination meter	Indicator color	Buzzer
Less than approx. 18 MPH (29 km/h)	—	—	OFF	ON	White	OFF
Approx. 20 MPH (32 km/h) or more	—	Vehicle is absent	OFF	ON	White	OFF
	OFF	Vehicle is detected	ON	ON	White	OFF
	ON (vehicle detected direction)	Before turn signal operates Vehicle is detected	Blink	Blink	Yellow (Blink)	Short continuous beeps
		Vehicle is detected after turn signal operates	Blink	Blink	Yellow (Blink)	OFF

>> Inspection End.

RCTA

RCTA : Description

INFOID:0000000011231793

Always perform the RCTA system action test to check that the system operates normally after replacing the side radar LH/RH, or repairing any BSW/RCTA system malfunction.

WARNING:
Be careful of traffic conditions and safety around the vehicle when performing road test.
CAUTION:
Fully understand the following items well before the road test;
- **Precautions: Refer to DAS-87, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".**
- **System description for RCTA: Refer to DAS-96, "RCTA : System Description".**
- **Normal operating condition: Refer to DAS-181, "Description".**

RCTA : Work Procedure

INFOID:0000000011231794

WARNING:
Be careful of traffic conditions and safety around the vehicle when performing road test.
CAUTION:
Fully understand the following items well before the road test;
- **Precautions: Refer to DAS-87, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".**
- **System description for RCTA: Refer to DAS-96, "RCTA : System Description".**
- **Normal operating condition: Refer to DAS-181, "Description".**

1.CHECK BSW/RCTA SYSTEM SETTING

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

>> GO TO 2.

2.ACTION TEST FOR RCTA

1. Enable the setting of the RCTA system on the integral switch.
2. Check the RCTA operation according to the following table:

Vehicle condition		Action	Buzzer
• R range • 5 MPH (8 km/h)	If the radar detects an approaching vehicle from the side.	• Chime sound (single beep) • Flashes Blind Spot Warning indicator on the side of the approaching vehicle is detected. • Yellow rectangular frame appears in the display.	Single beep
	No approaching vehicle	No action	—

>> Inspection End.

DTC/CIRCUIT DIAGNOSIS

C1B50 SIDE RADAR MALFUNCTION

DTC Description

INFOID:0000000011231798

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1B50	SIDE RDR MALFUNCTION (Side radar malfunction)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	Side radar malfunction
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Perform “All DTC Reading” mode.
3. Check if “C1B50” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is the “C1B50” detected as the current malfunction?

YES >> Refer to DAS-154, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231799

1.PERFORM SELF DIAGNOSTIC

CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “SIDE RADAR LEFT/RIGHT”.
3. Touch “ERASE”.
4. Turn ignition switch OFF.
5. Turn ignition switch ON.
6. Check if any DTC other than “C1B50” is detected in “Self Diagnostic Result” mode 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-131, "DTC Index" (Side Radar Right) or DAS-129, "DTC Index" (Side Radar Left).
NO >> Replace the faulty side radar. Refer to DAS-188, "Removal and Installation".

C1B51 BLIND SPOT WARNING INDICATOR SHORT CIRCUIT

DTC Description

INFOID:0000000011231800

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1B51	BSW/BSI IND SHORT CIR (Blind Spot Warning indicator short circuit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	Short circuit in Blind Spot Warning indicator circuit is detected. (Over current is detected)
		Diagnosis delay time	–

POSSIBLE CAUSE

- Blind Spot Warning indicator circuit.
- Blind Spot Warning indicator.
- Side radar.

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Perform “All DTC Reading” mode.
3. Check if “C1B51” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is the “C1B51” detected as the current malfunction?

YES >> Refer to DAS-155, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231801

Regarding Wiring Diagram information, refer to DAS-132, "Wiring Diagram".

1.CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN 1

1. Turn ignition switch OFF.
2. Disconnect side radar harness connector and Blind Spot Warning indicator harness connector.
3. Check continuity between side radar harness connector and Blind Spot Warning indicator harness connector.

Side radar		Blind Spot Warning indicator		Continuity
Connector	Terminal	Connector	Terminal	
B465 LH	4	D21 LH	1	Yes
B466 RH		D111 RH		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness or connector.

2.CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN 2

Check continuity between Blind Spot Warning indicator harness connector and ground.

Blind Spot Warning indicator		Ground	Continuity
Connector	Terminal		
D21 LH	4		Yes
D111 RH			

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness or connector.

3.CHECK SIDE RADAR VOLTAGE OUTPUT

1. Connect side radar harness connector.
2. Check voltage between Blind Spot Warning indicator harness connector and ground.

Blind Spot Warning indicator		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
D21 LH	1		Ignition switch OFF ⇒ ON (Approx. 2 sec.)	6 V
D111 RH				

Is the inspection result normal?

YES >> Replace Blind Spot Warning indicator. Refer to DAS-189, "Removal and Installation".
NO >> Replace side radar. Refer to DAS-188, "Removal and Installation".

C1B52 BLIND SPOT WARNING INDICATOR OPEN CIRCUIT

DTC Description

INFOID:0000000011231802

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1B52	BSW/BSI IND OPEN CIR (Blind Spot Warning indicator open circuit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	Open circuit in Blind Spot Warning indicator circuit is detected
		Diagnosis delay time	–

POSSIBLE CAUSE

- Blind Spot Warning indicator circuit.
- Blind Spot Warning indicator.
- Side radar.

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Perform “All DTC Reading” mode.
3. Check if “C1B52” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is the “C1B52” detected as the current malfunction?

