# SECTION DAS DRIVER ASSISTANCE SYSTEM

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## PRECAUTION PRECAUTIONS

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

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

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

• Solder the repaired area and wrap tape around the soldered area. **NOTE:** 

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



• Bypass connection is never allowed at the repaired area. **NOTE:** 

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



## PRECAUTIONS

## Precautions for Removing Battery Terminal

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

#### NOTE:

< PRECAUTION >

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

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

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

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

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

Precaution for Blind Spot Warning/Blind Spot Intervention System Service INFOLEMENT	
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#### WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test. CAUTION:

- Do not use the Blind Spot Intervention system when driving with free rollers or a chassis dynamometer.
- Do not perform the active test while driving.
- Do not disassemble the lane camera unit.
- Do not use the lane camera unit that is removed from the vehicle.
- Do not change BSW initial state ON ⇒ OFF without the consent of the customer.

TO KEEP THE BLIND SPOT WARNING/BLIND SPOT INTERVENTION SYSTEM OPERATING PROPERLY. BE SURE TO OBSERVE THE FOLLOWING ITEMS:

#### Lane Camera Unit Maintenance

The lane camera unit for the LDW/LDP system is located above the inside mirror. To keep the proper operation of the LDW/LDP systems and prevent a system malfunction, be sure to observe the following:

- Always keep the windshield clean.
- Do not attach a sticker (including transparent material) or install an accessory near the camera unit.
- Do not place reflective materials, such as white paper or a mirror, on the instrument panel. The reflection of sunlight may adversely affect the camera unit capability of detecting the lane markers.
- Do not strike or damage the areas around the camera unit.
- Do not touch the camera lens or remove the screw located on the camera unit.

## System Maintenance

The two side radar for the Blind Spot Warning and Blind Spot Intervention systems are located near the rear bumper.

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

## Precaution for BSW System Service

## WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test. **CAUTION:** 

- Never perform the active test while driving.
- Never change BSW initial state ON ⇒ OFF without the consent of the customer.

TO KEEP THE BSW SYSTEM OPERATING PROPERLY, BE SURE TO OBSERVE THE FOLLOW-



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### < PRECAUTION >

## ING ITEMS:

System Maintenance

- The two side radar for the BSW system are located near the rear bumper.
- Always keep the area near the side radar clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the side radar.
- Do not strike or damage the area around the side radar.

## SYSTEM DESCRIPTION

**COMPONENT PARTS** 

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**Component Parts Location** 

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## **COMPONENT PARTS**

#### < SYSTEM DESCRIPTION >

No.	Component	Function
1	Combination meter	<ul> <li>Description: Refer to <u>DAS-11, "Combination Meter"</u></li> <li>System display and warning: <u>DAS-17, "System Display and Warning"</u> Refer to <u>MWI-6, "METER SYSTEM : Component Parts Location"</u> for detailed installation location</li> </ul>
2	Sonar sensors	Refer to SN-4, "Component Description"
3	ADAS control unit	Refer to DAS-10, "ADAS Control Unit"
4	BCM	Refer to <u>DAS-11, "BCM"</u> Refer to <u>BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"</u> for detailed in- stallation location
5	ABS actuator and electric unit (con- trol unit)	Refer to <u>DAS-11, "ABS Actuator and Electric Unit (Control Unit)"</u> Refer to <u>BRC-11, "Component Parts Location"</u> (type 1) for detailed installation location Refer to <u>BRC-139, "Component Parts Location"</u> (type 2) for detailed installation location
6	ECM	Refer to <u>DAS-12, "ECM"</u> Refer to <u>EC-20, "ENGINE CONTROL SYSTEM : Component Parts Location"</u> (USA and Canada) for detailed installation location Refer to <u>EC-534, "ENGINE CONTROL SYSTEM : Component Parts Location"</u> (Mexico) for detailed installation location
7	ТСМ	Refer to <u>DAS-11. "TCM"</u> Refer to <u>TM-15. "CVT CONTROL SYSTEM : Component Parts Location"</u> (RE0F10E) for detailed installation location Refer to <u>TM-229. "CVT CONTROL SYSTEM : Component Parts Location"</u> (RE0F10J) for detailed installation location
8	BSW indicator LH (RH similar)	Refer to DAS-11, "BSW Indicator LH/RH"
9	Around view monitor control unit	Refer to AV-208, "Component Description"
10	Side radar LH (RH similar)	Refer to DAS-11, "Side Radar LH/RH"
11	Warning system switch	<ul> <li>Description: Refer to <u>DAS-11, "Warning System Switch"</u></li> <li>System display and warning: <u>DAS-17, "Switch Name and Function"</u></li> </ul>
12	Warning system switch ON indicator (On the warning system switch)	Refer to DAS-17, "System Display and Warning"
13	Stop lamp switch	Refer to EXL-7. "Component Description"
14	Sonar control unit	Refer to SN-4, "Component Description"
15	CAN gateway	Refer to LAN-116, "System Description"

## ADAS Control Unit



- Controls the BSW system, based on received signals.
- Communicates with each control unit via CAN communication.
- Connected with the side radar (LH and RH) via ITS communication, ADAS control unit receives a vehicle detection signal and transmits a BSW indicator signal and a BSW indicator dimmer signal to the side radar.
- Receives a warning system switch signal from the warning system switch.
- Transmits a buzzer output signal to the combination meter via CAN communication.

## **COMPONENT PARTS**

## < SYSTEM DESCRIPTION >

Side Radar LH/RH

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- Installed near the rear bumper, the side radar detects vehicles in the adjacent lane.
- Connected with the ADAS control unit via ITS communication, the side radar transmits a vehicle detection signal.
- Receives a BSW indicator signal and a BSW indicator dimmer signal from the ADAS control unit and transmits an indicator operation signal to the BSW indicator LH/RH.

### BSW Indicator LH/RH

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- Installed on the door by the A pillar, the BSW indicator "A" warns the driver by lighting/blinking.
- Receives a BSW indicator operation signal from the side radar LH/RH and blinks or turns ON/OFF the BSW indicator lamp.

## Warning System Switch

- Installed to the instrument lower panel, the warning system switch is used to activate/deactivate the BSW system.
- Transmits a warning system switch signal to the ADAS control unit.

## **Combination Meter**

- Receives BSW warning lamp signal and buzzer output signal from ADAS control unit via CAN communication.
- Turns the BSW warning lamp ON/OFF according to the signals from the ADAS control unit
- Operates the buzzer according to the signal from the ADAS control unit

## ABS Actuator and Electric Unit (Control Unit)

Transmits vehicle speed signal to ADAS control unit via CAN communication.

## BCM

- Transmits turn indicator signal to ADAS control unit via CAN communication.
- Transmits dimmer signal to ADAS control unit via CAN communication.

## ТСМ

Transmits shift position signal to ADAS control unit via CAN communication.

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[BSW]

Transmits engine speed signal to ADAS control unit via CAN communication.

## SYSTEM

## System Description

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[BSW]

## SYSTEM DIAGRAM



### Input Signal Item

Transmit unit	Signal name		Description	Κ
ТСМ	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	L
BCM CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp	M	
		Dimmer signal	Receives an ON/OFF state of dimmer signal	
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone	Ν
ECM	CAN communication	Engine speed signal	Receives an engine speed	_
Warning system switch	Warning system switch signal		Receives an ON/OFF state of the warning system switch	DAS

#### **Output Signal Item**

Reception unit	Signal name		Description
Combination meter	CAN communication	BSW warning lamp signal	Transmits a BSW warning lamp signal to turn ON the BSW warning lamp
		Buzzer output signal	Transmits a buzzer output signal to activate buzzer

Reception unit	Signal name		Description
Side radar LH, RH		BSW indicator signal	Transmits a BSW indicator signal to turn ON the BSW indicator
	ITS communication	BSW indicator dimmer signal	Transmits a BSW indicator dimmer signal to dimmer BSW indicator
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
BSW ON indi- cator	BSW ON indicator signal		Turns ON the BSW ON indicator

### FUNCTION DESCRIPTION

- The BSW system can help alert the driver of other vehicles in adjacent lanes when changing lanes.
- The BSW system uses side radar installed near the rear bumper to detect vehicles in an adjacent lane.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- This detection zone starts from the outside mirror of vehicle and extends approximately 10 ft (3.0 m) behind the rear bumper, and approximately 10 ft (3.0 m) sideways.
- The BSW system operates above approximately 32 km/h (20 MPH).
- If the side radar detects vehicles in the detection zone, the BSW indicator illuminates.



If the driver then activates the turn signal, a buzzer will sound twice and the BSW indicator will blink.
 NOTE:

A buzzer sounds if the side radar have already detected vehicles when the driver activates the turn signal. If a vehicle comes into the detection zone after the driver activates the turn signal, then only the BSW indicator blinks and no buzzer sounds.



## BSW SYSTEM OPERATION DESCRIPTION

• ADAS control unit enables BSW system.

• The ADAS control unit turns on the BSW system when the warning system switch is turned ON.

- Side radar detects a vehicle in the adjacent lane, and transmits the vehicle detection signal to ADAS control unit via ITS communication.
- ADAS control unit starts the control as follows, based on a vehicle detection signal, turn signal and dimmer signal transmitted from BCM via CAN communication:
- Buzzer output signal transmission to combination meter via CAN communication.
- BSW indicator signal and BSW indicator dimmer signal transmission to side radar via ITS communication.
- Side radar transmits an indicator operation signal to the BSW indicator according to BSW indicator signal and BSW indicator dimmer signal.

#### Operation Condition of BSW System

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

- When the warning system switch in turned ON.
- When the vehicle drives at approximately 32 km/h (20 MPH) or more to the forward direction.

#### NOTE:

- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 29 km/h (18 MPH)
- The BSW system may not function properly, depending on the situation. Refer to <u>DAS-19</u>, "<u>Precautions for</u> <u>Blind Spot Warning</u>".

## BULB CHECK ACTION AND FAIL-SAFE INDICATION

Vehicle condition/Driver's operation	BSW indicator	BSW ON indicator	Indication on the combination meter
Ignition switch: OFF $\Rightarrow$ ON	Approx. 2 sec. ON	Approx. 5 sec. ON <sup>*</sup>	OFF → OFF (Yellow) ON JSOIA0374GB
When DTC is detected	OFF	ON	OFF
When radar blockage is detected	OFF	ON	OFF

\*: If BSW initial state is ON, BSW ON indicator continues turned ON.

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## SYSTEM

## < SYSTEM DESCRIPTION >

#### Blinking cycle when the side radar blockage condition



#### NOTE:

Time shown in the figure is approximate time.

#### **BSW INITIAL STATE CHANGE**

#### **CAUTION:**

## Never change BSW initial state "ON" $\Rightarrow$ "OFF" without the consent of the customer.

BSW initial state can be changed.

- BSW initial ON\* BSW function is automatically turned ON, when the ignition switch OFF  $\Rightarrow$  ON.
- BSW initial OFF BSW function is still OFF when the ignition switch OFF  $\Rightarrow$  ON.
- \*: Factory setting

How to change BSW initial state

- 1. Turn ignition switch ON.
- 2. Switch BSW functions to OFF.
- 3. Push and hold warning system switch for more than 4 seconds.
- 4. Buzzer sounds and blinking of the BSW ON indicator informs that the BSW initial state changes completed.

## Fail-safe (ADAS Control Unit)

INFOID:000000011657654

INFOID:000000011657655

If a malfunction occurs in the system, ADAS control unit cancels the control. Then the BSW warning lamp in the combination meter illuminates.

## Fail-safe (Side Radar)

#### FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels the control. Then the BSW warning lamp in the combination meter illuminates.

#### TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then BSW warning lamp in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

## OPERATION



No.	Name	Function
1	Warning system switch	Turns BSW system ON/OFF

## System Display and Warning

## INDICATOR AND WARNING LAMP



No.	Name	Description	
1	BSW ON indicator	Turns ON while BSW system is ON	K
2	BSW warning lamp (In the combination meter)	<ul><li>Turns ON when BSW system is malfunctioning</li><li>Blinks when radar blockage is detected</li></ul>	1

## DISPLAY AND WARNING OPERATION

Vehicle condition/ Driver's operation			on	Actio	on	M
BSW ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of ve- hicle detec- tion within detection area	Indication on the BSW indicator	Buzzer	Ν
OFF	—	—	—	OFF	OFF	

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INFOID:000000011657657

## **OPERATION**

### < SYSTEM DESCRIPTION >

Vehicle condition/ Driver's operation				Ac	tion
BSW ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of ve- hicle detec- tion within detection area	Indication on the BSW indicator	Buzzer
	Less than ap- prox. 29 (18)	_		OFF	OFF
ON Approx. 32 (20) or more		_	Vehicle is absent	OFF	OFF
		OFF Vehicle is detected	ON	OFF	
	Approx. 32 (20) or more	Approx. 32 (20) or more ON (Vehicle de-		Blink	Short continuous beep
			Before turn signal oper- ates Vehicle is detected	200 ms Indicator ON Indicator OFF 200 ms JSOIA0251GB	60 ms Buzzer ON Buzzer OFF 570 ms JSOIA0452GB
		tected direc- tion)	Vehicle is detected af- ter turn sig- nal operates OFF	Blink 200 ms Indicator ON Indicator OFF 200 ms JSOIA0251GB	OFF

#### NOTE:

- If vehicle speed exceeds approximately 32 km/h (20MPH), BSW function operates until the vehicle speed becomes lower than approximately 29km/h (18MPH).
- Time shown in the figure is approximate time.

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HANDLING PRECAUTION	Δ
Precautions for Blind Spot Warning	A
<ul> <li>SIDE RADAR HANDLING</li> <li>Side radar for BSW system is located inside the rear bumper.</li> <li>Always keep the rear bumper near the side radar clean.</li> </ul>	В
<ul> <li>Do not attach a sticker (including transparent material), install an accessory or paintwork near the side radar.</li> <li>Do not strike or damage the areas around the side radar.</li> <li>Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair.</li> </ul>	С
<ul> <li>PRECAUTIONS FOR BLIND SPOT WARNING</li> <li>The BSW system is 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</li> </ul>	D
<ul> <li>direction driver will move to ensure it is safe to change lanes. Never rely solely on the BSW system.</li> <li>The BSW system may not provide a warning for vehicles that pass through the detection zone quickly.</li> <li>Do not use the BSW system when towing a trailer because the system may not function properly.</li> </ul>	Ε
<ul> <li>Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.</li> <li>The side radar may not be able to detect and activate BSW when certain objects are present such as:</li> <li>Pedestrians, bicycles, animals</li> </ul>	F
<ul> <li>Several types of vehicles such as motorcycles.</li> <li>Oncoming vehicles.</li> </ul>	G
<ul> <li>Vehicles remaining in the detection zone when driver accelerate from a stop.</li> <li>A vehicle merging into an adjacent lane at a speed approximately the same as vehicle.</li> <li>A vehicle approaching rapidly from behind.</li> <li>A vehicle which vehicle overtakes rapidly.</li> </ul>	Н
<ul> <li>Severe weather or road spray conditions may reduce the ability of the side radar to detect other vehicles.</li> <li>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 away.</li> </ul>	I
<ul> <li>The side radar are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.</li> </ul>	J
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## **DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)**

#### < SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

## **CONSULT Function (ADAS)**

INFOID:000000011657659

[BSW]

### APPLICATION ITEMS

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

Diagnosis mode	Description
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 ITS communication

## SELF DIAGNOSTIC RESULT

Refer to DAS-28, "DTC Index".

### DATA MONITOR

#### NOTE:

- The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.
- SIGNAL B, SIGNAL C are displayed, but not used.

Monitored item [Unit]	SIGNAL A	BSW MAIN SIGNAL	Description
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]
BUZZER O/P [On/Off]	x		Indicates [On/Off] status of BSW warning chime output
Shift position [Off, P, R, N, D]		×	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)
WARN SYS SW [On/Off]	×	×	Indicates [On/Off] status of warning system switch
BSW/BSI WARN LMP [On/Off]		×	Indicates [On/Off] status of BSW warning lamp output
BSW SYSTEM ON [On/Off]		×	Indicates [On/Off] status of BSW system

#### ACTIVE TEST CAUTION:

• Never perform "Active Test" while driving the vehicle.

- The "Active Test" cannot be performed when the BSW warning lamp is illuminated.
- Shift the selector lever to "P" position, and then perform the test.

Test item	Description
ICC BUZZER	Sounds a buzzer used for BSW system by arbitrarily operating ON/OFF
BSW/BSI WARNING LAMP	The BSW warning lamp can be illuminated by ON/OFF operations as necessary

## **DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)**

### < SYSTEM DESCRIPTION >

ICC BUZZER

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

#### **BSW/BSI WARNING LAMP**

Test item	Operation	Description	BSW warning lamp	
BSW/BSI WARNING LAMP	Off	Stops transmitting the BSW warning lamp signal below to end the test	_	1
	On	Transmits the BSW warning lamp signal to the combina- tion meter via CAN communication	ON	F

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## DIAGNOSIS SYSTEM (SIDE RADAR LH)

## CONSULT Function (SIDE RADAR LEFT)

INFOID:000000011657660

[BSW]

### 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-31, "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
BSW/CTA WARN STATUS [On/Off]	Indicates [On/Off] status of vehicle detection
CTA SYSTEM ON [On/Off]	Indicates [On/Off] status of Rear Cross Traffic Area system
BSW STATUS [On/Off]	Indicates [On/Off] status of Blind Spot Warning system
VHCL SPD SE [km/h]	Indicates vehicle speed in [km/h]
TURN SIGNAL [On/Off]	Indicates the position of the left turn signal switch
ATCVT RANGE IND [P/R/N/D]	Indicates position of transmission range switch
LUMINANCE (LEFT) [Hi/Lo]	Indicates the left side luminance level of the radar
LUMINANCE (RIGHT) [Hi/Lo]	Indicates the right side luminance level of the radar

#### ACTIVE TEST

#### CAUTION:

• Never perform the active test while driving.

• Active test cannot be started while the BSW indicator is illuminated.

## DIAGNOSIS SYSTEM (SIDE RADAR LH)

#### < SYSTEM DESCRIPTION >

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Active test item	Operation	Description	A
BSW/BSI INDICATOR	On	Outputs the voltage to illuminate the BSW indicator	
DRIVE	Off	Stops the voltage to illuminate the BSW indicator	
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## DIAGNOSIS SYSTEM (SIDE RADAR RH)

## CONSULT Function (SIDE RADAR RIGHT)

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-33, "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
BSW/CTA WARN STATUS [On/Off]	Indicates [On/Off] status of vehicle detection
CTA SYSTEM ON [On/Off]	Indicates [On/Off] status of Rear Cross Traffic Area system
BSW STATUS [On/Off]	Indicates [On/Off] status of Blind Spot Warning system
VHCL SPD SE [km/h]	Indicates vehicle speed in [km/h]
TURN SIGNAL [On/Off]	Indicates the position of the right turn signal switch
ATCVT RANGE IND [P/R/N/D]	Indicates position of transmission range switch
LUMINANCE (LEFT) [—]	Indicates the left side luminance level of the radar
LUMINANCE (RIGHT) [—]	Indicates the right side luminance level of the radar

## ACTIVE TEST

#### CAUTION:

Never perform the active test while driving.

• Active test cannot be started while the BSW indicator is illuminated.

INFOID:000000011657661

## DIAGNOSIS SYSTEM (SIDE RADAR RH)

#### < SYSTEM DESCRIPTION >

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Active test item	Operation	Description	A
BSW/BSI INDICATOR	On	Outputs the voltage to illuminate the BSW indicator	
DRIVE	Off	Stops the voltage to illuminate the BSW indicator	
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Revision: September 2014

## ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

## **Reference Value**

INFOID:000000011657662

[BSW]

## VALUES ON THE DIAGNOSIS TOOL

#### NOTE:

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

Monitor item		Condition	Value/Status
VHCL SPEED SE	While driving		Displays the ve- hicle speed cal- culated by ADAS control unit
		When the buzzer of the BSW system operates	On
DUZZEN O/F		When the buzzer of the BSW system not operates	Off
Shift position	<ul><li>Engine running</li><li>While driving</li></ul>	Displays the shift position	
	Turn signal lamps OFF	Off	
	Turn signal lamp LH blinking	LH	
Turn signai	Turn signal lamp RH blinking	RH	
	Turn signal lamp LH and RH b	LH&RH	
	Ignition quitch ON	When warning system switch is pressed	On
WARN STS SW	Ignition switch ON	When warning system switch is not pressed	Off
	Ignition quitch ON	BSW warning lamp ON	On
BSW/BSI WARN LMP	Ignition switch ON	BSW warning lamp OFF	Off
		When the BSW system is ON (BSW ON indicator ON)	On
		When the BSW system is OFF (BSW ON indicator OFF)	Off

## TERMINAL LAYOUT

PHYSICAL VALUES



## ADAS CONTROL UNIT

#### < ECU DIAGNOSIS INFORMATION >

Termir (Wire	minal No. Description			Condition		Standard value	Reference value	А
+	_	Signal name	Input/ Output	Condition		Standard Value	(Approx.)	В
1 (B)		CAN -H	_	_		_	_	
2 (W)		CAN -L	_	_		_	_	С
6 (L)		ITS CAN-H	_	_		_	_	D
7 (Y)		ITS CAN-L	_	_		_	_	
8 (Y)		ITS CAN-L	_	_		_	_	Ε
9 (BG)	Ground	ITS CAN-H	_	_		_	_	F
12 (R)		Ignition power supply	Input	Ignition swite	ch ON	9.5 - 16 V	Battery Voltage	1
15 (B)		Ground	—	Ignition swite	ch ON	0 - 0.1 V	0 V	G
18		Warning system ON in-	Output	BSW ON indicator	Illuminated	0 - 0.1 V	0 V	
(R)		dicator	Carpar		OFF	9.5 - 16 V	12 V	Н
19		Warning system switch	Innut	Warning system	Pressed	0 - 0.1 V	0 V	
(LG)		Warning System Switch	input	switch	Released	9.5 -16 V	12 V	

## Fail-safe

If a malfunction occurs in the system, ADAS control unit cancels the control. Then the BSW warning lamp in the combination meter illuminates.

## **DTC Inspection Priority Chart**

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

Priority	Detected items (DTC)	
1	U1508: LOST COMM (SIDE RDR L)	
2	U1000: CAN COMM CIRCUIT     U1010: CONTROL UNIT (CAN)     U1507: LOST COMM (SIDE RDR R)	1
3	C1B53: SIDE RDR R MALF     C1B54: SIDE RDR L MALF	

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INFOID:000000011657663

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## ADAS CONTROL UNIT

#### < ECU DIAGNOSIS INFORMATION >

[BSW]
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INFOID:000000011657665

Priority	Detected items (DTC)
4	<ul> <li>C1A01: POWER SUPPLY CIR</li> <li>C1A02: POWER SUPPLY CIR 2</li> <li>U0121: VDC CAN CIR 2</li> <li>U0401: ECM CAN CIR 1</li> <li>U0402: TCM CAN CIR 1</li> <li>U0415: VDC CAN CIR 1</li> <li>U150B: ECM CAN CIRC 3</li> <li>U150C: VDC CAN CIRC 3</li> <li>U150D: TCM CAN CIRC 3</li> <li>U150E: BCM CAN CIRC 3</li> <li>U150E: BCM CAN CIR 2</li> <li>U1504: SIDE RDR L CAN CIR 2</li> <li>U1505: SIDE RDR R CAN CIR 2</li> <li>U1506: SIDE RDR R CAN CIR 1</li> <li>U1518: SIDE RDR L CAN CIR 3</li> <li>U1519: SIDE RDR R CAN CIRC 3</li> </ul>
5	C1A03: VHCL SPEED SE CIRC
6	C1A00: CONTROL UNIT

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

				×: Applicable
	DTC	BSW warning lamp	Fail-safe	Reference
C1A00	CONTROL UNIT	ON	×	<u>DAS-56</u>
C1A01	POWER SUPPLY CIR	ON	×	DAS-57
C1A02	POWER SUPPLY CIR 2	ON	×	<u>DAS-57</u>
C1A03	VHCL SPEED SE CIRC	ON	×	DAS-58
C1B53	SIDE RDR R MALF	ON	×	DAS-63
C1B54	SIDE RDR L MALF	ON	×	DAS-64
NO DTC IS DETECTED. FURTHER TESTING MAY BE RE- QUIRED	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	_	_	_
U1000	CAN COMM CIRCUIT	ON	×	DAS-66
U1010	CONTROL UNIT (CAN)	ON	×	DAS-69
U0121	VDC CAN CIR 2	ON	×	DAS-72
U0401	ECM CAN CIR 1	ON	×	<u>DAS-73</u>
U0402	TCM CAN CIR 1	ON	×	DAS-74
U0415	VDC CAN CIR 1	ON	×	DAS-76

## ADAS CONTROL UNIT

### < ECU DIAGNOSIS INFORMATION >

[BSW]

	DTC	BSW warning lamp	Fail-safe	Reference	_
U150B	ECM CAN CIRC 3	ON	×	DAS-77	- A
U150C	VDC CAN CIRC 3	ON	×	<u>DAS-78</u>	-
U150D	TCM CAN CIRC 3	ON	×	DAS-79	В
U150E	BCM CAN CIRC 3	ON	×	DAS-80	-
U1503	SIDE RDR L CAN CIR 2	ON	×	DAS-81	-
U1504	SIDE RDR L CAN CIR 1	ON	×	DAS-82	С
U1505	SIDE RDR R CAN CIR 2	ON	×	DAS-83	-
U1506	SIDE RDR R CAN CIR 1	ON	×	DAS-84	D
U1507	LOST COMM (SIDE RDR R)	ON	×	DAS-85	_
U1508	LOST COMM (SIDE RDR L)	ON	×	DAS-86	_
U1518	SIDE RDR L CAN CIRC 3	ON	×	DAS-87	E
U1519	SIDE RDR R CAN CIRC 3	ON	×	DAS-88	

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< ECU DIAGNOSIS INFORMATION >

## SIDE RADAR LH

## **Reference Value**

## 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
BSW/CTA WARN	BSW system is normal.	On
STATUS	BSW system is malfunctioning.	Off
CTA SYSTEM ON	CTA system is ON	On
CIASISTEMON	CTA system is OFF.	Off
RSIN/ STATUS	BSW system is ON	Off
55W 51A105	BSW system is OFF.	On
VHCL SPD SE	Indicates current vehicle speed.	Km/h
	Left turn signal is ON.	On
TURN SIGNAL	Left turn signal is OFF.	Off
ATCVT RANGE IND	Shows the poisition of the transmission range switch.	P/R/N/D
LUMINANCE(LEFT)	Shows radar left luminance level	Hi/Lo
LUMINANCE (RIGHT)	Shows radar right luminance level	Hi/Lo

## **TERMINAL LAYOUT**



## PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Standard value	Reference value	
+	-	Signal name	Input/ Output	Condition	Standard Value	(Approx.)	
4 (W)		BSW indicator	Output	Approx. 2 sec. after ignition switch OFF $\Rightarrow$ ON (bulb check)	5.5 - 16 V	6 V	
5 (R)		Ignition power supply	Input	Ignition switch ON	10 - 16 V	Battery voltage	
6 (L)	Ground	ITS CAN-H		_	_	_	
7 (Y)		ITS CAN-L		_	_	_	
8 (B)		Ground	_	_	0 - 0.1 V	0 V	

INFOID:000000011657666

## SIDE RADAR LH

#### < ECU DIAGNOSIS INFORMATION >

#### Fail-safe

#### FAIL-SAFE CONTROL BY DTC



#### TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then BSW warning lamp in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

## **DTC Inspection Priority Chart**

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)	ŀ
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	ŀ

## **DTC Index**

INFOID:0000000011657669

[BSW]

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×: Applicable	
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	DTC	BSW warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	<u>DAS-59</u>
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-60
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-61
C1B55	RADAR BLOCKAGE	Blink	×	DAS-65
U1000	CAN COMM CIRCUIT	ON	×	DAS-67
U1010	CONTROL UNIT (CAN)	ON	×	DAS-69
U0104	ADAS CAN CIR1	ON	×	<u>DAS-71</u>
U0405	ADAS CAN CIR2	ON	×	<u>DAS-75</u>

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< ECU DIAGNOSIS INFORMATION >

## SIDE RADAR RH

## **Reference Value**

## 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
BSW/CTA WARN	BSW system is normal.	On
STATUS	BSW system is malfunctioning.	Off
CTA SYSTEM ON	CTA system is ON	On
CIASISTEMON	CTA system is OFF.	Off
BSW STATUS	BSW system is ON	Off
	BSW system is OFF.	On
VHCL SPD SE	Indicates current vehicle speed.	Km/h
	Right turn signal is ON.	On
TURN SIGNAL	Right turn signal is OFF.	Off
ATCVT RANGE IND	Shows the poisition of the transmission range switch.	P/R/N/D
LUMINANCE(LEFT) Shows radar left luminance level		Hi/Lo
LUMINANCE (RIGHT)	Shows radar right luminance level	Hi/Lo

## **TERMINAL LAYOUT**



## PHYSICAL VALUES

INFOID:000000011657670

## SIDE RADAR RH

#### < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Standard value	Reference value
+	_	Signal name	Input/ Output	Condition		(Approx.)
3 (B)		Shield ground	_	_	0 - 0.1 V	0 V
4 (W)		BSW indicator	Output	Approx. 2 sec. after ignition switch OFF $\Rightarrow$ ON (bulb check)	5.5 - 16 V	6 V
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	10 - 16 V	Battery voltage
6 (L)		ITS CAN-H	_			_
7 (Y)		ITS CAN-L	_			_
8 (B)		Ground	_		0 - 0.1 V	0 V

## Fail-safe

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### FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels the control. Then the BSW warning lamp in the combination meter illuminates.

## TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then BSW warning lamp in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

## **DTC Inspection Priority Chart**

If some DTCs are displayed at the same time, I	perform inspections	one by one based o	n the following priority
chart.		-	

Priority	Detected items (DTC)	
1	U1000: CAN COMM CIRCUIT     U1010: CONTROL UNIT (CAN)	L
2	U0104: ADAS CAN CIR 1     U0405: ADAS CAN CIR 2	D./
3	C1B50: SIDE RDR MALFUNCTION	IVI
4	C1B51: BSW/BSI IND SHORT CIR     C1B52: BSW/BSI IND OPEN CIR     C1B55: RADAR BLOCKAGE	Ν

## **DTC Index**

INFOID:000000011657673

#### DAS

				×: Applicable
	DTC	BSW warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	DAS-59
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-60
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-61
C1B55	RADAR BLOCKAGE	Blink	×	DAS-65
U1000	CAN COMM CIRCUIT	ON	×	DAS-67
U1010	CONTROL UNIT (CAN)	ON	×	DAS-70

## SIDE RADAR RH

## < ECU DIAGNOSIS INFORMATION >

DTC		BSW warning lamp	Fail-safe	Reference page
U0104	ADAS CAN CIR1	ON	×	<u>DAS-71</u>
U0405	ADAS CAN CIR2	ON	×	DAS-75

## WIRING DIAGRAM BLIND SPOT WARNING

Wiring Diagram



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## **BLIND SPOT WARNING**

#### < WIRING DIAGRAM >



ABOWA0083GB
#### < WIRING DIAGRAM >



ABOWA0085GB

[BSW]



ABOIA0268GB

#### < WIRING DIAGRAM >



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Connector Name JOINT CONNECTOR-M04 WHITE M67 Connector Color Connector No.

3 2 1	Sign
	Color of Wire
园 H.S.	Terminal No.

signal Name	-	ļ	ļ	
Wire	L	L	В	
l erminal No.	Ļ	2	3	

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Connector Color

Terminal No. 17 18 3 32

H.S. F

Connector No.



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## **BLIND SPOT WARNING**

#### < WIRING DIAGRAM >

[BSW]

**DAS-42** 

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#### < WIRING DIAGRAM >



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[BSW]



#### < WIRING DIAGRAM >

[BSW]

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< WIRING DIAGRAM >





Signal Name

Color of Wire

Terminal No.

