SECTION DAS DRIVER ASSISTANCE SYSTEM

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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. This system includes dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. 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 3 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. **NOTE:**

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



< SYSTEM DESCRIPTION > SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000007911468



1. ADAS control unit (view of rear luggage room area with rear panel assembly removed) Refer to <u>DAS-18. "Component Description"</u>.

Component Description

INFOID:000000007911469

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

System Description

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

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< SYSTEM DESCRIPTION >

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

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Transmit unit		Signal name	Description
Combination meter	CAN com- munica- tion	System selection signal	Receives a selection state of each item in "Driving Aids" selected with the vehicle information display
A/C auto amp.	CAN com- munica- tion	Ambient temperature signal	Receives ambient temperature signal
Millimeter wave sensor	ITS com- munica- tion	ICC sensor signal	Receives detection results, such as the presence or ab- sence of a vehicle ahead and distance from the vehicle
Lane camera unit	ITS com- munica- tion	Detected lane condition signal	Receives detection results of lane marker
Accelerator pedal actuator	ITS com- munica- tion	Accelerator pedal actuator operation status signal	Receives an operational state of accelerator pedal ac- tuator
Side radar LH, RH	ITS com- munica- tion	Vehicle detection signal	Receives vehicle detection condition of detection zone
BCI OFF Switch	Hard wire	BCI OFF switch signal	Receives lateral G acting on the vehicle
Sonar control unit	ITS com- munica- tion	Rear object detection signal	Receives objects detection result of rear area behind vehicle
Warning sys- tems switch	Warning sy	stems switch signal	Receives an ON/OFF state of the warning systems switch

Output Signal Item

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

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< SYSTEM DESCRIPTION >

Reception unit		Signal na	me	Description
			Own vehicle indicator signal	
			Vehicle ahead detec- tion indicator signal	
			Set vehicle speed indi- cator signal	
		Meter display signal	Set distance indicator signal	Transmits a signal to display a state of the system on the information display
			SET switch indicator signal	
			MAIN switch indicator signal	
			DCA system switch in- dicator signal	
Combination	CAN commu	Blind Spot Warr tion warning lan	ning/Blind Spot Interven- np signal	Transmits a Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to turn ON the Blind Spot Warning/Blind Spot Intervention warning lamp
meter	nication	Blind Spot Inter signal	vention ON indictor lamp	Transmits a Blind Spot Intervention ON indictor lamp signal to turn ON the Blind Spot Intervention ON indic- tor lamp
		LDP ON indicat	or lamp signal	Transmits an LDP ON indicator lamp signal to turn ON the LDP ON indicator lamp
		Lane departure	warning lamp signal	Transmits an lane departure warning lamp signal to turn ON the lane departure warning lamp
		ICC warning lar	np signal	Transmits an ICC warning lamp signal to turn ON the ICC system warning lamp
		IBA OFF indica	tor lamp signal	 Transmits a signal to turn ON the IBA OFF indicator lamp Transmits an ON/OFF state of the intelligent brake assist
		Buzzer output s	ignal	Transmits a buzzer output signal to turn ON the buzz- er of the following systems: • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Intelligent Brake Assist (IBA) • Forward Collision Warning (FCW)
Millimeter	ITS commu-	Vehicle speed s	signal	Transmits a vehicle speed calculated by the ADAS control unit
wave sensor	nication	Steering angle sensor signal		Transmits a steering angle sensor signal received from the steering angle sensor
Lane camera	ITS commu-	Vehicle speed s	ignal	Transmits a vehicle speed calculated by the ADAS control unit
unit	nication	Turn indicator s	ignal	Transmits a turn indicator signal received from BCM
Accelerator	ITS commu-	Accelerator pedal position signal		Transmits an accelerator pedal angle calculated by the ADAS control unit
pedal actuator	nication	Accelerator pedal feedback force control signal		Transmits a target reaction force value calculated by the ADAS control unit
		Vehicle speed s	ignal	Transmits a vehicle speed calculated by the ADAS control unit
Side radar LH, RH	ITS commu- nication	Blind Spot Warr tion indicator sig	ning/Blind Spot Interven- gnal	Transmits a Blind Spot Warning/Blind Spot Interven- tion indicator signal to turn ON the Blind Spot Warning/ Blind Spot Intervention indicator
		Blind Spot Warning/Blind Spot Interven- tion indicator dimmer signal		Transmits a Blind Spot Warning/Blind Spot Interven- tion indicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator

< SYSTEM DESCRIPTION >

Reception unit		Signal name	Description
ICC brake hold relay	ICC brake hole	d relay drive signal	Activates the brake hold relay and turns ON the stop lamp
Warning buzz- er	Warning buzz	er signal	Activates the warning buzzer of the following systems: • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
Warning sys- tems ON indi- cator	Warning syste	ems ON indicator signal	Turns ON the warning systems ON indicator
Sonar control unit	ITS commu- nication	Warning buzzer signal	While the shiftier is in reverse and backing up, trans- mits a request for a variable warning buzzer signal re- lated to distance whenever an obstacle exists
Around view monitor control unit	ITS commu- nication 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

DESCRIPTION

- ADAS^{*} control unit controls the following systems, based on ITS communication signals from the millimeter wave sensor, the accelerator pedal actuator, the lane camera unit and side radar LH/RH and a CAN communication signal from each control unit.
 - NOTE:
 - *: Advanced Driver Assistance Systems
- Intelligent Cruise Control (ICC)
- Distance Control Assist (DCA)
- Intelligent Brake Assist (İBA)
- Brake Assist (with preview function)
- Forward Collision Warning (FCW)
- Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- Blind Spot Warning (BSW)/Blind Spot Intervention
- Backup Collision Intervention (BCI)

System	Reference	
Intelligent Cruise Control (ICC)	CCS-14, "System Description"	Κ
Distance Control Assist (DCA)	DAS-85. "System Description"	
Intelligent Brake Assist (IBA)	BRC-142, "INTELLIGENT BRAKE ASSIST : System De- scription"	L
Brake Assist (with preview function)	BRC-135, "BRAKE ASSIST (WITH PREVIEW FUNCTION) : System Description"	
Forward Collision Warning (FCW)	DAS-248, "System Description"	IVI
Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)	 Lane Departure Warning: <u>DAS-320</u>, "LANE DEPAR- <u>TURE WARNING (LDW) SYSTEM : System Description</u>" Lane Departure Prevention: <u>DAS-323</u>, "LANE DEPAR- <u>TURE PREVENTION (LDP) SYSTEM : System Descrip- tion</u>" 	Ν
Blind Spot Warning (BSW)/Blind Spot Intervention	 Blind Spot Warning: <u>DAS-466. "BLIND SPOT WARNING</u> (<u>BSW) SYSTEM : System Description"</u> Blind Spot Intervention: <u>DAS-470. "BLIND SPOT INTER-VENTION SYSTEM : System Description"</u> 	DAS
Backup Collision Intervention (BCI)	Backup Collision Intervention: <u>DAS-642</u> , "System De- scription"	Р

Fail-safe (ADAS Control Unit)

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

< SYSTEM DESCRIPTION >

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

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

On Board Diagnosis Function

DESCRIPTION

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

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)
- 1. Turn the ignition switch OFF.
- 2. Start the engine.
- Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.
 NOTE:

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



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to <u>DAS-48</u>, "<u>DTC Index</u>".



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[ADAS CONTROL UNIT]

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[ADAS CONTROL UNIT]

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

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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

Ass	umed abnormal part	Inspection item	
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combina- tion meter operates. Refer to <u>MWI-17</u> , "Description"	
ICC steering switch malfunc	tion		
Harness malfunction betwee	n ICC steering switch and ECM	Perform the inspection for DTC"C1A06". Refer to <u>CCS-</u> 109 "Diagnosis Procedure"	
ECM malfunction			
ADAS control unit malfunction	on	 Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-78, "Diagnosis Procedure"</u>. Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to <u>DAS-48, "DTC Index"</u>. 	

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

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

NOTE:

- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.
- 4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

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

CONSULT Function (ICC/ADAS)

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PKIB8373B

10 sec

ON

OFF

ON

OFF

CANCEL

DISTANCE

switch

switch

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
Work Support	Displays causes of automatic system cancellation occurred during system control
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 Mntr	The result of transmit/receive diagnosis of CAN communication is displayed

WORK SUPPORT

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[ADAS CONTROL UNIT]

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Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following sys- tems Vehicle-to-vehicle distance control mode Conventional (fixed speed) cruise control mode Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following sys- tems Lane Departure Prevention (LDP) Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems • Backup Collision Intervention (BCI)

NOTE:

• Causes of the maximum five cancellations (system cancel) are displayed.

• The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

	ol mode	ontrol mode			G
	nce contr	cruise co	ol Assist		Н
Cause of cancellation	icle distar	d speed)	ice Contr	Description	Ι
	Vehicle-to-veh	Conventional (fixe	Distar		J
OPERATING ABS	×		×	ABS function was operated	
OPERATING TCS	×	×	×	TCS function was operated	L
OPERATING VDC	×	×	×	VDC function was operated	
ECM CIRCUIT	×	×		ECM did not permit ICC operation	
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range	M
LASER TEMP	×		×	Temperature around millimeter wave sensor became low	
SNOW MODE SW	×		×	SNOW mode switch was pressed	Ν
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time	
VHCL SPD DOWN	×	×	×	 Vehicle speed lower than the speed as follows Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH) 	DAS
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise	Ρ
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed	
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from CVT vehicle speed	
FR RADAR BLOCKED	×		×	The front bumper near the millimeter sensor is blocked or dirty	
TIRE SLIP	×	×		Wheel slipped	
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	

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< SYSTEM DESCRIPTION >

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

Display Items for The Cause of Automatic Cancellation 2

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

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< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description	A B C
SNOW MODE SW	×		SNOW mode switch was pressed	
VDC OFF SW	×		VDC OFF switch was pressed	D
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control	
BSI WARNING	×		Blind Spot Intervention system was activated	
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control	Ε
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value	
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction	F
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control	
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction	G
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated	
BSI) CURVATURE		×	Road curve was more than the specified value	Н
BSI) Steering angle large		×	Steering angle was more than the specified value	
BSI) Brake is operated		×	Brake pedal was operated	
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage	
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified	
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker	J
BSI) Lane marker un- clear		×	Detected lane marker was unclear	IZ.
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value	K
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value	
BSI) Accel is operated		×	Accelerator pedal was depressed	L
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction	
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction	
BSI) R range		×	Selector lever was operated to R range	IVI
BSI) Parking brake drift		×	Rear wheels lock was detected	
BSI) SNOW MODE SW		×	SNOW mode switch was pressed	Ν
BSI) VDC OFF SW		×	VDC OFF switch was pressed	
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control	DAS
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)	
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit	Ρ
NO RECORD	×	×	_	

Display Items for The Cause of Automatic Cancellation 3

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Cause of cancellation	Backup Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	—

SELF DIAGNOSTIC RESULT Refer to <u>DAS-48. "DTC Index"</u>.

DATA MONITOR

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means "controlling")
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output

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< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	(LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN com- munication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]	
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit	
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output	
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communica- tion (ECM transmits engine speed signal through CAN communication)	
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)	
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output	
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output	
D RANGE SW [On/Off]	×					Indicates [On/Off] status of "D" or "M" positions read from ADAS control unit through CAN communication; ON when position "D" or "M" (TCM transmits shift position signal through CAN communication).	
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN commu- nication (TCM transmits shift position signal through CAN communication)	
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)	
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit	
VHCL SPD CVT [km/h] or [mph]	×					Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication)	
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communi- cation (ECM transmits accelerator pedal position signal through CAN communi- cation).	
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]	
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output	
DISTANCE [m]	×					Indicates the distance from the vehicle ahead	
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead $$\mathbb{N}$$	
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)	
DCA ON IND [On/Off]	×					The status [On/Off] of DCA system switch indicator output is displayed	
DCA VHL AHED [On/Off]	×					The status [On/Off] of vehicle ahead detection indicator output in DCA system is displayed	
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system	
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)	

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)	
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system	
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of waning systems ON indicator output	
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output	
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output	
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output	
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
READY signal [On/Off]			×			Indicates LDP system settings	
Camera lost [Detect/Deviate/ Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection sig- nal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)	
Shift position [Off, P, R, N, D, M/ T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communica- tion (TCM transmits shift position signal through CAN communication)	
Turn signal [OFF/LH/RH/ LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)	
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)	
STATUS signal [Stnby/Warn/Cancl/ Off]			×			Indicates a control state of LDP system	
Lane unclear [On/Off]			×	×		Indicates an On/Off state of the lane marker. The On/Off state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)	
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to On/Off by selecting "Driver Assistance" ⇒"Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention	
DCA SELECT [On/Off]	×	×	×	×		Indicates an On/Off state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch	С
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output	D
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output	F
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system	
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system	F
BCP ON [On/Off]					×	Indicates [On/Off] status of BCP system	0
BCI SW ADAS [On/Off]					×	Indicates [On/Off] status of Backup Collision Intervention system	G
LDP_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Prevention system failure lamp	Н
LDW_ON_LAMP [On/Off]			×	×		Indicates [On/Off] status of LDW system	
LDW_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Warning system failure lamp	
SYSTEM_CANCEL _MESSAGE [Request/No Re- quest]	×	×	×	×		Indicates system cancel message request	
CAM_HI_TEMP_M SG [On/Off]			×	×		Indicates high temperature message has been received	
ITS Setting Item(DCA) [On/Off]	×	×	×	×		Indicates [On/Off] status of Distance Control Assist installation	L
ITS Setting Item(LDP) [On/Off]	×	×	×	×		Indicates [On/Off] status of Lane Departure Prevention	Μ
ITS Setting Item(BSI) [On/Off]	×	×	×	×		Indicates [On/Off] status of Blind Spot Intervention system	Ν
BSI FAIL IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention	DAS
BSW ON IND [On/Off]				×		Indicates [On/Off] status of BSW system	
SR_BLK_MSG [On/Off]				×		Indicates [On/Off] status of messages received	
WARN_LANE_TIMI NG [-] [On/Off]			×			Indicates [On/Off] status of warning lane timing	
BSW_IND_BRIGHT NESS [Bright/Not Bright]				×		Indicates BSW warning lamp indicator brightness level	

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
FCW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Forward Collision Warning system. Forward Collision Warning system can be set to On/Off by selecting "Driver Assistance"⇒ "Dynamic Assistance Settings" of the navigation system	
LDW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Lane Departure Warning system. Lane Departure Warning system can be set to On/Off by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system	
BSW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Blind Spot Warning system. Blind Spot Warning system can be set to On/Off by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system	
ITS setting item (FCW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Forward Collision Warning	
ITS setting item (LDW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Lane Departure Warning	
ITS setting item (BSW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Blind Spot Warning	

ACTIVE TEST

CAUTION:

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

Test item	Description
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Lane Departure Warning (LDW) Lane Departure Prevention (LDP) Blind Spot Warning (BSW) Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF opera- tions as necessary
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF opera- tions as necessary

< SYSTEM DESCRIPTION >

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Test item	Description	
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary	- /-
LDW ON IND	The LDW ON indicator lamp can be illuminated by ON/OFF operations as necessary	-
LDP FAIL IND	The LDP fail indicator lamp can be illuminated by ON/OFF operations as necessary	- E
LDW FAIL IND	The LDW fail indicator lamp can be illuminated by ON/OFF operations as necessary	-
BSW ON IND	The BSW ON indicator lamp can be illuminated by ON/OFF operations as necessary	-
BSI FAIL IND	The BSI fail indicator lamp can be illuminated by ON/OFF operations as necessary	- (

BRAKE ACTUATOR **NOTE:**

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

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

NOTE:



ICC BUZZER

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

METER LAMP

NOTE:

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

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< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Test item	Oper- ation	Description	 MAIN switch indicator ICC system warning lamp IBA OFF indicator lamp
Off		 Stops sending the following signals to exit from the test Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	OFF
METER LAMP	On	 Transmits the following signals to the combination meter via CAN communication Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Oper- ation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal be- low to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ACTIVE PEDAL

CAUTION:

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

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting


DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

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NOTE:

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

Test item	Opera- tion	Description	DCA system switch indicator	
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal be- low to end the test	_	
	On	Transmits the DCA system switch indicator signal to the com- bination meter via CAN communication	ON	

LDP BUZZER

Test item	Opera- tion	Description	Warning buzzer	
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	_	
	On	Transmits the warning buzzer signal to the warning buzzer	ON	

WARNING SYSTEM IND

Test item	Oper- ation	Description	Warning systems ON indicator	(
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	_	
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON	ŀ

LDP ON IND

Test item	Oper- ation	Description	LDP ON indicator lamp (Green)	
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal be- low to end the test	_	
	On	Transmits the LDP ON indicator lamp signal to the com- bination meter via CAN communication	ON	

LANE DEPARTURE W/L

Test item	Oper- ation	Description	Lane departure warning lamp (Yellow)	
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp sig- nal below to end the test	_	M
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON	N

BSW/BSI WARNING LAMP

Test item	Oper- ation	Description	Blind Spot Warning/Blind Spot Inter- vention warning lamp (Yellow)	DAS
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot In- tervention warning lamp signal below to end the test	_	P
	On	Transmits the Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to the combination meter via CAN communication	ON	I

BSI ON INDICATOR

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Test item	Oper- ation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention ON indicator sig- nal to the combination meter via CAN communication	ON

LDW ON INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW ON INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

LDP FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure prevention ON indica- tor lamp (Yellow)
LDP FAIL INDICATOR	Off	Stops transmitting the Lane Departure prevention ON indicator signal below to end the test	_
	On	Transmits the Lane Departure prevention ON indicator signal to the combination meter via CAN communication	ON

LDW FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW FAIL INDICA- TOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

BSW ON INDICATOR

Test item	Oper- ation	Description	Blind Spot Warning ON indicator lamp (Yellow)
BSW ON INDICATOR	Off	Stops transmitting the Blind Spot Warning ON indicator signal below to end the test	_
	On	Transmits the Blind Spot Warning ON indicator signal to the warning lamp on the door	ON

BSI FAIL INDICATOR

Test item	Oper- ation	Description	Blind Spot Intervention FAIL indicator lamp (Yellow)
BSI FAIL INDICATOR	Off	Stops transmitting the Blind Spot Intervention FAIL indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention FAIL indicator sig- nal to the warning lamp on the door	ON

ECU IDENTIFICATION

ADAS control unit part number is displayed.

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Condition	Value/Status
		When MAIN switch is pressed	On
MAIN SW	Ignition switch ON	When MAIN switch is not pressed	Off
		When SET/COAST switch is pressed	On
SET/COAST SW	Ignition switch ON	When SET/COAST switch is not pressed	Off
	Ignition switch ON When CANCEL switch is pressed When CANCEL switch is not pressed		On
CANCEL SW	Ignition switch ON	When CANCEL switch is not pressed	Off
		Condition itch ON When MAIN switch is pressed when SET/COAST switch is pressed When SET/COAST switch is not pressed when SET/COAST switch is not pressed When CANCEL switch is not pressed when CANCEL switch is not pressed When CANCEL switch is not pressed when CANCEL switch is not pressed When RESUME/ACCELERATE switch is not pressed when RESUME/ACCELERATE switch is not pressed When DISTANCE switch is not pressed when DISTANCE switch is not pressed When DISTANCE switch is not pressed when DISTANCE switch is not pressed When DISTANCE switch is not pressed when DISTANCE switch is not pressed When ICC system is not controlling when brake pedal is depressed When brake pedal is not depressed when brake pedal is not depressed When brake pedal is not depressed itch ON When BCI switch is not pressed ming Except idling (depress accelerator pedal) when BCI switch is not pressed When BCI system is OFF engine and turn the engine and turn the orbange the vehi- hicle distance set- When set to "long" when set to "short" When set to "short" iCC system ON (MAIN switch indicator ON) ICC system OFF (MAIN switch in	On
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is not pressed	Off
	legitien ewitch ON	When DISTANCE switch is pressed	On
DISTANCE SW	Ignition switch ON	When DISTANCE switch is not pressed	Off
	Drive the vehicle and activate	When ICC system is controlling	On
CRUISE OPE	the vehicle-to-vehicle distance control mode	When ICC system is not controlling	Off
		When brake pedal is depressed	Off
BRAKE SW	Ignition switch ON	When brake pedal is not depressed	On
	Ignition switch ON	When brake pedal is depressed	On
STUP LAMP SW		When brake pedal is not depressed	Off
		Idling	On
IDLE SW	Engine running	Except idling (depress accelerator pedal)	Off
DOL OW	Ignition switch ON	When BCI switch is pressed	On
BCI SW		When BCI switch is not pressed	Off
	SYSTEM ON Ignition switch ON When BCI system is ON		On
BCISISIEMUN	Ignition switch ON	When BCI system is OFF	Off
	Ignition switch ON When BCI switch is pressed When BCI switch is not pressed When BCI switch is not pressed When BCI switch is not pressed When BCI system is ON When BCI system is OFF • Start the engine and turn the ICC system ON • Press the DISTANCE • When set to "Iong" When set to "middle"		Long
	ICC system ON Press the DISTANCE	When set to "middle"	Mid
SET DISTANCE	switch to change the vehi- cle-to-vehicle distance set- ting	When set to "short"	Short
	Start the engine and press	ICC system ON (MAIN switch indicator ON)	On
	MAIN switch	ICC system OFF (MAIN switch indicator OFF)	Off
VHCI AHFAD	Drive the vehicle and activate	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
	control mode	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
	Start the engine and press	When ICC system is malfunctioning (ICC system warning lamp ON)	On
	MAIN switch	When ICC system is normal	Off

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< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
VHCL SPEED SE	While driving		Displays a vehi- cle speed calcu- lated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
		 When the buzzer of the following system operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	On
DUZZER U/F		 When the buzzer of the following system not operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	Off
ENGINE RPM	Engine running		Equivalent to ta- chometer read- ing
BA WARNING	Engine running	IBA OFF indicator lamp ONWhen IBA system is malfunctioningWhen IBA system is turned to OFF	On
		IBA OFF indicator lamp OFFWhen IBA system is normalWhen IBA system is turned to ON	Off
	Drive the vehicle and activate When ICC brake hold relay is activated		On
STP LMP DRIVE	control mode	When ICC brake hold relay is not activated	Off
D PANGE SW		When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
		When the selector lever is in "N", "P" position	On
NP RANGE SW	Engine running	When the selector lever is in any position other than "N", "P"	Off
PKB SW/	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of CVT ve- hicle speed sen- sor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position
		When ICC system is deactivated	Off
MODE SIG	Start the engine and press MAIN switch	When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
	Drive the vehicle and acti-	SET switch indicator ON	On
SET DISP IND	 vate the conventional (fixed speed) cruise control mode Press SET/COAST switch 	SET switch indicator OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status	
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the dis- tance from the preceding vehi- cle	B
		When a vehicle ahead is not detected	0.0	
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance		Displays the rel- ative speed.	C
	control mode	When a vehicle ahead is not detected	0.0	
	Drive the vehicle and activate	Both side lane markers are detected	Detect	-
Camera lost	or Blind Spot Intervention sys-	Deviate side lane marker is lost	Deviate	L
	tem	Both side lane markers are lost	Both	
	While driving	Lane marker is unclear	On	E
Lane unclear	while driving	Lane marker is clear		
		When the LDP system is ON	Stnby	
	Drive the vehicle with the LDP	When the LDP system is operating	Warn	F
STATUS signal	system turned ON	When the LDP system is canceled	Cancl	
		When the LDP system is OFF	Off	(
		When dynamic driver assistance switch is pressed	On	
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is not pressed	Off	
	Start the engine and press dy- namic driver assistance switch	DCA system OFF (DCA system switch indicator OFF)	Off	ŀ
DCA ON IND	(When DCA system setting is ON)	DCA system ON (DCA system switch indicator ON)	On	I
	Drive the vehicle and activate	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off	
DCA VHL AHED	the DCA system	When a vehicle ahead is detected (vehicle ahead de- tection indicator ON)	On	,
APA TEMP	Engine running		Display the ac- celerator pedal actuator inte- grated motor temperature	k
APA PWR	Ignition switch ON		Power supply voltage value of accelerator ped- al actuator	L
	Ignition switch ON	FCW set with the vehicle information display ON	On	
		FCW set with the vehicle information display OFF	Off	
	Ignition quitch ON	LDW set with the vehicle information display ON	On	Ν
		LDW set with the vehicle information display OFF	Off	
	Ignition switch ON	LDW ON indicator ON	On	DA
		LDW ON indicator OFF	Off	
	Start the engine and press dy-	LDP ON indicator lamp ON	On	
LDP ON IND	namic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp OFF	Off	F
	Drive the vehicle and activate	Lane departure warning lamp ON	On	
LANE DPRT W/L	the LDW system or LDP sys- tem	Lane departure warning lamp OFF	Off	

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
LDW BUZER OUT-	Drive the vehicle and activate the LDW/LDP system or Blind	 When the buzzer of the following system operates LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	On
PUT	Spot Warning/Blind Spot Inter- vention system	 When the buzzer of the following system does not oper- ate LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	Off
	Start the engine and press dy-	When the LDP system is ON	On
LDP SYSTEM ON	Namic driver assistance switch (When LDP system setting is ON)	When the LDP system is OFF	Off
	Start the engine and press dy-	When the LDP system is ON	On
READY signal	(When LDP system setting is ON)	When the LDP system is OFF	Off
Shift position	Engine runningWhile driving		Displays the shift position
	Turn signal lamps OFF		Off
Turn signal	Turn signal lamp LH blinking		LH
rum signal	Turn signal lamp RH blinking	RH	
	Turn signal lamp LH and RH bl	inking	LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
		Vehicle turning left	
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not n	Off	
FUNC ITEM (NV- DCA)	NOTE: The item is indicated, but not n	nonitored	Off
DCA SELECT	lanition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is ON	On
		"Distance Control Assist" set with the vehicle informa- tion display is OFF	Off
I DP SELECT	lanition switch ON	"Lane Departure Prevention" set with the vehicle infor- mation display is ON	On
		"Lane Departure Prevention" set with the vehicle infor- mation display is OFF	Off
	Ignition switch ON	"Blind Spot Intervention" set with the vehicle information display is ON	On
BOISELEUT		"Blind Spot Intervention" set with the vehicle information display is OFF	Off
		When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
DRIVE MODE STATS	Ignition switch ON	 When position od drive mode select switch is in following states: In the middle of SNOW-ECO In the middle of ECO-STANDARD In the middle of STANDARD-SPORTS 	Mid
		A signal other than those above is input	ERROR
	Ignition switch ON	When warning systems switch is pressed	On
WARN SIS SW	Ignition switch ON	When warning systems switch is not pressed	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
		Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
BSW/BSI WARN LIMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
BSI ON IND		Blind Spot Intervention ON indicator OFF	Off
	Ignition owitch ON	When the BSW system is ON	On
BSW STSTEW UN		When the BSW system is OFF	Off
	Start the engine and press dy-	When the Blind Spot Intervention system is ON	On
BSI SYSTEM ON	namic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is OFF	Off
	LDP system fail lamp ON		On
LDP FAIL LAMP	Ignition switch ON	LDP system fail lamp OFF	Off
		LDW ON indicator ON	On
LUW ON LAMP	Ignition switch ON	LDW ON indicator OFF	Off
		LDW system fail lamp ON	On
ldw fail lamp	Ignition switch ON	LDW system fail lamp OFF	Off
SYSTEM_CANCEL_ MESSAGE	Engine running	Request signal to cancel warning systems	No request Slippery road Snow mode ON VDC OFF
CAM HI TEMP	legitien ewiteb ON	Camera temperature above 100°c (212°F)	On
MSG	Ignition switch ON	Camera temperature below 100°c (212°F)	Off
ITS Setting Item			On
(DCA)	Ignition switch ON	MENU> SETTINGS> DAS> DCA ON/OFF	Off
			On
ITS Setting Item (LDP)	Ignition switch ON	MENU> SETTINGS> DAS> LDP ON/OFF	Off
			On
ITS Setting Item (BSI)	Ignition switch ON	MENU> SETTINGS> DAS> BCI ON/OFF	Off
		BSI system fail lamp ON	On
BSI FAIL IND	Ignition switch ON	BSI system fail lamp OFF	Off
		BSW system indicator ON	On
BAAN ON IND	Ignition switch ON	BSW system indicator OFF	Off
		Sensor blocked warning message ON	On
SR_BLK_MSG	Ignition switch ON	Sensor blocked warning message OFF	Off
WARN_LANE_ TIMING	Engine running	Calibration is required	Nothing
BSW_IND_ BRIGHTNESS	Ignition switch ON	Adjust BRIGHTNESS as needed	Normal
	Drive the vehicle and activate	Lane departure warning is operating	On
	the LDP system	Lane departure warning is not operating	Off
FCW SELECT [ON/	Ignition switch ON	Forward Collision Warning set with the vehicle informa- tion display ON	On
OFF]		Forward Collision Warning set with the vehicle informa- tion display OFF	Off

< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Monitor item		Condition	Value/Status
LDW SELECT [ON/	lanition switch ON	Lane Departure Warning set with the vehicle informa- tion display ON	On
OFF]		Lane Departure Warning set with the vehicle informa- tion display ON	Off
BSW SELECT [ON/	lanition switch ON	Blind Spot Warning set with the vehicle information display ON	On
OFF]		Blind Spot Warning set with the vehicle information display ON	Off
ITS setting item	Ignition switch ON		On
(FCW) [ON/OFF]	Ignition Switch ON	MENO-SETTINGS-DAS-TOW ON/OTT	Off
ITS setting item	Ignition switch ON		On
(LDW) [ON/OFF]		MENU-SETTINGS-DAS-LDW UN/OFF	Off
ITS setting item	Ignition quitch ON		On
(BSW) [ON/OFF]	Ignition switch ON	MENUS SETTINGSS DASS BSW UN/OFF	Off
Ratteny circuit OEE	lanition switch ON	Battery circuit OFF	On
Ballery Circuit OFF		Battery circuit ON	Off

TERMINAL LAYOUT PHYSICAL VALUES



< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

Termir (Wire	ninal No. Description		Condition	Value	A					
+	_	Signal name	Input/ Output		Condition	(Approx.)	В			
1		Warning systems	Input	Ignition	When warning systems switch is not pressed	12 V				
(BR)		switch	input	ON	When warning systems switch is pressed	0 V	С			
4		Warning systems ON	Output	Ignition	Warning systems ON indi- cator ON	0 V	D			
(W)		indicator	Output	ON	Warning systems ON indi- cator OFF	12 V				
5		ICC brake hold relay		Ignition	—	12 V	E			
(G)		drive signal	Output	switch ON	At "STOP LAMP" test of "Active test"	0 V				
6 (B)		Ground	_	Ignition switch ON	_	0 V	F			
7 (L)	Ground	ITS communication-H	_	_	_	_	G			
8 (Y)		ITS communication-L	—	_	—	_				
10		BCI OFF switch	BCI OFF switch	BCI OFF switch	Ignition	Input	Ignition	When BCI OFF switch is not pressed	12 V	П
(BG)		Der er i switch	input	ON	When BCI OFF switch is pressed	0 V	I			
12				Ignition	Warning buzzer operation	0 V				
(G)		Warning buzzer signal	Output	switch ON	Warning buzzer not oper- ating	12 V	J			
14 (B)		CAN -H		_	_	_	L/			
15 (W)		CAN -L			_	_	Ň			
16 (R)		Ignition power supply	Input		Ignition switch ON	Battery Voltage	L			

Fail-safe

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

System	Buzzer	Warning lamp/Indicator lamp	Description	IN
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel	
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel	DAC
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel	Ρ
Forward Collision Warning (FCW)	High-pitched tone	Warning message	Cancel	
Distance Control Assist (DCA)	High-pitched tone	DCA system warning	Cancel	
Lane Departure Warning (LDW)		Lane departure warning lamp	Cancel	

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< ECU DIAGNOSIS INFORMATION >

[ADAS CONTROL UNIT]

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	_	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

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

Priority	Detected items (DTC)
1	C1A0A: CONFIG UNFINISHED U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)
2	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	 C1B00: CAMERA UNIT MALF C1F02: APA C/U MALF C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF

< ECU DIAGNOSIS INFORMATION >

Priority	Detected items (DTC)	
	C1A01: POWER SUPPLY CIR	
	C1A02: POWER SUPPLY CIR 2	
	C1A04: ABS/TCS/VDC CIRC	
	CTAU5: BRAKE SW/STOP L SW CTAU6: OPERATION SW/ CIRC	
	CIA00. OPERATION SW CIRC CIA12: LASER BEAM OFFCNTR	
	C1A13: STOP LAMP RLY FIX	
	C1A14: ECM CIRCUIT	
	C1A16: RADAR STAIN	
	C1A18: LASER AIMING INCMP	
	C1A2A: ICC SEN PWR SUP CIR	
	C1A21: ICC SENSOR HIGH TEMP	
	C1A24: NP RANGE	
	CIA33: CAN TRANSMISSION FRR	
	C1A34: COMMAND ERROR	
	• C1A35: APA CIR	
	C1A36: APA CAN COMM CIR	
	C1A37: APA CAN CIR 2	
	C1A38: APA CAN CIR 1	
	C1A39: STRG SEN CIR	
	CIA40: SYSTEM SW CIRC	
	CIBUL CAM AIMING INCOMP CIBUL CAM ARNEMI THE DETCT	
	CIB56: SONAR CIRCUIT	
	C1B57: AVM CIRCUIT	
	C1F01: APA MOTOR MALF	
	C1F05: APA PWR SUPLY CIR	
	U0121: VDC CAN CIR 2	
4	U0126: STRG SEN CAN CIR 1	
	• U0235: ICC SENSOR CAN CIRC 1	
	• UU4U1: ECM CAN CIR 1	
	• U0415: VDC CAN CIR 1	
	U0428: STRG SEN CAN CIR 2	
	• U1500: CAM CAN CIR 2	
	• U1501: CAM CAN CIR 1	
	U1502: ICC SEN CAN COMM CIR	
	U1503: SIDE RDR L CAN CIR 2	
	U1504: SIDE RDR L CAN CIR 1	
	U1505: SIDE RDR R CAN CIR 2	
	U 1500. SIDE RDR R CAN CIR T U1521: SONAR CAN COMMUNICATION	
	U1522: SONAR CAN COMMUNICATION U1522: SONAR CAN COMMUNICATION	
	U1523: SONAR CAN COMMUNICATION	
	U1524: AVM CAN COMMUNICATION	
	U1525: AVM CAN COMMUNICATION	
	U150B: ECM CAN CIRC 3	
	U150C: VDC CAN CIRC 3	
	U150D: TCM CAN CIRC 3	
	U150E: BCM CAN CIRC 3 U150E: AV CAN CIRC 3	
	• U1513: METER CAN CIRC 3	
	U1514: STRG SEN CAN CIRC 3	
	U1515: ICC SENSOR CAN CIRC 3	
	• U1516: CAM CAN CIRC 3	
	• U1517: APA CAN CIRC 3	
	U1518: SIDE RDR L CAN CIRC 3	
	U1519: SIDE RDR R CAN CIRC 3	
5	C1A03: VHCL SPEED SE CIRC	
6	C1A15: GEAR POSITION	
7	C1A00: CONTROL UNIT	

< ECU DIAGNOSIS INFORMATION >

DTC Index

[ADAS CONTROL UNIT]

INFOID:000000007911477

NOTE:

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

Systems for fail-safe

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

DTC				Warning lamp				Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-73</u>
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-102</u>
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-104</u>
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-105</u>
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	<u>CCS-109</u>
C1A0A	10	CONFIG UNFINISHED	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	Perform configuration
C1A12	12	LASER BEAM OFFCN- TR	ON	ON				A, C, D, E	<u>CCS-111</u>
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	CCS-113

< ECU DIAGNOSIS INFORMATION >

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В

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- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- · G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC	2			W	arning la	mp		Fail-safe		
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference	D F G
						Blind				
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-119</u>	
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-120</u>	
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	<u>CCS-122</u>	J
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	<u>CCS-124</u>	
C1A18	18	LASER AIMING INCMP	ON	ON				A, C, D, E	<u>CCS-125</u>	LZ.
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	<u>CCS-127</u>	K
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-129</u>	1
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	<u>CCS-131</u>	
C1A27	27	ECD PWR SUPLY CIR	ON	ON				A, B, C, D, E	<u>CCS-132</u>	
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	<u>CCS-134</u>	Μ
C1A34	34	COMMAND ERROR	ON					A, B, E	<u>CCS-135</u>	
C1A35	35	APA CIR	ON				ON	A, E, H	<u>CCS-136</u>	Ν
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	<u>CCS-137</u>	
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	<u>CCS-138</u>	
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	<u>CCS-139</u>	DAG
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-140</u>	
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	<u>CCS-133</u>	Ρ
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-416	
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	DAS-418	
C1B03	83	CAM ABNRML TMP DE- TCT							<u>DAS-420</u>	
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-575	
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-576	

< ECU DIAGNOSIS INFORMATION >

- Systems for fail-safe
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- H: Backup Collision Intervention (BCI)

DTC)			W	arning la	mp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1B56	87	SONAR CIRCUIT					ON	Н	DAS-742
C1B57	88	AVM CIRCUIT					ON	Н	<u>DAS-743</u>
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	<u>CCS-143</u>
C1F02	92	APA C/U MALF	ON				ON	A, E, H	<u>CCS-144</u>
C1F05	95	APA PWR SUPLY CIR	ON				ON	A, E, H	<u>CCS-145</u>
NO DTC IS DETECT- ED. FUR- THER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED							_
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-147</u>
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-149</u>
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	<u>CCS-151</u>
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-152</u>
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-153</u>
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-155</u>
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-157</u>
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-75</u>
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-76
U1500	145	CAM CAN CIR 2			ON	ON		F, G	DAS-436
U1501	146	CAM CAN CIR 1			ON	ON		F, G	<u>DAS-437</u>
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	<u>CCS-166</u>

< ECU DIAGNOSIS INFORMATION >

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- Systems for fail-safe
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- · G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC)			W	arning la	mp		Fail-safe		
						rning lamp				D
			amp	du	g lamp	ention wa	ention			E
CONSULT	On board display	CONSULT display	:m warning l	indicator la	ture warninç	Spot Interve	llision Interv	System	Reference	F
	uopiay		ICC syste	IBA OFF	Lane depar	arning/Blind	Backup Co			G
						Blind Spot W				Н
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	DAS-601	I
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-602	
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-603	J
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-604	
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-605	K
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-606	
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-162</u>	L
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-163</u>	
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-164</u>	Μ
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-165</u>	
U150F	161	AV CAN CIRC 3							<u>DAS-77</u>	
U1512	162	HVAC CAN CIRC3			ON	ON		F, G	<u>DAS-438</u>	Ν
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-167</u>	
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-168</u>	DAS
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	<u>CCS-169</u>	D/ 10
U1516	166	CAM CAN CIRC 3			ON	ON		F, G	<u>DAS-440</u>	Р
U1517	167	APA CAN CIRC 3	ON				ON	A, B, E, H	<u>CCS-170</u>	
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	<u>DAS-611</u>	
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-612	
U1521	177	SONAR CHECKSUM					ON	Н	DAS-779	
U1522	178	SONAR MESSAGE					ON	Н	DAS-780	

< ECU DIAGNOSIS INFORMATION >

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DTC	2			W	arning la	mp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
U1523	179	SONAR CAN DLC					ON	Н	<u>DAS-781</u>
U1524	180	SONAR CAN DLC					ON	Н	<u>DAS-782</u>
U1525	181	AVM MESSAGE					ON	Н	<u>DAS-783</u>

NOTE:

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

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

WIRING DIAGRAM А DRIVER ASSISTANCE SYSTEMS Wiring Diagram INFOID:000000007911478 В 200NL ECTOR 200BB3 (BK) : WITH PRE-CRASH SEAT BELT SYSTEM BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR LH С SIDE RADAR LH (B416) D B400 (BRO BSO B7) (E JOINT CONNECTOR-B01 (B63) 13 12 9 B77 Е JOINT CONN-ECTOR B147 20 F JOINT CONNECTOR B146 B32 B124 G ЦN DATA LINE DATA | B08 B08 B115 Н 698 14A 80A JOINT CONNECTOR -M29 (M38) M40) 8 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR RH (D111) SIDE RADAR RH B109 ADAS CONTROL UNIT (B104) I FUSE BLOCK(J/B) (M3), (M4), (M68), (E28) CONNECTOR-M28 M37) J L6M BIOT M84 [10] CONTROL UNIT (M96) 8 Ċ. Κ ¢ DOINT CONNECTOR-B08 (B115) ရွ 5A L IGNITION SWITCH ON OR START M84 B101 10A 2 າລ 9 Μ TWIN SWITCH (WARNING SYSTEM SWITCH) (M126) DRIVE ASSISTANCE SYSTEM 20 M189 M188 10A BATTERY Z Ν F 19 N M189 22 С (M189 DAS 5 M36 B136 M188 ŝ WARNING¹ BUZZER (M60) Ρ

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< WIRING DIAGRAM >



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[ADAS CONTROL UNIT]



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< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEMS

[ADAS CONTROL UNIT]



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[ADAS CONTROL UNIT]









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< WIRING DIAGRAM >







Connector No B32 Connector Name WRE TO WIRE Connector Name WIRE TO WIRE Connector Color WHITE Mis 1110 1110 Mis 1110 1110 1110 Mis 1110 1110 1110 1110 Mis 1110 1110 1110 1110 1110 Mis 1110				
Connector Name WIRE TO WIRE Connector Color WHITE (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	Connector No	<u>п</u>	52	
Connector Color WHITE Mission Mission Mission Mission Mission Mission Mission Mission Connector Color of Signal Name 20 Y 21 L	Connector Na	v me	IRE TO WIR	Ш
Terminal No. Color of Signal Name 20 Y L	Connector Co	lor V	HITE	
Terminal No. Color of Wire Signal Name 20 Y L -	品. H.S.			
16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 22 31 30 23 22 21 20 19 18 17 Terminal No. Color of Signal Name 20 Y - - 21 L L - -			[
Terminal No.Color of WireSignal Name20Y-21L-	16 15 14 13 12 32 31 30 29 28	27 26	3 3 7 6 5 5 24 23 22 21 1	4 3 2 1 20 19 18 17
Terminal No. Color of Wire Signal Name 20 Y - 21 L -				
20 Y – 21 L –	Terminal No.	Color Wire	of Sigr	nal Name
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Connector No.

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Signal Name - BCP OFF SW - - - - - - - - - - - - -	Color of Write BG	Terminal No. 9 9 111 111 110 113 110 110 110 110 110 110	Dds CONTROL UNIT HITE 7 6 6 4 3 2 1 15 4 1 31 2 11 10 9 16 Signal Name WARNING SYSTEM SW - WARNING SYSTEM SW - MARNING SYSTEM SIGNAL - DRIVE SIGNAL GND ITS COMM-H ITS COMM-H	Innector No. Innector Name Al Innector Name Al Innector Name Al Innector Color Innel No. Color V 3 3 - - - - 3 - - - - - - 7 - - - - - - - 7 -
Signal Nan		Terminal No.		acceter Namo
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Signal Name	Color of	Terminal No	115	nnector No. B
			ITS COMM-L	8
			ITS COMM-H	7 L
			GND	6 B
			BRAKE HOLD RLY DRIVE SIGNAL	5 G
			WARNING SYSTEM ON IND	4 W
			1	۱ ۳
			I	2
		,	WARNING SYSTEM SW	1 BR
IGNITION	щ	16		Wire More
CAN-L	×	15	of Signal Name	Color of Color of
CAN-H	В	14		
I	I	13	15 14 13 12 11 10 9	6
WARNING BUZZE	9	12	7 6 5 4 3 2 1	8
I	I	11		
BCP OFF SW	BG	10		
Ι	I	6		
Signal Name	Color of Wire	Terminal No.	DAS CONTROL LINIT	nnector No. b

Signal Name	I	I	-	I	I	I	I	I	I	I	I	I	Н
Color of Wire	в	GR	SHIELD	В	щ	Н	×	M	В	В	GR	SHIELD	В
Terminal No.	6	10	11	19	20	21	27	28	59	30	31	32	33



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Signal Name	1	I	I	
Color of Wire	Μ	ш	SHIELD	
Terminal No.	5	9	7	

Signal Name	I	I	I	I	I
Color of Wire	В	BR	В	ГG	Y
Terminal No.	1	4	5	7	8



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	Signal Name	I	I	I	I	
	Color of Wire	В	ГG	BR	۲	
J	Terminal No.	5	9	7	8	

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< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEMS


< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

DTC DETECTION LOGIC

DTC (On board play)	dis- Trouble diagnosis name	DTC detecting condition	Possible causes				
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit				
OTC CONFIRMATION PROCEDURE							
1. PERFC	ORM DTC CONFIRMATION	N PROCEDURE					
 Start t Performanda Check 	he engine. m "All DTC Reading" with (if the "C1A00" is detected	CONSULT. as the current malfunction in "Self Dia	ignostic Result" of "ICC/ADAS".				
Is "C1A00" detected as the current malfunction?							
YES > NO >	> Refer to <u>DAS-73, "Diagn</u> > INSPECTION END	osis Procedure".					
Diagnos	is Procedure		INFOID:00000007911480				
1. CHEC	SELF-DIAGNOSIS RESU	JLTS					
Check if a	ny DTC other than "C1A00	is detected in "Self Diagnostic Result	" of "ICC/ADAS".				
ls any DT	C detected?						
YES >	YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-48, "DTC Index"</u> .						
NO >	> Replace the ADAS contr	ol unit. Refer to <u>DAS-79, "Removal an</u>	<u>d Installation"</u> .				

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C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 < DTC/CIRCUIT DIAGNOSIS > [ADAS CONTROL UNIT]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000007911481

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

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

- YES >> Refer to <u>DAS-74</u>, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911482

1. CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-78, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> Repair or replace the malfunctioning parts.

< DTC/CIRCUIT DIAGNOSIS >

U1000 CAN COMM CIRCUIT

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-39</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.

DTC Logic

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DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes	I
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiv- ing CAN communication signal or ITS communi- cation signal for 2 seconds or more	CAN communication systemITS communication system	

NOTE:

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

Diagnosis Procedure

1.PERFORM THE SELF-DIAGNOSIS

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

Is "U1000" detected as the current malfunction?

- YES>> Refer to LAN-22, "Trouble Diagnosis Flow Chart".NO>> Refer to GI-53, "Intermittent Incident".
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< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description

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

DTC Logic

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DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000007911488

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the MAIN switch of ICC system ON.

2. Perform "All DTC Reading" with CONSULT.

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

Is "U1010" detected as the current malfunction?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> INSPECTION END

U150F AV CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150F AV CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes			
U150F (161)	AV CAN CIRC 3 ADAS control unit detects an error signal that is received from AV control unit via CAN communication AV control unit					
NOTE: If DTC "U150F Logic <u>"</u> .	-" is detected along wi	th DTC "U1000", first diagnose the DTC	C "U1000". Refer to <u>DAS-75, "DTC</u>			
OTC CONFIF	RMATION PROCED	JRE				
1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE				
 2. Turn the L 3. Perform <i>"i</i> 4. Check if the second s	All DTC Reading" with he "U150F" is detected tected as the current n efer to DAS-77, "Diagr efer to GI-53, "Intermit	pot Intervention system ON. CONSULT. I as the current malfunction in "Self Diag <u>nalfunction?</u> nosis Procedure". tent Incident"	gnostic Result" of "ICC/ADAS".			
Diagnosis I	Procedure		INFOID:000000007911490			
1.CHECK SE	ELF-DIAGNOSIS RES	JLTS				
Check if "U10	00" is detected other th	nan "U150F" in "Self Diagnostic Result"	of "ICC/ADAS".			
<u>s "U1000" de</u> t	tected?					
YES >> Po	erform the CAN comm efer to <u>DAS-75, "DTC</u>	nunication system inspection. Repair or Logic".	replace the malfunctioning parts.			
Check if any L	DIC is detected in "Sel	f Diagnostic Result" of "MULTI AV".				
YES >> Po	erform diagnosis on th	e detected DTC and repair or replace	the malfunctioning parts. Refer to			
NO >> R	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".			

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[ADAS CONTROL UNIT]

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< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

Regarding Wiring Diagram information, refer to DAS-53, "Wiring Diagram".

1. CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

	Terminal	Condition		
(+)	(-)	Condition	Voltage
ADAS co	ontrol unit		Ignition	(Approx.)
Connector	Terminal		switch	
		Ground	OFF	0 V
B104	16		ON	Battery volt- age

Is the inspection result normal?

YES >> GO TO 2.

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

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect the ADAS control unit connector.

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

ADAS co	ontrol unit		Continuity
Connector	Terminal	Ground	Continuity
B104	6		Yes

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

INFOID:000000007911491

REMOVAL AND INSTALLATION ADAS CONTROL UNIT

- 1. Disconnect the battery negative terminal.
- 2. Remove the storage box. Refer to INT-31, "STORAGE BOX : Removal and Installation".
- 3. Disconnect the harness connector (A) from the ADAS control unit (1).
 - Critic (1).
- 4. Remove bolts (
- 5. Lift upward to remove ADAS control unit (1).



INSTALLATION

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)

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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. This system includes dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. 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 3 minutes before performing any service.

Precautions For Harness Repair

INFOID:000000007911494

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

< PRECAUTION >

DCA System Service

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CAUTION:

•	Turn the MAIN	switch	OFF in	conditions	similar t	to driving,	such as	free	rollers	or a	chassis	dyna-
	mometer.											

- Never use the millimeter wave sensor removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of DCA system, then check the operation of DCA system after performing radar beam alignment, if necessary.

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000007911496



COMPONENT PARTS

tem warning lamp, buzzer (On the combination meter)

Accelerator pedal actuator

ICC brake hold relay

< SYSTEM DESCRIPTION >

- 1. Combination meter Refer to DAS-83, "Component Description".
- 4. Steering angle sensor (view with steer- 5. ing wheel removed) Refer to DAS-83, "Component Description".
- 7. Millimeter wave sensor (view with front 8. fascia removed) Refer to DAS-83, "Component Description".
- 10. TCM Refer to DAS-83, "Component Description".
- 13. ADAS control unit (view of rear luggage room area with rear panel assembly removed) Refer to DAS-83, "Component Description".

Component Description

11. ICC brake switch

2.