YES >> Refer to DAS-157, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231803

Regarding Wiring Diagram information, refer to DAS-132, "Wiring Diagram".

1.CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN 1

1. Turn ignition switch OFF.
2. Disconnect side radar harness connector and Blind Spot Warning indicator harness connector.
3. Check continuity between side radar harness connector and Blind Spot Warning indicator harness connector.

Side radar		Blind Spot Warning indicator		Continuity
Connector	Terminal	Connector	Terminal	
B465 LH	4	D21 LH	1	Yes
B466 RH		D111 RH		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness or connector.

2.CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN 2

Check continuity between Blind Spot Warning indicator harness connector and ground.

Blind Spot Warning indicator		Ground	Continuity
Connector	Terminal		
D21 LH	4		Yes
D111 RH			

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness or connector.

3.CHECK SIDE RADAR VOLTAGE OUTPUT

1. Connect side radar harness connector.
2. Check voltage between Blind Spot Warning indicator harness connector and ground.

Blind Spot Warning indicator		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
D21 LH	1		Ignition switch OFF ⇒ ON (Approx. 2 sec.)	6 V
D111 RH				

Is the inspection result normal?

YES >> Replace Blind Spot Warning indicator. Refer to DAS-189, "Removal and Installation".
NO >> Replace side radar. Refer to DAS-188, "Removal and Installation".

C1B55 RADAR BLOCKAGE

DTC Description

INFOID:0000000011231804

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1B55	RADAR BLOCKAGE (Radar blockage)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	Side radar is blocked
		Diagnosis delay time	–

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.

POSSIBLE CAUSE

Stain or foreign materials is deposited.

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “C1B55” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is the DTC “C1B55” detected?

YES >> Refer to DAS-159, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231805

1.CHECK THE REAR BUMPER

Check rear bumper near the side radar contaminated with foreign materials.

>> GO TO 2.

2.CHECK THE SIDE RADAR

Check side radar and the side radar outskirts contaminated with foreign materials.

>> GO TO 3.

3.CHECK THE SIDE RADAR INSTALL CONDITION

Check side radar installation condition (installation position, properly tightened, a bent bracket).

>> GO TO 4.

4. INTERVIEW

1. Ask if there is stain or foreign materials.
2. Ask if there is any temporary ambient condition such as splashing water, mist or fog.
3. Ask if there is any object such as ice, frost or dirt obstructing the side radar.

Is any of above conditions seen?

YES >> Explain to the customer about the difference between the blockage detection function and the indication when the malfunction is detected and tell them “This is not malfunction”.

NO >> Inspection End.

U0104 ADAS CAN 1

DTC Description

INFOID:0000000011231818

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0104	ADAS CAN CIR1 (ADAS control unit CAN circuit 1)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	Side radar detected an error of ITS communication signal that was received from ADAS control unit
		Diagnosis delay time	–

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0104” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-165, "SIDE RADAR LH : DTC Description" (Side Radar LH) or DAS-166, "SIDE RADAR RH : DTC Description" (Side Radar RH).

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if U0104 is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is DTC “U0104” detected?

YES >> Refer to DAS-161, "Diagnosis Procedure".

NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".

NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231819

1.CHECK DTC PRIORITY

If DTC “U0104” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-165, "SIDE RADAR LH : DTC Description" (Side Radar LH) or DAS-166, "SIDE RADAR RH : DTC Description" (Side Radar RH).

NO >> GO TO 2.

2.SELF DIAGNOSTIC RESULT OF ADAS CONTROL UNIT

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select “Self Diagnostic Result” mode of “ICC/ADAS”.

4. Check DTC.

Is DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-119, "DTC Index".

NO >> Replace side radar LH or side radar RH. Refer to DAS-188, "Removal and Installation"

U0405 ADAS CAN 2

DTC Description

INFOID:0000000011231822

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0405	ADAS CAN CIR2 (ADAS control unit CAN circuit 2)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	Side radar detected an error of ITS communication signal that was received from ADAS control unit
		Diagnosis delay time	–

POSSIBLE CAUSE

ADAS control unit.

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0405” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-165, "SIDE RADAR LH : DTC Description" (Side Radar LH) or DAS-166, "SIDE RADAR RH : DTC Description" (Side Radar RH).

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if U0405 is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is DTC “U0405” detected?

YES >> Refer to DAS-163, "Diagnosis Procedure".

NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".

NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:0000000011231823

1.CHECK DTC PRIORITY

If DTC “U0104” is displayed with DTC “U1000”, first diagnose the DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to DAS-165, "SIDE RADAR LH : DTC Description" (Side Radar LH) or DAS-166, "SIDE RADAR RH : DTC Description" (Side Radar RH).

NO >> GO TO 2.

2.SELF DIAGNOSTIC RESULT OF ADAS CONTROL UNIT

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Select “Self Diagnostic Result” mode of “ICC/ADAS”.

4. Check DTC.

Is DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-119, "DTC Index".

NO >> Replace side radar LH or side radar RH. Refer to DAS-188, "Removal and Installation"

U1000 CAN COMM CIRCUIT
SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:0000000011231827

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 vehicles are 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-37, "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 Description

INFOID:0000000011231828

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000	CAN COMM CIRCUIT (CAN communication circuit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If side radar LH is not transmitting or receiving ITS communication signal
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

ITS communication system

FAIL-SAFE

The following systems are canceled:
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT
1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1000” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is “U1000” detected?