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Signal Name Т T I. Т T Т Т T. T Color of Wire SHIELD ≥ ≥ В ш ш ≻ ≻ ≻ Terminal No. 16 17 19 20 22 S 9 4



r		-	יור	1		
	1		12	23	Γ	
	2		13	24		
	Э		4	25		
	4		15	26		
	5		16	27		
	9		17	28		
	7		18	29		
5	8		19	30		
	6		20	31		
	10		21	32		-
	1		22	33	L	4
l	٦Ľ		лĽ	Л		
_						
Æ		Ч. С.				
12	7					L

Signal Nam	I	I	I	
Color of Wire	Γ	_	Γ	
Terminal No.	F	2	З	

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B101 WIRE TO WIRE WHITE	Connector No Connector Na Connector Co	me JOIN	: IT CONNECTOR-B14 TE	Connector No Connector Na Connector Co	. B103 me JOIN lor WHIT	- CONNECTOR-B05 E	
3 4 5 6 7 8 9 10 11 12 13 14 15 16 19 20 21 22 23 24 25 28 27 28 29 30 31 32	品 H.S.		4 3 2 1 0	品 H.S.		3 2 1 0	
lor of Signal Name	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	
-	-	_	1	-	٩	1	
1	N	_	1	~	٩	1	
	3	в	I	з	N	I	
36 -							
B104	Terminal No.	Color of Wire	Signal Name	Connector No	. B109		
I ADAS CONTROL UNIT	10	1	1	Connector Na	me SIDE	RADAR RH V	
	1		1			~	
	12	œ	IGN				
1 10 9 8 7 6 5 4 3 2 1	13	1	1	SH	1 2 3	4 5 6 7 8	
3 22 21 20 19 18 17 16 15 14 13	14	1	1				
	15	в	GND		Color of		
Vire Signal Name	16	1	1	l erminal No.	Wire	Signal Name	
B CAN-H	17	1	1	3	В	I	
W CAN-L	3	æ	WARNING SYSTEM ON IND	4 1	≥ 0	I	
	19	LG	WARNING SYSTEM SW	n u	c   _		
	20	1	1	2	ı >	I	
I ITS CAN-H	21	I	1	. α	· 6	1	
Y ITS CAN-L	22	I	I	)	1		
Y ITS CAN-L	23	I	I				
3G ITS CAN-H	24	ı	I				

					12										_	
			2	2	-											
Connector	r Na	me	>	Η	Щ	P	2	/IB	ш							
Connecto	ပိ	p	>	Η	Ε	l										
										7						
	-	~	e	4	ß	0	7	∞	σ	10	=	12	13	4	15	11 <del>-</del>
0	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	6
														ſ		

Signal Name	I	I	Ι	I	
Color of Wire	L	Р	٢	BG	
Terminal No.	17	18	31	32	

4	AS CONTROL UNIT	ITE	8         7         6         5         4         3         2         1           1         20         19         18         17         16         15         14         13	Signal Name
. B10	me AD/	lor WH	2 11 10 5 4 23 22 2	Color of Wire
Connector No.	Connector Na	Connector Co	<b>府</b> 前 H.S.	Terminal No.

Signal Name	CAN-H	CAN-L	I	I	I	ITS CAN-H	ITS CAN-L	ITS CAN-L	ITS CAN-H	
 Color of Wire	в	Μ	I	I	I	Γ	۲	٢	BG	
Terminal No.	-	2	с	4	5	9	7	8	6	

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## **BLIND SPOT WARNING**

### < WIRING DIAGRAM >

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#### < WIRING DIAGRAM >

[BSW]
[0011]







	우	16					L					r								
									N											
-	2	e	4	5	9	7	∞	6	10	Ħ	12	13	14	15	16	17	18	19	20	
21	22	23	24	25	26	27	28	29	30	31	32	33	33	35	36	37	38	39	6	
																				-
					Ċ	2	2	L.,										_		

Signal Name	I	I	I	I	I	I	
Color of Wire	æ	ГG	В	N	SHIELD	н	
Terminal No.	35	36	37	38	39	40	

ABOIA0278GB

VIRE Connector No. B406 Connector Name REAR COMBINATION Connector Color GRAY	signal Name Color of Signal Name 1 G Signal Name 2 B -	AR LH     Connector No.     D2       AR LH     Connector Name     WIRE TO WIRE       6     7     16       7     8       16     Wire	B C E F
Connector No. B404 Connector Name WIRE TO V Connector Color BLACK	Terminal No. Color of Survey	Connector No.     B416       Connector Name     SIDE RAD/       Connector Name     SIDE RAD/       Connector Color     BLACK       Image: Side Radiation of the state of the sta	k I H
00 IRE TO WIRE HITE 8 7 6 5 4 3 2 1 24 23 22 22 20 19 18 17	Signal Name	07 EAR COMBINATION AAY 2 1 2 1 2 1 2 1 2 1	L
Connector No.         B4           Connector Name         WI           Connector Color         WI           H.S.         11/10           13         12/11           13         12/11           13         13/12	Terminal No.         Color o Wire           6         R           7         W           8         B           12         L           13         Y           15         G	Connector No. B4 Connector Name RE Connector Color GF Terminal No. Wire 2 B	D

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[BSW]

## **BLIND SPOT WARNING**

< WIRING DIAGRAM >

Revision: September 2014



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## **BLIND SPOT WARNING**

**Revision: September 2014** 

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## BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

## Work Flow

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:** 

INFOID:000000011657675

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## DIAGNOSIS AND REPAIR WORK FLOW

#### < BASIC INSPECTION >

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

>> GO TO 2.

2.self-diagnosis with consult

1. Perform "All DTC Reading" with CONSULT.

Check if the DTC is detected on the self-diagnosis results of "SIDE RADAR LEFT/RIGHT" and/or "BSW". 2.

Is any DTC detected?

YES >> GO TO 5. >> GO TO 3.

NO

 ${f 3}.$ PRE-INSPECTION FOR DIAGNOSIS

Perform pre-inspection for diagnosis. Refer to DAS-53, "Inspection Procedure".

>> GO TO 4.

4.ACTION TEST

Perform BSW system action test to check the operation status. Refer to DAS-54, "Description". Check if any other malfunctions occur.

>> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

- 1. Check the DTC in the self-diagnosis results.
- 2. Perform trouble diagnosis for the detected DTC. Refer to DAS-31, "DTC Index" (SIDE RADAR LEFT) or DAS-33, "DTC Index" (SIDE RADAR RIGHT) and/or DAS-28, "DTC Index" (BSW).

NOTE:

If "DTC: U1000" is detected, first diagnose the ITS communication system.

>> GO TO 7.

**O.**SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to DAS-96, "Symptom Table".

>> GO TO 7.

**/**.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

#### >> GO TO 8.

8.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

Erases self-diagnosis results.

2. Perform "All DTC Reading" again after repairing or replacing the specific items.

Check if any DTC is detected in self-diagnosis results of "SIDE RADAR LEFT/RIGHT" and "BSW". 3

Is any DTC detected?

YES >> GO TO 5. NO >> GO TO 9.

9.REPAIR CHECK (ACTION TEST)

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

Is there a malfunction symptom?

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

**Revision: September 2014** 

[BSW]

## **PRE-INSPECTION FOR DIAGNOSIS**

	[BSW]
PRE-INSPECTION FOR DIAGNOSIS	
Inspection Procedure	000000011657676
1.CHECK REAR BUMPER NEAR THE SIDE RADAR	
Is rear bumper near the side radar contaminated with foreign materials?	
YES >> Clean the rear bumper. NO >> GO TO 2.	
2.CHECK SIDE RADAR AND THE SIDE RADAR OUTSKIRTS	
Are side radar and the side radar outskirts contaminated with foreign materials?	
YES >> Clean the side radar or side radar outskirts. NO >> GO TO 3.	
<b>3.</b> CHECK SIDE RADAR INSTALLATION CONDITION	
Check side radar installation condition (installation position, properly tightened, a bent bracket). Is it properly installed?	
YES >> Inspection End. NO >> Install side radar properly.	

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## ACTION TEST

#### < BASIC INSPECTION >

## ACTION TEST

#### Description

Always perform the BSW system action test to check that the system operates normally after replacing the side radar LH/RH, or repairing any BSW 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 <u>DAS-7, "Precaution for BSW System Service"</u>.
- System description: Refer to DAS-13, "System Description".
- Normal operating condition: Refer to <u>DAS-97, "Description"</u>.

#### Work Procedure

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#### 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 <u>DAS-7</u>, "<u>Precaution for BSW System Service</u>".
  System description: Refer to <u>DAS-13</u>, "<u>System Description</u>".
- Normal operating condition: Refer to DAS-97, "Description".

**1**.BSW SYSTEM ACTION TEST

- 1. Drive the vehicle.
- 2. Turn warning system switch ON (BSW ON indicator is ON).
- 3. Check BSW operation according to the following table.

BSW ON indicator       Vehicle speed (Approx.) [km/h (MPH)]       Turn signal condition       Status of ve- hicle detec- tion within detection       Indication on the BSW indicator       Buzzer         OFF       —       —       —       OFF       OFF       OFF         Vehicle stand ap- prox. 29 (18)       —       —       OFF       OFF       OFF         Image: Constraint of the standard s		Vehicle condition/ Driver's operation			Action		
OFF     -     -     OFF     OFF       Less than approx. 29 (18)     -     -     OFF     OFF     OFF       Image: ON     OFF     -     Vehicle is absent     OFF     OFF     OFF       Image: ON     OFF     Vehicle is detected     ON     OFF     OFF       Image: ON     OFF     Vehicle is detected     ON     OFF       Image: ON     OFF     Vehicle is detected     ON     OFF       Image: ON     OFF     Vehicle is detected     Image: ON     Image: ON       Image: ON     ON     OFF     Image: ON     Image: ON       Image: ON     ON     Image: ON     Image: ON     Image: ON       Image: ON     ON     Image: ON     Image: ON     Image: ON       Image: ON     ON     Image: ON     Image: ON     Image: ON       Image: ON     ON     Image: ON     Image: ON     Image: ON       Image: ON     ON     Image: ON     Image: ON     Image: ON       Image: ON     Image: ON     Image: ON     Image: ON     Image: ON       Image: ON     Image: ON     Image: ON     Image: ON     Image: ON       Image: ON     Image: ON     Image: ON     Image: ON     Image: ON       Image: ON<	BSW ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of ve- hicle detec- tion within detection area	Indication on the BSW indicator	Buzzer	
ON     Less than ap- prox. 29 (18)     —     —     —     OFF     OFF       0     -     Vehicle is absent     OFF     OFF     OFF       0     -     Vehicle is detected     ON     OFF       0     OFF     Vehicle is detected     ON     OFF       0     -     Before turn signal oper- ates Vehicle is detected     Blink     Short continuous beep       0     ON (Vehicle de- tected direc- tion)     ON Vehicle is detected af-     Blink     Short continuous beep       0     ON     OFF     OFF     OFF	OFF	—	—	—	OFF	OFF	
ON     Approx. 32 (20) or more     ON     OFF     Vehicle is detected     ON     OFF       ON     Approx. 32 (20) or more     ON     Before turn signal oper- ates Vehicle is detected     Blink     Short continuous beep       ON     Vehicle is detected     ON     OFF       Vehicle is detected     Before turn oFF     Indicator OFF     Blink     Short continuous beep       ON     Vehicle is detected     Before turn oFF     Indicator OFF     Indicator OFF     Indicator OFF     Indicator OFF     Indicator OFF       Vehicle is detected direc- tion)     Vehicle is detected afr- ON     Blink     SolA0251GB     Indicator OFF     OFF		Less than ap- prox. 29 (18)	_	_	OFF	OFF	
ON     OFF     Vehicle is detected     ON     OFF       ON     Approx. 32 (20) or more     Approx. 32 (20) or more     Before turn signal oper- ates Vehicle is detected     Blink     Short continuous beep       ON     ON     Indicator OFF     Indicator     Indicator OFF     Indicator     Indicator <td></td> <td rowspan="3">Approx. 32 (20) or more</td> <td>_</td> <td>Vehicle is absent</td> <td>OFF</td> <td>OFF</td>		Approx. 32 (20) or more	_	Vehicle is absent	OFF	OFF	
ON Approx. 32 (20) or more ON Vehicle de- tected direc- tion) ON Vehicle is detected af- Vehicle is detected af- ON Vehicle is detected af- ON Vehicle is detected af- ON Slink Blink Short continuous beep Blink Short continuous beep Buzzer ON Buzzer OFF Store Store Short continuous beep Buzzer ON Buzzer OFF Store Store Store OFF Store Store OFF Store Store OFF Store Store OFF Store OFF Store OFF Store OFF Store OFF OFF Store OFF Store OFF Store OFF OFF Store OFF Store Store OFF Store OFF Store OFF Store OFF Store OFF Store OFF Store OFF Store OFF Store			OFF	Vehicle is detected	ON	OFF	
ter turn sig- nal operates OFF 200 ms JSOIA0251GB	ON		ON (Vehicle de- tected direc- tion)	Before turn signal oper- ates Vehicle is detected Vehicle is detected af- ter turn sig- nal operates	Blink Portugation Blink Portugation Blink Blink Blink Portugation Blink Portugation	Short continuous beep $\begin{array}{c} & & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ $	

## **ACTION TEST**

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ASIC INSPECTION >	
<ul> <li>NOTE:</li> <li>If vehicle speed exceeds approximately 32 km/h (20MPH), BSW function operates until t speed becomes lower than approximately 29km/h (18MPH).</li> <li>Time shown in the figure is approximate time.</li> </ul>	he vehicle
>> Inspection End.	

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#### < DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS C1A00 CONTROL UNIT

## DTC Logic

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit

#### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

#### 1. Start the engine.

- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

#### Is "C1A00" detected as the current malfunction?

YES >> Refer to <u>DAS-56. "Diagnosis Procedure"</u>. NO >> Inspection End.

#### Diagnosis Procedure

**1.**CHECK SELF-DIAGNOSIS RESULTS

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

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-28, "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

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INFOID:000000011657680

#### C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 [BSW]

#### < DTC/CIRCUIT DIAGNOSIS >

## C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

## **DTC Logic**

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#### DTC DETECTION LOGIC

D	тс	rouble diagnosis name	DTC detecting condition	Possible causes				
C1/	A01 P	OWER SUPPLY IR	The battery voltage sent to ADAS control unit re- mains less than 7.9 V for 5 seconds	Connector, harness, fuse				
C1/	C1A02 POWER SUPPLY CIR 2 The battery voltage sent to ADAS control unit re- mains more than 19.3 V for 5 seconds • ADAS control unit							
TC CO	ONFIRM	ATION PROC	EDURE					
1.PER	FORM D	TC CONFIRMA	TION PROCEDURE					
. Star 2. Turr 3. Per 4. Che "BS	rt the eng n the BSV form "All eck if the SW".	ine. V system ON. DTC Reading" "C1A01" or "C	with CONSULT. 21A02" is detected as the current malfur	nction in "Self Diagnostic Result" of				
s "C1A	01" or "C´	1A02" detected	as the current malfunction?					
YES NO	>> Refe >> Refe	r to <u>DAS-57, "E</u> r to <u>GI-47, "Inte</u>	Diagnosis Procedure". ermittent Incident".					
Diagno	osis Pro	ocedure		INFOID:000000011657682				
<b>1.</b> CHE	CK ADAS		NIT POWER SUPPLY AND GROUND CI	RCUIT				
Check p	oower su	pply and grour	d circuit of ADAS control unit. Refer to	DAS-89, "ADAS CONTROL UNIT :				
s the in	spection	result normal?						
YES	>> Repl	ace the ADAS	control unit. Refer to <u>DAS-98, "Removal a</u>	nd Installation".				
NO	>> Repa	air or replace th	e malfunctioning parts.					

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## C1A03 VEHICLE SPEED SENSOR

## DTC Logic

INFOID:000000011657683

[BSW]

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) re- ceived by the ADAS control unit via CAN com- munication, are inconsistent	<ul> <li>Wheel speed sensor</li> <li>ABS actuator and electric unit (control unit)</li> <li>ADAS control unit</li> </ul>

#### NOTE:

If DTC "C1A03" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-66.</u> "ADAS CONTROL UNIT : DTC Logic"

#### DTC CONFIRMATION PROCEDURE

## **1.**PERFORM DTC CONFIRMATION PROCEDURE

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

## Always drive safely.

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

#### Is "C1A03" detected as the current malfunction?

- YES >> Refer to DAS-58, "Diagnosis Procedure".
- NO >> Refer to GI-47, "Intermittent Incident".

#### Diagnosis Procedure

INFOID:000000011657684

#### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "BSW".

#### Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

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

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

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BRC-47, "DTC Index"</u> (type 1) or <u>BRC-176, "DTC Index"</u> (type 2).
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

## C1B50 SIDE RADAR MALFUNCTION

#### < DTC/CIRCUIT DIAGNOSIS >

## C1B50 SIDE RADAR MALFUNCTION

## DTC LOGIC

[BSW]

## А

INFOID:000000011657685

DIC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B50	SIDE RDR MALFUNC- TION	Side radar malfunction	Side radar
DTC CONFIF	MATION PROCEDU	IRE	
1.perform	DTC CONFIRMATION	I PROCEDURE	
<ol> <li>Start the e</li> <li>Perform "A</li> <li>Check if the RIGHT/LE</li> </ol>	ngine. All DTC Reading" with ( ne "C1B50" is detected FT".	CONSULT. I as the current malfunction in "Se	If Diagnostic Result" of "SIDE RADAR
l <u>s the "C1B50"</u> YES >> Re NO >> Ins	detected as the current efer to <u>DAS-59, "Diagn</u> spection End.	nt malfunction? osis Procedure".	
Diagnosis F	Procedure		INFOID:000000011657680
<b>1.</b> CHECK SE	LF-DIAGNOSIS RESU	ILT	
Check if any D	TC other than "C1B50	is detected in "Self Diagnostic Re	sult" of "SIDE RADAR LEFT/RIGHT"
<u>ls any DTC de</u> YES >> Pe	tected? erform diagnosis on the	e detected DTC and repair or repla	ce the malfunction part. Refer to <u>DAS-</u> <u>ndex"</u> (SIDE RADAR LEFT).
<u>33</u> NO >> Re	eplace the side radar. F	Refer to DAS-99. "Removal and Ins	stallation".
NO >> Re	eplace the side radar. F	Refer to DAS-99, "Removal and Ins	stallation".
NO >> Re	eplace the side radar. F	Refer to DAS-99, "Removal and Ins	stallation".
NO >> Re	eplace the side radar. F	Refer to <u>DAS-99</u> . "Removal and Ins	stallation".
NO >> Re	eplace the side radar. F	Refer to <u>DAS-99</u> . "Removal and Ins	stallation".
NO >> Re	eplace the side radar. F	Refer to <u>DAS-99</u> . "Removal and Ins	<u>stallation"</u> .
NO >> Re	eplace the side radar. F	Refer to <u>DAS-99.</u> "Removal and Ins	<u>stallation"</u> .

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## **C1B51 BSW/BSI INDICATOR SHORT CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## C1B51 BSW/BSI INDICATOR SHORT CIRCUIT

## DTC Logic

INFOID:000000011657687

[BSW]

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B51	BSW/BSI IND SHORT CIR	Short circuit in BSW indicator circuit is detected. (Over current is detected)	<ul><li>BSW indicator circuit</li><li>BSW indicator</li><li>Side radar</li></ul>

#### DTC CONFIRMATION PROCEDURE

#### **1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Perform "All DTC Reading" with CONSULT.
- Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

#### Is the "C1B51" detected as the current malfunction?

- YES >> Refer to DAS-60, "Diagnosis Procedure".
- NO >> Inspection End.

#### Diagnosis Procedure

INFOID:000000011657688

## 1. CHECK BSW INDICATOR CIRCUIT FOR SHORT

- 1. Turn ignition switch OFF.
- 2. Disconnect side radar harness connector and BSW indicator harness connector.
- 3. Check continuity between side radar harness connector and ground.

Side	radar		Continuity	
Connector	Terminal	- Ground	Continuity	
B416 (LH)	1		No	
B109 (RH)	Ŧ		110	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

## **2.**REPLACE THE SIDE RADAR

- 1. Replace the side radar.
- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"

#### Is the DTC "C1B51" detected?

- YES >> Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.
- NO >> Inspection End.

#### C1B52 BSW/BSI INDICATOR OPEN CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## C1B52 BSW/BSI INDICATOR OPEN CIRCUIT

## DTC Logic

[BSW]

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INFOID:000000011657689

## DTC DETECTION LOGIC

DTC	Trouble diagnosis	s name	C	TC detecting condition	on	Possible cause
C1B52	BSW/BSI IND OPI	EN CIR Ope	n circuit in BSW	indicator circuit is de	tected.	<ul><li>BSW indicator circuit</li><li>BSW indicator</li><li>Side radar</li></ul>
отс сс	ONFIRMATION	PROCEDL	IRE			
<b>1</b> .PERF	ORM DTC CON	FIRMATION	I PROCEDUF	RE		
1. Star 2. Turr 3. Perf 4. Che RIG	t the engine. ) the BSW systen orm "All DTC Rea ck if the "C1B52' HT/LEFT".	n ON. ading" with ( ' is detected	CONSULT. as the curre	nt malfunction in	"Self Diagnostic	Result" of "SIDE RADAR
<u>s the "C</u>	1B52" detected a	as the currer	nt malfunction	<u>?</u>		
YES	>> Refer to DAS	<u>8-61, "Diagn</u>	osis Procedui	<u>e"</u> .		
) Diagna	>> Inspection Er	10.				
Jiagho	sis Procedur	е				INFOID:000000011657690
<b>1.</b> CHE0	CK BSW INDICA	TOR CIRCU	IT FOR OPE	N 1		
. Turn 2. Disc 3. Che	ignition switch C onnect side rada ck continuity betw	DFF. Ir harness co ween side ra	onnector and dar harness	BSW indicator ha	arness connector SW indicator harr	: ness connector.
	Side radar	BSW	ndicator	Continuity	-	
Connec	tor Terminal	Connector	Terminal	Continuity		
B416 (L	H) 4	D21 (LH)	- 1	Yes		
B109 (F	RH)	D111 (RH)			_	
<u>s the ins</u> YES NO CHEC	Spection result no >> GO TO 2. >> Repair the ha	ormal? arnesses or	connectors.	N 2		
<u>heck c</u>			ator harness	connector and an	ound	
	Sintificatly Section			sonnootor and gr	ound.	
B	SW indicator		Continuity	, ,		
Connec	tor Terminal	Ground	Continuity			
D21 (L	H) 4	Cround	Yes			
ל) 111 U		rmal?				
<u>s me ins</u> YES	Spection result ho	<u>onnal?</u>				
NO	>> Repair the ha	arnesses or	connectors.			
<b>3.</b> снес	CK SIDE RADAR	VOLTAGE	OUTPUT			
1. Con	nect side radar h	arness conr	nector.			
2. Che	ck voltage betwe	en BSW ind	icator harnes	s connector and	ground.	

## **C1B52 BSW/BSI INDICATOR OPEN CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

BSW indicator		Condition		Standard	Reference	
Connector	Terminal	Ground	Cround		(Approx.)	
D21 (LH)		Ground	Ignition switch		2.14	
D111 (RH)	1		$OFF \Rightarrow ON$ (Approx. 2 sec.)	5.5 - 16 V	6 V	

Is the inspection result normal?

>> Replace BSW indicator. Refer to <u>DAS-101, "Removal and Installation"</u>. >> Replace side radar. Refer to <u>DAS-99, "Removal and Installation"</u>. YES

NO

[BSW]

## C1B53 SIDE RADAR RIGHT MALFUNCTION

#### < DTC/CIRCUIT DIAGNOSIS >

## C1B53 SIDE RADAR RIGHT MALFUNCTION

## DTC Logic

[BSW]

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INFOID:000000011657691

## DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B53	SIDE RDR R MALF	ADAS control unit detects that side radar RH has a malfunction.	Side radar RH
DTC CON	IFIRMATION PROCED	JRE	
<b>1.</b> PERFO	RM DTC CONFIRMATIO	N PROCEDURE	
<ol> <li>Start th</li> <li>Turn th</li> <li>Perform</li> <li>Check</li> </ol>	ne engine. ne BSW system ON. m "All DTC Reading" with if the "C1B53" is detected	CONSULT. I as the current malfunction in "Self Diagn	ostic Result" of "BSW".
ls "C1B53"	detected as the current n	nalfunction?	
YES >	Refer to <u>DAS-63</u> , "Diagr Defer to <u>CL 47</u> , "Intermit	nosis Procedure".	
NU >/	Refer to <u>GI-47, Intermit</u>	tent incident.	
Jiagnos	is Procedure		INFOID:00000001165769
1.снеск	SELF-DIAGNOSIS RES	JLTS	
Check if "L	J1000" is detected other th	nan "C1B53" in "Self Diagnostic Result" of	"BSW".
<u>ls "U1000"</u>	detected?		
YES >	Perform the CAN comm Refer to <u>DAS-66, "ADAS</u> > CO TO 2	nunication system inspection. Repair or re <u>S CONTROL UNIT : DTC Logic"</u> .	eplace the malfunctioning parts
<b>Z</b> .CHECK	SELF-DIAGNOSIS RESI	JLIS	
Check if ar	ny DTC is detected in "Sel	f Diagnostic Result" of "SIDE RADAR RIG	SHT".
Is any DTC	<u>C detected?</u>		
YES >:	Perform diagnosis on th <u>DAS-33, "DTC Index"</u> (S	e detected DTC and repair or replace the IDE RADAR RIGHT).	e malfunctioning parts. Refer to
NO >:	Replace the ADAS control	rol unit. Refer to <u>DAS-98, "Removal and li</u>	nstallation".

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### C1B54 SIDE RADAR LEFT MALFUNCTION

#### < DTC/CIRCUIT DIAGNOSIS >

## C1B54 SIDE RADAR LEFT MALFUNCTION

#### DTC Logic

INFOID:000000011657693

[BSW]

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B54	SIDE RDR L MALF	ADAS control unit detects that side radar LH has a malfunction.	Side radar LH

#### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1B54" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

#### Is "C1B54" detected as the current malfunction?

- YES >> Refer to DAS-64, "Diagnosis Procedure".
- NO >> Refer to GI-47, "Intermittent Incident".

#### Diagnosis Procedure

INFOID:000000011657694

#### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B54" in "Self Diagnostic Result" of "BSW".

#### Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

#### 2. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-31, "DTC Index" (SIDE RADAR LEFT).
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

## C1B55 RADAR BLOCKAGE

#### < DTC/CIRCUIT DIAGNOSIS >

## C1B55 RADAR BLOCKAGE

#### **DTC Logic**

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INFOID:0000000011657695

INFOID:000000011657696

#### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B55	RADAR BLOCKAGE	Side radar is blocked.	Stain or foreign materials is deposit- ed.

#### NOTE:

DTC "C1B55" may be detected under the following conditions except for possible cause. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".)

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.
- Due to the nature of radar technology it is possible to get a blockage warning and not actually be blocked. This is rare and is known as a false blockage warning. A false blocked condition either self-clears or clears after an ignition cycle.

#### Diagnosis Procedure

#### **1.**CHECK THE REAR BUMPER

Check rear bumper near the side radar for contamination with foreign materials.

#### >> GO TO 2.

#### 2. CHECK THE SIDE RADAR

Check side radar and the side radar outskirts for contamination 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 are stains 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.

#### < DTC/CIRCUIT DIAGNOSIS >

## U1000 CAN COMM CIRCUIT ADAS CONTROL UNIT

#### ADAS CONTROL UNIT : Description

INFOID:000000011657703

[BSW]

#### CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. CAN communication signal chart. Refer to <u>LAN-38</u>, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

#### ITS COMMUNICATION

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

#### ADAS CONTROL UNIT : DTC Logic

INFOID:000000011657704

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiv- ing ITS communication signal for 2 seconds or more	ITS communication system

#### NOTE:

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

#### ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000011657705

## **1**.PERFORM THE SELF-DIAGNOSIS

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

#### Is "U1000" detected as the current malfunction?

- YES >> Refer to LAN-21. "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

#### SIDE RADAR LH

#### SIDE RADAR LH : Description

INFOID:000000011657697

#### CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. CAN communication signal chart. Refer to LAN-38, "CAN COMMUNICATION SYSTEM : CAN Communica-

CAN communication signal chart. Refer to <u>LAN-38</u>, "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.

## **DAS-66**

## **U1000 CAN COMM CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

#### · ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

#### SIDE RADAR LH : DTC Logic

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#### INFOID:000000011657698

[BSW]

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DTC DETECTION LOGIC DTC DTC detecting condition Possible causes Trouble diagnosis name If side radar LH is not transmitting or receiving ITS U1000 CAN COMM CIRCUIT ITS communication system communication signal for 2 seconds or more SIDE RADAR LH : Diagnosis Procedure INFOID:000000011657699 **1.**PERFORM THE SELF-DIAGNOSIS 1. Start the engine. Turn the BSW system ON, and then wait for 2 seconds or more. 2. 3. Perform "All DTC Reading" with CONSULT. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR 4 LEFT". Is "U1000" detected as the current malfunction? YES >> Refer to LAN-21, "Trouble Diagnosis Flow Chart". >> Refer to GI-47, "Intermittent Incident". NO SIDE RADAR RH SIDE RADAR RH : Description INFOID:000000011657700

#### CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. CAN communication signal chart. Refer to <u>LAN-38</u>, "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.

#### SIDE RADAR RH : DTC Logic

#### INFOID:0000000011657701

INFOID:0000000011657702

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	Ν
U1000	CAN COMM CIRCUIT	If Side radar RH is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system	
				DAS

## SIDE RADAR RH : Diagnosis Procedure

## **1.**PERFORM THE SELF-DIAGNOSIS

1. Start the engine.

- 2. Turn the BSW system ON, and then wait for 2 seconds or more.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

#### Is "U1000" detected as the current malfunction?

YES >> Refer to LAN-21, "Trouble Diagnosis Flow Chart".

< DTC/CIRCUIT DIAGNOSIS >

NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

# CAN c **DAS-69**

## ADAS

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< DTC/CIRCUIT DIAGNOSIS >

ADAS CONTROL UNIT

DTC DETECTION LOGIC

U1010 CONTROL UNIT (CAN)

ADAS CONTROL UNIT : Description

ADAS CONTROL UNIT : DTC Logic

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<u>Is "U10</u>

YES NO SIDE

## SIDE

CAN c

## SIDE

## DTC D

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010	CONTROL UNIT (CAN)	If side radar LH detects malfunction by CAN controller initial diagnosis.	Side radar LH

## SIDE

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- 2. Pe
- 3. Ch LE

<u>ls "U10</u>

NO

## SIDE

## SIDE

## **U1010 CONTROL UNIT (CAN)**

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

DTC	Trouble diagnosis name	e DTC detecting condition		Possible causes	
U1010	CONTROL UNIT (CAN	) If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS contr	ol unit	
S CO	NTROL UNIT : D	Diagnosis Procedure		INFOID:0000000011657714	
ERFOR	M DTC CONFIRMATI	ON PROCEDURE			
urn the Perform Check if	BSW system ON. "All DTC Reading" wi the "U1010" is detect	th CONSULT. ed as the current malfunction in "Self Diag	nostic Re	sult" of "BSW".	
5 >>1 >>1 E RA[	etected as the current Replace the ADAS co Inspection End. DAR LH	<u>. mairunction ?</u> ntrol unit. Refer to <u>DAS-98, "Removal and</u>	Installatio	<u>on"</u> .	
E RAD	OAR LH : Descrip	tion		INFOID:000000011657706	
controll	er controls the comm	unication of ITS communication signal and	the error	detection.	
E RAD					
DETEN					
C T	Trouble diagnosis name	DTC detecting condition		Possible cause	
010 CC	ONTROL UNIT (CAN)	If side radar LH detects malfunction by CAN contro diagnosis.	ller initial	Side radar LH	
E RAD	DAR LH : Diagnos	sis Procedure		INFOID:000000011657708	
IECK S	ELF-DIAGNOSIS RE	SULT			
urn the erform heck if	BSW system ON. "All DTC Reading" wi the "U1010" is detec	th CONSULT. ted as the current malfunction in "Self Dia	gnostic R	esult" of "SIDE RADAR	
<u>1010" d</u>	etected as the current	malfunction?			
<<     <<	Replace the side rada Inspection End.	r LH. Refer to <u>DAS-99, "Removal and Inst</u>	<u>allation"</u> .		
= RAL	JAR RH				
E RAD	DAR RH : Descrip	otion		INFOID:000000011657709	
controll	er controls the comm	unication of ITS communication signal and	the error	detection.	
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INFOID:000000011657713

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## U1010 CONTROL UNIT (CAN)

#### < DTC/CIRCUIT DIAGNOSIS >

#### SIDE RADAR RH : DTC Logic

INFOID:000000011657710

INFOID:0000000011657711

[BSW]

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010	CONTROL UNIT (CAN)	If Side radar RH detects malfunction by CAN controller initial diagnosis.	Side radar RH

### SIDE RADAR RH : Diagnosis Procedure

1. CHECK SELF-DIAGNOSIS RESULT

- 1. Turn the BSW system ON.
- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

Is "U1010" detected as the current malfunction?