- Vehicle information display, ICC sys-3. ICC steering switch
 - 6. ABS actuator and electric unit (control unit) Refer to DAS-83, "Component Description".
 - 9. ECM Refer to DAS-83, "Component Description".
 - 12. Stop lamp switch

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Component	Description
ADAS control unit	 ADAS control unit calculates a target distance between vehicles and a target speed, based on signals received from each sensor and switch to transmit a brake fluid pressure control signal to ABS actuator and electric unit (control unit) via CAN communication ADAS control unit transmits the buzzer output signal to the combination meter via CAN communication ADAS control unit transmits an accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication
Millimeter wave sensor	 Millimeter wave sensor detects light reflected from a vehicle ahead by emitting millimeter waves forward and calculates a distance from the vehicle ahead and a relative speed, based on the detected signal Millimeter wave sensor transmits the presence/absence of vehicle ahead and the distance from the vehicle to ADAS control unit via ITS communication
ECM	ECM transmits the accelerator pedal position signal, ICC brake switch signal, stop lamp switch signal, ICC steering switch signal, etc. to ADAS control unit via CAN communication
ABS actuator and electric unit (control unit)	 ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), stop lamp signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication ABS actuator and electric unit (control unit) controls the brake, based on a brake fluid pressure control signal received from ADAS control unit via CAN communication
ТСМ	TCM transmits the signal related to CVT control to ADAS control unit via CAN communi- cation
Combination meter	 Performs the following operations using the signals received from the ADAS control unit via the CAN communication Displays the DCA system operation status using the meter display signal Illuminates the ICC system warning lamp using the ICC warning lamp signal Operates the buzzer (ICC warning chime) using the buzzer output signal
Dynamic driver assistance switch (On the ICC steering switch)	ECM receives an ICC steering switch (dynamic driver assistance switch) signal and trans- mits the signal to ADAS control unit via CAN communication
ICC brake hold relay	ICC brake hold relay activates the stop lamp by ICC brake hold relay drive signal (stop lamp drive signal) outputted by the ADAS control unit

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

Component	Description
ICC brake switch	ICC brake switch is turned OFF and stop lamp switch is turned ON, when depressing the brake negative
Stop lamp switch	 ICC brake switch signal is input to ECM. These signals are transmitted from ECM to ADAS control unit via CAN communication Stop lamp switch signal is input to ECM and ABS actuator and electric unit (control unit). These signals are transmitted from ECM and ABS actuator and electric unit (control unit) to ADAS control unit via CAN communication
AV control unit	AV control unit transmits the system selection signal to the ADAS control unit via CAN communication
Steering angle sensor	Measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ADAS control unit via CAN communication
Accelerator pedal actuator	Accelerator pedal actuator receives an accelerator pedal feedback force control signal from the ADAS control unit via ITS communication and pushes back the accelerator pedal

< SYSTEM DESCRIPTION >

SYSTEM

System Description

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

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SYSTEM

< SYSTEM DESCRIPTION >

Transmit unit		Signal name	9	Description	
		Closed throttle positi	on signal	Receives idle position state (ON/OFF)	
		Accelerator pedal po	sition signal	Receives accelerator pedal position (angle)	
ECM	CAN com- munica-	ICC steering switch signal	Dynamic driver as- sistance switch sig- nal	Receives the operational state of the ICC steering switch	
	uon	Engine speed signal		Receives engine speed	
		Stop lamp switch sig	nal	Receives an operational state of the brake pedal	
		Snow mode switch s	ignal	Receives an operational state of the snow mode	
		Input speed signal		Receives the number of revolutions of input shaft	
том	CAN com-	Current gear positior	n signal	Receives a current gear position	
T CIVI	tion	Shift position signal		Receives a selector lever position	
		Output shaft revolution	on signal	Receives the number of revolutions of output shaft	
		ABS malfunction sign	nal	Receives a malfunction state of ABS	
	CAN com- munica- tion	ABS operation signal		Receives an operational state of ABS	
		ABS warning lamp signal		Receives an ON/OFF state of ABS warning lamp	
		TCS malfunction sign	nal	Receives a malfunction state of TCS	
ABS actuator		TCS operation signa	l	Receives an operational state of TCS	
and electric unit		VDC OFF switch signal		Receives an ON/OFF state of VDC	
(control unit)		VDC malfunction sig	nal	Receives a malfunction state of VDC	
		VDC operation signa	I	Receives an operational state of VDC	
		Vehicle speed signal (ABS)		Receives wheel speeds of four wheels	
		Stop lamp switch sig	nal	Receives an operational state of the brake pedal	
		Yaw rate signal		Receives yaw rate acting on the vehicle	
		Steering angle sense	or malfunction signal	Receives a malfunction state of steering angle sensor	
Steering angle sensor	CAN com- munica-	CAN com- nunica- Steering angle sensor signal		Receives the number of revolutions, turning direction of the steering wheel	
		Steering angle speed	l signal	Receives the turning angle speed of the steering wheel	
Combination meter	CAN com- munica- tion	System selection signal		Receives a selection state of each item in "Driving Aids" selected with the vehicle information display	
Millimeter wave sensor	ITS com- munica- tion	Millimeter wave sensor signal		Receives detection results, such as the presence or ab- sence of a vehicle ahead and distance from the vehicle	
Accelerator pedal actuator	ITS com- munica- tion	Accelerator pedal act signal	tuator operation status	Receives an operational state of accelerator pedal ac- tuator	

Output Signal Item

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

< SYSTEM DESCRIPTION >

Reception unit		Signal na	ime	Description
Combination	CAN commu-	Meter display	Vehicle ahead detec- tion indicator signal	Transmits a signal to display a state of the system on
		signal	DCA system switch in- dicator signal	the information display
meter	nication	ICC warning lamp signal		Transmits an ICC warning lamp signal to turn ON the ICC system warning lamp
		Buzzer output signal		Transmits a buzzer output signal to activate the buzz- er
Millimeter wave sensor	ITS commu- nication	Vehicle speed signal		Transmits a vehicle speed calculated by the ADAS control unit
		Steering angle	sensor signal	Transmits a steering angle sensor signal received from the steering angle sensor
Accelerator ITS commu-		Accelerator pedal position signal		Transmits an accelerator pedal angle calculated by the ADAS control unit
pedal actuator	nication	Accelerator pedal feedback force control signal		Transmits a target actuation force value calculated by the ADAS control unit
ICC brake hold relay	ICC brake hold	d relay drive signa	al	Activates the brake hold relay and turns ON the stop lamp

FUNCTION DESCRIPTION

When a vehicle is detected ahead

· The vehicle ahead detection indicator comes ON.

When vehicle approaches a vehicle ahead

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

When brake operation by driver is required

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

CAUTION:

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

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

OPERATION DESCRIPTION

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

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SYSTEM

< SYSTEM DESCRIPTION >

When vehicle approaches a vehicle ahead	If the driver is not depressing the acceler- ator pedal, the system activates the brakes to decelerate smoothly as neces- sary	↓ JSOIA0222ZZ
	If the driver is depressing the accelerator pedal, the system moves the accelerator pedal upward to assist the driver to re- lease the accelerator pedal	JSOIA0094ZZ
When brake operation by driver is required	The system alerts the driver by a warning chime and blinking the vehicle ahead de- tection indicator. If the driver is depressing the accelerator pedal after the warning, the system moves the accelerator pedal upward to assist the driver to switch to the brake pedal	Warn by binking indicator and chime sound

Deceleration control	It transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) via CAN communication and performs the brake control
Accelerator pedal actuation control	It transmits the accelerator pedal feedback force control signal to the accelerator pedal actuator via ITS communication and controls the accelerator pedal in the upward direction

Operation Condition

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

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

No Operation Condition

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

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

Operation Cancellation Condition

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

- When the dynamic driver assistance switch is turned to OFF.
- When the system malfunction occurs.
- When ABS or VDC (including the TCS) operates.
- When the VDC is turned OFF.
- When the SNOW mode switch is turned ON.
- When the sensor area of the front bumper is dirty and the measurement of the distance between the vehicles becomes difficult.

Operation At The Driver Operation

Give priority to the driver operation in the following situation.

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

SYSTEM

Fail-safe (ADAS Control Unit)

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

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

Fail-safe (Millimeter Wave Sensor)

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

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OPERATION

Switch Name and Function



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

Menu Displayed by Pressing Each Switch

SYSTEM DISPLAY



No.	Switch name	Description
1	Dynamic driver assistance switch OFF	Indicates that DCA system is OFF.
2	Dynamic driver assistance switch ON (DCA set)	Indicates that DCA system is ON with no vehicle ahead

DISPLAY AND WARNING LAMP

System Control Condition Display

The DCA system indicator on the vehicle information display illuminates when the system is turned ON by pressing the dynamic driver assistance switch.

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OPERATION

< SYSTEM DESCRIPTION >

	Condition	Display on combination meter	A
Operation status	System set display with vehicle ahead	DCA Aloia008922	
	System set display with out vehicle ahead		D
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		ALOIA0090ZZ	Г

Approach Warning Display

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

Warning Lamp Display

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OPERATION

< SYSTEM DESCRIPTION >

	Condition	Description	Display on combination meter	
Warning display	When the dynamic driver assistance switch is turned ON with settings of DCA system, LDP system and Blind Spot Intervention system OFF	The DCA system is not activated. The DCA system switch indicator blinks.	Unavailable: Road is slippery	
	 When the road is slippery and VDC or ABS (including the TCS) operates When the VDC is turned OFF When the SNOW mode switch is turned ON 	The DCA system is automatically can- celed. The chime will sound and the DCA system switch indicator will blink. NOTE: The system operates if the dynamic driver assistance switch is turned OFF⇒ON after the condition improves.	Unavailable: Snow Mode Active Unavailable: VCD OFF _{ALOIA0} p9122	
	When the sensor window is dirty, mak- ing it impossible to detect a vehicle ahead	The DCA system is automatically can- celed. The chime sounds and the ICC sys- tem warning lamp will come on and the "Sensor Blocked" indicator will appear. NOTE: Stop the vehicle in a safe location and turn the ignition switch OFF. Clean the dirty ar- ea. The system returns to normal condition when turning the ignition switch ON again.	SENSOR BLOCKED	
	When the DCA system is not operating properly	The chime sounds and the DCA system warning indicator (orange) will come on. NOTE: Turn the ignition switch OFF, and then turn the ignition switch ON again. If there is no malfunction, the system returns to the normal condition.		

NOTE:

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

Precautions for Distance Control Assist

< SYSTEM DESCRIPTION >

- Stationary and slow moving vehicles - Pedestrians or objects in the roadway - Oncoming vehicles in the same lane - Motorcycles traveling offset in the travel lane between vehicles. accidents, never use the DCA system under the following conditions. - On roads with sharp curves - On slippery road surfaces such as on ice or snow, etc. - On off-road surfaces such as on sand or rock, etc. - During bad weather (rain, fog, snow, etc.) - When rain, snow or dirt adhere to the system sensor - On steep downhill roads (frequent braking may result in overheating the brakes) - On repeated uphill and downhill roads - When towing a trailer or other vehicle The following are some conditions in which the sensor cannot detect the signals. - When the snow or road spray from traveling vehicles reduces the sensor's visibility When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle The DCA system is designed to automatically check the sensor's operation. When the front bumper area of vehicle properly. Be sure to check and clean the sensor regularly. The DCA system is designed to help assist the driver to maintain a following distance from the vehicle driver to take necessary action. The DCA system does not control vehicle speed or warn when driver approach stationary and slow moving vehicles. Driver must pay attention to vehicle operation to maintain proper distance from vehicles ahead.
- If the vehicle ahead comes to a stop, the vehicle decelerates to a standstill within the limitations of the system. The system will cancel once it judges that the vehicle has come to a standstill with a warning chime. To prevent the vehicle from moving, the driver must depress the brake pedal.
- The DCA system will not apply brake control while the driver is depressing the accelerator pedal.
- This system is only an aid to assist the driver and is not a collision warning or avoidance device. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- This system will not adapt automatically to road conditions. Do not use the system on roads with sharp curves, or on icy roads, in heavy rain or in fog.
- The distance sensor will not detect under most conditions.
 - As there is a performance limit to the distance control function, never rely solely on the DCA system. This system does not correct careless, inattentive or absent-minded driving, or overcome poor visibility in rain, E fog, or other bad weather. Decelerate the vehicle speed by depressing the brake pedal, depending on the distance to the vehicle ahead and the surrounding circumstances in order to maintain a safe distance
 - The system may not detect the vehicle in front of own vehicle in certain road or weather conditions. To avoid

- In some road or traffic conditions, a vehicle or object can unexpectedly come into the sensor detection zone and cause automatic braking. Driver may need to control the distance from other vehicles using the accelerator pedal. Always stay alert and avoid using the DCA system when it is not recommended in this section.
- the distance sensor is covered with dirt or is obstructed, the system will automatically be cancelled. If the front bumper area of the distance sensor is covered with ice, a transparent or translucent vinyl bag, etc., the DCA system may not detect them. In these instances, the DCA system may not be able to decelerate the
- ahead. The system will decelerate as necessary and if the vehicle ahead comes to a stop, the vehicle decelerates to standstill. However, the DCA system can only apply up to 25% of the vehicles total braking power. If a vehicle moves into the traveling lane ahead or if a vehicle traveling ahead rapidly decelerates, the distance between vehicles may become closer because the DCA system cannot decelerate the vehicle quickly enough. If this occurs, the DCA system will sound a warning chime and blink the system display to notify the
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HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

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

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



- ahead. Manually brake when deceleration is required to maintain a safe distance upon sudden braking by the vehicle ahead or when a vehicle suddenly appears in front of own vehicle. Always stay alert when using
- the DCA system.
- When the vehicle ahead detection indicator lamp is not illuminated, system will not control or warn the driver.
- Depending on the position of the accelerator pedal, the system may not be able to assist the driver to release the accelerator pedal appropriately.
- If the vehicle ahead comes to a standstill, the vehicle decelerates to a standstill within the limitations of the system. The system will release brake control with a warning chime once it judges the vehicle is at a standstill. To prevent the vehicle from moving, the driver must depress the brake pedal. [The system will resume control automatically once the system reaches 5 km/h (3 MPH)].





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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

On Board Diagnosis Function

DESCRIPTION

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

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)
- 1. Turn the ignition switch OFF.
- 2. Start the engine.
- Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.
 NOTE:

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



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to <u>DAS-48</u>, "<u>DTC Index</u>".



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

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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

Assumed abnormal part		Inspection item	
Information display Combination meter malfunction		Check that the self-diagnosis function of the combina- tion meter operates. Refer to <u>MWI-17</u> , " <u>Description</u> "	
ICC steering switch malfunc	tion		
Harness malfunction between ICC steering switch and ECM		Perform the inspection for DTC"C1A06". Refer to <u>CCS</u> 109 "Diagnosis Procedure"	
ECM malfunction			
ADAS control unit malfunction		 Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-78, "Diagnosis Procedure"</u>. Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to <u>DAS-48, "DTC Index"</u>. 	

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

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

NOTE:

- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- · If the operation is not completed within 10 seconds, repeat the procedure from step 1.
- 4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

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

CONSULT Function (ICC/ADAS)

INFOID:000000008368250

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
Work Support	Displays causes of automatic system cancellation occurred during system control
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 Mntr	The result of transmit/receive diagnosis of CAN communication is displayed

WORK SUPPORT

10 sec ON CANCEL switch OFF ON DISTANCE switch OFF PKIB8373B

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Work support items	Description	/
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following sys- tems Vehicle-to-vehicle distance control mode Conventional (fixed speed) cruise control mode Distance Control Assist (DCA) 	E
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following sys- tems Lane Departure Prevention (LDP) Blind Spot Intervention 	(
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following sys- tems • Backup Collision Intervention (BCI)	

NOTE:

• Causes of the maximum five cancellations (system cancel) are displayed.

• The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description	G H J K
OPERATING ABS	×		×	ABS function was operated	
OPERATING TCS	×	×	×	TCS function was operated	L
OPERATING VDC	×	×	×	VDC function was operated	
ECM CIRCUIT	×	×		ECM did not permit ICC operation	
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range	M
LASER TEMP	×		×	Temperature around millimeter wave sensor became low	
SNOW MODE SW	×		×	SNOW mode switch was pressed	Ν
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time	
VHCL SPD DOWN	×	×	×	 Vehicle speed lower than the speed as follows Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH) 	DAS
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise	Ρ
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed	
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from CVT vehicle speed	
FR RADAR BLOCKED	×		×	The front bumper near the millimeter sensor is blocked or dirty	
TIRE SLIP	×	×		Wheel slipped	
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	

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

Display Items for The Cause of Automatic Cancellation 2

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

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Cause of cancellation	Lane departure prevention	Blind spot intervention	Description	
SNOW MODE SW	×		SNOW mode switch was pressed	
VDC OFF SW	×		VDC OFF switch was pressed	D
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control	
BSI WARNING	×		Blind Spot Intervention system was activated	
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control	E
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value	
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction	F
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control	
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction	G
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated	
BSI) CURVATURE		×	Road curve was more than the specified value	
BSI) Steering angle large		×	Steering angle was more than the specified value	
BSI) Brake is operated		×	Brake pedal was operated	
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage	
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified	
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker	J
BSI) Lane marker un- clear		×	Detected lane marker was unclear	
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value	K
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value	
BSI) Accel is operated		×	Accelerator pedal was depressed	L
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction	
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction	
BSI) R range		×	Selector lever was operated to R range	
BSI) Parking brake drift		×	Rear wheels lock was detected	
BSI) SNOW MODE SW		×	SNOW mode switch was pressed	Ν
BSI) VDC OFF SW		×	VDC OFF switch was pressed	
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control	DAS
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)	
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit	Ρ
NO RECORD	×	×	_	

Display Items for The Cause of Automatic Cancellation 3

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[DCA]

Cause of cancellation	Backup Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	_

SELF DIAGNOSTIC RESULT Refer to <u>DAS-48. "DTC Index"</u>.

DATA MONITOR

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means "controlling")
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output

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(LDW/LDP) MAIN SIG (BSW/BSI) G ALL SIG (ICC) MAIN SIG (ICC) MAIN SIC (BCI) А Monitored item Description [Unit] Indicates vehicle speed calculated from ADAS control unit through CAN com-VHCL SPEED SE × × × X × munication [ABS actuator and electric unit (control unit) transmits vehicle speed [km/h] or [mph] signal (wheel speed) through CAN communication] SET VHCL SPD Indicates set vehicle speed memorized in ADAS control unit × X [km/h] or [mph] **BUZZER O/P** Indicates [On/Off] status of ICC warning chime output × Х [On/Off] ENGINE RPM Indicates engine speed read from ADAS control unit through CAN communica-Х tion (ECM transmits engine speed signal through CAN communication) [rpm] WIPER SW Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request E × [OFF/LOW/HIGH] signal through CAN communication) **BA WARNING** Indicates [On/Off] status of IBA OFF indicator lamp output × [On/Off] F STP LMP DRIVE × × × Indicates [On/Off] status of ICC brake hold relay drive output [On/Off] Indicates [On/Off] status of "D" or "M" positions read from ADAS control unit D RANGE SW through CAN communication; ON when position "D" or "M" (TCM transmits shift × [On/Off] position signal through CAN communication). NP RANGE SW Indicates shift position signal read from ADAS control unit through CAN commuх Н nication (TCM transmits shift position signal through CAN communication) [On/Off] Parking brake switch status [On/Off] judged from the parking brake switch signal PKB SW that ADAS control unit readout via CAN communication is displayed (Combina-X [On/Off] tion meter transmits the parking brake switch signal via CAN communication) **PWR SUP MONI** Indicates IGN voltage input by ADAS control unit × × [V] Indicates vehicle speed calculated from CVT vehicle speed sensor read from VHCL SPD CVT × ADAS control unit through CAN communication (TCM transmits CVT vehicle [km/h] or [mph] speed sensor signal through CAN communication) Indicates throttle position read from ADAS control unit through CAN communi-THRTL OPENING cation (ECM transmits accelerator pedal position signal through CAN communi-X × × [%] cation). MODE SIG Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise х [OFF, ICC, ASCD] control model SET DISP IND Indicates [On/Off] status of SET switch indicator output × [On/Off] M DISTANCE Indicates the distance from the vehicle ahead X [m] RELATIVE SPD Indicates the relative speed of the vehicle ahead Ν X [m/s] DYNA ASIST SW Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans-× [On/Off] mits ICC steering switch signal through CAN communication) DAS DCA ON IND The status [On/Off] of DCA system switch indicator output is displayed х [On/Off] DCA VHL AHED The status [On/Off] of vehicle ahead detection indicator output in DCA system × Ρ [On/Off] is displayed FCW SYSTEM ON Indicates [On/Off] status of FCW system × × [On/Off] Accelerator pedal actuator integrated motor temperature that the ADAS control APA TEMP × unit readout via ITS communication is displayed (Accelerator pedal actuator х [°C] transmits the integrated motor temperature via ITS communication)

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Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)	
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system	
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of waning systems ON indicator output	
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output	
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output	
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output	
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
READY signal [On/Off]			×			Indicates LDP system settings	
Camera lost [Detect/Deviate/ Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection sig- nal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)	
Shift position [Off, P, R, N, D, M/ T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communica- tion (TCM transmits shift position signal through CAN communication)	
Turn signal [OFF/LH/RH/ LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)	
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)	
STATUS signal [Stnby/Warn/Cancl/ Off]			×			Indicates a control state of LDP system	
Lane unclear [On/Off]			×	×		Indicates an On/Off state of the lane marker. The On/Off state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)	
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to On/Off by selecting "Driver Assistance" ⇒"Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention	
DCA SELECT [On/Off]	×	×	×	×		Indicates an On/Off state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	

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(LDW/LDP) MAIN SIG (BSW/BSI) MAIN SIG (BCI) Ċ ALL SIG MAIN SIG (ICC) А (ICC) Monitored item Description [Unit] Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Inter-BSI SELECT vention system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dy-× × × × [On/Off] namic Assistance Settings" of the meter system WARN SYS SW x Indicates [On/Off] status of warning systems switch X × X [On/Off] **BSW/BSI WARN** Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning LMP х lamp output [On/Off] **BSI ON IND** Indicates [On/Off] status of Blind Spot Intervention ON indicator output Х [On/Off] Ε BSW SYSTEM ON Indicates [On/Off] status of BSW system × [On/Off] **BSI SYSTEM ON** Indicates [On/Off] status of Blind Spot Intervention system F × [On/Off] BCP ON Indicates [On/Off] status of BCP system × [On/Off] BCI SW ADAS Indicates [On/Off] status of Backup Collision Intervention system X [On/Off] LDP FAIL LAMP Indicates [On/Off] status of Lane Departure Prevention system failure lamp X X Н [On/Off] LDW ON LAMP Indicates [On/Off] status of LDW system X Х [On/Off] LDW FAIL LAMP Indicates [On/Off] status of Lane Departure Warning system failure lamp X × [On/Off] SYSTEM_CANCEL MESSAGE × x × x Indicates system cancel message request [Request/No Request] CAM_HI_TEMP_M SG Indicates high temperature message has been received × X [On/Off] **ITS Setting** Item(DCA) Indicates [On/Off] status of Distance Control Assist installation х × X X [On/Off] **ITS Setting** Μ Item(LDP) Indicates [On/Off] status of Lane Departure Prevention × × × × [On/Off] ITS Setting Ν Item(BSI) Indicates [On/Off] status of Blind Spot Intervention system X X × × [On/Off] **BSI FAIL IND** Indicates [On/Off] status of Blind Spot Intervention X [On/Off] DAS BSW ON IND Indicates [On/Off] status of BSW system × [On/Off] SR_BLK_MSG Ρ Indicates [On/Off] status of messages received X [On/Off] WARN_LANE_TIMI NG [-] Indicates [On/Off] status of warning lane timing × [On/Off] BSW IND BRIGHT NESS Indicates BSW warning lamp indicator brightness level × [Bright/Not Bright]

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< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
FCW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Forward Collision Warning system. Forward Collision Warning system can be set to On/Off by selecting "Driver Assistance"⇒ "Dynamic Assistance Settings" of the navigation system	
LDW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Lane Departure Warning system. Lane Departure Warning system can be set to On/Off by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system	
BSW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Blind Spot Warning system. Blind Spot Warning system can be set to On/Off by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system	
ITS setting item (FCW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Forward Collision Warning	
ITS setting item (LDW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Lane Departure Warning	
ITS setting item (BSW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Blind Spot Warning	

ACTIVE TEST

CAUTION:

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

Test item	Description
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Intelligent Cruise Control (ICC) Distance Control Assist (DCA) Forward Collision Warning (FCW) Intelligent Brake Assist (IBA)
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Lane Departure Warning (LDW) Lane Departure Prevention (LDP) Blind Spot Warning (BSW) Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF opera- tions as necessary
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF opera- tions as necessary

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Test item	Description	,
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary	F
LDW ON IND	The LDW ON indicator lamp can be illuminated by ON/OFF operations as necessary	
LDP FAIL IND	The LDP fail indicator lamp can be illuminated by ON/OFF operations as necessary	E
LDW FAIL IND	The LDW fail indicator lamp can be illuminated by ON/OFF operations as necessary	
BSW ON IND	The BSW ON indicator lamp can be illuminated by ON/OFF operations as necessary	
BSI FAIL IND	The BSI fail indicator lamp can be illuminated by ON/OFF operations as necessary	C

BRAKE ACTUATOR **NOTE:**

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

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

NOTE:



ICC BUZZER

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

METER LAMP

NOTE:

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

Р

DAS

< SYSTEM DESCRIPTION >

[DCA]

Test item	Oper- ation	Description	 MAIN switch indicator ICC system warning lamp IBA OFF indicator lamp
Of		 Stops sending the following signals to exit from the test Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	OFF
METER LAMP	On	 Transmits the following signals to the combination meter via CAN communication Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Oper- ation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal be- low to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ACTIVE PEDAL CAUTION:

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

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting



Revision: March 2012

< SYSTEM DESCRIPTION >

NOTE:

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

Test item	Opera- tion	Description	DCA system switch indicator	F
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal be- low to end the test	_	
	On	Transmits the DCA system switch indicator signal to the com- bination meter via CAN communication	ON	С

LDP BUZZER

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

WARNING SYSTEM IND

Test item	Oper- ation	Description	Warning systems ON indicator	(
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	_	
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON	ŀ

LDP ON IND

Test item	Oper- ation	Description	LDP ON indicator lamp (Green)	
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal be- low to end the test	_	
	On	Transmits the LDP ON indicator lamp signal to the com- bination meter via CAN communication	ON	

LANE DEPARTURE W/L

Test item	Oper- ation	Description	Lane departure warning lamp (Yellow)	
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp sig- nal below to end the test	_	M
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON	NI

BSW/BSI WARNING LAMP

Test item	Oper- ation	Description	Blind Spot Warning/Blind Spot Inter- vention warning lamp (Yellow)	DAS
BSW/BSI WARNING — LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot In- tervention warning lamp signal below to end the test	_	P
	On	Transmits the Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to the combination meter via CAN communication	ON	I

BSI ON INDICATOR

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< SYSTEM DESCRIPTION >

Test item	Oper- ation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention ON indicator sig- nal to the combination meter via CAN communication	ON

LDW ON INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW ON INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

LDP FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure prevention ON indica- tor lamp (Yellow)
LDP FAIL INDICATOR	Off	Stops transmitting the Lane Departure prevention ON indicator signal below to end the test	_
	On	Transmits the Lane Departure prevention ON indicator signal to the combination meter via CAN communication	ON

LDW FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW FAIL INDICA- TOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

BSW ON INDICATOR

Test item	Oper- ation	Description	Blind Spot Warning ON indicator lamp (Yellow)
BSW ON INDICATOR	Off	Stops transmitting the Blind Spot Warning ON indicator signal below to end the test	_
	On	Transmits the Blind Spot Warning ON indicator signal to the warning lamp on the door	ON

BSI FAIL INDICATOR

Test item	Oper- ation	Description	Blind Spot Intervention FAIL indicator lamp (Yellow)
BSI FAIL INDICATOR	Off	Stops transmitting the Blind Spot Intervention FAIL indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention FAIL indicator sig- nal to the warning lamp on the door	ON

ECU IDENTIFICATION

ADAS control unit part number is displayed.
DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER/RADAR)

APPLICATION ITEMS

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

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

SELF DIAGNOSTIC RESULT Refer to CCS-65, "DTC Index".

DATA MONITOR

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

WORK SUPPORT

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DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

Work support items	Description
MILLIWAVE RADAR ADJUST	Outputs millimeter waves, calculates the displacement in radar direction, and indicates an ad- justment direction

Milliwave Radar Adjust Refer to <u>CCS-85. "Description"</u>.

ECU IDENTIFICATION

ICC sensor part number is displayed.

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

CONSULT Function (ACCELERATOR PEDAL ACT)

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DESCRIPTION

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

Test mode	Function	
Self Diagnostic Result	 Displays malfunctioning system memorized in accelerator pedal actuator Displays the Freeze Frame Data when the malfunction is detected 	
DATA MONITOR	Displays real-time input/output data of accelerator pedal actuator	
ACTIVE TEST	Enables operation check of electrical loads by sending driving signal to them	
ECU Identification	Displays accelerator pedal actuator parts number	
CAN Diag Support Monitor	The results of transmit/receive diagnosis of ITS communication can be read	

SELF DIAGNOSTIC RESULT

Self Diagnostic Result Refer to <u>DAS-131, "DTC Index"</u>.

FFD (Freeze Frame Data) The accelerator pedal actuator records the following data when the malfunction is detected.

Freeze Frame Data item [Unit]	Description	
TGT FBK FRC [N]	It displays the target accelerator pedal actuation force that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication at the time when the malfunction is detected	
TGT MOT POSI [%]	It displays the target motor position that the accelerator pedal actuator read out from the accelerator pedal feedback force control signal received via ITS communication at the time when the malfunction is detected	J
ACT MOT POSI [%]	It displays the integrated motor position that the accelerator pedal actuator read out at the time when the malfunction is detected	K
AP OPEN [%]	It displays the accelerator pedal position signal that the accelerator pedal actuator read out via ITS communication at the time when the malfunction is detected	
APA TEMP [°C]	It displays the integrated motor temperature that the accelerator pedal actuator read out at the time when the malfunction is detected	L
APA CURRENT [A]	It displays the integrated motor consumption current that the accelerator pedal actuator read out at the time when the malfunction is detected	Л
APA PWR [V]	It displays the power supply voltage that the accelerator pedal actuator read out at the time when the malfunction is detected	VI
APA OPE STATS [On/Off]	It displays the activation permission status of accelerator pedal actuator at the time when the mal- function is detected	Ν
APA STATS [READY/NG/TP NG/INIT]	It displays the condition of accelerator pedal actuator at the time when the malfunction is detected	٨
IGN Counter ^{Note}	It displays number of ignition switch OFF \rightarrow ON after the malfunction is detected	Α.

NOTE:

• The number is 0 when is detected now.

• The number increases like 1 \rightarrow 2 \cdots 38 \rightarrow 39 after returning to the normal condition whenever IGN OFF \rightarrow ON.

• The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

DATA MONITOR

DIAGNOSIS SYSTEM (ACCELERATOR PEDAL ACTUATOR)

< SYSTEM DESCRIPTION >

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

ACTIVE TEST

CAUTION:

Never perform ACTIVE TEST while driving the vehicle. NOTE:

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

Item list

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

ACCELERATOR PEDAL ACTUATOR TEST 1

NOTE:

Check the accelerator pedal by depressing when performing the test.

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

ACCELERATOR PEDAL ACTUATOR TEST 2

NOTE:

Check the accelerator pedal by depressing when performing the test.

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

ECU IDENTIFICATION

Displays accelerator pedal assembly parts number.

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Condition	Value/Status
	Ignition owitch ON	When MAIN switch is pressed	On
MAIN SVV	Ignition switch ON	When MAIN switch is not pressed	Off
	Ignition quitab ON	When SET/COAST switch is pressed	On
SET/COAST SW	Ignition switch ON	When SET/COAST switch is not pressed	Off
	Institute excitate ON	When CANCEL switch is pressed	On
CANCEL SW	Ignition switch ON	When CANCEL switch is not pressed	Off
	Ignition owitch ON	When RESUME/ACCELERATE switch is pressed	On
RESUME/ACC SW		When RESUME/ACCELERATE switch is not pressed	Off
	Ignition owitch ON	When DISTANCE switch is pressed	On
DISTANCE SW	Ignition switch ON	When DISTANCE switch is not pressed	Off
	Drive the vehicle and activate	When ICC system is controlling	On
CRUISE OPE	the vehicle-to-vehicle distance control mode	When ICC system is not controlling	Off
		When brake pedal is depressed	Off
BRAKE SW	Ignition switch ON	When brake pedal is not depressed	On
		When brake pedal is depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is not depressed	Off
	Facility and size	Idling	On
IDLE SVV	Engine running	Except idling (depress accelerator pedal)	Off
	Ignition switch ON	When BCI switch is pressed	On
BCI SW		When BCI switch is not pressed	Off
	Ignition switch ON	When BCI system is ON	On
BCI STSTEWION		When BCI system is OFF	Off
	• Start the engine and turn the	When set to "long"	Long
	 ICC system ON Press the DISTANCE switch to change the vehi- cle-to-vehicle distance set- ting 	When set to "middle"	Mid
SET DISTANCE		When set to "short"	Short
	Start the engine and press	ICC system ON (MAIN switch indicator ON)	On
	MAIN switch	ICC system OFF (MAIN switch indicator OFF)	Off
VHCL AHFAD	Drive the vehicle and activate	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
	control mode	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press	When ICC system is malfunctioning (ICC system warning lamp ON)	On
	MAIN switch	When ICC system is normal (ICC system warning lamp OEE)	Off

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< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehi- cle speed calcu- lated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
		 When the buzzer of the following system operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	On
DUZZLIKON	Engine running	 When the buzzer of the following system not operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	Off
ENGINE RPM	Engine running		Equivalent to ta- chometer read- ing
		IBA OFF indicator lamp ONWhen IBA system is malfunctioningWhen IBA system is turned to OFF	On
	Engine running	IBA OFF indicator lamp OFFWhen IBA system is normalWhen IBA system is turned to ON	Off
	Drive the vehicle and activate	When ICC brake hold relay is activated	On
STP LMP DRIVE	the vehicle-to-vehicle distance control mode	When ICC brake hold relay is not activated	Off
D RANGE SW	Engine running	When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
		When the selector lever is in "N", "P" position	On
NP RANGE SW	Engine running	When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
	Ignition Switch ON	When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of CVT ve- hicle speed sen- sor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position
		When ICC system is deactivated	Off
MODE SIG	Start the engine and press MAIN switch	When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
	Drive the vehicle and acti-	SET switch indicator ON	On
SET DISP IND	 speed) cruise control mode Press SET/COAST switch 	SET switch indicator OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status	
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the dis- tance from the preceding vehi- cle	AB
		When a vehicle ahead is not detected	0.0	
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance	When a vehicle ahead is detected	Displays the rel- ative speed.	С
	control mode	When a vehicle ahead is not detected	0.0	
	Drive the vehicle and activate	Both side lane markers are detected	Detect	
Camera lost	the LDW system, LDP system or Blind Spot Intervention sys-	Deviate side lane marker is lost	Deviate	D
	tem	Both side lane markers are lost	Both	
) (/hile alaining a	Lane marker is unclear	On	E
Lane unclear	while driving	Lane marker is clear	Off	
		When the LDP system is ON	Stnby	
	Drive the vehicle with the LDP	When the LDP system is operating	Warn	F
STATUS signal	system turned ON	When the LDP system is canceled	Cancl	
		When the LDP system is OFF	Off	G
		When dynamic driver assistance switch is pressed	On	0
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is not pressed	Off	
	Start the engine and press dy- namic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off	Н
DCA ON IND		DCA system ON (DCA system switch indicator ON)	On	
	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off	
DOA VILLAHED		When a vehicle ahead is detected (vehicle ahead de- tection indicator ON)	On	J
APA TEMP	Engine running		Display the ac- celerator pedal actuator inte- grated motor temperature	K
APA PWR	Ignition switch ON		Power supply voltage value of accelerator ped- al actuator	L
ECW SYSTEM ON	Ignition switch ON	FCW set with the vehicle information display ON	On	
		FCW set with the vehicle information display OFF	Off	
	Ignition quitch ON	LDW set with the vehicle information display ON	On	Ν
		LDW set with the vehicle information display OFF	Off	
	Ignition switch ON	LDW ON indicator ON	On	DAS
		LDW ON indicator OFF	Off	
	Start the engine and press dy-	LDP ON indicator lamp ON	On	
LDP ON IND	namic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp OFF	Off	Ρ
	Drive the vehicle and activate	Lane departure warning lamp ON	On	
LANE DPRT W/L	the LDW system or LDP sys- tem	Lane departure warning lamp OFF	Off	

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
	Drive the vehicle and activate	When the buzzer of the following system operatesLDW/LDP systemBlind Spot Warning/Blind Spot Intervention system	On
PUT	Spot Warning/Blind Spot Inter- vention system	 When the buzzer of the following system does not operate LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	Off
	Start the engine and press dy-	When the LDP system is ON	On
LDP SYSTEM ON	namic driver assistance switch (When LDP system setting is ON)	When the LDP system is OFF	Off
	Start the engine and press dy-	When the LDP system is ON	On
READY signal	(When LDP system setting is ON)	When the LDP system is OFF	Off
Shift position	Engine runningWhile driving		Displays the shift position
	Turn signal lamps OFF		Off
Turn signal	Turn signal lamp LH blinking		LH
rum signal	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH bl	inking	LH&RH
	While driving	Vehicle turning right	Negative value
SIDE G	write driving	Vehicle turning left	Positive value
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not n	nonitored	Off
FUNC ITEM (NV- DCA)	NOTE: The item is indicated, but not n	nonitored	Off
	Ignition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is ON	On
DOA SELECT	ignition switch on	"Distance Control Assist" set with the vehicle informa- tion display is OFF	Off
	Ignition switch ON	"Lane Departure Prevention" set with the vehicle infor- mation display is ON	On
	ignition switch ON	"Lane Departure Prevention" set with the vehicle infor- mation display is OFF	Off
	lanition switch ON	"Blind Spot Intervention" set with the vehicle information display is ON	On
BOIGLEUT	ignition switch ON	"Blind Spot Intervention" set with the vehicle information display is OFF	Off
		When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
DRIVE MODE STATS	Ignition switch ON	 When position od drive mode select switch is in following states: In the middle of SNOW-ECO In the middle of ECO-STANDARD In the middle of STANDARD-SPORTS 	Mid
		A signal other than those above is input	ERROR
		When warning systems switch is pressed	On
WARN SYS SW	Ignition switch ON	When warning systems switch is not pressed	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
	Ignition out to ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
BSW/BSI WARN LIMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
	Ignition quitch ON	Blind Spot Intervention ON indicator ON	On
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator OFF	Off
		When the BSW system is ON	On
BSW SYSTEM ON	Ignition switch ON	When the BSW system is OFF	Off
BSI SYSTEM ON	Start the engine and press dy- namic driver assistance switch (When Blind Spot Intervention	When the Blind Spot Intervention system is ON	On
	system setting is ON)	when the blind Spot intervention system is Of I	OII
	Ignition switch ON	LDP system fail lamp ON	On
		LDP system fail lamp OFF	Off
	lenitien ewiteb ON	LDW ON indicator ON	On
LUW ON LAMP	Ignition switch ON	LDW ON indicator OFF	Off
	legitien en itst. ON	LDW system fail lamp ON	On
LDW FAIL LAMP	Ignition switch ON	LDW system fail lamp OFF	Off
SYSTEM_CANCEL_ MESSAGE	Engine running	Request signal to cancel warning systems	No request Slippery road Snow mode ON VDC OFF
CAM_HI_TEMP_	legitien ewitch ON	Camera temperature above 100°c (212°F)	On
MSG	Ignition switch ON	Camera temperature below 100°c (212°F)	Off
ITS Setting Item			On
(DCA)	Ignition switch ON	MENU> SETTINGS> DAS> DCA ON/OFF	Off
ITS Setting Item (LDP)	Ignition switch ON	MENU> SETTINGS> DAS> LDP ON/OFF	On Off
ITS Setting Item (BSI)	Ignition switch ON	MENU> SETTINGS> DAS> BCI ON/OFF	On Off
		DCI system feil Ismn ON	01
BSI FAIL IND	Ignition switch ON		011
		DSI system indiastor ON	
BSW ON IND	Ignition switch ON	Dow system indicator OIN	01
		Soper blocked warning machine ON	
SR_BLK_MSG	Ignition switch ON	Sensor blocked warning message OF	01
WARN_LANE_ TIMING	Engine running	Calibration is required	Nothing
BSW_IND_ BRIGHTNESS	Ignition switch ON	Adjust BRIGHTNESS as needed	Normal
	Drive the vehicle and activate	Lane departure warning is operating	On
WARN REQ	the LDP system	Lane departure warning is not operating	Off
FCW SELECT [ON/		Forward Collision Warning set with the vehicle informa- tion display ON	On
OFF]	Ignition switch ON	Forward Collision Warning set with the vehicle informa- tion display OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
LDW SELECT [ON/	lapition switch ON	Lane Departure Warning set with the vehicle informa- tion display ON	On
OFF]		Lane Departure Warning set with the vehicle informa- tion display ON	Off
BSW SELECT [ON/		Blind Spot Warning set with the vehicle information display ON	On
OFF]		Blind Spot Warning set with the vehicle information display ON	Off
ITS setting item	Ignition switch ON		On
(FCW) [ON/OFF]		WENC SETTINGS DAS FOW UN/OFF	Off
ITS setting item	Ignition owitch ON		On
(LDW) [ON/OFF]		WENU-SETTINGS-DAS-LDW ON/OFF	Off
ITS setting item	Ignition quitab ON		On
(BSW) [ON/OFF]	Ignition switch ON	MENUS SETTINGS DASS BSW UN/OFF	Off
	Ignition owitch ON	Battery circuit OFF	On
Dattery circuit OFF	Ignition Switch ON	Battery circuit ON	Off

TERMINAL LAYOUT PHYSICAL VALUES



< ECU DIAGNOSIS INFORMATION >

[DCA]

Termir (Wire	nal No. color)	Description			Condition	Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
1		Warning systems	Input	Ignition	When warning systems switch is not pressed	12 V
(BR)		switch	mput	ON	When warning systems switch is pressed	0 V (
4		Warning systems ON	Output	Ignition	Warning systems ON indi- cator ON	0 V
(W)		indicator	Output	ON	Warning systems ON indi- cator OFF	12 V
5		ICC brake hold relay		Ignition	—	12 V
(G)		drive signal	Output	switch ON	At "STOP LAMP" test of "Active test"	0 V
6 (B)	-	Ground	_	lgnition switch ON	_	0 V F
7 (L)	Ground	ITS communication-H	_	_	—	—
8 (Y)		ITS communication-L	_	—	—	-
10		PCI OFF owitch	loout	Ignition	When BCI OFF switch is not pressed	12 V
(BG)		BCI OFF SWICH	mput	ON	When BCI OFF switch is pressed	0 V
12				Ignition	Warning buzzer operation	0 V
(G)		Warning buzzer signal	Output	switch ON	Warning buzzer not oper- ating	12 V
14 (B)		CAN -H	_		_	
15 (W)		CAN -L	_	_	_	K
16 (R)		Ignition power supply	Input		Ignition switch ON	Battery Voltage

Fail-safe

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Μ

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

System	Buzzer	Warning lamp/Indicator lamp	Description	N
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel	
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel	DAG
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel	Ρ
Forward Collision Warning (FCW)	High-pitched tone	Warning message	Cancel	
Distance Control Assist (DCA)	High-pitched tone	DCA system warning	Cancel	
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel	

< ECU DIAGNOSIS INFORMATION >

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	_	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000008368258

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

Priority	Detected items (DTC)
1	C1A0A: CONFIG UNFINISHED U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)
2	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	C1B00: CAMERA UNIT MALF C1F02: APA C/U MALF C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF

< ECU DIAGNOSIS INFORMATION >

Priority	Detected items (DTC)	
	C1A01: POWER SUPPLY CIR	— A
	C1A02: POWER SUPPLY CIR 2	
	C1A04: ABS/TCS/VDC CIRC C1A05: BDAKE SW/STOD L SW/	
	CIA03: DICARE SWISTOP E SW CIA03: OPERATION SW CIRC	В
	C1A12: LASER BEAM OFFCNTR	
	C1A13: STOP LAMP RLY FIX	
	C1A14: ECM CIRCUIT	С
	CTAT6: RADAR STAIN CTAT6: LASER AIMING INCMP	
	C1A2A: ICC SEN PWR SUP CIR	
	C1A21: ICC SENSOR HIGH TEMP	D
	C1A24: NP RANGE	
	C1A26: ECD MODE MALF C1A27: ECD DWD SUDIX CID	
	CIA27. ECD PWR SUPLY CIR CIA33: CAN TRANSMISSION ERR	E
	C1A34: COMMAND ERROR	
	C1A35: APA CIR	
	C1A36: APA CAN COMM CIR	F
	C1A37: APA CAN CIR 2 C1A39: ADA CAN CIR 1	
	CIASO: APA CAN CIR I CIASO: STRG SEN CIR	
	C1A40: SYSTEM SW CIRC	G
	C1B01: CAM AIMING INCMP	0
	C1B03: CAM ABNRML TMP DETCT	
	C1B56: SONAR CIRCUIT	Ц
	CIED1: APA MOTOR MALE	11
	C1F05: APA PWR SUPLY CIR	
	U0121: VDC CAN CIR 2	
4	U0126: STRG SEN CAN CIR 1	
	U0235: ICC SENSOR CAN CIRC 1 U0401: ECM CAN CIRC 1	
	• U0402: TCM CAN CIR 1	
	• U0415: VDC CAN CIR 1	J
	U0428: STRG SEN CAN CIR 2	
	• U1500: CAM CAN CIR 2	
	U1501: CAM CAN CIR 1 U1502: ICC SEN CAN COMM CIR	K
	U1503: SIDE RDR L CAN CIR 2	
	U1504: SIDE RDR L CAN CIR 1	
	U1505: SIDE RDR R CAN CIR 2	L
	U1506: SIDE RDR R CAN CIR 1	
	U1521. SONAR CAN COMMUNICATION U1522 ⁻ SONAR CAN COMMUNICATION	
	U1523: SONAR CAN COMMUNICATION	N
	U1524: AVM CAN COMMUNICATION	
	U1525: AVM CAN COMMUNICATION	
	U150B: ECM CAN CIRC 3 U150C: VDC CAN CIRC 3	Ν
	• U150D: TCM CAN CIRC 3	
	U150E: BCM CAN CIRC 3	
	• U150F: AV CAN CIRC 3	DA
	U1512: HVAC CAN CIRC3	
	U1513: METER CAN CIRC 3 U1514: STRC SEN CAN CIRC 3	
	U1515: ICC SENSOR CAN CIRC 3	
	• U1516: CAM CAN CIRC 3	P
	U1517: APA CAN CIRC 3	
	U1518: SIDE RDR L CAN CIRC 3	
	U1519: SIDE RDR R CAN CIRC 3	
5	C1A03: VHCL SPEED SE CIRC	
6	C1A15: GEAR POSITION	
7	C1A00: CONTROL UNIT	

< ECU DIAGNOSIS INFORMATION >

DTC Index

INFOID:000000008368259

[DCA]

NOTE:

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

Systems for fail-safe

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

DTC	2			W	arning la	Imp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-73</u>
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-102</u>
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-104</u>
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-105</u>
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	<u>CCS-109</u>
C1A0A	10	CONFIG UNFINISHED	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	Perform configuration
C1A12	12	LASER BEAM OFFCN- TR	ON	ON				A, C, D, E	<u>CCS-111</u>
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	<u>CCS-113</u>

< ECU DIAGNOSIS INFORMATION >

А

В

С

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- · G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC	2			W	arning la	mp		Fail-safe		
						arning lamp				D
			amp	đu	g lamp	ention we	ention			E
CONSULT	On board	CONSULT display	ו warning l	ndicator la	ire warninç	pot Interv	sion Interv	stem	Reference	F
	display		ICC system	IBA OFF ii	Lane departu	Varning/Blind S	Backup Collis	ର୍ଜ		G
						Blind Spot V				H
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-119</u>	
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-120</u>	
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	<u>CCS-122</u>	J
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	<u>CCS-124</u>	
C1A18	18	LASER AIMING INCMP	ON	ON				A, C, D, E	<u>CCS-125</u>	V
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	<u>CCS-127</u>	r.
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-129</u>	
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	<u>CCS-131</u>	
C1A27	27	ECD PWR SUPLY CIR	ON	ON				A, B, C, D, E	<u>CCS-132</u>	-
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	<u>CCS-134</u>	Μ
C1A34	34	COMMAND ERROR	ON					A, B, E	<u>CCS-135</u>	
C1A35	35	APA CIR	ON				ON	A, E, H	<u>CCS-136</u>	Ν
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	<u>CCS-137</u>	
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	<u>CCS-138</u>	DAS
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	<u>CCS-139</u>	DAG
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-140</u>	
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	<u>CCS-133</u>	Ρ
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	<u>DAS-416</u>	
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	<u>DAS-418</u>	
C1B03	83	CAM ABNRML TMP DE- TCT							<u>DAS-420</u>	
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-575	
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-576	

< ECU DIAGNOSIS INFORMATION >

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DTC	;			W	arning la	imp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1B56	87	SONAR CIRCUIT					ON	Н	DAS-742
C1B57	88	AVM CIRCUIT					ON	Н	DAS-743
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	<u>CCS-143</u>
C1F02	92	APA C/U MALF	ON				ON	A, E, H	<u>CCS-144</u>
C1F05	95	APA PWR SUPLY CIR	ON				ON	A, E, H	<u>CCS-145</u>
NO DTC IS DETECT- ED. FUR- THER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED							_
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-147</u>
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-149</u>
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	<u>CCS-151</u>
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-152</u>
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-153</u>
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-155</u>
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-157</u>
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-75</u>
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-76
U1500	145	CAM CAN CIR 2			ON	ON		F, G	DAS-436
U1501	146	CAM CAN CIR 1			ON	ON		F, G	<u>DAS-437</u>
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	<u>CCS-166</u>

< ECU DIAGNOSIS INFORMATION >

А

В

С

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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DTC)			W	arning la	mp		Fail-safe		0
						arning lamp				D
			g lamp	lamp	ing lamp	rvention w	rvention			E
CONSULT	On board display	CONSULT display	tem warnin	F indicator	arture warn	nd Spot Inte	ollision Inte	System	Reference	F
			ICC sys	IBA OF	Lane dep	Varning/Blir	Backup C			G
						Blind Spot V				Η
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	DAS-601	.
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-602	
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-603	J
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-604	
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-605	K
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-606	
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-162</u>	L
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-163</u>	
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-164</u>	Μ
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-165</u>	
U150F	161	AV CAN CIRC 3							<u>DAS-77</u>	
U1512	162	HVAC CAN CIRC3			ON	ON		F, G	<u>DAS-438</u>	N
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-167</u>	
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-168</u>	DAS
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	<u>CCS-169</u>	BAC
U1516	166	CAM CAN CIRC 3			ON	ON		F, G	<u>DAS-440</u>	Р
U1517	167	APA CAN CIRC 3	ON				ON	A, B, E, H	<u>CCS-170</u>	
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	DAS-611	
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-612	
U1521	177	SONAR CHECKSUM					ON	Н	DAS-779	
U1522	178	SONAR MESSAGE					ON	Н	<u>DAS-780</u>	

< ECU DIAGNOSIS INFORMATION >

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
- D: Forward Collision Warning (FCW)
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- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC)			W	arning la	Imp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
U1523	179	SONAR CAN DLC					ON	Н	<u>DAS-781</u>
U1524	180	SONAR CAN DLC					ON	Н	<u>DAS-782</u>
U1525	181	AVM MESSAGE					ON	Н	<u>DAS-783</u>

NOTE:

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

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

ICC SENSOR

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Value/Status	
VHCL SPEED SE	While driving		Value of vehicle speed signal (wheel speed)
		Vehicle stopped	0.0
YAW RATE	While driving	Vehicle turning right	Positive value
		Vehicle turning left	Negative value
PWR SUP MONI	Ignition switch ON		Power supply voltage value of ICC sensor
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the dis- tance from the preceding vehi- cle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance	When a vehicle ahead is detected	Displays the rel- ative speed
	control mode	When a vehicle ahead is not detected	0.0
RADAR OFFSET	NOTE: The item is indicated, but not u	sed	_
RADAR HEIGHT	NOTE: The item is indicated, but not u	sed	
		When setting the steering wheel in straight-ahead position	0.0
STEERING ANGLE	Ignition switch ON	When turning the steering wheel 90° rightward	+90
		When turning the steering wheel 90° leftward	-90
STRG ANGLE SPEED	Ignition switch ON	At the time of turning the steering wheel	Steering wheel turning speed is displayed
L/R ADJUST	Ignition switch ON	At the completion of radar alignment adjustment	Horizontal cor- rection value is displayed
U/D ADJUST	Ignition switch ON	At the completion of radar alignment adjustment	Vertical correc- tion value is dis- played

TERMINAL LAYOUT



INFOID:000000008368260

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ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

Term (Wire	inal No. e color)	Description		Condition	Standard value	Reference value
+	_	Signal name	Input/ Output	Condition		(Approx.)
1 (P)	8 (B)	Ignition power supply	Input	Ignition switch ON	9.5 - 16 V	Battery voltage
6 (Y)		ITS communication-L	_	_	_	_
7 (L)		ITS communication-H	_	_	_	_
8 (B)	Ground	Ground	_	Ignition switch ON	0 - 0.1 V	0 V

Fail-safe

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

DTC Inspection Priority Chart

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

Priority	Detected items (DTC)
1	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
2	C1A50: ADAS MALFUNCTION
3	 C1A01: POWER SUPPLY CIR C1A02: POWER SUPPLY CIR 2 C1A12: RADAR OFF-CENTER C1A16: RADAR BLOCKED C1A18: RADAR ALIGNMENT INCOMPLETE C1A21: UNIT HIGH TEMP C1A39: STRG SEN CIR U0104: ADAS CAN CIR1 U0121: VDC CAN CIR2 U0126: STRG SEN CAN CIR1 U0405: ADAS CAN CIR2 U0415: VDC CAN CIR2 U0428: STRG SEN CAN CIR2
4	C1A00: CONTROL UNIT

DTC Index

NOTE:

- The details of time display are as per the following.
- 0: The malfunctions that are detected now
- CAN communication system (U1000, U1010)
- 1 39: It increases like $0 \rightarrow 1 \rightarrow 2 \cdots 38 \rightarrow 39$ 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 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.