YES >> Refer to DAS-165, "SIDE RADAR LH : Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR LH : Diagnosis Procedure

INFOID:0000000011231829

1. SELF DIAGNOSTIC RESULT

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON, and then wait for 30 seconds or more.
3. Perform “ALL DTC READING” mode.
4. Check if “U1000” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR LEFT”.

Is “U1000” detected?

YES >> Refer to LAN-21, "Trouble Diagnosis Flow Chart".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:0000000011231830

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 vehicles are 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-37, "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 Description

INFOID:0000000011231831

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000	CAN COMM CIRCUIT (CAN communication circuit)	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If side radar RH is not transmitting or receiving ITS communication signal
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

ITS communication system

FAIL-SAFE

The following systems are canceled:
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT
1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1000” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT/LEFT”.

Is “U1000” detected?

YES >> Refer to DAS-165, "SIDE RADAR LH : Diagnosis Procedure".

NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR RH : Diagnosis Procedure

INFOID:0000000011231832

1.SELF DIAGNOSTIC RESULT

CONSULT
1. Start the engine.
2. Turn the Blind Spot Warning system ON, and then wait for 30 seconds or more.
3. Perform “ALL DTC READING” mode.
4. Check if “U1000” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT”.

Is “U1000” detected?

YES >> Refer to LAN-21, "Trouble Diagnosis Flow Chart".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

U1010 CONTROL UNIT (CAN)

SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:0000000011231839

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

SIDE RADAR LH : DTC Description

INFOID:0000000011231840

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If side radar LH detects malfunction by CAN controller initial diagnosis
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT
1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1010” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR LEFT”.

Is “U1010” detected?

YES >> Refer to DAS-165, "SIDE RADAR LH : Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR LH : Diagnosis Procedure

INFOID:0000000011231841

1.SELF DIAGNOSTIC RESULT

CONSULT
1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “ALL DTC READING” mode.
4. Check if “U1010” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR LEFT”.

Is “U1010” detected?

YES >> Replace the side radar LH. Refer to DAS-188, "Removal and Installation".
NO >> Inspection End.

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:0000000011231842

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

SIDE RADAR RH : DTC Description

INFOID:0000000011231843

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	–
		Threshold	If Side radar RH detects malfunction by CAN controller initial diagnosis
		Diagnosis delay time	–

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “All DTC Reading” mode.
4. Check if “U1010” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT”.

Is “U1010” detected?

YES >> Refer to DAS-167, "SIDE RADAR RH : Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR RH : Diagnosis Procedure

INFOID:0000000011231844

1.SELF DIAGNOSTIC RESULT

CONSULT

1. Start the engine.
2. Turn the Blind Spot Warning system ON.
3. Perform “ALL DTC READING” mode.
4. Check if “U1010” is detected as the current malfunction in “Self Diagnostic Result” mode of “SIDE RADAR RIGHT”.

Is “U1010” detected?

YES >> Replace the side radar RH. Refer to DAS-188, "Removal and Installation".
NO >> Inspection End.

POWER SUPPLY AND GROUND CIRCUIT

SIDE RADAR LH

SIDE RADAR LH : Diagnosis Procedure

INFOID:0000000011231851

Regarding Wiring Diagram information, refer to DAS-132, "Wiring Diagram".

1.CHECK FUSES

Check that the following fuse is not blown:

Signal name	Fuse No.
Ignition power supply	29 (10A)

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

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			
B465	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 connector and ground.

Side radar LH		Ground	Continuity
Connector	Terminal		
B465	3		Yes
	8		

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:0000000011231852

Regarding Wiring Diagram information, refer to DAS-132, "Wiring Diagram".

1.CHECK FUSES

Check that the following fuse is not blown:

Signal name	Fuse No.
Ignition power supply	29 (10A)

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

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			
B466	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 connector and ground.

Side radar RH		Ground	Continuity
Connector	Terminal		
B466	3		Yes
	8		

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair the side radar RH ground circuit.

RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000011622380

Regarding Wiring Diagram information, refer to DAS-132, "Wiring Diagram".

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		
B466	3		Yes

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair harness or connector.

WARNING BUZZER CIRCUIT

Component Function Check

INFOID:0000000011231855

1.CHECK WARNING BUZZER

CONSULT
1. Select “ADAS BUZZER” in “Active Test” mode of “ICC/ADAS”.
2. Check that the function operates normally.

Is the inspection result normal?

YES >> Inspection End.
NO >> Refer to DAS-173, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011231856

Regarding Wiring Diagram information, refer to DAS-132, "Wiring Diagram".

1.CHECK WARNING BUZZER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the warning buzzer harness 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		
M60	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		
M60	3		Yes

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the harness or connector.

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	
B182	4	M60	2	Yes

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair the harness or connector.

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		
B182	4		No

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair the harness or connector.

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-85, "Removal and Installation".
NO >> Replace the warning buzzer. Refer to DAS-187, "Removal and Installation".