- YES >> Replace the side radar RH. Refer to <u>DAS-99</u>, "Removal and Installation".
- NO >> Inspection End.

## U0104 ADAS CAN 1

## < DTC/CIRCUIT DIAGNOSIS >

## U0104 ADAS CAN 1

## DTC Logic

[BSW]

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#### INFOID:000000011657715

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0104	ADAS CAN CIR1	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit
NOTE: If DTC " <u>RADAR</u> RIGHT)	U0104" is detected along w <u>LH:DTC Logic"</u> (SIDE R	ith DTC "U1000", first diagnose the DTC "U1000". ADAR LEFT), <u>DAS-67, "SIDE RADAR RH:DT</u>	Refer to <u>DAS-67, "SIDE</u> <u>C Logic"</u> (SIDE RADAR
DTC CO	ONFIRMATION PROCED	URE	
1.PER	FORM DTC CONFIRMATIC	N PROCEDURE	
1. Star	rt the engine.		
<ol> <li>Turi</li> <li>Per</li> <li>Che</li> <li>RIG</li> </ol>	n the BSW system ON. form "All DTC Reading" with ock if the U0104 is detected GHT/LEFT".	n CONSULT d as the current malfunction in "Self Diagnostic F	Result" of "SIDE RADAR
<u>ls the D</u> YES NO	<u>TC "U0104" detected?</u> >> Refer to <u>DAS-71, "Diag</u> >> Refer to <u>GI-47, "Interm</u>	nosis Procedure". ittent Incident".	
Diagno	osis Procedure		INFOID:000000011657716
1.сне	CK SELF-DIAGNOSIS RES	BULTS	
Check if	f "U1000" is detected other t	han "U0104" in "Self Diagnostic Result" of "SIDE	RADAR RIGHT/LEFT".
YES NO	>> Perform the CAN com Refer to <u>DAS-67, "SIDI</u> <u>RH : DTC Logic"</u> (SIDE >> GO TO 2.	munication system inspection. Repair or replace <u>ERADAR LH : DTC Logic"</u> (SIDE RADAR LEFT), RADAR RIGHT).	the malfunctioning parts. DAS-67, "SIDE RADAR
2.сне	CK ADAS CONTROL UNIT	SELF-DIAGNOSIS RESULTS	
Check if	f any DTC is detected in "Se	elf Diagnostic Result" of "BSW".	
<u>Is any D</u>	TC detected?		
YES	>> Perform diagnosis on t DAS-28, "DTC Index".	he detected DTC and repair or replace the malfu	nctioning parts. Refer to
NO	>> Replace side radar LH	or RH. Reter to <u>DAS-99, "Removal and Installatio</u>	<u>n"</u>

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## U0121 VDC CAN 2

#### < DTC/CIRCUIT DIAGNOSIS >

## U0121 VDC CAN 2

#### DTC Logic

[BSW]

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

#### NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-66, "ADAS</u> <u>CONTROL UNIT : DTC Logic"</u>.

#### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

#### Is "U0121" detected as the current malfunction?

YES >> Refer to DAS-72, "Diagnosis Procedure".

NO >> Refer to GI-47, "Intermittent Incident".

#### Diagnosis Procedure

INFOID:0000000011657718

#### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

 $2. {\sf CHECK} \text{ ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS}$ 

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

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BRC-47, "DTC Index"</u> (type 1) or <u>BRC-176, "DTC Index"</u> (type 2).
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".
## U0401 ECM CAN 1

## Revision: September 2014

U0401 ECM CAN 1	
DTC Logic	

DTC DETECTION LOGIC

< DTC/CIRCUIT DIAGNOSIS >

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM
NOTE: f DTC "U040 CONTROL U	1" is detected along wit NIT : DTC Logic".	h DTC "U1000", first diagnose the DTC	"U1000". Refer to <u>DAS-66, "ADAS</u>
OTC CONF	RMATION PROCED	URE	
1.PERFOR	M DTC CONFIRMATIO	N PROCEDURE	
<ol> <li>Start the</li> <li>Turn the</li> <li>Perform</li> <li>Check if</li> </ol>	engine. BSW system ON. "All DTC Reading" with the "U0401" is detected	CONSULT. I as the current malfunction in "Self Dia	gnostic Result" of "BSW".
<u>s "U0401" de</u>	etected as the current n	nalfunction?	
YES >> F	Refer to <u>DAS-73, "Diagr</u> Refer to <u>GI-47</u> , "Intermit	<u>nosis Procedure"</u> . tent Incident"	
Diagnosis	Procedure	ient moderne.	
4	Trocedure		INF-01D:000000011657720
<b>I</b> .CHECK S	ELF-DIAGNOSIS RES	ULTS	
Check if "U1(	000" is detected other th	nan "U0401" in "Self Diagnostic Result"	of "BSW".
<u>s "U1000" de</u>	etected?		
YES >> F	Perform the CAN comm	nunication system inspection. Repair o	r replace the malfunctioning parts.
NO >> (	GO TO 2.	<u>B CONTROL ONTE: DTO LOGIC</u> .	
2.снеске	CM SELF-DIAGNOSIS	RESULTS	
Check if any	DTC is detected in "Se	If Diagnostic Result" of "ENGINE".	
s any DTC d	etected?	-	
YES >> F	Perform diagnosis on th	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> F	<u>EC-105, "DTC_Index"</u> (I Replace the ADAS cont	JSA and Canada) or <u>EC-610, "DTC In</u>	<u>idex"</u> (Mexico). d Installation"

**DAS-73** 

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INFOID:000000011657719

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## U0402 TCM CAN 1

## < DTC/CIRCUIT DIAGNOSIS >

## U0402 TCM CAN 1

## DTC Logic

INFOID:0000000011657721

[BSW]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	ТСМ

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-66, "ADAS</u> <u>CONTROL UNIT : DTC Logic"</u>.

### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U0402" detected as the current malfunction?

- YES >> Refer to DAS-74, "Diagnosis Procedure".
- NO >> Refer to <u>GI-47</u>, "Intermittent Incident".

## Diagnosis Procedure

INFOID:0000000011657722

### 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.
- 2. CHECK TCM SELF-DIAGNOSIS RESULTS

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

### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>TM-63, "DTC Index"</u> (RE0F10E) or <u>TM-277, "DTC Index"</u> (RE0F10J).
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

## < DTC/CIRCUIT DIAGNOSIS >

## U0405 ADAS CAN 2

## DTC Logic

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INFOID:000000011657723

## DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0405	ADAS CAN CIR2	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit
<b>NOTE:</b> If DTC "I <mark>RADAR</mark> RIGHT).	U0405" is detected along wi <u>LH:DTC Logic"</u> (SIDE R.	th DTC "U1000", first diagnose the DTC "U1000" ADAR LEFT), <u>DAS-67, "SIDE RADAR LH:DT</u>	. Refer to <u>DAS-67, "SIDE</u> <u>C Logic"</u> (SIDE RADAR
DTC CC	ONFIRMATION PROCED	URE	
1.PERF	FORM DTC CONFIRMATIO	N PROCEDURE	
1. Star 2. Turr 3. Perf	rt the engine. n the BSW system ON. form "All DTC Reading" with	CONSULT.	
4. Che RIG	eck if the U0405 is detected HT/LEFT".	as the current malfunction in "Self Diagnostic I	Result" of "SIDE RADAR
<u>Is the D</u> YES NO	<u>TC "U0405" detected?</u> >> Refer to <u>DAS-75, "Diag</u> r >> Refer to <u>GI-47, "Intermit</u>	nosis Procedure". tent Incident".	
Diagno	osis Procedure		INFOID:000000011657724
<b>1.</b> снес	CK SELF-DIAGNOSIS RES	ULTS	
Check if Is "U100	f "U1000" is detected other the	nan "U0405" in "Self Diagnostic Result" of "SIDE	RADAR RIGHT/LEFT".
YES NO	>> Perform the CAN comm Refer to <u>DAS-67, "SIDE</u> <u>RH : DTC Logic"</u> (SIDE >> GO TO 2.	nunication system inspection. Repair or replace <u>RADAR LH : DTC Logic</u> " (SIDE RADAR LEFT) RADAR RIGHT).	the malfunctioning parts. , <u>DAS-67, "SIDE RADAR</u>
<b>2.</b> снес	CK ADAS CONTROL UNIT	SELF-DIAGNOSIS RESULTS	
Check if	any DTC is detected in "Se	If Diagnostic Result" of "BSW".	
<u>Is any D</u>	TC detected?		
YES	>> Perform diagnosis on th <u>DAS-28, "DTC Index"</u> .	ne detected DTC and repair or replace the malfu	unctioning parts. Refer to
NO	>> Replace side radar LH o	or RH. Refer to <u>DAS-99, "Removal and Installation</u>	<u>on"</u> .

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## < DTC/CIRCUIT DIAGNOSIS >

## U0415 VDC CAN 1

## DTC Logic

[BSW]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

#### NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-66, "ADAS</u> <u>CONTROL UNIT : DTC Logic"</u>.

### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

#### Is "U0415" detected as the current malfunction?

- YES >> Refer to DAS-76, "Diagnosis Procedure".
- NO >> Refer to GI-47, "Intermittent Incident".

### Diagnosis Procedure

INFOID:0000000011657726

### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

 $2. {\sf CHECK} \text{ ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS}$ 

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

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BRC-47, "DTC Index"</u> (type 1) or <u>BRC-176, "DTC Index"</u> (type 2).
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

## U150B ECM CAN 3

## < DTC/CIRCUIT DIAGNOSIS >

## U150B ECM CAN 3

## DTC Logic

[BSW]

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INFOID:000000011657727

## DTC DETECTION LOGIC

	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM
NOTE:			
IF DTC "U15	0B" is detected along	with DTC "U1000", first diagnose the	DTC "U1000". Refer to <u>DAS-66</u>
	RMATION PROCED	URE	
I.PERFORM	A DTC CONFIRMATIO	N PROCEDURE	
1. Start the	engine.		
2. Turn the 3. Perform	All DTC Reading" with	CONSULT	
4. Check if	the "U150B" is detected	d as the current malfunction in "Self Dia	gnostic Result" of "BSW".
<u>ls "U150B" de</u>	etected as the current r	nalfunction?	
YES >> F	Refer to <u>DAS-77, "Diagr</u>	nosis Procedure".	
NO >>F	Refer to <u>GI-47, "Intermit</u>	tent Incident".	
Diagnoeie	Procedure		
Diagnosis			INFOID:00000001165772
<b>1.</b> снеск s	ELF-DIAGNOSIS RES	ULTS	INFOID:00000001165772
1.CHECK S	ELF-DIAGNOSIS RES	ULTS nan "U150B" in "Self Diagnostic Result"	of "BSW".
<b>1.</b> CHECK S Check if "U10 Is "U1000" de	ELF-DIAGNOSIS RES	ULTS nan "U150B" in "Self Diagnostic Result"	of "BSW".
<b>1</b> .CHECK S Check if "U10 Is "U1000" de YES >> F	ELF-DIAGNOSIS RES 000" is detected other the etected? Perform the CAN comm	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or	of "BSW".
<b>1</b> .CHECK S Check if "U10 Is "U1000" de YES >> F F NO >> 0	ELF-DIAGNOSIS RES 000" is detected other th etected? Perform the CAN comm Refer to <u>DAS-66, "ADAS</u> GO TO 2	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> .	of "BSW".
1.CHECK S Check if "U10 Is <u>"U1000" de</u> YES >> F F NO >> C CHECK F	ELF-DIAGNOSIS RES 000" is detected other th etected? Perform the CAN comm Refer to <u>DAS-66, "ADAS</u> GO TO 2.	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> .	of "BSW".
1.CHECK S Check if "U10 Is "U1000" de YES >> F NO >> C 2.CHECK E	ELF-DIAGNOSIS RES 000" is detected other th etected? Perform the CAN comm Refer to <u>DAS-66, "ADAS</u> GO TO 2. CM SELF-DIAGNOSIS	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . RESULTS	of "BSW".
1.CHECK S Check if "U10 Is <u>"U1000" de</u> YES >> F NO >> C 2.CHECK E Check if any	ELF-DIAGNOSIS RES 000" is detected other the etected? Perform the CAN comm Refer to <u>DAS-66, "ADAS</u> GO TO 2. CM SELF-DIAGNOSIS DTC is detected in "Seleverted?	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . RESULTS If Diagnostic Result" of "ENGINE".	of "BSW".
<b>1</b> .CHECK S Check if "U10 Is "U1000" de YES >> F NO >> 0 <b>2</b> .CHECK E Check if any Is any DTC d	ELF-DIAGNOSIS RES 2000" is detected other the 2 tected? 2 erform the CAN common 2 efform the	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . RESULTS If Diagnostic Result" of "ENGINE".	of "BSW".
1.CHECK S Check if "U10 Is <u>"U1000" de</u> YES >> F NO >> C 2.CHECK E Check if any Is any DTC d YES >> F	ELF-DIAGNOSIS RES 2000" is detected other the 2 erform the CAN common 2 erform the CAN common	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . RESULTS If Diagnostic Result" of "ENGINE". ne detected DTC and repair or replace JSA and Canada) or <u>EC-610, "DTC Inc</u>	of "BSW". replace the malfunctioning parts the malfunctioning parts. Refer to lex." (Mexico).
1.CHECK S Check if "U10 is "U1000" de YES $>>$ F NO $>>$ C 2.CHECK E Check if any is any DTC d YES $>>$ F NO $>>$ F	ELF-DIAGNOSIS RES 2000" is detected other the 2 tected? 2 erform the CAN common 2 erform the CAN common 2 efform the CAN common 2 efform the CAN common 2 efform the CAN common 2 efform the CAN common 2 erform the	ULTS nan "U150B" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . RESULTS If Diagnostic Result" of "ENGINE". ne detected DTC and repair or replace JSA and Canada) or <u>EC-610, "DTC Inc</u> rol unit. Refer to <u>DAS-98, "Removal and</u>	the malfunctioning parts. Refer to

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## **U150C VDC CAN 3**

## < DTC/CIRCUIT DIAGNOSIS >

## **U150C VDC CAN 3**

INFOID:000000011657729

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

#### NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".

### DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2.
- Turn the BSW system ON. Perform "All DTC Reading" with CONSULT. 3.
- 4. Check if the "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U150C" detected as the current malfunction?

>> Refer to DAS-78, "Diagnosis Procedure". YES

>> Refer to GI-47, "Intermittent Incident". NO

### Diagnosis Procedure

INFOID:000000011657730

### 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".
- NO >> GO TO 2.

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

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

### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-47, "DTC Index" (type 1) or BRC-176, "DTC Index" (type 2).
- >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation". NO

## U150D TCM CAN 3

## < DTC/CIRCUIT DIAGNOSIS >

## U150D TCM CAN 3

DTC DETECTION LOGIC

## DTC Logic

[BSW]

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#### INFOID:0000000011657731

#### DTC DTC detecting condition Possible causes Trouble diagnosis name ADAS control unit detects an error signal that is тсм U150D TCM CAN CIRC 3 received from TCM via CAN communication NOTE: If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-66, D "ADAS CONTROL UNIT : DTC Logic". DTC CONFIRMATION PROCEDURE Е 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. Turn the BSW system ON. 2. F Perform "All DTC Reading" with CONSULT. 3. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "BSW". 4. Is "U150D" detected as the current malfunction? >> Refer to DAS-79, "Diagnosis Procedure". YES >> Refer to GI-47, "Intermittent Incident". NO Diagnosis Procedure Н INFOID:000000011657732 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "BSW". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. J Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. 2.CHECK TCM SELF-DIAGNOSIS RESULTS Κ Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to L TM-63, "DTC Index" (RE0F10E) or TM-277, "DTC Index" (RE0F10J). >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation". NO M

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## U150E BCM CAN 3

## < DTC/CIRCUIT DIAGNOSIS >

## U150E BCM CAN 3

## DTC Logic

[BSW]

INFOID:000000011657733

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	ВСМ

### NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-66.</u> "ADAS CONTROL UNIT : DTC Logic".

### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U150E" detected as the current malfunction?

- YES >> Refer to DAS-80, "Diagnosis Procedure".
- NO >> Refer to <u>GI-47</u>, "Intermittent Incident".

## Diagnosis Procedure

INFOID:000000011657734

## 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK BCM SELF-DIAGNOSIS RESULTS

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

### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BCS-52, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

## U1503 SIDE RDR L CAN 2

## < DTC/CIRCUIT DIAGNOSIS >

## U1503 SIDE RDR L CAN 2

## DTC Logic

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INFOID:000000011657735

[BSW]

## DTC DETECTION LOGIC

U1503 S NOTE: If DTC "U1503" Refer to DAS- Refer to DAS- DTC CONFIRM 1.PERFORM E 1. Start the end 2. Turn the BS 3. Perform "All	ide RDR L CAN CIR 2 is detected along with E <u>36, "ADAS CONTROL I</u> <u>36, "DTC Logic"</u> for DTC ATION PROCEDUR TC CONFIRMATION P gine.	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication OTC "U1000", or "U1508", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". C "U1508". E PROCEDURE	Side radar LH DTC "U1000" or "U1508".
NOTE: f DTC "U1503" Refer to <u>DAS</u> - Refer to <u>DAS</u> - DTC CONFIRM <b>1</b> .PERFORM E 1. Start the eng 2. Turn the BS 3. Perform "All	is detected along with E <u>36. "ADAS CONTROL I</u> <u>36. "DTC Logic"</u> for DT( <u>1ATION PROCEDUR</u> <u>TC CONFIRMATION P</u> gine. W system ON.	DTC "U1000", or "U1508", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". C "U1508". E PROCEDURE	DTC "U1000" or "U1508".
DTC CONFIRM <b>1</b> .PERFORM E 1. Start the end 2. Turn the BS 3. Perform "All	ATION PROCEDUR TC CONFIRMATION P gine. W system ON.	E PROCEDURE	
I.PERFORM E         1. Start the end         2. Turn the BS         3. Perform "All	TC CONFIRMATION F	PROCEDURE	
<ol> <li>Start the english</li> <li>Turn the BS</li> <li>Perform "All</li> </ol>	gine. W system ON.		
A Chack if the	UIC Reading" with CC	NSULT.	Pesult" of "BSW/"
s "U1503" deter	ted as the current malf	unction?	result of DSW.
YES >> Ref NO >> Ref	er to <u>DAS-81, "Diagnosi</u> er to <u>GI-47, "Intermitten</u>	is Procedure". t Incident".	
Diagnosis Pr	ocedure		INFOID:0000000116577
<b>1.</b> CHECK SEL	-DIAGNOSIS RESULT	ſS	
Check if "U1000	" or "U1508" is detected	d other than "U1503" in "Self Diagnostic Resu	ult" of "BSW".
<u>ls "U1000" or "U</u>	1508" detected?		
YES-1 >> U10 func YES-2 >> U15	00 detected: Perform the stioning parts. Refer to [08 detected: Refer to [08 detected]	he CAN communication system inspection. F DAS-66, "ADAS CONTROL UNIT : DTC Logi DAS-86, "DTC Logic"	Repair or replace the mal i <u>c"</u> .
NO >> GO	TO 2.	<u></u>	
2.CHECK SIDE	ERADAR LH SELF-DIA	GNOSIS RESULTS	
Check if any DT	C is detected in "Self Di	iagnostic Result" of "SIDE RADAR LEFT".	
Is any DTC dete	cted?		
YES >> Per	orm diagnosis on the c 3-31, "DTC Index".	detected DTC and repair or replace the malf	unctioning parts. Refer to
NO >> Rep	lace the ADAS control	unit. Refer to <u>DAS-98, "Removal and Installa</u>	<u>ition"</u> .

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## U1504 SIDE RDR L CAN 1

### < DTC/CIRCUIT DIAGNOSIS >

## U1504 SIDE RDR L CAN 1

## DTC Logic

INFOID:000000011657737

[BSW]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1504	SIDE RDR L CAN CIR 1	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication	Side radar LH

#### NOTE:

If DTC "U1504" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".

- Refer to DAS-67, "SIDE RADAR LH : DTC Logic" for DTC "U1000".
- Refer to <u>DAS-86, "DTC Logic"</u> for DTC "U1508".

### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1504" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U1504" detected as the current malfunction?

YES >> Refer to <u>DAS-82, "Diagnosis Procedure"</u>.

NO >> Refer to GI-47, "Intermittent Incident".

### Diagnosis Procedure

INFOID:000000011657738

### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1504" in "Self Diagnostic Result" of "BSW".

#### Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.
- YES-2 >> U1508 detected: Refer to DAS-86, "DTC Logic".
- NO >> GO TO 2.

### **2.**CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-31. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-99</u>, "Removal and Installation".

## U1505 SIDE RDR R CAN 2

### < DTC/CIRCUIT DIAGNOSIS >

## U1505 SIDE RDR R CAN 2

## DTC Logic

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INFOID:0000000011657739

U1505         SIDE RDR R CAN CIR 2         ADAS control unit detects an error signal that is received from side radar RH via ITS communication         Side radar RH           NOTE:         If DTC ''U1505" is detected along with DTC ''U1000", first diagnose the DTC ''U1000". Refer to DAS-66. ''ADA CONTROL UNIT : DTC Logic".         DTC CONFIRMATION PROCEDURE         Image: Control UNIT : DTC CONFIRMATION PROCEDURE           1.         Start the engine.         Turn the BSW system ON.         Perform ''All DTC Reading'' with CONSULT.           4.         Check if the ''U1505'' is detected as the current malfunction in ''Self Diagnostic Result'' of ''BSW''.         Is ''U1505'' detected as the current malfunction?           YES         >> Refer to DAS-83. ''Diagnosis Procedure''.         NO         >> Refer to GI-47. ''Intermittent Incident''.           Diagnosis Procedure         Image: Control UNIT : DTC Logic''.         Image: Control UNIT : DTC Logic''.           YES         >> Refer to GI-47. ''Intermittent Incident''.         Diagnosis Procedure           ICHECK SELF-DIAGNOSIS RESULTS         Check if ''U1000'' is detected other than ''U1505'' in ''Self Diagnostic Result'' of ''BSW''.           Is ''U1000'' detected?         YES         >> Perform the CAN communication system inspection. Repair or replace the malfunctioning part Refer to DAS-66. ''ADAS CONTROL UNIT : DTC Logic''.           NO         >> GO TO 2.         2         CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS         Check if any DTC is detected?         SIDE RA	DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
NOTE:         If DTC "U1505" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-66. "AD/ CONTROL UNIT : DTC Logic".         DTC CONFIRMATION PROCEDURE         1. PERFORM DTC CONFIRMATION PROCEDURE         1. Start the engine.         2. Turn the BSW system ON.         3. Perform "All DTC Reading" with CONSULT.         4. Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".         Is "U1505" detected as the current malfunction?         YES       >> Refer to DAS-83. "Diagnosis Procedure".         NO       >>> Refer to GI-47. "Intermittent Incident".         Diagnosis Procedure	U1505	SIDE RDR R CAN CIR 2	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH
DTC CONFIRMATION PROCEDURE         1. PERFORM DTC CONFIRMATION PROCEDURE         1. Start the engine.         2. Turn the BSW system ON.         3. Perform "All DTC Reading" with CONSULT.         4. Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".         Is "U1505" detected as the current malfunction?         YES       >> Refer to DAS-63, "Diagnosis Procedure".         NO       >> Refer to GI-47, "Intermittent Incident".         Diagnosis Procedure	NOTE: If DTC "U15 CONTROL	505" is detected along with D UNIT : DTC Logic".	TC "U1000", first diagnose the DTC "U1000"	. Refer to <u>DAS-66, "ADAS</u>
<ul> <li>PERFORM DTC CONFIRMATION PROCEDURE</li> <li>Perform the engine.</li> <li>Turn the BSW system ON.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".</li> <li><u>s "U1505" detected as the current malfunction?</u></li> <li>YES &gt;&gt; Refer to <u>DAS-83. "Diagnosis Procedure"</u>.</li> <li>NO &gt;&gt; Refer to <u>GI-47. "Intermittent Incident"</u>.</li> <li>Diagnosis Procedure</li> <li><i>I.</i>CHECK SELF-DIAGNOSIS RESULTS</li> <li>Check if "U1000" is detected other than "U1505" in "Self Diagnostic Result" of "BSW".</li> <li><u>Is "U1000" detected?</u></li> <li>YES &gt;&gt; Perform the CAN communication system inspection. Repair or replace the malfunctioning par Refer to <u>DAS-66. "ADAS CONTROL UNIT : DTC Logic"</u>.</li> <li>NO &gt;&gt; GO TO 2.</li> <li>2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS</li> <li>Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".</li> <li>Is any DTC detected?</li> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer <u>DAS-33. "DTC Index"</u>.</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to <u>DAS-98. "Removal and Installation"</u>.</li> </ul>		FIRMATION PROCEDUR	E	
<ol> <li>Start the engine.</li> <li>Turn the BSW system ON.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".</li> <li><u>Is "U1505" detected as the current malfunction?</u></li> <li>YES &gt;&gt; Refer to <u>DAS-83, "Diagnosis Procedure"</u>. NO &gt;&gt; Refer to <u>GI-47, "Intermittent Incident"</u>.</li> <li>Diagnosis Procedure</li> <li><i>I.</i>CHECK SELF-DIAGNOSIS RESULTS</li> <li>Check if "U1000" is detected other than "U1505" in "Self Diagnostic Result" of "BSW".</li> <li><u>Is "U1000" detected?</u></li> <li>YES &gt;&gt; Perform the CAN communication system inspection. Repair or replace the malfunctioning par Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.</li> <li>NO &gt;&gt; GO TO 2.</li> <li>CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS</li> <li>Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".</li> <li><u>Is any DTC detected?</u></li> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer <u>DAS-33, "DTC Index"</u>.</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to <u>DAS-98, "Removal and Installation"</u>.</li> </ol>	1.PERFOR	RM DTC CONFIRMATION F	PROCEDURE	
YES       >> Refer to DAS-83, "Diagnosis Procedure".         NO       >> Refer to GI-47, "Intermittent Incident".         Diagnosis Procedure       Information in the intermittent Incident".         1.CHECK SELF-DIAGNOSIS RESULTS       Information in the intermittent incident in the intermittent incident in the intermittent incident in the intermittent incident intermittent incident in the intermittent incident intermittent incident in the intermittent incident in the intermittent incident in the incident intermittent incident in the incident intermittent incident inte	1. Start th 2. Turn th 3. Perforn 4. Check Is "U1505" of	e engine. e BSW system ON. n "All DTC Reading" with CO if the "U1505" is detected as detected as the current malf	ONSULT. the current malfunction in "Self Diagnostic F <u>unction?</u>	Result" of "BSW".
Diagnosis Procedure       Information of the info	YES >>	Refer to <u>DAS-83</u> , "Diagnos	<u>is Procedure"</u> . t Incident"	
1.CHECK SELF-DIAGNOSIS RESULTS         Check if "U1000" is detected other than "U1505" in "Self Diagnostic Result" of "BSW".         Is "U1000" detected?         YES       >> Perform the CAN communication system inspection. Repair or replace the malfunctioning par Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".         NO       >> GO TO 2.         2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS         Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".         Is any DTC detected?         YES       >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer         DAS-33, "DTC Index".         NO       >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".		o Drogoduro		
<ul> <li>1.CHECK SELF-DIAGNOSIS RESULTS</li> <li>Check if "U1000" is detected other than "U1505" in "Self Diagnostic Result" of "BSW".</li> <li>Is "U1000" detected?</li> <li>YES &gt;&gt; Perform the CAN communication system inspection. Repair or replace the malfunctioning par Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".</li> <li>NO &gt;&gt; GO TO 2.</li> <li>2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS</li> <li>Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".</li> <li>Is any DTC detected?</li> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer DAS-33, "DTC Index".</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".</li> </ul>		SFICEULIE		INFOID:00000001165774
<ul> <li>Check if "U1000" is detected other than "U1505" in "Self Diagnostic Result" of "BSW".</li> <li>Is "U1000" detected?</li> <li>YES &gt;&gt; Perform the CAN communication system inspection. Repair or replace the malfunctioning par Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".</li> <li>NO &gt;&gt; GO TO 2.</li> <li>CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS</li> <li>Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".</li> <li>Is any DTC detected?</li> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer DAS-33, "DTC Index".</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".</li> </ul>	1.снеск	SELF-DIAGNOSIS RESUL	ſS	
<ul> <li>YES &gt;&gt; Perform the CAN communication system inspection. Repair or replace the malfunctioning par Refer to <u>DAS-66, "ADAS CONTROL UNIT : DTC Logic"</u>.</li> <li>NO &gt;&gt; GO TO 2.</li> <li><b>2.</b>CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS</li> <li>Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".</li> <li><u>Is any DTC detected?</u></li> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer <u>DAS-33, "DTC Index"</u>.</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to <u>DAS-98, "Removal and Installation"</u>.</li> </ul>	Check if "U Is "U1000" (	1000" is detected other than detected?	"U1505" in "Self Diagnostic Result" of "BSW	" •
<ul> <li>2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS</li> <li>Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".</li> <li><u>Is any DTC detected?</u></li> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer</li> <li><u>DAS-33, "DTC Index"</u>.</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to <u>DAS-98, "Removal and Installation"</u>.</li> </ul>	YES >> NO >>	<ul> <li>Perform the CAN commun</li> <li>Refer to <u>DAS-66, "ADAS C</u></li> <li>GO TO 2.</li> </ul>	ication system inspection. Repair or replace ONTROL UNIT : DTC Logic".	the malfunctioning parts
<ul> <li>Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".</li> <li><u>Is any DTC detected?</u></li> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer <u>DAS-33. "DTC Index"</u>.</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to <u>DAS-98, "Removal and Installation"</u>.</li> </ul>	2.снеск	SIDE RADAR RH SELF-DI	AGNOSIS RESULTS	
<ul> <li>YES &gt;&gt; Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer <u>DAS-33, "DTC Index"</u>.</li> <li>NO &gt;&gt; Replace the ADAS control unit. Refer to <u>DAS-98, "Removal and Installation"</u>.</li> </ul>	Check if an Is any DTC	y DTC is detected in "Self D detected?	iagnostic Result" of "SIDE RADAR RIGHT".	
NO Replace the ADAS control unit. Relef to <u>DAS-96, Removal and Installation</u> .	YES >>	Perform diagnosis on the one DAS-33, "DTC Index".	detected DTC and repair or replace the malf	functioning parts. Refer to
	NU >>		unit. Relef to DAS-96, Removal and Installa	<u>uuun</u> .

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## U1506 SIDE RDR R CAN 1

### < DTC/CIRCUIT DIAGNOSIS >

## U1506 SIDE RDR R CAN 1

## DTC Logic

INFOID:000000011657741

[BSW]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1506	SIDE RDR R CAN CIR 1	ADAS control unit detects an error signal that is received from side radar RH via ITS communication	Side radar RH

#### NOTE:

If DTC "U1506" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".

### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2.
- Turn the BSW system ON. Perform "All DTC Reading" with CONSULT. 3.
- Check if the "U1506" is detected as the current malfunction in "Self Diagnostic Result" of "BSW". 4.