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ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

									×: Applicabl	е
DTC					Fail-safe	e functio	n	1		A
CONSULT	CONSULT display	ICC system warning lamp	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Intelligent Brake Assist (IBA)	Brake Assist (with preview function)	Reference	
C1A00	CONTROL UNIT	ON	×	×	×	×	×	×	<u>CCS-98</u>	F
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	×	<u>CCS-100</u>	
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	×	<u>CCS-100</u>	(-
C1A12	RADAR OFF-CENTER	ON	×		×	×	×	×	<u>CCS-112</u>	0
C1A16	RADAR BLOCKED	ON	×		×	×	×	×	<u>CCS-123</u>	
C1A18	RADAR ALIGNMENT INCOMPLETE	ON	×		×	×	×	×	<u>CCS-126</u>	H
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	×	×	<u>CCS-127</u>	
C1A39	STRG SEN CIR	ON	×	×	×	×	×	×	<u>CCS-140</u>	
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	×	×	<u>CCS-142</u>	1
U0104	ADAS CAN CIR1	ON	×	×	×	×	×	×	<u>CCS-146</u>	
U0121	VDC CAN CIR2	ON	×	×	×	×	×	×	<u>CCS-147</u>	J
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	×	<u>CCS-149</u>	
U0405	ADAS CAN CIR2	ON	×	×	×	×	×	×	<u>CCS-154</u>	
U0415	VDC CAN CIR1	ON	×	×	×	×	×	×	<u>CCS-155</u>	K
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	×	<u>CCS-157</u>	
U1000	CAN COMM CIRCUIT	ON	×	×	×	×	×	×	<u>CCS-159</u>	L
U1010	CONTROL UNIT (CAN)	ON	×	×	×	×	×	×	<u>CCS-161</u>	

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< ECU DIAGNOSIS INFORMATION >

ACCELERATOR PEDAL ACTUATOR

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Condition	Value/Status
TGT FBK FRC	Drive the vehicle and operate the DCA sys- tem	When the ADAS control unit is control- ling the accelerator pedal actuator	It changes with the demand from the ADAS control unit
ACT MOT POSI	Engine running	Depress accelerator pedal	It changes according to the de- pressed amount of accelerator pedal
AP OPEN	Engine running	Depress accelerator pedal	It changes according to the de- pressed amount of accelerator pedal
APA TEMP	Engine running		Display the accelerator pedal ac- tuator integrated motor tempera- ture
APA CURRENT	Drive the vehicle and operate the DCA sys- tem	When the ADAS control unit is control- ling the accelerator pedal actuator	Display the accelerator pedal ac- tuator motor operation consump- tion current
APA PWR	Ignition switch ON		Battery voltage
ADA ODE STATS		When the accelerator pedal actuator control is permitted	On
		When the accelerator pedal actuator control is invalid	Off
		When the accelerator pedal actuator is normal	Ready
		When the accelerator pedal actuator is temporarily malfunctioning	TP NG
		When the accelerator pedal actuator is malfunctioning	NG
		During the accelerator pedal actuator operation preparations	Init

TERMINAL LAYOUT



PHYSICAL VALUES

INFOID:000000007911516

ACCELERATOR PEDAL ACTUATOR

< ECU DIAGNOSIS INFORMATION >

Termi (Wire	inal No. e color)	Description	Condition		Value	/
+	_	Signal name	Input/ Output	Condition	(Approx.)	E
1 (BG)		Battery power supply	Input	Ignition switch OFF	Battery voltage	
2 (GR)		Ground	_	Ignition switch ON	0 V	(
3 (G)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	ſ
4 (Y)		ITS communication-L	_	_	_	L
5 (BG)		ITS communication-H		_	_	E

DTC Inspection Priority Chart

INFOID:000000007911517

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

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

DTC Index

NOTE:

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

×: Applicable

INFOID:000000007911518

				-
CONSULT display	ICC system warning lamp	Fail-safe function	Reference	NI
C1F01: APA MOTOR MALF	ON	×	DAS-195	IN
C1F02: APA C/U MALF	ON	×	DAS-197	
C1F03: APA HI TEMP	—		DAS-199	DAS
C1F05: APA PWR SUPLY CIR	ON	×	DAS-200	
C1F06: CAN CIR2	ON	×	DAS-202	_
C1F07: CAN CIR1	ON	×	DAS-203	Р
U1000: CAN COMM CIRCUIT	ON	×	DAS-211	
U1010: CONTROL UNIT (CAN)	ON	X	DAS-213	

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< WIRING DIAGRAM >

[DCA]

WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS

Wiring Diagram





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BG

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Signal Name	GND1	GND2	IGN	BAT	CAN-L	CAN-H	
Color of Wire	в	В	BG	Μ	٩	L	
Terminal No.	-	2	21	22	38	39	





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Revision: March 2012

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< WIRING DIAGRAM >



M124

Connector No.



57 73





WHITE

Connector Color

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Connector Name

AROUND VIEW MONITOR CONTROL UNIT

M96

Connector No.

Connector Name

	Signal Name	GND	IGN	CAN-H	CAN-L
	Color of Wire	В	ГG	В	M
	Terminal No.	1	ю	27	28

V-CAN 1 GND

SHIELD

29



Signal Name	I	I	I	
Color of Wire	SHIELD	в	Μ	
Terminal No.	11	12	13	

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Connector No.	M70
Connector Name	SONAR CONTROL UNIT
Connector Color	WHITE
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Connector Name WIRE TO WIRE

M84

Connector No.

Connector Color WHITE

		-	₽		
		~	4		
		e	15		
r		4	16		
	17	S	17		
	V	9	18		
	N	2	19		
	Ν	80	8		L
ι	_	6	5		
		9	ដ		
		÷	33		
		12	24		ŀ
				1	
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	Ľ	7			L

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Color of Wire

Terminal No.

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Signal Name	CAN-H	CAN-L	IGN	GND
Color of Wire	В	W	ГG	в
Terminal No.	5	6	12	15







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< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEMS

Connector No. E2 Connector Name WIF	RE TO WIRE	Connector Connector	Vo. E5 Vame WIRI Color WHI	e to wire Te	 Connector N Connector N Connector C	o. E16 ame ECN olor GR/	, k	
H 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 4 5 6 7 8 11 12 13 14 15 16	H.S.	8 - 1 - 0 - 3	1 1 5 6 7 11 12 13 14 15 16	。 形	97 101 105 98 102 106 99 103 107 100 104 108	109113171 121 125 1101114113 122 125 1111115119 123 127 112116120 124 128	7
erminal No. Wire	Signal Name	Terminal N	D. Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	
6	1	=	æ	I	101	σ	ASCDSW	·
10 L	I				 108	ж	GNDA-FTP/OILPRS	· · · ·
					113	٩	CAN-L	
					114	Γ	CAN-H	-
					122	ж	BRAKE	· · · ·
					126	ГG	GND	
onnector No. E26		Connector	No. E28		Connector N	o. E38		
onnector Name WIF	RE TO WIRE	Connector	Name FUS	SE BLOCK (J/B)	Connector N	ame STC	JP LAMP SWITCH	-
connector Color WH	HTE	Connector	Color WHI	E	 Connector C	olor WHI	TE	_
H.S.	4 5 6 7 8 9 10 11 12 16 17 18 19 20 21 22 23 24	品.S.H	4M 3 10M 9	M 2M 1M	雨 H.S.		2	
erminal No. Wire	Signal Name	Terminal N	o. Wire	Signal Name	 Terminal No.	Color of Wire	Signal Name	
9 Υ	I	1M	В	Ι	۲	თ	I	
10 BG	1	5M	g	I	2	٩	I	_
		MZ	Ъ	I	e	თ	I	
		8M	æ	I	4	σ	T	

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Signal Name	I	I	I	I	
Color of Wire	В	g	Р	В	
Terminal No.	1M	5M	Μζ	8M	

Signal Name	I	I	
Color of Wire	Y	BG	
erminal No.	6	10	

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DRIVER ASSISTANCE SYSTEMS

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< WIRING DIAGRAM >

Signal Name	I	BCP OFF SW	I	WARNING BUZZER	I	CAN-H	CAN-L	IGNITION
Color of Wire	I	BG	I	U	Ι	В	M	R
Terminal No.	6	10	11	12	13	14	15	16

Signal Name	I	I	Ι	1	I	I	I	I	I	I	I	I	I	
Color of Wire	В	GR	SHIELD	œ	щ	н	N	W	В	Ш	GR	SHIELD	В	
Terminal No.	6	10	11	19	20	21	27	28	29	30	31	32	33	



Signal Name	WARNING SYSTEM SW	1	I	WARNING SYSTEM ON IND	BRAKE HOLD RLY DRIVE SIGNAL	GND	ITS COMM-H	ITS COMM-L
Color of Wire	ВВ	I	Ι	N	U	в	_	≻
Ferminal No.	-	2	3	4	5	9	7	8

ector No. B115 ector Name JOINT CONNECTOR-B08		22 21 20 19 18 17 16 15 14 13 12 5
ector No. B115 ector Name JOIN		22 21 20 19



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Signal Name	I	I	1	I	I	I
Color of Wire	В	В	Y	L	Н	M
Terminal No.	-	2	e	4	5	9

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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

Connector No. Connector Name Connector Color	B124 WIRE TO WIRE WHITE			Conne	ector Nan	N WHIT	E E		Connector 1	Vame JOI Color WH	40 INT CONN HITE	LECTOR-B12	
雨 H.S.				FISH			ſ		国 H.S.		4 3 2 1	F	
1 2 3 4 5 6 7 17 18 19 20 21 22 23	8 9 10 11 12 13 3 24 25 26 27 28 29 3	14 15 16 30 31 32		1 2 21 22	3 4 5 6 23 24 25 24	27 28 29	10 11 12 13 14 15 1 30 31 32 33 34 35 3	6 17 18 19 20 6 37 38 39 40					
Terminal No. Colc Wi	or of Signal	Name		Termir	al No.	olor of Wire	Signal Name		Terminal No	Color of Wire	Sig	nal Name	
20					_	σ	1		-			1	
21 L						N	I		2				
					~	BR	I		3			I	
						BG G							
Connector No.	B147			Conne	ctor No.	B400			Connector N	lo. B40	4		
Connector Name Connector Color	JOINT CONNEC WHITE	TOR-B13		Conne	ector Nam ctor Colc	re WIRE	TO WIRE		Connector D Connector C	Vame WIF	RE TO WIF	2	
													٦
同 H.S.] 4 3 2 1 []			品.S.H					际 H.S.		2 1		
				16 15 32 31 ;	14 13 12 1 30 29 28 27	26 25 24 2	7 6 5 4 3 2 1 33 22 21 20 19 18 17						
Terminal No. Colo	r of Signal	Name		Termir	al No. C	olor of Wire	Signal Name		Terminal No	Color of	Sig	nal Name	
-	2					<u>е</u>	I		-	B		1	_
2						8	1						1
× €					~	в	1						
				-	5	_	I						
				1	3	×	1						
				-	5	IJ	1						
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DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[DCA]





Signal Name	I	I	I	
Color of Wire	Μ	ш	SHIELD	
Terminal No.	2	9	7	

Connector No.	R5
Connector Name	LANE CAMERA UNIT
Connector Color	WHITE
际 H.S.	

Signal Name	Ι	I	I	I	I
Color of Wire	В	BR	В	ГG	≻
Terminal No.	-	4	5	7	8



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Signal Name	I	I	I	I
Color of Wire	В	ГG	BR	Y
Terminal No.	5	9	7	8

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	DRIVER ASSISTANCE SYSTEMS	
< WIRING DIAGRAM >		

[DCA]



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.

DIAGNOSIS AND REPAIR WORK FLOW

<	BASIC	INSF	PECT	ION	>
---	-------	------	------	-----	---

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

>> GO TO 2	B
2.self-diagnosis with consult	
 Perform "All DTC Reading" with CONSULT. Check if the DTC is detected on the self-diagnosis results of "ICC/ADAS" and/or "ACCELE PEDAL ACT". Is any DTC detected? 	С
YES >> GO TO 5. NO >> GO TO 3.	D
3.ACTION TEST	
Perform DCA system action test to check the operation status. Refer to <u>DAS-156, "Description"</u> . Check if any other malfunctions occur.	E
>> GO TO 4.	F
4.SYMPTOM DIAGNOSIS	
Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to <u>DAS-225</u> , " <u>Symptom</u> <u>Table</u> ".	G
>> GO TO 6.	Н
5. TROUBLE DIAGNOSIS BY DTC	
 Check the DTC in the self-diagnosis results. Perform trouble diagnosis for the detected DTC. Refer to <u>DAS-122</u>, "<u>DTC Index</u>" (ICC/ADAS) and/or <u>DAS-131</u>, "<u>DTC Index</u>" (ACCELE PEDAL ACT). 	I
If "DTC: U1000" is detected, first diagnose the CAN communication system or ITS communication system.	J
>> GO TO 6.	
6.MALFUNCTIONING PART REPAIR	Κ
Repair or replace the identified malfunctioning parts.	
>> GO TO 7	L
7. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)	
1. Erases self-diagnosis results.	Μ
 Perform "All DTC Reading" again after repairing or replacing the specific items. Check if any DTC is detected in self-diagnosis results of "ICC/ADAS" and "ACCELE PEDAL ACT". 	
Is any DTC detected?	Ν
YES >> GO TO 5.	
8. REPAIR CHECK (ACTION TEST)	DAS
Perform the DCA system action test. Check that the malfunction symptom is solved or no other symptoms occur.	Р
Is there a malfunction symptom?	
YES >> GO TO 4. NO >> INSPECTION END	

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

< BASIC INSPECTION >

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

Description

• Always perform the millimeter wave sensor aiming adjustment after removing and installing or replacing the millimeter wave sensor.

CAUTION:

The system does not operate normally unless the millimeter wave sensor aiming adjustment is performed. Always perform it.

• Perform the DCA system action test check that the DCA system operates normally.

Work Procedure

INFOID:000000007911522

INFOID:000000007911521

1.MILLIMETER WAVE SENSOR AIMING ADJUSTMENT

Adjust the millimeter wave sensor aiming. Refer to <u>CCS-85, "Description"</u>.

>> GO TO 2.

2.DCA SYSTEM ACTION TEST

1. Perform the DCA system action test. Refer to <u>DAS-156</u>, "Description".

2. Check that the DCA system operates normally.

>> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING ACCELERATOR PEDAL ASSEM-**BLY**

< BASIC INSPECTION >

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ADDITIONAL SERVICE WHEN REPLACING ACCELERATOR PEDAL AS-SEMBLY

Description · Always perform accelerator pedal released position learning when replacing the accelerator pedal assembly or disconnecting the accelerator pedal position sensor connector. Perform the DCA system action test check that the DCA system operates normally. Work Procedure 1.ACCELERATOR PEDAL RELEASED POSITION LEARNING Perform accelerator pedal released position learning. Refer to EC-158, "Description".

>> GO TO 2.

2.DCA SYSTEM ACTION TEST

Perform the DCA system action test. Refer to DAS-156, "Description". 1.

2. Check that the DCA system operates normally.

>> INSPECTION END

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ACTION TEST

< BASIC INSPECTION >

ACTION TEST

Description

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

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

Work Procedure

NOTE:

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

1.ICC SYSTEM ACTION TEST

Perform the ICC system action test. Refer to CCS-92, "Description".

>> GO TO 2.

2. CHECK DCA SYSTEM SETTING

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

>> GO TO 3.

3.CHECK DYNAMIC DRIVER ASSISTANCE SWITCH

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

NOTE:

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

If the accelerator pedal assembly is not replaced>>INSPECTION END If the accelerator pedal assembly is replaced>>GO TO 4.

4.CHECK DCA SYSTEM OPERATION

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

>> INSPECTION END



INFOID:000000007911526

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS C1A00 CONTROL UNIT

DTC Logic

DTC DETECTION LOGIC

DTC (On board play)	dis- Trouble diagnosis name	DTC detecting condition	Possible causes
C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit
	IFIRMATION PROCEDU	IRE I PROCEDURE	
 Start t Perfor Check 	he engine. m "All DTC Reading" with t if the "C1A00" is detected	CONSULT. as the current malfunction in "Self Dia	agnostic Result" of "ICC/ADAS".
<u>s "C1A00"</u> YES > NO >	<u>' detected as the current m</u> > Refer to <u>DAS-157, "Diag</u> > INSPECTION END	<u>alfunction?</u> nosis Procedure".	
Diagnos	is Procedure		INFOID:00000007911528
1.CHECK	SELF-DIAGNOSIS RESU	ILTS	
Check if a s any DT(ny DTC other than "C1A00 <u>C detected?</u>	is detected in "Self Diagnostic Result	" of "ICC/ADAS".
YES > NO >	 Perform diagnosis on the <u>DAS-122, "DTC Index"</u>. Replace the ADAS contr 	e detected DTC and repair or replace ol unit. Refer to <u>DAS-79, "Removal an</u>	the malfunctioning parts. Refer to distallation".

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INFOID:000000007911527

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

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000007911529

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

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

- YES >> Refer to DAS-158. "Diagnosis Procedure".
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911530

1.CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-223</u>, "ADAS CONTROL UNIT : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> Repair or replace the malfunctioning parts.

< DTC/CIRCUIT DIAGNOSIS >

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000007911531

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) and the CVT vehicle speed sensor signal (output shaft revolution signal) from TCM, received by the ADAS control unit via CAN communication, are inconsistent	 Wheel speed sensor ABS actuator and electric unit (control unit) Vehicle speed sensor CVT (output speed sensor) TCM ADAS control unit
OTE: DTC "C1A0 Refer to <u>DA</u>	3" is detected alon	g with DTC "U1000" or "C1A04", first dia <u>NTROL UNIT : DTC Logic"</u> for DTC "U10	gnose the DTC "U1000" or "C1A04". 000".
Refer to DA	<u>S-161, "DTC Logic</u>	<u>"</u> for DTC "C1A04".	
TC CONFI	RMATION PROC	EDURE	
.PERFORM	I DTC CONFIRMA	TION PROCEDURE	
 Start the Turn the Drive the CAUTIOI Always c 	engine. DCA system ON. vehicle at 30 km/h N: drive safely.	(19 MPH) or more.	
 Stop the solution Perform " 	vehicle. 'All DTC Reading" v	with CONSULT.	
. Check if t	the "C1A03" is dete	cted as the current malfunction in "Self I	Diagnostic Result" of "ICC/ADAS".
<u>s "C1A03" de</u>	etected as the curre	ent malfunction?	
NO >> R	Refer to <u>GI-53, "Inte</u>	rmittent Incident".	
Diagnosis	Procedure		INFOID:00000007911532
.CHECK SI	ELF-DIAGNOSIS F	RESULTS	
Check if "C1A	04" or "U1000" is c	letected other than "C1A03" in "Self Diag	gnostic Result" of "ICC/ADAS".
s any DTC de	etected?		
	AS-122, "DTC Inde	In the detected DTC and repair or replaced $\frac{1}{2}$	ce the mainunctioning parts. Refer to
NO >> G	GO TO 2.		
L.CHECK D	ATA MONITOR		
 Start the Drive the Check the MONITO 	engine. vehicle. at the value of "VH R" of "ICC/ADAS".	CL SPD AT" is almost the same as the v	value of "VHCL SPEED SE" in "DATA
CAUTION: Be careful of	f the vehicle speed	4.	
s the inspect	ion result normal?		
YES >> R NO >> G	Replace the ADAS of GO TO 3.	control unit. Refer to <u>DAS-79, "Removal</u>	and Installation".
3. СНЕСК ТО	CM SELF-DIAGNO	SIS RESULTS	
I. Perform " 2. Check if a	All DTC Reading". Any DTC is detecte	d in "Self Diagnostic Result" of "TRANSI	MISSION".

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< DTC/CIRCUIT DIAGNOSIS >

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-122, "DTC Index"</u>.
- NO >> GO TO 4.

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

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-122, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

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INFOID:000000007911533

DTC DETECTION LOGIC В DTC Trouble diagnosis (On board dis-DTC detecting condition Possible causes name play) C1A04 If a malfunction occurs in the VDC/TCS/ABS ABS actuator and electric unit (control ABS/TCS/VDC CIRC (4) system unit) D NOTE: If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". Е **Diagnosis** Procedure INFOID:000000007911534 1. CHECK SELF-DIAGNOSIS RESULTS F 1. Perform "All DTC Reading" with CONSULT. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC/ADAS". 2. Is "U1000" detected? >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. YES Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. Н 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? >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to YES DAS-122, "DTC Index". J NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". Κ

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C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:000000007911535

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) con- tinues for 10 seconds or more with vehicle speeds at approximately 40 km/h or more	 Stop lamp switch circuit ICC brake switch circuit Stop lamp switch ICC brake switch Incorrect stop lamp switch installation Incorrect ICC brake switch installation ECM ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211,</u> "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:000000007911536

Regarding Wiring Diagram information, refer to <u>DAS-132, "Wiring Diagram"</u>.

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4.

NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3.CHECK STOP LAMP SWITCH

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

Is the inspection result normal?

YES >> GO TO 14.

NO >> GO TO 9.

4.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.

Check ICC brake switch for correct installation. Refer to <u>BR-15, "Adjustment"</u>.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Adjust ICC brake switch installation. Refer to <u>BR-15, "Adjustment"</u>.

C1A05 BRAKE SWISTOP LAMP SW

< DTC/CIRCU					OF LAWIF SVY	[DCA1
5 ICC BRAKE						
2. Check ICC	brake swi	tch. Refer	to DAS-165	5, "Componen	t Inspection (ICC Brake Switch)".	
Is the inspection	on result no	rmal?				
YES >> GO	D TO 6.	h	4 - I-			
		brake swi			-	
	BRAKE S		OWER SUP			
 Turn the ig Check volt 	nition swite	ch ON. ≥n ICC bra	ake switch h	arness conne	ctor and ground	
	age series					
	Termina	lls				
	(+)		(-)	Voltage		
ICC bra	ake switch			(Approx.)		
Connector	Termina	al	Ground		_	
E72	1			Battery voltage		
Is the inspection	on result no	rmal?				
YES >> GO	D TO 7.	rnoocco	roopposter	0		
1NU >> KE	purco pr					
	RNESS BE			SWITCH AN	DECM	
1. Turn ignitio 2 Disconnec	on switch O	1FF nector				
3. Check for	continuity b	etween IC	CC brake sw	vitch harness of	connector and ECM harness connector.	
	-					
ICC brakes	switch		ECM	Continuity	-	
Connector	Terminal	Connector	Terminal	Continuity	_	
E72	2	E16	126	Yes	<u>.</u>	
4. Check for	continuity b	etween IC	CC brake sw	vitch harness of	connector and ground.	
100	owitch					
Connoctor	Terminal	_	Ground	Continuity		
E72	2	_	Ground	No	-	
⊑1∠ Is the inspectic		rmal?		INU	-	
YFS >> C(
NO >> Re	epair the ha	rnesses c	or connector	S.		
8.PERFORM	SELF-DIA	GNOSIS (OF ECM			
1. Connect a	Il connecto	rs again if	the connec	tors are disco	nnected.	<u> </u>
2. Turn ignitio	on switch O	N.				
3. Perform "A	All DTC Rea	ading".	"Self Diag	nostic Decult"	of "ENGINE" Pofer to EC 109 "DTC 1	ndev"
s any DTC det	tected?				OF LINGINE . Relef to EC-100, DTC I	
YES >> Re	epair or repl	lace the m	alfunctionin	ng parts identif	ied by the self-diagnosis result.	
NO >> Re	eplace the A	ADAS con	trol unit. Re	fer to DAS-79	"Removal and Installation".	
9.CHECK ST	OP LAMP S	SWITCH I	NSTALLATI	ON		
1. Turn ignitio	on switch C	FF.				
2. Check stop	p lamp swit	ch for cor	rect installat	tion. Refer to	3R-15, "Adjustment".	
Is the inspectic	on result no	<u>rmal?</u>				
YES >> GO	O TO 10.			Dofer to DD	15 "A division and"	
NU >> A0	ijust stop la	mp switch	1 Installation	i. Refer to BR-	<u>15, Adjustment"</u> .	

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

10.STOP LAMP SWITCH INSPECTION

- 1. Disconnect stop lamp switch connector.
- 2. Check stop lamp switch. Refer to DAS-165, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

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

11. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

(+)	(-)	Voltage	
Stop lamp switch			(Approx.)	
Connector	Terminal	Cround		
E38	1 3	Ground	Battery voltage	

Is the inspection result normal?

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

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

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

Stop lan	np switch	E	Continuity	
Connector	Terminal	Connector Terminal		Continuity
E38	2	E16	122	Yes

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

Stop lamp switch			Continuity
Connector	Terminal	Ground	Continuity
E38	2		No

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair the harnesses or connectors.

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

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

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector		
E38	4	E125	5	Yes

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

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

	<u></u>					Λ
Can	Stop lan	np switch	Ground	Continuity		
	38	rerminai	Ground	No		
Le the	inspect	tion result nor	mal?	NO		В
YES	>> (<u>111a1 :</u>			
NO	>> F	Repair the har	nesses or connectors.			С
14 .F	PERFO	RM SELF-DIA	AGNOSIS OF ECM			
1. Co	onnect	all connectors	s again if the connectors	s are discor	inected.	_
2. Tu	urn igni	tion switch OI	N. dina"			D
3. Pt	heck if	any DTC is d	etected in "Self Diagnos	tic Result" o	of "ENGINE". Refer to EC-108, "DTC Index".	
ls any	DTC d	etected?				E
YES	>> F	Repair or repla	ace the malfunctioning p	arts identifi	ed by the self-diagnosis result.	
	>> (GO TO 15.				_
1) .F	PERFO	RM SELF-DIA	AGNOSIS OF ABS ACT	UATOR AN	ID ELECTRIC UNIT (CONTROL UNIT)	F
Check	if any	DTC is detect	ted in "Self Diagnostic F	Result" of "A	BS". Refer to <u>BRC-45, "DTC Index"</u> .	
ls any	DTC d	etected?				G
YES NO	>> F >> F	Repair or repla Replace the A	ace the malfunctioning p	barts identifi	ed by the self-diagnosis result. "Removal and Installation"	
Com		t Inonactic		(0 <u>07(0 70,</u>	<u>- Removal and installation</u> .	Ц
Com	poner	it inspectio	on (ICC brake Swi	lCH)	INFOID:000000007911537	11
1.сн	ECK IC	C BRAKE S	WITCH			
Check	for cor	ntinuity betwe	en ICC brake switch ter	minals.		
		,				
Terr	ninal		Condition	Continuity		.1
1	2	When brake peo	dal is depressed	No		0
	2	When brake peo	dal is released	Yes		
<u>Is the</u>	inspect	tion result nor	mal?			Κ
YES	>>	NSPECTION	END vrako switch			
	г			(- I-)		L
Com	poner	nt inspectio	on (Stop Lamp Swi	tcn)	INFOID:000000007911538	
1.сн	ECK S	TOP LAMP S	WITCH			
Check	for cor	ntinuitv betwe	en stop lamp switch ter	minals.		M
		· · · , · · · ·	F			
Terr	ninal		Condition	Continuity		Ν
1	2	When brake peo	dal is depressed	Yes		
I	∠	When brake peo	dal is released	No		
2	4	When brake peo	dal is depressed	Yes		DA
5	-	When brake peo	dal is released	No		
Is the	inspect	tion result nor	mal?			Ρ
YES	>>	NSPECTION	END			
NÜ	>> ŀ	keplace stop I	amp switch.			

< DTC/CIRCUIT DIAGNOSIS >

C1A06 OPERATION SW

DTC Logic

INFOID:000000007911539

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	 Any switch of the ICC steering switch is detected as "ON" continuously for 60 seconds An ON/OFF state judgment of the ICC differs between ECM and ADAS control unit, and the state continues for 2 seconds or more 	 ICC steering switch circuit ICC steering switch ECM

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

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

Is "C1A06" detected as the current malfunction?

- YES >> Refer to <u>DAS-166, "Diagnosis Procedure"</u>.
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911540

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

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

- 1. Turn the ignition switch OFF.
- 2. Disconnect the ICC steering switch connector.
- 3. Check the ICC steering switch. Refer to DAS-167, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the steering wheel.

3.CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

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

Spira	cable	E	Continuity	
Connector	Terminal	Connector	Terminal	Continuity

DTC/CIRC	UIT DIAGN	IOSIS >			[DCA]
M30	25 32	E16	101 108	Yes	
. Check for	or continuity	between spi	ral cable ha	rness conne	ctor and ground.
Spiral	cable				
Connector	Terminal	_		Continuity	
M30	25 Ground		bund	No	
YES >> (NO >> •.CHECK S	GO TO 4. Repair the has PIRAL CAB	arnesses or LE	connectors.		
heck for co	ntinuity betw	een spiral c	able termina	als.	
	Spiral cable	9			
	Terminal		C	Continuity	
13		25		Yes	
16		32			
<u>the inspec</u> YES >> (NO >> I PERFOR	t <u>ion result no</u> GO TO 5. Replace the M SELF-DIA	ormal? spiral cable. .GNOSIS OI	ECM		
Connect Turn the Perform Check if any DTC c YES >> I	the connect ignition swit "All DTC Re any DTC is detected? Perform self-	ors of ICC s ch ON. ading". detected in ' diagnosis o	teering swit "Self Diagno n the detect	ch and ECM ostic Result" o ed DTC and	connector. of "ENGINE". repair or replace the malfunctioning parts. Refe
NO >>	Replace the	ADAS contr	ol unit. Refe	er to <u>DAS-79,</u>	"Removal and Installation".

1. CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

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



< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the steering wheel.

C1A12 LASER BEAM OFF CENTER

DTC detecting condition

Millimeter wave sensor is off the aiming

< DTC/CIRCUIT DIAGNOSIS >

DTC DETECTION LOGIC

C1A12 LASER BEAM OFF CENTER

Trouble diagnosis name

LASER BEAM OFFCNTR

DTC Logic

DTC (On board dis-

> play) C1A12

> > (12)

1.CHECK MILLIMETER WAVE SENSOR SELF-DIAGNOSIS RESULTS

ing point

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

point

Is "C1A12" detected?

Diagnosis Procedure

- YES >> Refer to <u>CCS-112, "DTC Logic"</u>.
- NO >> GO TO 2.

2. CHECK ADAS CONTROL SELF-DIAGNOSIS RESULTS

Is "C1A12" detected?

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

YES >> Replace ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> INSPECTION END

[DCA]

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INFOID:000000007911542

INFOID:000000007911543

Possible causes

Millimeter wave sensor is off the aim-

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< DTC/CIRCUIT DIAGNOSIS >

C1A13 STOP LAMP RELAY

DTC Logic

[DCA]

DTC DETECTION LOGIC

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

NOTE:

If DTC "C1A13" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211,</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE (1)

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

Is "C1A13" detected as the current malfunction?

YES >> Refer to DAS-170, "Diagnosis Procedure".

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (2)

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

CAUTION: Always drive safely.

NOTE:

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

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

Is "C1A13" detected as the current malfunction?

YES >> Refer to DAS-170, "Diagnosis Procedure".

NO >> GI-53, "Intermittent Incident" Refer to .

Diagnosis Procedure

INFOID:000000007911545

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

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.

DAS-170

				IDCA1
NO >> GO TO 2	NUSIS >			
2. CHECK STOP LAME	SWITCH			
Check that "STOP LAM	P SW" operate no	rmally in "DATA M	ONITOR" of "ICC/ADAS".	
Is the inspection result r	ormal?			
YES >> GO TO 10.				
NO >> GO TO 3.				
J.CHECK STOP LAMF	SWITCH INSTAI	LATION		
1. Turn ignition switch	OFF.	stallation Refer to	BR-15 "Adjustment"	
Is the inspection result r	ormal?		<u>BR 10, Agustinent</u> .	
YES >> GO TO 4.				
NO >> Adjust stop	lamp switch instal	llation. Refer to <u>BF</u>	<u>≀-15, "Adjustment"</u> .	
4. CHECK STOP LAMF	SWITCH			
1. Disconnect stop lan	p switch connect	or. S 165 "Component	at Inspection (Stop Lamp Switch)"	
Is the inspection result r	ormal?			
YES >> GO TO 5.				
NO >> Replace sto	p lamp switch.			
5. CHECK STOP LAMF	FOR ILLUMINAT	TION		
1. Turn the ignition swi	tch OFF.			
 Remove ICC brake Check that the stop 	noid reiay. Iamp is illuminate	d by depressing th	he brake pedal to turn the stop lamp C	DN.
Is the inspection result r	ormal?	,	· · · · · · · · · · · · · · · · · · ·	
YES >> GO TO6.				
NO >> Check the s	top lamp circuit, a	and repair or replace	e the malfunctioning parts.	
O.CHECK HARNESS E	SETWEEN STOP	LAMP SWITCH A		
 I urn the ignition swi Disconnect stop land 	tch OFF. In switch FCM re	ear combination la	mp_and high-mounted stop lamp con	nectors
 Check for continuity 	between the stop	amp switch harn	ess connector and the ECM harness	connector.
			_	
Stop lamp switch	ECM	Continuity		
Connector Terminal	Connector le			
Look for continuity	E 10	122 res		
4. Check for continuity	between stop lan	np switch harness	connector and ground.	
Stop lamp switch			-	
Connector Terminal	Ground	Continuity		
E38 2	-	No	_	
Is the inspection result r	ormal?		-	
YES >> GO TO 7.				
NO >> Repair the r	arnesses or conn	ectors.		
I .CHECK ICC BRAKE	HOLD RELAY CI	RCUIT		
1. Disconnect ECM, re	ar combination la	mp, and high-mou	nted stop lamp connectors.	
Is the inspection result r	ormal?		e pedaris not depressed.	
YES >> GO TO 9.				
NO >> GO TO 8.				
Ö. CHECK ICC BRAKE	HOLD RELAY			

< DTC/CIRCUIT DIAGNOSIS >

- 1. Remove ICC brake hold relay
- 2. Check ICC brake hold relay. Refer to <u>DAS-175</u>, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace ICC brake hold relay.

9.Perform self-diagnosis of ECM

- 1. Connect all connectors again if the connectors are disconnected.
- 2. Turn ignition switch ON.
- 3. Perform "All DTC Reading".
- 4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to EC-108, "DTC Index".

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
- NO >> Replace ADAS control unit. Refer to DAS-79, "Removal and Installation".

10. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

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

(+)	(-)	Voltage
ICC brake	hold relay		(Approx.)
Connector	Terminal	Ground	
E75 2			Battery voltage

Is the inspection result normal?

YES >> GO TO 11.

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

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

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

ICC brake	hold relay	ADAS co	ontrol unit	Continuity
Connector	Terminal	Connector Termin		Continuity
E75	1	B104	5	Yes

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

ICC brake	e hold relay		Continuity
Connector	Terminal	Ground	Continuity
E75	1		No

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12. CHECK ADAS CONTROL UNIT STANDARD VOLTAGE

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

2. Turn ignition switch ON.

3. Perform "STOP LAMP" on "Active Test" of "ICC/ADAS", and then check the voltage between ADAS control unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

А Terminal Condition (+) (-) Voltage ADAS control unit Active Test (Approx.) В item Connector Terminal "STOP LAMP" Ground Battery Off voltage B104 5 On 0 V Is the inspection result normal? D YES >> GO TO 13. NO >> Replace ADAS control unit. Refer to DAS-79, "Removal and Installation". 13. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT Е Turn ignition switch OFF. 1. Check the voltage between ICC brake hold relay harness connector and ground. 2. F Terminal (+) (-) Voltage G (Approx.) ICC brake hold relay Connector Terminal Ground Battery Н E75 5 voltage Is the inspection result normal? YES >> GO TO 14. NO >> Repair or replace ICC brake hold relay power supply circuit. 14. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM J 1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors and remove ICC brake hold relay. 2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector. K ECM ICC brake hold relay Continuity Connector Terminal Connector Terminal E75 3 M16 122 Yes 3. Check for continuity between ICC brake hold relay harness connector and ground. Μ ICC brake hold relay Continuity Connector Terminal Ground Ν E75 3 No Is the inspection result normal? YES >> GO TO 15. DAS NO >> Repair the harnesses or connectors. 15. CHECK ICC BRAKE HOLD RELAY 1. Remove ICC brake hold relay. 2. Check ICC brake hold relay. Refer to DAS-175, "Component Inspection". Is the inspection result normal? YES >> GO TO 16. NO >> Replace ICC brake hold relay. 16.CHECK STOP LAMP SWITCH

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

DAS-173

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 21.

NO >> GO TO 17.

17. CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.

2. Check stop lamp switch for correct installation. Refer to <u>BR-15, "Adjustment"</u>.

Is the inspection result normal?

YES >> GO TO 18.

NO >> Adjust stop lamp switch installation. Refer to <u>BR-15, "Adjustment"</u>.

18.CHECK STOP LAMP SWITCH

1. Disconnect stop lamp switch connector.

2. Check stop lamp switch. Refer to DAS-165, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace stop lamp switch.

19. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Connect stop lamp switch connector.

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

(+)	(-)	Voltage
Stop lan	np switch		(Approx.)
Connector	Terminal	Ground	
E38	3		Battery voltage

Is the inspection result normal?

YES >> GO TO 20.

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

20. Check harness between stop LAMP switch and ABS actuator and electric unit (Control Unit)

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

Stop lamp switch		ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E38	4	E125	5	Yes

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

Stop lamp switch			Continuity
Connector	Terminal	Ground	Continuity
E38	4		No

Is the inspection result normal?

YES >> GO TO 21.

NO >> Repair the harnesses or connectors.

21.PERFORM SELF-DIAGNOSIS OF ECM

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

[DCA] < DTC/CIRCUIT DIAGNOSIS > 2. Turn ignition switch ON. 3. Perform "All DTC Reading". А Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to EC-108, "DTC Index". 4. Is any DTC detected? YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result. В NO >> GO TO 22. 22.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) 1. Connect all connectors again if the connectors are disconnected. 2. Turn ignition switch ON. 3. Perform "All DTC Reading". Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to <u>BRC-45</u>, "DTC Index". D 4. Is any DTC detected? YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result. E >> Replace ADAS control unit. Refer to DAS-79, "Removal and Installation". NO Component Inspection INFOID:000000007911546 F

1.CHECK ICC BRAKE HOLD RELAY

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

Terminal		Condition	Continuity
		When the battery voltage is applied	Yes
3	5	When the battery voltage is not applied	No

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ICC brake hold relay.



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< DTC/CIRCUIT DIAGNOSIS > C1A14 ECM

DTC Logic

INFOID:000000007911547

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	 Accelerator pedal position sensor ECM ADAS control unit

NOTE:

If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Operate the ICC system and drive. CAUTION:

Always drive safely.

- 3. Stop the vehicle.
- 4. Perform "All DTC Reading" with CONSULT.
- 5. Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A14" detected as the current malfunction?

- YES >> Refer to <u>DAS-176, "Diagnosis Procedure"</u>.
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911548

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>EC-108, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

C1A15 GEAR POSITION

Description

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

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

DTC Logic

INFOID-000000007911550

INFOID:000000007911549

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN com- munication and a gear position calculated by the ADAS control unit continues for approx- imately 11 minutes or more	 Input speed sensor Vehicle speed sensor CVT (output speed sensor) TCM 	

NOTE:

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

Н Refer to <u>DAS-211</u>, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000". Refer to DAS-159, "DTC Logic" for DTC "C1A03". Refer to <u>DAS-161, "DTC Logic"</u> for DTC "C1A04". DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. 2. Turn the DCA system ON. 3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more. **CAUTION:** K Always drive safely. 4. Stop the vehicle. 5. Perform "All DTC Reading" with CONSULT. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS". 6 Is "C1A15" detected as the current malfunction? YES >> Refer to DAS-177, "Diagnosis Procedure". Μ >> Refer to GI-53, "Intermittent Incident". NO **Diagnosis** Procedure INFOID:000000007911551 Ν 1.CHECK SELF-DIAGNOSIS RESULTS Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC/ ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". Ρ NO >> GO TO 2.

2.CHECK VEHICLE SPEED SIGNAL

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

CAUTION: Be careful of the vehicle speed.

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

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

3.CHECK GEAR POSITION

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

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

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

4.CHECK GEAR POSITION SIGNAL

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

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 6.

5.CHECK INPUT SPEED SENSOR SIGNAL

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

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> GO TO 6.

Ó.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-122, "DTC Index".

NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

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

1. Perform "All DTC Reading".

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-122, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A16 RADAR BLOCKED

< DTC/CIRCUIT DIAGNOSIS >

C1A16 RADAR BLOCKED

DTC Logic

[DCA]

INFOID:000000007911552

DTC DETECT	TION LOGIC		
DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A16 (16)	RADAR BLOCKED	If any stain occurs to millimeter wave sensor body window	 Stain or foreign materials is deposited Cracks or scratches exist
NOTE: DTC "C1A16" in between the co them "This is n • When contan • When driving • When millime	may be detected un ontamination detecti ot malfunction".) nination or foreign m while it is snowing c eter wave sensor are	der the following conditions. (Explain to ion function and the indication when th aterials adhere to the millimeter wave s or when frost forms on the millimeter wa a of the front bumper is temporarily fog	the customer about the difference me malfunction is detected and tell ensor area of the front bumper ve sensor area of the front bumper ged
Diagnosis P	Procedure		INFOID:00000007911553
1.VISUAL CH	ECK 1		
Check for conta	amination and foreig	n material on the millimeter wave sense	or area of the front bumper.
Does contamin	ation or foreign mate	erial exist?	
YES >> Cle	ean the contamination	on and foreign material from the millim	eter wave sensor area of the front
bu	mper.		
NU >> G(
Z.VISUAL CH	ECK 2		
 Remove th Check milli 	e front bumper. Refe imeter wave sensor	er to <u>EXT-17, "Removal and Installation</u> for contamination and foreign materials.	n
Does contamin	ation or foreign mate	erial exiat?	
YES >> Cle NO >> GC	ean the contamination TO 3.	on and foreign material from the millimet	er wave sensor.
3.VISUAL CH	ECK 3		
Check millimet	er wave sensor for c	racks and scratches.	
Are there any o	cracks or scratches f	ound?	
YES >> Re NO >> GO	place the millimeter D TO 4.	wave sensor. Refer to DAS-240, "Remo	oval and Installation".
4.INTERVIEW	/		
1. Ask if there	e is any trace of con	tamination or foreign material adhering	to the millimeter wave sensor area
of the front 2. Ask if the	t bumper. millimeter wave sen	sor area of the front bumper was frost	ed during driving or if vehicle was
driven in si 3. Ask if millir tend to fog	now. neter wave sensor a , etc.)	rea of the front bumper was temporarily	fogged (windshield glass may also
Are any of the	above conditions se	en?_	
YES >> Ex	plain to customer ab	out the difference between contamination	on detection and an actual malfunc-

tion. Inform them that "this is not malfunction".
 NO >> Replace the millimeter wave sensor. Refer to <u>DAS-240. "Removal and Installation"</u>.

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C1A17 ICC SENSOR

< DTC/CIRCUIT DIAGNOSIS >

C1A17 ICC SENSOR

DTC Logic

INFOID:000000007911554

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A17 (17)	ICC SENSOR MALF	If millimeter wave sensor is malfunctioning	Millimeter wave sensor

NOTE:

If DTC "C1A17" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

Diagnosis Procedure

INFOID:000000007911555

1. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.

2. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000"detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-180, "DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK MILLIMETER WAVE SENSOR SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>CCS-65. "DTC Index"</u>.
- NO >> Replace ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
C1A18 RADAR AIMING INCMP

< DTC/CIRCUIT DIAGNOSIS >

C1A18 RADAR AIMING INCMP

DTC Logic

[DCA]

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INFOID:000000007911556

DTC (On board o play)	lis- Trouble diagnosis name	DTC detecting condition	Possible causes
C1A18 (18)	RADAR AIMING IN- CMP	Millimeter wave sensor is not adjusted	 No millimeter wave sensor aiming adjustment is performed Millimeter wave sensor aiming ad- justment has been interrupted
	FIRMATION PROCE	EDURE	
1.PERFOR	RM DTC CONFIRMAT	TION PROCEDURE	
 Start th Turn th Perform Check 	e engine. e DCA system ON. n "All DTC Reading" w if the "C1A18" is deter	vith CONSULT. cted as the current malfunction in "Sel	f Diagnostic Result" of "ICC/ADAS".
s "C1A18"	detected as the curre	nt malfunction?	
YES >>	Refer to DAS-181, "[<u>Diagnosis Procedure".</u>	
Diagnosi	s Procedure		INFOID:00000007911557
1.ADJUST	MILLIMETER WAVE	SENSOR AIMING	
Check if the	e "C1A18" is detected	in "Self Diagnostic Result" of "RADAR	R".
<u>s "C1A18"</u>	detected?		
YES >> NO >>	Refer to <u>CCS-126, "I</u> Replace the ADAS c	<u>DTC Logic"</u> . ontrol unit. Refer to <u>DAS-79, "Remova</u>	al and Installation".

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C1A21 UNIT HIGH TEMP

< DTC/CIRCUIT DIAGNOSIS >

C1A21 UNIT HIGH TEMP

DTC Logic

INFOID:000000007911558

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A21 (21)	ICC SENSOR HIGH TEMP	Millimeter wave sensor judges high temperature abnormality	Temperature around the millimeter wave sensor becomes high

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the ignition switch OFF.
- 2. Wait for 10 minutes or more to cool the millimeter wave sensor.
- 3. Start the engine.
- 4. Turn the DCA system ON.
- 5. Perform "All DTC Reading" with CONSULT.
- 6. Check if the "C1A21" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".
- Is "C1A21" detected as the current malfunction?
- YES >> Refer to DAS-182, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911559

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "C1A21" detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>CCS-127, "ICC SENSOR : DTC Logic"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

C1A24 NP RANGE

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	С
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communica- tion and a current gear position signal contin- ues for 60 seconds or more	TCMTransmission range switch	D
NOTE: If DTC "C1A24 "ADAS CONTE	4" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>	E
DTC CONFIR	MATION PROCED	URE		_
1.CHECK DT	C REPRODUCE (1)			F
 Start the e Turn the D Wait for ap Perform "A 	ngine. CA system ON. pproximately 5 minute All DTC Reading" with	s or more after shifting the selector leve CONSULT.	er to "P" position.	G
5. Check if th	e "C1A24" is detected	d as the current malfunction in "Self Dia	agnostic Result" of "ICC/ADAS".	Н
YES >> Re NO >> GO 2.CHECK DT	ected as the current r efer to <u>DAS-183, "Diac</u> D TO 2. C REPRODUCE (2)	gnosis Procedure".		I
 Wait for ap Perform "A Check if th 	pproximately 5 minute All DTC Reading". ae "C1A24" is detected	s or more after shifting the selector level d as the current malfunction in "Self Dia	er to "N" position. agnostic Result" of "ICC/ADAS".	J
<u>Is "C1A24" det</u>	ected as the current r	nalfunction?		K
NO >> Re	efer to <u>GI-53, "Intermit</u>	itent Incident".		
Diagnosis F	Procedure		INFOID:00000007911561	
1.CHECK SE	LF-DIAGNOSIS RES	ULTS		L
Check if "U100	0" is detected other the	han "C1A24" in "Self Diagnostic Result'	' of "ICC/ADAS".	M
<u>ls "U1000" det</u>	ected?			
YES >> Pe Re NO >> G(erform the CAN comn efer to <u>DAS-211, "ADA</u> O TO 2.	nunication system inspection. Repair o <u>AS CONTROL UNIT : DTC Logic"</u> .	r replace the malfunctioning parts.	Ν
2. СНЕСК ТС	M DATA MONITOR			
Check that "SL	.CT LVR POSI" opera	tes normally in "DATA MONITOR" of "T	RANSMISSION".	DAS
Is the inspection	on result normal?			
YES >> GO NO >> Pe pa	D TO 3. erform diagnosis for ti rts. Refer to <u>TM-55.</u> "	ransmission range switch circuit and re	epair or replace the malfunctioning	Ρ
3.PERFORM	TCM SELF-DIAGNO	SIS		
 Perform "A Check if a 	All DTC Reading". ny DTC is detected in	"Self Diagnostic Result" of "TRANSMI	SSION".	

Is any DTC detected?

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INFOID:000000007911560

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>TM-55, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A26 ECD MODE MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

C1A26 ECD MODE MALFUNCTION

DTC Logic

INFOID:000000007911562

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DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A26 (26)	ECD MODE MALF	If an abnormal condition occurs with ECD system	ABS actuator and electric unit (control unit)
NOTE: If DTC "C1 "U0415" or • DTC "U10 • DTC "U00 • DTC "U00	A26" is detected along "U0121". 000": Refer to <u>DAS-211.</u> 415": Refer to <u>DAS-209</u> 121": Refer to <u>DAS-204</u>	with DTC "U1000", "U0415" or "U0121" · <u>"ADAS CONTROL UNIT : DTC Logic"</u> . <u>"DTC Logic"</u> . <u>"DTC Logic"</u> .	first diagnose the DTC "U1000",
DTC CON	FIRMATION PROCE	DURE	
1.PERFO	RM DTC CONFIRMATIO	ON PROCEDURE	
1. Start th 2. Wait fo 3. Perforr 4. Check Is "C1A26" YES >> NO >>	r approximately 1 minut n "All DTC Reading" wit if the "C1A26" is detected detected as the current Refer to <u>DAS-185, "Dis</u> Refer to <u>GI-53, "Interm</u>	e after turning the DCA system ON. h CONSULT. ed as the current malfunction in "Self Diag <u>malfunction?</u> agnosis Procedure". <u>hittent Incident"</u> .	nostic Result" of "ICC/ADAS".
Diagnosi	s Procedure		INFOID:00000000791156
1.снеск	SELF-DIAGNOSIS RE	SULTS	
Check if "L	J1000", "U0415" or "U0	121" is detected other than "C1A26" in "	Self Diagnostic Result" of "ICC
Is any DTC	detected?		
YES >> NO >>	 Perform diagnosis on DAS-211, "ADAS CON GO TO 2. 	the detected DTC and repair or replace th ITROL UNIT : DTC Logic".	ne malfunctioning parts. Refer to
2.PERFO	RM SELF-DIAGNOSIS	OF ABS ACTUATOR AND ELECTRIC UN	IT (CONTROL UNIT)
Check if an	y DTC is detected in "S	elf Diagnostic Result" of "ABS".	
<u>Is any DTC</u>	detected?		
YES >>	 Perform diagnosis on GI-53, "Intermittent Ind Replace ADAS control 	the detected DTC and repair or replace the <u>sident</u> ". unit, Refer to DAS-79, "Removal and Inst	ne malfunctioning parts. Refer to allation".
		and refer to <u>brief reference</u> and mot	<u>anatori</u> .