SYMPTOM DIAGNOSIS

DRIVER ASSISTANCE SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000011231857

Symptom	Confirmation item		Inspection item/Reference page
PFCW/FEB/BSW/RCTA indicators do not illuminate.	All of driver assistance indicators do not illuminate.		System cannot be turned ON/OFF using the integral switch. Refer to DAS-176, "Description".
	Other information display is not illuminated.		Combination meter. Refer to MWI-29, "DTC Index".
FEB/PFCW/BSW/RCTA warning display does not illuminate (Buzzer is functioning normally)	Information display is functioning normally.		ADAS control unit. Refer to DAS-22, "DTC Index".
	Information display is not functioning normally.		Perform On Board Diagnosis of Combination meter. Refer to MWI-18, "On Board Diagnosis Function".
FEB/PFCW/BSW/RCTA warning buzzer is not sounding (Warning display is functioning normally)	FEB/PFCW warning buzzer does not sound.		Chime does not sound. Refer to DAS-177, "Description".
FEB/PFCW/BSW/RCTA warning buzzer is not sounding (Warning display is functioning normally)	BSW/RCTA warning buzzer does not sound.		Chime does not sound. Refer to DAS-173, "Component Function Check".
PFCW/FEB is not activated	PFCW and FEB are not activated.	Frequently cannot detect the vehicle ahead/Detection zone is short.	Frequently cannot detect the vehicle ahead/Detection zone is short. Refer to DAS-179, "Description".
		System misidentifies a vehicle even though there is no vehicle ahead.	Perform radar alignment. Refer to CCS-71, "Description".
		System misidentifies a vehicle in the next lane.	
		System does not detect the vehicle ahead at all.	The system does not detect the vehicle ahead at all. Refer to DAS-180, "Description"

SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE INTEGRAL SWITCH

Description

INFOID:0000000011231858

System setting is not selectable on the combination meter information display.

Diagnosis Procedure

INFOID:0000000011231859

1.CHECK DRIVER ASSISTANCE SYSTEM SETTING

1. Ignition On.
2. Check that the driver assistance system setting can be turned ON/OFF with the integral switch in the combination meter information display using the steering switches.

Is the inspection result normal?

YES >> Inspection End.
NO >> GO TO 2.

2.CHECK STEERING SWITCH CIRCUIT

Check the steering switches. Refer to MWI-67, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness or connector.

3.CHECK STEERING SWITCH RESISTANCE

Check the steering switches resistance. Refer to MWI-67, "Component Inspection".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-78, "Removal and Installation".
NO >> Replace steering switches. Refer to AV-66, "Removal and Installation".

CHIME DOES NOT SOUND

Description

INFOID:0000000011231860

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-179, "Description".)

Diagnosis Procedure

INFOID:0000000011231861

1.PERFORM ACTIVE TEST

CONSULT

1. Select “METER BUZZER” in “Active Test” mode of “ICC/ADAS”.
2. Check that the function operates normally.

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 3.

2.PERFORM THE SELF DIAGNOSTIC RESULT

CONSULT

1. Perform “All DTC Reading” mode.
2. Check if the “U1000” is detected in “Self Diagnosis Results” of “ICC/ADAS”.

Is “U1000” detected?

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

3.CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to DAS-70, "DTC Description".

>> Inspection End.

4.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-29, "DTC Index".
NO >> GO TO 5.

5.CHECK ICC WARNING CHIME CIRCUIT

Check meter buzzer. Refer to WCS-30, "Component Function Check".

Is the inspection result normal?

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

6.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

>> Inspection End.

7.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-85, "Removal and Installation".

>> Inspection End.

8.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-85, "Removal and Installation".

>> Inspection End.

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

Description

INFOID:0000000011231866

Symptom check: Detection function may become unstable under the following conditions.
- 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:0000000011231867

1.VISUAL CHECK (1)

Check ICC sensor for contamination and foreign materials.

Does contamination or foreign materials exist?

YES >> GO TO 2.
NO >> GO TO 3.

2.WIPE OUT DIRT AND FOREIGN MATERIAL

Clean the contamination and foreign material from the ICC sensor.

>> GO TO 7.

3.VISUAL CHECK (2)

Check ICC sensor and ICC sensor bracket for damage or looseness.

Does damage or looseness exist?

YES >> Repair or replace affected components. Refer to CCS-148, "Removal and Installation".
NO >> GO TO 4.

4.PERFORM RADAR ALIGNMENT

1. Perform radar alignment. Refer to CCS-71, "Description".
2. Perform action test. Refer to CCS-78, "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 CCS-148, "Removal and Installation".
2. Perform radar alignment. Refer to CCS-71, "Description".
3. Perform action test. Refer to CCS-78, "Description".
4. Check that the vehicle ahead detection performance improves.

Does it improve?

>> Inspection End.

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

INFOID:0000000011231868

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

Diagnosis Procedure

INFOID:0000000011231869

1.CHECK INFORMATION DISPLAY

1. Start the “Self Diagnosis mode” of combination meter. Refer to MWI-18, "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. Refer to MWI-78, "Removal and Installation".

2.VISUAL CHECK (1)

Check ICC sensor for contamination and foreign materials.

Does contamination or foreign materials exist?

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

3.WIPE OUT DIRT AND FOREIGN MATERIAL

Clean the contamination and foreign material from the ICC sensor.

>> Inspection End.

4.VISUAL CHECK (2)

Check ICC sensor and ICC sensor bracket for damage or looseness.

Does damage or looseness exist?

YES >> Repair or replace affect components. Refer to CCS-148, "Removal and Installation".
NO >> GO TO 5.

5.PERFORM RADAR ALIGNMENT

1. Perform radar alignment. Refer to CCS-71, "Description".
2. Perform action test. Refer to CCS-78, "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 CCS-148, "Removal and Installation".
2. Perform radar alignment. Refer to CCS-71, "Description".
3. Perform action test. Refer to CCS-78, "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-85, "Removal and Installation".

>> Inspection End.