### Is "U1506" detected as the current malfunction?

- >> Refer to DAS-84, "Diagnosis Procedure". YES
- >> Refer to GI-47, "Intermittent Incident". NO

## Diagnosis Procedure

INFOID:000000011657742

## 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1506" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-33, "DTC Index".
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

## U1507 LOST COMM(SIDE RDR R)

### < DTC/CIRCUIT DIAGNOSIS >

## U1507 LOST COMM(SIDE RDR R)

## DTC Logic

[BSW]

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INFOID:000000011657743

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1507	LOST COMM(SIDE RDR R) ADAS control unit cannot receive ITS commu- nication signal from side radar RH for 2 sec- onds or more · ITS communic · Side radar RH		<ul><li>ITS communication system</li><li>Side radar RH</li></ul>
NOTE:			
f DTC "U150 CONTROL L	07" is detected along wit <u>JNIT : DTC Logic"</u>	h DTC "U1000", first diagnose the DTC	"U1000". Refer to <u>DAS-66, "ADAS</u>
DTC CONF	IRMATION PROCED	URE	
1.PERFOR	M DTC CONFIRMATIO	N PROCEDURE	
. Start the	engine.		
2. Turn the	BSW system ON.		
B. Perform	"All DTC Reading" with	CONSULT.	mantia Decult" of "DOM/"
. Check If	the U15U/ is detected	a as the current mainunction in "Self Diag	gnostic Result of BSVV.
	stastad as the surrent a	adfunction	
<u>s "U1507" d</u>	etected as the current n	nalfunction?	
<u>s "U1507" d</u> YES >> I NO >> I	<u>etected as the current n</u> Refer to <u>DAS-85, "Diag</u> r Refer to GI-47, "Intermit	nalfunction? nosis Procedure". ttent Incident".	
<u>s "U1507" d</u> YES >> I NO >> I	etected as the current n Refer to <u>DAS-85, "Diagr</u> Refer to <u>GI-47, "Intermit</u> Procedure	nalfunction? nosis Procedure". ttent Incident".	
<u>s "U1507" de</u> YES >> I NO >> I Diagnosis	etected as the current n Refer to <u>DAS-85, "Diagr</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b>	nalfunction? nosis Procedure". ttent Incident".	INFOID:00000001165774
<u>s "U1507" de</u> YES >> I NO >> I Diagnosis 1.CHECK S	etected as the current n Refer to <u>DAS-85, "Diagr</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> ELF-DIAGNOSIS RES	nalfunction? nosis Procedure". ttent Incident". ULTS	INFOID:00000001165774
<u>s "U1507" de</u> YES >> I NO >> I Diagnosis 1.CHECK S	etected as the current n Refer to <u>DAS-85, "Diagr</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> ELF-DIAGNOSIS RES	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result"	INFOID:00000001165774 of "BSW".
s <u>"U1507" do</u> YES >> I NO >> I Diagnosis 1.CHECK S Check if "U10 s "U1000" do	etected as the current n Refer to <u>DAS-85, "Diagr</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> ELF-DIAGNOSIS RES 000" is detected other the etected?	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result"	INFOID:00000001165774 of "BSW".
s <u>"U1507" d</u> YES >> I NO >> I Diagnosis 1.CHECK S Check if "U10 s <u>"U1000" do</u> YES >> I	etected as the current n Refer to <u>DAS-85, "Diagr</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> ELF-DIAGNOSIS RES 000" is detected other the etected? Perform the CAN comm	nalfunction? <u>nosis Procedure"</u> . <u>ttent Incident"</u> . ULTS han "U1507" in "Self Diagnostic Result" nunication system inspection. Repair or	INFOID:00000001165774 of "BSW".
s <u>"U1507" de</u> YES >> I NO >> I Diagnosis 1.CHECK S Check if "U10 s <u>"U1000" de</u> YES >> I	etected as the current n Refer to <u>DAS-85, "Diagr</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> ELF-DIAGNOSIS RES 000" is detected other the etected? Perform the CAN comm Refer to <u>DAS-66, "ADAS</u> 30 TO 2	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result" nunication system inspection. Repair or S CONTROL UNIT : DTC Logic".	INFOID.00000001165774 of "BSW". replace the malfunctioning parts
s <u>"U1507" de</u> YES >> F NO >> F Diagnosis 1.CHECK S Check if "U10 s <u>"U1000" de</u> YES >> F NO >> CHECK S	etected as the current n Refer to <u>DAS-85</u> , "Diagr Refer to <u>GI-47</u> , "Intermit <b>Procedure</b> ELF-DIAGNOSIS RES 000" is detected other the etected? Perform the CAN comm Refer to <u>DAS-66, "ADAS</u> GO TO 2.	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> .	INFOID:00000001165774 of "BSW". replace the malfunctioning parts
s "U1507" di         YES       >> I         NO       >> I         Diagnosis         1.CHECK S         Check if "U10         s "U1000" di         YES       >> I         NO       >> 0         2.CHECK S	etected as the current n Refer to <u>DAS-85</u> , "Diagr Refer to <u>GI-47</u> , "Intermit <b>Procedure</b> EELF-DIAGNOSIS RES 000" is detected other th etected? Perform the CAN comm Refer to <u>DAS-66</u> , "ADAS GO TO 2. EIDE RADAR RH SELF-	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . -DIAGNOSIS RESULTS	of "BSW".
s "U1507" de         YES       >> I         NO       >> I         Diagnosis       1.CHECK S         1.CHECK if "U10       de         s "U1000" de       YES         YES       >> I         NO       >> G         2.CHECK if any       S         Check if any       S	etected as the current n Refer to <u>DAS-85</u> , "Diagr Refer to <u>GI-47</u> , "Intermit <b>Procedure</b> EELF-DIAGNOSIS RES D00" is detected other the etected? Perform the CAN comm Refer to <u>DAS-66</u> , "ADAS GO TO 2. EIDE RADAR RH SELF- DTC is detected in "Selected to 2	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result" hunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . -DIAGNOSIS RESULTS If Diagnostic Result" of "SIDE RADAR F	of "BSW".
s "U1507" di           YES         >> I           NO         >> I           Diagnosis         1.CHECK S           Check if "U10         di           S "U1000" di         YES           YES         >> I           NO         >> 0           2.CHECK S         Check if any           S any DTC c         S	etected as the current n Refer to <u>DAS-85</u> , "Diagr Refer to <u>GI-47</u> , "Intermit <b>Procedure</b> ELF-DIAGNOSIS RES 000" is detected other th etected? Perform the CAN comm Refer to <u>DAS-66</u> , "ADAS GO TO 2. EIDE RADAR RH SELF- DTC is detected in "Sel letected?	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . -DIAGNOSIS RESULTS If Diagnostic Result" of "SIDE RADAR F	of "BSW". • replace the malfunctioning parts
$\frac{s (U1507) da}{YES} >> F$ NO >> F Diagnosis 1.CHECK S Check if (U10) $\frac{s (U1000) da}{YES} >> F$ NO >> C CHECK S Check if any $\frac{s any DTC c}{YES} >> F$	etected as the current n Refer to <u>DAS-85</u> , "Diagr Refer to <u>GI-47</u> , "Intermit <b>Procedure</b> EELF-DIAGNOSIS RES 000" is detected other the etected? Perform the CAN comm Refer to <u>DAS-66</u> , "ADAS GO TO 2. EIDE RADAR RH SELF- DTC is detected in "Seletected? Perform diagnosis on the DAS-33, "DTC index"	nalfunction? nosis Procedure". ttent Incident". ULTS han "U1507" in "Self Diagnostic Result" nunication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> . DIAGNOSIS RESULTS If Diagnostic Result" of "SIDE RADAR F he detected DTC and repair or replace	of "BSW". replace the malfunctioning parts RIGHT".

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## U1508 LOST COMM(SIDE RDR L)

### < DTC/CIRCUIT DIAGNOSIS >

## U1508 LOST COMM(SIDE RDR L)

## DTC Logic

INFOID:000000011657745

[BSW]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1508	LOST COMM(SIDE RDR L)	ADAS control unit cannot receive ITS commu- nication signal from side radar LH for 2 sec- onds or more	<ul><li>Side radar LH harness connector</li><li>ITS communication system</li><li>Side radar LH</li></ul>

#### NOTE:

DTC "U1508" is detected along with DTC "U1000", first diagnose the DTC "U1508".

### DTC CONFIRMATION PROCEDURE

### **1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1508" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U1508" detected as the current malfunction?

- YES >> Refer to DAS-86, "Diagnosis Procedure".
- NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

## Diagnosis Procedure

INFOID:000000011657746

## 1. CHECK SIDE RADAR HARNESS CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Check the terminals and connectors of the side radar LH for damage, bend and short (unit side and connector side).

#### Is the inspection result normal?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>LAN-21, "Trouble Diagnosis Flow Chart"</u>.
- NO >> Repair the terminal or connector.

## U1518 SIDE RDR L CAN 3

## < DTC/CIRCUIT DIAGNOSIS >

## U1518 SIDE RDR L CAN 3

## DTC Logic

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[BSW]

INFOID:000000011657747

## DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1518	SIDE RDR L CAN CIRC 3	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication	Side radar LH
NOTE: If DTC "U1518 • Refer to <u>DAS</u> • Refer to <u>DAS</u>	3" is detected along with [ S-66. "ADAS CONTROL S-86. "DTC Logic" for DT	DTC "U1000", or "U1508", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". C "U1508".	DTC "U1000" or "U1508".
	RMATION PROCEDUR		
1. Start the e 2. Turn the E 3. Perform "/	angine. SSW system ON. All DTC Reading" with CC	DNSULT.	
4. Check ii ti I <u>s "U1518" det</u> YES >> R	ected as the current malf	function?	Result of BSW.
NO >> R	efer to <u>GI-47, "Intermitter</u>	it Incident"	
Diagnosis I	Procedure		INFOID:0000000116577
<b>1</b> .CHECK SE	LF-DIAGNOSIS RESUL	TS	
Check if "U10	00" or "U1508" is detected	d other than "U1518" in "Self Diagnostic Res	ult" of "BSW".
<u>Is "U1000" or '</u> YES-1 >> U fu YES-2 >> U NO >> G	<u>"U1508" detected?</u> 1000 detected: Perform t nctioning parts. Refer to <u>I</u> 1508 detected: Refer to <u>I</u> O TO 2.	he CAN communication system inspection. I DAS-66, "ADAS CONTROL UNIT : DTC Log DAS-86, "DTC Logic".	Repair or replace the mai i <u>c"</u> .
2.CHECK SI	DE RADAR LH SELF-DIA	AGNOSIS RESULTS	
Check if any D	TC is detected in "Self D	iagnostic Result" of "SIDE RADAR LEFT".	
Is any DTC de YES >> Pe	etected? erform diagnosis on the one of the	detected DTC and repair or replace the mail	functioning parts. Refer to

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## U1519 SIDE RDR R CAN 3

### < DTC/CIRCUIT DIAGNOSIS >

## U1519 SIDE RDR R CAN 3

## DTC Logic

INFOID:000000011657749

[BSW]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1519	SIDE RDR R CAN CIRC 3	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH

#### NOTE:

If DTC "U1519" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".

### DTC CONFIRMATION PROCEDURE

## 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2.
- Turn the BSW system ON. Perform "All DTC Reading" with CONSULT. 3.
- Check if the "U1519" is detected as the current malfunction in "Self Diagnostic Result" of "BSW". 4.

### Is "U1519" detected as the current malfunction?

- >> Refer to DAS-88, "Diagnosis Procedure". YES
- >> Refer to GI-47, "Intermittent Incident". NO

## **Diagnosis** Procedure

INFOID:000000011657750

## 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1519" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-66, "ADAS CONTROL UNIT : DTC Logic".

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-33, "DTC Index".
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

	POWE	ER SUP	PLY ANI	d Gf	ROUND CIR	CUIT	
CUIT DIAGI	NOSIS >						[BSW]
SUPPL	Y AND	GROU	ND CIR	CUI	Т		
ONTROL	UNIT						
NTROL	UNIT : E	Diagnosi	s Proced	lure			INFOID:000000011657751
		0					
		are blown					
	wing luses		Ι.				
	Signal name					Fuse No.	
Igniti	on power su	oply				30 (10A)	
<u>ction result r</u> GO TO 2. Replace the ADAS CON <sup>-</sup>	<u>oormal?</u> e blown fus TROL UNI	se after rep T POWER	pairing the a	affecte CIRCI	ed circuit if a fus JIT	se is blown.	
ge between	ADAS cor	ntrol unit ha	arness coni	necto	and ground.		
lerminal	(_)	Condi	tion		Reference		
ontrol unit		laniti	on Stan	lage	voltage		
Terminal	_	swite	ch		(/ (pp/0x.)		
	Ground	OF	= 0 - 0	).1 V	0 V		
12		ON	I 9.5 -	16 V	Battery volt- age		
ction result r	normal?						
GO TO 3. Bonair the /		rol unit no	wor cupply	circui	+		
ADAS CON	TROL UNI	T GROUN	D CIRCUIT	Г	ι.		
e ignition sw hect the ADA or continuity	itch OFF. AS control between	unit conne ADAS con	ector. trol unit hai	rness	connector and	ground.	
AS control unit			Continu	itv			
r Ter	minal	Ground		, 	-		
tion result r	10		Yes		-		I
Inspection E Repair the A DAR LH	End. ADAS cont	rol unit gro	ound circuit edure	t.			INEQID:000000011657752
USES	2.0.9.10						D
of the follow	wing fuses	are blown	1:				
(	Signal name					Fuse No.	
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ction result r	normal?						
	CUIT DIAG SUPPL DNTROL DNTROL CUSES of the follow Control unit Control 2. Replace the ADAS CON Ge between Terminal (12 Control unit Terminal (12 Control unit Terminal (12 Control unit Terminal (12 Control unit Terminal (12 Control unit Terminal (12 Control unit Terminal (12 Control unit Terminal (12 Control unit (12 Control unit) (12 Control unit) (12	POWE CUIT DIAGNOSIS > SUPPLY AND DNTROL UNIT DNTROL UNIT DNTROL UNIT : D Signal name Ignition power sup Cion result normal? GO TO 2. Replace the blown fus ADAS CONTROL UNI ge between ADAS cont ADAS CONTROL UNI ge between ADAS cont Terminal +) (-) ontrol unit Terminal freminal 12 Cion result normal? GO TO 3. Repair the ADAS cont ADAS CONTROL UNI 2 cion result normal? GO TO 3. Repair the ADAS cont ADAS CONTROL UNI 2 cion result normal? GO TO 3. Repair the ADAS cont ADAS CONTROL UNI 2 cion result normal? GO TO 3. Repair the ADAS control or continuity between ADAS CONTROL UNI 2 cion result normal? Inspection End. Repair the ADAS cont ADAS CONTROL UNI 2 cion result normal? Inspection End. Repair the ADAS cont ADAS CONTROL UNI 2 cion result normal? Inspection End. Repair the ADAS cont DAR LH : Diagnos Signal name Ignition power sup Cion result normal?	POWER SUP CUIT DIAGNOSIS > SUPPLY AND GROUP ONTROL UNIT DNTROL UNIT : Diagnosi CUSES of the following fuses are blown Signal name Ignition power supply Ction result normal? GO TO 2. Replace the blown fuse after rep ADAS CONTROL UNIT POWER ge between ADAS control unit ha Terminal (-) DATO UNIT Terminal (-) Condi (-) Condi (-) (-) (-) (-) (-) (-) (-) (-)	POWER SUPPLY AND CUIT DIAGNOSIS > SUPPLY AND GROUND CIR DNTROL UNIT DNTROL UNIT : Diagnosis Proced Signal name Ignition power supply Clion result normal? GO TO 2. Replace the blown fuse after repairing the a ADAS CONTROL UNIT POWER SUPPLY OF ge between ADAS control unit harness con Terminal +) (-) Condition Terminal Ground OFF 0 - 0 12 ON 9.5 - Clion result normal? GO TO 3. Repair the ADAS control unit power supply ADAS CONTROL UNIT GROUND CIRCUIT a ginition switch OFF. Terminal Ground Control unit harnest is ginition switch OFF. Terminal Ground Control unit harnest DAS CONTROL UNIT GROUND CIRCUIT is ginition switch OFF. Terminal Ground Continuit harnest is ginition switch OFF. Terminal Ground Continuit harnest Continuity between ADAS control unit power supply ADAS CONTROL UNIT GROUND CIRCUIT DAS CONTROL UNIT GROUND CIRCUIT Supportion End. Repair the ADAS control unit ground circuit DAR LH DAR LH : Diagnosis Procedure -USES of the following fuses are blown: Signal name Ignition power supply Clion result normal?	POWER SUPPLY AND GF CUIT DIAGNOSIS > SUPPLY AND GROUND CIRCUI DNTROL UNIT ONTROL UNIT : Diagnosis Procedure USES of the following fuses are blown: Usignal name Ignition power supply Ution result normal? GO TO 2. Replace the blown fuse after repairing the affecte ADAS CONTROL UNIT POWER SUPPLY CIRCU ge between ADAS control unit harness connector Terminal OFF O-0.1V ON 9.5-16V Ction result normal? GO TO 3. Repair the ADAS control unit power supply circui ADAS CONTROL UNIT GROUND CIRCUIT Dignition switch OFF. Isect the ADAS control unit power supply circui ADAS CONTROL UNIT GROUND CIRCUIT Dignition switch OFF. Isect the ADAS control unit power supply circui ADAS CONTROL UNIT GROUND CIRCUIT Dignition switch OFF. Isect the ADAS control unit ground circuit. DAS CONTROL UNIT GROUND CIRCUIT Dignition power supply Control unit Terminal DAR LH DAR LH DAR LH : Diagnosis Procedure USES To f the following fuses are blown: Dignition power supply Ction result normal? Signal name Ignition power supply Ction result normal?	POWER SUPPLY AND GROUND CIRCUIT         SUPPLY AND GROUND CIRCUIT         DNTROL UNIT : Diagnosis Procedure         Signal name         Image: Signal name         Condition         Signal name         Image: Signal name         Image: Signal name         Signal name         Image: Signal name         Image: Signal name	POWER SUPPLY AND GROUND CIRCUIT         SUPPLY AND GROUND CIRCUIT         SUPPLY AND GROUND CIRCUIT         ONTROL UNIT : Diagnosis Procedure         FUSES         rof the following fuses are blown:         Signal name       Fuse No.         Ignition power supply       30 (10A)         dition result normal?         GO TO 2.         Replace the blown fuse after repairing the affected circuit if a fuse is blown.         ADAS CONTROL UNIT POWER SUPPLY CIRCUIT         ge between ADAS control unit harness connector and ground.         Terminal         traminal         Condition         Standard voltage         Adres on trol unit power SUPPLY CIRCUIT         ge between ADAS control unit power supply circuit.         ADAS control unit pround circuit.         DAS control unit connector.         or continuity         Terminal         Ground

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

## POWER SUPPLY AND GROUND CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[BSW]

## 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			
(+)		(-)	Condition	Standard	Reference voltage (Approx.)	
Side ra	adar LH	Ignition owi		voltage		
Connector	Terminal		Ignition Switch			
		Ground	OFF	0 - 0.1 V	0 V	
B416	5		ON	10 - 16 V	Battery volt- age	

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the side radar LH power supply circuit.

 ${\it 3.}$  CHECK GROUND CIRCUIT

Check continuity between side radar LH harness connectors and ground.

Side ra	adar LH		Continuity
Connector	Connector Terminal		Continuity
B416	B416 8		Yes

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:000000011657753

### **1.**CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	30 (10A)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

## 2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect the side radar RH connector.

3. Check voltage between side radar RH harness connector and ground.

Terminals		Condition			
(+)		(-)	Condition	Standard	Reference
Side ra	adar RH		voltage		(Approx.)
Connector	Terminal		Ignition Switch		
		Ground	OFF	0 - 0.1 V	0 V
B109	5		ON	10 - 16 V	Battery volt- age

Is the inspection result normal?



			LY AND GROUND CIRCUI	T IBSW1
YES >> GC NO >> Re	TO 3. pair the side rac	ar RH power su	ipply circuit.	[]
3.CHECK GR	OUND CIRCUIT	Г		
Check continuit	ty between side	radar RH harne	ess connectors and ground.	
Side ra	adar RH		Continuity	
Connector	Terminal	Ground		
B109	8		Yes	
YES >> Ins NO >> Re	n result normal': pection End. pair the side rac	2 lar RH ground c	ircuit.	

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< DTC/CIRCUIT DIAGNOSIS >

## WARNING SYSTEM SWITCH CIRCUIT

## **Component Function Check**

1. CHECK WARNING SYSTEM SWITCH INPUT SIGNAL

- 1. Turn the ignition switch ON.
- 2. Select the DATA MONITOR item "WARN SYS SW" of "BSW" with CONSULT.
- 3. With operating the warning system switch, check the monitor status.

Monitor item	Condition	Monitor status
WARN SYS	Warning system switch is pressed	On
SW	Warning system switch is not pressed	OFF

Is the inspection result normal?

YES >> Warning system switch circuit is normal.

NO >> Refer to DAS-92, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:000000011657755

1. CHECK WARNING SYSTEM SWITCH SIGNAL INPUT

- 1. Turn the ignition switch ON.
- 2. With operating the warning system switch, check voltage between ADAS control unit harness connector and ground.

Terminals			Condition		
(	+)	(-)	Condition	Voltage	
ADAS control unit			Warning	(Approx.)	
Connector	Terminal	Ground	system switch		
P104	10		Pressed	0 V	
B104	19		Released	12 V	

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-98. "Removal and Installation"</u>.

2. CHECK WARNING SYSTEM SWITCH

1. Turn ignition switch OFF.

- 2. Remove warning system switch.
- 3. Check warning system switch. Refer to DAS-102, "Removal and Installation".

### Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the warning system switch. Refer to <u>DAS-102</u>, "Removal and Installation".

## 3.CHECK WARNING SYSTEM SWITCH GROUND CIRCUIT

Check continuity between warning system switch harness connector and the ground.

Warning sy	stem switch		Continuity	
Connector	Terminal	Ground	Continuity	
M133	8	1	Yes	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

 ${f 4}.$ CHECK WARNING SYSTEM SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

## **DAS-92**

INFOID:000000011657754

## WARNING SYSTEM SWITCH CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

- 1. Disconnect the ADAS control unit connector.
- 2. Check continuity between the ADAS control unit harness connector and warning system switch harness A connector.

A	DAS co	ntrol unit	Warning	system switch	Continuity		E
Conn	ector	Terminal	Connector	Terminal			
B1	04	19	M133	6	Yes		(
<u>Is the</u>	nspec	<u>tion result n</u>	ormal?				C
YES NO <b>5.</b> СН	>> >> ECK V	GO TO 5. Repair the h VARNING S	arnesses c YSTEM SV	r connector VITCH SIGI	s. NAL INPUT CI	RCUIT FOR SHORT	
Check	contir	uity betwee	n the ADA	6 control un	it harness con	nector and ground.	F
	ADA	S control unit			Continuity		_
Со	nnector	Termi	nal	Ground	Continuity		F
E	3104	19			No		1
YES NO		Replace the Repair the h	ADAS con arnesses c	trol unit. Re r connector	fer to <u>DAS-98.</u> s.	"Removal and Installation".	(
Сотр <b>1</b> .сн	DONE ECK V	nt Inspect	tion YSTEM SV	VITCH		INFCID:000000011657756	ŀ
Check	contir	nuity of warn	ing system	switch.			
Tern	ninal		Condition		Continuity		
6	0	When warning	g system swit	ch is pressed	Yes		J
0	When warning system switch is released No						
Is the	nspec	tion result n	ormal?				
YES NO	>> >>	Inspection E Replace wai	ind. ming syste	n switch. R	efer to <u>DAS-10</u>	2, "Removal and Installation".	K
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## **BSW ON INDICATOR CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

## **BSW ON INDICATOR CIRCUIT**

## **Diagnosis** Procedure

## 1. CHECK BSW ON INDICATOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect warning system switch connector.
- 3. Turn ignition switch ON.
- 4. Check voltage between warning system switch harness connector and ground.

Terminals			
(+)		(–)	Voltage
Warning system switch			(Approx.)
Connector Terminal		Ground	
M133 5		*	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the BSW ON indicator power supply circuit.

2. CHECK BSW ON INDICATOR SIGNAL FOR OPEN

- 1. Turn ignition switch OFF.
- 2. Disconnect the ADAS control unit harness connector.
- 3. Check continuity between the ADAS control unit harness connector and warning system switch harness connector.

ADAS control unit		Warning sy	Continuity	
Connector Terminal		Connector	Terminal	Continuity
B104	18	M133	3	Yes

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK BSW ON INDICATOR SIGNAL CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS co	ontrol unit		Continuity
Connector Terminal		Ground	Continuity
B104	18	*	No

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

**4.**CHECK BSW ON INDICATOR

Check the BSW ON indicator. Refer to DAS-94, "Component Inspection".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

NO >> Replace warning system switch. DAS-102, "Removal and Installation".

### **Component Inspection**

INFOID:000000011657758

**1.**CHECK BSW ON INDICATOR

Apply battery voltage to warning system switch terminals 5 and 6, and then check if the BSW ON indicator illuminates.

## **DAS-94**

INFOID:000000011657757

## **BSW ON INDICATOR CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

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Term	inals	Condition	BSW ON indica-
(+)	(-)	Condition	tor
5	з	When the battery voltage is applied	On
5	5	When the battery voltage is not applied	Off
<u>Is the i</u>	inspec	ction result normal?	
YES	>>	Inspection End.	_
NO	>>	Replace the warning system swite	ch. Refer to DAS

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INFOID:000000011657759

## SYMPTOM DIAGNOSIS BSW SYSTEM SYMPTOMS

## Symptom Table

**CAUTION:** 

# Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

#### NOTE:

For the operational conditions of BSW, refer to <u>DAS-13</u>, "System Description".

Sympt	om	Possible cause	Inspection item/Reference page
Indicator/warning lamps do not il- luminate when ignition switch OFF $\Rightarrow$ ON.	BSW warning lamp (Yellow) does not illuminate	<ul> <li>BSW warning lamp signal (CAN)</li> <li>Combination meter</li> <li>ADAS control unit</li> <li>BSW warning lamp (combination meter)</li> </ul>	<ul> <li>Power supply and ground circuit of ADAS control unit Refer to <u>DAS-89</u>, "ADAS CON- <u>TROL UNIT : Diagnosis Proce-</u> <u>dure"</u></li> <li>ADAS control unit Active test "BSW/BSI WARNING LAMP" Refer to <u>DAS-20</u>, "CONSULT <u>Function (ADAS)"</u></li> <li>ADAS control unit Data moni- tor "BSW/BSI WARN LMP" Refer to <u>DAS-20</u>, "CONSULT <u>Function (ADAS)"</u></li> <li>Combination meter Data mon- itor "BSW W/L" Refer to <u>MWI-18, "CONSULT</u> <u>Function (METER/M&amp;A)"</u></li> </ul>
	BSW ON indicator (on the warning system switch) does not illuminate	<ul> <li>Harness between ADAS control unit and warning system switch</li> <li>Warning system switch</li> <li>ADAS control unit</li> </ul>	BSW ON indicator circuit Refer to <u>DAS-94, "Diagnosis Pro-</u> cedure"
	BSW indicator does not turn ON	<ul> <li>Harness between side radar and BSW indicator</li> <li>Side radar LH/RH</li> <li>BSW indicator</li> </ul>	Perform self-diagnosis of side ra- dar Refer to <u>DAS-22, "CONSULT</u> <u>Function (SIDE RADAR LEFT)"</u> or <u>DAS-24, "CONSULT Function</u> ( <u>SIDE RADAR RIGHT)"</u>
BSW system is not activated. (Indicator/warning lamps illumi- nate when ignition switch OFF $\Rightarrow$ ON.)	BSW ON indicator is not turned ON ⇔ OFF when op- erating warning system switch	<ul> <li>Harness between ADAS control unit and warning system switch</li> <li>Harness between warning system switch and ground</li> <li>ADAS control unit</li> <li>Warning system switch</li> </ul>	BSW ON indicator circuit Refer to <u>DAS-94, "Diagnosis Pro-</u> cedure"
	Buzzer is not sounding	<ul><li>ADAS control unit</li><li>Combination meter</li></ul>	Meter buzzer circuit Refer to <u>WCS-30, "Component</u> <u>Function Check"</u>

## NORMAL OPERATING CONDITION

## NORMAL OPERATING CONDITION

## Description

Description	INFOID:0000000011657760	
PRECAUTIONS FOR BLIND SPOT WARNING (BSW)		В
<ul> <li>The BSW system is not a replacement for proper driving procedure and are not designed to with vehicles or objects. When changing lanes, always use the side and rear mirrors and turr direction driver will move to ensure it is safe to change lanes. Never rely solely on the BSW</li> </ul>	prevent contact and look in the system.	С
<ul> <li>The BSW system may not provide a warning for vehicles that pass through the detection zor</li> <li>Do not use the BSW system when towing a trailer because the system may not function provide a system.</li> </ul>	ne quickly. perlv.	
<ul> <li>Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chin may not be heard.</li> </ul>	ne sound, and it	D
The side radar may not be able to detect and activate BSW when certain objects are presen	t such as:	
<ul> <li>Pedestrians, bicycles, animals.</li> <li>Several types of vehicles such as motorcycles</li> </ul>		_
- Oncoming vehicles.		E
- 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.		F
- A vehicle approaching rapidly from benind.		1
<ul> <li>Severe weather or road spray conditions may reduce the ability of the side radar to detect of</li> </ul>	her vehicles.	
<ul> <li>The side radar detection zone is designed based on a standard lane width. When driving in a side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the detect vehicles driving two lanes away</li> </ul>	i wider lane, the side radar may	G
• The side radar are designed to ignore most stationary objects, however objects such as g foliage and parked vehicles may occasionally be detected. This is a normal operating condit	uardrails, walls, ion.	Η
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## REMOVAL AND INSTALLATION ADAS CONTROL UNIT

Removal and Installation

INFOID:000000011660031

[BSW]

### REMOVAL

#### **CAUTION:**

Before replacing ADAS control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to <u>DAS-54, "Work Procedure"</u>.

- 1. Disconnect the battery negative terminal. Refer to <u>PG-95</u>, "Removal and Installation".
- 2. Remove the storage box. Refer to INT-33, "STORAGE BOX : Removal and Installation".
- 4. Remove bolts (**←**).
- 5. Lift upward to remove ADAS control unit (1).



### INSTALLATION

#### CAUTION:

Be sure to perform "Read/Write Configuration" when replacing ADAS control unit. For details, refer to DAS-54, "Work Procedure".

Installation is in the reverse order of removal.

• Tighten ADAS control unit bolts to specification.

ADAS control unit bolts : 8.3 N·m (0.85 kg-m, 73 in-lb)

## < REMOVAL AND INSTALLATION >

## SIDE RADAR

**Exploded View** 

INFOID:000000011660037

[BSW]

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Removal

- 1. Remove the rear bumper fascia. Refer to EXT-20, "Removal and Installation".
- Disconnect the harness connector (1) (3) from the side radar (LH/RH) as shown. 2.



3. Remove nuts to remove the side radar (LH/RH) as necessary.

#### Installation

Installation is in the reverse order of removal.

### CAUTION:

Do not use the side radar if the lens has flaws. NOTE:

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### < REMOVAL AND INSTALLATION >

Always lock the side radar connector (2).Do not touch the side radar lens and keep lens area clean.

## **BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR**

## < REMOVAL AND INSTALLATION >

## BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

## **Exploded View**

INFOID:000000011660034

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< REMOVAL AND INSTALLATION >

## BSW SWITCH

Removal and Installation

### REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-25. "Removal and Installation".
- 2. Remove the bracket for BSW switch and other switches from instrument driver lower panel.
- 3. Insert remover tool (B) in pawl (A) of the bracket and widen the pawl in (C) direction to release the fit.
- 4. Remove BSW switch from the bracket in (D) direction.



INSTALLATION Installation is in the reverse order of removal. [BSW]

## PRECAUTIONS

# PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT **PRF-TENSIONER**" INFOID:000000011660039

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. D

### 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:

NOTE:

line are lost.

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Igni-Н tion 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

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.



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INFOID:000000011657766

### Precaution for Backup Collision Intervention

#### WARNING:

Be careful of traffic conditions and safety around the vehicle when performing road test. CAUTION:

- Do not use the Backup Collision Intervention system when driving with free rollers or a chassis dynamometer.
- Do not perform the active test while driving.
- Do not change BCI initial state  $ON \Rightarrow OFF$  without the consent of the customer.

TO KEEP THE BACKUP COLLISION INTERVENTION SYSTEM OPERATING PROPERLY, BE SURE TO OBSERVE THE FOLLOWING ITEMS:

#### System Maintenance

The two side radars for the Backup Collision Intervention system are located near the rear bumper.

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

#### System Maintenance

The four rear sonars for the Backup Collision Intervention system are located in the rear bumper.

- Always keep the area near the rear sonars clean.
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the rear sonars.
- Do not strike or damage the area around the rear sonars.