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C1A27 ECD POWER SUPPLY CIRCUIT

DTC Logic

[DCA]

INFOID:000000007911564

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1A27 (27)	ECD PWR SUPLY CIR	ECD system power supply voltage is excessively low	 ABS actuator and electric unit (control unit) power supply circuit ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A27" is detected along with DTC "U1000", "U0415" or "U0121" first diagnose the DTC "U1000", "U0415" or "U0121".

DTC "U1000": Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.

- DTC "U0415": Refer to <u>DAS-209</u>, "DTC Logic".
- DTC "U0121": Refer to <u>DAS-204, "DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Wait for approximately 1 minute after turning the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1A27" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A27" detected as the current malfunction?

- YES >> Refer to DAS-186, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911565

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000", "U0415" or "U0121" is detected other than "C1A27" in "Self Diagnostic Result" of "ICC/ ADAS".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-122, "DTC Index".

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check power supply circuit of ABS actuator and electric unit (control unit). Refer to <u>BRC-67. "Diagnosis Proce-</u> dure".

Is the inspection result normal?

- YES >> Perform self-diagnosis of ABS actuator and electric unit (control unit). Refer to <u>BRC-45. "DTC</u> <u>Index"</u>.
- NO >> Repair the harnesses or connectors.

C1A2A ICC SENSOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

C1A2A ICC SENSOR POWER SUPPLY CIRCUIT

DTC Logic

INFOID:000000007911566

[DCA]

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DTC DETECTION LOGIC В DTC С (On board Trouble diagnosis name DTC detecting condition Possible cause display) C1A2A Abnormal power supply voltage in millimeter wave Harness, connector, fuse ICC SEN PWR SUP CIR (80) sensor Millimeter wave sensor D DTC CONFIRMATION PROCEDURE **1.**PERFORM DTC CONFIRMATION PROCEDURE Е 1. Start the engine. 2. Turn the DCA system ON. 3. Perform "All DTC Reading" with CONSULT. F Check if the "C1A2A" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 4. Is "C1A2A" detected as the current malfunction? YES >> Refer to DAS-187, "Diagnosis Procedure". G NO >> Refer to GI-53, "Intermittent Incident". **Diagnosis** Procedure INFOID:000000007911567 Н 1. CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "C1A2A" in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to YES DAS-211, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. 2.CHECK MILLIMETER WAVE SENSOR SELF-DIAGNOSIS Check if any DTC is detected in "Self Diagnostic Result" of "LASER". Κ Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to CCS-65, "DTC Index". L NO >> Replace ADAS control unit. Refer to DAS-79, "Removal and Installation". Μ Ν

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< DTC/CIRCUIT DIAGNOSIS >

C1A33 CAN TRANSMISSION ERROR

DTC Logic

INFOID:000000007911568

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A33 (33)	CAN TRANSMISSION ERR	If an error occurs in the CAN communication signal that ADAS control unit transmits to ECM	ADAS control unit

NOTE:

If DTC "C1A33" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "C1A33" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A33" detected as the current malfunction?

- YES >> Refer to DAS-188, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911569

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A33" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

C1A34 COMMAND ERROR

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A34 (34)	COMMAND ERROR	If an error occurs in the command signal that ADAS control unit transmits to ECM via CAN communication	ADAS control unit
NOTE: If DTC "C1A34 "ADAS CONTF	4" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>
DTC CONFIR	MATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
 Start the e Operate th CAUTION Always dr 	ngine. le ICC system and dri : ive safelv .	ve.	
 Stop the version Perform "A Check if the 	ehicle. III DTC Reading" with e "C1A34" is detected	CONSULT. I as the current malfunction in "Self Dia	agnostic Result" of "ICC/ADAS".
<u>ls "C1A34" det</u> YES >> Re NO >> Re	ected as the current n efer to <u>DAS-189, "Diac</u> efer to <u>GI-53, "Intermit</u>	nalfunction? anosis Procedure". tent Incident".	
Diagnosis F	Procedure		INFOID:00000007911571
1.CHECK SE	LF-DIAGNOSIS RESI	ULTS	
Check if "U100	0" is detected other th	nan "C1A34" in "Self Diagnostic Result"	' of "ICC/ADAS".
<u>ls "U1000" dete</u>	ected?		
YES >> Pe Re NO >> Re	rform the CAN comm fer to <u>DAS-211, "ADA</u> place the ADAS cont	nunication system inspection. Repair o <u>\S CONTROL UNIT : DTC Logic"</u> . rol unit. Refer to <u>DAS-79, "Removal an</u>	r replace the malfunctioning parts. <u>d Installation"</u> .

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INFOID:000000007911570

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C1A35 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

C1A35 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000007911572

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A35 (35)	APA CIR	If the accelerator pedal actuator is malfunc- tioning	Accelerator pedal actuator

NOTE:

If DTC "C1A35" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

Diagnosis Procedure

INFOID:000000007911573

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1A35" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A35" detected as the current malfunction?

- YES >> GO TO 2.
- NO >> INSPECTION END

2. CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A35" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 3.

3.CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if the DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-131, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

< DTC/CIRCUIT DIAGNOSIS >

C1A36 ACCELERATOR PEDAL ACTUATOR CAN COMM

DTC Logic

[DCA]

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DIC Logic			INFOID:000000007911574
DTC DETEC	TION LOGIC		В
DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A36 (36)	APA CAN COMM CIR	If an error occurs in the signal that the accel- erator pedal actuator transmits via ITS com- munication	ADAS control unit Accelerator pedal actuator ITS communication system
NOTE: If DTC "C1A3 "ADAS CONT	6" is detected along w ROL UNIT : DTC Logic	vith DTC "U1000", first diagnose the 	DTC "U1000". Refer to DAS-211.
DTC CONFIF	RMATION PROCEDU	IRE	
1.PERFORM	DTC CONFIRMATION	I PROCEDURE	F
1. Start the e2. Turn the E3. Perform "/4. Check if theIs "C1A36" deYES >> ReNO >> Re	engine. DCA system ON. All DTC Reading" with (he "C1A36" is detected tected as the current m efer to <u>DAS-191, "Diag</u> efer to <u>GI-53, "Intermitt</u>	CONSULT. as the current malfunction in self-diag <u>alfunction?</u> nosis Procedure". ent Incident".	G nosis results of "ICC/ADAS". H
Diagnosis F	Procedure		INFOID:00000007911575
1.CHECK AD	DAS CONTROL UNIT S	ELF-DIAGNOSIS RESULTS	1
Check if "U100 Is "U1000" det YES >> Pe Re NO >> G	D0" is detected other the <u>tected?</u> erform the CAN comm efer to <u>DAS-211, "ADAS</u> O TO 2.	an "C1A36" in "Self Diagnostic Result" unication system inspection. Repair o <u>S CONTROL UNIT : DTC Logic"</u> .	of "ICC/ADAS". J r replace the malfunctioning parts.
2.CHECK AC	CELERATOR PEDAL	ACTUATOR SELF-DIAGNOSIS RESU	JLTS
Check if the D Is any DTC de YES >> Pe	TC is detected in "Self etected? erform diagnosis on the AS-131, "DTC Index".	Diagnostic Result" of "ACCELE PEDA e detected DTC and repair or replace	L ACT".
		and the broad of t	

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C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

< DTC/CIRCUIT DIAGNOSIS >

C1A37 ACCELERATOR PEDAL ACTUATOR CAN 2

DTC Logic

INFOID:000000007911576

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A37 (133)	APA CAN CIR2	If ADAS control unit detects an error signal that is received from accelerator pedal actu- ator via ITS communication	Accelerator pedal actuator malfunction

NOTE:

If DTC "C1A37" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1A37" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected as the current malfunction?

- YES >> Refer to DAS-192, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911577

1.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A37" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

2.REPLACE ACCELERATOR PEDAL ASSEMBLY

- 1. Turn the ignition switch OFF.
- 2. Replace the accelerator pedal assembly.
- 3. Turn the ignition switch ON.
- 4. Erases all self-diagnosis results.
- 5. Perform "All DTC Reading" again.
- 6. Check if the DTC "C1A37" is detected in self-diagnosis results of "ICC/ADAS".

Is "C1A37" detected?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> INSPECTION END

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

C1A38 ACCELERATOR PEDAL ACTUATOR CAN 1

DTC Logic

[DCA]

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INFOID:000000007911578

DTC DETEC	TION LOGIC		
DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A38 (132)	APA CAN CIR1	If ADAS control unit detects an error signal that is received from accelerator pedal actu- ator via ITS communication	Accelerator pedal actuator malfunction
NOTE: If DTC "C1A3 "ADAS CONT	8" is detected along v ROL UNIT : DTC Logic	vith DTC "U1000", first diagnose the	DTC "U1000". Refer to <u>DAS-211.</u>
DTC CONFIF	RMATION PROCEDU	JRE	
1.PERFORM	DTC CONFIRMATION	I PROCEDURE	
 Start the e Turn the E Perform "/ Check if the example. 	engine. DCA system ON. All DTC Reading" with he "C1A38" is detected	CONSULT. as the current malfunction in self-diag	nosis results of "ICC/ADAS".
<u>ls "C1A38" de</u>	tected as the current m	alfunction?	
YES >> R	efer to <u>DAS-193, "Diag</u> efer to GI-53, "Intermitt	nosis Procedure". ent Incident"	
Diagnosis F	Procedure	<u>ent mondent</u> .	INEC/ID-0000007011570
1 au=au			
	DAS CONTROL UNIT S	SELF-DIAGNOSIS RESULTS	
Check if "U100	JU" is detected other th	an "C1A38" in "Self Diagnostic Result"	of "ICC/ADAS".
YES >> Pe	erform the CAN comm	unication system inspection. Repair o	r replace the malfunctioning parts.
	efer to <u>DAS-211, "ADA</u> O TO 2	<u>S CONTROL UNIT : DTC Logic"</u> .	
2.REPLACE	ACCELERATOR PEDA	AL ASSEMBLY	
1. Turn the id	anition switch OFF.		
2. Replace t	he accelerator pedal as	ssembly.	
 Erases Al Perform "/ 	All DTC Reading" agair	۱.	
5. Check if the	he "C1A38" is detected	in self-diagnosis results of "ICC/ADAS	5".
Is "C1A38" de	tected?		d lastallation"
1ES >> R NO >> IN	eplace the ADAS contr ISPECTION END	or utilit. Refer to <u>DAS-79, "Removal an</u>	

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C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000007911580

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to DAS-194, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911581

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BRC-45. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>.

C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

C1F01 ACCELERATOR PEDAL ACTUATOR ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F01 (91)	APA MOTOR MALF	If the accelerator pedal actuator motor error is detected	Accelerator pedal actuator integrated motor malfunction
DTC CONFIF	RMATION PROCEDU	JRE	
1.PERFORM	DTC CONFIRMATION	I PROCEDURE	
 Turn the ig Turn the ig Slowly de Repeat st 	gnition switch OFF. gnition switch ON. press the accelerator p ep 3 several times.	edal completely, and then release it.	
 Perform "/ Check if t ADAS". 	All DTC Reading" with he DTC "C1F01" is de	CONSULT. etected as the current malfunction on	the self-diagnosis results of "ICC/
<u>Is "C1F01" det</u> YES >> Re NO >> Re	<u>tected as the current m</u> efer to <u>DAS-195, "ADA</u> efer to <u>GI-53, "Intermitt</u>	<u>alfunction?</u> S CONTROL UNIT : Diagnosis Procee ent Incident".	dure".
ADAS CON	NTROL UNIT : Dia	gnosis Procedure	INFOID:000000007911583
1.CHECK AD	DAS CONTROL UNIT S	SELF-DIAGNOSIS RESULTS	
Check if "U100	00" is detected other th	an "C1F01" in "Self Diagnostic Result"	' of "ICC/ADAS".
<u>ls "U1000" det</u>	tected?		
YES >> Pe Re NO >> G	erform the CAN comm efer to <u>DAS-211, "ADA</u> O TO 2.	unication system inspection. Repair o <u>S CONTROL UNIT : DTC Logic"</u> .	r replace the malfunctioning parts.
2.CHECK AC	CELERATOR PEDAL	ACTUATOR SELF-DIAGNOSIS RESI	JLTS
Check if "C1F(Is "C1F01" det	01" is detected in "Self tected?	Diagnostic Result" of "ACCELE PEDA	NL ACT".
YES >> RO NO >> RO ACCELER	efer to <u>DAS-195, "ACC</u> eplace the ADAS contr ATOR PEDAL A(ELERATOR PEDAL ACTUATOR : DT ol unit. Refer to <u>DAS-79, "Removal an</u> CTUATOR	<u>C Logic"</u> . <u>d Installation"</u> .
ACCELER	ATOR PEDAL AC	TUATOR : DTC Logic	INFOID:00000007911584
DTC DETEC	TION LOGIC		

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	
C1F01	APA MOTOR MALF	If the accelerator pedal actuator motor error is detected	Accelerator pedal actuator integrated motor malfunction	

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the ignition switch OFF.
- 2. Turn the ignition switch ON.
- 3. Slowly depress the accelerator pedal completely, and then release it.

DAS-195

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C1F01 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

- 4. Repeat step 3 several times.
- Perform "All DTC Reading" with CONSULT.
 Check if the DTC "C1F01" is detected as the current malfunction on the self-diagnosis results of "ICC/ ADAS" or "ACCELE PEDAL ACT".

Is "C1F01" detected as the current malfunction?

- >> Refer to DAS-196, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure". YES
- NO >> Refer to GI-53, "Intermittent Incident".

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000007911585

1.REPLACE ACCELERATOR PEDAL ASSEMBLY

Perform DTC confirmation procedure. If "C1F01" is detected, replace the accelerator pedal assembly. Refer to DAS-241, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation".

>> INSPECTION END

C1F02 AC ADAS CON	CELERATOR P	EDAL ACTUATOR		A
ADAS CON	ITROL UNIT : DT	C Logic	INFCID:00000007911586	B
DTC DETEC	TION LOGIC			
DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	С
C1F02 (92)	APA C/U MALF	If the accelerator pedal actuator integrated control unit error is detected	Accelerator pedal actuator integrated control unit malfunction	D
1.PERFORM	DTC CONFIRMATION	I PROCEDURE		F
 Start the e Turn the E Perform "A Check if the second s	engine. DCA system ON. All DTC Reading" with (ne "C1F02" is detected ected as the current m efer to <u>DAS-197. "ADA</u> efer to <u>GI-53. "Intermitt</u> ITROL UNIT : Dia	CONSULT. as the current malfunction on the self- <u>alfunction?</u> <u>S CONTROL UNIT : Diagnosis Procee</u> ent Incident". gnosis Procedure	-diagnosis results of "ICC/ADAS". dure".	F
1.CHECK AD	AS CONTROL UNIT S	ELF-DIAGNOSIS RESULTS		Н
Check if "U100 Is "U1000" det	00" is detected other the ected?	an "C1F02" in "Self Diagnostic Result"	of "ICC/ADAS".	I
YES >> Per Re NO >> Go 2.CHECK AC	erform the CAN comme efer to <u>DAS-211. "ADA:</u> O TO 2. CELERATOR PEDAL	unication system inspection. Repair o <u>S CONTROL UNIT : DTC Logic"</u> . ACTUATOR SELF-DIAGNOSIS RESI	r replace the malfunctioning parts. JLTS	J
Check if "C1F0 Is "C1F02" det YES >> Re NO >> Re ACCELER	D2" is detected in "Self rected? efer to <u>DAS-197, "ACC</u> eplace the ADAS contro ATOR PEDAL AC	Diagnostic Result" of "ACCELE PEDA ELERATOR PEDAL ACTUATOR : DT ol unit. Refer to <u>DAS-79, "Removal an</u> CTUATOR	L ACT". <u>C Logic"</u> . <u>d Installation"</u> .	K
ACCELERATOR PEDAL ACTUATOR : DTC Logic				

C1F02 ACCELERATOR PEDAL ACTUATOR

DTC DETECTION LOGIC

< DTC/CIRCUIT DIAGNOSIS >

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	Ν
C1F02	APA C/U MALF	If the accelerator pedal actuator integrated control unit error is detected	Accelerator pedal actuator integrated control unit malfunction	

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1F02" is detected as the current malfunction on the self-diagnosis results of "ACCELE PEDAL ACT" or "ICC/ADAS"
- Is "C1F02" detected as the current malfunction?

INFOID:000000007911589

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[DCA]

C1F02 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Replace the accelerator pedal assembly. Refer to <u>DAS-241</u>, "MODELS WITH DISTANCE CON-TROL ASSIST SYSTEM : Removal and Installation".
- NO >> INSPECTION END

C1F03 ACCELERATOR PEDAL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

C1F03 ACCELERATOR PEDAL ACTUATOR

DTC Logic

INFOID:000000007911590

[DCA]

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DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F03	АРА НІ ТЕМР	 The temperature of the motor integrated in the accelerator pedal actuator remains 100°C (212°F) or more for 0.4 seconds or more The temperature of the motor drive circuit integrated in the accelerator pedal actuator remains 120°C (248°F) or more for 0.4 seconds or more 	Accelerator pedal actuator integrated motor malfunction
NOTE: When the acce	elerator pedal actua	ator operates excessively, "C1F03" may be	e detected temporarily.
	MATION PROCE	EDURE	
1.PERFORM	DTC CONFIRMAT	ION PROCEDURE	
 Turn the ig Wait for 10 Drive the v 	nition switch OFF.) minutes or more a vehicle with DCA sy	and cool the accelerator pedal actuator intersection of the system.	egrated motor.
Always di	rive safely.		
 Stop the visit of /li>	enicie. All DTC Reading" w ne DTC "C1F03" is CT".	vith CONSULT. s detected as the current malfunction in s	self-diagnosis results of "ACCELE
<u>ls "C1F03" det</u>	ected as the currer	nt malfunction?	
YES >> Re	efer to <u>DAS-199, "L</u> efer to <u>GI-53, "Inter</u>	Diagnosis Procedure". mittent Incident".	
Diagnosis F	Procedure		INFOID:00000007911591
1.REPLACE	ACCELERATOR P	EDAL ASSEMBLY	
Perform DTC c DAS-241, "MO	confirmation procec	dure. If "C1F03" is detected, replace the ac ANCE CONTROL ASSIST SYSTEM : Ren	celerator pedal assembly. Refer to noval and Installation".
>> IN	SPECTION END		

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911592

[DCA]

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1F05" is detected as the current malfunction on the self-diagnosis results of "ICC/ADAS".

Is "C1F05" detected as the current malfunction?

YES >> Refer to DAS-200, "ADAS CONTROL UNIT : Diagnosis Procedure".

NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

1.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F05" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

2.CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if "C1F05" is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT". <u>Is "C1F05" detected?</u>

YES >> Refer to DAS-200. "ACCELERATOR PEDAL ACTUATOR : DTC Logic".

NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation". ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : DTC Logic

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

2. Turn the DCA system ON.

3. Perform "All DTC Reading" with CONSULT.

INFOID:000000007911594

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C1F05 ACCELERATOR PEDAL ACTUATOR POWER SUPPLY CIRCUIT	
< DTC/CIRCUIT DIAGNOSIS > [DCA]	
4. Check if the "C1F05" is detected as the current malfunction on the self-diagnosis results of "ACCELE PEDAL ACT".	А
Is "C1F05" detected as the current malfunction?	
YES >> Refer to <u>DAS-201. "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u> . NO >> Refer to <u>GI-53, "Intermittent Incident"</u> .	В
ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure	
1.CHECK POWER SUPPLY CIRCUIT	С
Check the accelerator pedal actuator power supply circuit. Refer to <u>DAS-223, "ACCELERATOR PEDAL</u> <u>ACTUATOR : Diagnosis Procedure"</u> .	D
Is the inspection result normal?	
 YES >> Replace the accelerator pedal assembly. Refer to <u>DAS-241, "MODELS WITH DISTANCE CON-</u> <u>TROL ASSIST SYSTEM : Removal and Installation"</u>. NO >> Repair or replace the malfunctioning parts. 	E
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C1F06 CAN CIRCUIT2

< DTC/CIRCUIT DIAGNOSIS >

C1F06 CAN CIRCUIT2

DTC Logic

[DCA]

INFOID:000000007911596

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F06	CAN CIR 2	If accelerator pedal actuator detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "C1F06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211</u>, <u>"ACCELERATOR PEDAL ACTUATOR : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1F06" is detected as the current malfunction in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "C1F06" detected as the current malfunction?

- YES >> Refer to DAS-202, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911597

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1F06" in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ACCELERATOR PEDAL ACTUATOR : DTC Logic"</u>.

NO >> GO TO 2.

2.REPLACE ADAS CONTROL UNIT

- 1. Turn the ignition switch OFF.
- 2. Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation".
- 3. Erases All self-diagnosis results.
- 4. Perform "All DTC Reading" again.
- 5. Check if the "C1F06" is detected in self-diagnosis results of "ACCELE PEDAL ACT".

Is "C1F06" detected?

- YES >> Replace the accelerator pedal assembly. Refer to <u>DAS-241, "MODELS WITH DISTANCE CON-</u> <u>TROL ASSIST SYSTEM : Removal and Installation"</u>.
- NO >> INSPECTION END

C1F07 CAN CIRCUIT1

< DTC/CIRCUIT DIAGNOS	IS >
C1F07 CAN CIRCU	IT1

DTC Logic

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1F07	CAN CIR 1	If accelerator pedal actuator detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit
NOTE: f DTC "C1F ADAS CON	07" is detected along TROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>
	IRMATION PROCED		
1. Start the	engine.	N PROCEDORE	
2. Turn the B Perform	DCA system ON.	CONSULT	
4. Check i PEDAL	f the "C1F07" is detec ACT".	ted as the current malfunction in "Se	If Diagnostic Result" of "ACCELE
<u>s "C1F07" d</u>	etected as the current r	nalfunction?	
YES >> NO >>	Refer to <u>DAS-202, "Dia</u> Refer to <u>GI-53, "Intermi</u>	<u>gnosis Procedure"</u> . <u>ttent Incident"</u> .	
Diagnosis	Procedure		INFOID:000000007911599
1.снеск я	SELF-DIAGNOSIS RES	ULTS	
Check if "U1	000" is detected other t	han "C1F07" in "Self Diagnostic Result"	' of "ACCELE PEDAL ACT".
<u>s "U1000" d</u>	etected?		
YES >>	Perform the CAN comm Refer to DAS-211, "AC	nunication system inspection. Repair c CELERATOR PEDAL ACTUATOR : DT	r replace the malfunctioning parts.
NO >>	GO TO 2.		
2.REPLACI	E ADAS CONTROL UN	IT	
1. Turn the	ignition switch OFF.	Pofer to DAS 70 "Pomoval and Install	ation"
3. Erases /	All self-diagnosis results	S.	<u>ation</u> .
4. Perform	"All DTC Reading" aga	in.	
s "C1F07" d	etected?		
YES >>	Replace the accelerato	r pedal assembly. Refer to <u>DAS-241, "</u> <u>// : Removal and Installation"</u> .	MODELS WITH DISTANCE CON-
NO >>	INSPECTION END		

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[DCA]

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< DTC/CIRCUIT DIAGNOSIS >

U0121 VDC CAN 2

DTC Logic

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0121" detected as the current malfunction?

- YES >> Refer to DAS-204, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911601

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

DTC DETECTION LOGIC

U0126 STRG SEN CAN 1

DTC Logic

[DCA]

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INFOID:000000007911602

DTC (On board dis-Trouble diagnosis name DTC detecting condition Possible causes play) If ADAS control unit detects an error signal U0126 that is received from steering angle sensor via STRG SEN CAN CIR1 Steering angle sensor (130) D CAN communication NOTE: If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-211, E "ADAS CONTROL UNIT : DTC Logic". DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE F 1. Start the engine. 2. Turn the DCA system ON. Perform "All DTC Reading" with CONSULT. 3. G 4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "U0126" detected as the current malfunction? Н YES >> Refer to DAS-205, "Diagnosis Procedure". >> Refer to GI-53, "Intermittent Incident". NO Diagnosis Procedure INFOID:000000007911603 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". Κ 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 Μ BRC-45, "DTC Index". >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". NO

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< DTC/CIRCUIT DIAGNOSIS >

U0235 ICC SENSOR CAN 1

DTC Logic

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0235 (144)	ICC SENSOR CAN CIR1	If ADAS control unit detects an error signal that is received from millimeter wave sensor via ITS communication	Millimeter wave sensor

NOTE:

If DTC "U0235" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0235" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0235" detected as the current malfunction?

- YES >> Refer to DAS-206, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911605

1.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0235" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

2.CHECK MILLIMETER WAVE SENSOR SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>CCS-65. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0401 ECM CAN 1

DTC DETECTION LOGIC

DTC Logic

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[DCA]

INFOID:000000007911606

DTC (On board Trouble diagnosis name DTC detecting condition Possible causes display) If ADAS control unit detects an error signal U0401 ECM CAN CIR1 that is received from ECM via CAN communi-ECM (120) D cation NOTE: If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-211, E "ADAS CONTROL UNIT : DTC Logic". DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE F 1. Start the engine. 2. Turn the DCA system ON. Perform "All DTC Reading" with CONSULT. 3. G 4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "U0401" detected as the current malfunction? Н YES >> Refer to DAS-207, "Diagnosis Procedure". >> Refer to GI-53, "Intermittent Incident". NO Diagnosis Procedure INFOID:000000007911607 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". Κ NO >> GO TO 2. 2.CHECK ECM SELF-DIAGNOSIS RESULTS Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to Μ EC-108, "DTC Index". >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". NO

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< DTC/CIRCUIT DIAGNOSIS >

U0402 TCM CAN 1

DTC Logic

INFOID:000000007911608

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communication	ТСМ

NOTE:

If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0402" detected as the current malfunction?

- YES >> Refer to DAS-208, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53. "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911609

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "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-55, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0415 VDC CAN 1

DTC Logic

[DCA]

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INFOID:000000007911610

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)
NOTE: f DTC "U041! ADAS CONTI	5" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>ic"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>
TC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
1. Start the e 2. Turn the D 3. Perform " <i>A</i> 4. Check if th s "U0415" det	engine. DCA system ON. All DTC Reading" with ne "U0415" is detected ected as the current r	CONSULT. d as the current malfunction in "Self Dia nalfunction?	gnostic Result" of "ICC/ADAS".
YES >> Re NO >> Re	efer to <u>DAS-209, "Dia</u> efer to <u>GI-53, "Intermi</u>	gnosis Procedure". ttent Incident".	
Diagnosis F	Procedure		INFOID:00000007911611
1. CHECK SE	LF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other t	han "U0415" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>s "U1000" det</u>	ected?	Ū.	
YES >> Pe Re NO >> Ge	erform the CAN comm efer to <u>DAS-211, "ADA</u> O TO 2.	nunication system inspection. Repair o <u>AS CONTROL UNIT : DTC Logic"</u> .	r replace the malfunctioning parts.
2. СНЕСК АВ	S ACTUATOR AND E	ELECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS
Check if any D	TC is detected in "Se	If Diagnostic Result" of "ABS".	
s any DTC de	tected?		
YES >> Pe	erform diagnosis on th	he detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> Re	eplace the ADAS conf	trol unit. Refer to <u>DAS-79, "Removal an</u>	d Installation".

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< DTC/CIRCUIT DIAGNOSIS >

U0428 STRG SEN CAN 2

DTC Logic

INFOID:000000007911612

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0428" detected as the current malfunction?

- YES >> Refer to DAS-210, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911613

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1000 CAN COMM CIRCUIT [DCA] < DTC/CIRCUIT DIAGNOSIS > **U1000 CAN COMM CIRCUIT** ADAS CONTROL UNIT ADAS CONTROL UNIT : Description INFOID-000000007911614 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-39, "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:000000007911615 DTC DETECTION LOGIC DTC (On board Trouble diagnosis name DTC detecting condition Possible causes display) If ADAS control unit is not transmitting or receiv-U1000 · CAN communication system CAN COMM CIRCUIT ing CAN communication signal or ITS communi-(100)· ITS communication system cation signal for 2 seconds or more NOTE: If "U1000" is detected, first diagnose the CAN communication system. ADAS CONTROL UNIT : Diagnosis Procedure INFOID:000000007911616 **1.**PERFORM THE SELF-DIAGNOSIS Turn the ignition switch ON. Turn the DCA system ON, and then wait for 30 seconds or more.

- Perform "All DTC Reading" with CONSULT. 3.
- Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 4

Is "U1000" detected as the current malfunction?

>> Refer to <u>LAN-22</u>, "Trouble Diagnosis Flow Chart".
>> Refer to <u>GI-53</u>, "Intermittent Incident". YES

NO

ACCELERATOR PEDAL ACTUATOR

ACCELERATOR PEDAL ACTUATOR : Description

ITS COMMUNICATION

1.

2.

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

ACCELERATOR PEDAL ACTUATOR : DTC Logic

DTC DETECTION LOGIC

INFOID:000000007911617

INFOID:000000007911618

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U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DCA]

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	If accelerator pedal actuator is not transmitting or receiving ITS communication signal for 2 sec- onds or more	ITS communication system

ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure

INFOID:000000007911619

1.PERFORM THE SELF-DIAGNOSIS

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

Is "U1000" detected as the current malfunction?

>> Refer to LAN-22, "Trouble Diagnosis Flow Chart". YES

NO >> Refer to GI-53, "Intermittent Incident".

DAS-213 Revision: March 2012

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

ADAS CONTROL UNIT : DTC Logic

ADAS CONTROL UNIT : Description

U1010 CONTROL UNIT (CAN)

DTC DETECTION LOGIC

DTC

< DTC/CIRCUIT DIAGNOSIS >

ADAS CONTROL UNIT

(On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit
ADAS CO	NTROL UNIT : Di	agnosis Procedure	INFC/D:00000007911622
1.PERFORM	M DTC CONFIRMATIO	N PROCEDURE	(
1. Turn the 2. Perform 3. Check if Is "U1010" de	DCA system ON. "All DTC Reading" with the "U1010" is detected etected as the current r	CONSULT. d as the current malfunction in "Self Dia nalfunction?	gnostic Result" of "ICC/ADAS".
NO >> NO ACCELEF	Replace the ADAS cont NSPECTION END RATOR PEDAL A	trol unit. Refer to <u>DAS-79, "Removal an</u> CTUATOR	<u>d Installation"</u> .
ACCELER	RATOR PEDAL AC	CTUATOR : Description	INFOID:000000007911623
CAN controlle	er controls the commur	nication of ITS communication signal ar	nd the error detection.
ACCELER	RATOR PEDAL AC	CTUATOR : DTC Logic	INFOID:00000007911624
DTC DETEC	CTION LOGIC		
DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	If accelerator pedal actuator detects malfunc- tion by CAN controller initial diagnosis	Accelerator pedal actuator
ACCELER	ATOR PEDAL AC	CTUATOR : Diagnosis Procedu	IFC INFOID:000000007911625
1.PERFORM	M DTC CONFIRMATIC	N PROCEDURE	I
 Turn the Perform ' Check if PEDAL A 	DCA system ON. "All DTC Reading" with the "U1010" is detec ACT".	CONSULT. ted as the current malfunction in "Se	If Diagnostic Result" of "ACCELE D
	staatad aa tha arrest		
YES >> F 1 NO >> I	etected as the current r Replace the accelerato IROL ASSIST SYSTEM NSPECTION END	nalfunction? r pedal actuator. Refer to <u>DAS-241, "I</u> <u>M : Removal and Installation"</u> .	MODELS WITH DISTANCE CON-

U1010 CONTROL UNIT (CAN)

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[DCA]

INFOID:000000007911620

INFOID:000000007911621

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В

U150B ECM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150B ECM CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150B" detected as the current malfunction?

- YES >> Refer to DAS-214, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911627

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "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-108. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

U150C VDC CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150C VDC CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)	
NOTE: If DTC "U1500 "ADAS CONTI	C" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the l <u>c"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>	
DTC CONFIF	MATION PROCED	URE		
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	F	
 Start the e Turn the D Perform "A Check if the 	ngine. OCA system ON. All DTC Reading" with ne "U150C" is detected	CONSULT. d as the current malfunction in "Self Dia	G gnostic Result" of "ICC/ADAS".	
<u>ls "U150C" det</u>	ected as the current r	nalfunction?		
YES >> Re	efer to <u>DAS-215, "Diac</u> efer to <u>GI-53, "Intermit</u>	<u>anosis Procedure"</u> . <u>tent Incident"</u> .	H	
Diagnosis F	Procedure		INFOID:00000007911629	
1.CHECK SE	LF-DIAGNOSIS RES	ULTS	I	
Check if "U100	0" is detected other th	nan "U150C" in "Self Diagnostic Result"	of "ICC/ADAS".	
<u>ls "U1000" det</u>	ected?			
YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic".				
NO >> GO TO 2.				
2. СНЕСК АВ	S ACTUATOR AND E	ELECTRIC UNIT (CONTROL UNIT) SEL	F-DIAGNOSIS RESULTS	
Check if any D	TC is detected in "Sel	f Diagnostic Result" of "ABS".	L	
Is any DTC de	tected?			
YES >> Pe	erform diagnosis on th RC-45, "DTC Index"	ne detected DTC and repair or replace	the malfunctioning parts. Refer to \mathbb{N}	
NO >> Re	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".	

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[DCA]

INFOID:000000007911628

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U150D TCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150D TCM CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	тсм

NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150D" detected as the current malfunction?

- YES >> Refer to DAS-216, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911631

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "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-55, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".
U150E BCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150E BCM CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	ВСМ
NOTE: If DTC "U150I "ADAS CONTI	E" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>
DTC CONFIF 1.PERFORM	RMATION PROCED DTC CONFIRMATIO	URE N PROCEDURE	
1. Start the e 2. Turn the E 3. Perform "/ 4. Check if the extreme term of term o	engine. DCA system ON. All DTC Reading" with ne "U150E" is detected tected as the current r efer to DAS-217. "Diag	CONSULT. d as the current malfunction in "Self Dia nalfunction? anosis Procedure".	gnostic Result" of "ICC/ADAS".
NO >> Re Diagnosis F	efer to <u>GI-53, "Intermit</u> Procedure	tent Incident".	
1. снеск se	LF-DIAGNOSIS RES	ULTS	14F012.00000007911653
Check if "U100 Is "U1000" det	00" is detected other the	nan "U150E" in "Self Diagnostic Result"	of "ICC/ADAS".
YES >> Pe Re NO >> Ge	erform the CAN comn efer to <u>DAS-211, "ADA</u> O TO 2.	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.
Z .CHECK BC	M SELF-DIAGNOSIS	RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "BCM".	
Is any DTC de	tected?		
YES >> Pe <u>B(</u> NO >> Re	erform diagnosis on th <u>CS-49, "DTC_Index"</u> . eplace the ADAS cont	ne detected DTC and repair or replace rol unit. Refer to <u>DAS-79, "Removal and</u>	the malfunctioning parts. Refer to
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INFOID:000000007911632

U1502 ICC SENSOR CAN COMM CIRC

< DTC/CIRCUIT DIAGNOSIS >

U1502 ICC SENSOR CAN COMM CIRC

DTC Logic

INFOID:000000007911634

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1502 (147)	ICC SEN CAN COMM CIR	ADAS control unit detects an error signal that is received from millimeter wave sensor via CAN communication	Millimeter wave sensor

NOTE:

If DTC "U1502" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1502" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1502" detected as the current malfunction?

- YES >> Refer to DAS-218, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911635

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1502" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

2.CHECK MILLIMETER WAVE SENSOR SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>CCS-65. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1513 METER CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U1513 METER CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter
NOTE: If DTC "U151 "ADAS CONT	3" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the l <u>c"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
 Start the e Turn the I Perform ", Check if tl Is "U1513" def 	engine. DCA system ON. All DTC Reading" with he "U1513" is detected tected as the current n	CONSULT. d as the current malfunction in "Self Diag nalfunction?	gnostic Result" of "ICC/ADAS".
YES >> R NO >> R	efer to <u>DAS-219, "Diag</u> efer to <u>GI-53, "Intermit</u>	gnosis Procedure". Itent Incident".	
Diagnosis I	Procedure		INFOID:000000007911637
1.CHECK SE	ELF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other th	han "U1513" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>Is "U1000" def</u> YES >> Po Ri NO >> G 2. CHECK CC	<u>tected?</u> erform the CAN comn efer to <u>DAS-211, "ADA</u> O TO 2. OMBINATION METER	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic". SELF-DIAGNOSIS RESULTS	r replace the malfunctioning parts.
Check if any D	TC is detected in "Se	If Diagnostic Result" of "METER/M&A".	
Is any DTC de	etected?	-	
YES >> Po	erform diagnosis on th WI-25. "DTC Index".	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> R	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".

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[DCA]

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< DTC/CIRCUIT DIAGNOSIS >

U1514 STRG SEN CAN 3

DTC Logic

[DCA]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1514 (165)	STRG SEN CAN CIRC 3	ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U1514" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1514" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1514" detected as the current malfunction?

- YES >> Refer to DAS-220, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911639

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1514" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "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 BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1515 ICC SENSOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U1515 ICC SENSOR CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1515 (165)	ICC SENSOR CAN CIRC 3	ADAS control unit detects an error signal that is received from millimeter wave sensor via CAN communication	Millimeter wave sensor
NOTE: If DTC "U151 "ADAS CONT	5" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the l <u>c"</u> .	DTC "U1000". Refer to <u>DAS-211.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
 Start the e Turn the E Perform "/ Check if the 	engine. DCA system ON. All DTC Reading" with ne "U1515" is detected	CONSULT. I as the current malfunction in "Self Diag	gnostic Result" of "ICC/ADAS".
l <u>s "U1515" det</u> YES >> Re NO >> Re	ected as the current n efer to <u>DAS-221, "Diac</u> efer to <u>GI-53, "Intermit</u>	nalfunction? gnosis Procedure". tent Incident".	
Diagnosis F	Procedure		INFOID:00000007911641
1 .CHECK SE	LF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other the	nan "U1515" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" det</u>	ected?		
YES >> Pe Re NO >> G	erform the CAN comn efer to <u>DAS-211, "ADA</u> O TO 2.	nunication system inspection. Repair or <u>AS CONTROL UNIT : DTC Logic</u> ".	replace the malfunctioning parts.
2.CHECK MI	LLIMETER WAVE SE	NSOR SELF-DIAGNOSIS RESULTS	
Check if any D Is any DTC de	TC is detected in "Se tected?	f Diagnostic Result" of "LASER".	
YES >> Pe	erform diagnosis on th	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> R	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".

DAS

Revision: March 2012

DAS-221

[DCA]

A INFOID:000000007911640

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U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U1517 ACCELERATOR PEDAL ACTUATOR CAN 3

DTC Logic

INFOID:000000007911642

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1517 (167)	APA CAN CIRC 3	ADAS control unit detects an error signal that is received from accelerator pedal actuator via CAN communication	Accelerator pedal actuator

NOTE:

If DTC "U1517" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the DCA system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1517" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1517" detected as the current malfunction?

- YES >> Refer to DAS-222, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911643

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1517" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK ACCELERATOR PEDAL ACTUATOR SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "ACCELE PEDAL ACT".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-131, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

< DTC/CIR(POWE	ER SUPF	PLY AND) GRC	OUND CIRC	UIT	[DCA]
POWER	SUPPLY	AND	GROUN					<u> </u>
ADAS CO	ONTROL	UNIT						
ADAS CC	NTROL U	JNIT : C	iagnosis	s Proced	ure			INFOID:000000007911646
Regarding V	Viring Diagra	m informa	ation, refer	to <u>DAS-13</u>	<u>2. "Wirin</u>	ng Diagram".		
1.снески	ADAS CONT	ROL UNI	T POWER	SUPPLY C	RCUIT			
Check voltag	ge between A	ADAS con	trol unit ha	arness conr	ector ar	nd ground.		
	Terminal							
(*	+)	(-)	- Conditi	ion Volt	ade			
ADAS co	ontrol unit	. ,	Ignitio	on (App	rox.)			
Connector	Terminal		switcl	h				
5404	10	Ground	OFF	. 0	V			
B104	16		ON	Batter	y volt- je			
Is the inspec YES >> NO >>	ction result ne GO TO 2. Repair the A	<u>ormal?</u> DAS cont	rol unit pov	wer supply	circuit.			
2. CHECK /	ADAS CONT	ROL UNI	T GROUNI	D CIRCUIT	,			
 Turn the Disconn Check feedback 	e ignition swit nect the ADA or continuity	tch OFF. S control between	unit connec ADAS cont	ctor. trol unit har	ness co	nnector and gr	ound.	
	-					-		
AD/	AS control unit	tin al	Onevend	Continui	ty			
B104	r iem	iinai S	Ground	Yes				
Is the inspec	ction result n	ormal?						
YES >> NO >> ACCELE	INSPECTIO Repair the A RATOR P	N END DAS cont PEDAL 7	rol unit gro	ound circuit.				
ACCELE	RATOR PI	EDAL A	CTUATO	DR : Dia	ynosis	Procedure		INFOID:000000007911647
Regarding V	Viring Diagra	m informa	ation, refer	to <u>DAS-13</u>	<u>2, "Wirin</u>	ng Diagram".		
1 .CHECK F	USES							
Check if any	of the follow	ing fuses	are blown:	:				
	S	ignal name					Fuse No.	
	Batter	y power sup	ply				64	

Is the inspection result normal?

YES

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

 $2. {\sf CHECK} \ {\sf ACCELERATOR} \ {\sf PEDAL} \ {\sf ACTUATOR} \ {\sf POWER} \ {\sf SUPPLY} \ {\sf CIRCUIT}$

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Check voltage between accelerator pedal actuator harness connector and ground.

Terminal			Condition		
(+)		(—)	Condition	Voltage	
Accelerator pedal actuator			Ignition	(Approx.)	
Connector	Connector Terminal		switch		
E74	1	Giouna	OFF	Battery volt-	
	3		ON	age	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the accelerator pedal actuator power supply circuit.

3. CHECK ACCELERATOR PEDAL ACTUATOR GROUND CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect the accelerator pedal actuator connector.

3. Check for continuity between accelerator pedal actuator harness connector and ground.

Accelerator p	edal actuator		Continuity	
Connector Terminal		Ground	Continuity	
E74	2		Yes	
	14 10	·		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the accelerator pedal actuator ground circuit.

DISTANCE CONTROL ASSIST SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS DISTANCE CONTROL ASSIST SYSTEM SYMPTOMS

Symptom Table

INFOID:000000007911648 В

[DCA]

	Symptoms	Reference page
	Switch does not turn ON	Poter to DAS 226 "Description"
	Switch does not turn OFF	Refer to <u>DAS-220. Description</u> .
Operation	DCA system setting cannot be turned ON on the navigation screen	Poter to DAS 228 "Description"
	DCA system setting cannot be turned OFF on the navigation screen	Relef to <u>DAS-220. Description</u> .
	DCA system not activated (switch is ON)	Refer to DAS-229, "Description".
Display/Chime	Information display is not illuminated (vehicle ahead indicator)	Refer to <u>MWI-17, "Description"</u> .
	Chime does not sound	Refer to DAS-231, "Description".
Control	No force generated for putting back the accelera- tor pedal	Refer to DAS-233, "Description".
	Frequently cannot detect the vehicle ahead	Pefer to DAS 234 "Description"
	Detection zone is short	Nelei lo <u>DAS-234, Description</u> .
Detection of lead vehicle	System misidentifies a vehicle even though there is no vehicle ahead	 Adjust millimeter wave sensor aiming: Refer to <u>CCS-85</u>, <u>"Description"</u>.
	System misidentifies a vehicle in the next lane	 Perform action test. Refer to <u>DAS-156</u>, "Description".
	System does not detect the vehicle ahead at all	Refer to DAS-236, "Description".

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SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

< SYMPTOM DIAGNOSIS >

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

Description

INFOID:000000007911649

[DCA]

The switch does not turn ON

• When the DCA system setting is ON, the DCA system switch indicator does not illuminate even if the dynamic driver assistance switch is depressed.

The switch does not turn OFF

 The DCA system switch indicator does not turn OFF even if the dynamic driver assistance switch is pressed when the DCA system switch indicator illuminates.

NOTE:

The system cannot be operated when setting conventional (fixed speed) cruise control mode.

Diagnosis Procedure

INFOID:000000007911650

1.CHECK DCA SYSTEM SETTING

1. Start the engine.

- 2. After starting the engine wait for 5 seconds or more.
- 3. Check that DCA system setting on the navigation screen is ON.

Is DCA system setting ON?

- YES >> GO TO 2.
- NO >> Enable the DCA system setting.

2. DYNAMIC DRIVER ASSISTANCE SWITCH INSPECTION

- 1. Start the engine.
- 2. Check that "DYNA ASIST SW" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK DCA SYSTEM SWITCH INDICATOR CIRCUIT

1. Start the engine.

- 2. Select the active test item "DCA INDICATOR" of "ICC/ADAS" with CONSULT.
- 3. Check if the DCA system switch indicator illuminates when the test item is operated.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 4.

4.PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.

2. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to MWI-25, "DTC Index".

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

5.CHECK STEERING SWITCH CIRCUIT

Check the steering switch circuit. Refer to DAS-166, "Diagnosis Procedure".

Is the inspection result normal?

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

6.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.

2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to <u>DAS-122</u>, "<u>DTC Index</u>". Is any DTC detected?

YES >> GO TO 7.

TES ~~ GO TO 7.

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF

	Δ1
<pre> STMPTOM DIAGNOSIS ></pre>	
7 REPAIR OR REPLACE MALEUNCTIONING PARTS	/-
Panair or replace malfunctioning parts	
Repair of replace manufactioning parts.	г
>> GO TO 8.	
8. CHECK DCA SYSTEM	
 Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action to (Refer to <u>DAS-156, "Description"</u> for action test.) Check that the DCA system is normal. 	est.
>> INSPECTION END	L
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DCA SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHICLE INFOR-MATION DISPLAY

< SYMPTOM DIAGNOSIS >

DCA SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHICLE IN-FORMATION DISPLAY

Description

INFOID:000000007911651

[DCA]

- DCA system setting is not selectable on the navigation screen. NOTE:
- When the ignition switch is in ACC position, DCA system settings cannot be changed.
- "Distance Control Assist" is not indicated on the navigation screen.
- The switching between ON and OFF cannot be performed by operating the navigation system.
- The item of "Distance Control Assist" on the navigation screen is not active.
- After turning ON the ignition switch or starting the engine, DCA settings of the navigation system cannot be selected for several tens of seconds under the following conditions:
- After replacing AV control unit.
- After erasing connection history of the navigation system.
- After erasing self-diagnosis results.
- The DCA system setting differs from the one set at the previous driving. NOTE:

Turn OFF the ignition switch and wait for 5 seconds or more.

Diagnosis Procedure

INFOID:000000007911652

1. CHECK DCA SYSTEM SETTING

- 1. Start the engine.
- Check that the DCA system settings is selectable on the navigation screen. 2.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.PERFORM THE SELF-DIAGNOSIS

- 1. Perform "All DTC Reading" with CONSULT.
- 2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". Refer to the following.
- ICC/ADAS: <u>DAS-122</u>, "<u>DTC Index</u>" MULTI AV: <u>AV-464</u>, "<u>DTC Index</u>"
- METER/M&A: MWI-25, "DTC Index"

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> INSPECTION END

 ${f 3.}$ CHECK DATA MONITOR OF ADAS CONTROL UNIT

Check that "DCA SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.

Is the inspection result normal?

YES >> Refer to AV-435, "Description".

NO >> GO TO 4.

4.CHECK MULTIFUNCTION SWITCH

Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate properly.

Is the inspection result normal?

- >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". YES
- NO >> Repair or replace malfunctioning parts.

DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

< SYMPTOM DIAGNOSIS > [DCA] DCA SYSTEM NOT ACTIVATED (SWITCH IS ON) Description The dynamic driver assistance switch can be turned ON/OFF, but the DCA system does not operate. NOTE: Never start the operation under the following conditions. No operation condition When the brake pedal depressed When the CC system is set When the tock system judges that the vehicle comes to a standstill by the system control When the system millunction occurs When the system and function occurs When the system and function occurs When the sensor area of the front bumper is dirty and the measurement of the distance between the vehicles becomes difficult When the SNOW mode switch is turned ON Diagnosis Procedure More system and function occurs 1.CHECK CAUSE OF AUTOMATIC CANCELLATION Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT. Ist displayed? Not displayed>G TO 2. "OPE SW VOLT CIRC">"OPE SW VOLT CIRC">"CAN COMM ERROR">Refer to DAS-166. "DTC Logic". "VHOL SPD UNMATCH">"Refer to DAS-166. "DTC Logic". "CAN COMM ERROR">"Refer to DAS-166. "DTC Logic". "CAN COMM ERROR">Refer to DAS-166. "DTC Logic". "CAN COMM ERROR">Refer to DAS-166. "DTC Logic". "AN COMM ERROR">"Refer to DAS-166. "DTC Logic". "AN COUTT">"Refer to DAS-166. "DTC Logic". "CAN COMM ERROR">Refer to DAS-166. "DTC Logic". "AN COUTT">"REFER to DAS-166. "DTC Logic". "CAN COMM ERROR">Refer to DAS-166. "DTC Logic". "AN COUTT">"REFER to DAS-166. "DTC Logic". "AN COUTT">"		
DCA SYSTEM NOT ACTIVATED (SWITCH IS ON) Description We conserve the second of the sec	< SYMPTOM DIAGNOSIS > [C)CA]
Description The dynamic driver assistance switch can be turned ON/OFF, but the DCA system does not operate. No operation condition When the operation under the following conditions. No operation condition When the brake pedal depressed When the system judges that the vehicle comes to a standstill by the system control When the system judges that the vehicle comes to a standstill by the system control When the system judges that the vehicle comes to a standstill by the system control When the system malfunction occurs When the system malfunction occurs When the system malfunction occurs When the System judges that the rCS) operates When the System judges that the rCS) operates When the Sort ODC (including the TCS) operates When the Sort ODC (including the TCS) operates When the Sort ODC is turned OFF When the Sort ODC is turned ON Diagnosis Procedure Accurate of the front bumper is dirty and the measurement of the distance between the vehicles becomes difficult Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ ADAS" with CONSULT. Is it displayed? Not displayed>GO TO 2. "OPE SW VOLT CIRC">>Refer to DAS-166. "DTC Logic". "AN COMM ERROR">>Refer to DAS-166. "DTC Logic". "AN COMM ERROR">>Refer to DAS-166. "DTC Logic". "AN COMM ERROR">>Refer to DAS-166. "DTC Logic". "OPE SW VOLT CIRC">>Refer to DAS-166. "DTC Logic". "AN COMM ERROR">>Refer to DAS-166. "DTC Logic".	DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)	
The dynamic driver assistance switch can be turned ON/OFF, but the DCA system does not operate. NOTE: Never start the operation under the following conditions. No operation condition When the brake pedal depressed When the system judges that the vehicle comes to a standstill by the system control When the system judges that the vehicle comes to a standstill by the system control When the system judges that the vehicle comes to a standstill by the system control When the system index is not detected Operation cancellation condition When the dynamic driver assistance switch is turned to OFF When the system malfunction occurs When the System malfunction occurs When the Soft or VDC (including the TCS) operates I check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT. Is it displayed? Not displayed?eG TO 2. "OPE SW VOLT CIRC">PCCCOMPACTURE Conce." "OPE SW VOLT CIRC">PCCCOMPACTURE CONCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT. Is it displayed? Not displayed?>GO TO 2. "O	Description	007911653
Never start the operation under the following conditions. No operation condition When the brake pedal depressed When the ICC system is set When the system judges that the vehicle comes to a standstill by the system control When the vehicle ahead is not detected Operation cancellation condition When the dynamic driver assistance switch is turned to OFF When the dynamic driver assistance switch is turned to OFF When the system malfunction occurs When the system malfunction occurs When the Stor VDC (including the TCS) operates When the VDC is turned OFF When the Sensor area of the front bumper is dirty and the measurement of the distance between the vehi- cles becomes difficult When ABS warning lamp is ON When the SNOW mode switch is turned ON Diagnosis Procedure 1.CHECK CAUSE OF AUTOMATIC CANCELLATION Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ ADAS" with CONSULT. Is it displayed? Not displayed? Not displayed? Not displayed? Not displayed? Not displayed? Not ONMERROR">Refer to DAS-166 ."DTC Logic". "VHCL SPD UNMATCH">Refer to DAS-166 ."DTC Logic". "CAN COMM ERROR">Refer to DAS-159. "DTC Logic". "APA HI TEMP">Refer to DAS-161. "DTC Logic". "APA HI TEMP">Refer to DAS-161. "DTC Logic". "APA HI TEMP">Refer to DAS-163. "DTC Logic". "APA HI TEMP">Refer to DAS-161. "DTC Logic". "APA HI TEMP">Refer to DAS-163. "DTC Logic". "APA HI TEMP">R	The dynamic driver assistance switch can be turned ON/OFF, but the DCA system does not operate. NOTE:	
 When the ICC system is set When the system judges that the vehicle comes to a standstill by the system control When the system judges that the vehicle comes to a standstill by the system control When the vehicle ahead is not detected Operation cancellation condition When the system malfunction occurs When the system malfunction occurs When the system malfunction occurs When the SDC is turned OFF When the sensor area of the front bumper is dirty and the measurement of the distance between the vehicles becomes difficult When ABS warning lamp is ON When the SNOW mode switch is turned ON Diagnosis Procedure More concentration ADAS" with CONSULT. Is it displayed>SGO TO 2. "OPE SW VOLT CIRC">PREfer to DAS-166. "DTC Logic". "HCL SPD UNMATCH">Refer to DAS-159. "DTC Logic". "CAN COMM ERROR">Refer to DAS-158. "DTC Logic". "APA HI TEMP">Refer to DAS-161. "DTC Logic". "APA HI TEMP">Refer to DAS-181. "DTC Logic". "APA HI TEMP">Refer to DAS-188. "DTC Logic". 	Never start the operation under the following conditions. No operation condition • When the brake pedal depressed	
Operation cancellation condition • When the dynamic driver assistance switch is turned to OFF • When the system malfunction occurs • When the system malfunction occurs • When the system malfunction occurs • When the SNOV (including the TCS) operates • When the VDC is turned OFF • When the sensor area of the front bumper is dirty and the measurement of the distance between the vehicles becomes difficult • When the SNOW mode switch is turned ON Diagnosis Procedure • When the SNOW mode switch is turned ON Diagnosis Procedure • When the SNOW mode switch is turned ON Diagnosis Procedure 1.CHECK CAUSE OF AUTOMATIC CANCELLATION Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ ADAS" with CONSULT. Is it displayed? Not displayed>>GO TO 2. "OPE SW VOLT CIRC">Refer to DAS-166, "DTC Logic". "VHCL SPD UNMATCH">Refer to DAS-166, "DTC Logic". "CAN COMM ERROR">Refer to DAS-158, "DTC Logic". "CAN COMM ERROR">Refer to DAS-158, "DTC Logic". "CAN COMM ERROR">Refer to DAS-158, "DTC Logic". "ABS/TCS/VDC CIRC">Refer to DAS-158, "DTC Logic". "ABS/TCS/VDC CIRC">Refer to DAS-158, "DTC Logic". "ABS/TCS/VDC CIRC">Refer to DAS-161, "DTC Logic". "CAN COMM ERROR">Refer to DAS-161, "DTC Logic". "ABS/TCS/VDC CIRC">Refer to DAS-161, "DTC Logic". "ABS/TCS/VDC CIRC">Refer to DAS-161, "DTC Logic". "ABS/TCS/VDC CIRC">Refer to DAS-161, "DTC Logic". "ADA HI TEMP">REFER to DAS-161, "DTC Logic". "APA HI TEMP">REFER to DAS-161, "DTC Logic". "APA HI TEMP">REFER to DAS-161, "DTC Logic". "ADA HI TEMP">REFER to DAS-165, "	 When the ICC system is set When the system judges that the vehicle comes to a standstill by the system control When the vehicle ahead is not detected 	
 When ABS or VDC (including the TCS) operates When ABS or VDC (including the TCS) operates When the VDC is turned OFF When the sensor area of the front bumper is dirty and the measurement of the distance between the vehicles becomes difficult When ABS warning lamp is ON When the SNOW mode switch is turned ON Diagnosis Procedure I.CHECK CAUSE OF AUTOMATIC CANCELLATION Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT. Is it displayed? Not displayed>GO TO 2. "OPE SW VOLT CIRC">Refer to DAS-166. "DTC Logic". "VHCL SPD UNMATCH">Refer to DAS-159. "DTC Logic". "CAN COMM ERROR">Refer to DAS-159. "DTC Logic". "ICC SENSOR CAN COMM ERR">Refer to DAS-158. "DTC Logic". "APA HI TEMP">Refer to DAS-161. "DTC Logic". "APA HI TEMP">Refer to DAS-185. "DTC Logic". 2.PERFORM ALL OF THE SELF-DIAGNOSIS 	 Operation cancellation condition When the dynamic driver assistance switch is turned to OFF When the system malfunction occurs 	
When ABS warning lamp is ON When ABS warning lamp is ON When the SNOW mode switch is turned ON Diagnosis Procedure I.CHECK CAUSE OF AUTOMATIC CANCELLATION Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT. Is it displayed? Not displayed? Not displayed? Not displayed? Not displayed? Not displayed? CHCL SPD UNMATCH">>Refer to DAS-166, "DTC Logic". "UPCL SPD UNMATCH">>Refer to DAS-159, "DTC Logic". "ICC SENSOR CAN COMM ERR">>Refer to DAS-159, "DTC Logic". "ICC SENSOR CAN COMM ERR">>Refer to DAS-161, "DTC Logic". "ABS/TCS/VDC CIRC">>Refer to DAS-161, "DTC Logic". "APA HI TEMP">>Refer to DAS-185, "DTC Logic". "ECD CIRCUIT">>Refer to DAS-185, "DTC Logic". "APA HI TEMP">>Refer to DAS-185, "DTC Logic". "ECD CIRCUIT">>Refer to DAS-185, "DTC Logic". "APA HI TEMP">>Refer to DAS-185, "DTC Logic". "APA	 When ABS or VDC (including the TCS) operates When the VDC is turned OFF When the sensor area of the front humber is dirty and the measurement of the distance between the 	vehi.
Diagnosis Procedure 1.CHECK CAUSE OF AUTOMATIC CANCELLATION Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ ADAS" with CONSULT. Is it displayed? Not displayed>>GO TO 2. "OPE SW VOLT CIRC">>Refer to DAS-166. "DTC Logic". "VHCL SPD UNMATCH">>Refer to DAS-166. "DTC Logic". "VHCL SPD UNMATCH">>Refer to DAS-159. "DTC Logic". "IGN LOW VOLT">>Refer to DAS-158. "DTC Logic". "IGN COMM ERROR">>Refer to DAS-158. "DTC Logic". "IGN COMM ERROR">>Refer to DAS-158. "DTC Logic". "ABS/TCS/VDC CIRC">>Refer to DAS-161. "DTC Logic". "APA HI TEMP">>Refer to DAS-161. "DTC Logic". "APA HI TEMP">>Refer to DAS-161. "DTC Logic". "APA HI TEMP">>Refer to DAS-185. "DTC Logic". "	 When ABS warning lamp is ON When the SNOW mode switch is turned ON 	4 CT 11-
1.CHECK CAUSE OF AUTOMATIC CANCELLATION Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ADAS" with CONSULT. Is it displayed? Not displayed>>GO TO 2. "OPE SW VOLT CIRC">>Refer to DAS-166. "DTC Logic". "VHCL SPD UNMATCH">>Refer to DAS-169. "DTC Logic". "IGN LOW VOLT">>Refer to DAS-159. "DTC Logic". "IGN LOW VOLT">>Refer to DAS-158. "DTC Logic". "IGN COMM ERROR">>Refer to DAS-211. "ADAS CONTROL UNIT : DTC Logic". "ICC SENSOR CAN COMM ERR">>Refer to DAS-206. "DTC Logic". "ABS/TCS/VDC CIRC">>Refer to DAS-161. "DTC Logic". "APA HI TEMP">>Refer to DAS-161. "DTC Logic". "APA HI TEMP">>Refer to DAS-185. "DTC Logic".	Diagnosis Procedure	1007911654
Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of "ICC/ ADAS" with CONSULT. Is it displayed? Not displayed>>GO TO 2. "OPE SW VOLT CIRC">>Refer to DAS-166, "DTC Logic". "VHCL SPD UNMATCH">>Refer to DAS-159, "DTC Logic". "IGN LOW VOLT">>Refer to DAS-158, "DTC Logic". "CAN COMM ERROR">>Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". "ICC SENSOR CAN COMM ERR">>Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". "ICC SENSOR CAN COMM ERR">>Refer to DAS-211, "ADAS CONTROL UNIT : DTC Logic". "ABS/TCS/VDC CIRC">>Refer to DAS-161, "DTC Logic". "ADA HI TEMP">>Refer to DAS-199, "DTC Logic". "APA HI TEMP">>Refer to DAS-185, "DTC Logic". "ECD CIRCUIT">>Refer to DAS-185, "DTC Logic".	1. CHECK CAUSE OF AUTOMATIC CANCELLATION	
<u>Is it displayed</u> Not displayed>>GO TO 2. "OPE SW VOLT CIRC">>Refer to <u>DAS-166</u> , " <u>DTC Logic</u> ". "VHCL SPD UNMATCH">>Refer to <u>DAS-159</u> , " <u>DTC Logic</u> ". "IGN LOW VOLT">>Refer to <u>DAS-158</u> , " <u>DTC Logic</u> ". "CAN COMM ERROR">>Refer to <u>DAS-211</u> , "ADAS CONTROL UNIT : <u>DTC Logic</u> ". "ICC SENSOR CAN COMM ERR">>Refer to <u>DAS-206</u> , " <u>DTC Logic</u> ". "ABS/TCS/VDC CIRC">>Refer to <u>DAS-161</u> , " <u>DTC Logic</u> ". "APA HI TEMP">>Refer to <u>DAS-199</u> , " <u>DTC Logic</u> ". "APA HI TEMP">>Refer to <u>DAS-199</u> , " <u>DTC Logic</u> ". "ECD CIRCUIT">>Refer to <u>DAS-185</u> , " <u>DTC Logic</u> ".	Check if there is any cancellation cause in the "CAUSE OF AUTO-CANCEL" on "WORK SUPPORT" of ADAS" with CONSULT.	"ICC/
Not displayed>>GO TO 2. "OPE SW VOLT CIRC">>Refer to <u>DAS-166</u> , " <u>DTC Logic</u> ". "VHCL SPD UNMATCH">>Refer to <u>DAS-159</u> , " <u>DTC Logic</u> ". "IGN LOW VOLT">>Refer to <u>DAS-158</u> . " <u>DTC Logic</u> ". "CAN COMM ERROR">>Refer to <u>DAS-211</u> , "ADAS CONTROL UNIT : <u>DTC Logic</u> ". "ICC SENSOR CAN COMM ERR">>Refer to <u>DAS-206</u> , " <u>DTC Logic</u> ". "ABS/TCS/VDC CIRC">>Refer to <u>DAS-161</u> . " <u>DTC Logic</u> ". "APA HI TEMP">>Refer to <u>DAS-199</u> . " <u>DTC Logic</u> ". "ECD CIRCUIT">>Refer to <u>DAS-185</u> , " <u>DTC Logic</u> ". "ECD CIRCUIT">>Refer to <u>DAS-185</u> , " <u>DTC Logic</u> ".	Is it displayed?	
 "IGN LOW VOLT">>Refer to <u>DAS-158, "DTC Logic"</u>. "CAN COMM ERROR">>Refer to <u>DAS-211, "ADAS CONTROL UNIT : DTC Logic"</u>. "ICC SENSOR CAN COMM ERR">>Refer to <u>DAS-206, "DTC Logic"</u>. "ABS/TCS/VDC CIRC">>Refer to <u>DAS-161, "DTC Logic"</u>. "APA HI TEMP">>Refer to <u>DAS-199, "DTC Logic"</u>. "ECD CIRCUIT">>Refer to <u>DAS-185, "DTC Logic"</u>. 2.PERFORM ALL OF THE SELF-DIAGNOSIS 	Not displayed>>GO TO 2. "OPE SW VOLT CIRC">>Refer to <u>DAS-166, "DTC Logic"</u> . "VHCL SPD UNMATCH">>Refer to <u>DAS-159, "DTC Logic"</u> .	
"ABS/TCS/VDC CIRC">>Refer to <u>DAS-161</u> , " <u>DTC Logic"</u> . "APA HI TEMP">>Refer to <u>DAS-199</u> , " <u>DTC Logic"</u> . "ECD CIRCUIT">>Refer to <u>DAS-185</u> , " <u>DTC Logic"</u> . 2. PERFORM ALL OF THE SELF-DIAGNOSIS	"IGN LOW VOLT">>Refer to <u>DAS-158. "DTC Logic"</u> . "CAN COMM ERROR">>Refer to <u>DAS-211. "ADAS CONTROL UNIT : DTC Logic"</u> . "ICC SENSOR CAN COMM ERR">>Refer to DAS-206. "DTC Logic".	
2.PERFORM ALL OF THE SELF-DIAGNOSIS	"ABS/TCS/VDC CIRC">>Refer to <u>DAS-161</u> , " <u>DTC Logic"</u> . "APA HI TEMP">>Refer to <u>DAS-199</u> , " <u>DTC Logic"</u> . "ECD CIPCUIT">>Refer to <u>DAS-199</u> , " <u>DTC Logic"</u> .	
	2.PERFORM ALL OF THE SELF-DIAGNOSIS	
 Perform "All DTC Reading". Check if any DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to <u>DAS-122. "DTC Index"</u>. 	 Perform "All DTC Reading". Check if any DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to <u>DAS-122</u>, "<u>DTC Inde</u>; 	<u>×"</u> .
<u>Is any DTC detected?</u> YES >> GO TO 3.	<u>Is any DTC detected?</u> YES >> GO TO 3.	
3.REPAIR OR REPLACE MALFUNCTIONING PARTS	3.REPAIR OR REPLACE MALFUNCTIONING PARTS	
Repair or replace malfunctioning parts identified by the self-diagnosis result.	Repair or replace malfunctioning parts identified by the self-diagnosis result.	
>> GO TO 6.	>> GO TO 6.	
4.CHECK EACH SWITCH AND VEHICLE SPEED SIGNAL	4.CHECK EACH SWITCH AND VEHICLE SPEED SIGNAL	
 Start the engine. Check that the following items operate normally in "DATA MONITOR" of "ICC/ADAS". "VHCL SPEED SE" "BRAKE SW" "DATA ASIST SW" 	 Start the engine. Check that the following items operate normally in "DATA MONITOR" of "ICC/ADAS". "VHCL SPEED SE" "BRAKE SW" "DYNA ASIST SM" 	

Is there a malfunctioning item?

All items are normal>>GO TO 5. "VHCL SPEED SE">>Refer to <u>DAS-159</u>, "<u>DTC Logic</u>".

DCA SYSTEM NOT ACTIVATED (SWITCH IS ON)

< SYMPTOM DIAGNOSIS >

"BRAKE SW">>Refer to <u>DAS-162</u>, "<u>DTC Logic</u>". "DYNA ASIST SW">>Refer to <u>DAS-166</u>, "<u>DTC Logic</u>".

5.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

>> GO TO 6.

6.CHECK DCA SYSTEM

- Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to <u>DAS-156</u>, "<u>Description</u>" for action test.)
- 2. Check that the DCA system is normal.

>> INSPECTION END

CHIME DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

CHIME DOES NOT SOUND

Description

The warning chime may not sound in some cases when there is a short distance between vehicles. Some examples are:

- When the vehicles are traveling at the same speed and the distance between vehicles is not changing
- When the vehicle ahead is traveling faster and the distance between vehicles is increasing
- When a vehicle cuts in near own vehicle
- The warning chime will not sound when own vehicle approaches vehicles that are parked or moving slowly.
- The warning chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the <u>DAS-234</u>, "<u>Descrip-</u> <u>tion</u>".)

Diagnosis Procedure

1.PERFORM ACTIVE TEST

Check if the warning chime sounds on the active test item "ICC BUZZER" of "ICC/ADAS" with CONSULT. Does the warning chime sound?

YES >> GO TO 2. NO >> GO TO 3.

2. CHECK THE MALFUNCTION SYMPTOM DURING WARNING CHIME OPERATION

Understand the vehicle ahead detection condition when the malfunction occurred. If the warning chime should H have sounded, replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

>> GO TO 9.	
3. PERFORM THE SELF-DIAGNOSIS	
 Perform "All DTC Reading" with CONSULT. Check if the "U1000" is detected in self-diagnosis results of "ICC/ADAS". 	J
Is "U1000" detected?	
YES >> GO TO 4. NO >> GO TO 5.	К
4.CAN COMMUNICATIONS INSPECTION	
Check the CAN communication and repair or replace malfunctioning parts. Refer to <u>DAS-211, "ADAS CON-</u> <u>TROL UNIT : DTC Logic"</u> .	L
>> GO TO 9.	M
5. PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER	
 Perform "All DTC Reading" with CONSULT. Check if any DTC is detected in self-diagnosis results of "METER/M&A". 	Ν
Is any DTC detected?	
 YES >> Repair or replace malfunctioning parts. Refer to <u>MWI-25, "DTC Index"</u>. NO >> GO TO 6. 	DAS
6. CHECK ICC WARNING CHIME CIRCUIT	
Check meter buzzer. Refer to WCS-28, "Component Function Check".	Ρ
Is the inspection result normal?	

NO >> GO TO 7.

1.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

INFOID:000000007911655

INFOID:000000007911656

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< SYMPTOM DIAGNOSIS >

>> GO TO 9.

8.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

>> GO TO 9.

9. CHECK DCA SYSTEM

- Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. 1. (Refer to <u>DAS-156</u>, "<u>Description</u>" for action test.)2. Check if the DCA system is normal.

>> INSPECTION END

NO FORCE GENERATED FOR PUTTING BACK THE ACCELERATOR PEDAL < SYMPTOM DIAGNOSIS > [DCA] NO FORCE GENERATED FOR PUTTING BACK THE ACCELERATOR PEDAL Description

	B
The dynamic driver assistance switch can be turned ON/OFF but the actuation force of accelerator pedal is not generated.	C
When the vehicle ahead detection indicator does not illuminate, the control and warning with the system are not performed.	C
• The actuation force of accelerator pedal may not be generated sufficiently depending on depressing method or depressing amount of accelerator pedal.	D
Diagnosis Procedure	
1.PERFORM THE SELF-DIAGNOSIS	Ε
 Perform "All DTC Reading" with CONSULT. Check if any DTC is detected in self-diagnosis results of "ICC/ADAS" or "ACCELE PEDAL ACT". <u>Is any DTC detected?</u> 	F
NO >> GO TO 3.	G
2.REPAIR OR REPLACE THE MALFUNCTIONING PARTS	
Repair or replace malfunctioning parts. Refer to <u>DAS-122, "DTC Index"</u> (ICC/ADAS) or <u>DAS-131, "DTC Index"</u> (ACCELE PEDAL ACT).	Η
>> GO TO 5.	1
3.PERFORM ACTIVE TEST	
Check if the accelerator pedal actuator operates by the active test items "ACCELERATOR PEDAL ACTUA- TOR TEST1" and "ACCELERATOR PEDAL ACTUATOR TEST2" of "ACCELE PEDAL ACT" with CONSULT.	J
Does it operate?	
NO >> Replace the accelerator pedal assembly.	Κ
4. CHECK VEHICLE AHEAD DETECTION PERFORMANCE	
Understand the vehicle ahead detection condition when the malfunction occurred. If the detecting function is malfunctioning, check according to <u>DAS-234</u> , " <u>Description</u> ".	L
>> INSPECTION END	М
5. CHECK DCA SYSTEM	
 Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to <u>DAS-156</u>, "<u>Description</u>" for action test.) Check if the DCA system is normal. 	Ν
>> INSPECTION END	DA
	D

А

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DCA]

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

Description

INFOID:000000007911659

The detection function may become unstable in the following cases.

- When radar reflections from the vehicle is interrupted.
- When driving a road with extremely sharp corners.
- When the sensor cannot detect a vehicle ahead while the vehicle ahead passes a hill or valley.

Diagnosis Procedure

INFOID:000000007911660

1.VISUAL CHECK (1)

Check the contamination and foreign matter on the millimeter wave sensor area of the front bumper. Does foreign material exist?

YES >> GO TO 3. NO >> GO TO 2.

2.VISUAL CHECK (2)

1. Remove for front bumper. Refer to EXT-17, "Removal and Installation".

2. Check millimeter wave sensor for contamination and foreign material.

Does foreign material exist?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$.clean dirt and foreign materials

Clean the contamination and foreign material from the area around the millimeter wave sensor body window.

>> GO TO 8.

4.VISUAL CHECK (3)

Check millimeter wave sensor for cracks and scratches.

Are there any cracks or scratches?

YES >> GO TO 6.

NO >> GO TO 5.

5. ADJUST MILLIMETER WAVE SENSOR ALIGNMENT

- 1. Install the front bumper. Refer to EXT-17. "Removal and Installation".
- 2. Adjust the millimeter wave sensor alignment. Refer to DAS-240, "Removal and Installation".
- 3. Perform ICC system action test. Refer to <u>DAS-156</u>, "Description".
- 4. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> INSPECTION END

NO >> GO TO 6.

6.REPLACE MILLIMETER WAVE SENSOR

- 1. Replace the millimeter wave sensor. Refer to CCS-189, "Removal and Installation".
- 2. Install the front bumper. Refer to EXT-17, "Removal and Installation".
- 3. Adjust the millimeter wave sensor alignment. Refer to CCS-85, "Description".
- 4. Perform ICC system action test. Refer to <u>DAS-156, "Description"</u>.
- 5. Check that the vehicle ahead detection performance improves.

Does it improve?

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

7.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DCA]

8.	>> GO TO 8. CHECK ICC SYSTEM	А
1. 2.	Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to <u>DAS-156</u> , " <u>Description</u> " for action test.) Check that the ICC system is normal.	В
	>> INSPECTION END	С
		D
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THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

< SYMPTOM DIAGNOSIS >

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

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

Diagnosis Procedure

INFOID:000000007911662

INFOID:000000007911661

1.CHECK ICC SYSTEM DISPLAY ON INFORMATION DISPLAY

1. Start the self-diagnosis mode of combination meter. Refer to MWI-17, "Description".

2. Check that the information display turns ON normally.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the combination meter.

2.VISUAL CHECK (1)

Check for contamination and foreign material on the millimeter wave sensor area of the front bumper.

Do foreign material exist?

YES >> GO TO 4.

NO >> GO TO 3.

3.VISUAL CHECK (2)

1. Remove the front bumper. Refer to EXT-17, "Removal and Installation".

2. Check millimeter wave sensor for contamination and forign material.

Does foreign material exist?

YES >> GO TO 4.

NO >> GO TO 5.

4.CLEAN DIRT AND FOREIGN MATERIAL

Clean the contamination and foreign material from the area around from the millimeter wave sensor.

>> GO TO 9.

5.VISUAL CHECK (3)

Check millimeter wave sensor for cracks and/or scratches.

Are there cracks?

YES >> GO TO 7.

NO >> GO TO 6.

6.MILLIMETER WAVE SENSOR ALIGNMENT ADJUSTMENT

1. Install the front bumper. Refer to EXT-17, "Removal and Installation".

- 2. Adjust the millimeter wave sensor alignment. Refer to CCS-85, "Description".
- 3. Perform ICC system action test. Refer to DAS-156. "Description".
- 4. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> INSPECTION END

NO >> GO TO 8.

7.REPLACE MILLIMETER WAVE SENSOR

- 1. Replace the millimeter wave sensor. Refer to <u>CCS-189, "Removal and Installation"</u>.
- 2. Adjust the millimeter wave sensor alignment. Refer to <u>CCS-85, "Description"</u>.
- 3. Perform ICC system action test. Refer to DAS-156, "Description".
- 4. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> Inspection End.

NO >> GO TO 8.

[DCA]

~ ~ ~ . . . - -_ _ _

SYMPTOM DIAGNOSIS >	IDCA]
.REPLACE ADAS CONTROL UNIT	
eplace the ADAS control unit. Refer to DAS-79, "Removal and Installation".	
>> GO TO 9. .CHECK DCA SYSTEM	
Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing (Refer to <u>DAS-156, "Description"</u> for action test.) Check that the ICC system is normal.	the action test.
>> INSPECTION END	

Ρ

NORMAL OPERATING CONDITION

Description

PRECAUTIONS FOR DISTANCE CONTROL ASSIST (DCA) SYSTEM

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

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

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



- The approach warning chime may sound and the system display may blink when the sensor detects some reflectors which are fitted on vehicles in other lanes or on the side of the road. This may cause the DCA system to operate inappropriately. The sensor may detect these reflectors when the vehicle is driven on winding roads, hilly roads or when entering or exiting a curve. The sensor may also detect reflectors on narrow roads or in road construction zones. In these cases driver will have to manually control the proper distance ahead of own vehicle. Also, the sensor sensitivity can be affected by vehicle operation (steering maneuver or driving position in the lane) or traffic or vehicle condition (for example, if a vehicle is being driven with some damage).
- The DCA system automatically decelerates own vehicle to help assist the driver to maintain a following distance from the vehicle



- ahead. Manually brake when deceleration is required to maintain a safe distance upon sudden braking by the vehicle ahead or when a vehicle suddenly appears in front of own vehicle. Always stay alert when using the DCA system.
- When the vehicle ahead detection indicator lamp is not illuminated, system will not control or warn the driver.
- Depending on the position of the accelerator pedal, the system may not be able to assist the driver to release the accelerator pedal appropriately.
- If the vehicle ahead comes to a standstill, the vehicle decelerates to a standstill within the limitations of the system. The system will release brake control with a warning chime once it judges the vehicle is at a standstill. To prevent the vehicle from moving, the driver must depress the brake pedal. [The system will resume control automatically once the system reaches 5 km/h (3 MPH)].

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< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION MILLIMETER WAVE SENSOR

Exploded View

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[DCA]



- A. Millimeter wave sensor harness B. connector
- Millimeter wave sensor <∃ Front
 - For tightening sequence refer to DAS-240, "Removal and Installation".

Removal and Installation

REMOVAL

- 1. Remove front bumper fascia. Refer to EXT-17, "Removal and Installation".
- Disconnect the harness connector from the millimeter wave sensor.
- 3. Release the harness clip from the millimeter wave sensor.
- Remove millimeter wave sensor bolts.
- 5. Remove millimeter wave sensor.

INSTALLATION

Installation is in the reverse order of removal.

• Install millimeter wave sensor bolts () loosely; then tighten in sequence shown.

WARNING:

- · Do not look straight into the millimeter wave sensor when performing millimeter wave sensor alignment.
- Always perform the millimeter wave sensor alignment and check the operation after removal, installation or replacement of millimeter wave sensor. Refer to CCS-84, "Work Procedure".



CAUTION:

- · Do not drop or shock millimeter wave sensor.
- Make sure millimeter wave sensor harness is installed without any twists.

ACCELERATOR PEDAL ASSEMBLY < REMOVAL AND INSTALLATION > ACCELERATOR PEDAL ASSEMBLY

MODELS WITH DISTANCE CONTROL ASSIST SYSTEM

MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Exploded View

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1. Accelerator pedal assembly

Front

MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation

REMOVAL

- 1. Remove three accelerator pedal assembly nuts.
- Disconnect the two harness connectors (A, B) from the accelerator pedal assembly.
 Front

A. Nut

3. Remove the accelerator pedal assembly from vehicle.

CAUTION:

- Do not disassemble accelerator pedal assembly.
- Do not drop or impact accelerator pedal assembly.
- Do not expose accelerator pedal assembly to water.



INSTALLATION Installation is in the reverse order of removal. **NOTE:** For inspection, refer to <u>DAS-242, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Inspection"</u>.

ACCELERATOR PEDAL ASSEMBLY

< REMOVAL AND INSTALLATION >

MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Inspection

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INSPECTION AFTER INSTALLATION

Check that the accelerator pedal moves smoothly within the specified range.
 Front

Accelerator pedal stroke (A) : Refer to <u>ACC-7</u>, "Accelerator Control"



· Check the accelerator pedal height.

Accelerator pedal height : Refer to <u>ACC-7, "Acceler-</u> ator Control"

• Depress and release the accelerator pedal to check that it returns quickly and smoothly to the original released position.

CAUTION:

- Whenever the harness connector of the accelerator pedal position sensor has been disconnected, perform "Accelerator Pedal Released Position Learning". Refer to <u>EC-158</u>, "Work Procedure".
- The accelerator pedal should operate smoothly without catching when the pedal operating force is released. The pedal should return smoothly to the fully raised position. The spring should be free from damage.

DYNAMIC DRIVER ASSISTANCE SWITCH

< REMOVAL AND INSTALLATION >

DYNAMIC DRIVER ASSISTANCE SWITCH

Removal and Installation

The dynamic driver assistance switch and ICC steering switch are serviced as an assembly. Refer to <u>CCS-190, "Removal and Installation"</u>.

CAUTION:

Always perform the DCA system action test to check that the system operates normally after replacing the millimeter wave sensor, replacing the accelerator pedal, or repairing any DCA system malfunction. Refer to <u>DAS-156</u>, "Work Procedure".

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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. This system includes dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. 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 3 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

Precaution for FCW System Service

CAUTION:

< PRECAUTION >

- Turn the FCW system OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Never use the millimeter wave sensor removed from vehicle. Never disassemble or remodel.
- Erase DTC when replacing parts of FCW system, then check the operation of FCW system after performing radar beam alignment, if necessary.
- Never change FCW initial state $ON \Rightarrow OFF$ without the consent of the customer.

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SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

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- 1. Combination meter Refer to <u>DAS-247</u>, "Component Description".
- ABS actuator and electric unit (control unit) Refer to <u>DAS-247. "Component Description"</u>.
- 7. Warning system ON indicator
- 2. Vehicle information display, buzzer (On the combination meter)
- Millimeter wave sensor (view with front fascia removed) Refer to <u>DAS-247. "Component Description"</u>.
- ADAS control unit (view of rear luggage room area with rear panel assembly removed) Refer to <u>DAS-247</u>, "Component Description".
- IBA OFF indicator lamp

3.

6. Warning system switch

COMPONENT PARTS

< SYSTEM DESCRIPTION >

Component Description

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Component	Description
ADAS control unit	 ADAS control unit turns ON warning systems ON indicator ADAS control unit transmits a buzzer output signal to combination meter via CAN communication
Millimeter wave sensor	 Millimeter wave sensor detects light reflected from a vehicle ahead by irradiating a wave forward and calculates a distance from the vehicle ahead and a relative speed, based on the detected signal Millimeter wave sensor transmits the presence/absence of a vehicle ahead and a distance from the vehicle ahead to the ADAS control unit via ITS communication
ABS actuator and electric unit (control unit)	ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), to ADAS control unit via CAN communication
Warning systems switch	Inputs the warning systems switch signal to ADAS control unit.
Warning systems ON indicator (On the warning systems switch)	Turns warning systems ON indicator ON/OFF according to the signals from the ADAS control unit
Combination meter	 Performs the following operations using the signals received from the ADAS control unit via the CAN communication Blinks the vehicle ahead detection indicator according to a meter display signal Illuminates the IBA OFF indicator lamp using the IBA OFF indicator lamp signal Operates the buzzer (ICC warning chime) using the buzzer output signal
AV control unit	AV control unit transmits the system selection signal to the ADAS control unit via CAN com- munication

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SYSTEM

System Description

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit		Signal name	Description
ABS actuator and electric unit (control unit)	CAN com- munica- tion	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
Combination munica- meter System selection signal		System selection signal	Receives a selection state of each item in "Driving Aids" selected with the vehicle information display
Millimeter wave sensor signal Millimeter wave sensor signal		Millimeter wave sensor signal	Receives detection results, such as the presence or ab- sence of a leading vehicle and distance from the vehicle
Warning sys- tems switch	Warning systems switch signal		Receives an ON/OFF state of the warning systems switch

Output Signal Item

Reception unit	Signal name			Description
	CAN commu- nication	Meter display signal	Vehicle ahead detec- tion indicator signal	Transmits a signal to display a state of the system on the information display
Combination meter		IBA OFF indicator lamp signal		 Transmits a signal to turn ON the IBA OFF indicator lamp Transmits an ON/OFF state of the intelligent brake assist
		Buzzer output signal		Transmits a buzzer output signal to activate the buzzer
Millimeter wave sensor	ITS commu- nication	Vehicle speed s	ignal	Transmits a vehicle speed calculated by the ADAS control unit
Warning sys- tems ON indi- cator		Turns ON the warning systems ON indicator		

DESCRIPTION

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SYSTEM

< SYSTEM DESCRIPTION >	[FCW]
 The Forward Collision Warning (FCW) system will we tion indicator) and chime when own vehicle is getting. The FCW system will function when own vehicle is above. NOTE: The FCW system shares the diagnosis function with I 	warn the driver by a warning lamp (vehicle ahead detec- ig close to the vehicle ahead in the traveling lane. driven at speeds of approximately 10 MPH (15 km/h) and ICC system.
FUNCTION DESCRIPTION The distance from the vehicle ahead and a relative sp and a millimeter wave sensor signal is transmitted t judging the necessity of warning according to the re- unit transmits a buzzer output signal and meter displa- tion.	peed are calculated by using the millimeter wave sensor to the ADAS control unit via ITS communication. When ceived millimeter wave sensor signal, the ADAS control ay signal to the combination meter via CAN communica-
 FCW Operating Condition Warning systems ON indicator: ON Vehicle speed: Approximately 10 MPH (15 km/h) ar NOTE: When the FCW system setting on the navigation scre 	nd above. een is ON.
Fail-safe Indication	
Vehicle condition	Indication on the combination meter
When the FCW system malfunctions	FCW Malfunction Please See Owner's Manual ALOIA0124GB
When the sensor area of the front bumper is dirty	FCW Unaväilable Front radar blocked
	ALUIAU125GB

Fail-safe (ADAS Control Unit)

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

System	Buzzer	Warning lamp/Indicator lamp	Description	
Vehicle-to-vehicle distance control mode	High- pitched tone	ICC system warning lamp	Cancel	Ν
Conventional (fixed speed) cruise control mode	High- pitched tone	ICC system warning lamp	Cancel	DAS
Intelligent Brake Assist (IBA)	High- pitched tone	IBA OFF indicator lamp	Cancel	Ρ
Forward Collision Warning (FCW)	High- pitched tone	Warning message	Cancel	
Distance Control Assist (DCA)	High- pitched tone	DCA system warning lamp	Cancel	

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SYSTEM

< SYSTEM DESCRIPTION >

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Warning (LDW)	-	Lane departure warning lamp	Cancel
Lane Departure Prevention (LDP)	Low- pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	_	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention (BSI)	Low- pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	Low- pitched tone	Backup collision warning lamp	Cancel

Fail-safe (millimeter wave sensor)

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

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OPERATION

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OPERATION



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No.	Switch name	Description
1	Warning systems switch	Turns FCW system ON/OFF (When the setting of FCW system in the vehicle information display is ON)
2	FCW system setting screen (the vehicle information display)	The setting of FCW system can be switched between ON and OFF

Menu Displayed by Pressing Each Switch

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No.	Display item	Description	
1	Warning systems ON indicator	 Indicates that the FCW system, LDW system, and/or BSW system is ON. Blinks when the setting of LDW, FCW, and BSW are "OFF" and the warning systems switch is pressed. 	
2	Vehicle ahead detection indicator	Vehicle ahead detection indicator blinks when the FCW system is activated	

SYSTEM CONTROL CONDITION DISPLAY

Condition	Warning systems ON indica- tor	Vehicle ahead detection indicator (In the combination meter)	Buzzer	Ν
Set condition	ON	OFF	_	DAS

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OPERATION

< SYSTEM DESCRIPTION >

Condition	Warning systems ON indica- tor	Vehicle ahead detection indicator (In the combination meter)	Buzzer
When the warning systems switch is turned ON with settings of FCW sys- tem, LDW system and BSW system OFF	Blink	OFF	_
When own vehicle comes close to the vehicle ahead and it is judged that the distance between the vehicles is not sufficient	ON	FCW ALOIA010622	Веер
HANDLING PRECAUTION [FCW] < SYSTEM DESCRIPTION > HANDLING PRECAUTION А Precautions for Forward Collision Warning INFOID:000000007911676 FORWARD COLLISION WARNING (FCW) • FCW system is intended to warn the driver before a collision but will not avoid a collision. It is the drive's responsibility to stay alert, drive safely and be in control of the vehicle at all times. • As there is a performance limit, the FCW system may not provide a warning in certain conditions. The FCW system will not detect the following objects. - Pedestrians, animals, or obstacles in the roadway. - Oncoming vehicles in the same lane D FCW system will not detect under the following conditions. - When the sensor gets dirty, it is impossible to detect the distance from the vehicle ahead. • The sensor generally detects signals returned from the reflectors on a vehicle ahead. Therefore, the FCW system may not warn properly under the following conditions: Ε - When the sensor area of the front bumper gets dirty or it is impossible to detect the distance to the vehicle ahead. When visibility is low (such as rain, fog, snow, etc.). _ F - When snow or road spray from traveling vehicles are splashed. - When excessively heavy baggage is loaded in the rear seat or the luggage room of own vehicle. - When abruptly accelerating or decelerating. - On steep downhill or roads with sharp curves. G - When there is a highly reflective object near the vehicle ahead. i.e.) very close to other vehicle, signboard, etc. - When own vehicle are towing a trailer. Н • Depending on certain road conditions (curved, beginning of a curve), vehicle conditions (steering position, vehicle position), or preceding vehicle's conditions (position in lane, etc.), the FCW system may not function properly. The FCW system may detect highly reflective objects such as signs and other stationary objects on the road or near the traveling lane, and provide unnecessary warning. The FCW system may not function in offset conditions. • The FCW system may not function when the distance to the vehicle ahead is extremely close. The FCW system is designed to automatically check the sensor's functionality. If the sensor area of the front bumper is covered with ice, a transparent or translucent bag, etc., the system may not detect them. In these instances, the system may not be able to warn the driver properly. Be sure to check and clean the sensor area of the front bumper regularly. Excessive noise will interfere with the warning chime sound, and the chime may not be heard. Κ • A sudden appearance of the vehicle in front (i.e.: when a vehicle abruptly cuts in) may not be detected and the system may not warn soon enough. The FCW system will be canceled automatically with a chime sound and a warning message will appear L under the following conditions: - When the sensor area of the front bumper is dirty - When the FCW system malfunctions Μ Ν DAS

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

On Board Diagnosis Function

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[FCW]

DESCRIPTION

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

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)
- 1. Turn the ignition switch OFF.
- 2. Start the engine.
- Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.
 NOTE:

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



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to <u>DAS-48</u>, "<u>DTC Index</u>".



< SYSTEM DESCRIPTION >

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

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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

	Assumed abnormal part	Inspection item		
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combina- tion meter operates. Refer to <u>MWI-17</u> , "Description"		
ICC steering switch mall	unction			
Harness malfunction bet	ween ICC steering switch and ECM	Perform the inspection for DTC"C1A06". Refer to <u>CCS-</u> <u>109. "Diagnosis Procedure"</u>		
ECM malfunction				
ADAS control unit malfu	nction	 Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-78</u>, "<u>Diagnosis Procedure</u>". Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to <u>DAS-48</u>, "<u>DTC Index</u>". 		

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

- 1. Turn the ignition switch OFF.
- 2. Start the engine, and then start the on board self-diagnosis.
- Press the CANCEL switch 5 times, and then press the DIS-TANCE switch 5 times under the condition that the on board self-diagnosis starts.
 NOTE:
 - Complete the operation within 10 seconds after pressing the CANCEL switch first.
 - If the operation is not completed within 10 seconds, repeat the procedure from step 1.
- 4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

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

CONSULT Function (ICC/ADAS)

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	N						
Work Support	Displays causes of automatic system cancellation occurred during system control	IN						
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load	DA						
ECU identification	Displays ADAS control unit part number	2,						
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed							

WORK SUPPORT

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	Work support items	Description
_	CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following sys- tems Vehicle-to-vehicle distance control mode Conventional (fixed speed) cruise control mode Distance Control Assist (DCA)
	CAUSE OF AUTO-CANCEL 2	 Displays causes of automatic system cancellation occurred during control of the following systems Lane Departure Prevention (LDP) Blind Spot Intervention
CAUSE OF AUTO-	CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following sys- tems • Backup Collision Intervention (BCI)

NOTE:

• Causes of the maximum five cancellations (system cancel) are displayed.

• The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description
OPERATING ABS	×		×	ABS function was operated
OPERATING TCS	×	×	×	TCS function was operated
OPERATING VDC	×	×	×	VDC function was operated
ECM CIRCUIT	×	×		ECM did not permit ICC operation
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range
LASER TEMP	×		×	Temperature around millimeter wave sensor became low
SNOW MODE SW	×		×	SNOW mode switch was pressed
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time
VHCL SPD DOWN	×	×	×	 Vehicle speed lower than the speed as follows Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH)
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from CVT vehicle speed
FR RADAR BLOCKED	×		×	The front bumper near the millimeter sensor is blocked or dirty
TIRE SLIP	×	×		Wheel slipped
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage

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< SYSTEM DESCRIPTION >

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

Display Items for The Cause of Automatic Cancellation 2

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

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Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker un- clear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	

Display Items for The Cause of Automatic Cancellation 3

< SYSTEM DESCRIPTION >

[FCW]

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Cause of cancellation	Backup Collision Intervention	Description	A B C
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage	D
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication	
ECD CIRCUIT	×	An abnormal condition occurs in ECD system	
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high	E
Accel is operated	×	Accelerator pedal was depressed	
NO RECORD	×		F

SELF DIAGNOSTIC RESULT Refer to DAS-48, "DTC Index".

DATA MONITOR

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	H
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)	I
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)	J
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)	
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)	K
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)	L
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means "controlling")	
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)	Μ
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)	Ν
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)	
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit	DAS
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output	Р
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output	
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output	
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output	

< SYSTEM DESCRIPTION >

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Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN com- munication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communica- tion (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of "D" or "M" positions read from ADAS control unit through CAN communication; ON when position "D" or "M" (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN commu- nication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit
VHCL SPD CVT [km/h] or [mph]	×					Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communi- cation (ECM transmits accelerator pedal position signal through CAN communi- cation).
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [On/Off] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [On/Off] of vehicle ahead detection indicator output in DCA system is displayed
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)

< SYSTEM DESCRIPTION >

[FCW]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	A
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator trans- mits the power supply voltage via ITS communication)
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of waning systems ON indicator output
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system
READY signal [On/Off]			×			Indicates LDP system settings
Camera lost [Detect/Deviate/ Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection sig- nal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)
Shift position [Off, P, R, N, D, M/ T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communica- tion (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/ LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)
STATUS signal [Stnby/Warn/Cancl/ Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an On/Off state of the lane marker. The On/Off state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to On/Off by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
DCA SELECT [On/Off]	×	×	×	×		Indicates an On/Off state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the meter system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system

< SYSTEM DESCRIPTION >

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Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch	
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output	
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output	
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system	
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system	
BCP ON [On/Off]					×	Indicates [On/Off] status of BCP system	
BCI SW ADAS [On/Off]					×	Indicates [On/Off] status of Backup Collision Intervention system	
LDP_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Prevention system failure lamp	
LDW_ON_LAMP [On/Off]			×	×		Indicates [On/Off] status of LDW system	
LDW_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Warning system failure lamp	
SYSTEM_CANCEL _MESSAGE [Request/No Re- quest]	×	×	×	×		Indicates system cancel message request	
CAM_HI_TEMP_M SG [On/Off]			×	×		Indicates high temperature message has been received	
ITS Setting Item(DCA) [On/Off]	×	×	×	×		Indicates [On/Off] status of Distance Control Assist installation	
ITS Setting Item(LDP) [On/Off]	×	×	×	×		Indicates [On/Off] status of Lane Departure Prevention	
ITS Setting Item(BSI) [On/Off]	×	×	×	×		Indicates [On/Off] status of Blind Spot Intervention system	
BSI FAIL IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention	
BSW ON IND [On/Off]				×		Indicates [On/Off] status of BSW system	
SR_BLK_MSG [On/Off]				×		Indicates [On/Off] status of messages received	
WARN_LANE_TIMI NG [-] [On/Off]			×			Indicates [On/Off] status of warning lane timing	
BSW_IND_BRIGHT NESS [Bright/Not Bright]				×		Indicates BSW warning lamp indicator brightness level	

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< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
FCW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Forward Collision Warning system. Forward Collision Warning system can be set to On/Off by selecting "Driver Assistance"⇒ ("Dynamic Assistance Settings" of the navigation system	
LDW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Lane Departure Warning system. Lane Departure Warning system can be set to On/Off by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system	
BSW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Blind Spot Warning system. Blind Spot Warning system can be set to On/Off by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system	
ITS setting item (FCW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Forward Collision Warning	
ITS setting item (LDW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Lane Departure Warning	
ITS setting item (BSW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Blind Spot Warning	

ACTIVE TEST

CAUTION:

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

Test item	Description	
BRAKE ACTUATOR	Activates the brake by an arbitrary operation	
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Intelligent Cruise Control (ICC) • Distance Control Assist (DCA) • Forward Collision Warning (FCW) • Intelligent Brake Assist (IBA)	
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary	
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lam can be illuminated	
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary	
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary	
LDP BUZZER Sounds a buzzer used for following systems by arbitrarily operating ON/OFF LDP BUZZER • Lane Departure Warning (LDW) • Blind Spot Warning (BSW) • Blind Spot Intervention		
WARNING SYSTEM IND Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF oper tions as necessary		
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary	
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary	
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF opera- tions as necessary	

[FCW]

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< SYSTEM DESCRIPTION >

Test item	Description
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary
LDW ON IND	The LDW ON indicator lamp can be illuminated by ON/OFF operations as necessary
LDP FAIL IND	The LDP fail indicator lamp can be illuminated by ON/OFF operations as necessary
LDW FAIL IND	The LDW fail indicator lamp can be illuminated by ON/OFF operations as necessary
BSW ON IND	The BSW ON indicator lamp can be illuminated by ON/OFF operations as necessary
BSI FAIL IND	The BSI fail indicator lamp can be illuminated by ON/OFF operations as necessary

BRAKE ACTUATOR **NOTE:**

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

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

NOTE:





ICC BUZZER

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

METER LAMP

NOTE:

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

< SYSTEM DESCRIPTION >

MAIN switch indicator А Oper-Test item Description ٠ ICC system warning lamp ation · IBA OFF indicator lamp Stops sending the following signals to exit from the test В Meter display signal Off OFF ICC warning lamp signal · IBA OFF indicator lamp signal METER LAMP Transmits the following signals to the combination meter via CAN communication ON On · Meter display signal · ICC warning lamp signal D · IBA OFF indicator lamp signal

STOP LAMP

Test item	Oper- ation	Description	Stop lamp	
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal be- low to end the test	OFF	
	On	Transmits the ICC brake hold relay drive signal	ON	

ACTIVE PEDAL

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

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting



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< SYSTEM DESCRIPTION >

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

Test item	Opera- tion	Description	DCA system switch indicator
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal be- low to end the test	_
	On	Transmits the DCA system switch indicator signal to the com- bination meter via CAN communication	ON

LDP BUZZER

Test item	Opera- tion	Description	Warning buzzer
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	_
	On	Transmits the warning buzzer signal to the warning buzzer	ON

WARNING SYSTEM IND

Test item	Oper- ation	Description	Warning systems ON indicator
WARNING SYSTEM	Off	Stops transmitting the warning systems ON indicator signal below to end the test	_
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON

LDP ON IND

Test item	Oper- ation	Description	LDP ON indicator lamp (Green)
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal be- low to end the test	_
	On	Transmits the LDP ON indicator lamp signal to the com- bination meter via CAN communication	ON

LANE DEPARTURE W/L

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

BSW/BSI WARNING LAMP

Test item	Oper- ation	Description	Blind Spot Warning/Blind Spot Inter- vention warning lamp (Yellow)
BSW/BSI WARNING	Off	Stops transmitting the Blind Spot Warning/Blind Spot In- tervention warning lamp signal below to end the test	_
LAMP	On	Transmits the Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to the combination meter via CAN communication	ON

BSI ON INDICATOR

< SYSTEM DESCRIPTION >

Test item	Oper- ation	Description	Blind Spot Intervention ON indicator lamp (Green)	A
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indi- cator signal below to end the test	_	В
	On	Transmits the Blind Spot Intervention ON indicator sig- nal to the combination meter via CAN communication	ON	

LDW ON INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)	
LDW ON INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_	
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON	E

LDP FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure prevention ON indica- tor lamp (Yellow)	
LDP FAIL INDICATOR	Off	Stops transmitting the Lane Departure prevention ON indicator signal below to end the test	_	G
	On	Transmits the Lane Departure prevention ON indicator signal to the combination meter via CAN communication	ON	Н

LDW FAIL INDICATOR

LDW FAIL INDICA- TOR Off Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test — On Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication ON	Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)	
TOR On Transmits the Lane Departure Warning ON indicator ON	LDW FAIL INDICA-	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_	
signal to the combination meter via CAN communication	TOR	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON	

BSW ON INDICATOR

Test item	Oper- ation	Description	Blind Spot Warning ON indicator lamp (Yellow)	L
BSW ON INDICATOR	Off	Stops transmitting the Blind Spot Warning ON indicator signal below to end the test	_	D. /
	On	Transmits the Blind Spot Warning ON indicator signal to the warning lamp on the door	ON	IVI

BSI FAIL INDICATOR

Test item	Oper- ation	Description	Blind Spot Intervention FAIL indicator lamp (Yellow)	
BSI FAIL INDICATOR	Off	Stops transmitting the Blind Spot Intervention FAIL indi- cator signal below to end the test	_	DAC
	On	Transmits the Blind Spot Intervention FAIL indicator sig- nal to the warning lamp on the door	ON	Ρ

ECU IDENTIFICATION

ADAS control unit part number is displayed.

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[FCW]

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DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER/RADAR)

INFOID:000000008368265

[FCW]

APPLICATION ITEMS

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

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

SELF DIAGNOSTIC RESULT

Refer to <u>CCS-65, "DTC Index"</u>.

DATA MONITOR

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

WORK SUPPORT

DIAGNOSIS SYSTEM (ICC SENSOR)

< SYSTEM DESCRIPTION >

[FCW]

Work support items	Description
MILLIWAVE RADAR ADJUST	Outputs millimeter waves, calculates the displacement in radar direction, and indicates an ad- justment direction
Milliwave Radar Adjust Refer to <u>CCS-85. "Description</u>	<u>_</u> .
ECU IDENTIFICATION ICC sensor part number is dis	played.