NORMAL OPERATING CONDITION

Description

INFOID:0000000011231872

PRECAUTIONS FOR PREDICTIVE FORWARD COLLISION WARNING (PFCW)

- The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- The radar sensor does not detect the following objects:
- Pedestrians, animals, or obstacles in the roadway.
- Oncoming vehicles.
- Crossing vehicles.
- The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle.
- The radar sensor may not detect a second vehicle ahead in the following conditions:
- Snow or heavy rain.
- Dirt, ice, snow or other material covering the radar sensor.
- Interference by other radar sources.
- Snow or road spray from traveling vehicles is splashed.
- Driving in a tunnel.
- The radar sensor may not detect a second vehicle when the vehicle ahead is being towed.
- When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed.
- The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves.
- Excessive noise will interfere with the warning tone sound, and it may not be heard.

PRECAUTIONS FOR BLIND SPOT WARNING

- The Blind Spot Warning system are not a replacement for proper driving procedure and are not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system.
- The Blind Spot Warning system may not provide the warning or the control for vehicles that pass through the detection zone quickly.
- Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Blind Spot Warning 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 is designed to ignore most stationary objects, however, objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

PRECAUTIONS FOR REAR CROSS TRAFFIC ALERT (RCTA)

- Always check surroundings and turn to check what is behind you before backing up. The radar sensors detect approaching (moving) vehicles. The radar sensors cannot detect every object such as:
- Pedestrians, bicycles, motorcycles, animals or child operated toy vehicles.
- A vehicle that passing at speeds greater than approximately 30 KM/H (19 MPH)
- A vehicle that passing at speeds greater than approximately 8 KM/H (5 MPH)
- The radar sensors may not detect approaching vehicles in certain situations:
- When the vehicle that is parked next to you obstructs the beam of the radar sensor.
- When the vehicle is parked in an angled parking space.
- When the vehicle is parked on an incline.

- When an approaching vehicle turns into your vehicles parking lot isle.
- When the angle formed by your vehicle is too small.

• The following conditions may reduce the ability of the radar to detect other vehicles:

- Severe weather
- Road spray
- Ice build up on the vehicle
- Frost on the vehicle
- Dirt build up on the vehicle

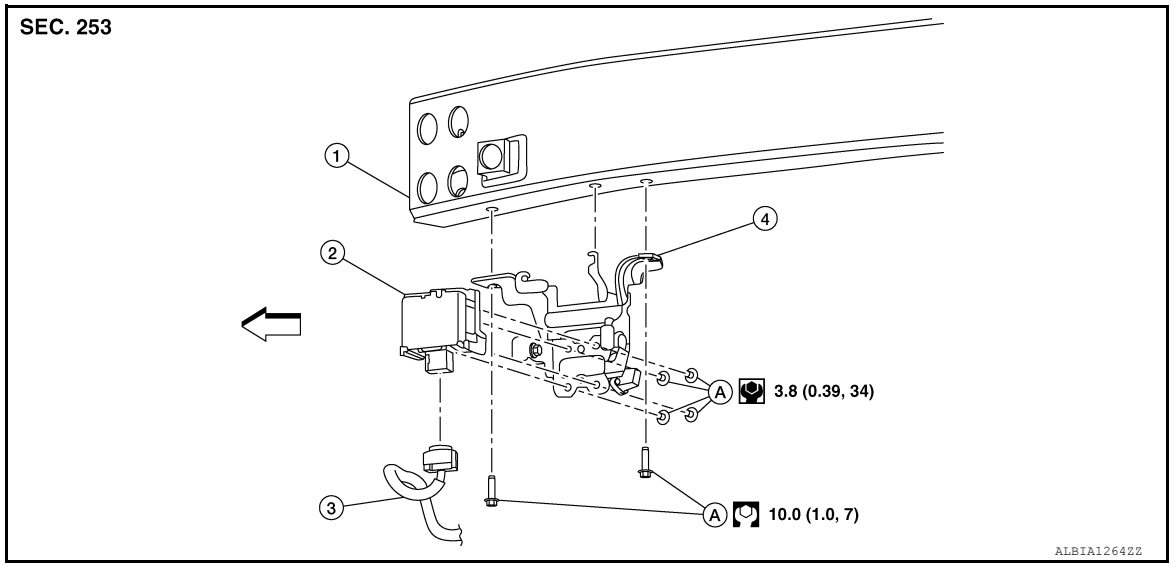
• Do not attach stickers (including transparent material), install accessories or apply additional paint near the radar sensors. These conditions may reduce the ability of the radar to detect other vehicles.
• Do not use RCTA systems when towing a trailer.
• Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound and it may not be heard.

REMOVAL AND INSTALLATION

ICC SENSOR

Exploded View

INFOID:0000000011573903



1. Front bumper reinforcement
2. ICC sensor
3. ICC sensor harness connector
4. ICC sensor bracket
A. Refer to INSTALLATION
⇦ Front

Removal and Installation

INFOID:0000000011573904

REMOVAL

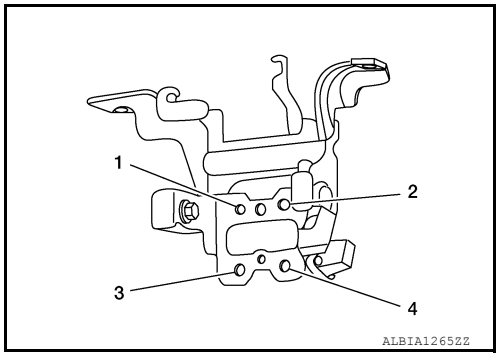
1. Remove front bumper fascia. Refer to EXT-24, "Exploded View".
2. Disconnect the harness connector from the ICC sensor.
3. Remove ICC sensor bracket bolts.
4. Remove bolts and detach ICC sensor from ICC sensor bracket.