# SYSTEM DESCRIPTION

COMPONENT PARTS

## **Component Parts Location**

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## **COMPONENT PARTS**

### < SYSTEM DESCRIPTION >

No.	Component	Function
1	Combination meter	<ul> <li>Description: Refer to <u>DAS-107</u>, "Combination Meter"</li> <li>System display and warning: <u>DAS-113</u>, "System Display and Warning" Refer to <u>MWI-6</u>, "<u>METER SYSTEM</u> : Component Parts Location" for detailed installation location</li> </ul>
2	Sonar sensors	Refer to SN-4, "Component Description"
3	ADAS control unit	Refer to DAS-106, "ADAS Control Unit"
4	ВСМ	Refer to <u>DAS-107, "BCM"</u> Refer to <u>BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"</u> for detailed in- stallation location
5	ABS actuator and electric unit (con- trol unit)	Refer to <u>DAS-107, "ABS Actuator and Electric Unit (Control Unit)"</u> Refer to <u>BRC-11, "Component Parts Location"</u> (type 1) for detailed installation location Refer to <u>BRC-139, "Component Parts Location"</u> (type 2) for detailed installation location
6	ECM	Refer to <u>DAS-108. "ECM"</u> Refer to <u>EC-20, "ENGINE CONTROL SYSTEM : Component Parts Location"</u> (USA and Canada) for detailed installation location Refer to <u>EC-534, "ENGINE CONTROL SYSTEM : Component Parts Location"</u> (Mexico) for detailed installation location
7	ТСМ	Refer to DAS-107. "TCM" Refer to TM-15. "CVT CONTROL SYSTEM : Component Parts Location" (RE0F10E) for detailed installation location Refer to TM-229. "CVT CONTROL SYSTEM : Component Parts Location" (RE0F10J) for detailed installation location
8	BSW indicator LH (RH similar)	Refer to DAS-107, "BSW Indicator LH/RH"
9	Around view monitor control unit	Refer to AV-208, "Component Description"
10	Side radar LH (RH similar)	Refer to DAS-107, "Side Radar LH/RH"
11	Warning system switch	<ul> <li>Description: Refer to <u>DAS-107, "Warning System Switch"</u></li> <li>System display and warning: <u>DAS-113, "Switch Name and Function"</u></li> </ul>
12	Warning system switch ON indicator (On the warning system switch)	Refer to DAS-113. "System Display and Warning"
13	Stop lamp switch	Refer to EXL-7, "Component Description"
14	Sonar control unit	Refer to SN-4, "Component Description"
15	CAN gateway	Refer to LAN-116, "System Description"

## ADAS Control Unit



- Controls the BSW system, based on received signals.
- Communicates with each control unit via CAN communication.
- Connected with the side radar (LH and RH) via ITS communication, ADAS control unit receives a vehicle detection signal and transmits a BSW indicator signal and a BSW indicator dimmer signal to the side radar.

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- Receives a warning system switch signal from the warning system switch.
- Transmits a buzzer output signal to the combination meter via CAN communication.

## **COMPONENT PARTS**

## < SYSTEM DESCRIPTION >

### Side Radar LH/RH

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- Installed near the rear bumper, the side radar detects vehicles in the adjacent lane.
- Connected with the ADAS control unit via ITS communication, the side radar transmits a vehicle detection signal.
- Receives a BSW indicator signal and a BSW indicator dimmer signal from the ADAS control unit and transmits an indicator operation signal to the BSW indicator LH/RH.

### **BSW Indicator LH/RH**

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- Installed on the door by the A pillar, the BSW indicator "A" warns the driver by lighting/blinking.
- Receives a BSW indicator operation signal from the side radar LH/RH and blinks or turns ON/OFF the BSW indicator lamp.

### Warning System Switch

- Installed to the instrument lower panel, the warning system switch is used to activate/deactivate the BSW system.
- Transmits a warning system switch signal to the ADAS control unit.

### **Combination Meter**

- Receives BSW warning lamp signal and buzzer output signal from ADAS control unit via CAN communication.
- Turns the BSW warning lamp ON/OFF according to the signals from the ADAS control unit
- Operates the buzzer according to the signal from the ADAS control unit

## ABS Actuator and Electric Unit (Control Unit)

Transmits vehicle speed signal to ADAS control unit via CAN communication.

## BCM

- Transmits turn indicator signal to ADAS control unit via CAN communication.
- Transmits dimmer signal to ADAS control unit via CAN communication.

### тсм

Transmits shift position signal to ADAS control unit via CAN communication.

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< SYSTEM DESCRIPTION > ECM

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[RCTA]

Transmits engine speed signal to ADAS control unit via CAN communication.
## < SYSTEM DESCRIPTION >

## SYSTEM

### System Description

### SYSTEM DIAGRAM



### ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

#### Input Signal Item

Transmit unit	S	ignal name	Description	Κ
ТСМ	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	L
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp	M
		Dimmer signal	Receives an ON/OFF state of dimmer signal	
Side radar LH, RH	CAN communication	Vehicle detection signal	Receives vehicle detection condition of detection zone	Ν
ECM	CAN communication	Engine speed signal	Receives an engine speed	
Sonar control unit	ITS communication	Rear object detection signal	Receives objects detection result of rear area behind vehicle	DAS
Warning system switch	Warning system switch signal		Receives an ON/OFF state of the warning system switch	D

#### **Output Signal Item**

Reception unit	Signal name		Description
Combination meter	CAN communication	BSW warning lamp signal	Transmits a BSW warning lamp signal to turn ON the BSW warning lamp
		Buzzer output signal	Transmits a buzzer output signal to activate buzzer

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### SYSTEM

#### < SYSTEM DESCRIPTION >

Reception unit	Signal name		Description
Sonar control unit	ITS communication Warning buzzer signal		While the shifter is in reverse and backing up, trans- mits a request for a variable warning buzzer signal to alert the driver.
Around view monitor control unit	ITS communication Visual signal request		Transmits a visual signal request by the ADAS control unit to center display to override other signals and dis- play rear view while the shift lever is in reverse.
Side radar LH, RH	CAN communication	BSW indicator signal	Transmits a BSW indicator signal to turn ON the BSW indicator
		BSW indicator dimmer signal	Transmits a BSW indicator dimmer signal to dimmer BSW indicator
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
BSW ON indi- cator	BSW ON indicator signal		Turns ON the BSW ON indicator

#### FUNCTION DESCRIPTION

- The Rear Cross Traffic Area (RCTA) system can help alert the driver of approaching vehicles or rear objects when the driver is backing out of a parking space.
- The RCTA system comprise of two main detection systems. The side radars (1), and the four sonar sensors (2) mounted on the rear bumper cover as illustrated.
- The RCTA system operates at speeds below 5 MPH (8 km/h) whenever the vehicle is in reverse.



[RCTA]

- The RCTA system uses the two side radars installed near the rear bumper to detect approaching vehicles and rear obstacles.
- The side radars can detect an approaching vehicle from up to 66 ft (20 m) away on either side of the vehicle.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.



- The sonar sensors can detect rear obstacles of up to approximately 4.9 feet (1.5 m).
   The PCTA system can beln alort the driver of an approaching year.
- The RCTA system can help alert the driver of an approaching vehicle or objects behind the vehicle when the driver is backing out of a parking space.



- If the approaching vehicle is faster, the warning timer is faster. If the approaching vehicle is slower, the warning timer is slower.
- When the radar detects a vehicle approaching from the side, the system gives visual and audible warnings.

### SYSTEM

#### < SYSTEM DESCRIPTION >

#### RCTA SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables RCTA system.
- The ADAS control unit turns on the RCTA system when the warning system switch is turned ON.
- Side radar detects a vehicle in the adjacent lane, and transmits the vehicle detection signal to ADAS control unit via CAN 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:
- Buzzer output signal transmission to combination meter via CAN communication.
- BSW indicator signal and BSW indicator dimmer signal transmission to side radar via CAN communication.
- Side radar transmits an indicator operation signal to the BSW indicator according to BSW indicator signal and BSW indicator dimmer signal.

#### Operation Condition of RCTA System

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

- When the warning system switch in turned ON.
- When the vehicle drives at approximately 5 MPH (8 km/h) or less in reverse (R) direction.



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#### < SYSTEM DESCRIPTION >



# RCTA INITIAL STATE CHANGE CAUTION:

# Never change RCTA initial state "ON"⇒"OFF" without the consent of the customer. RCTA initial state can be changed.

- RCTA initial ON\* RCTA function is automatically turned ON, when the ignition switch OFF  $\Rightarrow$  ON.
- RCTA initial OFF RCTA function is still OFF when the ignition switch  $OFF \Rightarrow ON$ .

\*: Factory setting

#### How to change RCTA initial state

- 1. Turn ignition switch ON.
- 2. Switch RCTA functions to OFF.
- 3. Push and hold warning system switch for more than 4 seconds.
- 4. Buzzer sounds and blinking of the BSW ON indicator informs that the BSW initial state changes completed.

### Fail-safe (ADAS Control Unit)

If a malfunction occurs in the system, ADAS control unit cancels the control. Then the RCTA warning lamp in the combination meter illuminates.

### Fail-safe (Side Radar)

#### FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels the control. Then the RCTA warning lamp in the combination meter illuminates.

#### TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then RCTA warning lamp in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

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### < SYSTEM DESCRIPTION >

# OPERATION

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No.	Name	Function
1	Warning system switch	Turns RCTA system ON/OFF

### System Display and Warning

### INDICATOR AND WARNING LAMP



No.	Name	Description	
1	RCTA ON indicator	Turns ON while RCTA system is ON	K
2	RCTA warning lamp (In the combination meter)	<ul><li>Turns ON when RCTA system is malfunctioning</li><li>Blinks when radar blockage is detected</li></ul>	

### DISPLAY AND WARNING OPERATION

	Vehicle condition/	Driver's operatio	on	Ac	tion	M
RCTA ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Shift lever position	Status of ve- hicle detec- tion within detection area	Indication on the BSW indicator	Buzzer	Ν
OFF	—	—	—	OFF	OFF	
	More than ap- prox. 8 (5)	_	_	OFF	OFF	DAS
ON Ap 8 or	Approx.	Except (R)	Vehicle is absent	OFF	OFF	Ρ
	or less	Reverse (R)	Vehicle is detected	ON	ON	

#### NOTE:

If vehicle speed exceeds approximately 8 km/h (5MPH), RCTA function will stop operating until the vehicle speed becomes approximately 8km/h (5MPH) or lower.

### HANDLING PRECAUTION

### Precautions for Rear Cross Traffic Alert

SONAR HANDLING

- The four sonar sensors are located on the rear bumper cover.
- Always keep the sonar sensors clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork over any of the sonar sensors.
- Do not strike or scratch any of the sonar sensors causing physical damage. to a sensor or the surrounding area

#### SIDE RADAR HANDLING

- Side radar for Backup Collision Intervention system is located inside the rear bumper.
- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork near the side radar.
- Do not strike or damage the areas around the side radar.
- Do not strike, damage, and scratch the side radar, especially the vent seal (circular area).

#### REAR CROSS TRAFFIC ALERT

- The Rear Cross Traffic Alert (RCTA) system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When backing up. always look in the direction driver will move to ensure it is safe to proceed. Never rely solely on the RCTA system.
- Using the RCTA system under some road or weather condition could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The RCTA system may not provide a warning for vehicles that pass through the detection zone quickly.
- Do not use the RCTA system when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate RCTA when certain objects are present such as:
- Pedestrians, bicycles, animals.
- A vehicle passing at a speed greater than approximately 5 MPH (8km/h).
- A radar sensor may not detect approaching vehicles in certain situations:
- When the vehicle parked aside obstruct the beam of the radar sensor.
- When the vehicle is parked in an angled parking space.
- When the vehicle is parked on an inclined ground.
- When the vehicle turns around into your vehicle's aisle.
- When the angle formed by your vehicle and approaching vehicle is small.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The sonar system may not detect:
- Small or moving object.
- Wedge-shaped objects.
- Object closer to the bumper than 10 inch (30 cm).
- Thin objects such as rope, wire, chain, etc...
- The side radars are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

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### DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

#### < SYSTEM DESCRIPTION >

### DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

### **CONSULT Function (ADAS)**

#### **APPLICATION ITEMS**

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

Diagnosis mode	Description
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 ITS communication

#### SELF DIAGNOSTIC RESULT

Refer to DAS-28, "DTC Index".

### DATA MONITOR

#### NOTE:

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

• SIGNAL B, SIGNAL C are displayed, but not used.

				Н
Monitored item [Unit]	SIGNAL A	BSW MAIN SIGNAL	Description	l
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]	K
BUZZER O/P [On/Off]	×		Indicates [On/Off] status of BSW warning chime output	
Shift position [Off, P, R, N, D]		×	Indicates shift position read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)	L
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)	M
WARN SYS SW [On/Off]	×	×	Indicates [On/Off] status of warning system switch	
BSW/BSI WARN LMP [On/Off]		×	Indicates [On/Off] status of BSW warning lamp output	Ν
BSW SYSTEM ON [On/Off]		×	Indicates [On/Off] status of BSW system	DAS

### ACTIVE TEST

**CAUTION:** 

• Never perform "Active Test" while driving the vehicle.

- The "Active Test" cannot be performed when the BSW warning lamp is illuminated.
- · Shift the selector lever to "P" position, and then perform the test.

Test item	Description
ICC BUZZER	Sounds a buzzer used for BSW system by arbitrarily operating ON/OFF
BSW/BSI WARNING LAMP	The BSW warning lamp can be illuminated by ON/OFF operations as necessary

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### **DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)**

### < SYSTEM DESCRIPTION >

### ICC BUZZER

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

#### **BSW/BSI WARNING LAMP**

Test item	Operation	Description	BSW warning lamp
BSW/BSI WARNING LAMP	Off	Stops transmitting the BSW warning lamp signal below to end the test	_
	On	Transmits the BSW warning lamp signal to the combina- tion meter via CAN communication	ON

### **DIAGNOSIS SYSTEM (SIDE RADAR LH)**

#### < SYSTEM DESCRIPTION >

### DIAGNOSIS SYSTEM (SIDE RADAR LH)

### CONSULT Function (SIDE RADAR LEFT)

#### DESCRIPTION

CONSULT performs the following functions by communicating with the side radar LH.

Select diag mode	Function	C
Self Diagnostic Result	Displays memorized DTC in the side radar	_
Data Monitor	Displays real-time data of side radar	- г
Active Test	Enables operation check of electrical loads by sending driving signal to them	- L
ECU Identification	Displays part number of side radar	_

#### SELF DIAGNOSTIC RESULT

#### Self Diagnostic Result

Displays memorized DTC in side radar LH. Refer to DAS-31, "DTC Index".

FFD (Freeze Frame Data)

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

Freeze Frame Data item	Description	C
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	Η

#### 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	J
BSW/CTA WARN STATUS [On/Off]	Indicates [On/Off] status of vehicle detection	K
CTA SYSTEM ON [On/Off]	Indicates [On/Off] status of Rear Cross Traffic Area system	
BSW STATUS [On/Off]	Indicates [On/Off] status of Blind Spot Warning system	L
VHCL SPD SE [km/h]	Indicates vehicle speed in [km/h]	M
TURN SIGNAL [On/Off]	Indicates the position of the left turn signal switch	
ATCVT RANGE IND [P/R/N/D]	Indicates position of transmission range switch	N
LUMINANCE (LEFT) [Hi/Lo]	Indicates the left side luminance level of the radar	DAS
LUMINANCE (RIGHT) [Hi/Lo]	Indicates the right side luminance level of the radar	
ACTIVE TEST		P

#### ACTIVE TEST

#### **CAUTION:**

Never perform the active test while driving.

Active test cannot be started while the BSW indicator is illuminated.

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### DIAGNOSIS SYSTEM (SIDE RADAR LH)

#### < SYSTEM DESCRIPTION >

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

### DIAGNOSIS SYSTEM (SIDE RADAR RH)

#### < SYSTEM DESCRIPTION >

### DIAGNOSIS SYSTEM (SIDE RADAR RH)

### CONSULT Function (SIDE RADAR RIGHT)

#### DESCRIPTION

CONSULT performs the following functions by communicating with the side radar RH.

Select diag mode	Function	C
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	- L
ECU Identification	Displays part number of side radar	

#### SELF DIAGNOSTIC RESULT

#### Self Diagnostic Result

Displays memorized DTC in side radar RH. Refer to DAS-33, "DTC Index".

FFD (Freeze Frame Data)

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

Freeze Frame Data item	Description	G
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	Н

# 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	J
BSW/CTA WARN STATUS [On/Off]	Indicates [On/Off] status of vehicle detection	K
CTA SYSTEM ON [On/Off]	Indicates [On/Off] status of Rear Cross Traffic Area system	_
BSW STATUS [On/Off]	Indicates [On/Off] status of Blind Spot Warning system	L
VHCL SPD SE [km/h]	Indicates vehicle speed in [km/h]	M
TURN SIGNAL [On/Off]	Indicates the position of the right turn signal switch	_
ATCVT RANGE IND [P/R/N/D]	Indicates position of transmission range switch	N
LUMINANCE (LEFT) [—]	Indicates the left side luminance level of the radar	DAS
LUMINANCE (RIGHT) [—]	Indicates the right side luminance level of the radar	

#### ACTIVE TEST

#### CAUTION:

Never perform the active test while driving.

• Active test cannot be started while the BSW indicator is illuminated.

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### **DIAGNOSIS SYSTEM (SIDE RADAR RH)**

#### < SYSTEM DESCRIPTION >

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

# ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

### Reference Value

### VALUES ON THE DIAGNOSIS TOOL

#### NOTE:

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

Monitor item		Condition	Value/Status
VHCL SPEED SE	While driving		Displays the ve- hicle speed cal- culated by ADAS control unit
		When the buzzer of the BSW system operates	On
BUZZER O/F		When the buzzer of the BSW system not operates	Off
Shift position	<ul><li>Engine running</li><li>While driving</li></ul>		Displays the shift position
	Turn signal lamps OFF	Off	
	Turn signal lamp LH blinking	LH	
rum signal	Turn signal lamp RH blinking	RH	
	Turn signal lamp LH and RH b	blinking	LH&RH
	Institute outline ON	When warning system switch is pressed	On
VVARIN SYS SVV	Ignition switch ON	When warning system switch is not pressed	Off
	Instition quitab ON	BSW warning lamp ON	On
B244/B21 AAKIN TIML	Ignition switch ON	BSW warning lamp OFF	Off
BSW SYSTEM ON		When the BSW system is ON (BSW ON indicator ON)	On
		When the BSW system is OFF (BSW ON indicator OFF)	Off

### TERMINAL LAYOUT PHYSICAL VALUES



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### ADAS CONTROL UNIT

#### < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Standard value	Reference value	
+	_	Signal name	Input/ Output	Condition		Standard Value	(Approx.)	
1 (B)		CAN -H	_	_		_	_	
2 (W)		CAN -L		_		_	_	
6 (L)		ITS CAN-H		_		_	-	
7 (Y)		ITS CAN-L	—	_		_	-	
8 (Y)		ITS CAN-L	_	_		_	_	
9 (BG)	Ground	ITS CAN-H		_		_	_	
12 (R)		Ignition power supply	Input	Ignition swit	ch ON	9.5 - 16 V	Battery Voltage	
15 (B)		Ground	—	Ignition swit	ch ON	0 - 0.1 V	0 V	
18		Warning system ON in-	Output	BSW ON indicator	Illuminated	0 - 0.1 V	0 V	
(R)		dicator	o a ap ar		OFF	9.5 - 16 V	12 V	
19		Warning system switch	Innut	Warning system	Pressed	0 - 0.1 V	0 V	
(LG)		warning system switch	input	switch	Released	9.5 -16 V	12 V	

### Fail-safe

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If a malfunction occurs in the system, ADAS control unit cancels the control. Then the BSW warning lamp in the combination meter illuminates.

### **DTC Inspection Priority Chart**

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

Priority	Detected items (DTC)
1	U1508: LOST COMM (SIDE RDR L)
2	<ul> <li>U1000: CAN COMM CIRCUIT</li> <li>U1010: CONTROL UNIT (CAN)</li> <li>U1507: LOST COMM (SIDE RDR R)</li> </ul>
3	C1B53: SIDE RDR R MALF     C1B54: SIDE RDR L MALF

### ADAS CONTROL UNIT

#### < ECU DIAGNOSIS INFORMATION >

Priority	Detected items (DTC)	
4	<ul> <li>C1A01: POWER SUPPLY CIR</li> <li>C1A02: POWER SUPPLY CIR 2</li> <li>U0121: VDC CAN CIR 2</li> <li>U0401: ECM CAN CIR 1</li> <li>U0402: TCM CAN CIR 1</li> <li>U0415: VDC CAN CIR 1</li> <li>U150B: ECM CAN CIRC 3</li> <li>U150C: VDC CAN CIRC 3</li> <li>U150D: TCM CAN CIRC 3</li> <li>U150E: BCM CAN CIRC 3</li> <li>U150E: BCM CAN CIRC 3</li> <li>U150E: SIDE RDR L CAN CIR 2</li> <li>U1505: SIDE RDR L CAN CIR 2</li> <li>U1505: SIDE RDR R CAN CIR 2</li> <li>U1506: SIDE RDR R CAN CIR 2</li> <li>U1506: SIDE RDR R CAN CIR 1</li> <li>U1518: SIDE RDR L CAN CIR 3</li> <li>U1519: SIDE RDR R CAN CIRC 3</li> </ul>	E C E
5	C1A03: VHCL SPEED SE CIRC	
6	C1A00: CONTROL UNIT	

### 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
- IGN counter is displayed on FFD (Freeze Frame Data).
- 0: The malfunctions that are detected now CAN communication system (U1000, U1010)
- 1 39: It increases like 0 → 1 → 2 ··· 38 → 39 after returning to the normal condition whenever the ignition switch OFF → ON. It returns to 0 when a malfunction is detected again in the process.

- If it is over 39, it is fixed to 39 until the self-diagnosis results are erased. Other than CAN communication system (Other than U1000, U1010)

- 1 49: It increases like  $0 \rightarrow 1 \rightarrow 2 \cdots 38 \rightarrow 49$  after returning to the normal condition whenever the ignition switch OFF  $\rightarrow$  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	N
	DTC	BSW warning lamp	Fail-safe	Reference	
C1A00	CONTROL UNIT	ON	×	DAS-151	L
C1A01	POWER SUPPLY CIR	ON	×	DAS-152	
C1A02	POWER SUPPLY CIR 2	ON	×	DAS-152	
C1A03	VHCL SPEED SE CIRC	ON	×	DAS-153	M
C1B53	SIDE RDR R MALF	ON	×	DAS-158	
C1B54	SIDE RDR L MALF	ON	×	DAS-159	N
NO DTC IS DETECTED. FURTHER TESTING MAY BE RE- QUIRED	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	_	_	_	DAS
U1000	CAN COMM CIRCUIT	ON	×	DAS-161	Ρ
U1010	CONTROL UNIT (CAN)	ON	×	DAS-164	
U0121	VDC CAN CIR 2	ON	×	DAS-167	
U0401	ECM CAN CIR 1	ON	×	DAS-168	
U0402	TCM CAN CIR 1	ON	×	DAS-169	
U0415	VDC CAN CIR 1	ON	×	DAS-171	

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### ADAS CONTROL UNIT

#### < ECU DIAGNOSIS INFORMATION >

[RCTA]

	DTC	BSW warning lamp	Fail-safe	Reference
U150B	ECM CAN CIRC 3	ON	×	DAS-172
U150C	VDC CAN CIRC 3	ON	×	DAS-173
U150D	TCM CAN CIRC 3	ON	×	DAS-174
U150E	BCM CAN CIRC 3	ON	×	DAS-175
U1503	SIDE RDR L CAN CIR 2	ON	×	DAS-176
U1504	SIDE RDR L CAN CIR 1	ON	×	DAS-177
U1505	SIDE RDR R CAN CIR 2	ON	×	DAS-178
U1506	SIDE RDR R CAN CIR 1	ON	×	DAS-179
U1507	LOST COMM (SIDE RDR R)	ON	×	DAS-180
U1508	LOST COMM (SIDE RDR L)	ON	×	DAS-181
U1518	SIDE RDR L CAN CIRC 3	ON	×	DAS-182
U1519	SIDE RDR R CAN CIRC 3	ON	×	DAS-183

< ECU DIAGNOSIS INFORMATION >

# SIDE RADAR LH

### **Reference Value**

### 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
00001		

Monitor Item	Condition	Value/Status	-
BSW/CTA WARN	BSW system is normal.	On	D
STATUS	BSW system is malfunctioning.	Off	_
CTA SYSTEM ON	CTA system is ON	On	
CIASISTEMON	CTA system is OFF.	Off	
	BSW system is ON	Off	_
BSW STATUS	BSW system is OFF.	On	F
VHCL SPD SE	Indicates current vehicle speed.	Km/h	_
	Left turn signal is ON.	On	_
TURN SIGNAL	Left turn signal is OFF.	Off	G
ATCVT RANGE IND	Shows the poisition of the transmission range switch.	P/R/N/D	_
LUMINANCE(LEFT) Shows radar left luminance level		Hi/Lo	H
LUMINANCE (RIGHT)	Shows radar right luminance level	Hi/Lo	_

### TERMINAL LAYOUT



### PHYSICAL VALUES

Termir (Wire	nal No. color)	Description		Condition	Standard value	Reference value	IVI
+	-	Signal name	Input/ Output	Condition	Standard value	(Approx.)	Ν
4 (W)		BSW indicator	Output	Approx. 2 sec. after ignition switch OFF $\Rightarrow$ ON (bulb check)	5.5 - 16 V	6 V	DAS
5 (R)		Ignition power supply	Input	Ignition switch ON	10 - 16 V	Battery voltage	
6 (L)	Ground	ITS CAN-H	_	_	_	_	Ρ
7 (Y)	-	ITS CAN-L			_	_	
8 (B)		Ground			0 - 0.1 V	0 V	

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INFOID:000000011669608

### SIDE RADAR LH

#### < ECU DIAGNOSIS INFORMATION >

#### Fail-safe

#### FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels the control. Then the BSW warning lamp in the combination meter illuminates.

#### TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then BSW warning lamp in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

#### **DTC Inspection Priority Chart**

INFOID:000000011669610

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	<ul> <li>C1B51: BSW/BSI IND SHORT CIR</li> <li>C1B52: BSW/BSI IND OPEN CIR</li> <li>C1B55: RADAR BLOCKAGE</li> </ul>

### **DTC Index**

INFOID:000000011669611

DTC		BSW warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	<u>DAS-154</u>
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-155
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-156
C1B55	RADAR BLOCKAGE	Blink	×	DAS-160
U1000	CAN COMM CIRCUIT	ON	×	DAS-162
U1010	CONTROL UNIT (CAN)	ON	×	<u>DAS-164</u>
U0104	ADAS CAN CIR1	ON	×	DAS-166
U0405	ADAS CAN CIR2	ON	×	DAS-170

< ECU DIAGNOSIS INFORMATION >

# SIDE RADAR RH

### **Reference Value**

### 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	_
BSW/CTA WARN	BSW system is normal.	On	D
STATUS	BSW system is malfunctioning.	Off	
	CTA system is ON	On	_
CIASISTEMON	CTA system is OFF.	Off	
	BSW system is ON	Off	_
65W 51A105	BSW system is OFF.	On	F
VHCL SPD SE	Indicates current vehicle speed.	Km/h	_
	Right turn signal is ON.	On	_
TURIN SIGNAL	Right turn signal is OFF.	Off	G
ATCVT RANGE IND	Shows the poisition of the transmission range switch.	P/R/N/D	_
LUMINANCE(LEFT) Shows radar left luminance level		Hi/Lo	- Н
LUMINANCE (RIGHT)	Shows radar right luminance level	Hi/Lo	_

### TERMINAL LAYOUT



### PHYSICAL VALUES

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### SIDE RADAR RH

#### < ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Standard value	Reference value
+	_	Signal name	Input/ Output	Condition		(Approx.)
3 (B)		Shield ground	_	_	0 - 0.1 V	0 V
4 (W)		BSW indicator	Output	Approx. 2 sec. after ignition switch OFF $\Rightarrow$ ON (bulb check)	5.5 - 16 V	6 V
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	10 - 16 V	Battery voltage
6 (L)		ITS CAN-H			_	_
7 (Y)		ITS CAN-L			_	_
8 (B)		Ground			0 - 0.1 V	0 V

### Fail-safe

INFOID:000000011669613

#### FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels the control. Then the BSW warning lamp in the combination meter illuminates.

#### TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then BSW warning lamp in combination meter blinks. Also, under the following conditions, the operation may be temporarily cancelled.

• The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.

• The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.

### **DTC Inspection Priority Chart**

INFOID:000000011669614

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:000000011669615

				×: Applicable
	DTC	BSW warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	<u>DAS-154</u>
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-155
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-156
C1B55	RADAR BLOCKAGE	Blink	×	DAS-160
U1000	CAN COMM CIRCUIT	ON	×	DAS-162
U1010	CONTROL UNIT (CAN)	ON	×	DAS-165

### SIDE RADAR RH

#### < ECU DIAGNOSIS INFORMATION >

[RCTA]

	DTC	BSW warning lamp	Fail-safe	Reference page
U0104	ADAS CAN CIR1	ON	×	DAS-166
U0405	ADAS CAN CIR2	ON	×	DAS-170

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[RCTA]

# WIRING DIAGRAM REAR CROSS TRAFFIC AREA

Wiring Diagram



#### < WIRING DIAGRAM >



[RCTA]

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#### < WIRING DIAGRAM >



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#### < WIRING DIAGRAM >





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**Revision: September 2014** 

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#### < WIRING DIAGRAM >

[RCTA]
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#### < WIRING DIAGRAM >

				А
CONNECTOR-M27	Signal Name	BLOCK (J/B)	Signal Name	В
Connector No. M150 Connector Name JOINT Connector Color WHITE Connector Color WHITE	Terminal No. Color of Wire. 23 GR 28 SHIELD 31 GR	Connector No. E28 Connector Name FUSE Connector Color WHITE	Terminal No.     Wire       5M     Y       7M     R       8M     R	D
				F
3 ANING SYSTEM SW	Signal Name	7 E TO WIRE ITE	Signal Name	G
Innector No. M13 Innector Name WAF Innector Color WHI	minal No. Color of 3 R 5 GR 8 B	mector No. M16 mector Name WIA mnector Color WHI	minal No. Wire 6 SHIELD 7 B 16 W	I
				J K
O SYSTEM) O SYSTEM) 0 SYSTEM) 0 9 8 7 6 5 4 3 2 23 24 23 22 21 20 19 18	Signal Name CAN-H CAN-L	ROL UNIT (WITH AUDIO SYSTEM) 56 57 58 59 60 61 62 71 72 73 74 75 76 77 78	Signal Name CAN-L CAN-H	L
r No. M124 n Name AV CONTI MID AUDIC MID AUDIC MI13 12 11 10 22 31 30 28 28 27 28	No. Color of Mire P	r No. M163 r Name AV CONTI PREMIUM PREMIUM r Color WHITE		M
Connecto Connecto Connecto	Terminal 11 12	Connecto Connecto Lonnecto	ABOJA0272GB	DAS

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#### < WIRING DIAGRAM >

### [RCTA]



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< WIRING DIAGRAM >

[RCTA]



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Signal Name

Terminal No. Color of Wire

Signal Name

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Terminal No.

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< WIRING DIAGRAM >

Signal Name

Color of Wire

Terminal No.

Connector Name JOINT CONNECTOR-B01

B63

Connector No.

Connector Color WHITE

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**Revision: September 2014** 

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Connector Name SIDE RADAR RH

Connector Color BLACK

Connector Name JOINT CONNECTOR-B05

Connector Name JOINT CONNECTOR-B14

Connector No. B102

Connector Color WHITE

Connector No. B103

Connector Color WHITE

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	Sig					
	Color of Wire	Р	Ч	×		. B109
H.S.	Terminal No.	1	2	e		Connector No
	Signal Name	I	I	I		Cianol Nomo
	Color of Wire	L	Γ	ш		Color of

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Signal Name	I	I	IGN	I	I	GND	I	I	WARNING SYSTEM ON IND	WARNING SYSTEM SW	I	I	I	I	. 1	
Color of Wire	I	I	щ	I	I	в	I	I	В	ГG	I	Ι	-	Ι	-	1
Terminal No.	10	÷	12	13	14	15	16	17	18	19	20	21	22	23	24	

Signal Name

Color of Wire

Terminal No. с 4 ß 9  $\sim$ ω

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Term					
Signal Name	1	1	1		
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Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE
1 0	3 1 5 8 7 8 0 10 11 10 13 14 15 16

2         3         4         5         6         7         8         9         10         11         12         13         14         15         16           7         18         19         20         21         22         23         24         25         26         27         28         29         30         31         32
7 18 19 20 21 22 22 24 25 26 27 28 29 30 31
7 18 19 20 21 22 23 24 25 26 27 28 29 30
2         3         4         5         6         7         8         9         10         11         12         13           7         18         19         20         21         22         23         24         25         26         27         28         29         23
1         2         3         4         5         6         7         8         9         10         11         12           7         118         119         20         21         22         23         24         25         26         27         28
7 18 19 20 21 22 23 24 25 28 21
7 18 19 20 21 22 23 24 25 26
2 3 4 5 6 7 8 9 7 18 19 20 21 22 23 24 25
2 3 4 5 6 7 8 7 18 19 20 21 22 23 24
2 3 4 5 6 7 7 18 19 20 21 22 23
2 3 4 5 6 7 18 19 20 21 22
2 3 4 5 7 18 19 20 21
2 3 4 7 18 19 20
7 18 19
2 18
H.S.