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Condition	Value/Status
	Institute switch ON	When MAIN switch is pressed	On
MAIN SW	Ignition switch ON	When MAIN switch is not pressed	Off
	Ignition quitab ON	When SET/COAST switch is pressed	On
SET/COAST SW	Ignition switch ON	When SET/COAST switch is not pressed	Off
	Institute antitate ON	When CANCEL switch is pressed	On
CANCEL SW	Ignition switch ON	When CANCEL switch is not pressed	Off
	Institute antitate ON	When RESUME/ACCELERATE switch is pressed	On
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is not pressed	Off
	Institute autitate ON	When DISTANCE switch is pressed	On
DISTANCE SW	Ignition switch ON	When DISTANCE switch is not pressed	Off
	Drive the vehicle and activate	When ICC system is controlling	On
CRUISE OPE	the vehicle-to-vehicle distance control mode	When ICC system is not controlling	Off
		When brake pedal is depressed	Off
BRAKE SW	Ignition switch ON	When brake pedal is not depressed	On
		When brake pedal is depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is not depressed	Off
	F actor and the	Idling	On
IDLE SW	Engine running	Except idling (depress accelerator pedal)	Off
BCI SW	Ignition switch ON	When BCI switch is pressed	On
		When BCI switch is not pressed	Off
	Institute antitate ON	When BCI system is ON	On
BCISISIEMUN	Ignition switch ON	When BCI system is OFF	Off
	Start the engine and turn the	When set to "long"	Long
SET DISTANCE	ICC system ON Press the DISTANCE	When set to "middle"	Mid
	switch to change the vehi- cle-to-vehicle distance set- ting	When set to "short"	Short
CRUISE LAMP	Start the engine and press	ICC system ON (MAIN switch indicator ON)	On
	MAIN switch	ICC system OFF (MAIN switch indicator OFF)	Off
	Drive the vehicle and activate	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
VHCL AHEAD	control mode	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
	Start the engine and press	When ICC system is malfunctioning (ICC system warning lamp ON)	On
	MAIN switch	When ICC system is normal (ICC system warning lamp OFF)	Off

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< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item		Value/Status		
VHCL SPEED SE	While driving	Displays a vehi- cle speed calcu- lated by the ADAS control unit	B	
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed	C
		 When the buzzer of the following system operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	On	D
BUZZER U/P		 When the buzzer of the following system not operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	Off	E
ENGINE RPM	Engine running	Equivalent to ta- chometer read- ing	F	
		IBA OFF indicator lamp ONWhen IBA system is malfunctioningWhen IBA system is turned to OFF	On	G
DA WARNING		IBA OFF indicator lamp OFFWhen IBA system is normalWhen IBA system is turned to ON	Off	Н
	Drive the vehicle and activate	When ICC brake hold relay is activated	On	
STP LMP DRIVE	control mode	When ICC brake hold relay is not activated	Off	
D RANGE SW		When the selector lever is in "D" position or manual mode	On	J
D WINGE OW		When the selector lever is in any position other than "D" or manual mode	Off	
		When the selector lever is in "N", "P" position	On	K
NP RANGE SW	Engine running	When the selector lever is in any position other than "N", "P"	Off	I
PKB SW	Ignition switch ON	When the parking brake is applied	On	L
		When the parking brake is released	Off	
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit	Μ
VHCL SPD AT	While driving		Value of CVT ve- hicle speed sen- sor signal	Ν
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position	DAS
		When ICC system is deactivated	Off	
MODE SIG	Start the engine and press	When vehicle-to-vehicle distance control mode is activated	ICC	Ρ
		When conventional (fixed speed) cruise control mode is activated	ASCD	
	Drive the vehicle and acti-	SET switch indicator ON	On	
SET DISP IND	 vate the conventional (fixed speed) cruise control mode Press SET/COAST switch 	SET switch indicator OFF	Off	

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item		Condition	Value/Status
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the dis- tance from the preceding vehi- cle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance	When a vehicle ahead is detected	Displays the rel- ative speed.
	control mode	When a vehicle ahead is not detected	0.0
	Drive the vehicle and activate	Both side lane markers are detected	Detect
Camera lost	the LDW system, LDP system or Blind Spot Intervention sys-	Deviate side lane marker is lost	Deviate
	tem	Both side lane markers are lost	Both
		Lane marker is unclear	On
Lane unclear	while driving	Lane marker is clear	Off
		When the LDP system is ON	Stnby
	Drive the vehicle with the LDP	When the LDP system is operating	Warn
STATUS signal	system turned ON	When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
	Ignition quitch ON	When dynamic driver assistance switch is pressed	On
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is not pressed	Off
	Start the engine and press dy- namic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
DCA ON IND		DCA system ON (DCA system switch indicator ON)	On
	Drive the vehicle and activate	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
DCA VHL AHED	the DCA system	When a vehicle ahead is detected (vehicle ahead de- tection indicator ON)	On
APA TEMP	Engine running		Display the ac- celerator pedal actuator inte- grated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator ped- al actuator
	Ignition switch ON	FCW set with the vehicle information display ON	On
10W STOTEM ON	Ignition switch ON	FCW set with the vehicle information display OFF	Off
	Ignition owitch ON	LDW set with the vehicle information display ON	On
EDW STSTEM ON	Ignition switch ON	LDW set with the vehicle information display OFF	Off
	Ignition switch ON	LDW ON indicator ON	On
	Ignition switch ON	LDW ON indicator OFF	Off
	Start the engine and press dy-	LDP ON indicator lamp ON	On
LDP ON IND	Namic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp OFF	Off
	Drive the vehicle and activate	Lane departure warning lamp ON	On
LANE DPRT W/L	the LDW system or LDP sys- tem	Lane departure warning lamp OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition			
	Drive the vehicle and activate	When the buzzer of the following system operatesLDW/LDP systemBlind Spot Warning/Blind Spot Intervention system	On	A	
PUT	Spot Warning/Blind Spot Inter- vention system	 When the buzzer of the following system does not operate LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	Off	B	
	Start the engine and press dy-	When the LDP system is ON	On	0	
LDP SYSTEM ON	(When LDP system setting is ON)	When the LDP system is OFF	Off	D	
	Start the engine and press dy-	When the LDP system is ON	On		
READY signal	(When LDP system setting is ON)	When the LDP system is OFF	Off	Е	
Shift position	Engine runningWhile driving		Displays the shift position	F	
	Turn signal lamps OFF		Off		
Turn sianal	Turn signal lamp LH blinking		LH	~	
	Turn signal lamp RH blinking	RH	G		
	Turn signal lamp LH and RH bl	LH&RH			
SIDE G	While driving	Negative value	Н		
	5	Vehicle turning left	Positive value		
FUNC ITEM	Ignition switch ON	FUNC3			
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not m	Off			
FUNC ITEM (NV- DCA)	NOTE: The item is indicated, but not m	Off	J		
DCA SELECT	lanition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is ON	On		
	ignition of the second second	"Distance Control Assist" set with the vehicle informa- tion display is OFF	Off	K	
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the vehicle infor- mation display is ON	On	L	
		"Lane Departure Prevention" set with the vehicle infor- mation display is OFF	Off		
BSI SELECT	Ignition switch ON	"Blind Spot Intervention" set with the vehicle information display is ON	On	M	
DOI OLLEOT		"Blind Spot Intervention" set with the vehicle information display is OFF	Off	N	
		When drive mode select switch position is STANDARD	STD		
		When drive mode select switch position is in SPORT	SPORT		
		When drive mode select switch position is in ECO	ECO	DAS	
		When drive mode select switch position is in SNOW	SNOW		
DRIVE MODE STATS	Ignition switch ON	 When position od drive mode select switch is in following states: In the middle of SNOW-ECO In the middle of ECO-STANDARD In the middle of STANDARD-SPORTS 	Mid	Ρ	
		A signal other than those above is input	ERROR		
WARN SYS SW	Ignition switch ON	When warning systems switch is pressed	On		
		When warning systems switch is not pressed	Off		

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item		Value/Status	
		Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
BSW/BSI WARIN LIVIP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
	Ignition owitch ON	Blind Spot Intervention ON indicator ON	On
BSI ON IND		Blind Spot Intervention ON indicator OFF	Off
	Ignition quitab ON	When the BSW system is ON	On
BSW STSTEM ON		When the BSW system is OFF	Off
	Start the engine and press dy-	When the Blind Spot Intervention system is ON	On
BSI SYSTEM ON	namic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is OFF	Off
	Ignition switch ON	LDP system fail lamp ON	On
		LDP system fail lamp OFF	Off
	Ignition owitch ON	LDW ON indicator ON	On
		LDW ON indicator OFF	Off
	Ignition quitab ON	LDW system fail lamp ON	On
		LDW system fail lamp OFF	Off
SYSTEM_CANCEL_ MESSAGE	Engine running	Request signal to cancel warning systems	No request Slippery road Snow mode ON VDC OFF
CAM_HI_TEMP_	Ignition switch ON	Camera temperature above 100°c (212°F)	On
MSG		Camera temperature below 100°c (212°F)	Off
ITS Setting Item	Ignition switch ON		On
(DCA)		MENU> SETTINGS> DAS> DCA ON/OFF	Off
ITS Sotting Itom (IDD)	Ignition switch ON		On
ITS Setting item (LDP)		MENUS SETTINGS DAS LDF ON/OFF	Off
ITS Setting Item (BSI)	Ignition switch ON	MENU> SETTINGS> DAS> BCI ON/OFF	On
			Off
BSI FAIL IND	Ignition switch ON	BSI system fail lamp ON	On
		BSI system fail lamp OFF	Off
BSW ON IND	Ignition switch ON	BSW system indicator ON	On
		BSW system indicator OFF	Off
SR_BLK_MSG	Ignition switch ON	Sensor blocked warning message ON	On
		Sensor blocked warning message OFF	Off
WARN_LANE_ TIMING	Engine running	Calibration is required	Nothing
BSW_IND_ BRIGHTNESS	Ignition switch ON	Adjust BRIGHTNESS as needed	Normal
	Drive the vehicle and activate	Lane departure warning is operating	On
	the LDP system	Lane departure warning is not operating	Off
FCW SELECT [ON/	Ignition switch ON	Forward Collision Warning set with the vehicle information display ON	On
OFF]		Forward Collision Warning set with the vehicle informa- tion display OFF	Off

< ECU DIAGNOSIS INFORMATION >

[FCW]

Monitor item	Condition			
LDW SELECT [ON/		Lane Departure Warning set with the vehicle informa- tion display ON	On	
OFF]		Lane Departure Warning set with the vehicle informa- tion display ON	Off	
BSW SELECT [ON/		Blind Spot Warning set with the vehicle information dis- play ON	On	
OFF]		Blind Spot Warning set with the vehicle information display ON	Off	
ITS setting item	Ignition owitch ON		On	
(FCW) [ON/OFF]		MENU- SETTINGS- DAS- FCW UN/OFF	Off	
ITS setting item	Ignition quitab ON			
(LDW) [ON/OFF]		MENU- SETTINGS- DAS- LDW UN/UFF	Off	
ITS setting item	Ignition quitab ON		On	
(BSW) [ON/OFF]	ignition switch ON	MENUS SETTINGS DASS BSW UN/UFF	Off	
Potton / circuit OFF	Ignition owitch ON	Battery circuit OFF	On	
Ballery Circuit OFF		Battery circuit ON	Off	

TERMINAL LAYOUT PHYSICAL VALUES



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< ECU DIAGNOSIS INFORMATION >

[FCW]

Terminal No. (Wire color)		Description			Condition	Value	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
1		Warning systems	Input	Ignition	When warning systems switch is not pressed	12 V	
(BR)		switch	mput	ON	When warning systems switch is pressed	0 V	
4		Warning systems ON	Output	Ignition	Warning systems ON indi- cator ON	0 V	
(W)		indicator	Output	ON	Warning systems ON indi- cator OFF	12 V	
5		ICC brake hold relay		Ignition	_	12 V	
(G)		drive signal	Output	switch ON	At "STOP LAMP" test of "Active test"	0 V	
6 (B)		Ground	_	Ignition switch ON	_	0 V	
7 (L)	Ground	ITS communication-H		_	_	_	
8 (Y)		ITS communication-L		_	_	_	
10		PCI OFF quitab	Input	Ignition switch	When BCI OFF switch is not pressed	12 V	
(BG)		Der er i switch	mput	ON	When BCI OFF switch is pressed	0 V	
12				Ignition	Warning buzzer operation	0 V	
(G)		Warning buzzer signal	Output	switch ON	Warning buzzer not oper- ating	12 V	
14 (B)		CAN -H	_	_	_	_	
15 (W)		CAN -L		_	_		
16 (R)		Ignition power supply	Input	I	gnition switch ON	Battery Voltage	

Fail-safe

INFOID:00000008368267

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

System	Buzzer	Warning lamp/Indicator lamp	Description
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel
Forward Collision Warning (FCW)	High-pitched tone	Warning message	Cancel
Distance Control Assist (DCA)	High-pitched tone	DCA system warning	Cancel
Lane Departure Warning (LDW)		Lane departure warning lamp	Cancel

< ECU DIAGNOSIS INFORMATION >

System	Buzzer	Warning lamp/Indicator lamp	Description	Δ
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel	A
Blind Spot Warning (BSW)	_	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel	В
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel	
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel	С

DTC Inspection Priority Chart

INFOID:00000008368268

[FCW]

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

Priority	Detected items (DTC)	
1	C1A0A: CONFIG UNFINISHED U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)	
2	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)	
3	 C1B00: CAMERA UNIT MALF C1F02: APA C/U MALF C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF 	

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< ECU DIAGNOSIS INFORMATION >

[FCW]

Priority	Detected items (DTC)
	C1A01: POWER SUPPLY CIR
	C1A02: POWER SUPPLY CIR 2
	C1A04: ABS/TCS/VDC CIRC
	C1A05: BRAKE SW/STOP L SW
	CTAU6: OPERATION SW CIRC CTA12: LASED DEAM OFFICIED
	CIAI2: LASER BEAM OFFCNIR CIAI3: STOP LAMP RLY FIX
	CIAI4: ECM CIRCUIT
	C1A16: RADAR STAIN
	C1A18: LASER AIMING INCMP
	C1A2A: ICC SEN PWR SUP CIR
	C1A21: ICC SENSOR HIGH TEMP
	C1A24: NP RANGE
	C1A26: ECD MODE MALF
	CIA27: ECD PWR SUPLY CIR CIA22: CAN TRANSMISSION ERR
	CIA33: CAN TRANSMISSION ERROR
	C1A35: APA CIR
	C1A36: APA CAN COMM CIR
	• C1A37: APA CAN CIR 2
	• C1A38: APA CAN CIR 1
	C1A39: STRG SEN CIR
	C1A40: SYSTEM SW CIRC C1D01: CAM AIMING INCOMP
	CIBUT: CAM AIMING INCMP CIBUS: CAM ARNIAMI TMD DETCT
	C1B56: SONAR CIRCUIT
	C1B57: AVM CIRCUIT
	C1F01: APA MOTOR MALF
	C1F05: APA PWR SUPLY CIR
	• U0121: VDC CAN CIR 2
4	U0126: STRG SEN CAN CIR 1
	U0235: ICC SENSOR CAN CIRC 1
	U0401: ECM CAN CIR 1 U0402: TCM CAN CIR 1
	• U0415: VDC CAN CIR 1
	• U0428: STRG SEN CAN CIR 2
	• U1500: CAM CAN CIR 2
	• U1501: CAM CAN CIR 1
	U1502: ICC SEN CAN COMM CIR
	U1503: SIDE RDR L CAN CIR 2
	U1504: SIDE RDR L CAN CIR 1
	U 1505. SIDE RDR R CAN CIR 2 U1506: SIDE RDR R CAN CIR 1
	U1521: SONAR CAN COMMUNICATION
	U1522: SONAR CAN COMMUNICATION
	U1523: SONAR CAN COMMUNICATION
	U1524: AVM CAN COMMUNICATION
	U1525: AVM CAN COMMUNICATION
	U150B: ECM CAN CIRC 3
	U150C: VDC CAN CIRC 3 U150D: TOM CAN CIRC 3
	U150E: BCM CAN CIRC 3
	U150E: AV CAN CIRC 3
	U1512: HVAC CAN CIRC3
	U1513: METER CAN CIRC 3
	U1514: STRG SEN CAN CIRC 3
	U1515: ICC SENSOR CAN CIRC 3
	U1516: CAM CAN CIRC 3
5	C1A03: VHCL SPEED SE CIRC
6	+ C1A15: GEAR POSITION

C1A00: CONTROL UNIT

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< ECU DIA	GNOSIS	INFORMATION >							[FCW]	
DTC Inde	x								NFOID:000000008368269	9
NOTE: • The detail: • CRNT: A r • PAST: A r • IGN count • IGN count • O: The ma CAN com • 1 - 39: It in switch OF • If it is over Other thar • 1 - 49: It in switch OF • If it is over Systems fo • A: Vehicle- • B: Conven	s of time malfunction alfunction munication munication munication ncreases $F \rightarrow ON$ of 39, it is n CAN con ncreases $F \rightarrow ON$.	display are as per the f on is detected now on was detected in the p olayed on FFD (Freeze s that are detected now on system (U1000, U10 g like $0 \rightarrow 1 \rightarrow 2 \cdots 38$ - . It returns to 0 when a fixed to 39 until the self ommunication system (0 g like $0 \rightarrow 1 \rightarrow 2 \cdots 38$ - . It returns to 0 when a fixed to 49 until the self distance control mode d speed) cruise control mode	followin past Frame (10) \rightarrow 39 a malfur f-diagn Other t \rightarrow 49 a malfur f-diagn	ng. e Data) after re notion is nosis re than U ² after re notion is nosis re	turning s detec esults a 1000, L turning s detec esults a	to the ted aga re eras J1010) to the ted aga re eras	norma ain in t ed. norma ain in t ed.	al condition wheneve he process. al condition wheneve he process.	er the ignition	1
 C: Intellige D: Forward E: Distance F: Lane De G: Blind Sp H: Backup 	ent Brake A d Collision e Control A eparture Wa pot Warning Collision I	ssist (IBA) Warning (FCW) Issist (DCA) arning (LDW)/Lane Departur g (BSW)/Blind Spot Intervent ntervention (BCI)	e Preve tion	ntion (LI	DP)					
DT	C			W	arning la	mp	1	Fail-safe		
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference	
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-73	
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-74	
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>	
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-102</u>	
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-104</u>	
C1A05	5	BRAKE SW/STOP L SW		ON	ON		ON	A, B, C, D, E, F, G, H	<u>CCS 100</u>	
C1A0A	10	CONFIG UNFINISHED	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	Perform configuration	
C1A12	12	LASER BEAM OFFCN- TR	ON	ON				A, C, D, E	<u>CCS-111</u>	
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	<u>CCS-113</u>	

< ECU DIAGNOSIS INFORMATION >

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

DTC			Warning lamp				Fail-safe		
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-119</u>
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-120</u>
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	<u>CCS-122</u>
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	<u>CCS-124</u>
C1A18	18	LASER AIMING INCMP	ON	ON				A, C, D, E	<u>CCS-125</u>
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	<u>CCS-127</u>
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-129</u>
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	<u>CCS-131</u>
C1A27	27	ECD PWR SUPLY CIR	ON	ON				A, B, C, D, E	<u>CCS-132</u>
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	<u>CCS-134</u>
C1A34	34	COMMAND ERROR	ON					A, B, E	<u>CCS-135</u>
C1A35	35	APA CIR	ON				ON	A, E, H	<u>CCS-136</u>
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	<u>CCS-137</u>
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	<u>CCS-138</u>
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	<u>CCS-139</u>
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-140</u>
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	<u>CCS-133</u>
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	DAS-416
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	DAS-418
C1B03	83	CAM ABNRML TMP DE- TCT							DAS-420
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-575
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-576

Revision: March 2012

< ECU DIAGNOSIS INFORMATION >

А

В

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

DTC				W	arning la	mp		Fail-safe		0
			du	<u>Q</u>	amp	ition warning lamp	ntion			D
CONSULT	On board display	CONSULT display	stem warning lar	FF indicator lam	barture warning l	nd Spot Interven	Collision Interver	System	Reference	F
			ICC sys	IBA OI	Lane dep	ilind Spot Warning/Blir	Backup C			G
C1B56	87	SONAR CIRCUIT				ш	ON	Н	DAS-742	
C1B57	88						ON	н	DAS-743	
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	CCS-143	J
C1F02	92	APA C/U MALF	ON				ON	A, E, H	CCS-144	
C1F05	95	APA PWR SUPLY CIR	ON				ON	A, E, H	CCS-145	
NO DTC IS DETECT- ED. FUR- THER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED		_	_		_		_	L
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-147</u>	IVI
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-149</u>	
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	<u>CCS-151</u>	Ν
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-152</u>	
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-153</u>	DAS
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-155</u>	
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-157</u>	D
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-75</u>	Г
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-76	
U1500	145	CAM CAN CIR 2			ON	ON		F, G	<u>DAS-436</u>	
U1501	146	CAM CAN CIR 1			ON	ON		F, G	<u>DAS-437</u>	
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	<u>CCS-166</u>	

< ECU DIAGNOSIS INFORMATION >

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

DTC)			W	arning la	Imp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	DAS-601
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-602
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-603
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-604
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-605
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	<u>DAS-606</u>
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-162</u>
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-163</u>
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-164</u>
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-165</u>
U150F	161	AV CAN CIRC 3							<u>DAS-77</u>
U1512	162	HVAC CAN CIRC3			ON	ON		F, G	<u>DAS-438</u>
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-167</u>
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-168</u>
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	<u>CCS-169</u>
U1516	166	CAM CAN CIRC 3			ON	ON		F, G	<u>DAS-440</u>
U1517	167	APA CAN CIRC 3	ON				ON	A, B, E, H	<u>CCS-170</u>
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	<u>DAS-611</u>
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	<u>DAS-612</u>
U1521	177	SONAR CHECKSUM					ON	Н	<u>DAS-779</u>
U1522	178	SONAR MESSAGE					ON	Н	DAS-780

< ECU DIAGNOSIS INFORMATION >

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- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
- B: Conventional (fixed speed) cruise control mode
- C: Intelligent Brake Assist (IBA)
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- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC	DTC		Warning lamp					Fail-safe		
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference	D F G
U1523	179	SONAR CAN DLC					ON	Н	<u>DAS-781</u>	
U1524	180	SONAR CAN DLC					ON	Н	<u>DAS-782</u>	
U1525	181	AVM MESSAGE					ON	Н	<u>DAS-783</u>	J

NOTE:

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

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

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ICC SENSOR

Reference Value

VALUES ON THE DIAGNOSIS TOOL

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

TERMINAL LAYOUT



PHYSICAL VALUES

INFOID:00000008368270

ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Standard value	Reference value	А
+	-	Signal name	Input/ Output	Condition		(Approx.)	В
1 (P)	8 (B)	Ignition power supply	Input	Ignition switch ON	9.5 - 16 V	Battery voltage	
6 (Y)		ITS communication-L	_	—	_	_	С
7 (L)		ITS communication-H	_	_	_	_	П
8 (B)	Ground	Ground		Ignition switch ON	0 - 0.1 V	0 V	

Fail-safe

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

DTC Inspection Priority Chart

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

Priority	Detected items (DTC)	
1	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)	
2	C1A50: ADAS MALFUNCTION	
3	 C1A01: POWER SUPPLY CIR C1A02: POWER SUPPLY CIR 2 C1A12: RADAR OFF-CENTER C1A16: RADAR BLOCKED C1A18: RADAR ALIGNMENT INCOMPLETE C1A21: UNIT HIGH TEMP C1A39: STRG SEN CIR U0104: ADAS CAN CIR1 U0121: VDC CAN CIR2 U0126: STRG SEN CAN CIR1 U0405: ADAS CAN CIR2 U0405: ADAS CAN CIR2 	
1	U0428: STRG SEN CAN CIR2	

DTC Index

NOTE:

- The details of time display are as per the following.
- 0: The malfunctions that are detected now
- CAN communication system (U1000, U1010)
- DAS - 1 - 39: It increases like $0 \rightarrow 1 \rightarrow 2 \cdots 38 \rightarrow 39$ 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 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.

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ICC SENSOR

< ECU DIAGNOSIS INFORMATION >

DTC				I	Fail-safe	e functio	n		
CONSULT	CONSULT display	ICC system warning lamp	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist (DCA)	Forward Collision Warning (FCW)	Intelligent Brake Assist (IBA)	Brake Assist (with preview function)	Reference
C1A00	CONTROL UNIT	ON	×	×	×	×	×	×	<u>CCS-98</u>
C1A01	POWER SUPPLY CIR	ON	×	×	×	×	×	×	<u>CCS-100</u>
C1A02	POWER SUPPLY CIR2	ON	×	×	×	×	×	×	<u>CCS-100</u>
C1A12	RADAR OFF-CENTER	ON	×		×	×	×	×	<u>CCS-112</u>
C1A16	RADAR BLOCKED	ON	×		×	×	×	×	<u>CCS-123</u>
C1A18	RADAR ALIGNMENT INCOMPLETE	ON	×		×	×	×	×	<u>CCS-126</u>
C1A21	UNIT HIGH TEMP	ON	×	×	×	×	×	×	<u>CCS-127</u>
C1A39	STRG SEN CIR	ON	×	×	×	×	×	×	<u>CCS-140</u>
C1A50	ADAS MALFUNCTION	ON	×	×	×	×	×	×	<u>CCS-142</u>
U0104	ADAS CAN CIR1	ON	×	×	×	×	×	×	<u>CCS-146</u>
U0121	VDC CAN CIR2	ON	×	×	×	×	×	×	<u>CCS-147</u>
U0126	STRG SEN CAN CIR1	ON	×	×	×	×	×	×	<u>CCS-149</u>
U0405	ADAS CAN CIR2	ON	×	×	×	×	×	×	<u>CCS-154</u>
U0415	VDC CAN CIR1	ON	×	×	×	×	×	×	<u>CCS-155</u>
U0428	STRG SEN CAN CIR2	ON	×	×	×	×	×	×	<u>CCS-157</u>

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×: Applicable

U1000

U1010

CAN COMM CIRCUIT

CONTROL UNIT (CAN)

<u>CCS-159</u>

<u>CCS-161</u>

< WIRING DIAGRAM >

WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS

Wiring Diagram



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DRIVER ASSISTANCE SYSTEMS

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DRIVER ASSISTANCE SYSTEMS

[FCW]



Signal Name	GND1	GND2	IGN	BAT	CAN-L	CAN-H	
Color of Wire	В	В	BG	Μ	Ь	_	
Terminal No.	-	2	21	22	38	39	





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Signal Name

Terminal No.

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Connector No.	. M12t	9	Connector N	Vo. M145	0	Connector	No. M150	0	
Connector Nai	me TWIF SYS	N SWITCH (WARNING TEM SWITCH)	Connector Connector Connector Connector	Vame CON	1BINATION SWITCH	Connector	Name JOIN	IT CONNECTOR-M27	
Connector Col	lor BLA	CK						Ļ	
品 H.S.			回 H.S.	20 19 18	17 16 15 14 13	H.S.	22 21 20 1	8 7 6 5 4 3 2 1 9 18 17 16 15 14 13 12	
]						33 32 31 3	80 29 28 27 26 25 24 23	
Terminal No.	Color of Wire	Signal Name	Terminal Nc	Color of Wire	Signal Name	Terminal N	lo. Color of Wire	Signal Name	
-	≻	I	13	œ	1	23	B	1	
2	в	1	16		1	28	SHIELD	1	
ى ک	×	1				31	GB	1	
9	ŋ	1					-		
Connector No.	. M16	33	Connector h	No. M18	8	Connector	· No. M189	6	
Connector Nar	AV (AUE SUF	CONTROL UNIT (BOSE DIO SYSTEM - WITH ROUND SOUND SYSTEM	Connector Connec	Name WIR Color WHI	E TO WIRE TE	Connector	· Name WIRI	E TO WIRE TE	
	TAIL	D REAR SEAT ENTER- WIENT SYSTEM)							
Connector Col	lor WH	ITE		1 2 3 4	5 6 7 8 9 10 11 12		12 11 10 9	8 7 6 5 4 3 2 1	
			·C-11	13 14 15 16	17 18 19 20 21 22 23 24	0°E	24 23 22 21	20 19 18 17 16 15 14 13	
H.S.	9 50 51 52 66 67 68	53 54 55 56 57 58 59 60 61 62 63 64 69 70 71 72 73 74 75 76 77 78 80							
Terminal No.	Color of Wire	Signal Name	Terminal Nc). Wire	Signal Name	Terminal N	lo. Color of Wire	Signal Name	
62	Ъ	CAN-L	19	σ	I	19	U	I	
78	-	CAN-H	20	≥	I	20	≥	1	

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) NT CONNECTOR-E14 ACK	5 4 3 2 1	Signal Name	1	I	1								CELERATOR PEDAL	HT GRAY	43		Signal Name	I	I
o. E70 ame JOI olor BL/		Color of Wire	٩.	٩	٩							0. E74	ame AC	olor LIG	9	Calar of	Wire	BG	GR
Connector No Connector Na Connector Co	HS.	Terminal No.	-	5	e							Connector No	Connector Na	Connector Co	配 H.S.		Terminal No.	1	0
			1						1							_			
NT CONNECTOR-E12 JE	8 7 6 5 4 3 2 1	Signal Name	I	I	I	I	I	I					BRAKE SWITCH	NMC	[<u></u>][<u>[</u>]][<u>[</u>]]		Signal Name	I	I
D. E45 ame JOI	12 11 10 9	Color of Wire	_	_	L	٩	₫	Ч). E72	ame ICC	olor BR(Color of	Wire	9	ГG
Connector No Connector Na Connector Co	E HIS	Terminal No.	٢	2	е	2	8	6				Connector No	Connector Na	Connector Co	日 H.S.		Terminal No.	ł	2
4 INT CONNECTOR-E01 HITE	8 7 6 5 4 3 2 1 19 18 17 16 15 14 13 12 30 29 28 27 26 25 24 23	signal Name	1	1	1	1	1	ļ	1	I	I		INT CONNECTOR-E15	ACK	54321		Signal Name	I	I
o. E44 ame JOI olor WH	11 10 9 22 21 20 33 32 31	Color of Wire	æ	æ	٩	٩	۵.	U	σ	σ	σ	o. E71	ame JOI	olor BL/	\bigcirc	Color of	Wire	L	
Connector N Connector N Connector C	SH SH	Terminal No.	4	2	12	13	14	19	20	21	22	Connector N	Connector N	Connector C	吗. H.S.		Terminal No.	1	0

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А Connector Name JOINT CONNECTOR-E07 Signal Name Signal Name В L T I Т Т T L Т Т Т С Connector Color WHITE E108 Color of Wire Color of Wire · >-BG ≻ ≥ G ш ≻ ٩ _ ≻ Connector No. D Terminal No. Terminal No. 39G 41G 35G 36G 40G 80G 81G N Э H.S. 佢 Е F 21G20G19G18G17G16G15G14G13G12G11G 30G29G28G27G26G25G24G23G22G 61 G 60 G 59 G 57 G 56 G 55 G 54 G 53 G 52 G 51 G 70 G 69 G 68 G 67 G 66 G 65 G 64 G 63 G 62 G 81G80G79G78G77G76G75G74G73G72G71G 90G89G88G87G86G85G84G83G82G 41640639638637636356356356326326316 5064964864764864564456436426 Connector Name JOINT CONNECTOR-E06 Signal Name 5G 4G 3G 2G 1G 10G 9G 8G 7G 6G 95G 94G 93G 92G 91G 100G 99G 98G 97G 96G G Т I Connector Name WIRE TO WIRE Connector Color WHITE WHITE Н E106 E152 Color of Wire BG B B Connector Color Connector No. Connector No. Terminal No. I 2 с H.S. H.S. Æ E J Κ ო Connector Name ICC BRAKE HOLD RELAY STOP LAMP SW ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
 25
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 6 7 8 9 10 11 12 13 14 Signal Name Signal Name L CAN-H CAN-L Т Т T Т -X 2 5 Μ WHITE BLUE E125 Color of Wire E75 Color of Wire ശ ٩ _ ≥ ۲ ۲ ٩ G Connector Color Connector Name Connector Color c, Ν Connector No. Connector No. Terminal No. Terminal No. յШղև 15 25 S -N с ഹ H.S. H.S. E 佢 DAS

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DRIVER ASSISTANCE SYSTEMS	

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	Connector No.	B104	Terminal N	lo. Color of	Signal Name
Connector Name JOINT CONNECTOR-B15	Connector Name	ADAS CONTROL UNIT			
Connector Color WHITE	Connector Color	WHITE	6	I	I
			10	BG	BCP OFF SW
			F	1	I
		8 7 6 5 4 3 2 1	12	σ	WARNING BUZZER
Ď		6 15 14 13 12 11 10 9	13	1	1
			14	۵	CAN-H
Corminal No Color of Signal Name	Torminal No Colo	r of Signal Namo	15	×	CAN-L
errinia No. Wire olyna Name	Vir Mir		16	æ	IGNITION
1 P -	1 BF	R WARNING SYSTEM SW		-	
3 W	2	1			
	n n	1			
	4	/ WARNING SYSTEM ON IND			
	ک	BRAKE HOLD RLY DRIVE SIGNAL			
	9	GND			
		ITS COMM-H			
	8	ITS COMM-L			
connector No. B109	Connector No.	B115	-	. Color of	
onnector Name SIDE RADAR RH	Connector Name	JOINT CONNECTOR-B08		Wire	olgnal ivame
connector Color BLACK	Connector Color	WHITE	6	В	-
			10	GR	-
			11	SHIELD	I
H.S.	H.S.	9 8 7 6 5 4 3 2 1	19	н	I
	22 21 2	20 19 18 17 16 15 14 13 12	20	н	I
		1 20 20 22 27 26 25 24 22 23	21	В	I
erminal No. Color of Signal Name			27	8	I
- -]]	28	N	-
- c			29	В	-
, 1 o			30	в	I
			31	GR	I
۲ س ۲ س			32	SHIELD	I
= =			33	В	I
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Connector No. B103

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BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

OVERALL SEQUENCE



DETAILED FLOW

NOTE:

The FCW system shares component parts with the ICC system. If the FCW system has a malfunction perform diagnosis for the ICC system.

1.INTERVIEW FOR MALFUNCTION

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[FCW]

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

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

>> GO TO 2.

2.SELF-DIAGNOSIS WITH CONSULT

1. Perform "All DTC Reading" with CONSULT.

2. Check if the DTC is detected on the self-diagnosis results of "ICC/ADAS".

Is any DTC detected?

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

3.ACTION TEST

Perform the ICC system action test to check the operation status. Refer to CCS-92, "Description".

>> GO TO 4.

4.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to <u>DAS-309, "Symptom</u> <u>Table"</u>.

>> 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 <u>DAS-279</u>, "DTC Index".

>> GO TO 6.

6.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

7.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

- 1. Erases self-diagnosis results.
- 2. Perform "All DTC Reading" again after repairing or replacing the specific items.
- 3. Check if the DTC is detected on the self-diagnosis results of "ICC/ADAS".

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 8.

8.REPAIR CHECK (ACTION TEST)

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

Is there any malfunction symptom?

YES >> GO TO 4.

NO >> Inspection End.

FORWARD COLLISION WARNING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

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SYMPTOM DIAGNOSIS FORWARD COLLISION WARNING SYSTEM SYMPTOMS

Symptom Table

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NOTE:

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

	Symptoms	Reference page	
	FCW system is not activated	Refer to DAS-310, "Description"	D
Operation	FCW system setting cannot be turned ON on the navigation screen	Pefer to DAS-311 "Description"	_
	FCW system setting cannot be turned OFF on the navigation screen		E

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FCW SYSTEM IS NOT ACTIVATED

< SYMPTOM DIAGNOSIS >

FCW SYSTEM IS NOT ACTIVATED

Description

FCW system does not operate by pressing the warning systems switch. **NOTE:**

Warning systems switch is shared with LDW system and BSW system.

Diagnosis Procedure

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1.PERFORM THE SELF-DIAGNOSIS

1. Perform "All DTC Reading" with CONSULT.

 Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to <u>DAS-279, "DTC Index"</u>. <u>Is any DTC detected?</u>

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK WARNING SYSTEMS SWITCH CIRCUIT

Check warning systems switch circuit. Refer to <u>DAS-443</u>, "Component Function Check". **NOTE:**

Warning systems switch is shared with LDW system and BSW system.

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> GO TO 3.

3.REPAIR OR REPLACE THE SPECIFIC ITEMS

Repair or replace malfunctioning items.

>> Inspection End.

FCW SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHICLE INFOR-MATION DISPLAY

[FCW] < SYMPTOM DIAGNOSIS > FCW SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHICLE IN-Δ FORMATION DISPLAY Description INFOID:000000007911693 • FCW system setting is not selectable on the navigation screen. NOTE: When the ignition switch is in ACC position, FCW system settings cannot be changed. - "Forward Collision Warning" is not indicated on the navigation screen. - The switching between ON and OFF cannot be performed by operating the navigation system. - The item of "Forward Collision Warning" on the navigation screen is not active. D After turning ON the ignition switch or starting the engine, FCW settings of the navigation system cannot be selected for several tens of seconds under the following conditions: After replacing AV control unit. - After erasing connection history of the navigation system. E - After erasing self-diagnosis results of AV control unit. The FCW system setting differs from the one set at the previous driving. NOTE: F Turn OFF the ignition switch and wait for 5 seconds or more. Diagnosis Procedure INFOID-000000007911694 CHECK FCW SYSTEM SETTING 1. Start the engine. Check that the FCW system settings is selectable on the navigation screen. 2. Н Is the inspection result normal? YFS >> GO TO 3. NO >> GO TO 2. 2.PERFORM THE SELF-DIAGNOSIS 1. Perform self-diagnosis with CONSULT. 2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". Refer to the following. ICC/ADAS: <u>CCS-59</u>, "<u>DTC Index"</u> MULTI AV: <u>AV-464, "DTC Index"</u> K METER/M&A: MWI-25, "DTC Index" Is any DTC detected? YES >> Repair or replace malfunctioning parts. NO >> INSPECTION END ${f 3}.$ CHECK DATA MONITOR OF ADAS CONTROL UNIT Μ Check that "DCA SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT. Is the inspection result normal? YES >> Refer to DAS-254, "On Board Diagnosis Function". Ν NO >> GO TO 4. **4**.CHECK MULTIFUNCTION SWITCH DAS Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate properly. Is the inspection result normal? Ρ >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". YES NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

PRECAUTIONS FOR FORWARD COLLISION WARNING (FCW)

- FCW system is intended to warn the driver before a collision but will not avoid a collision. It is the drive's responsibility to stay alert, drive safely and be in control of the vehicle at all times.
- As there is a performance limit, the FCW system may not provide a warning in certain conditions.
- The FCW system will not detect the following objects.
- Pedestrians, animals, or obstacles in the roadway.
- Oncoming vehicles in the same lane
- FCW system will not detect under the following conditions.
- When the sensor gets dirty, it is impossible to detect the distance from the vehicle ahead.
- The sensor generally detects signals returned from the reflectors on a vehicle ahead. Therefore, the FCW system may not warn properly under the following conditions:
- When the sensor area of the front bumper gets dirty or it is impossible to detect the distance to the vehicle ahead.
- When visibility is low (such as rain, fog, snow, etc.).
- When snow or road spray from traveling vehicles are splashed.
- When excessively heavy baggage is loaded in the rear seat or the trunk room of own vehicle.
- When abruptly accelerating or decelerating.
- On steep downhill or roads with sharp curves.
- When there is a highly reflective object near the vehicle ahead.
- i.e.) very close to other vehicle, signboard, etc.
- Depending on certain road conditions (curved, beginning of a curve), vehicle conditions (steering position, vehicle position), or preceding vehicle's conditions (position in lane, etc.), the FCW system may not function properly. The FCW system may detect highly reflective objects such as signs and other stationary objects on the road or near the traveling lane, and provide unnecessary warning.
- The FCW system may not function in offset conditions.
- The FCW system may not function when the distance to the vehicle ahead is extremely close.
- The FCW system is designed to automatically check the sensor's functionality. If the sensor area of the front bumper is covered with ice, a transparent or translucent bag, etc., the system may not detect them. In these instances, the system may not be able to warn the driver properly. Be sure to check and clean the sensor area of the front bumper regularly.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- A sudden appearance of the vehicle in front (i.e.: when a vehicle abruptly cuts in) may not be detected and the system may not warn soon enough.
- The FCW system will be canceled automatically with a chime sound and a warning message will be displayed under the following conditions:
- When the sensor area of the front bumper is dirty
- When the FCW system malfunctions

REMOVAL AND INSTALLATION WARNING SYSTEMS SWITCH

Removal and Installation

REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-23. "Removal and Installation".
- 2. Remove three screws (A, B) that retain the lower switch assembly (2).
 - (1) :Upper switch assembly
 - (C) :Upper switch assembly screws



 (\mathbf{C})

- 3. Release upper (B) and lower (C) tab using a suitable tool (A), then remove the warning system switch (1) from the lower switch assembly.
 - (2) :Dimmer switch
 - (3) :AC 120V outlet main switch
 - (4) :Heated steering wheel switch



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[FCW]

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< PRECAUTION > 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. This system includes dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. 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 3 minutes before performing any service.

Precautions For Harness Repair

INFOID:000000007911698

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

STREGACTION >		
Precaution for LDW/LDP System Service	INFOID:000000007911699	А
 WARNING: Be careful of traffic conditions and safety around the vehicle when performing road test CAUTION: Never use the LDP system when driving with free rollers or a chassis dynamometer. Never perform the active test while driving. 	:.	В
 Never disassemble and remodel the lane camera unit. Do not use the lane camera unit that is removed from the vehicle. Never change LDW initial state ON ⇒ OFF without the consent of the customer. 		С
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< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : Component Parts Location

INFOID:000000007911700



COMPONENT PARTS

< SYSTEM DESCRIPTION >

1.	Lane camera unit	2.	Vehicle information display	3.	BCM (with the combination meter re- moved) Refer to <u>DAS-317, "LANE DEPAR-</u> <u>TURE WARNING (LDW) SYSTEM :</u> <u>Component Description"</u>	A
4.	ABS actuator and electric unit (control unit) Refer to <u>DAS-317. "LANE DEPAR-</u> <u>TURE WARNING (LDW) SYSTEM :</u> <u>Component Description"</u> .	5.	Warning buzzer	6.	Warning systems switch	С
7.	Warning systems ON indicator	8.	ADAS control unit (view of rear luggage room area with rear panel assembly removed) Refer to <u>DAS-317, "LANE DEPARTURE</u>			D
			WARNING (LDW) SYSTEM : Compo- nent Description".			Ε

LANE DEPARTURE WARNING (LDW) SYSTEM : Component Description INFOLD:00000007911701

Component	Description
ADAS control unit	 Judges the lane departure depending on the lane detection result and each signals Controls the warning buzzer and the warning systems ON indicator Transmits lane departure warning lamp signal to combination meter via CAN communication
Lane camera unit	 Detects the lane marker in travel lane Transmits the detected lane condition signal to ADAS control unit via ITS communication
ABS actuator and electric unit (con- trol unit)	Transmits the vehicle speed signal (wheel speed) to ADAS control unit via CAN communica- tion
Warning systems switch	Inputs the warning systems switch signal to ADAS control unit
Warning systems ON indicator (On the warning systems switch)	Turns on the warning systems ON indicator, according to a warning systems ON indicator sig- nal received from the ADAS control unit
Warning buzzer	Activates the warning buzzer, according to a warning buzzer signal received from the ADAS control unit
Combination meter	 Turns the lane departure indicator lamp ON/OFF according to the signals from ADAS control unit via CAN communication Transmits the system selection signa to ADAS control unit via CAN communication
BCM	Transmits the turn indicator signal to ADAS control unit via CAN communication

LANE DEPARTURE PREVENTION (LDP) SYSTEM

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[LDW & LDP]

LANE DEPARTURE PREVENTION (LDP) SYSTEM : Component Parts Location

INFOID:000000007911702



- 1. Lane camera unit
- 2. Dynamic driver assistance switch (On the ICC steering switch)
- Vehicle information display (LDP) 4.
- BCM (with the combination meter re- 6. 5. moved) Refer to DAS-319, "LANE **DEPARTURE PREVENTION (LDP)** SYSTEM : Component Description".
- Steering angle sensor (view with steering wheel removed) Refer to DAS-319, "LANE DEPAR-**TURE PREVENTION (LDP) SYS-**TEM : Component Description".

3.

ABS actuator and electric unit (control unit) Refer to DAS-319, "LANE DEPAR-TURE PREVENTION (LDP) SYS-TEM : Component Description".



COMPONENT PARTS

Refer to DAS-319, "LANE DEPAR-

TURE PREVENTION (LDP) SYS-

TEM : Component Description".

< SYSTEM DESCRIPTION >

- 7. ECM Refer to <u>DAS-319</u>, "LANE DEPAR-<u>TURE PREVENTION (LDP) SYS-</u> <u>TEM : Component Description"</u>.
- 10. ADAS control unit (view of rear luggage room area with rear panel assembly removed) Refer to <u>DAS-319. "LANE DEPAR-</u> <u>TURE PREVENTION (LDP) SYS-</u> <u>TEM : Component Description"</u>.

9. Warning buzzer

[LDW & LDP]

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LANE DEPARTURE PREVENTION (LDP) SYSTEM : Component Description

TCM

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INFOID:000000007911703

Component	Description
ADAS control unit	 Judges lane departure based on each signal and calculates yaw moment necessary to generate force toward the direction to recover the vehicle from the lane departure Outputs the warning buzzer signal to the warning buzzer Transmits a target yaw moment signal to the ABS actuator and electric unit (control unit) via CAN communication Transmits the lane departure warning lamp signal and LDP ON indicator lamp signal to combination meter via CAN communication
Lane camera unit	 Detects the lane marker in travel lane Transmits the detected lane condition signal to ADAS control unit via ITS communication
ABS actuator and electric unit (control unit)	 Transmits the vehicle speed signal (wheel speed) to ADAS control unit via CAN communication Transmits the yaw rate signal and side G sensor signal to ADAS control unit via CAN communication Receives a target yaw moment signal from the ADAS control unit via CAN communication and controls brake pressure of four wheels, respectively
Warning buzzer	Activates the warning buzzer, according to a warning buzzer signal received from the ADAS control unit
Dynamic driver assistance switch (On the ICC steering switch)	ECM receives an ICC steering switch (dynamic driver assistance switch) signal and transmits the signal to ADAS control unit via CAN communication
Combination meter	 Turns on the following indicator/warning lamp, according to a signal received for the ADAS control unit via CAN communication LDP ON indicator lamp (Green) Lane departure warning indicator light (Yellow) Transmits the system selection signal to ADAS control unit via CAN communication
BCM	Transmits the turn indicator signal to ADAS control unit via CAN communication
ECM	Transmits the accelerator pedal position signal, engine speed signal and ICC steering switch signal (dynamic driver assistance switch signal) to ADAS control unit via CAN communication
Steering angle sensor	Transmits the steering angle sensor signal to ADAS control unit via CAN communication
ТСМ	Transmits the output shaft revolution signal, input speed signal, current gear position signal and shift position signal to ADAS control unit via CAN communication

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SYSTEM LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : System Description

INFOID:000000007911704

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit		Signal name	Description
ABS actuator and electric unit (control unit)	CAN com- munica- tion	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
BCM	CAN com- munica- tion	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
Combination meter	CAN com- munica- tion	System selection signal	Receives a selection state of each item in "Driving Aids" selected with the vehicle information display
Lane camera unit	ITS com- munica- tion	Detected lane condition signal	Receives detection results of lane marker
Warning sys- tems switch	Warning sy	stems switch signal	Receives an ON/OFF state of the warning systems switch

Output Signal Item

Reception unit		Signal name	Description
Combination meter	CAN commu- nication	Lane departure warning lamp signal	Transmits a lane departure warning lamp signal to turn ON the lane departure warning lamp
Lane camera	ITS commu-	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
unit	nication	Turn indicator signal	Transmits a turn indicator signal received from BCM
Warning buzz- er	Warning buzze	er signal	Activates the warning buzzer
Warning sys- tems ON indi- cator	Warning syste	ms ON indicator signal	Turns ON the warning systems ON indicator

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< SYSTEM DESCRIPTION >

FUNCTION DESCRIPTION

- Lane Departure Warning (LDW) system provides a lane departure warning function when the vehicle is driven at speeds of approximately 70 km/h (45 MPH) or more.
- When the vehicle approaches either the left or the right side of the traveling lane, a warning will sound and the lane departure warning lamp (yellow) on the combination meter will blink to alert the driver.
- The warning does not occur during turn signal operation (Lane change side).
- The warning function will stop when the vehicle returns inside of the lane markers.

EXAMPLE



When the vehicle approaches the right lane marker, the driver is alerted by the buzzer and the blinking of lane departure warning lamp (yellow).

OPERATION DESCRIPTION

- When the system is turned ON by operating the warning systems switch, ADAS control unit turns ON the warning systems ON indicator.
- Lane camera unit monitors lane markers of the traveling lane. It transmits the detected lane condition signal to ADAS control unit via ITS communication.
- Activates warning buzzer
- ADAS control unit transmits a lane departure warning lamp signal to combination meter via CAN communication and turns ON/OFF the lane departure warning lamp (yellow).

OPERATING CONDITION

- Warning systems ON indicator: ON
- Vehicle speed: approximately 70 km/h (45 MPH) or more
- · Turn indicator signal: After 2 seconds or more from turned OFF

NOTE:

- When the LDW system setting on the vehicle information display is ON.
- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 60 km/h (40 MPH)
- LDP ON indicator lamp is OFF
- The LDW system may not function properly, depending on the situation. Refer to <u>DAS-331</u>, "Precautions for <u>Lane Departure Warning/Lane Departure Prevention"</u>

Fail-safe Indication

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SYSTEM

< SYSTEM DESCRIPTION >

Vehicle condition/ Driver's operation	Warning sys- tems ON indi- cator	Indication on the combination meter
When DTC is detected (Except "C1B01" and "C1B03")	ON	
Camera aiming is not completed ("C1B01"is detected) NOTE: This is detected while driving the vehicle and the indication remains ON until the ignition switch is turned OFF	ON	LDP ON (Yellow)
When DTC is detected (Except "C1B01" and "C1B03")	ON	
Camera aiming is not completed ("C1B01" is detected) NOTE: This is detected while driving the vehicle and the indication remains ON until the ignition switch is turned OFF	ON	Malfunction Please See Owner's Manual
Temporary disabled status at high temperature ("C1B03" is detected)	OFF	Unavailable: High Cabin Temp
When the warning systems switch is pressed (When the settings of LDW system, FCW system, and BSW system on the vehicle information display are "OFF")	Blink	Unavailable All Systems are disable ALOIA0132GB

LANE DEPARTURE WARNING (LDW) SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:000000007911705

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

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

Revision: March 2012

SYSTEM

< SYSTEM DESCRIPTION >

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

[LDW & LDP]

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INFOID:000000007911706 FAIL-SAFE CONTROL BY DTC If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the lane departure warning lamp in the combination meter. TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE · If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. The warning systems ON indicator on the switch will blink and the following message appears on the vehicle information display "Unavailable High Cabin Temp." • When interior temperature is reduced, the system will resume operation automatically and the warning systems ON indicator on the switch will stop blinking. LANE DEPARTURE PREVENTION (LDP) SYSTEM LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description INFOID:00000007911707 SYSTEM DIAGRAM Dynamic driver Combination meter assistance switch signal Dynamic drive ECM assistance switch 4 wheels brake control ABS actuator and (Yaw moment control) electric unit (control unit)



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		e	Description
		Accelerator pedal position signal		Receives accelerator pedal position (angle)
ECM CAN cc munica tion	CAN com- munica-	N com- ICC steering switch signal	Dynamic driver as- sistance switch sig- nal	Receives the operational state of the ICC steering switch
	lion	Engine speed signal		Receives engine speed
		Snow mode switch signal		Receives an operational state of the snow mode

SYSTEM

< SYSTEM DESCRIPTION >

Transmit unit	Signal name		Description
ТСМ	CAN com- munica- tion	Input speed signal	Receives the number of revolutions of input shaft
		Current gear position signal	Receives a current gear position
		Shift position signal	Receives a selector lever position
		Output shaft revolution signal	Receives the number of revolutions of output shaft
		ABS malfunction signal	Receives a malfunction state of ABS
		ABS operation signal	Receives an operational state of ABS
		TCS malfunction signal	Receives a malfunction state of TCS
		TCS operation signal	Receives an operational state of TCS
ABS actuator	CAN com- munica- tion	VDC OFF switch signal	Receives an ON/OFF state of VDC
and electric unit (control unit)		VDC malfunction signal	Receives a malfunction state of VDC
		VDC operation signal	Receives an operational state of VDC
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
		Yaw rate signal	Receives yaw rate acting on the vehicle
		Side G sensor signal	Receives lateral G acting on the vehicle
Combination meter	CAN com- munica- tion	Parking brake switch signal	Receives an operational state of the parking brake
		System selection signal	Receives a selection state of each item in "Driver Aids"
BCM	CAN com- munica- tion	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
Steering angle n sensor ti	CAN com- munica- tion	Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor
		Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel
		Steering angle speed signal	Receives the turning angle speed of the steering wheel
Millimeter wave sensor	ITS com- munica- tion	Millimeter wave sensor signal	Receives detection results, such as the presence or ab- sence of a vehicle ahead and distance from the vehicle
Lane camera unit	ITS com- munica- tion	Detected lane condition signal	Receives detection results of lane marker

Output Signal Item

Reception unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN commu- nication	Target yaw moment signal	Transmits a target yaw moment signal to generate yaw moment to the vehicle
Combination CAN commu- meter nication	LDP ON indicator lamp signal	Transmits an LDP ON indicator lamp signal to turn ON the LDP ON indicator lamp	
	nication	Lane departure warning lamp signal	Transmits an lane departure warning lamp signal to turn ON the lane departure warning lamp
Lane camera ITS commu- unit nication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit	
	nication	Turn indicator signal	Transmits a turn indicator signal received from BCM
Warning buzz- er	Warning buzzer signal		Activates the warning buzzer

FUNCTION DESCRIPTION

• Lane Departure Prevention (LDP) system provides a lane departure warning and brake control assistance when the vehicle is driven at speeds of approximately 70 km/h (45 MPH) or more.
SYSTEM

< SYSTEM DESCRIPTION >

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- When the vehicle approaches either the left or the right side of the traveling lane, a warning sounds and the lane departure warning lamp (yellow) on the combination meter blinks to alert the driver. Then, the LDP system automatically applies the brakes for a short period of time to help assist the driver to return the vehicle to the center of the traveling lane.
- Warning and brake control are not performed during turn signal operation (lane change side).
- The warning and assist functions stop when the vehicle returns to a position inside of the lane marker.