INSTALLATION

Install ICC sensor to ICC sensor bracket.

- Install ICC sensor bolts loosely and then tighten in sequence as shown.

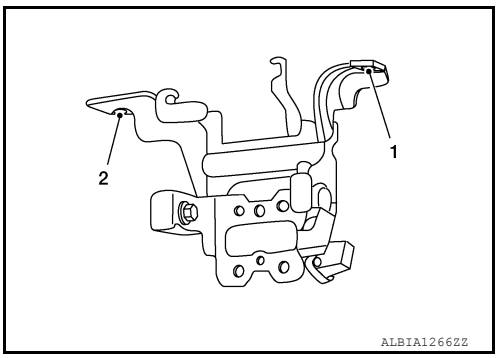
ICC sensor bolts : 3.8 N·m (0.39 kg-m, 34 in-lb)



Install ICC sensor bracket to front bumper reinforcement.

- Install ICC sensor bracket bolts loosely and then tighten in sequence as shown.

ICC sensor bracket bolts : 10.0 N·m (1.0 kg-m, 7 ft-lb)



Installation of remaining components is in the reverse order of removal.

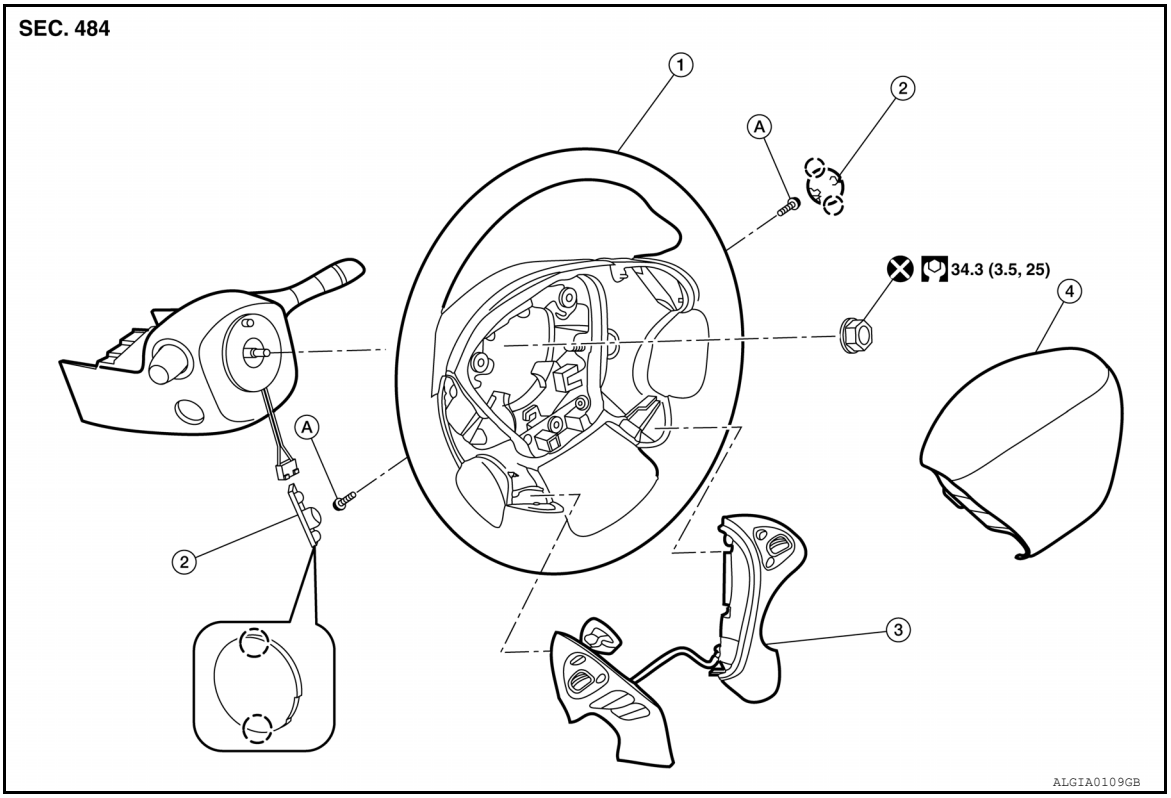
CAUTION:

- **Always perform the ICC sensor alignment and check the operation after removal, installation or replacement of ICC sensor. Refer to CCS-68, "Work Procedure".**
- **Do not touch ICC sensor face.**
- **Do not drop or shock ICC sensor.**
- **Make sure ICC sensor harness is installed without any twists.**

ICC STEERING SWITCH

Exploded View

INFOID:0000000011231874



1. Steering wheel
2. Cover
3. Steering switches
4. Driver air bag module
A. Refer to SR-12, "Exploded View".
Pawl

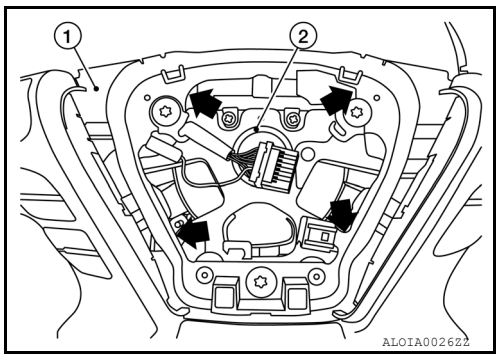
Removal and Installation

INFOID:0000000011590507

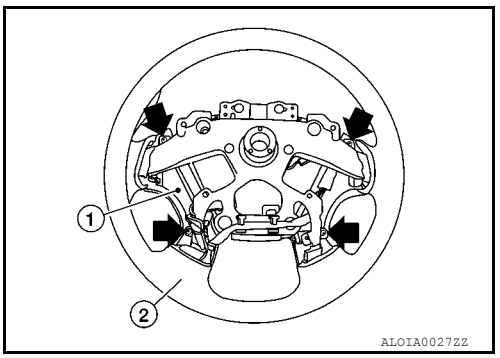
REMOVAL

NOTE:
The ICC steering and audio switches are serviced as an assembly.