Signal Name	I	I	I	I	
Color of Wire		Р	٢	BG	
Terminal No.	17	18	31	32	

Terminal No. -<sub>ເ</sub> ო

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õ	24	23	22	21	20	19	18	17	16	15	14	13

Revision: September 2014

#### < WIRING DIAGRAM >



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Connector Name LaMP LH       Connector Color     GRAY       Connector Color     GRAY       Connector Name     Terminal No.       Vire     Signal Name       1     G       2     B       2     B       2     D2       Connector No.     D2       Connector Name     WIRE TO WIRE       Connector No.     D2       Connector Name     WIRE TO WIRE       Timinal No.     Color of B       Tormetor No.     D2       Connector Name     WIRE TO WIRE       Tormetor No.     D2       Connector No.     D2       Connector No.     D2       Connector No.     D2       Tormetor No.     D2       Connector No.     D2       Connector No.     D2       Connector No.     D2       Connector No.     D2       Tormetor No.     D3       Tormetor No.     D3	ACK ACK ACK 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	Connector Color B H.S. Terminal No. Color Wire Wire Donnector No. B Connector No. B Connector Name S Connector Name S Connector Name S H.S.	Connector Color Connector No. Connector No. Conn	VHITE VHITE VHITE VHITE VHITE VHITE 0f Signal Name 107 Signal	Color         Color <t< th=""></t<>
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7 B –	1	9			
	-	6 L	-		
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		- -		-	ב 
6  SHIELD  –	1	с.			ď
WIRe	1	4 W	4 V	I	<u>თ</u>
Terminal No. Color of Signal Name	ରାଧ୍ୟାଖ ାଧ୍ୟା।ଟ	I Efrititial INU. Wire		SIGNAI NAITIE	<sup>VO.</sup> Wir∈
	of Signal Name	Terminal No Color	Terminal No Colo	of Signal Name	Color
				e)	
H.S.	3 4 5 6 7 8	H.S.	THR.	21	
			لَيْلَ ا	[	
-				RAY	Color G
Connector Color   WHITE	LACK	Connector Color   B	Connector Color		'+
CONTRECTOR NAME WINE TO WINE		Connector Name S		AMP RH	
Connector Name WIRE TO WIRE		Connector Name	Connector Name	FAR COMBINATION	Name
Connector No. D2	416	Connector No. B	Connector No.	407	No. E
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				9 8 7 6 5 4 3 2 1 5 1 2 1 2 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1	12 11 10 28 27 26 2
		<u>р.п.</u>		ſ	
		SH	H C		
	2 1	E	प्रिंग		
Connector Color GBAV	ACK	Connector Color B	Connector Color	VHI E	
LAMP LH				1117	
Connector Name REAR COMBINATION	IRE TO WIRE			VIRE TO WIRE	Color V
	+0+	Connector Name M	Connector Name		Vame V Color V

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### **REAR CROSS TRAFFIC AREA**

< WIRING DIAGRAM >

[RCTA]


< WIRING DIAGRAM >

А Connector Name BLIND SPOT WARNING INDICATOR RH Connector Name HIGH-MOUNTED STOP Signal Name Signal Name В Т I. I. Т Ŀ ~ 2 1 С BROWN WHITE D111 D503 Color of Wire Color of Wire <u>ප</u> | ස ≥ ш Connector Color Connector Color Connector No. Connector No. D Terminal No. Terminal No. -4 <sub>ເ</sub> -H.S. H.S. 佢 E Е 
 10
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 F Signal Name Signal Name G T T Т 1 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE 4 3 2 1 8 7 6 5 
 16
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 Н WHITE Connector Color GRAY D101 D502 Color of Wire Color of Wire SHIELD ш ш ≥ Connector No. Connector Color Connector No. Terminal No. Terminal No. 15 16 32 N H.S. H.S. E F J Κ 4 3 2 1 16 15 14 13 Connector Name BLIND SPOT WARNING INDICATOR LH L Signal Name Signal Name L I ī Connector Name WIRE TO WIRE 8 7 6 5 20 19 18 17 1 4 3 2 1 Μ WHITE Connector Color WHITE D501 12 11 10 9 1 24 23 22 21 2 D21 Color of Wire Color of Wire ŋ ≥ ш Connector Color Ν Connector No. Connector No. Terminal No. Terminal No. 4 24 -H.S. H.S. F DAS

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[RCTA]

ABOIA0280GB

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

### Work Flow

**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:** 

INFOID:000000011669617

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION > [RCTA]	
The customers are not professionals. Never assume that "maybe the customer means" or "maybe the cus tomer mentioned this symptom".	
>> GO TO 2.	
2.self-diagnosis with consult	
<ol> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the DTC is detected on the self-diagnosis results of "SIDE RADAR LEFT/RIGHT" and/or "ADAS".</li> </ol>	
YES >> GO TO 5.	
NO >> GO TO 3.	
<b>3.</b> PRE-INSPECTION FOR DIAGNOSIS	
Perform pre-inspection for diagnosis. Refer to DAS-148. "Inspection Procedure".	
>> GO TO 4.	
4.ACTION TEST	
Perform RCTA system action test to check the operation status. Refer to <u>DAS-149, "Description"</u> . Check if any other malfunctions occur.	
5. TROUBLE DIAGNOSIS BY DTC	
Check the DTC in the self-diagnosis results	
<ol> <li>Perform trouble diagnosis for the detected DTC. Refer to <u>DAS-126, "DTC Index"</u> (SIDE RADAR LEFT) o <u>DAS-128, "DTC Index"</u> (SIDE RADAR RIGHT) and/or <u>DAS-123, "DTC Index"</u> (ADAS).</li> <li>NOTE:</li> </ol>	
If "DTC: U1000" is detected, first diagnose the CAN communication system.	
>> GO TO 7	
6. SYMPTOM DIAGNOSIS	
Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to <u>DAS-191, "Sympton</u> <u>Table"</u> .	
>> GO TO 7.	
7. MALFUNCTIONING PART REPAIR	
Repair or replace the identified malfunctioning parts.	
>> GO TO 8.	
8. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)	
<ol> <li>Erases self-diagnosis results.</li> <li>Perform "All DTC Reading" again after repairing or replacing the specific items.</li> <li>Check if any DTC is detected in self-diagnosis results of "SIDE RADAR LEFT/RIGHT" and "ADAS".</li> </ol>	
Is any DTC detected?	
YES >> GO TO 5. NO >> GO TO 9.	
9. REPAIR CHECK (ACTION TEST)	
Perform the RCTA system action test. Check that the malfunction symptom is solved or no other symptoms occur.	
Is there a malfunction symptom?	
YES >> GO TO 4.	

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NO

>> Inspection End.

# **PRE-INSPECTION FOR DIAGNOSIS**

< BASIC INSPECTION >

# PRE-INSPECTION FOR DIAGNOSIS

Inspection Procedure

1. CHECK SONAR SENSORS INSTALLATION ON THE REAR BUMPER COVER

Are there any foreign materials obstructing the view of any sonar sensor?

YES >> Clean the rear bumper and the sonar detection window.

NO >> GO TO 2.

2.check rear bumper near the side radar

Is rear bumper near the side radar contaminated with foreign materials?

YES >> Clean the rear bumper.

NO >> GO TO 3.

 $\mathbf{3}$ . CHECK SIDE RADAR AND THE SIDE RADAR OUTSKIRTS

Are side radar and the side radar outskirts contaminated with foreign materials?

YES >> Clean the side radar or side radar outskirts.

NO >> GO TO 4.

**4.**CHECK SIDE RADAR INSTALLATION CONDITION

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

Is it properly installed?

- YES >> Inspection End.
- NO >> Install side radar properly.

INFOID:000000011657794

# ACTION TEST

ACTION TEST	
< BASIC INSPECTION > [RCTA]	
ACTION TEST	Δ
Description	~
Always perform the RCTA system action test to check that the system operates normally after replacing the side radar (left or right), or repairing any RCTA system malfunction.	В
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:	С
<ul> <li>Precautions: Refer to <u>DAS-104, "Precaution for Backup Collision Intervention"</u>.</li> <li>System description for Rear Cross Traffic Alert: Refer to <u>DAS-109, "System Description"</u>.</li> <li>Normal operating condition: Refer to <u>DAS-192, "Description"</u>.</li> </ul>	D
Work Procedure	Е
WARNING: Be careful of traffic conditions and safety around the vehicle when performing road test. CAUTION:	F
<ul> <li>Fully understand the following items well before the road test;</li> <li>Precautions: Refer to <u>DAS-7</u>, "<u>Precaution for BSW System Service</u>".</li> <li>System description: Refer to <u>DAS-13</u>, "<u>System Description</u>".</li> <li>Normal operating condition: Refer to <u>DAS-192</u>, "<u>Description</u>".</li> <li>1.RCTA SYSTEM ACTION TEST</li> </ul>	G

1. Drive the vehicle.

- 2. 3. Turn warning system switch ON (RCTA ON indicator is ON). Check RCTA operation according to the following table.

	Vehicle condition/	Driver's operatio	on	Action		
RCTA ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Shift lever position	Status of ve- hicle detec- tion within detection area	Indication on the BSW indicator	Buzzer	J
OFF	_	—	_	OFF	OFF	Κ
	More than ap- prox. 8 (5)	_	_	OFF	OFF	L
		Except (R)	Vehicle is absent	OFF	OFF	
			Vehicle is detected	ON	ON	Μ
				Blink	One single beep	
ON	Approx. 8 (5) or less	Reverse (R)	Several ve- hicles ap- proaching in detection zone behind	200 ms Indicator ON Indicator OFF 200 ms JSOIA0251GB	60 ms Buzzer ON Buzzer OFF 570 ms JSOIA0452GB	N DAS
			Object be- hind vehicle and several vehicles ap- proaching in detection zone	Blink 200 ms Indicator ON Indicator OFF 200 ms JSOIA0251GB	Sonar chime sounds	Ρ

**Revision: September 2014** 

2015 Pathfinder

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### < BASIC INSPECTION >

### NOTE:

- If vehicle speed exceeds approximately 8 km/h (5MPH), RCTA function will stop operating until the vehicle speed becomes approximately 8km/h (5MPH) or lower.
- Time shown in the figure is approximate time.

>> Inspection End.

# < DTC/CIRCUIT DIAGNOSIS >

# DTC/CIRCUIT DIAGNOSIS C1A00 CONTROL UNIT

# DTC Logic

# DTC DETECTION LOGIC

	1		
DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit
TC CONFI	RMATION PROCEDU	JRE	
.PERFORM	I DTC CONFIRMATION	N PROCEDURE	
Start the c Perform " Check if t S "C1A00" de	engine. All DTC Reading" with he "C1A00" is detected etected as the current m	CONSULT. as the current malfunction in "Self D alfunction?	iagnostic Result" of "BSW".
YES >> R NO >> Ir	efer to <u>DAS-151, "Diag</u> nspection End.	nosis Procedure".	
Diagnosis	Procedure		INFOID:00000001166962
.снеск з	ELF-DIAGNOSIS RESU	JLTS	
Check if any [ s any DTC de	DTC other than "C1A00 etected?	" is detected in "Self Diagnostic Resu	llt" of "BSW".
YES >> P D NO >> R	erform diagnosis on th <u>AS-123, "DTC Index"</u> . eplace the ADAS contr	e detected DTC and repair or replac ol unit. Refer to <u>DAS-98, "Removal a</u>	e the malfunctioning parts. Refer to nd Installation".

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INFOID:000000011669620 B

[RCTA]

### C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 < DTC/CIRCUIT DIAGNOSIS > [RCTA]

# C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

# DTC Logic

INFOID:000000011669622

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01	POWER SUPPLY CIR	The battery voltage sent to ADAS control unit re- mains less than 7.9 V for 5 seconds	Connector, harness, fuse
C1A02	POWER SUPPLY CIR 2	The battery voltage sent to ADAS control unit re- mains more than 19.3 V for 5 seconds	ADAS control unit

### DTC CONFIRMATION PROCEDURE

# 1.PERFORM DTC CONFIRMATION PROCEDURE

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

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

YES >> Refer to DAS-152, "Diagnosis Procedure".

NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

### Diagnosis Procedure

INFOID:000000011669623

# **1.**CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-184. "ADAS CONTROL UNIT :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".
- NO >> Repair or replace the malfunctioning parts.

### < DTC/CIRCUIT DIAGNOSIS >

# C1A03 VEHICLE SPEED SENSOR

# DTC Logic

INFOID:000000011669624

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[RCTA]

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) re- ceived by the ADAS control unit via CAN com- munication, are inconsistent	<ul> <li>Wheel speed sensor</li> <li>ABS actuator and electric unit (control unit)</li> <li>ADAS control unit</li> </ul>
OTE: DTC "C1A ADAS CON	03" is detected alo TROL UNIT : DTC I	ng with DTC "U1000", first diagnose th <u>_ogic"</u>	ne DTC "U1000". Refer to <u>DAS-161</u>
TC CONF	IRMATION PROC	EDURE	
.PERFOR	M DTC CONFIRMA	TION PROCEDURE	
Start the     Turn the     Drive the <b>CAUTIC Always</b> Stop the     Perform     Check if <u>s'C1A03' d</u> YES >>       NO >>	e engine. BSW system ON. e vehicle at 30 km/h N: drive safely. vehicle. "All DTC Reading" the "C1A03" is dete letected as the curre Refer to <u>DAS-153, "</u> Refer to <u>GI-47, "Inte</u>	(19 MPH) or more. with CONSULT. ected as the current malfunction in "Self I <u>ent malfunction?</u> <u>Diagnosis Procedure"</u> . <u>crmittent Incident"</u> .	Diagnostic Result" of "BSW".
viagnosis			INFOID:00000001166962
CHECK S	SELF-DIAGNOSIS F	KESULIS or than "C1A03" in "Solf Diagnostic Pool	ut" of "BS\//"
<u>s "U1000"</u> d	etected?		
YES >>	Perform the CAN co Refer to <u>DAS-161. "</u> GO TO 2.	ommunication system inspection. Repair ADAS CONTROL UNIT : DTC Logic".	r or replace the malfunctioning parts
NO >> (			
CHECK A	ABS ACTUATOR AN	ID ELECTRIC UNIT (CONTROL UNIT) \$	SELF-DIAGNOSIS RESULTS
CHECK A	DTC is detected in	ID ELECTRIC UNIT (CONTROL UNIT) "Self Diagnostic Result" of "ABS".	SELF-DIAGNOSIS RESULTS

# C1B50 SIDE RADAR MALFUNCTION

### < DTC/CIRCUIT DIAGNOSIS >

# C1B50 SIDE RADAR MALFUNCTION

# DTC LOGIC

INFOID:000000011669626

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B50	SIDE RDR MALFUNC- TION	Side radar malfunction	Side radar

### DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

### 1. Start the engine.

- 2. Perform "All DTC Reading" with CONSULT.
- Check if the "C1B50" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

Is the "C1B50" detected as the current malfunction?

- YES >> Refer to DAS-154, "Diagnosis Procedure".
- NO >> Inspection End.

### Diagnosis Procedure

INFOID:000000011669627

# 1.CHECK SELF-DIAGNOSIS RESULT

Check if any DTC other than "C1B50" is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT/RIGHT" <u>Is any DTC detected?</u>

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunction part. Refer to <u>DAS-128</u>, "<u>DTC Index</u>" (SIDE RADAR RIGHT) or <u>DAS-126</u>, "<u>DTC Index</u>" (SIDE RADAR LEFT).
- NO >> Replace the side radar. Refer to <u>DAS-99</u>, "Removal and Installation".

# C1B51 BSW/BSI INDICATOR SHORT CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# C1B51 BSW/BSI INDICATOR SHORT CIRCUIT

# DTC Logic

[RCTA]

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#### INFOID:000000011669628

C1B51       BSW/BSI IND SHORT CIR       Short circuit in BSW indicator circuit is detected. (Over our - Side radar          BSW indicator circuit BSW indicator circuit Side radar Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR Right is detected as the current malfunction? YES > Refer to DAS-155, "Diagnosis Procedure". NO >> Inspection End. Disconnect side radar harness connector and BSW indicator harness connector. Check continuity between side radar harness connector and ground. Side radar Connector Terminal Bif (H) 4 Ground Ground No Side radar Continuity Bif (H) 4 Bif (H) Bif (H) 4 Bif (H) 4 Bif (H) 4 Bif (H) Bif (H) Bif (H) 4 Bif (H) 5 Bif (H	C1B51       BSW/BSI IND SHORT CIR       Short circuit in BSW indicator circuit is detected. (Over cur is BSW indicator circuit is detected.) <ul> <li>BSW indicator circuit</li> <li>BSW indicator</li> <li>Side radar</li> </ul> TC CONFIRMATION PROCEDURE		Trouble diagnosis	name	DTC detecting condition	Possible cause
Start the engine.         Start the engine.         Perform "All DTC Reading" with CONSULT.         Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADA RIGHT/LEFT".         sthe "C1B51" detected as the current malfunction?         YES       >> Refer to DAS-155. "Diagnosis Procedure".         NO       >> Inspection End.         Diagnosis Procedure       #************************************	Start the engine.         9 Perform "All DTC Reading" with CONSULT.         Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADA! RIGHT/LEFT".         sthe "C1B51" detected as the current malfunction?         YES       >> Refer to DAS-155. "Diagnosis Procedure".         NO       >> Inspection End.         Diagnosis Procedure <ul> <li>CHECK BSW INDICATOR CIRCUIT FOR SHORT</li> <li>CHECK BSW INDICATOR CIRCUIT FOR SHORT</li> <li>Turn ignition switch OFF.</li> <li>Disconnect side radar harness connector and BSW indicator harness connector.</li> <li>Check continuity between side radar harness connector and ground.</li> </ul> <ul> <li>Side radar</li> <li>Ground</li> <li>Bating (LH)</li> <li>a file inspection result normal?</li> <li>YES</li> <li>&gt; Replace the harnesses or connectors.</li> <li>REPLACE THE SIDE RADAR</li> <li>Replace the side radar.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"</li> <li>Sthe DTC "C1B51" detected?</li> </ul> <li>YES &gt;&gt; Replace the side radar.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"</li> <li>Sthe DTC "C1B51" detected?</li>	C1B51	BSW/BSI IND SHO	RT CIR Sho rent	rt circuit in BSW indicator circuit is detected. (Over cur- is detected)	<ul><li>BSW indicator circuit</li><li>BSW indicator</li><li>Side radar</li></ul>
1. PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADA RIGHT/LEFT". <b>s the "C1B51" detected as the current malfunction?</b> YES >> Refer to DAS-155. "Diagnosis Procedure". NO >> Inspection End. Diagnosis Procedure <b>ACCONCENTION CHECK BSW INDICATOR CIRCUIT FOR SHORT</b> 1. CHECK BSW INDICATOR CIRCUIT FOR SHORT 1. Turn ignition switch OFF. 2. Disconnect side radar harness connector and BSW indicator harness connector. 3. Check continuity between side radar harness connector and ground. <b>Side radar Continuity Side radar Continuity Side radar Continuity Continuity Ste inspection result normal?</b> YES >> GO TO 2. NO >> Repair the harnesses or connectors. <b>2.</b> REPLACE THE SIDE RADAR <b>1.</b> Replace the side radar. <b>2.</b> Perform "All DTC Reading" with CONSULT. 3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT" <b>s the DIC "C1B51" detected?</b> YES >> Replace the side radar. Refer to DAS-99, "Removal and Installation". NO >> Inspection End.	PERFORM DTC CONFIRMATION PROCEDURE         Start the engine.         Perform "All DTC Reading" with CONSULT.         Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAI RIGHT/LEFT".         sthe "C1B51" detected as the current malfunction?         YES       >> Refer to DAS-155. "Diagnosis Procedure".         NO       >> Inspection End.         Diagnosis Procedure	тс со	ONFIRMATION	PROCEDI	JRE	
<ol> <li>Start the engine.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADA RIGHT/LEFT".</li> <li>a the "C1B51" detected as the current malfunction?</li> <li>YES &gt;&gt; Refer to DAS-155. "Diagnosis Procedure".</li> <li>NO &gt;&gt; Inspection End.</li> <li>Diagnosis Procedure</li> <li>CHECK BSW INDICATOR CIRCUIT FOR SHORT</li> <li>CHECK BSW INDICATOR CIRCUIT FOR SHORT</li> <li>Turn ignition switch OFF.</li> <li>Disconnect side radar harness connector and BSW indicator harness connector.</li> <li>Check continuity between side radar harness connector and ground.</li> </ol> Side radar Connector Terminal Ground Continuity Site inspection result normal? YES >> GO TO 2. NO >> Repair the harnesses or connectors. 2.REPLACE THE SIDE RADAR I. Replace the side radar. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT" sthe DTC "C1B51" detected? YES >> Replace the side radar. Refer to DAS-99, "Removal and Installation". NO >> Inspection End.	Start the engine.     Perform "All DTC Reading" with CONSULT.     Check if the "C1B51" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADA!     RIGHT/LEFT".     sthe "C1B51" detected as the current malfunction?     YES >> Refer to DAS-155. "Diagnosis Procedure".     No >> Inspection End.     Diagnosis Procedure         .cHECK BSW INDICATOR CIRCUIT FOR SHORT     .cHECK BSW INDICATOR CIRCUIT FOR SHORT     .cHECK as a names connector and BSW indicator harness connector.     .check continuity between side radar harness connector and ground.     Side radar     Connector Terminal     Ground     Ground     Ground     Ground     Replace the side radar.     Replace the side radar.     Replace the side radar.     Refer to SIDE RADAR     Replace the side radar. Refer to DAS-99, "Removal and Installation".     No     >> Inspection End.	.PER	FORM DTC CON	FIRMATION	N PROCEDURE	
YES       >> Refer to DAS-155. "Diagnosis Procedure".         NO       >> Inspection End.         Diagnosis Procedure	YES       >> Refer to DAS-155. "Diagnosis Procedure".         NO       >> Inspection End.         Diagnosis Procedure	. Star 2. Per 3. Che RIG s the "C	rt the engine. form "All DTC Rea eck if the "C1B51" HT/LEFT". C1B51" detected a	ading" with is detected is the curre	CONSULT. d as the current malfunction in "Self Diagnos nt malfunction?	tic Result" of "SIDE RADAF
NO       >> Inspection End.         Diagnosis Procedure	NO       >> Inspection End.         Diagnosis Procedure	YES	>> Refer to DAS	<u>-155, "Diag</u>	nosis Procedure".	
1. CHECK BSW INDICATOR CIRCUIT FOR SHORT         1. Turn ignition switch OFF.         2. Disconnect side radar harness connector and BSW indicator harness connector.         3. Check continuity between side radar harness connector and ground.         Side radar         Connector         Terminal         B416 (LH)         B416 (LH)         4         B010 (RH)         4         Continuity         s the inspection result normal?         YES         YES         > GO TO 2.         NO         Perform 'All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         S the DTC "C1B51" detected?         YES       > Replace the side radar.         Perform 'All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES       > Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	Oraginosis Procedure       Mericonnector        CHECK BSW INDICATOR CIRCUIT FOR SHORT        Disconnect side radar harness connector and BSW indicator harness connector.        Check continuity between side radar harness connector and ground.         Side radar         Connector         Terminal         Ground         B416 (LH)         4         B109 (RH)         5         Septention result normal?         YES         > Replace the side radar.         Replace the side radar.         Perform "All DTC Reading" with CONSULT.         Check if the "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspe	NO	>> Inspection En	ia.		
1. CHECK BSW INDICATOR CIRCUIT FOR SHORT         1. Turn ignition switch OFF.         2. Disconnect side radar harness connector and BSW indicator harness connector.         3. Check continuity between side radar harness connector and ground.         Side radar         Connector       Terminal         Ground       Continuity         B416 (LH)       4         B109 (RH)       4         Sthe inspection result normal?         YES       > GO TO 2.         NO       >> Repair the harnesses or connectors.         2. REPLACE THE SIDE RADAR         1. Replace the side radar.         2. Perform "All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	.CHECK BSW INDICATOR CIRCUIT FOR SHORT         . Turn ignition switch OFF.         Disconnect side radar harness connector and BSW indicator harness connector.         Check continuity between side radar harness connector and ground.         Side radar         Connector       Terminal         Ground       Continuity         B416 (LH)       4         B419 (RH)       4         B109 (RH)       4         Sthe inspection result normal?         YES       > GO TO 2.         NO       >> Repair the harnesses or connectors.         AREPLACE THE SIDE RADAR         Replace the side radar.         Perform "All DTC Reading" with CONSULT.         Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         sthe DTC "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	nagno		Ð		INFOID:00000001166962
1. Turn ignition switch OFF.         2. Disconnect side radar harness connector and BSW indicator harness connector.         3. Check continuity between side radar harness connector and ground.         Side radar         Connector       Terminal         B416 (LH)       4         B109 (RH)       4         St the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the harnesses or connectors.         2.REPLACE THE SIDE RADAR         1. Replace the side radar.         2. Perform "All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	Turn ignition switch OFF.     Disconnect side radar harness connector and BSW indicator harness connector.     Check continuity between side radar harness connector and ground.      Side radar     Connector Terminal     Ground     Ground     Continuity     B109 (RH)     4     No     S the inspection result normal?  YES >> GO TO 2. NO >> Repair the harnesses or connectors.  RepLACE THE SIDE RADAR  Replace the side radar.  Refer to DAS-99, "Removal and Installation".  NO >> Inspection End.	.CHE	CK BSW INDICAT	FOR CIRCL	JIT FOR SHORT	
Side radar         Connector       Terminal         B416 (LH)       4         B109 (RH)       4         Sthe inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the harnesses or connectors.         2. REPLACE THE SIDE RADAR         1. Replace the side radar.         2. Perform "All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         S the DTC "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	Side radar         Connector       Terminal         B416 (LH)       4         B109 (RH)       4         Sthe inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the harnesses or connectors.         2.REPLACE THE SIDE RADAR         .       Replace the side radar.         .       Perform "All DTC Reading" with CONSULT.         .       Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	. Turi 2. Disc 5. Che	n ignition switch C connect side rada eck continuity betw	PFF. r harness c veen side ra	onnector and BSW indicator harness connec adar harness connector and ground.	tor.
Connector       Terminal       Ground         B416 (LH)       4       No         B109 (RH)       4       No         s the inspection result normal?       YES >> GO TO 2.         NO       >> Repair the harnesses or connectors.         2.REPLACE THE SIDE RADAR         1. Replace the side radar.         2. Perform "All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	Connector       Terminal       Ground         B416 (LH)       4       No         B109 (RH)       4       No         s the inspection result normal?       YES >> GO TO 2.         NO       >> Repair the harnesses or connectors.         2. REPLACE THE SIDE RADAR       .         . Replace the side radar.       .         . Perform "All DTC Reading" with CONSULT.       .         . Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	_	Side radar		Continuity	
B410 (L11) B109 (RH)       4       No         s the inspection result normal? YES >> GO TO 2. NO >> Repair the harnesses or connectors.       No         2. REPLACE THE SIDE RADAR       .         1. Replace the side radar.       .         2. Perform "All DTC Reading" with CONSULT.       .         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT" s the DTC "C1B51" detected?         YES >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO >> Inspection End.	B410 (L1)       4       No         B109 (RH)       4       No         s the inspection result normal?       YES >> GO TO 2.         YO >> Repair the harnesses or connectors.       2.         . REPLACE THE SIDE RADAR       .         . Replace the side radar.       .         . Perform "All DTC Reading" with CONSULT.       .         . Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO >> Inspection End.	Conne	ctor Terminal	Ground		
s the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the harnesses or connectors.         2. REPLACE THE SIDE RADAR         1. Replace the side radar.         2. Perform "All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"         s the DTC "C1B51" detected?         YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	s the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the harnesses or connectors.         2.REPLACE THE SIDE RADAR         . Replace the side radar.         2. Perform "All DTC Reading" with CONSULT.         3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT" <u>s the DTC "C1B51" detected?</u> YES       >> Replace the side radar. Refer to DAS-99, "Removal and Installation".         NO       >> Inspection End.	D/16 /				
<ul> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the harnesses or connectors.</li> <li>2. REPLACE THE SIDE RADAR</li> <li>1. Replace the side radar.</li> <li>2. Perform "All DTC Reading" with CONSULT.</li> <li>3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"</li> <li>s the DTC "C1B51" detected?</li> <li>YES &gt;&gt; Replace the side radar. Refer to DAS-99, "Removal and Installation".</li> <li>NO &gt;&gt; Inspection End.</li> </ul>	<ul> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the harnesses or connectors.</li> <li><b>2.</b> REPLACE THE SIDE RADAR</li> <li>Replace the side radar.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"</li> <li><u>s the DTC "C1B51" detected?</u></li> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ul>	B416 ( B109 (I	RH) 4		No	
<ul> <li>2. REPLACE THE SIDE RADAR</li> <li>1. Replace the side radar.</li> <li>2. Perform "All DTC Reading" with CONSULT.</li> <li>3. Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"</li> <li><u>s the DTC "C1B51" detected?</u></li> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ul>	<ul> <li>Replace the side radar.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"</li> <li><u>s the DTC "C1B51" detected?</u></li> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ul>	B416 ( B109 (I s the in	RH) 4 spection result no	rmal?	No	
<ol> <li>Replace the side radar.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT" <u>s the DTC "C1B51" detected?</u></li> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>. NO &gt;&gt; Inspection End.</li> </ol>	<ol> <li>Replace the side radar.</li> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT" <u>s the DTC "C1B51" detected?</u></li> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ol>	B416 ( B109 (I <u>s the in</u> YES	RH) 4 spection result no >> GO TO 2. >> Repair the ba	rmal?		
<ol> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT" <u>s the DTC "C1B51" detected?</u></li> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ol>	<ul> <li>Perform "All DTC Reading" with CONSULT.</li> <li>Check if the "C1B51" is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT"</li> <li><u>s the DTC "C1B51" detected?</u></li> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ul>	B416 ( B109 (I s the in YES NO .REP	RH) 4 spection result no >> GO TO 2. >> Repair the ha	<u>rmal?</u> rnesses or RADAR	connectors.	
<u>s the DTC "C1B51" detected?</u> YES >> Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u> . NO >> Inspection End.	<u>s the DTC "C1B51" detected?</u> YES >> Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u> . NO >> Inspection End.	B416 ( B109 (l Sthe in YES NO C.REP	RH)       4         spection result no         >> GO TO 2.         >> Repair the ha         LACE THE SIDE         blace the side rada	rmal? rnesses or RADAR ar.	connectors.	
<ul> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ul>	<ul> <li>YES &gt;&gt; Replace the side radar. Refer to <u>DAS-99, "Removal and Installation"</u>.</li> <li>NO &gt;&gt; Inspection End.</li> </ul>	B416 ( B109 (I S the in YES NO REP . REP . Rep . Per	4         spection result no         >> GO TO 2.         >> Repair the ha         LACE THE SIDE         blace the side rada         form "All DTC Readed         eck if the "C1B51"	rmal? rnesses or RADAR ar. ading" with is detected	CONSULT.	RIGHT/LEET"
		B416 ( B109 (I Sthe in YES NO REP REP Rep Rep Sthe D	4         RH)         spection result no         >> GO TO 2.         >> Repair the ha         LACE THE SIDE         blace the side rada         form "All DTC Rea         eck if the "C1B51"         TC "C1B51" detect	rmal? rnesses or RADAR ar. ading" with is detected <u>sted?</u>	CONSULT.	RIGHT/LEFT"
		B416 ( B109 (I Sthe in YES NO REPI REPI REPI REPI Sthe D YES NO	ARH)       4         spection result no         >> GO TO 2.         >> Repair the ha         LACE THE SIDE         place the side rada         form "All DTC Readed         eck if the "C1B51" detect         >> Replace the section End         >> Replace the section End	rmal? rnesses or RADAR ar. ading" with is detected <u>sted?</u> side radar. I	CONSULT. I in "Self Diagnostic Result" of "SIDE RADAR Refer to <u>DAS-99, "Removal and Installation"</u> .	RIGHT/LEFT"
		B416 ( B109 (I S the in YES NO REP REP REP REP S the D YES NO	4         spection result no         >> GO TO 2.         >> Repair the ha         LACE THE SIDE         blace the side rada         form "All DTC Rea         eck if the "C1B51"         TC "C1B51" detector         >> Replace the s         >> Inspection Er	rmal? rnesses or RADAR ar. ading" with is detected <u>sted?</u> side radar. I id.	CONSULT. I in "Self Diagnostic Result" of "SIDE RADAR Refer to <u>DAS-99, "Removal and Installation"</u> .	RIGHT/LEFT"

# C1B52 BSW/BSI INDICATOR OPEN CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# C1B52 BSW/BSI INDICATOR OPEN CIRCUIT

# DTC Logic

INFOID:000000011669630

INFOID:000000011669631

[RCTA]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B52	BSW/BSI IND OPEN CIR	Open circuit in BSW indicator circuit is detected.	<ul><li>BSW indicator circuit</li><li>BSW indicator</li><li>Side radar</li></ul>

### DTC CONFIRMATION PROCEDURE

### **1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1B52" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

### Is the "C1B52" detected as the current malfunction?

- YES >> Refer to DAS-156, "Diagnosis Procedure".
- NO >> Inspection End.