EXAMPLE



When the vehicle approaches the right lane marker, the driver is alerted by the buzzer and the blinking of lane departure warning lamp (yellow). Simultaneously, the left brake is controlled independently to generate force toward the direction to recover the vehicle from the lane departure.

OPERATION DESCRIPTION

- When the system is turned ON by dynamic driver assistance switch, ADAS control unit transmits LDP ON indicator signal to combination meter via CAN communication.
- Lane camera unit monitors lane markers of the traveling lane. It transmits the detected lane condition signal to ADAS control unit via ITS communication.
- When judging from a lane marker detection signal that the vehicle is approaching the lane marker, ADAS J control unit controls the following items.
- Activates warning buzzer.
- Transmits a lane departure warning lamp signal to combination meter via CAN communication.
- Calculates necessary yaw moment to transmit a target yaw moment signal to ABS actuator and electric unit (control unit) via CAN communication.
- When receiving the target yaw moment signal, ABS actuator and electric unit (control unit) controls brake pressure of four wheels, respectively.
- When receiving the signal from ADAS control unit, combination meter turns ON/OFF the lane departure warning lamp (yellow) and the LDP ON indicator lamp (green).

OPERATING CONDITION

- LDP ON indicator lamp: ON
- · Vehicle speed: approximately 70 km/h (45 MPH) or more
- Turn indicator signal: After 2 seconds or more from turned OFF

NOTE:

- When the LDP system setting in the vehicle information display is ON.
- After the operating conditions are satisfied, the control continues until the vehicle speed reaches approximately 60 km/h (40 MPH).
- The LDP system may not function properly, depending on the situation. Refer to <u>DAS-331</u>, "Precautions for Lane Departure Warning/Lane Departure Prevention".

Fail-safe Indication

DAS

SYSTEM

< SYSTEM DESCRIPTION >

Vehicle condition/ Driver's operation	Indication on the combination meter	Buzzer
When DTC is detected (Except "C1B01" and "C1B03")		
Camera aiming is not completed ("C1B01"is detected) NOTE: This is detected while driving the vehicle and the indication remains ON until the ignition switch is turned OFF	LDP ON (Yellow)	Веер
Temporary disabled status at high temperature ("C1B03"is detected)	Unavailable High Cabin Temp	Веер
Temporary disabled status during rain	Unavailable Road is slippery	Веер
Temporary disabled status when the VDC system is turned OFF	Unavailable VDC OFF	Веер
Temporary disabled status when drive mode select switch is in SNOW mode	Unavailable Snow mode active	Веер
When the dynamic driver assistance switch is pressed (When the settings of LDP system, DCA system and Blind Spot Intervention system in the vehicle information display are "OFF")	LDP OFF (green) Unavailable All Systems are disable	_

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

INFOID:000000007911708

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

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

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

INFOID:000000007911709

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the lane departure warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

DAS-326

SYSTEM

< SYSTEM DESCRIPTION >

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and the following message appears on the meter display "Unavailable High Cabin Temp.".
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON.

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OPERATION

LANE DEPARTURE WARNING (LDW) SYSTEM

LANE DEPARTURE WARNING (LDW) SYSTEM : Switch Name and Function



No.	Switch name	Description
1	Warning systems switch	Turns LDW system ON/OFF (When the setting of LDW system in the vehicle information display is ON)
2	LDW system setting screen (The vehicle information display)	Turns setting of LDW system can be switched between ON and OFF

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

INDICATOR LAMP AND WARNING LAMP



No.	Display item	Description
1	Warning systems ON indicator	 Indicates that the LDW, FCW, and/or BSW system is ON Blinks when the setting of LDW, FCW, and BSW are "OFF" and the warning systems switch is pressed Blinks when the temperature of the lane camera unit becomes high
2	Lane departure warning indicator light	Blinks when LDW system is activated

DISPLAY AND WARNING

OPERATION

< SYSTEM DESCRIPTION >

Vehicle co	ondition/ Driver's operation	Action	Warning sys- tems ON indi- cator	Indication on the combination meter	Buzzer	А
Less than Ap- prox. 60 km/h (40 MPH)	Close to lane marker	No action	ON	OFF	_	В
				OFF (orange) Blink		С
Approx. 70 km/h (45 MPH) or more	Close to lane marker	Warning Buzzer sounds Warning lamp blinks (orange) 	ON	<i>i</i> ``	Short con- tinuous beeps	D
				ALOIA0104ZZ		E
	 Close to lane marker Turn signal ON (Deviate side) 	No action	ON	OFF	_	F

NOTE:

After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 60 km/h (40 MPH). Refer to <u>DAS-320</u>, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description".

LANE DEPARTURE PREVENTION (LDP) SYSTEM

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

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No.	Switch name	Description	- [
1	Dynamic driver assistance switch	Turns LDP system ON/OFF (When the setting of LDP system in the vehicle information display)	_
2	LDP system settings screen (the vehicle information display)	The setting of LDP system can be switched between ON and OFF	N

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

INDICATOR LAMP AND WARNING LAMP



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OPERATION

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No.	Display item	Description
1	LDP ON indicator (green)	Indicates that LDP system is ON
I	Lane departure warning lamp (yellow)	Turns ON when LDP system has a malfunction
2	Lane departure warning indicator light (yellow)	Blinks when the warning of LDP system occurs

DISPLAY AND WARNING

Vehicle condition/ Driver's operation		Action	Indication on the combination meter	Buzzer
Less than Ap- prox. 60 km/h (40 MPH)	Close to lane marker	No action	ON (green)	_
	Close to lane marker	Warning and yawing Buzzer sounds Warning lamp blinks Brake control 	Green →→ LDP (Green) ON (Yellow) Blink ALOIA0135GB	Short continu- ous beeps
Approx. 70	 Close to lane marker Turn signal ON (Deviate side) 	No action	LDP ALOIA0134GB	_
MPH) or more	Close to lane with soft brak- ing	Warning • Buzzer sounds • Warning lamp blinks	Green (ON)	Short continu- ous beeps
	 VDC OFF Switch OFF ⇒ ON (VDC system ON ⇒ OFF) SNOW mode switch OFF ⇒ ON Road is slippery Camera temperature high 	Cancellation • Buzzer sounds • Each message is displayed NOTE: When dynamic driver assis- tance switch is ON ⇒ OFF, message is turned OFF	Each message is displayed	Веер

NOTE:

After the operating conditions are satisfied, the control continues until the vehicle speed reaches approximately 60 km/h (40 MPH). Refer to <u>DAS-323</u>, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System <u>Description</u>".

HANDLING PRECAUTION

HANDLING PRECAUTION	٨
Precautions for Lane Departure Warning/Lane Departure Prevention	A
LANE CAMERA UNIT HANDLING To keep the proper operation of the LDW/LDP systems and prevent a system malfunction, be sure to observe the following:	В
 Always keep the windshield clean. Do not attach a sticker (including transparent material) or install an accessory near the lane camera unit. Do not place reflective materials, such as white paper or a mirror, on the instrument panel. The reflection of 	С
 Do not strike or damage the areas around the lane camera unit. Do not touch the camera lens. Do not remove the screw located on the lane camera unit. 	D
	E
 LDW system is only a warning device to inform the driver of a potential unintended lane departure. It will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of the vehicle at all times. 	F
 LDW system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers. 	
 Excessive noise will interfere with the warning chime sound, and the chime may not be heard. LDW system may not function properly under the following conditions: On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; 	G
yellow painted lane markers; non-standard lane markers; or lane markers covered with water, dirt or snow, etc.	Н
 On roads where there are sharp curves. On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs. (The LDW system could detect these items as lane markers.) On roads where the traveling lane marges or separates. 	I
 When the vehicle's traveling direction does not align with the lane marker. When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range. 	J
 When rain, snow or dirt adheres to the windshield in front of the lane camera unit. When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly. When strong light enters the lane camera unit. (For example, the light directly shines on the front of the vehicle at sunrise or sunset.) 	K
- When a sudden change in brightness occurs. (For example, when the vehicle enters or exits a tunnel or under a bridge.)	L
LANE DEPARTURE PREVENTION (LDP)	
 LDP system will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of vehicle at all times. LDP system is primarily intended for use on well-developed freeways or highways. It may not detect the lane markers in certain roads, weather or driving conditions. 	V
 Using the LDP system under some conditions of road, lane marker or weather, or when driver change lanes without using the turn signal could lead to an unexpected system operation. In such conditions, driver needs to correct the vehicle's direction with driver's steering operation to avoid accidents. 	N
• When the LDP system is operating, avoid excessive or sudden steering maneuvers. Otherwise, driver could lose control of the vehicle	AS
The LDP system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers	
 The LDP system may not function properly under the following conditions, and do not use the LDP system: During bad weather (rain, fog, snow, wind, etc.). 	Ρ
 when driving on suppery roads, such as on ice or snow, etc. When driving off-road such as on sand or rock, etc. 	
 When driving on winding or uneven roads. When there is a lane closure due to road repairs. 	
 When driving in a makeshift lane. When driving on roads where the lane width is too narrow. 	

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- When driving without normal tire conditions (for example, tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels).
- When the vehicle is equipped with non-original brake parts or suspension parts.
- When towing a trailer or other vehicle.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- The functions of the LDP system (warning and brake control assist) may or may not operate properly under the following conditions:
- On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers or lane markers covered with water, dirt or snow, etc.
- On roads where discontinued lane markers are still detectable.
- On roads where there are sharp curves.
- On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs (The LDP system could detect these items as lane markers.).
- On roads where the traveling lane merges or separates.
- When the vehicle's traveling direction does not align with the lane marker.
- When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range.
- When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
- When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
- When strong light enters the lane camera unit (For example, the light directly shines on the front of the vehicle at sunrise or sunset.)
- When a sudden change in brightness occurs (For example, when the vehicle enters or exits a tunnel or under a bridge.)
- While the LDP system is operating, driver may hear a sound of brake operation. This is normal and indicates that the LDP system is operating properly.

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

On Board Diagnosis Function

DESCRIPTION

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

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)
- 1. Turn the ignition switch OFF.
- 2. Start the engine.
- Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.
 NOTE:

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



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to <u>DAS-48</u>, "<u>DTC Index</u>".



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

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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

Assumed abnormal part		Inspection item	
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combina- tion meter operates. Refer to <u>MWI-17</u> , "Description"	
ICC steering switch malfunc	tion		
Harness malfunction between ICC steering switch and ECM		Perform the inspection for DTC"C1A06". Refer to CC 109 "Diagnosis Procedure"	
ECM malfunction			
ADAS control unit malfunction		 Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-78, "Diagnosis Procedure"</u>. Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to <u>DAS-48, "DTC Index"</u>. 	

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

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

NOTE:

- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.
- 4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

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

CONSULT Function (ICC/ADAS)

INFOID:000000008368254

PKIB8373B

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
Work Support	Displays causes of automatic system cancellation occurred during system control
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 Mntr	The result of transmit/receive diagnosis of CAN communication is displayed

WORK SUPPORT

r pressing the Ids, repeat the DISTANCE ON Switch OFF

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Work support items	Description
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following sys- tems Vehicle-to-vehicle distance control mode Conventional (fixed speed) cruise control mode Distance Control Assist (DCA)
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following sys- tems Lane Departure Prevention (LDP) Blind Spot Intervention
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following systems Backup Collision Intervention (BCI)

NOTE:

• Causes of the maximum five cancellations (system cancel) are displayed.

• The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	nventional (fixed speed) cruise control mode	Distance Control Assist	Description	G H J
		Col			K
OPERATING ABS	×		×	ABS function was operated	
OPERATING TCS	×	×	×	TCS function was operated	L
OPERATING VDC	×	×	×	VDC function was operated	
ECM CIRCUIT	×	×		ECM did not permit ICC operation	
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range	M
LASER TEMP	×		×	Temperature around millimeter wave sensor became low	
SNOW MODE SW	×		×	SNOW mode switch was pressed	Ν
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time	
VHCL SPD DOWN	×	×	×	 Vehicle speed lower than the speed as follows Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH) 	DAS
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise	Ρ
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed	
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from CVT vehicle speed	
FR RADAR BLOCKED	×		×	The front bumper near the millimeter sensor is blocked or dirty	
TIRE SLIP	×	×		Wheel slipped	
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	

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

Display Items for The Cause of Automatic Cancellation 2

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

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[LDW & LDP]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description
SNOW MODE SW	×		SNOW mode switch was pressed
VDC OFF SW	×		VDC OFF switch was pressed
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control
BSI WARNING	×		Blind Spot Intervention system was activated
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated
BSI) CURVATURE		×	Road curve was more than the specified value
BSI) Steering angle large		×	Steering angle was more than the specified value
BSI) Brake is operated		×	Brake pedal was operated
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker
BSI) Lane marker un- clear		×	Detected lane marker was unclear
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value
BSI) Accel is operated		×	Accelerator pedal was depressed
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction
BSI) R range		×	Selector lever was operated to R range
BSI) Parking brake drift		×	Rear wheels lock was detected
BSI) SNOW MODE SW		×	SNOW mode switch was pressed
BSI) VDC OFF SW		×	VDC OFF switch was pressed
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit
NO RECORD	×	×	_

Display Items for The Cause of Automatic Cancellation 3

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[LDW & LDP]

Cause of cancellation	Backup Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	_

SELF DIAGNOSTIC RESULT Refer to <u>DAS-48. "DTC Index"</u>.

DATA MONITOR

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means "controlling")
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output

< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN com- munication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communica- tion (ECM transmits engine speed signal through CAN communication)
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)
BA WARNING [On/Off]	×					Indicates [On/Off] status of IBA OFF indicator lamp output
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output
D RANGE SW [On/Off]	×					Indicates [On/Off] status of "D" or "M" positions read from ADAS control unit through CAN communication; ON when position "D" or "M" (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication)
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit
VHCL SPD CVT [km/h] or [mph]	×					Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication)
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communi- cation (ECM transmits accelerator pedal position signal through CAN communi- cation).
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output
DISTANCE [m]	×					Indicates the distance from the vehicle ahead
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
DCA ON IND [On/Off]	×					The status [On/Off] of DCA system switch indicator output is displayed
DCA VHL AHED [On/Off]	×					The status [On/Off] of vehicle ahead detection indicator output in DCA system is displayed
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)

< SYSTEM DESCRIPTIO

Monitored item [Unit]

LDW SYSTEM ON

LDW ON LAMP [On/Off] LDP ON IND [On/Off]

LANE DPRT W/L

LDW BUZER OUT-

LDP SYSTEM ON

APA PWR

[On/Off]

[On/Off]

[On/Off] WARN REQ [On/Off]

PUT [On/Off]

[V]

ALL SIG (ICC) MAIN SIG

×

N	>				[LDW & LDP]
(ICC)	MAIN SIG (LDW/LDP)	MAIN SIG	(BSW/BSI)	MAIN SIG (BCI)	Description
				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)
	×				Indicates [On/Off] status of LDW system
	×				Indicates [On/Off] status of waning systems ON indicator output
	×				Indicates [On/Off] status of LDP ON indicator lamp (Green) output
	×				Indicates [On/Off] status of lane departure warning lamp (Yellow) output
	×				Indicates [On/Off] status of warning buzzer output
	×				Indicates [On/Off] status of LDP system
	×				Indicates an ADAS control unit judged warning state (On/Off) of LDP system
	×				Indicates LDP system settings

READY signal [On/Off]			×			Indicates LDP system settings
Camera lost [Detect/Deviate/ Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection sig nal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)
Shift position [Off, P, R, N, D, M/ T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communica- tion (TCM transmits shift position signal through CAN communication)
Turn signal [OFF/LH/RH/ LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor sig nal via CAN communication)
STATUS signal [Stnby/Warn/Cancl/ Off]			×			Indicates a control state of LDP system
Lane unclear [On/Off]			×	×		Indicates an On/Off state of the lane marker. The On/Off state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to On/Off by selecting "Driver Assistance" ⇒"Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention
DCA SELECT [On/Off]	×	×	×	×		Indicates an On/Off state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system

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< SYSTEM DESCRIPTION >

[LDW & LDP]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	A
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	В
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch	С
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output	D
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output	F
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system	
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system	F
BCP ON [On/Off]					×	Indicates [On/Off] status of BCP system	0
BCI SW ADAS [On/Off]					×	Indicates [On/Off] status of Backup Collision Intervention system	G
LDP_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Prevention system failure lamp	Н
LDW_ON_LAMP [On/Off]			×	×		Indicates [On/Off] status of LDW system	
LDW_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Warning system failure lamp	
SYSTEM_CANCEL _MESSAGE [Request/No Re- quest]	×	×	×	×		Indicates system cancel message request	J
CAM_HI_TEMP_M SG [On/Off]			×	×		Indicates high temperature message has been received	К
ITS Setting Item(DCA) [On/Off]	×	×	×	×		Indicates [On/Off] status of Distance Control Assist installation	L
ITS Setting Item(LDP) [On/Off]	×	×	×	×		Indicates [On/Off] status of Lane Departure Prevention	Μ
ITS Setting Item(BSI) [On/Off]	×	×	×	×		Indicates [On/Off] status of Blind Spot Intervention system	Ν
BSI FAIL IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention	DAS
BSW ON IND [On/Off]				×		Indicates [On/Off] status of BSW system	
SR_BLK_MSG [On/Off]				×		Indicates [On/Off] status of messages received	Ρ
WARN_LANE_TIMI NG [-] [On/Off]			×			Indicates [On/Off] status of warning lane timing	
BSW_IND_BRIGHT NESS [Bright/Not Bright]				×		Indicates BSW warning lamp indicator brightness level	

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system
FCW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Forward Collision Warning system. Forward Collision Warning system can be set to On/Off by selecting "Driver Assistance"⇒ "Dynamic Assistance Settings" of the navigation system
LDW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Lane Departure Warning system. Lane Departure Warning system can be set to On/Off by selecting "Driver Assistance" ⇒ "Dynamic Assistance Settings" of the navigation system
BSW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Blind Spot Warning system. Blind Spot Warning system can be set to On/Off by selecting "Driver Assistance" = "Dynamic Assistance Settings" of the navigation system
ITS setting item (FCW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Forward Collision Warning
ITS setting item (LDW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Lane Departure Warning
ITS setting item (BSW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Blind Spot Warning

ACTIVE TEST

CAUTION:

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

Test item	Description
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Intelligent Cruise Control (ICC) Distance Control Assist (DCA) Forward Collision Warning (FCW) Intelligent Brake Assist (IBA)
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF • Lane Departure Warning (LDW) • Lane Departure Prevention (LDP) • Blind Spot Warning (BSW) • Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF opera- tions as necessary
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF opera- tions as necessary

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< SYSTEM DESCRIPTION >

[LDW & LDP]

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Test item	Description	٨
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary	A
LDW ON IND	The LDW ON indicator lamp can be illuminated by ON/OFF operations as necessary	
LDP FAIL IND	The LDP fail indicator lamp can be illuminated by ON/OFF operations as necessary	В
LDW FAIL IND	The LDW fail indicator lamp can be illuminated by ON/OFF operations as necessary	
BSW ON IND	The BSW ON indicator lamp can be illuminated by ON/OFF operations as necessary	
BSI FAIL IND	The BSI fail indicator lamp can be illuminated by ON/OFF operations as necessary	С

BRAKE ACTUATOR **NOTE:**

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

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

NOTE:



ICC BUZZER

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

METER LAMP

NOTE:

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

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< SYSTEM DESCRIPTION >

[LDW & LDP]

Test item	Oper- ation	Description	 MAIN switch indicator ICC system warning lamp IBA OFF indicator lamp
	Off	 Stops sending the following signals to exit from the test Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	OFF
METER LAMP	On	 Transmits the following signals to the combination meter via CAN communication Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Oper- ation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal be- low to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ACTIVE PEDAL

CAUTION:

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

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting



< SYSTEM DESCRIPTION >

NOTE:

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

Test item	Opera- tion	Description	DCA system switch indicator	E
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal be- low to end the test	_	_
	On	Transmits the DCA system switch indicator signal to the com- bination meter via CAN communication	ON	С

LDP BUZZER

Test item	Opera- tion	Description	Warning buzzer	
LDP BUZZER	Off	Stops transmitting the warning buzzer signal below to end the test	_	
	On	Transmits the warning buzzer signal to the warning buzzer	ON	

WARNING SYSTEM IND

Test item	Oper- ation	Description	Warning systems ON indicator	G
WARNING SYSTEM IND	Off	Stops transmitting the warning systems ON indicator signal below to end the test	_	
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON	ŀ

LDP ON IND

Test item	Oper- ation	Description	LDP ON indicator lamp (Green)	
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal be- low to end the test	_	
	On	Transmits the LDP ON indicator lamp signal to the com- bination meter via CAN communication	ON	

LANE DEPARTURE W/L

Test item	Oper- ation	Description	Lane departure warning lamp (Yellow)	
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp sig- nal below to end the test	_	M
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON	N

BSW/BSI WARNING LAMP

Test item	Oper- ation	Description	Blind Spot Warning/Blind Spot Inter- vention warning lamp (Yellow)	DAS
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot In- tervention warning lamp signal below to end the test	_	P
	On	Transmits the Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to the combination meter via CAN communication	ON	I

BSI ON INDICATOR

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< SYSTEM DESCRIPTION >

[LDW & LDP]

Test item	Oper- ation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention ON indicator sig- nal to the combination meter via CAN communication	ON

LDW ON INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW ON INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

LDP FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure prevention ON indica- tor lamp (Yellow)
	Off	Stops transmitting the Lane Departure prevention ON indicator signal below to end the test	_
	On	Transmits the Lane Departure prevention ON indicator signal to the combination meter via CAN communication	ON

LDW FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW FAIL INDICA-	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
TOR	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

BSW ON INDICATOR

Test item	Oper- ation	Description	Blind Spot Warning ON indicator lamp (Yellow)
	Off	Stops transmitting the Blind Spot Warning ON indicator signal below to end the test	_
DOW ON INDICATOR	On	Transmits the Blind Spot Warning ON indicator signal to the warning lamp on the door	ON

BSI FAIL INDICATOR

Test item	Oper- ation	Description	Blind Spot Intervention FAIL indicator lamp (Yellow)
	Off	Stops transmitting the Blind Spot Intervention FAIL indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention FAIL indicator sig- nal to the warning lamp on the door	ON

ECU IDENTIFICATION

ADAS control unit part number is displayed.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT Function (LANE CAMERA)

APPLICATION ITEMS

CONSULT performs the following functions by communicating with the lane camera unit.

Diagnosis mode	Description	C
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the lane camera unit	
Data Monitor	Displays lane camera unit input/output data in real time	
Work support	Performs the camera aiming	
ECU identification	Displays lane camera unit part number	

WORK SUPPORT

Work support items	Description
AUTO AIM	Outputs camera unit, calculates dislocation of the camera, and displays adjustment direction.

SELF DIAGNOSTIC RESULT Refer to DAS-365, "DTC Index".

DATA MONITOR

Monitored [Unit]	item	Description	
LC INACCURAT	[On/Off]	Lane camera unit status	
AIMING RESULT	[OK/NOK]	Result of camera aiming	
AIMING DONE	[OK/NG]	Status that camera aiming is done	
CAM HIGH TEMP	[NORMAL/ High]	Status of lane camera unit high temperature judgment	J
VHCL SPD SE	[km/h] or [mph]	Vehicle speed received from ADAS control unit via ITS communication	K
TURN SIGNAL	[Off, LH, RH, LH/RH]	Status of "Turn signal" determined from ADAS control unit via ITS communication	
LANE DETCT LH	[On/Off]	Left side lane marker detection	L
LANE DETCT RH	[On/Off]	Right side lane marker detection	
CROSS LANE LH	[On/Off]	Condition that the vehicle is crossing left lane marker	
CROSS LANE RH	[On/Off]	Condition that the vehicle is crossing right lane marker	IVI
WARN LANE LH	[On/Off]	Warning for left lane marker	
WARN LANE RH	[On/Off]	Warning for right lane marker	N
VALID POS LH	[VLD/INVLD]	Lateral position for left lane marker is valid	
VALID POS RH	[VLD/INVLD]	Lateral position for right lane marker is valid	
XOFFSET	[pixel]	Lane camera unit installation condition	DAS
AIM CHECK YAW	[deg]	Check result of camera aiming	
AIM CHECK ROLL	[deg]	Check result of camera aiming	P
AIM CHECK PITCH	[deg]	Check result of camera aiming	
FCTRY AIM YAW	[deg]	Lane camera unit installation condition	
FCTRY AIM ROL	[deg]	Lane camera unit installation condition	
FCTRY AIM PIT	[deg]	Lane camera unit installation condition	
ADAS MALF	[On/Off]	ADAS control unit status	

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DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

ECU identification Lane camera part number is displayed.

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Condition	Value/Status
	Institute antitate Obl	When MAIN switch is pressed	On
MAIN SW	Ignition switch ON	When MAIN switch is not pressed	Off
		When SET/COAST switch is pressed	On
SET/COAST SW	Ignition switch ON	When SET/COAST switch is not pressed	Off
		When CANCEL switch is pressed	On
CANCEL SW	Ignition switch ON	When CANCEL switch is not pressed	Off
		When RESUME/ACCELERATE switch is pressed	On
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is not pressed	Off
		When DISTANCE switch is pressed	On
DISTANCE SW	Ignition switch ON	When DISTANCE switch is not pressed	Off
	Drive the vehicle and activate	When ICC system is controlling	On
CRUISE OPE	the vehicle-to-vehicle distance control mode	When ICC system is not controlling	Off
		When brake pedal is depressed	Off
BRAKE SW	Ignition switch ON	When brake pedal is not depressed	On
		When brake pedal is depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is not depressed	Off
	Engine running	Idling	On
IDLE SW		Except idling (depress accelerator pedal)	Off
	Ignition switch ON	When BCI switch is pressed	On
BCI SW		When BCI switch is not pressed	Off
		When BCI system is ON	On
BCISYSTEM ON	Ignition switch ON	When BCI system is OFF	Off
	Start the engine and turn the	When set to "long"	Long
	E ICC system ON • Press the DISTANCE switch to change the vehi- cle-to-vehicle distance set- ting	When set to "middle"	Mid
SET DISTANCE		When set to "short"	Short
	Start the engine and press	ICC system ON (MAIN switch indicator ON)	On
	MAIN switch	ICC system OFF (MAIN switch indicator OFF)	Off
	Drive the vehicle and activate	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
	control mode	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
	Start the engine and press	When ICC system is malfunctioning (ICC system warning lamp ON)	On
	MAIN switch	When ICC system is normal (ICC system warning lamp OFF)	Off

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< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item		Condition	Value/Status
VHCL SPEED SE	While driving		Displays a vehi- cle speed calcu- lated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
		 When the buzzer of the following system operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	On
DUZZEN OF		 When the buzzer of the following system not operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	Off
ENGINE RPM	Engine running		Equivalent to ta- chometer read- ing
	G Engine running	IBA OFF indicator lamp ONWhen IBA system is malfunctioningWhen IBA system is turned to OFF	On
		IBA OFF indicator lamp OFFWhen IBA system is normalWhen IBA system is turned to ON	Off
	Drive the vehicle and activate	When ICC brake hold relay is activated	On
STP LMP DRIVE	control mode	When ICC brake hold relay is not activated	Off
D PANGE SW		When the selector lever is in "D" position or manual mode	On
D NANGE SW		When the selector lever is in any position other than "D" or manual mode	Off
		When the selector lever is in "N", "P" position	On
NP RANGE SW	Engine running	When the selector lever is in any position other than "N", "P"	Off
PKB SW/	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of CVT ve- hicle speed sen- sor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position
		When ICC system is deactivated	Off
MODE SIG	Start the engine and press MAIN switch	When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
	Drive the vehicle and acti-	SET switch indicator ON	On
SET DISP IND	vate the conventional (fixed speed) cruise control mode • Press SET/COAST switch	SET switch indicator OFF	Off

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item		Condition	Value/Status
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the dis- tance from the preceding vehi- cle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance	When a vehicle ahead is detected	Displays the rel- ative speed.
	control mode	When a vehicle ahead is not detected	0.0
	Drive the vehicle and activate	Both side lane markers are detected	Detect
Camera lost	or Blind Spot Intervention sys-	Deviate side lane marker is lost	Deviate
	tem	Both side lane markers are lost	Both
	While driving	Lane marker is unclear	On
Lane unclear	vvnile driving	Lane marker is clear	Off
		When the LDP system is ON	Stnby
	Drive the vehicle with the LDP	When the LDP system is operating	Warn
STATUS signal	system turned ON	When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
		When dynamic driver assistance switch is pressed	On
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is not pressed	Off
	Start the engine and press dy- namic driver assistance switch	DCA system OFF (DCA system switch indicator OFF)	Off
DCA ON IND	(When DCA system setting is ON)	DCA system ON (DCA system switch indicator ON)	On
	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
DCA VHL AHED		When a vehicle ahead is detected (vehicle ahead de- tection indicator ON)	On
APA TEMP	Engine running		Display the ac- celerator pedal actuator inte- grated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator ped- al actuator
ECW SYSTEM ON	Ignition switch ON	FCW set with the vehicle information display ON	On
		FCW set with the vehicle information display OFF	Off
	Ignition quitch CNI	LDW set with the vehicle information display ON	On
LUW STSTEM UN	Ignition switch ON	LDW set with the vehicle information display OFF	Off
	Ignition quitch CNI	LDW ON indicator ON	On
LUVV ON LAMP	Ignition switch ON	LDW ON indicator OFF	Off
	Start the engine and press dy-	LDP ON indicator lamp ON	On
LDP ON IND	namic driver assistance switch(When LDP system setting isON)	LDP ON indicator lamp OFF	Off
	Drive the vehicle and activate	Lane departure warning lamp ON	On
LANE DPRT W/L	the LDW system or LDP sys- tem	Lane departure warning lamp OFF	Off

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item	Condition					
LDW BUZER OUT-	Drive the vehicle and activate the LDW/LDP system or Blind	 When the buzzer of the following system operates LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	On			
PUT	Spot Warning/Blind Spot Inter- vention system	 LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	Off			
	Start the engine and press dy-	When the LDP system is ON	On			
LDP SYSTEM ON	namic driver assistance switch (When LDP system setting is ON)	When the LDP system is OFF	Off			
	Start the engine and press dy-	When the LDP system is ON	On			
READY signal	Namic driver assistance switch (When LDP system setting is ON)	When the LDP system is OFF	Off			
Shift position	Engine runningWhile driving		Displays the shift position			
	Turn signal lamps OFF		Off			
Turn signal	Turn signal lamp LH blinking		LH			
rum signal	Turn signal lamp RH blinking		RH			
	Turn signal lamp LH and RH bl	LH&RH				
SIDE G	While driving	While driving				
SIDE O	willie unvillig	Vehicle turning left	Positive value			
FUNC ITEM	Ignition switch ON	FUNC3				
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not m	Off				
FUNC ITEM (NV- DCA)	NOTE: The item is indicated, but not m	Off				
	Ignition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is ON	On			
DOA SELECT	ignition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is OFF	Off			
	lanition switch ON	"Lane Departure Prevention" set with the vehicle infor- mation display is ON	On			
	Ignition switch Orv	"Lane Departure Prevention" set with the vehicle infor- mation display is OFF	Off			
	Ignition switch ON	"Blind Spot Intervention" set with the vehicle information display is ON	On			
DOI OLLEOT		"Blind Spot Intervention" set with the vehicle information display is OFF	Off			
		When drive mode select switch position is STANDARD	STD			
		When drive mode select switch position is in SPORT	SPORT			
		When drive mode select switch position is in ECO	ECO			
		When drive mode select switch position is in SNOW	SNOW			
DRIVE MODE STATS	Ignition switch ON	 When position od drive mode select switch is in following states: In the middle of SNOW-ECO In the middle of ECO-STANDARD In the middle of STANDARD-SPORTS 	Mid			
		A signal other than those above is input	ERROR			
	Ignition switch ON	When warning systems switch is pressed	On			
VVARIN 313 SVV	Ignition switch ON	When warning systems switch is not pressed	Off			

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< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item		Value/Status	
		Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
	Ignition switch ON	Blind Spot Intervention ON indicator ON	On
BSI ON IND		Blind Spot Intervention ON indicator OFF	Off
	Ignition owitch ON	When the BSW system is ON	On
BSW STSTEW ON		When the BSW system is OFF	Off
	Start the engine and press dy-	When the Blind Spot Intervention system is ON	On
BSI SYSTEM ON	Namic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is OFF	Off
	Instition quitab ON	LDP system fail lamp ON	On
LUP FAIL LAMP	Ignition switch ON	LDP system fail lamp OFF	Off
		LDW ON indicator ON	On
	Ignition switch UN	LDW ON indicator OFF	Off
	Institute enviteds Obl	LDW system fail lamp ON	On
LDW FAIL LAMP	Ignition switch ON	LDW system fail lamp OFF	Off
SYSTEM_CANCEL_ MESSAGE	Engine running	Request signal to cancel warning systems	No request Slippery road Snow mode ON VDC OFF
CAM_HI_TEMP_	Ignition owitch ON	Camera temperature above 100°c (212°F)	On
MSG	Ignition switch ON	Camera temperature below 100°c (212°F)	Off
ITS Setting Item	Ignition switch ON		On
(DCA)		MENU> SETTINGS> DAS> DCA ON/OFF	Off
	Ignition switch ON		On
ITS Setting Item (LDP)		MENU> SETTINGS> DAS> LDP ON/OFF	Off
	Ignition switch ON		On
ITS Setting Item (BSI)		MENU> SETTINGS> DAS> BCI ON/OFF	Off
		BSI system fail lamp ON	On
BSI FAIL IND	Ignition switch ON	BSI system fail lamp OFF	Off
	Instition quitab CN	BSW system indicator ON	On
	Ignition Switch ON	BSW system indicator OFF	Off
	Instition quitab CN	Sensor blocked warning message ON	On
OK_BLK_WOG	Ignition Switch ON	Sensor blocked warning message OFF	Off
WARN_LANE_ TIMING	Engine running	Calibration is required	Nothing
BSW_IND_ BRIGHTNESS	Ignition switch ON	Adjust BRIGHTNESS as needed	Normal
	Drive the vehicle and activate	Lane departure warning is operating	On
	the LDP system	Lane departure warning is not operating	Off
FCW SELECT [ON/ OFF]	Ignition switch ON	Forward Collision Warning set with the vehicle informa- tion display ON	On
		Forward Collision Warning set with the vehicle informa- tion display OFF	Off

< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Monitor item		Condition	Value/Status
LDW SELECT [ON/	Ignition switch ON	Lane Departure Warning set with the vehicle informa- tion display ON	On
OFF]		Lane Departure Warning set with the vehicle informa- tion display ON	Off
BSW SELECT [ON/ OFF]	lanition switch ON	Blind Spot Warning set with the vehicle information display ON	On
		Blind Spot Warning set with the vehicle information display ON	Off
ITS setting item	Ignition switch ON		On
(FCW) [ON/OFF]	Ignition switch ON	MENO-SETTINGS-DAS-TOW ON/OTT	Off
ITS setting item	Ignition switch ON		On
(LDW) [ON/OFF]		MENO-SETTINGS-DAS-LDW UN/OFF	Off
ITS setting item	Ignition quitch ON		On
(BSW) [ON/OFF]	Ignition switch ON	MENU> SETTINGS> DAS> BSW UN/OFF	Off
Battery circuit OFF	lanition switch ON	Battery circuit OFF	On
	Ignition Switch ON	Battery circuit ON	Off

TERMINAL LAYOUT PHYSICAL VALUES



< ECU DIAGNOSIS INFORMATION >

[LDW & LDP]

Terminal No. (Wire color)		Description			Condition	AValue	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
1		Warning systems	Input	Ignition	When warning systems switch is not pressed	12 V	
(BR)		switch	input	ON	When warning systems switch is pressed	0 V C	
4		Warning systems ON	Output	Ignition	Warning systems ON indi- cator ON	0 V	
(W)		indicator	Output	ON	Warning systems ON indi- cator OFF	12 V	
5		ICC brake hold relay		Ignition	—	12 V	
(G)		drive signal	Output	switch ON	At "STOP LAMP" test of "Active test"	0 V	
6 (B)		Ground		Ignition switch ON	_	0 V F	
7 (L)	Ground	ITS communication-H	_		_	- G	
8 (Y)		ITS communication-L	—	_	—	_	
10		BCI OFF switch	Input	Ignition	Ignition	When BCI OFF switch is not pressed	12 V
(BG)		Ber of this witch	input	ON	When BCI OFF switch is pressed	0 V	
12				Ignition	Warning buzzer operation	0 V	
(G)		Warning buzzer signal	Output	switch ON	Warning buzzer not oper- ating	12 V J	
14 (B)		CAN -H	_	_	_	_	
15 (W)		CAN -L	—	_	_	K	
16 (R)		Ignition power supply	Input		gnition switch ON	Battery Voltage	

Fail-safe

INFOID:000000008368275

Μ

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

System	Buzzer	Warning lamp/Indicator lamp	Description	Ν
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel	
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel	DAG
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel	Р
Forward Collision Warning (FCW)	High-pitched tone	Warning message	Cancel	
Distance Control Assist (DCA)	High-pitched tone	DCA system warning	Cancel	
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel	

Revision: March 2012

< ECU DIAGNOSIS INFORMATION >

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	_	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000008368276

[LDW & LDP]

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

Priority	Detected items (DTC)
1	C1A0A: CONFIG UNFINISHED U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)
2	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	 C1B00: CAMERA UNIT MALF C1F02: APA C/U MALF C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF

< ECU DIAGNOSIS INFORMATION >

Priority	Detected items (DTC)	
	C1A01: POWER SUPPLY CIR	— A
	C1A02: POWER SUPPLY CIR 2	
	C1A04: ABS/TCS/VDC CIRC	
	C1A05: BRAKE SW/STOP L SW	В
	CTAUD: OPERATION SW CIRC CTAUD: LASED DEAM OFECNITD	
	CIAI2: LASER DEAM OFFORTR CIAI3: STOP I AMP RLY FIX	
	C1A14: ECM CIRCUIT	С
	C1A16: RADAR STAIN	0
	C1A18: LASER AIMING INCMP	
	C1A2A: ICC SEN PWR SUP CIR	5
	C1A21: ICC SENSOR HIGH TEMP	D
	C1A24: NP RANGE	
	C1A26: ECD MODE MALF	
	CIA27. ECD PWR SUPLY CIR CIA33: CAN TRANSMISSION EDD	E
	CIA34: COMMAND ERROR	
	• C1A35: APA CIR	
	C1A36: APA CAN COMM CIR	E
	• C1A37: APA CAN CIR 2	Г
	C1A38: APA CAN CIR 1	
	C1A39: STRG SEN CIR	
	C1A40: SYSTEM SW CIRC	G
	C1B01: CAM AIMING INCMP	
	C1B57: AVM CIRCUIT	Н
	C1F01: APA MOTOR MALF	
	C1F05: APA PWR SUPLY CIR	
	U0121: VDC CAN CIR 2	
4	U0126: STRG SEN CAN CIR 1	
	U0235: ICC SENSOR CAN CIRC 1	
	• U0401: ECM CAN CIR 1	
	• U0402: TCM CAN CIR 1	J
	• 10428: STRG SEN CAN CIR 2	
	• U1500 CAM CAN CIR 2	
	• U1501: CAM CAN CIR 1	K
	U1502: ICC SEN CAN COMM CIR	I.V.
	U1503: SIDE RDR L CAN CIR 2	
	U1504: SIDE RDR L CAN CIR 1	
	U1505: SIDE RDR R CAN CIR 2	L
	U1506: SIDE RDR R CAN CIR 1	
	U1521: SONAR CAN COMMUNICATION U1522: SONAR CAN COMMUNICATION	
	U1522: SONAR CAN COMMUNICATION	Μ
	U1524: AVM CAN COMMUNICATION	
	U1525: AVM CAN COMMUNICATION	
	U150B: ECM CAN CIRC 3	
	U150C: VDC CAN CIRC 3	N
	U150D: TCM CAN CIRC 3	
	U150E: BCM CAN CIRC 3	
	U150F: AV CAN CIRC 3 U1519: HVAC CAN CIRC 3	DA
	U1513: METER CAN CIRC 3 U1514: STRG SEN CAN CIRC 3	
	U1515: ICC SENSOR CAN CIRC 3	П
	• U1516: CAM CAN CIRC 3	P
	• U1517: APA CAN CIRC 3	
	U1518: SIDE RDR L CAN CIRC 3	
	U1519: SIDE RDR R CAN CIRC 3	
5	C1A03: VHCL SPEED SE CIRC	
6		
1		

< ECU DIAGNOSIS INFORMATION >

DTC Index

[LDW & LDP]

NOTE:

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

Systems for fail-safe

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

DTC			Warning lamp					Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-73</u>
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-102</u>
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-104</u>
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-105</u>
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	<u>CCS-109</u>
C1A0A	10	CONFIG UNFINISHED	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	Perform configuration
C1A12	12	LASER BEAM OFFCN- TR	ON	ON				A, C, D, E	<u>CCS-111</u>
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	<u>CCS-113</u>

< ECU DIAGNOSIS INFORMATION >

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- D: Forward Collision Warning (FCW)
- E: Distance Control Assist (DCA)
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- · G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC	2		Warning lamp		Fail-safe					
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference	D F G
						Blind				
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-119</u>	
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-120</u>	
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	<u>CCS-122</u>	J
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	<u>CCS-124</u>	
C1A18	18	LASER AIMING INCMP	ON	ON				A, C, D, E	<u>CCS-125</u>	LZ.
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	<u>CCS-127</u>	K
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-129</u>	1
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	<u>CCS-131</u>	
C1A27	27	ECD PWR SUPLY CIR	ON	ON				A, B, C, D, E	<u>CCS-132</u>	
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	<u>CCS-134</u>	Μ
C1A34	34	COMMAND ERROR	ON					A, B, E	<u>CCS-135</u>	
C1A35	35	APA CIR	ON				ON	A, E, H	<u>CCS-136</u>	Ν
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	<u>CCS-137</u>	
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	<u>CCS-138</u>	
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	<u>CCS-139</u>	DAG
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-140</u>	
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	<u>CCS-133</u>	Ρ
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	<u>DAS-416</u>	
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	DAS-418	
C1B03	83	CAM ABNRML TMP DE- TCT							<u>DAS-420</u>	
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-575	
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-576	

В

С

< ECU DIAGNOSIS INFORMATION >

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC			Warning lamp					Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1B56	87	SONAR CIRCUIT					ON	Н	DAS-742
C1B57	88	AVM CIRCUIT					ON	Н	<u>DAS-743</u>
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	<u>CCS-143</u>
C1F02	92	APA C/U MALF	ON				ON	A, E, H	<u>CCS-144</u>
C1F05	95	APA PWR SUPLY CIR	ON				ON	A, E, H	<u>CCS-145</u>
NO DTC IS DETECT- ED. FUR- THER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	_	_		_	_	_	_
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-147</u>
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-149</u>
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	<u>CCS-151</u>
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-152</u>
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-153</u>
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-155</u>
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-157</u>
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-75</u>
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-76</u>
U1500	145	CAM CAN CIR 2			ON	ON		F, G	DAS-436
U1501	146	CAM CAN CIR 1			ON	ON		F, G	<u>DAS-437</u>
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	<u>CCS-166</u>
ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

А

В

С

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

DTC	2			W	arning la	mp		Fail-safe		
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	nd Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference	D F G
	450					Blir	01	0.11		I
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	<u>DAS-601</u>	
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-602	
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-603	J
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	<u>DAS-604</u>	
U1507	154	RDR R)				ON	ON	G, H	<u>DAS-605</u>	Κ
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-606	
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-162</u>	L
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-163</u>	
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-164</u>	M
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-165</u>	
U150F	161	AV CAN CIRC 3							<u>DAS-77</u>	
U1512	162	HVAC CAN CIRC3			ON	ON		F, G	<u>DAS-438</u>	Ν
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-167</u>	
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-168</u>	DAS
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	<u>CCS-169</u>	Drite
U1516	166	CAM CAN CIRC 3			ON	ON		F, G	DAS-440	P
U1517	167	APA CAN CIRC 3	ON				ON	A, B, E, H	<u>CCS-170</u>	1
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	DAS-611	
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-612	
U1521	177	SONAR CHECKSUM					ON	Н	DAS-779	
U1522	178	SONAR MESSAGE					ON	Н	DAS-780	

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

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

DTC)		Warning lamp				Fail-safe		
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
U1523	179	SONAR CAN DLC					ON	Н	<u>DAS-781</u>
U1524	180	SONAR CAN DLC					ON	Н	<u>DAS-782</u>
U1525	181	AVM MESSAGE					ON	Н	<u>DAS-783</u>

NOTE:

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

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

LANE CAMERA UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
	Lane camera unit malfunction	On
LC INACCURAT	Lane camera unit normal	Off
	Camera aiming is completed	OK
AIMING DONE	Camera aiming is not adjusted	NG
	Camera aiming is completed	ОК
AIMING RESULT	Condition Value/Status Lane camera unit malfunction On Lane camera unit normal Off Camera aiming is completed OK Camera aiming is not adjusted NG Camera aiming is not completed OK Camera aiming is not completed NOK When the temperature around lane camera unit is adequate NORMAL When the temperature around the lane camera unit is adequate NORMAL While driving Approximately equivalent to speed-ometer reading Turn signal lamp LH and RH blinking LH/RH Turn signal lamp SDFF Off Left side lane marker is detected On Left side lane marker is not detected Off Right side lane marker is not detected Off The vehicle is crossing left side lane marker Off The vehicle is not crossing left side lane marker Off Warning for left side lane Off Warning for left side lane Off Varing for right side lane Off Lateral position for right side lane marker is avaid VLD Lateral position for right side lane Of	
	When the temperature around lane camera unit is adequate	NORMAL
CAM HIGH TEMP	When the temperature around the lane camera unit is high	High
VHCL SPD SE	While driving	Approximately equivalent to speed- ometer reading
	Turn signal lamp LH and RH blinking	LH/RH
	Turn signal lamp LH blinking	LH
IURN SIGNAL	Turn signal lamp RH blinking	RH
	Turn signal lamps OFF	Off
	Left side lane marker is detected	On
LANE DETCT LH	Left side lane marker is not detected	Off
	Right side lane marker is detected	On
LANE DETCT RH	Right side lane marker is not detected	Off
	The vehicle is crossing left side lane marker	On
CRUSS LANE LH	The vehicle is not crossing left side lane marker	Off
	The vehicle is crossing right side lane marker	On
CRUSS LANE RH	The vehicle is not crossing right side lane marker	Off
	Warning for left side lane	On
WARN LANE LH	Not warning for left side lane	Off
	Warning for right side lane	On
WARN LANE RH	Not warning for right side lane	Off
	Lateral position for left side lane marker is valid	VLD
VALID POS LH	Lateral position for left side lane marker is invalid	INVLD
	Lateral position for right side lane marker is valid	VLD
VALID POS RH	Lateral position for right side lane marker is invalid	INVLD
XOFFSET	Camera aiming is completed	Approx. 180 pixel
	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	$0\pm5.0~\text{deg}$
	Camera aiming is not completed	0.0 deg
FUTRY AIM RUL	Camera aiming is completed	0 ± 5.0 deg
	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	$0\pm5.0~\text{deg}$
	ADAS control unit malfunction	On
ADAS MALF	ADAS control unit normal	Off

INFOID:000000007911722

В

А

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value	
+	_	Signal name	Input/ Output		(Approx.)	
1 (B)		Ground	_	_	0 V	
4 (BR)		ITS communication-H	_	_	_	
5 (B)	Ground	Ground	_	_	0 V	
7 (LG)		Ignition power supply	Input	Ignition switch ON	Battery voltage	
8 (Y)		ITS communication-L	_	_	—	

Fail-safe

INFOID:000000007911723

FAIL-SAFE CONTROL BY DTC

Lane Departure Warning (LDW)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the lane departure warning lamp in the combination meter.

Lane Departure Prevention (LDP)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the lane departure warning lamp in the combination meter.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

Lane Departure Warning (LDW)

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

Lane Departure Prevention (LDP)

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

DTC Inspection Priority Chart

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

Revision: March 2012

DAS-364

2013 Infiniti JX

INFOID:000000007911724

LANE CAMERA UNIT

< ECU DIAGNOSIS INFORMATION >

Priority	Detected items (DTC)	A
1	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)	
2	C1A50: ADAS MALFUNCTION	В
3	 C1B01: CAM AIMING INCMP C1B03: ABNRML TEMP DETECT U0104: ADAS CAN CIR1 U0126: STRG SEN CAN CIR1 U0405: ADAS CAN CIR2 U0428: STRG SEN CAN CIR2 	С
4	C1B00: CAMERA UNIT MALF	D

DTC Index

INFOID:000000007911725

Ε

	Reference	Fail-safe	Warning indicator lamp (orange / Message)	DTC	
_	DAS-436	_	ON	ADAS MALFUNCTION	C1A50
	DAS-416	×	ON	CAMERA UNIT MALF	C1B00
_	DAS-418	×	ON	CAM AIMING INCMP	C1B01
	DAS-420	×	Message	ABNRML TEMP DETECT	C1B03
	DAS-421	×	ON	ADAS CAN CIR1	U0104
_	DAS-423	×	ON	STRG SEN CAN CIR1	U0126
	DAS-426	×	ON	ADAS CAN CIR2	U0405
	DAS-428	×	ON	STRG SEN CAN CIR2	U0428
	DAS-429	×	ON	CAN COMM CIRCUIT	U1000
	DAS-431	×	ON	CONTROL UNIT (CAN)	U1010

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[LDW & LDP]

WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS

Wiring Diagram





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Signal Name	GND1	GND2	IGN	BAT	CAN-L	CAN-H	
Color of Wire	в	В	BG	Μ	٩	L	
Terminal No.	+	2	21	22	38	39	





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[LDW & LDP]







Signal Name	GND	IGN	CAN-H	CAN-L	V-CAN 1 GND
Color of Wire	В	ГG	В	Μ	SHIELD
Terminal No.	t	ю	27	28	29



Signal Name	I	I	I	
Color of Wire	SHIELD	В	Μ	
Terminal No.	11	12	13	

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[LDW & LDP]



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Connector Name JOINT CONNECTOR-E07

E108

Connector No.