1. Remove steering wheel. Refer to ST-31, "Removal and Installation".
2. Release pawls (⬅) and remove steering wheel rear finisher (1) from steering wheel (2).



3. Remove ICC steering and audio switch assembly screws (⬅).
4. Remove ICC steering and audio switch assembly (1) from steering wheel (2).



INSTALLATION

Installation is in the reverse order of removal.

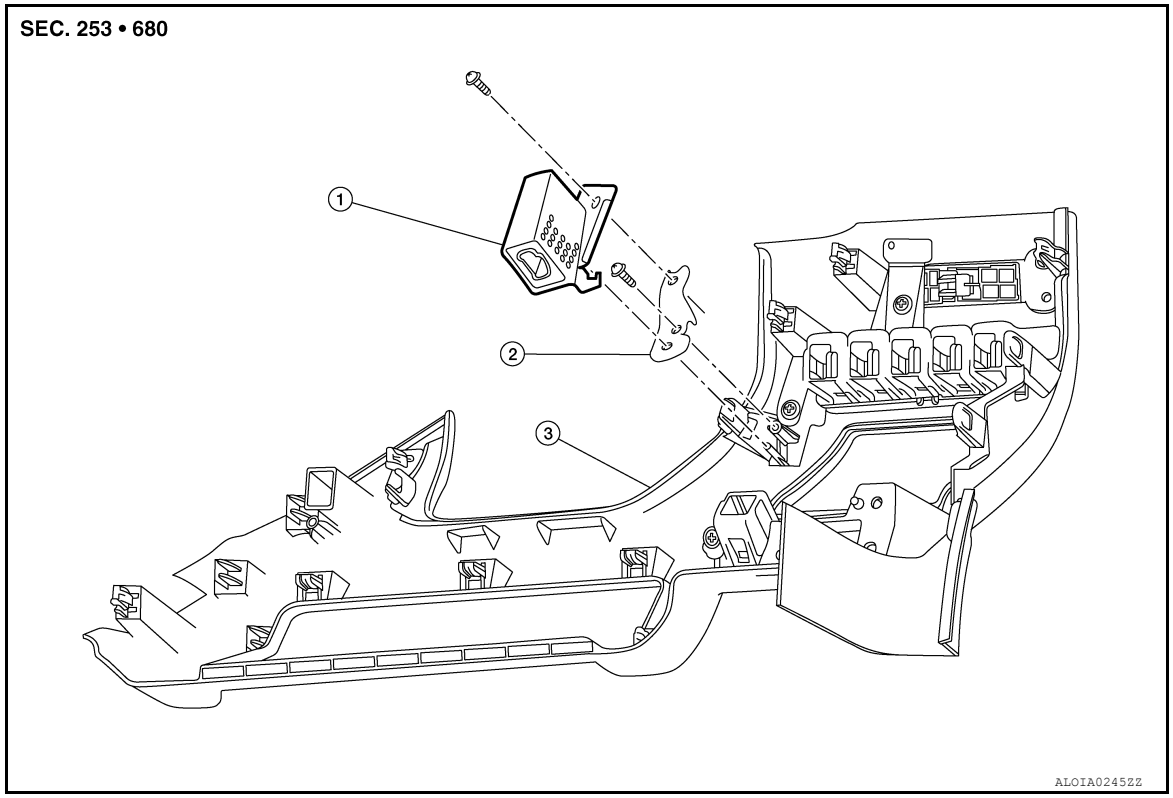
CAUTION:

Always perform the ICC system action test to check that the ICC system operates normally after replacing the ICC sensor or repairing any ICC system malfunction. Refer to CCS-78, "Work Procedure (Vehicle-To-Vehicle Distance Control Mode)".

WARNING BUZZER

Exploded View

INFOID:0000000011573905



1. Warning buzzer
2. Bracket
3. Instrument lower panel LH

Removal and Installation

INFOID:0000000011231878

REMOVAL

1. Remove the instrument lower panel LH. Refer to IP-24, "Removal and Installation".
2. Remove screw and remove warning buzzer.
3. Remove screw and remove bracket (if necessary).