# **Diagnosis** Procedure

# 1. CHECK BSW INDICATOR CIRCUIT FOR OPEN 1

- 1. Turn ignition switch OFF.
- 2. Disconnect side radar harness connector and BSW indicator harness connector.
- 3. Check continuity between side radar harness connector and BSW indicator harness connector.

Side	radar	BSW indicator		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B416 (LH)	4	D21 (LH)	1	Voc
B109 (RH)	4	D111 (RH)	Ι	les

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

### 2.CHECK BSW INDICATOR CIRCUIT FOR OPEN 2

Check continuity between BSW indicator harness connector and ground.

BSW in	ndicator		Continuity
Connector	Terminal		Continuity
D21 (LH)	1	Cround	Ves
D111 (RH)			163

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

**3.**CHECK SIDE RADAR VOLTAGE OUTPUT

1. Connect side radar harness connector.

2. Check voltage between BSW indicator harness connector and ground.

# C1B52 BSW/BSI INDICATOR OPEN CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

**BSW** indicator Reference Standard Condition voltage voltage Connector Terminal (Approx.) Ground D21 (LH) Ignition switch  $OFF \Rightarrow ON$ 5.5 - 16 V 6 V 1 D111 (RH) (Approx. 2 sec.)

### Is the inspection result normal?

YES >> Replace BSW indicator. Refer to <u>DAS-101, "Removal and Installation"</u>.

NO >> Replace side radar. Refer to <u>DAS-99</u>, "Removal and Installation".

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# C1B53 SIDE RADAR RIGHT MALFUNCTION

### < DTC/CIRCUIT DIAGNOSIS >

# C1B53 SIDE RADAR RIGHT MALFUNCTION

# DTC Logic

INFOID:000000011669632

[RCTA]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B53	SIDE RDR R MALF	ADAS control unit detects that side radar RH has a malfunction.	Side radar RH

### DTC CONFIRMATION PROCEDURE

# **1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1B53" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

#### Is "C1B53" detected as the current malfunction?

- YES >> Refer to DAS-158, "Diagnosis Procedure".
- NO >> Refer to GI-47, "Intermittent Incident".

### Diagnosis Procedure

INFOID:000000011669633

## **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B53" in "Self Diagnostic Result" of "BSW".

### Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-161, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

# 2. CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-128, "DTC Index" (SIDE RADAR RIGHT).
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

# C1B54 SIDE RADAR LEFT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

# C1B54 SIDE RADAR LEFT MALFUNCTION

# DTC Logic

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INFOID:000000011669634

# DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B54	SIDE RDR L MALF	ADAS control unit detects that side radar LH has a malfunction.	Side radar LH
OTC CON	FIRMATION PROCED	URE	
<b>1</b> .PERFC	RM DTC CONFIRMATIO	N PROCEDURE	
<ol> <li>Start to Start to</li></ol>	he engine. he BSW system ON. m "All DTC Reading" with ; if the "C1B54" is detected	CONSULT. d as the current malfunction in "Self Diagn	ostic Result" of "BSW".
<u>ls "C1B54'</u>	' detected as the current r	nalfunction?	
YES >	Refer to <u>DAS-159</u> , "Diag > Refer to <u>GL47</u> , "Intermit	<u>gnosis Procedure"</u> . tent Incident"	
	is Procedure		
Diagnos	IST TOCEDUIE		INFOID:000000011669633
<b>1.</b> CHECK	SELF-DIAGNOSIS RES	ULTS	
Check if "L	J1000" is detected other th	nan "C1B54" in "Self Diagnostic Result" of	"BSW".
<u>ls "U1000"</u>	detected?		
YES >	Perform the CAN comm Refer to <u>DAS-161, "ADA</u>	nunication system inspection. Repair or re AS CONTROL UNIT : DTC Logic".	eplace the malfunctioning parts
NO >	> GO TO 2.		
Z.CHECK	SELF-DIAGNOSIS RES	ULTS	
Check if a	ny DTC is detected in "Sel	If Diagnostic Result" of "SIDE RADAR LEF	-T".
<u>Is any DTC</u>	<u>C detected?</u>		
YES >	Perform diagnosis on the DAS-126, "DTC Index"	ne detected DTC and repair or replace the (SIDE RADAR LEFT).	e malfunctioning parts. Refer to
NO >	Replace the ADAS cont	rol unit. Refer to <u>DAŚ-98, "Removal and li</u>	nstallation".

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# C1B55 RADAR BLOCKAGE

### < DTC/CIRCUIT DIAGNOSIS >

# C1B55 RADAR BLOCKAGE

# DTC Logic

**IRCTA1** 

### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B55	RADAR BLOCKAGE	Side radar is blocked.	Stain or foreign materials is deposited.

#### NOTE:

DTC "C1B55" may be detected under the following conditions except for possible cause. (Explain to the customer about the difference between the contamination detection function and the indication when the malfunction is detected and tell them "This is not malfunction".)

- The side radar may be blocked by temporary ambient conditions such as splashing water, mist or fog.
- The blocked condition may also be caused by objects such as ice, frost or dirt obstructing the side radar.
- Due to the nature of radar technology it is possible to get a blockage warning and not actually be blocked. This is rare and is known as a false blockage warning. A false blocked condition either self-clears or clears after an ignition cycle.

### **Diagnosis** Procedure

INFOID:000000011669637

### **1.**CHECK THE REAR BUMPER

Check rear bumper near the side radar for contamination with foreign materials.

### >> GO TO 2.

### 2. CHECK THE SIDE RADAR

Check side radar and the side radar outskirts for contamination 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 are stains 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.

ADAS CO	AN COMM CIR( INTROL UNIT	CUIT	
ADAS CO	NTROL UNIT : De	escription	INFQID:000000011669638
CAN COMM CAN (Control tiplex commu- vehicle is equ other control with 2 commu- Each control CAN commu- tion Signal Cl	IUNICATION ller Area Network) is a unication line with high uipped with many elect units during operation unication lines (CAN-H unit transmits/receives nication signal chart. F hart".	serial communication line for real time app data communication speed and exceller ronic control units, and each control units (not independent). In CAN communicat (CAN-L) allowing a high rate of informati data but selectively reads the required da Refer to <u>LAN-38</u> , "CAN COMMUNICATIC	plications. It is an on-vehicle mul- nt error detection ability. Modern shares information and links with tion, control units are connected ion transmission with less wiring. ata only. N SYSTEM : CAN Communica-
<ul> <li>ITS COMMU ITS communication</li> <li>ITS communication</li> <li>ITS communication</li> </ul>	JNICATION unication is a multiplex ities of data at high spe unication lines adopt tw	communication system. This enables the eed by connecting control units with 2 con isted-pair line style (two lines twisted) for	e system to transmit and receive nmunication lines. noise immunity.
ADAS CO	NTROL UNIT : D	TC Logic	INFOID:000000011669639
DTC DETEC	CTION LOGIC		
DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
DTC U1000	Trouble diagnosis name	DTC detecting condition If ADAS control unit is not transmitting or receiv- ing ITS communication signal for 2 seconds or more	Possible causes
DTC U1000 <b>NOTE:</b> If "U1000" is d	Trouble diagnosis name CAN COMM CIRCUIT detected, first diagnose	DTC detecting condition If ADAS control unit is not transmitting or receiv- ing ITS communication signal for 2 seconds or more e the CAN communication system.	Possible causes
DTC U1000 NOTE: If "U1000" is o ADAS CO	Trouble diagnosis name CAN COMM CIRCUIT detected, first diagnose	DTC detecting condition If ADAS control unit is not transmitting or receiv- ing ITS communication signal for 2 seconds or more e the CAN communication system. agnosis Procedure	Possible causes ITS communication system
DTC U1000 NOTE: If "U1000" is of ADAS COI 1.PERFORM	Trouble diagnosis name CAN COMM CIRCUIT detected, first diagnose NTROL UNIT : Di	DTC detecting condition If ADAS control unit is not transmitting or receiv- ing ITS communication signal for 2 seconds or more the CAN communication system. agnosis Procedure SIS	Possible causes ITS communication system
DTC U1000 NOTE: If "U1000" is of ADAS COI 1. PERFORM 1. Turn the 2. Turn the 3. Perform " 4. Check if " Is "U1000" de YES >> F NO >> F SIDE RAD	Trouble diagnosis name CAN COMM CIRCUIT detected, first diagnose NTROL UNIT : Di M THE SELF-DIAGNO ignition switch ON. BSW system ON, and "All DTC Reading" with the "U1000" is detected etected as the current r Refer to LAN-21, "Trout Refer to GI-47, "Intermi DAR LH	DTC detecting condition If ADAS control unit is not transmitting or receiv- ing ITS communication signal for 2 seconds or more e the CAN communication system. agnosis Procedure SIS then wait for 2 seconds or more. CONSULT. d as the current malfunction in "Self Diagr malfunction? ble Diagnosis Flow Chart". ttent Incident".	Possible causes ITS communication system INFOID:000000011669640
DTC U1000 NOTE: If "U1000" is of ADAS COI 1. PERFORM 1. Turn the 2. Turn the 3. Perform " 4. Check if " Is "U1000" de YES >> F NO >> F SIDE RAD	Trouble diagnosis name CAN COMM CIRCUIT detected, first diagnose NTROL UNIT : Di M THE SELF-DIAGNO ignition switch ON. BSW system ON, and "All DTC Reading" with the "U1000" is detected etected as the current r Refer to LAN-21, "Trout Refer to GI-47, "Intermi DAR LH	DTC detecting condition If ADAS control unit is not transmitting or receiv- ing ITS communication signal for 2 seconds or more e the CAN communication system. agnosis Procedure SIS then wait for 2 seconds or more. a CONSULT. d as the current malfunction in "Self Diagonal malfunction? ble Diagnosis Flow Chart". ttent Incident".	Possible causes ITS communication system INFOID:000000011669640 mostic Result" of "BSW".

**U1000 CAN COMM CIRCUIT** 

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. CAN communication signal chart. Refer to <u>LAN-38</u>, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

#### ITS COMMUNICATION

< DTC/CIRCUIT DIAGNOSIS >

• 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.

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# **U1000 CAN COMM CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

### · ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

### SIDE RADAR LH : DTC Logic

INFOID:000000011669642

**IRCTA1** 

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If side radar LH is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

# SIDE RADAR LH : Diagnosis Procedure

INFOID:000000011669643

INFOID:000000011669644

# **1.**PERFORM THE SELF-DIAGNOSIS

#### 1. Start the engine.

- 2. Turn the BSW system ON, and then wait for 2 seconds or more.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR LEFT".

#### Is "U1000" detected as the current malfunction?

- YES >> Refer to LAN-21, "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-47</u>, "Intermittent Incident".

# SIDE RADAR RH

# SIDE RADAR RH : Description

### CAN COMMUNICATION

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

CAN communication signal chart. Refer to <u>LAN-38</u>, "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.

# SIDE RADAR RH : DTC Logic

INFOID:000000011669645

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If Side radar RH is not transmitting or receiving ITS communication signal for 2 seconds or more	ITS communication system

# SIDE RADAR RH : Diagnosis Procedure

#### INFOID:000000011669646

# **1.**PERFORM THE SELF-DIAGNOSIS

1. Start the engine.

- 2. Turn the BSW system ON, and then wait for 2 seconds or more.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

### Is "U1000" detected as the current malfunction?

YES >> Refer to LAN-21, "Trouble Diagnosis Flow Chart".

	U1000 CAN COMM CIRCUIT		
< DTC	CIRCUIT DIAGNOSIS >	[RCTA]	
NO	>> Refer to GI-47, "Intermittent Incident".	A	k
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# U1010 CONTROL UNIT (CAN)

### < DTC/CIRCUIT DIAGNOSIS >

# U1010 CONTROL UNIT (CAN) ADAS CONTROL UNIT

# ADAS CONTROL UNIT : Description

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

# ADAS CONTROL UNIT : DTC Logic

### DTC DETECTION LOGIC

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

# ADAS CONTROL UNIT : Diagnosis Procedure

**1.**PERFORM DTC CONFIRMATION PROCEDURE

1 Turn the BSW system ON.

Perform "All DTC Reading" with CONSULT. 2.

3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

Is "U1010" detected as the current malfunction?

>> Replace the ADAS control unit. Refer to DAS-98. "Removal and Installation". YES

NO >> Inspection End.

SIDE RADAR LH

# SIDE RADAR LH : Description

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

# SIDE RADAR LH : DTC Logic

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U1010	CONTROL UNIT (CAN)	If side radar LH detects malfunction by CAN controller initial diagnosis.	Side radar LH

# SIDE RADAR LH : Diagnosis Procedure

# 1.CHECK SELF-DIAGNOSIS RESULT

- 1. Turn the BSW system ON.
- Perform "All DTC Reading" with CONSULT. 2.
- Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR 3. LEFT".

Is "U1010" detected as the current malfunction?

- YFS >> Replace the side radar LH. Refer to DAS-99, "Removal and Installation".
- >> Inspection End. NO

### SIDE RADAR RH

# SIDE RADAR RH : Description

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

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# **U1010 CONTROL UNIT (CAN)**

# < DTC/CIRCUIT DIAGNOSIS >

# SIDE RADAR RH : DTC Logic

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### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause	E
U1010	CONTROL UNIT (CAN)	If Side radar RH detects malfunction by CAN controller initial diagnosis.	Side radar RH	C
SIDE F	RADAR RH : Diagno	osis Procedure	INFOID:000000011669655	C

# SIDE RADAR RH : Diagnosis Procedure

# 1. CHECK SELF-DIAGNOSIS RESULT

- 1. Turn the BSW system ON.
- Perform "All DTC Reading" with CONSULT. 2.
- Ε 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

#### Is "U1010" detected as the current malfunction?

	YES	>> Replace the side radar RH.	Refer to DAS-99,	, "Removal and	Installation"
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NO >> Inspection End.

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# < DTC/CIRCUIT DIAGNOSIS >

# U0104 ADAS CAN 1

# DTC Logic

INFOID:000000011669656

[RCTA]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0104	ADAS CAN CIR1	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit

### NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-162,</u> <u>"SIDE RADAR LH : DTC Logic"</u> (SIDE RADAR LEFT), <u>DAS-162, "SIDE RADAR RH : DTC Logic"</u> (SIDE RADAR RIGHT).

### DTC CONFIRMATION PROCEDURE

# **1.**PERFORM DTC CONFIRMATION PROCEDURE

#### 1. Start the engine.

- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT
- 4. Check if the U0104 is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

### Is the DTC "U0104" detected?

YES >> Refer to <u>DAS-166</u>, "Diagnosis Procedure".

NO >> Refer to GI-47, "Intermittent Incident".

### Diagnosis Procedure

INFOID:000000011669657

### 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT". Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-162</u>, "<u>SIDE RADAR LH</u> : <u>DTC Logic</u>" (SIDE RADAR LEFT), <u>DAS-162</u>, "<u>SIDE RADAR RH</u> : <u>DTC Logic</u>" (SIDE RADAR RIGHT).

# NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-123, "DTC Index"</u>.
- NO >> Replace side radar LH or RH. Refer to DAS-99, "Removal and Installation"

# **U0121 VDC CAN 2**

### < DTC/CIRCUIT DIAGNOSIS >

# U0121 VDC CAN 2

DTC DETECTION LOGIC

# **DTC Logic**

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INFOID:000000011669658

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)
NOTE:	(" :		
"ADAS CONT	ROL UNIT : DTC Logi	with DTC $01000$ , first diagnose the $\frac{1}{2}$ .	DIC "01000. Refer to <u>DAS-161</u>
DTC CONFIR		JRE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
<ol> <li>Turn the B</li> <li>Perform "A</li> <li>Check if the second secon</li></ol>	SW system ON. All DTC Reading" with he "U0121" is detected ected as the current m efer to <u>DAS-167, "Diac</u> efer to <u>GI-47, "Intermit</u> Procedure	CONSULT. as the current malfunction in "Self Dia alfunction? nosis Procedure". tent Incident".	gnostic Result" of "BSW".
1 CHECK SE	I F-DIAGNOSIS RESI	ILTS	
Check if "U100	0" is detected other th	an "U0121" in "Self Diagnostic Result"	of "BSW"
<u>Is "U1000" det</u>	ected?		
YES >> Pe	erform the CAN comm efer to <u>DAS-161, "ADA</u>	unication system inspection. Repair or <u>S CONTROL UNIT : DTC Logic"</u> .	r replace the malfunctioning parts
NO >> G(	D TO 2.		
NO >> GO	D TO 2. S ACTUATOR AND E	LECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS
NO >> GO 2.CHECK AB Check if any D	D TO 2. S ACTUATOR AND E TC is detected in "Sel	LECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-47. "DTC Index" (type 1) or BRC-176. "DTC Index" (type 2). >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".
- NO

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# U0401 ECM CAN 1

# < DTC/CIRCUIT DIAGNOSIS >

# U0401 ECM CAN 1

# DTC Logic

INFOID:000000011669660

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

### NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-161</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

### DTC CONFIRMATION PROCEDURE

# 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U0401" detected as the current malfunction?

- YES >> Refer to <u>DAS-168</u>, "Diagnosis Procedure".
- NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

### Diagnosis Procedure

INFOID:0000000011669661

### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "BSW".

#### Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-161, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>EC-105, "DTC Index"</u> (USA and Canada) or <u>EC-610, "DTC Index"</u> (Mexico).
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

# U0402 TCM CAN 1

# < DTC/CIRCUIT DIAGNOSIS >

# U0402 TCM CAN 1

# DTC Logic

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INFOID:000000011669662

# DTC DETECTION LOGIC

DIO	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	ТСМ
NOTE:			
f DTC "U04	02" is detected along with D	TC "U1000", first diagnose the DTC "U10	00". Refer to DAS-161
<u>'ADAS CON</u>	TROL UNIT : DTC Logic".		
DTC CONF	IRMATION PROCEDURE		
1.PERFOR	M DTC CONFIRMATION PRC	CEDURE	
1 Start the	engine		
2. Turn the	BSW system ON.		
3. Perform	"All DTC Reading" with CONS	SULT.	
4. Check If	the UU4U2 is detected as the	e current mairunction in "Self Diagnostic Re	esuit" of "BSW".
<u>IS "UU4U2" d</u>	etected as the current malfund	tion?	
1E5 >>1 NO >>1	Refer to <u>DAS-169, "Diagnosis</u> Refer to GI-47, "Intermittent In	rident".	
		<u>odent</u> .	
Jiagnosis	Procedure		INFOID:00000001166966
<b>1</b> .check s	ELF-DIAGNOSIS RESULTS		
Check if "U1	000" is detected other than "U	0402" in "Self Diagnostic Result" of "BSW".	
<u>s "U1000" d</u>	etected?		
	Perform the CAN communicat	ion system inspection. Penair or replace t	ha malfunctioning parts
YES >> I		ion system inspection. Repair of replace t	ne manufictioning parts
YES >> I	Refer to <u>DAS-161, "ADAS CO</u>	NTROL UNIT : DTC Logic".	ne manufictioning parts
YES >>       NO >> (	Refer to <u>DAS-161, "ADAS CO</u> GO TO 2.	NTROL UNIT : DTC Logic".	ne manuncuoning parts
YES >>1 NO >>0 2.CHECK T	Refer to <u>DAS-161, "ADAS COI</u> GO TO 2. CM SELF-DIAGNOSIS RESU	NTROL UNIT : DTC Logic".	ne manunctioning parts
YES >> I NO >> 0 2.CHECK T Check if any	Refer to <u>DAS-161, "ADAS COI</u> GO TO 2. CM SELF-DIAGNOSIS RESU DTC is detected in "Self Diago	NTROL UNIT : DTC Logic".	ne manuncuoning parts
YES >> I NO >> 0 2.CHECK T Check if any s any DTC c	Refer to <u>DAS-161, "ADAS COI</u> GO TO 2. CM SELF-DIAGNOSIS RESU DTC is detected in "Self Diago letected?	NTROL UNIT : DTC Logic".	
YES >> I NO >> 0 2.CHECK T Check if any s any DTC o YES >> I	Refer to <u>DAS-161, "ADAS COI</u> GO TO 2. CM SELF-DIAGNOSIS RESU DTC is detected in "Self Diago letected? Perform diagnosis on the dete	NTROL UNIT : DTC Logic".	nctioning parts. Refer to
YES >> I NO >> 0 2.CHECK T Check if any S any DTC o YES >> I	Refer to <u>DAS-161, "ADAS COI</u> GO TO 2. CM SELF-DIAGNOSIS RESU DTC is detected in "Self Diago <u>letected?</u> Perform diagnosis on the dete <u>IM-63, "DTC Index"</u> (RE0F10E Replace the ADAS control unit	NTROL UNIT : DTC Logic".         LTS         nostic Result" of "TRANSMISSION".         ected DTC and repair or replace the malful         E) or TM-277, "DTC Index" (RE0F10J).         Refer to DAS-98. "Removal and Installation."	nctioning parts. Refer to
YES >> I NO >> 0 2.CHECK T Check if any S any DTC o YES >> I NO >> I	Refer to <u>DAS-161, "ADAS CO</u> GO TO 2. CM SELF-DIAGNOSIS RESU DTC is detected in "Self Diago <u>letected?</u> Perform diagnosis on the dete <u>IM-63, "DTC Index"</u> (RE0F10F Replace the ADAS control unit	NTROL UNIT : DTC Logic". ILTS nostic Result" of "TRANSMISSION". A sected DTC and repair or replace the malfur E) or TM-277, "DTC Index" (RE0F10J). . Refer to DAS-98, "Removal and Installation	nctioning parts. Refer to

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# < DTC/CIRCUIT DIAGNOSIS >

# U0405 ADAS CAN 2

# DTC Logic

[RCTA]

INFOID:000000011669664

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
U0405	ADAS CAN CIR2	Side radar detected an error of ITS communication signal that was received from ADAS control unit.	ADAS control unit

### NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-162</u>, <u>"SIDE RADAR LH : DTC Logic"</u> (SIDE RADAR LEFT), <u>DAS-162</u>, <u>"SIDE RADAR LH : DTC Logic"</u> (SIDE RADAR RIGHT).

### DTC CONFIRMATION PROCEDURE

# **1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the U0405 is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT".

### Is the DTC "U0405" detected?

YES >> Refer to <u>DAS-170</u>, "Diagnosis Procedure". NO >> Refer to <u>GI-47</u>, "Intermittent Incident".

# Diagnosis Procedure

INFOID:000000011669665

### 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT". Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-162, "SIDE RADAR LH : DTC Logic"</u> (SIDE RADAR LEFT), <u>DAS-162, "SIDE RADAR RH : DTC Logic"</u> (SIDE RADAR RIGHT).

# NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-123, "DTC Index"</u>.
- NO >> Replace side radar LH or RH. Refer to <u>DAS-99</u>, "Removal and Installation".

# **U0415 VDC CAN 1**

### < DTC/CIRCUIT DIAGNOSIS >

# U0415 VDC CAN 1

# **DTC Logic**

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INFOID:000000011669666

	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)
<b>VOTE:</b> f DTC "U041 ADAS CONT	5" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to DAS-161
TC CONFI	RMATION PROCED	URE	
1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE	
<ul> <li>?. Turn the I</li> <li>?. Perform "</li> <li>I. Check if t</li> <li><u>s "U0415" de</u></li> <li>YES &gt;&gt; R</li> <li>NO &gt;&gt; R</li> </ul>	BSW system ON. All DTC Reading" with he "U0415" is detected tected as the current n tefer to <u>DAS-171, "Diad</u> tefer to <u>GI-47, "Intermit</u>	CONSULT. I as the current malfunction in "Self Dia <u>nalfunction?</u> <u>anosis Procedure"</u> . <u>tent Incident"</u> .	gnostic Result" of "BSW".
Diagnosis	Procedure		INFOID:00000001166966
1.CHECK SE	ELL-DIAGINOSIS KES	ULIO	
<b>1</b> .CHECK SE Check if "U10 <u>s "U1000" de</u> YES >> P	00" is detected other the tected?	nan "U0415" in "Self Diagnostic Result" nunication system inspection. Repair o	of "BSW". r replace the malfunctioning parts
<b>1</b> .CHECK SE Check if "U10 <u>s "U1000" de</u> YES >> P R NO >> G	00" is detected other the tected? erform the CAN communication to <u>DAS-161, "ADA</u> O TO 2.	nan "U0415" in "Self Diagnostic Result" nunication system inspection. Repair o	of "BSW". r replace the malfunctioning parts

### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-47, "DTC Index" (type 1) or BRC-176, "DTC Index" (type 2).
- >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation". NO

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# U150B ECM CAN 3

# < DTC/CIRCUIT DIAGNOSIS >

# U150B ECM CAN 3

# DTC Logic

INFOID:000000011669668

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

### NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-161</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

### DTC CONFIRMATION PROCEDURE

# 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U150B" detected as the current malfunction?

- YES >> Refer to DAS-172, "Diagnosis Procedure".
- NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

# Diagnosis Procedure

INFOID:000000011669669

# **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-161, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK ECM SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>EC-105, "DTC Index"</u> (USA and Canada) or <u>EC-610, "DTC Index"</u> (Mexico).
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

# **U150C VDC CAN 3**

# < DTC/CIRCUIT DIAGNOSIS >

# U150C VDC CAN 3

DTC DETECTION LOGIC

# DTC Logic

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#### INFOID:000000011669670

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)
ADAS CO	NTROL UNIT : DTC Logi	with DTC 101000, first diagnose the l	DIC 101000. Refer to <u>DAS-161.</u>
DTC CON	FIRMATION PROCED	URE	
1.PERFO	RM DTC CONFIRMATIO	N PROCEDURE	
I. Start th	ne engine.		
2. Turn th	ne BSW system ON.	CONSULT	
I. Check	if the "U150C" is detected	d as the current malfunction in "Self Dia	gnostic Result" of "BSW".
<u>s "U150C"</u>	detected as the current r	nalfunction?	
YES >>	Refer to <u>DAS-173, "Diac</u> Refer to GI-47 "Intermit	<u>anosis Procedure"</u> . tent Incident"	
Diagnosi	s Procedure	<u></u> .	INEC/ID-00000011660671
1 1			INFOLD.000000011009011
I.CHECK	SELF-DIAGNOSIS RES	ULTS	
Check if "U	1000" is detected other th	nan "U150C" in "Self Diagnostic Result"	of "BSW".
<u>s "U1000"</u> VES	detected?	nunication system inspection. Bonair or	roplace the malfunctioning parts
169	Refer to <u>DAS-161, "ADA</u>	AS CONTROL UNIT : DTC Logic".	replace the manufactoring parts.
NO >>	> GO TO 2.		
2.CHECK	ABS ACTUATOR AND E	LECTRIC UNIT (CONTROL UNIT) SEI	LF-DIAGNOSIS RESULTS
Check if ar	y DTC is detected in "Sel	If Diagnostic Result" of "ABS".	
s any DTC	<u>detected?</u>	a data stad DTO and space as surface	
		$\alpha_{1}$ $\alpha_{2}$ $\alpha_{3}$ $\alpha_{3$	
15 >	<u>BRC-47, "DTC Index"</u> (t	ype 1) or <u>BRC-176, "DTC Index"</u> (type 2	the malfunctioning parts. Refer to 2).

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# U150D TCM CAN 3

# < DTC/CIRCUIT DIAGNOSIS >

# U150D TCM CAN 3

# DTC Logic

INFOID:000000011669672

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	ТСМ

### NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-161</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

### DTC CONFIRMATION PROCEDURE

# 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U150D" detected as the current malfunction?

- YES >> Refer to DAS-174, "Diagnosis Procedure".
- NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

# Diagnosis Procedure

INFOID:000000011669673

### 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-161, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.
- 2. CHECK TCM SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>TM-63, "DTC Index"</u> (RE0F10E) or <u>TM-277, "DTC Index"</u> (RE0F10J).
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

# **U150E BCM CAN 3**

# < DTC/CIRCUIT DIAGNOSIS >

# U150E BCM CAN 3

# DTC Logic

[RCTA]

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#### INFOID:000000011669674

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	BCM
NOTE: If DTC "U15 <u>"ADAS CON</u>	0E" is detected along v ITROL UNIT : DTC Logic	with DTC "U1000", first diagnose the [ <u>c"</u> .	DTC "U1000". Refer to <u>DAS-161.</u>
DTC CONF	IRMATION PROCED	URE	
1.PERFOR	M DTC CONFIRMATIO	N PROCEDURE	
<ol> <li>Start the</li> <li>Turn the</li> <li>Perform</li> </ol>	e engine. BSW system ON. "All DTC Reading" with	CONSULT.	
4. Check if <u>Is "U150E" c</u> YES >>	the "U150E" is detected letected as the current n Refer to DAS-175, "Diac	d as the current malfunction in "Self Dia <u>g</u> nalfunction? anosis Procedure"	gnostic Result" of "BSW".
NO >>	Refer to <u>GI-47, "Intermit</u>	tent Incident".	
NO >> Diagnosis	Refer to <u>GI-47, "Intermit</u> Procedure	tent Incident".	INFOID:000000011669675
NO >> Diagnosis 1.check s	Refer to <u>GI-47, "Intermit</u> Procedure SELF-DIAGNOSIS RESI	ultrs	INFOID:000000011669678
NO >> Diagnosis 1.CHECK & Check if "U1	Refer to <u>GI-47, "Intermit</u> Procedure SELF-DIAGNOSIS RESI 000" is detected other th	ULTS nan "U150E" in "Self Diagnostic Result"	INFOID:00000001166967
NO >> Diagnosis 1.CHECK & Check if "U1 Is "U1000" d YES >> NO >>	Refer to <u>GI-47</u> , "Intermit Procedure SELF-DIAGNOSIS RESI 000" is detected other th letected? Perform the CAN comm Refer to <u>DAS-161, "ADA</u> GO TO 2.	ULTS nan "U150E" in "Self Diagnostic Result" nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	™FOID:000000011669674 of "BSW". replace the malfunctioning parts.
NO >> Diagnosis 1.CHECK & Check if "U1 Is "U1000" d YES >> NO >> 2.CHECK E	Refer to <u>GI-47</u> , <u>"Intermit</u> Procedure SELF-DIAGNOSIS RESU 000" is detected other th <u>letected?</u> Perform the CAN comm Refer to <u>DAS-161</u> , <u>"ADA</u> GO TO 2. SCM SELF-DIAGNOSIS	ULTS nan "U150E" in "Self Diagnostic Result" nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	of "BSW".
NO >> Diagnosis 1.CHECK § Check if "U1 Is "U1000" d YES >> NO >> 2.CHECK E Check if any Is any DTC o	Refer to <u>GI-47</u> , "Intermit <b>Procedure</b> SELF-DIAGNOSIS RESI 000" is detected other th letected? Perform the CAN comm Refer to <u>DAS-161</u> , "ADA GO TO 2. SCM SELF-DIAGNOSIS DTC is detected in "Sel detected?	ULTS nan "U150E" in "Self Diagnostic Result" nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic". RESULTS If Diagnostic Result" of "BCM".	of "BSW".
NO >> Diagnosis 1.CHECK § Check if "U1 Is "U1000" d YES >> NO >> 2.CHECK E Check if any Is any DTC o YES >>	Refer to <u>GI-47</u> , "Intermit <b>Procedure</b> SELF-DIAGNOSIS RESI 000" is detected other th <u>letected?</u> Perform the CAN comm Refer to <u>DAS-161</u> , "ADA GO TO 2. 3CM SELF-DIAGNOSIS DTC is detected in "Sel <u>detected?</u> Perform diagnosis on th <u>BCS-52, "DTC Index"</u> .	ULTS han "U150E" in "Self Diagnostic Result" hunication system inspection. Repair or AS CONTROL UNIT : DTC Logic". RESULTS If Diagnostic Result" of "BCM". he detected DTC and repair or replace	of "BSW". • replace the malfunctioning parts.

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# U1503 SIDE RDR L CAN 2

### < DTC/CIRCUIT DIAGNOSIS >

# U1503 SIDE RDR L CAN 2

# DTC Logic

INFOID:000000011669676

**IRCTA1** 

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1503	SIDE RDR L CAN CIR 2	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	Side radar LH

#### NOTE:

- If DTC "U1503" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".
- Refer to DAS-161, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000".
- Refer to DAS-181, "DTC Logic" for DTC "U1508".

### DTC CONFIRMATION PROCEDURE

# **1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1503" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

### Is "U1503" detected as the current malfunction?

- YES >> Refer to <u>DAS-176</u>, "Diagnosis Procedure".
- NO >> Refer to GI-47, "Intermittent Incident".

### Diagnosis Procedure

INFOID:000000011669677

### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1503" in "Self Diagnostic Result" of "BSW".

#### Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-161, "ADAS CONTROL UNIT : DTC Logic"</u>.
- YES-2 >> U1508 detected: Refer to DAS-181, "DTC Logic".
- NO >> GO TO 2.

### **2.**CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-126, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

# U1504 SIDE RDR L CAN 1

# < DTC/CIRCUIT DIAGNOSIS >

# U1504 SIDE RDR L CAN 1

# DTC Logic

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[RCTA]

INFOID:000000011669678

# DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1504	SIDE RDR L CAN CIR 1	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication	Side radar LH
NOTE: If DTC "U1504 • Refer to <u>DA</u> • Refer to <u>DA</u>	I" is detected along with D S-162, "SIDE RADAR LH S-181, "DTC Logic" for D	DTC "U1000", or "U1508", first diagnose the I <u>: DTC Logic"</u> for DTC "U1000". FC "U1508".	DTC "U1000" or "U1508".
DTC CONFIF 1.perform	RMATION PROCEDUR	E PROCEDURE	
<ol> <li>Start the e</li> <li>Turn the E</li> <li>Perform "A</li> <li>Check if the e</li> </ol>	engine. 3SW system ON. All DTC Reading" with CC ne "U1504" is detected as	DNSULT.	Result" of "BSW".
<u>ls "U1504" det</u> YES >> R NO >> R	efer to <u>DAS-177, "Diagno</u> efer to <u>GI-47, "Intermitten</u>	unction? sis Procedure". t Incident".	
Diagnosis I	Procedure		INFOID:0000000116696
<b>1.</b> CHECK SE	ELF-DIAGNOSIS RESULT	S	
Check if "U100 Is "U1000" or ' YES-1 >> U fu YES-2 >> U NO >> G	00" or "U1508" is detected <u>"U1508" detected?</u> 1000 detected: Perform the nctioning parts. Refer to <u>I</u> 1508 detected: Refer to <u>I</u> O TO 2.	d other than "U1504" in "Self Diagnostic Resume CAN communication system inspection. F DAS-161, "ADAS CONTROL UNIT : DTC Log DAS-181, "DTC Logic".	ult" of "BSW". Repair or replace the mal <u>gic"</u> .
	DE RADAR LH SELF-DIA	GNUSIS RESULIS	
LINECK IT ANY L	vic is actected in Self D tected?	agnostic Result of SIDE RADAR LEFT.	
YES >> Po <u>D</u> NO >> R	erform diagnosis on the c AS-126, "DTC Index". eplace the ADAS control	letected DTC and repair or replace the malf unit. Refer to <u>DAS-99, "Removal and Installa</u>	functioning parts. Refer to <u>tion"</u> .

# U1505 SIDE RDR R CAN 2

### < DTC/CIRCUIT DIAGNOSIS >

# U1505 SIDE RDR R CAN 2

# DTC Logic

INFOID:000000011669680

[RCTA]

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1505	SIDE RDR R CAN CIR 2	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH

### NOTE:

If DTC "U1505" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-161. "ADAS CONTROL UNIT : DTC Logic".

### DTC CONFIRMATION PROCEDURE

# 1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2.
- Turn the BSW system ON. Perform "All DTC Reading" with CONSULT. 3.
- Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "BSW". 4.

### Is "U1505" detected as the current malfunction?

- >> Refer to DAS-178, "Diagnosis Procedure". YES
- >> Refer to GI-47, "Intermittent Incident". NO

# Diagnosis Procedure

INFOID:0000000011669681

# 1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1505" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-161, "ADAS CONTROL UNIT : DTC Logic".

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-128, "DTC Index".
- NO >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation".

# U1506 SIDE RDR R CAN 1

# < DTC/CIRCUIT DIAGNOSIS >

# U1506 SIDE RDR R CAN 1

# DTC Logic

[RCTA]

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INFOID:000000011669682

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1506	SIDE RDR R CAN CIR 1	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH
NOTE: If DTC "U15 "ADAS CON	06" is detected along with TROL UNIT : DTC Logic".	DTC "U1000", first diagnose the DTC "U1	000". Refer to <u>DAS-161</u>
DTC CONF	IRMATION PROCEDUR	E	
1.PERFORM	M DTC CONFIRMATION F	PROCEDURE	
<ol> <li>Start the</li> <li>Turn the</li> <li>Perform</li> <li>Check if</li> </ol>	engine. BSW system ON. "All DTC Reading" with CC the "U1506" is detected as	DNSULT. the current malfunction in "Self Diagnostic F	Result" of "BSW".
YES >> F NO >> F	Refer to <u>DAS-179, "Diagno</u> Refer to <u>GI-47, "Intermitten</u>	<u>sis Procedure"</u> . <u>t Incident"</u> .	
Diagnosis	Procedure		INFOID:00000001166968
<b>1</b> .CHECK S	ELF-DIAGNOSIS RESULT	ſS	
Check if "U1	000" is detected other than	"U1506" in "Self Diagnostic Result" of "BSW	
<u>ls "U1000" de</u>	etected?		
YES >> F	Perform the CAN commun	ication system inspection. Repair or replace	the malfunctioning parts
NO >> (	GO TO 2.	CONTROL ONT . DTO LOGIC.	
<b>2.</b> снеск s	DE RADAR RH SELF-DI	AGNOSIS RESULTS	
Check if any	DTC is detected in "Self D	iagnostic Result" of "SIDE RADAR RIGHT".	
<u>Is any DTC c</u>	letected?		
YES >> I	Perform diagnosis on the o	letected DTC and repair or replace the malf	unctioning parts. Refer to
	JAS-128. "DTC Index".		

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# U1507 LOST COMM(SIDE RDR R)

### < DTC/CIRCUIT DIAGNOSIS >

# U1507 LOST COMM(SIDE RDR R)

# DTC Logic

INFOID:000000011669684

**IRCTA1** 

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1507	LOST COMM(SIDE RDR R)	ADAS control unit cannot receive ITS commu- nication signal from side radar RH for 2 sec- onds or more	<ul><li>ITS communication system</li><li>Side radar RH</li></ul>

#### NOTE:

If DTC "U1507" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-161.</u> "ADAS CONTROL UNIT : DTC Logic"

### DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1507" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

#### Is "U1507" detected as the current malfunction?

YES >> Refer to <u>DAS-180</u>, "Diagnosis Procedure".

NO >> Refer to <u>GI-47, "Intermittent Incident"</u>.

### Diagnosis Procedure

INFOID:000000011669685

# **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1507" in "Self Diagnostic Result" of "BSW".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-161, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

2. CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-128. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".
### U1508 LOST COMM(SIDE RDR L)

#### < DTC/CIRCUIT DIAGNOSIS >

# U1508 LOST COMM(SIDE RDR L)

# DTC Logic

[RCTA]

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INFOID:000000011669686

DTC	Trouble diagnosis name	DTC detecting condition Possible causes		
U1508	LOST COMM(SIDE RDR L)	ADAS control unit cannot receive ITS commu- nication signal from side radar LH for 2 sec- onds or more • Side radar LH harness connec • ITS communication system • Side radar LH		
NOTE:	· · · · · · · · · · ·			
DIC "01508"	is detected along with	DIC "U1000", first diagnose the DIC "	U1508″.	
DTC CONFI	RMATION PROCED	URE		
1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE		
1. Start the	enaine.			
O Turn the	BSW aveter ON			
z. rum me	DOW System On.			
3. Perform	All DTC Reading" with	CONSULT.		
<ol> <li>Further the</li> <li>Perform '</li> <li>Check if '</li> </ol>	All DTC Reading" with the "U1508" is detected	CONSULT. I as the current malfunction in "Self Diag	gnostic Result" of "BSW".	
<ol> <li>Perform '</li> <li>Perform '</li> <li>Check if '</li> <li><u>Is "U1508" de</u></li> </ol>	All DTC Reading" with the "U1508" is detected etected as the current n	CONSULT. I as the current malfunction in "Self Diag nalfunction?	gnostic Result" of "BSW".	
2. Turn the 3. Perform ' 4. Check if <u>Is "U1508" de</u> YES >> F NO >> F	All DTC Reading" with the "U1508" is detected etected as the current n Refer to DAS-181, "Diag Refer to GI-47, "Intermit	CONSULT. I as the current malfunction in "Self Diag nalfunction? gnosis Procedure".	gnostic Result" of "BSW".	
2. Turn the 3. Perform ' 4. Check if ' <u>Is "U1508" de</u> YES >> F NO >> F	All DTC Reading" with the "U1508" is detected etected as the current n Refer to <u>DAS-181, "Diac</u> Refer to <u>GI-47, "Intermit</u>	CONSULT. d as the current malfunction in "Self Diag <u>nalfunction?</u> gnosis Procedure". ttent Incident".	gnostic Result" of "BSW".	
2. Turn the 3. Perform ' 4. Check if <u>Is "U1508" de</u> YES >> F NO >> F Diagnosis	All DTC Reading" with the "U1508" is detected etected as the current n Refer to DAS-181, "Diag Refer to GI-47, "Intermit Procedure	CONSULT. d as the current malfunction in "Self Diag <u>malfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> .	gnostic Result" of "BSW".	
2. Turn the 3. Perform ' 4. Check if ' <u>Is "U1508" de</u> YES >> F NO >> F <b>Diagnosis</b> <b>1.</b> CHECK S	All DTC Reading" with the "U1508" is detected etected as the current m Refer to <u>DAS-181, "Diag</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> IDE RADAR HARNESS	CONSULT. d as the current malfunction in "Self Diag <u>nalfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> . S CONNECTOR	gnostic Result" of "BSW".	
2. Turn the 3. Perform ' 4. Check if ' <u>Is "U1508" de</u> YES >> F NO >> F <b>Diagnosis</b> <b>1.</b> CHECK S 1. Turn the	All DTC Reading" with the "U1508" is detected etected as the current m Refer to <u>DAS-181, "Diac</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> IDE RADAR HARNESS ignition switch OFF.	CONSULT. d as the current malfunction in "Self Diag <u>malfunction?</u> <u>gnosis Procedure"</u> . <u>tent Incident"</u> . S CONNECTOR	gnostic Result" of "BSW".	
2. Turn the 3. Perform ' 4. Check if ' <u>Is "U1508" de</u> YES >> F NO >> F <b>Diagnosis</b> <b>1.</b> CHECK S 1. Turn the 2. Check th	All DTC Reading" with the "U1508" is detected etected as the current n Refer to <u>DAS-181, "Diag</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> IDE RADAR HARNESS ignition switch OFF. e terminals and connect	CONSULT. d as the current malfunction in "Self Diag <u>nalfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> . S CONNECTOR	gnostic Result" of "BSW". INFOID:000000011669687	
<ol> <li>Perform ' <ol> <li>Perform '</li></ol></li></ol>	All DTC Reading" with the "U1508" is detected etected as the current m Refer to <u>DAS-181, "Diag</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> IDE RADAR HARNESS ignition switch OFF. e terminals and connected).	CONSULT. d as the current malfunction in "Self Diag <u>malfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> . S CONNECTOR ctors of the side radar LH for damage, b	gnostic Result" of "BSW". INFOID:000000011669687	
<ol> <li>Perform '</li> <li>Perform '</li> <li>Check if '</li> <li><u>Is "U1508" de</u></li> <li>YES &gt;&gt; F</li> <li>NO &gt;&gt; F</li> <li>Diagnosis</li> <li><b>1.</b> CHECK S</li> <li>Turn the</li> <li>Check th</li> <li>nector sid</li> <li>Is the inspect</li> </ol>	All DTC Reading" with the "U1508" is detected etected as the current m Refer to <u>DAS-181, "Diac</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> IDE RADAR HARNESS ignition switch OFF. e terminals and connected be). ion result normal?	CONSULT. d as the current malfunction in "Self Diag <u>malfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> . S CONNECTOR ctors of the side radar LH for damage, t	gnostic Result" of "BSW".	
2. Turn the 3. Perform ' 4. Check if ' <u>Is "U1508" de</u> YES >> F NO >> F Diagnosis 1. CHECK S 1. Turn the 2. Check th nector sid Is the inspect YES >> F F	All DTC Reading" with the "U1508" is detected etected as the current m Refer to <u>DAS-181, "Diag</u> Refer to <u>GI-47, "Intermit</u> <b>Procedure</b> IDE RADAR HARNESS ignition switch OFF. e terminals and connected de). ion result normal? Perform the CAN comm Refer to <u>LAN-21, "Troub</u>	CONSULT. d as the current malfunction in "Self Diag <u>nalfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> . S CONNECTOR ctors of the side radar LH for damage, to nunication system inspection. Repair or <u>ole Diagnosis Flow Chart"</u> .	gnostic Result" of "BSW".	

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### U1518 SIDE RDR L CAN 3

#### < DTC/CIRCUIT DIAGNOSIS >

### U1518 SIDE RDR L CAN 3

### DTC Logic

INFOID:000000011669688

#### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1518	SIDE RDR L CAN CIRC 3	ADAS control unit detects an error signal that is received from side radar LH via ITS communication	Side radar LH

#### NOTE:

- If DTC "U1518" is detected along with DTC "U1000", or "U1508", first diagnose the DTC "U1000" or "U1508".
- Refer to DAS-161, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000".
- Refer to DAS-181, "DTC Logic" for DTC "U1508".

#### DTC CONFIRMATION PROCEDURE

### **1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the BSW system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1518" is detected as the current malfunction in "Self Diagnostic Result" of "BSW".

#### Is "U1518" detected as the current malfunction?

- YES >> Refer to <u>DAS-182</u>, "Diagnosis Procedure".
- NO >> Refer to GI-47, "Intermittent Incident".

#### Diagnosis Procedure

INFOID:000000011669689

#### **1.**CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1508" is detected other than "U1518" in "Self Diagnostic Result" of "BSW".

#### Is "U1000" or "U1508" detected?

- YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-161, "ADAS CONTROL UNIT : DTC Logic"</u>.
- YES-2 >> U1508 detected: Refer to DAS-181, "DTC Logic".
- NO >> GO TO 2.

#### **2.**CHECK SIDE RADAR LH SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT".

#### Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-126, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

### U1519 SIDE RDR R CAN 3

#### < DTC/CIRCUIT DIAGNOSIS >

# U1519 SIDE RDR R CAN 3

# DTC Logic

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INFOID:0000000011669690

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	
U1519	SIDE RDR R CAN CIRC 3         ADAS control unit detects an error signal that is received from side radar RH via ITS communication         Side radar RH			
NOTE: If DTC "U1: "ADAS CON	519" is detected along with TROL UNIT : DTC Logic".	n DTC "U1000", first diagnose the DTC "U	1000". Refer to <u>DAS-161.</u>	
DTC CONF	IRMATION PROCEDUR	E		
1.PERFOR	RM DTC CONFIRMATION F	PROCEDURE		
1. Start the	e engine.			
2. Turn the	e BSW system ON.			
4. Check i	f the "U1519" is detected as	the current malfunction in "Self Diagnostic F	Result" of "BSW".	
<u>ls "U1519" (</u>	letected as the current malf	unction?		
YES >>	Refer to DAS-183, "Diagno	<u>sis Procedure"</u> .		
	Dressedure			
Diagnosis	s Procedure		INFOID:000000011669691	
1.CHECK	SELF-DIAGNOSIS RESUL	ſS		
Check if "U	000" is detected other than	"U1519" in "Self Diagnostic Result" of "BSW		
<u>ls "U1000" c</u>	letected?			
YES >>	Perform the CAN commun	ication system inspection. Repair or replace	the malfunctioning parts.	
NO >>	GO TO 2.	CONTROL ONT . DTO LOGIC.		
2.снеск	SIDE RADAR RH SELF-DI	AGNOSIS RESULTS		
Check if any	DTC is detected in "Self D	iagnostic Result" of "SIDE RADAR RIGHT".		
Is any DTC	detected?			
	Perform diagnosis on the	detected DTC and repair or replace the malf	functioning parts. Refer to	
YES >>	DAS 129 "DTC Index"	1 1		
YES >> NO >>	<u>DAS-128, "DTC Index"</u> . Replace the ADAS control	unit. Refer to DAS-98, "Removal and Installa	ition".	

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### POWER SUPPLY AND GROUND CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# POWER SUPPLY AND GROUND CIRCUIT ADAS CONTROL UNIT

### ADAS CONTROL UNIT : Diagnosis Procedure

### 1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	30 (10A)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

### 2. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

	Terminal		Condition			
(	+)	(—)	Condition	Standard	Reference	
ADAS control unit			Ignition	voltage	(Approx.)	
Connector	Terminal		switch			
		Ground	OFF	0 - 0.1 V	0 V	
B104	12		ON	9.5 - 16 V	Battery volt- age	

Is the inspection result normal?

YES >> GO TO 3.

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

 $\mathbf{3}$ .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 co	ontrol unit		Continuity
Connector	Connector Terminal		Continuity
B104	15		Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair the ADAS control unit ground circuit.

#### SIDE RADAR LH

### SIDE RADAR LH : Diagnosis Procedure

### 1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Ignition power supply	30 (10A)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

#### **DAS-184**

INFOID:000000011669693

### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

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		Standard voltage (Approx.)
(-	(+)		Condition	Standard	
Side radar LH			lanition switch	voltage	
Connector	Terminal		Ignition switch		
		Ground	OFF	0 - 0.1 V	0 V
B416 5		ON	10 - 16 V	Battery volt- age	

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the side radar LH power supply circuit.

## 3. CHECK GROUND CIRCUIT

Check continuity between side radar LH harness connectors and ground.

Side r	adar LH		Continuity		
Connector	Terminal	Ground	Continuity		Ц
B416	8		Yes		
Is the inspection	on result normal	2			
YES >> Ins NO >> Re SIDE RAD	spection End. epair the side rac AR RH	dar LH ground o	circuit.		I
SIDE RADA	AR RH : Diag	nosis Proce	edure	INFOID:000000011669694	J
1.CHECK FU	SES				K
Check if any o	f the following fu	ses are blown:			
	Signal na	ame		Fuse No.	L
	Ignition powe	er supply		30 (10A)	
Is the inspection	on result normal	<u>?</u>			
YES >> G	O TO 2.				M
NO >> Re	eplace the blowr	i fuse after repa	iring the affecte	ed circuit if a fuse is blown.	

2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect the side radar RH connector.

3. Check voltage between side radar RH harness connector and ground.

Terminals			Condition			
(+)		(-)	Condition	Standard	Reference voltage (Approx.)	
Side radar RH			lanition switch	voltage		
Connector	Terminal		Ignition Switch			
		Ground	OFF	0 - 0.1 V	0 V	
B109	5		ON	10 - 16 V	Battery volt- age	

Is the inspection result normal?

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### POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 3.

#### NO >> Repair the side radar RH power supply circuit.

# **3.**CHECK GROUND CIRCUIT

Check continuity between side radar RH harness connectors and ground.

Side ra	adar RH		Continuity	
Connector	Terminal	Ground	Continuity	
B109	8	† 	Yes	

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair the side radar RH ground circuit.

		WAR	NING SY	STEM SW	ITCH CIRCUIT
< DTC/CIRC		NOSIS >			[RCTA]
WARNIN	G SYST	EM SWI	тсн с	IRCUIT	
Componer	nt Functio	on Check			INFOID:000000011669695
<b>1</b> онгоки					
	VARINING S			UT SIGNAL	
<ol> <li>Turn the</li> <li>Select th</li> <li>With ope</li> </ol>	e DATA MC	Itch ON. ONITOR item varning syste	"WARN S em switch,	SYS SW" of "B check the mo	SW" with CONSULT. hitor status.
Monitor item		Condition		Monitor status	
WARN SYS	Warning sys	stem switch is p	ressed	On	
SW	Warning sys	stem switch is n	ot pressed	OFF	
Is the inspect	tion result n	ormal?			
YES >> \	Narning sys	stem switch o	circuit is no	ormal.	
Diagnosis	Procedu	ire	110313 1 100	<u> </u>	NECUD-00000011680606
<b>A</b>	1100044				14FOL2.000000011099090
1.CHECK W	VARNING S	SYSTEM SW	ITCH SIG	NAL INPUT	
1. Turn the	ignition swi	itch ON.			
2. With ope and drou	erating the v ind.	warning syst	em switch	, Check voltage	e between ADAS control unit narness connector
u					
	Terminals		Condition		
(+	·)	(-)	Condition	Voltage	
ADAS co	ntrol unit		Warning	(Approx.)	
Connector	Terminal	Cround	system		
	40	Ground	Pressed	0 V	
B104	19		Released	12 V	
Is the inspect	tion result n	ormal?			
YES >> F	Replace the	ADAS contr	ol unit. Re	efer to <u>DAS-98</u>	"Removal and Installation".
<b>2</b> outoria	30 10 2.				
	VARNING S		ПСН		
1. Turn igni 2. Remove	tion switch	OFF.			
3. Check w	arning syst	em switch. R	efer to DA	<u>S-102, "Remo</u>	val and Installation".
Is the inspect	<u>tion result r</u>	ormal?			
YES >> (	GO TO 3.	· · · · · · · · · · · · · · · · · · ·			
NU >>+	Replace the	warning sys		n. Refer to <u>DA</u>	5-102, "Removal and Installation".
J.CHECK W	VARNING S	SYSTEM SW	ITCH GRO	DUND CIRCUI	
Check contin	uity betwee	en warning sy	/stem swit	ch harness co	nnector and the ground.
Warning	system switc	h		0	
Connector	Term	inal G	Fround	Continuity	
M133	8			Yes	
Is the inspect	tion result r	ormal?			
YES >> (	GO TO 4.				
NO >> F	Repair harn	ess or conne	ector.		

4. CHECK WARNING SYSTEM SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

### WARNING SYSTEM SWITCH CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

- 1. Disconnect the ADAS control unit connector.
- 2. Check continuity between the ADAS control unit harness connector and warning system switch harness connector.

ADAS control unit		Warning system switch		Continuity	
Connector	Terminal	Connector	Terminal		
B104	19	M133	6	Yes	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

### 5. CHECK WARNING SYSTEM SWITCH SIGNAL INPUT CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

ADAS co	ontrol unit		Continuity	
Connector	Terminal	Ground		
B104	19		No	

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-98</u>, "Removal and Installation".

NO >> Repair the harnesses or connectors.

#### Component Inspection

1. CHECK WARNING SYSTEM SWITCH

Check continuity of warning system switch.

Terr	ninal	Condition	Continuity
6	Q	When warning system switch is pressed	Yes
0	0	When warning system switch is released	No

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace warning system switch. Refer to <u>DAS-102. "Removal and Installation"</u>.

Revision: September 2014

### **BSW ON INDICATOR CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS > **BSW ON INDICATOR CIRCUIT Diagnosis** Procedure 1. CHECK BSW ON INDICATOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect warning system switch connector. 3. Turn ignition switch ON. Check voltage between warning system switch harness connector and ground. 4. Terminals (+) (-) Voltage (Approx.) Warning system switch Connector Terminal Ground M133 5 Battery voltage Is the inspection result normal? YES >> GO TO 2. NO >> Repair the BSW ON indicator power supply circuit. **2.**CHECK BSW ON INDICATOR SIGNAL FOR OPEN 1. Turn ignition switch OFF. Disconnect the ADAS control unit harness connector. 2. Check continuity between the ADAS control unit harness connector and warning system switch harness 3. connector. ADAS control unit Warning system switch Continuity Connector Terminal Connector Terminal B104 18 M133 3 Yes

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

# ${f 3.}$ CHECK BSW ON INDICATOR SIGNAL CIRCUIT FOR SHORT

Check continuity between the ADAS control unit harness connector and ground.

	ADAS co	ontrol unit		0
Con	nector	Terminal	Ground	Continuity
В	104	18		No
Is the ir	nspectio	n result normal?	2	
YES	>> GC	) TO 4.		
NO	>> Re	pair the harness	ses or connecto	ors.

#### 4.CHECK BSW ON INDICATOR DAS Check the BSW ON indicator. Refer to DAS-189, "Component Inspection". Is the inspection result normal? YES >> Replace the ADAS control unit. Refer to DAS-98, "Removal and Installation". NO >> Replace warning system switch. DAS-102, "Removal and Installation".

### Component Inspection

**1.**CHECK BSW ON INDICATOR

Apply battery voltage to warning system switch terminals 5 and 6, and then check if the BSW ON indicator illuminates.

### **DAS-189**

INFOID:000000011669699

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### **BSW ON INDICATOR CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

Term	ninals	BSW ON in		
(+)	(-)	Condition	tor	
5	3	When the battery voltage is applied	On	
5	5	When the battery voltage is not applied	Off	

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace the warning system switch. Refer to <u>DAS-102. "Removal and Installation"</u>.

SYMPTOM DIAGNOSIS

RCTA SYSTEM SYMPTOMS

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INFOID:000000011669700 B

#### CAUTION:

Symptom Table

# Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

#### NOTE:

For the operational conditions of RCTA, refer to <u>DAS-109</u>, "System Description".

Symptom		Possible cause	Inspection item/Reference page	
Indicator/warning lamps do not il- luminate when ignition switch OFF $\Rightarrow$ ON.	RCTA warning lamp (Yellow) does not illuminate	<ul> <li>RCTA warning lamp signal (CAN)</li> <li>Combination meter</li> <li>ADAS control unit</li> <li>RCTA warning lamp (combination meter)</li> </ul>	<ul> <li>Power supply and ground circuit of ADAS control unit Refer to <u>DAS-184. "ADAS</u> <u>CONTROL UNIT : Diagnosis</u> <u>Procedure"</u></li> <li>ADAS control unit Active test "BSW/BSI WARN LMP" Refer to <u>DAS-115. "CONSULT</u> <u>Function (ADAS)"</u>.</li> <li>ADAS control unit Data monitor "BSW/BSI WARN LMP" Refer to <u>DAS-115. "CONSULT</u> <u>Function (ADAS)"</u></li> <li>Combination meter Data monitor "BSW W/L" Refer to <u>MWI-18. "CONSULT</u> <u>Function (METER/M&amp;A)"</u></li> </ul>	E F G
	RCTA ON indicator (on the system warning switch) does not illuminate	<ul> <li>Harness between ADAS control unit and system warning switch</li> <li>System warning switch</li> <li>ADAS control unit</li> </ul>	RCTA ON indicator circuit Refer to <u>DAS-189, "Diagnosis</u> <u>Procedure"</u>	J
	RCTA indicator does not turn ON	<ul> <li>Harness between side radar and RCTA indicator</li> <li>Side radar LH/RH</li> <li>RCTA indicator</li> </ul>	Perform self-diagnosis of side ra- dar Refer to <u>DAS-117, "CONSULT</u> <u>Function (SIDE RADAR LEFT)"</u> or <u>DAS-119, "CONSULT Func-</u> tion (SIDE RADAR RIGHT)"	K
RCTA system is not activated. (Indicator/warning lamps illuminate when ignition switch OFF $\Rightarrow$ ON.)	RCTA ON indicator is not turned ON ⇔ OFF when op- erating system warning switch	<ul> <li>Harness between ADAS control unit and system warning switch</li> <li>Harness between system warning switch and ground</li> <li>ADAS control unit</li> <li>System warning switch</li> </ul>	RCTA ON indicator circuit Refer to <u>DAS-189, "Diagnosis</u> <u>Procedure"</u>	N
	Buzzer is not sounding	<ul><li>ADAS control unit</li><li>Combination meter</li></ul>	Meter buzzer circuit Refer to <u>WCS-30, "Component</u> <u>Function Check"</u>	DA

# NORMAL OPERATING CONDITION

### Description

### SONAR HANDLING

- The four sonar sensors are located on the rear bumper cover.
- Always keep the sonar sensors clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork over any of the sonar sensors.
- Do not strike or scratch any of the sonar sensors causing physical damage. to a sensor or the surrounding area

#### SIDE RADAR HANDLING

- Side radar for Backup Collision Intervention system is located inside the rear bumper.
- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paintwork near the side radar.
- Do not strike or damage the areas around the side radar.
- Do not strike, damage, and scratch the side radar, especially the vent seal (circular area).

#### REAR CROSS TRAFFIC ALERT

- The Rear Cross Traffic Alert (RCTA) system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When backing up. always look in the direction driver will move to ensure it is safe to proceed. Never rely solely on the RCTA system.
- Using the RCTA system under some road or weather condition could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The RCTA system may not provide a warning for vehicles that pass through the detection zone quickly.
- Do not use the RCTA system when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate RCTA when certain objects are present such as:
- Pedestrians, bicycles, animals.
- A vehicle passing at a speed greater than approximately 5 MPH (8km/h).
- A radar sensor may not detect approaching vehicles in certain situations:
- When the vehicle parked aside obstruct the beam of the radar sensor.
- When the vehicle is parked in an angled parking space.
- When the vehicle is parked on an inclined ground.
- When the vehicle turns around into your vehicle's aisle.
- When the angle formed by your vehicle and approaching vehicle is small.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The sonar system may not detect:
- Small or moving object.
- Wedge-shaped objects.
- Object closer to the bumper than 10 inch (30 cm).
- Thin objects such as rope, wire, chain, etc...
- The side radars are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

### Description

INFOID:000000011669786

#### PRECAUTIONS FOR BLIND SPOT WARNING (BSW)

- The BSW system is not a replacement for proper driving procedure and are not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the BSW system.
- The BSW system may not provide a warning for vehicles that pass through the detection zone quickly.
- Do not use the BSW system when towing a trailer because the system may not function properly.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it
  may not be heard.
- The side radar may not be able to detect and activate BSW when certain objects are present such as:
- Pedestrians, bicycles, animals.
- Several types of vehicles such as motorcycles.
- Oncoming vehicles.

### NORMAL OPERATING CONDITION

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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. Severe weather or road spray conditions may reduce the ability of the side radar to detect other vehicles. The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away. The side radar are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.
Severe weather or road spray conditions may reduce the ability of the side 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 detect vehicles driving two lanes away. The side radar are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.
The side radar are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

DAS

# REMOVAL AND INSTALLATION ADAS CONTROL UNIT

Removal and Installation

INFOID:000000011660040

[RCTA]

#### REMOVAL

#### **CAUTION:**

Before replacing ADAS control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to <u>DAS-149</u>, "Work Procedure".

- 1. Disconnect the battery negative terminal. Refer to <u>PG-95, "Removal and Installation"</u>.
- 2. Remove the storage box. Refer to INT-33, "STORAGE BOX : Removal and Installation".
- 3. Disconnect the harness connector (A) from the ADAS control unit (1). ⊲: Front
- 4. Remove bolts (
- 5. Lift upward to remove ADAS control unit (1).



#### INSTALLATION

#### **CAUTION:**

Be sure to perform "Read/Write Configuration" when replacing ADAS control unit. For details, refer to DAS-149, "Work Procedure".

Installation is in the reverse order of removal.

• Tighten ADAS control unit bolts to specification.

ADAS control unit bolts : 8.3 N·m (0.85 kg-m, 73 in-lb)

# < REMOVAL AND INSTALLATION >

# SIDE RADAR

**Exploded View** 

INFOID:000000011660041

А



3. Remove nuts to remove the side radar (LH/RH) as necessary.

#### Installation

1.

2.

Installation is in the reverse order of removal.

#### CAUTION:

Do not use the side radar if the lens has flaws. NOTE:

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#### < REMOVAL AND INSTALLATION >

Always lock the side radar connector (2).Do not touch the side radar lens and keep lens area clean.

### **BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR**

### < REMOVAL AND INSTALLATION >

## BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

### **Exploded View**

INFOID:000000011660043

[RCTA]

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< REMOVAL AND INSTALLATION >

# BSW SWITCH

Removal and Installation

#### REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-25. "Removal and Installation".
- 2. Remove the bracket for BSW switch and other switches from instrument driver lower panel.
- 3. Insert remover tool (B) in pawl (A) of the bracket and widen the pawl in (C) direction to release the fit.
- 4. Remove BSW switch from the bracket in (D) direction.



INSTALLATION Installation is in the reverse order of removal. [RCTA]