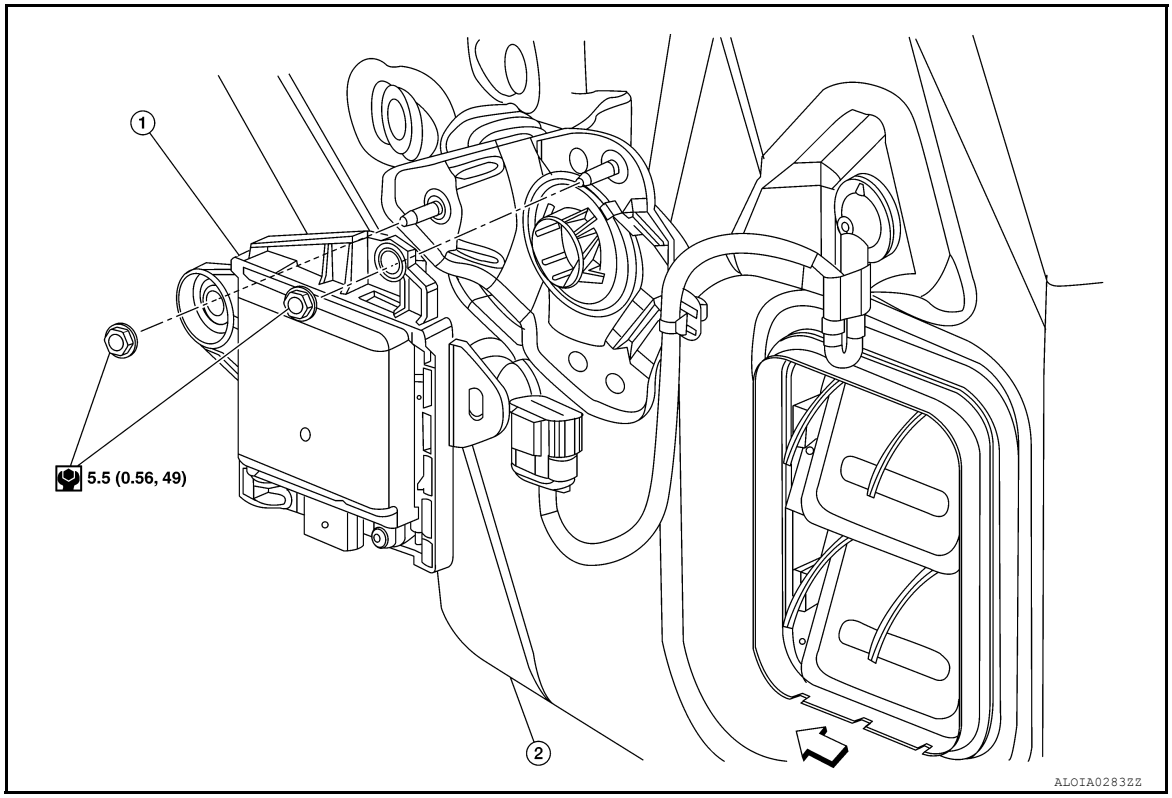
INSTALLATION

Installation is in the reverse order of removal.

SIDE RADAR

Exploded View

INFOID:0000000011570509



1. Side radar
2. Rear fender
⇦ Front

NOTE:
LH shown, RH similar.

Removal and Installation

INFOID:0000000011231875

REMOVAL

1. Remove the rear bumper fascia. Refer to EXT-27, "Removal and Installation".
2. Disconnect the harness connector from side radar.
3. Remove the nuts and remove the side radar.

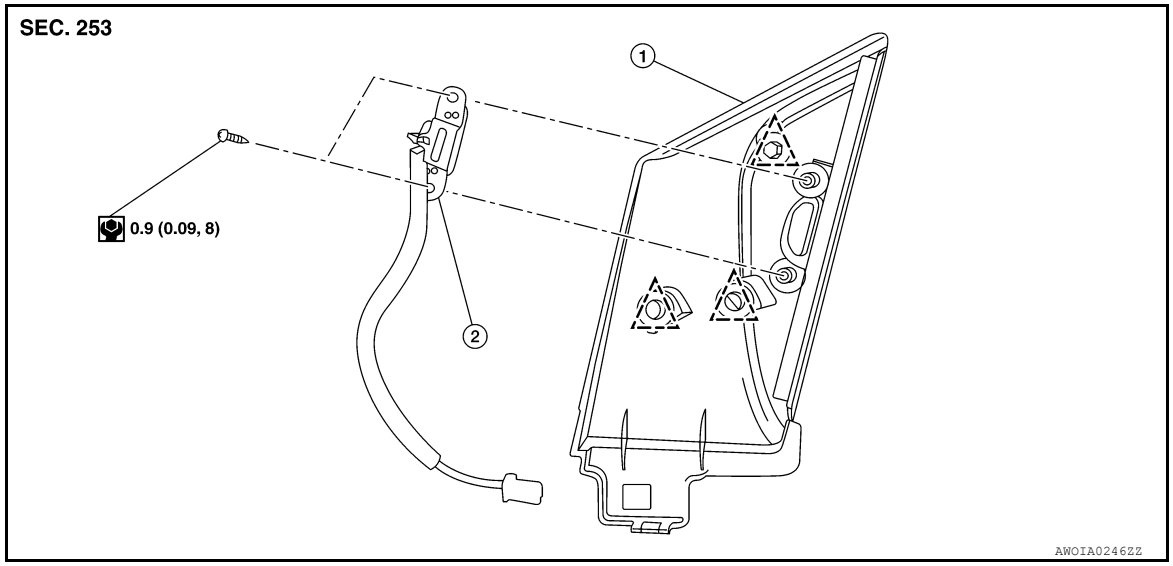
INSTALLATION

Installation is in the reverse order of removal.

BLIND SPOT WARNING INDICATOR

Exploded View

INFOID:0000000011578440



1. Door mirror corner finisher 2. Blind spot warning indicator △ Clip

Removal and Installation

INFOID:0000000011231876

REMOVAL

1. Remove the door mirror corner finisher. Refer to INT-15, "Removal and Installation".
2. Remove screws and remove blind spot warning indicator.

INSTALLATION

Installation in the reverse order of removal.