Connector Color WHITE

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DRIVER ASSISTANCE SYSTEMS

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WHITE

Signal Name Color of Wire BG ≥ G œ ۵. _ ≻ Terminal No. 39G 41G 81G 35G 36G 40G 80G 21G20G19G18G17G16G15G14G13G12G11G 30G29G28G27G26G25G25G24G23G22G 61G60G59G58G57G56G55G54G53G52G51G 70G69G68G67G66G65G64G63G62G 41G40G39G38G37G36G35G34G33G32G31 50G49G48G47G46G45G45G43G42G 5G 4G 3G 2G 1G 10G 9G 8G 7G 6G

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	Color of Wire	BG	BG	BG
	Terminal No.	F	2	ε
_		1		I
1	1	1	1	1

Signal Name

Color of Wire

Terminal No.

Signal Name

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2 X 1	Signal Name	I
	Color of Wire	M
H.S.	Terminal No.	ŀ

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F	2	e	5		Connector No



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81G80G79G78G77G76G75G74G73G72G71G 90G89G88G87G86G85G84G83G82G

CAN-H

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



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[LDW & LDP]

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Terminal No.

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Terminal No. 20 5

H.S.

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DRIVER ASSISTANCE SYSTEM	S
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[LDW	& L	DP]
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Ferminal No.	Color of Wire	Signal Name
6	I	I
10	ВG	BCP OFF SW
1	I	I
12	9	WARNING BUZZER
13	-	I
14	В	CAN-H
15	Μ	CAN-L
16	Я	IGNITION

Signal Name	I	I	I	1	I	I	I	I	I	I	I	I	Η	
Color of Wire	В	GR	SHIELD	œ	н	ш	Ν	Μ	В	ш	GR	SHIELD	В	
Ferminal No.	6	10	÷	19	20	21	27	28	29	30	31	32	33	



Signal Name	WARNING SYSTEM SW	I	1	WARNING SYSTEM ON IND	BRAKE HOLD RLY DRIVE SIGNAL	GND	ITS COMM-H	ITS COMM-L
Color of Wire	BR	I	I	8	U	ш	_	≻
Terminal No.	-	2	e	4	5	9	7	80

B115	JOINT CONNECTOR-B08	WHITE	9 8 7 6 5 4 3 2 1 0 19 18 17 16 15 14 13 12 1 30 29 28 27 26 25 24 23
Connector No.	Connector Name	Connector Color	HS. 3322





H.S. 佢



Connector No.	B109
Connector Name	SIDE RADAR RH
Connector Color	BLACK
同 H.S.	1 2 3 4 5 6

2 3 4 5 6	Signal Name
-	Color of Wire
Ś	ninal No.

Signal Name	I	I	1	I	I	1	
Wire	В	В	≻	L	В	N	
Terminal No.	F	2	e	4	5	9	

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[LDW & LDP]



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< WIRING DIAGRAM >

[LDW & LDP]





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Signal Name	I	I	I	
Color of Wire	Μ	ш	SHIELD	
Terminal No.	5	9	7	

Connector No.	R5
Connector Name	LANE CAMERA UNIT
Connector Color	WHITE
雨 H.S.	8 7 6 5

Signal Name	I	I	I	I	. 1
Color of Wire	В	BR	В	ГG	≻
Terminal No.	-	4	5	7	8

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Signal Name	I	I	I	ļ	
Color of Wire	В	ГG	BR	٢	
Terminal No.	5	9	7	8	

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[LDW & LDP]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000007911727

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the customer to obtain information about symptoms using "Diagnostic Work Sheet". (Refer to <u>DAS-</u> <u>387, "Diagnostic Work Sheet"</u>.)

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

>> GO TO 2.	А
2.SELF-DIAGNOSIS WITH CONSULT	
 Perform "All DTC Reading" with CONSULT. Check if the DTC is detected on the self-diagnosis results of "ICC/ADAS" and/or "LANE CAMERA". 	В
Is any DTC detected?	
YES >> GO TO 5. NO >> GO TO 3.	С
3. PRE-INSPECTION FOR DIAGNOSIS	
Perform pre-inspection for diagnosis. Refer to DAS-389, "Inspection Procedure".	D
>> GO TO 4.	F
4.ACTION TEST	
Perform LDW/LDP system action test to check the operation status. Refer to <u>DAS-390, "Description"</u> .	F
>> GO TO 6.	
5.TROUBLE DIAGNOSIS BY DTC	G
Perform trouble diagnosis for the detected DTC. Specify a malfunctioning part. Refer to <u>DAS-358</u> , " <u>DTC Index</u> " (ICC/ADAS) and/or <u>DAS-365</u> , " <u>DTC Index</u> " (LANE CAMERA).	0
	Н
>> GO TO 7.	
O.SYMPTOM DIAGNOSIS	1
Perform symptom diagnosis. Specify malfunctioning part. Refer to <u>DAS-449. "Symptom Table"</u> .	I
>> GO TO 7.	.1
7.MALFUNCTION PART REPAIR	0
Repair or replace the identified malfunctioning parts.	
	Κ
>> GO TO 8.	
$\mathbf{\delta}$.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)	L
Perform self-diagnosis with CONSULT. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.	
Is any DTC detected?	M
YES >> GO TO 5.	
9 REDAID CHECK (ACTION TEST)	Ν
Perform L DW/L DB system action test. Also shock the system exerction	
Does it operate normally?	
YES >> INSPECTION END NO >> GO TO 4.	DAS
Diagnostic Work Sheet	Ρ
DESCRIPTION	
In general, each customer feels differently about an incident. It is important to fully understand the symptoms	

or conditions for a customer complaint. There are many operating conditions that lead to the malfunction. A good grasp of such conditions can make troubleshooting faster and more accurate.

Some conditions may cause the lane departure warning lamp to stay ON.

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Utilize a work sheet sample to organize all of the information for troubleshooting.

KEY POINTS

- WHAT..... System and functions
- WHEN..... Date, Frequencies
- WHERE..... Road conditions
- HOW..... Operating conditions, Symptoms

WORK SHEET SAMPLE

Customer name MR/MS		Model and Year			
Engine #		Trans.		Mileage	
Incident Date		Manuf. Date		In Service Date	
Symptoms					
	Lane departure warning lamp	☐ Stays ON ☐ Turned ON occasiona	☐ Stay Illy ☐ Othe	s OFF 🗌 Blinks rs ()	
Indicator/Warning Jamps	☐Warning systems ON indicator	☐ Stays ON	☐ Stay ☐ Othe	s OFF 🔄 Blinks rs ()	
	LDP ON indicator lamp	☐ Stays ON ☐ Turned ON occasiona	☐ Stay Illy ☐ Othe	s OFF 🗌 Blinks rs ()	
	□Other lamps ()	☐ Stays ON ☐ Turned ON occasiona	☐ Stay Illy ☐ Othe	s OFF 🗌 Blinks rs ()	
	□When using LDW	☐ When using LDP			
	□ All functions do not operate. □ Warning function does not operate. (□No sound □No indicator) □ Yawing function does not operate. (Warning function is operated.)				
Functions	☐ Functions when changing ☐ Functions are untimely.	the course in the turn sig	nal direction		
	 Does not function when driving on lane markers. Functions when driving in a lane. Functions in a different position from the actual position. 				
Conditions			/		
Frequency	Continuously	🗌 Intermit	tently		
Light conditions	□ Not affected □ In the daytime □ Direct light	□ At night □ Backlight	□Sunrise/s	sunset (Strong light)	
Driving conditions	☐ Not affected ☐ Vehicle speed	MPH(km/h)	□ Vehicle i	s stopped	
Weather conditions	□ Not affected □ Fine □ Clouding	Raining	□ Snowing □ Others()	
Road conditions	☐ Not affected ☐ Highway ☐ Uneven roads	□ In town □ Winding roads	□Others ()	
Lane maker conditions	□ Not affected □ Clear	Unclear	□Others ()	
Other conditions					
				JSOIA0287GB	

PRE-INSPECTION FOR DIAGNOSIS

	FRE-INSFECTION FOR DIAGNOSIS	
< BAS	IC INSPECTION >	[LDW & LDP]
PRE	-INSPECTION FOR DIAGNOSIS	
Inspe	ection Procedure	INFOID:000000007911729
1. сн	ECK CAMERA LENS AND WINDSHIELD	
<u>Are ca</u>	mera lens and windshield contaminated with foreign materials?	
YES NO	>> Clean camera lens and windshield. >> GO TO 2.	
2.сн	ECK LANE CAMERA UNIT INSTALLATION CONDITION	
Check	lane camera unit installation condition (installation position, properly tightened, a ber	nt bracket).
<u>Is it pro</u>	operly installed?	
YES NO	 >> GO TO 3. >> Install lane camera unit properly, and perform camera aiming. Refer to <u>DAS-39</u>. 	4. "Description".
3.сн	ECK VEHICLE HEIGHT	
Check	vehicle height. Refer to FSU-20, "Wheelarch Height".	
<u>Is vehi</u>	cle height appropriate?	
YES NO	>> INSPECTION END >> Repair vehicle to appropriate height.	

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ACTION TEST

< BASIC INSPECTION >

ACTION TEST

Description

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

WARNING:

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

- Fully understand the following items well before the road test;
- Precautions: Refer to DAS-315, "Precaution for LDW/LDP System Service".
- System description for LDW: Refer to <u>DAS-320</u>, "LANE <u>DEPARTURE WARNING (LDW) SYSTEM</u> : <u>System Description</u>".
- System description for LDP: Refer to <u>DAS-323</u>, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : <u>System Description</u>".
- Handling precaution: Refer to <u>DAS-331</u>, "Precautions for Lane Departure Warning/Lane Departure Prevention".

Inspection Procedure

INFOID:000000007911731

WARNING:

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

- · Fully understand the following items well before the road test;
- Precautions: Refer to DAS-315, "Precaution for LDW/LDP System Service".
- System description for LDW: Refer to <u>DAS-320</u>, "LANE <u>DEPARTURE WARNING (LDW) SYSTEM</u> : <u>System Description</u>".
- System description for LDP: Refer to <u>DAS-323</u>, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : <u>System Description</u>".
- Handling precaution: Refer to <u>DAS-331</u>, "Precautions for Lane Departure Warning/Lane Departure Prevention".

1.CHECK LDW SYSTEM SETTING

- 1. Start the engine.
- 2. Check that the LDW system setting can be enabled/disabled in the vehicle information display.
- 3. Turn OFF the ignition switch and wait for 30 seconds or more.
- 4. Check that the previous setting is saved when the engine starts again.

>> GO TO 2.

2. ACTION TEST FOR LDW

- 1. Enable the setting of the LDW system in the vehicle information display.
- 2. Turn warning systems switch ON (warning systems ON indicator is ON).

NOTE: LDP system is OFF.

3. Check the LDW operation according to the following table.

INFOID:000000007911730

ACTION TEST

< BASIC INSPECTION >

Vehicle o	condition/ Driver's operation	Action	Warning sys- tems ON indi- cator	Indication on the combination meter	Buzzer
Less than Approx. 60 km/h (40 MPH)	Close to lane marker	No action	ON	OFF	_
Approx. 70 km/h (45 MPH) or more	Close to lane marker	Warning Buzzer sounds Warning lamp blinks 	ON	Orange (Blink)	Short contin- uous beeps
	 Close to lane marker Turn signal ON (Deviate side) 	No action	ON	OFF	_
After th reaches <u>SYSTE</u> >> 3. CHECK	e operating conditions of s approximately 60 km/h <u>M : System Description"</u> . GO TO 3. LDP SYSTEM SETTING	of warning are sa (40 MPH). Refe	atisfied, the w r to <u>DAS-320,</u>	arning continues until the v <u>"LANE DEPARTURE WAR</u>	ehicle speed <u>NING (LDW)</u>
 Start th Check to Turn Of Check to 	e engine. that the LDP system setti FF the ignition switch and that the previous setting i	ng can be enable I wait for 30 seco s saved when the	d/disabled in t nds or more. e engine starts	he vehicle information displa again.	у.
>> 4.action	GO TO 4. TEST FOR L DP				
1. Enable 2. Turn dy NOTE:	the setting of the LDP sy namic driver assistance s	stem in the vehic switch ON (LDP C	le information DN indicator la	display. mp is ON).	

3. Check the LDP operation according to the following table.

Vehicle condition/ Driver's operation		Action	Indication on the combination meter	Buzzer	Μ
Less than Ap- prox. 60 km/h (40 MPH)	Close to lane marker	No action	LDP (Green) ON	_	N DAS
			ALOIA0136GB		

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ACTION TEST

< BASIC INSPECTION >

[LDW & LDP]

Vehicle con	dition/ Driver's operation	Action	Indication on the combination meter	Buzzer
	Close to lane marker	Warning and yawing Buzzer sounds Warning lamp blinks Brake control 	LDP (Green) ON (Yellow) Blink ALOIAO135GB	Short continu- ous beeps
Approx. 70	 Close to lane marker Turn signal ON (Deviate side) 	No action	LDP (Green) ON ALOTAO136GB	_
km/h (45 MPH) or more	Close to lane marker with soft braking	Warning • Buzzer sounds • Warning lamp blinks	LDP (Green) ON (Yallow) Blink ALOIA0135GB	Short continu- ous beeps
	 VDC OFF Switch OFF ⇒ ON (VDC system ON ⇒ OFF) SNOW mode switch OFF ⇒ ON Road condition is wet Lane camera tempera- ture is high 	Cancellation • Buzzer sounds • Each message is displayed NOTE: When dynamic driver assis- tance switch is $ON \Rightarrow OFF$, message is turned OFF.	Each message is displayed	Веер

NOTE:

After the operating conditions are satisfied, the control continues until the vehicle speed reaches approximately 60 km/h (40 MPH). Refer to <u>DAS-323</u>, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System <u>Description</u>".

>> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT [LDW & LDP] < BASIC INSPECTION > ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT А Description INFOID:000000007911732 Always adjust the camera aiming after removing and installing or replacing the lane camera unit. В **CAUTION:** The system does not operate normally unless the camera aiming adjustment is performed. Always perform it. Work Procedure INFOID:000000007911733 **1**.CAMERA AIMING ADJUSTMENT D Perform the camera aiming adjustment with CONSULT. Refer to DAS-394, "Description". Е >> GO TO 2. 2.PERFORM SELF-DIAGNOSIS Perform the self-diagnosis of lane camera unit with CONSULT. Check if any DTC is detected. F Is any DTC detected? YES >> Perform the trouble diagnosis for the detected DTC. Refer to DAS-365. "DTC Index". NO >> GO TO 3. **3.**LDW/LDP SYSTEM ACTION TEST 1. Perform the LDW/LDP system action test. Refer to DAS-393, "Description". Н Check that the LDW/LDP system operates normally. 2. >> WORK END Κ Μ Ν DAS Ρ

CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

CAMERA AIMING ADJUSTMENT

Description

Always adjust the camera aiming after removing and installing or replacing the lane camera unit. **CAUTION:**

- Place the vehicle on level ground when the camera aiming adjustment is operated.
- Follow the CONSULT when performing the camera aiming. (Camera aiming adjustment cannot be operated without CONSULT.)

Work Procedure (Preparation)

INFOID:000000007911735

1.PERFORM SELF-DIAGNOSIS

Perform self-diagnosis of ADAS control unit and lane camera unit.

Is any DTC detected?

Except "C1B01">>Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to DAS-358. "DTC Index" (ICC/ADAS) or DAS-365. "DTC Index" (LANE CAMERA).

"C1B01" or no DTC>>GO TO 2.

2. PREPARATION BEFORE CAMERA AIMING ADJUSTMENT

- 1. Perform pre-inspection for diagnosis. Refer to <u>DAS-389</u>, "Inspection Procedure".
- 2. Adjust the tire pressure to the specified pressure value.
- 3. Maintain no-load in vehicle.
- 4. Check if coolant and engine oil are filled up to correct level and fuel tank is full.
- 5. Shift the selector lever to "P" position and release the parking brake.
- 6. Clean the windshield.
- 7. Completely clear off the instrument panel.

>> GO TO 3.

3. PREPARATION OF AIMING ADJUSTMENT JIG

Prepare the aiming adjustment jig according to the following procedure and the figure.

- 1. Print out the target mark attached in this service manual. Refer to <u>DAS-397</u>, "Work Procedure (Target <u>Mark Sample)</u>".
- 2. Stick a printed target mark on the board with a scotch tape or a piece of double-sided tape. **NOTE:**
 - Use the board that peripheral area of the target is monochrome such as a white-board.
 - Notice that the cross of the target is horizontal and vertical.



INFOID:000000007911734

< BASIC INSPECTION >				[LDW & LDP]	
1. •	Board 2. S : Target mark	String	3. Cone		А
	Diameter of a target (D)	: 200 mm (7.87 in)			В
	Height of a target center (H) Width between a right target cen- ter from a left target center (W)	: 1450 mm (57.09 in) : 600 mm (23.62 in)			С
Worł	>> Go to <u>DAS-395, "Work Proced</u> A Procedure (Target Setting)	ure (Target Setting)".		INFOID:000000007911736	D

A INALLIA A D HIGTMENT

CAUTION:

- Perform this operation in a horizontal position where there is a clear view for 5 m (16.4 ft) forward and 3 m (9.84 ft) wide.
- Place the target in a well-lighted location. (Poor lighting may make it hard to adjust.)
- The target may not be detected when there is a light source within 1.5 m (4.92 ft) from either side and within 1 m (3.28 ft) upward/downward from the target.
- Check the location of the sun. (Sunlight should not shine directly on the front of the vehicle.)
- The target may not be detected when there is the same pattern of black and white as the target when ^G the pattern is within 1 m (3.28 ft) from either side and upward/downward position from the target. (It is desirable that the vehicle is positioned on the opposite side of a single-color wall.)
- **1.**TARGET SETTING



"A" – "E" ("C" – "F")

: 3850 mm (151.57 in)

 Mark points "A", "B", "C" and "D"at the center of the lateral surface of each wheels. NOTE:

Hang a string with a cone from the fender so as to pass through the center of wheel, and then mark a point at the center of the lateral surface of the wheel.

 Draw line "LH" passing through points "A" and "B" on the left side of vehicle.
 NOTE:

Approximately 4 m (13.12 ft) or more from the front end of vehicle.



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CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

- 3. Mark point "E" on the line "LH" at the positions 3850 mm (151.57 in) from point "A".
- 4. Draw line "RH" passing through points "C" and "D" on the right side of vehicle in the same way as step 2. **NOTE:**
 - Approximately 4 m (13.12 ft) or more from the front end of vehicle.
- 5. Mark point "F" on the line "RH" at the positions 3850 mm (151.57 in) from point "C".
- 6. Draw line "FW" passing through the points "E" and "F" on the front side of vehicle.
- 7. Mark point "X" at the center of point "E" and "F" on the line "FW". CAUTION:

Make sure that "E" to "X" is equal to "F" to "X".

8. Position the center of the right target to point of "X".

>> Go to <u>DAS-396</u>, "Work Procedure (Camera Aiming <u>Adjustment)"</u>.



INFOID:000000007911737

Work Procedure (Camera Aiming Adjustment)

CAUTION:

Perform the adjustment under unloaded vehicle condition.

1.CHECK VEHICLE HEIGHT

Measure the wheelarch height. Calculate "Dh".

Dh [mm] = (Hfl + Hfr) ÷ 2 – 820 where, Hfl: Front left wheelarch height [mm] Hfr: Front right wheelarch height [mm]

NOTE:

"Dh" may be calculated as a minus value.

>> GO TO 2.

2.CAMERA AIMING ADJUSTMENT

CAUTION:

Operate CONSULT outside the vehicle, and close all the doors. (To retain vehicle attitude appropriately)

- 1. Select "Work Support" on "LANE CAMERA" with CONSULT.
- 2. Select "AUTO AIM".
- 3. Confirm the following items;
- The target should be accurately placed.
- The vehicle should be stopped.
- 4. Select "Start" to perform camera aiming.
- CAUTION:
 - Never select "Start" when the target is not accurately placed.
 - Wait 5 seconds or more after selecting "Start".
- Input "Dh", and then select "Start".
 CAUTION: Never change "Ht" and "Dt".
- 6. Confirm the displayed item.
- "Normally Completed": Select "Completion".
- "SUSPENSION", "X AIMING NG Y", "ABNORMALLY COMPLETED": Perform the following services.



DAS-396
CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

Displayed item		Possible cause	Service procedure
	—	Temporary malfunction in internal processing of the lane camera unit.	Go back to Step 1
SUSPENSION	00H Routine not ac- tivated	Lane camera unit malfunction.	Position the target appro- priately again. Perform
	10H Writing error	 Temporary malfunction in internal processing of the lane camera unit. Lane camera unit malfunction. 	the aiming again. Refer to <u>DAS-395, "Work Pro-</u> cedure (Target Setting)"
X AIMING NG Y (X: 0 - 7, Y: 1 - 8)	_	A target is not-yet-placed. (The lane camera unit cannot detect a target.)	Position the target appro- priately again. Perform
ABNORMALLY COM- PLETED	_	 The position of the lane camera unit is not correct. Inappropriate work environment. Inappropriate vehicle condition. 	the aiming again. Refer to <u>DAS-394, "Work Pro-</u> cedure (Preparation)".
NOTE			

NOTE:

Replace camera unit if "00H Routine not activated" or "10H Writing error" are repeatedly indicated during the above two services are performed.

7. Confirm that "Normally Completed" is displayed and then select "End" to close the aiming adjustment procedure.

>> GO TO 3.

3.PERFORM SELF-DIAGNOSIS

Perform self-diagnosis of lane camera unit with CONSULT.				
s any DTC detected?				
YES >> Perform diagnosis on the detected DTC and repair or replace the applicable item. Refer to <u>DAS-</u> <u>365, "DTC Index"</u> .	;			
NO $>>$ GO TO 4.	1			
4.ACTION TEST				
Test the LDW/LDP system operation by action test. Refer to <u>DAS-390, "Description"</u> .	J			
>> WORK END				
Work Procedure (Target Mark Sample)	K			
NOTE:	L			

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CAMERA AIMING ADJUSTMENT

< BASIC INSPECTION >

[LDW & LDP]

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



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DTC/CIRCUIT DIAGNOSIS C1A00 CONTROL UNIT

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play) Trouble diagnosis name DTC detecting condition Possible causes C1A00 (0) CONTROL UNIT ADAS control unit internal malfunction ADAS control unit DTC CONFIRMATION PROCEDURE ADAS control unit internal malfunction ADAS control unit DTC CONFIRMATION PROCEDURE 1. PERFORM DTC CONFIRMATION PROCEDURE 1. 1. Start the engine. 2. Perform "All DTC Reading" with CONSULT. 3. 3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "C1A00" detected as the current malfunction? YES >> Refer to DAS-399. "Diagnosis Procedure". NO >> Inspection End. Diagnosis Procedure NPRODUCCIONERTING 1.CHECK SELF-DIAGNOSIS RESULTS Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358. "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".				
C1A00 (0) CONTROL UNIT ADAS control unit internal malfunction ADAS control unit DTC CONFIRMATION PROCEDURE 1. PERFORM DTC CONFIRMATION PROCEDURE 1. 1. Start the engine. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". IS "C1A00" detected as the current malfunction? YES >> Refer to DAS-399. "Diagnosis Procedure". NO >> Inspection End. Diagnosis Procedure Import Consumption of "ICC/ADAS". Import Consumption End. Diagnosis Procedure Import Consumption End. Import Consumption End. Search Diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358. "DTC Index". Import Consumption End.	DTC (On board play)	dis- Trouble diagnosis name	DTC detecting condition	Possible causes
DTC CONFIRMATION PROCEDURE 1. PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "C1A00" detected as the current malfunction? YES >> Refer to DAS-399. "Diagnosis Procedure". NO >> Inspection End. Diagnosis Procedure Information of "ICC/ADAS". 1. CHECK SELF-DIAGNOSIS RESULTS Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358. "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation".	C1A00 (0)	CONTROL UNIT	ADAS control unit internal malfunction	ADAS control unit
 Start the engine. Perform "All DTC Reading" with CONSULT. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". <u>Is "C1A00" detected as the current malfunction?</u> YES >> Refer to <u>DAS-399, "Diagnosis Procedure"</u>. NO >> Inspection End. Diagnosis Procedure I.CHECK SELF-DIAGNOSIS RESULTS Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-358, "DTC Index"</u>. NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>. 	DTC CON	FIRMATION PROCEDU	JRE I PROCEDURE	
Is "C1A00" detected as the current malfunction? YES >> Refer to DAS-399, "Diagnosis Procedure". NO >> Inspection End. Diagnosis Procedure INFOLD.00000007911740 1.CHECK SELF-DIAGNOSIS RESULTS Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358, "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".	 Start th Perform Check 	ne engine. m "All DTC Reading" with (if the "C1A00" is detected	CONSULT. as the current malfunction in "Self Dia	agnostic Result" of "ICC/ADAS".
Diagnosis Procedure INFORMATION 1.CHECK SELF-DIAGNOSIS RESULTS Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358, "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".	<u>ls "C1A00"</u> YES >> NO >>	<u>detected as the current m</u> > Refer to <u>DAS-399, "Diag</u> > Inspection End.	alfunction? nosis Procedure".	
 CHECK SELF-DIAGNOSIS RESULTS Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358. "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". 	Diagnosi	s Procedure		INFOID:000000007911740
 Check if any DTC other than "C1A00" is detected in "Self Diagnostic Result" of "ICC/ADAS". <u>Is any DTC detected?</u> YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-358, "DTC Index"</u>. NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>. 	1. снеск	SELF-DIAGNOSIS RESU	ILTS	
 YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-358, "DTC Index"</u>. NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>. 	Check if ar Is any DTC	ny DTC other than "C1A00 C detected?	is detected in "Self Diagnostic Result"	t" of "ICC/ADAS".
	YES >> NO >>	 Perform diagnosis on the <u>DAS-358, "DTC Index"</u>. Replace the ADAS contra- 	e detected DTC and repair or replace ol unit. Refer to <u>DAS-79, "Removal an</u>	the malfunctioning parts. Refer to distance of the malfunction.

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[LDW & LDP]

INFOID:000000007911739

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C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 < DTC/CIRCUIT DIAGNOSIS > [LDW & LDP]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000007911741

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

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

- YES >> Refer to DAS-400. "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911742

1. CHECK ADAS CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-441</u>, "ADAS CONTROL UNIT : <u>Diagnosis Procedure</u>".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> Repair or replace the malfunctioning parts.

C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000007911743

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[LDW & LDP]

DTC DETECTION LOGIC В DTC Trouble diagnosis (On board DTC detecting condition Possible causes name display) If the vehicle speed signal (wheel speed) from Wheel speed sensor C1A03 VHCL SPEED SE · ABS actuator and electric unit (control ABS actuator and electric unit (control unit) re-CIRC (3) ceived by the ADAS control unit via CAN comunit) munication, are inconsistent · ADAS control unit NOTE: Ε If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04". • Refer to DAS-429, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000". Refer to <u>DAS-402</u>, "DTC Logic" for DTC "C1A04". F DTC CONFIRMATION PROCEDURE **1.**PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. 2. Turn the LDP system ON. 3. Drive the vehicle at 30 km/h (19 MPH) or more. **CAUTION:** Н Always drive safely. Stop the vehicle. 4. Perform "All DTC Reading" with CONSULT. 5 Check if the "C1A03" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 6 Is "C1A03" detected as the current malfunction? YES-1 (Lane departure warning lamp: ON)>>Refer to DAS-401, "Diagnosis Procedure". YES-2 (Lane departure warning lamp: OFF)>>Refer to CCS-102, "Diagnosis Procedure" >> Refer to GI-53, "Intermittent Incident". NO **Diagnosis** Procedure INFOID:000000007911744 1.CHECK SELF-DIAGNOSIS RESULTS Check if "C1A04" or "U1000" is detected other than "C1A03" in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358, "DTC Index". Μ NO >> GO TO 2. 2.CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS Ν Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS BRC-45, "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

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C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:000000007911745

DTC DETECTION LOGIC

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

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

Diagnosis Procedure

INFOID:000000007911746

1.CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429</u>, "ADAS CONTROL UNIT : DTC Logic".

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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BRC-45. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:000000007911747

INFOID:000000007911748

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	(
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) con- tinues for 10 seconds or more with vehicle speeds at approximately 40 km/h or more	 Stop lamp switch circuit ICC brake switch circuit Stop lamp switch ICC brake switch Incorrect stop lamp switch installation Incorrect ICC brake switch installation ECM ABS actuator and electric unit (control unit) 	1

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-429, "ADAS CONTROL UNIT : DTC Logic".

Diagnosis Procedure

Regarding Wiring Diagram information, refer to DAS-366, "Wiring Diagram".

1. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT. Check if the "U1000" is detected other than "C1A05" in "Self Diagnostic Result" of "ICC/ADAS". 2. Is "U1000" detected? Κ YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-429, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. 2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH L Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS". Is the inspection result normal? Μ YES >> GO TO 3. NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4. NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9. Ν 3.check stop lamp switch Check that "STOP LAMP SW" operate normally in "DATA MONITOR" of "ABS". DAS Is the inspection result normal? >> GO TO 14. YES NO >> GO TO 9. Ρ 4.CHECK ICC BRAKE SWITCH INSTALLATION Turn ignition switch OFF. 1. Check ICC brake switch for correct installation. Refer to BR-15, "Adjustment". 2. Is the inspection result normal?

YES >> GO TO 5.

NO >> Adjust ICC brake switch installation. Refer to <u>BR-15, "Adjustment"</u>.

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

5.ICC BRAKE SWITCH INSPECTION

- 1. Disconnect ICC brake switch connector.
- 2. Check ICC brake switch. Refer to DAS-406, "Component Inspection (ICC Brake Switch)".

Is the inspection result normal?

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

6.CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

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

(+)	(-)	Voltage
ICC bra	ke switch		(Approx.)
Connector	Terminal	Ground	
E72	1		Battery voltage

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair the harnesses or connectors.

7. CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ECM

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

ICC bra	ke switch	E	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E72	2	E16	126	Yes

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

ICC bra	ke switch		Continuity
Connector	Terminal	Ground	Continuity
E72	2		No

Is the inspection result normal?

YES >> GO TO 8.

- NO >> Repair the harnesses or connectors.
- **8.**PERFORM SELF-DIAGNOSIS OF ECM
- 1. Connect all connectors again if the connectors are disconnected.

2. Turn ignition switch ON.

3. Perform "All DTC Reading".

4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to <u>EC-108</u>, "<u>DTC Index</u>". <u>Is any DTC detected?</u>

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

NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

9.CHECK STOP LAMP SWITCH INSTALLATION

1. Turn ignition switch OFF.

Check stop lamp switch for correct installation. Refer to <u>BR-15, "Adjustment"</u>.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Adjust stop lamp switch installation. Refer to <u>BR-15, "Adjustment"</u>.

DAS-404

< DTC/CIR(10515 >			
10.stop			TION		<u>·</u>
1. Disconn	ect stop lam	p switch cor	nector.		
2. Check s	top lamp sw	itch. Refer to	DAS-406,	"Component	Inspection (Stop Lamp Switch)".
Is the inspec	tion result no	ormal?			
YES >>	GO TO 11. Replace stor	n lamn switc	h		
			n. POWER SI		ШТ
			I OWER O		
2. Check v	oltage betwe	en stop lam	p switch ha	arness conne	ctor and ground.
	-				
	Termin	als			•
	(+)		(-)	Voltage	
Stop	lamp switch			(Approx.)	
Connector	Termir	nal C-	round		_
E38	1			Battery voltage	
	3			, ,	
Is the inspec	tion result no	ormal?			
YES >>	GO TO 12. Renair the h	arnesses or	connectors	2	
	rtepuir the fi		00111001010		
12 CHECK		RETWEEN	STOPIAN	AP SWITCH	
	(HARNESS	BETWEEN	STOP LAN	/IP SWITCH /	AND ECM
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12.CHECł 1. Turn ign 2. Disconn 3. Check fe	K HARNESS ition switch (ect ECM, rea or continuity	BETWEEN OFF ar combinati between sto	STOP LAN on lamp an op lamp swi	IP SWITCH A	AND ECM ed stop lamp connectors. onnector and ECM harness connector.
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12.CHECH 1. Turn ign 2. Disconn 3. Check for Stop lan Connector E38 4. Check for Stop la Connector E38 Is the inspector YES >> NO >> 13.CHECH (CONTROL 1. Disconn 2. Check for (control	C HARNESS ition switch (ect ECM, re- or continuity np switch Terminal 2 or continuity mp switch Terminal 2 or continuity GO TO 13. Repair the h C HARNESS UNIT) ect ABS action or continuity unit) harness	BETWEEN OFF ar combinati between sto Connector E16 between sto ormal? arnesses or BETWEEN Jator and ele between st s connector.	STOP LAN on lamp an op lamp swi CM Terminal 122 op lamp swi Ground Ground Connectors I STOP LA ectric unit (top lamp s	IP SWITCH / Id high-mount tch harness of Continuity Yes tch harness of Continuity No S. MP SWITCH control unit) of witch harness	AND ECM ted stop lamp connectors. connector and ECM harness connector. connector and ground. AND ABS ACTUATOR AND ELECTRIC UNIT onnector. s connector and ABS actuator and electric unit
12.CHECH 1. Turn ign 2. Disconn 3. Check for Stop lan Connector E38 4. Check for Stop la Connector E38 Is the inspect YES >> NO >> 13.CHECH (CONTROL 1. Disconn 2. Check for (control	C HARNESS ition switch (ect ECM, re- pr continuity p switch Terminal 2 or continuity mp switch Terminal 2 ction result ne GO TO 13. Repair the h C HARNESS UNIT) ect ABS action or continuity unit) harness	BETWEEN OFF ar combinati between sto E16 between sto ormal? arnesses or BETWEEN Jator and ele between sto s connector.	STOP LAN on lamp an op lamp swi CM Terminal 122 op lamp swi Ground Connectors I STOP LA ectric unit (of top lamp s	IP SWITCH / Id high-mount tch harness of Continuity Yes tch harness of Continuity No S. MP SWITCH control unit) of witch harness	AND ECM ted stop lamp connectors. connector and ECM harness connector. connector and ground. AND ABS ACTUATOR AND ELECTRIC UNIT onnector. s connector and ABS actuator and electric unit .
12.CHECH 1. Turn ign 2. Disconn 3. Check fr Stop lan Connector E38 4. Check fr Stop la Connector E38 15 the inspec YES >> NO >> 13.CHECH (CONTROL 1. Disconn 2. Check f (control	C HARNESS ition switch (ect ECM, re- or continuity np switch Terminal 2 or continuity mp switch Terminal 2 or continuity mp switch C HARNESS UNIT) ect ABS action or continuity unit) harness	BETWEEN OFF ar combinati between sto E16 between sto ormal? arnesses or BETWEEN Jator and ele between st s connector. ABS actuato unit (cor	STOP LAN on lamp an op lamp swi CM Terminal 122 op lamp swi Ground Connectors I STOP LA ectric unit (top lamp s or and electric ntrol unit)	IP SWITCH / Id high-mount Id high-mount tch harness of Continuity Yes tch harness of Continuity No S. MP SWITCH control unit) of witch harness Continuity No S. Control unit) of Witch harness Continuity	AND ECM ted stop lamp connectors. connector and ECM harness connector. connector and ground. connector and ground. connector. s connector and ABS actuator and electric unit .
12.CHECk 1. Turn ign 2. Disconn 3. Check fi Stop lan Connector E38 4. Check fi Stop la Connector E38 Is the inspec YES >> NO >> 13.CHECk (CONTROL 1. Disconn 2. Check fi (control Stop lan Connector	C HARNESS ition switch (ect ECM, re- pr continuity p switch Terminal 2 or continuity mp switch Terminal 2 ction result ne GO TO 13. Repair the h C HARNESS UNIT) ect ABS action or continuity unit) harness	BETWEEN OFF ar combinati between sto End between sto Detween sto Ormal? arnesses or BETWEEN Jator and ele between sto s connector. ABS actuato unit (cor Connector	STOP LAN on lamp an op lamp swi CM Terminal 122 op lamp swi Ground Connectors I STOP LA ectric unit (top lamp s ectric unit (top lamp s	IP SWITCH / Id high-mount Id high-mount Id high-mount Continuity Yes Id harness of Continuity Yes Id harness of Continuity No S. MP SWITCH control unit) c witch harness Continuity Continuity	AND ECM ted stop lamp connectors. connector and ECM harness connector. connector and ground. connector and ground. connector. s connector and ABS actuator and electric unit

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

Stop lar	np switch	Oraciad	Continuity		
E38		Ground	No		
Loo	tion result por	mal?	NU		
YES >> (NO >> F 14.PERFC	GO TO 14. Repair the hari RM SELF-DIA	nesses or connectors. AGNOSIS OF ECM			
 Connect Turn igni Perform Check if 	all connectors ition switch ON "All DTC Read any DTC is de	s again if the connectors N. ding". etected in "Self Diagnos	s are discor tic Result" (nected. of "ENGINE". Refer to <u>EC-108, "D</u>	TC Index".
YES >> I	Repair or repla	ace the malfunctioning p	arts identifi	ed by the self-diagnosis result.	
15.perfc	ORM SELF-DIA	AGNOSIS OF ABS ACT	UATOR AN	ID ELECTRIC UNIT (CONTROL L	JNIT)
Check if any Is any DTC of YES >> I NO >> I	DTC is detect l <u>etected?</u> Repair or repla Replace the Al	ed in "Self Diagnostic R ace the malfunctioning p DAS control unit. Refer	esult" of "A earts identifi to <u>DAS-79,</u>	BS". Refer to <u>BRC-45, "DTC Index</u> ed by the self-diagnosis result. <u>"Removal and Installation"</u> .	<u>x"</u> .
Compone	nt Inspectio	on (ICC Brake Swit	tch)		INFOID:000000007911749
1. CHECK I	CC BRAKE SV	WITCH			
Check for co	ntinuity betwee	en ICC brake switch ter	minals.		
			1		
Terminal		Condition	Continuity		
1 2	When brake peo	al is depressed	No		
	when brake peo		Yes		
YES >> I NO >> I	nspection End Replace ICC b	nar <u>/</u> I. ırake switch.			
Compone	nt Inspectio	on (Stop Lamp Swi	tch)		INFOID:000000007911750
1.CHECK S	STOP LAMP S	WITCH			
Check for co	ntinuity betwee	en stop lamp switch terr	minals.		

Terminal Condition		Condition	Continuity
1	2	When brake pedal is depressed	Yes
	2	When brake pedal is released	No
3	4	When brake pedal is depressed	Yes
5	4	When brake pedal is released	No

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace stop lamp switch.

DTC DETECTION LOGIC

C1A06 OPERATION SW

DTC Logic

DTC

INFOID:000000007911751

Trouble diagnosis (On board dis-DTC detecting condition Possible causes name play) · Any switch of the ICC steering switch is detected as "ON" continuously for 60 seconds ICC steering switch circuit C1A06 **OPERATION SW** An ON/OFF state judgment of the ICC differs ICC steering switch (6) CIRC between ECM and ADAS control unit, and the ECM state continues for 2 seconds or more E NOTE: If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-429. "ADAS CONTROL UNIT : DTC Logic". F DTC CONFIRMATION PROCEDURE **1**.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. 2. Wait for approximately 5 minutes after turning the LDP system ON. 3. Perform "All DTC Reading" with CONSULT. 4. Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "C1A06" detected as the current malfunction? YES >> Refer to DAS-407, "Diagnosis Procedure". >> Refer to GI-53, "Intermittent Incident". NO Diagnosis Procedure INFOID:000000007911752 Regarding Wiring Diagram information, refer to DAS-366, "Wiring Diagram". Κ 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "C1A06" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-429, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. Μ 2. CHECK ICC STEERING SWITCH 1. Turn the ignition switch OFF. Ν Disconnect the ICC steering switch connector. 2. Check the ICC steering switch. Refer to DAS-408, "Component Inspection". 3. Is the inspection result normal? DAS YES >> GO TO 3. NO >> Replace the steering wheel. $\mathbf{3}$. Check harness between spiral cable and ECM 1. Disconnect the ECM connector. 2. Check for continuity between the spiral cable harness connector and ECM harness connector.

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity

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C1A06 OPERATION SW

< DTC/CIRCUIT DIAGNOSIS >

M30	25	E16	101	Ves
	32		108	165

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

Spiral cable			Continuity
Connector	Terminal	Ground	Continuity
M30	25		No
	32		NO

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK SPIRAL CABLE

Check for continuity between spiral cable terminals.

Spiral	Continuity		
Terminal		Continuity	
13	25	Vec	
16	32	163	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace the spiral cable.

5.PERFORM SELF-DIAGNOSIS OF ECM

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

Is any DTC detected?

- YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>EC-108, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

Component Inspection

INFOID:000000007911753

1. CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

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





< DTC/CIRCUIT DIAGNOSIS >	[LDW & LDP]	
Is the inspection result normal?		
YES >> Inspection End.		A
NO >> Replace the ICC ste	ering switch.	
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< DTC/CIRCUIT DIAGNOSIS > C1A14 ECM

INFOID:000000007911754

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A14 (14)	ECM CIRCUIT	If ECM is malfunctioning	 Accelerator pedal position sensor ECM ADAS control unit

NOTE:

If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Operate the ICC system and drive. CAUTION:

Always drive safely.

- 3. Stop the vehicle.
- 4. Perform "All DTC Reading" with CONSULT.
- 5. Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A14" detected as the current malfunction?

- YES >> Refer to <u>DAS-410, "Diagnosis Procedure"</u>.
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911755

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

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-108, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS >

C1A15 GEAR POSITION

Description

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

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

DTC Logic

INFOID:000000007911757

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN com- munication and a gear position calculated by the ADAS control unit continues for approx- imately 11 minutes or more	 Input speed sensor Vehicle speed sensor CVT (output speed sensor) TCM 	

NOTE:

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

Н Refer to <u>DAS-429</u>, "ADAS CONTROL UNIT : <u>DTC Logic</u>" for DTC "U1000". Refer to DAS-401, "DTC Logic" for DTC "C1A03". Refer to <u>DAS-402</u>, "DTC Logic" for DTC "C1A04". DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. 2. Turn the LDP system ON. 3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more. **CAUTION:** K Always drive safely. 4. Stop the vehicle. 5. Perform "All DTC Reading" with CONSULT. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS". 6 Is "C1A15" detected as the current malfunction? YES >> Refer to DAS-411, "Diagnosis Procedure". Μ >> Refer to GI-53, "Intermittent Incident". NO **Diagnosis** Procedure INFOID:000000007911758 Ν 1.CHECK SELF-DIAGNOSIS RESULTS Check if "C1A03", "C1A04", or "U1000" is detected other than "C1A15" in "Self Diagnostic Result" of "ICC/ ADAS". DAS Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358, "DTC Index". Ρ NO >> GO TO 2.

2.CHECK VEHICLE SPEED SIGNAL

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

CAUTION: Be careful of the vehicle speed.

Is the inspection result normal?

DAS-411

INFOID:000000007911756

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

3.CHECK GEAR POSITION

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

CAUTION:

Be careful of the vehicle speed.

Is the inspection result normal?

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

4.CHECK GEAR POSITION SIGNAL

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

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 6.

5.CHECK INPUT SPEED SENSOR SIGNAL

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

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> GO TO 6.

Ó.CHECK TCM SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading".

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>TM-55, "DTC Index"</u>.

NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

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

1. Perform "All DTC Reading".

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BRC-45. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

C1A24 NP RANGE

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communica- tion and a current gear position signal contin- ues for 60 seconds or more	TCMTransmission range switch
NOTE: If DTC "C1A24 "ADAS CONTE	4" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-429.</u>
DTC CONFIR	RMATION PROCED	URE	
 Start the e Turn the L Wait for ap Perform "A 	ngine. DP system ON. pproximately 5 minute All DTC Reading" with	s or more after shifting the selector leve CONSULT.	er to "P" position.
5. Check if th <u>Is "C1A24" det</u> YES >> Re	e "C1A24" is detected ected as the current r efer to DAS-413 "Dia	d as the current malfunction in "Self Dia <u>malfunction?</u> anosis Procedure"	agnostic Result" of "ICC/ADAS".
NO >> GO 2.CHECK DT	D TO 2. C REPRODUCE (2)		
 Wait for ap Perform "A Check if th 	oproximately 5 minute All DTC Reading". ne "C1A24" is detected	s or more after shifting the selector level d as the current malfunction in "Self Dia	er to "N" position. agnostic Result" of "ICC/ADAS".
<u>Is "C1A24" det</u> YES >> Re NO >> Re	ected as the current r efer to <u>DAS-413, "Dia</u> efer to <u>GI-53, "Intermi</u> t	nalfunction? gnosis Procedure". ttent Incident".	
Diagnosis F	Procedure		INFCID:00000007911760
Check if "U100 Is "U1000" det	LF-DIAGNOSIS RES 10" is detected other the	ULTS han "C1A24" in "Self Diagnostic Result'	' of "ICC/ADAS".
YES >> Pe Re NO >> GO	erform the CAN comm efer to <u>DAS-429, "AD/</u> O TO 2.	nunication system inspection. Repair o AS CONTROL UNIT : DTC Logic".	r replace the malfunctioning parts.
2.CHECK NP	POSITION SWITCH	SIGNAL	
Check that "NF Is the inspection	P RANGE SW" operat	es normally in "DATA MONITOR" of "IC	CC/ADAS".
YES >> G(NO >> G(3. CHECK TC	D TO 3. D TO 4. M DATA MONITOR		
Check that "SL Is the inspection YES >> Re	CT LVR POSI" opera	tes normally in "DATA MONITOR" of "T	RANSMISSION".

NO >> GO TO 4.

DAS-413

INFOID:000000007911759

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4.PERFORM TCM SELF-DIAGNOSIS

- 1. Perform "All DTC Reading".
- 2. 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-55, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A50 ADAS CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

C1A50 ADAS CONTROL UNIT

DTC Logic

INFOID:000000007911761

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C1A50	Trouble diagnosis name	DTC detecting condition	Possible cause
01700	ADAS MALFUNCTION	If ADAS control unit is malfunctioning	ADAS control unit
NOTE: If DTC "C1 <u>"ADAS CO</u> 1. PERFOI	A50" is detected along NTROL UNIT : DTC Log RM DTC CONFIRMATION) with DTC "U1000", first diagnose t <u>gic"</u> . ON PROCEDURE	he DTC "U1000". Refer to <u>DAS-429</u>
 Start th Turn th Perforr Check ERA". 	e engine. le LDP system ON. n "All DTC Reading" wit if the "C1A50" is detec	h CONSULT. ted as the current malfunction in "Se	elf Diagnostic Result" of "LANE CAM
<u>ls "C1A50"</u> YES >> NO >>	 detected as the current Refer to <u>DAS-415</u>, "Diality Refer to <u>GI-53</u>, "Interm 	<u>malfunction?</u> agnosis Procedure". <u>nittent Incident"</u> .	
Diagnosi	s Procedure		INFOID:0000000791176
1. снеск	LANE CAMERA UNIT	SELF-DIAGNOSIS RESULTS	
Check if "U Is "U1000"	1000" is detected other detected?	than "C1A50" in "Self Diagnostic Res	sult" of "LANE CAMERA".
YES >>	 Perform the CAN com Refer to <u>DAS-429, "LA</u> GO TO 2. 	munication system inspection. Repa <u>NE CAMERA UNIT : DTC Logic"</u> .	ir or replace the malfunctioning parts
2.снеск	ADAS CONTROL UNI	SELF-DIAGNOSIS RESULTS	
Check if an	y DTC is detected in "S	elf Diagnostic Result" of "ICC/ADAS".	
	detected?		
<u>Is any DTC</u>	Perform diagnosis on	the detected DTC and repair or repla	ace the malfunctioning parts. Refer to
<u>Is any DTC</u> YES >>	DAS-358, "DTC Index		

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C1B00 CAMERA UNIT MALF ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes		
C1B00 (81)	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit		
TC CONFIRMATION PROCEDURE PERFORM DTC CONFIRMATION PROCEDURE					
 Start the Perform Check if <u>Is "C1B00" de</u> 	engine. "All DTC Reading" with C0 the "C1B00" is detected a etected as the current mal	DNSULT. s the current malfunction in "Self Diagnos function?	stic Result" of "ICC/ADAS".		
YES >> F NO >> I	YES >> Refer to <u>DAS-416, "ADAS CONTROL UNIT : Diagnosis Procedure"</u> . NO >> INSPECTION END				
ADAS CO	NTROL UNIT : Diag	nosis Procedure	INFOID:00000007911764		
1.CHECK S	ELF-DIAGNOSIS RESUL	TS			
Check if "C1E Is "C1B00" de YES >> F NO >> F I ANF CA	BOO" is detected in "Self D <u>etected?</u> Refer to <u>DAS-416, "LANE</u> Replace the ADAS control MFRA UNIT	agnostic Result" of "LANE CAMERA". <u>CAMERA UNIT : DTC Logic"</u> unit. Refer to <u>DAS-79, "Removal and Ins</u>	tallation".		
		ogic	INFOID:00000007911765		

DIC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B00	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "C1B00" detected as the current malfunction?

YES >> Refer to DAS-416, "ADAS CONTROL UNIT : Diagnosis Procedure".

>> INSPECTION END NO

LANE CAMERA UNIT : Diagnosis Procedure

1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA". Is any DTC detected?

DAS-416

INFOID:000000007911763

INFOID:000000007911766

C1B00 CAMERA UNIT MALF

DTC/	CIRCUIT DIAGNOSIS >	[LDW & LDP]
YES	>> Perform diagnosis on the detected DTC and repair or replace the malfunctionin	ng parts. Refer to
NO	 >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u>. 	

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C1B01 CAM AIMING INCMP ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911767

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01 (82)	CAM AIMING INCMP	Camera aiming is not completed	 Lane camera aiming is not ad- justed Lane camera aiming adjustment has been interrupted
DTC CONF	IRMATION PROCEDU	RE	
1.PERFOR	M DTC CONFIRMATION	PROCEDURE	
1.Start the2.OperateCAUTIOAlways3.Perform4.Check ifIs "C1B01" deYES>> F	engine. the LDP system and drive N: d rive safely. "All DTC Reading" with C the "C1B01" is detected a etected as the current ma Refer to <u>DAS-418, "ADAS</u>	e. CONSULT. as the current malfunction in "Self Dia alfunction? S CONTROL UNIT : Diagnosis Proced	gnostic Result" of "ICC/ADAS".
NO >> F	Refer to <u>GI-53, "Intermitte</u>	nt Incident".	
ADAS CO	NTROL UNIT : Dia	gnosis Procedure	INFOID:000000007911768
1.CHECK S	ELF-DIAGNOSIS RESU	LTS	
Check if "C1E	301" is detected in "Self I	Diagnostic Result" of "LANE CAMERA	".
<u>Is "C1B01" de</u> YES >> F NO >> C 2. CHECK D	<u>etected?</u> Refer to <u>DAS-418, "LANE</u> GO TO 2. PATA MONITOR	CAMERA UNIT : DTC Logic"	
 Start the Check the ERA". 	engine. at "OK" is indicated for	the value of "AIMING RESULT" in "I	DATA MONITOR" of "LANE CAM-
Is "OK" indica YES >> F NO >> F LANE CA	a <u>ted?</u> Replace the ADAS contro Replace the lane camera MERA UNIT	l unit. Refer to <u>DAS-79, "Removal an</u> unit. Refer to <u>DAS-457, "Removal an</u>	<u>d Installation"</u> . <u>d Installation"</u> .
LANE CAI	MERA UNIT : DTC	Logic	INFOID:00000007911769
		-	
DTC	Trouble diagnosis name	DTC detecting condition	Possible causes

DIC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B01	CAM AIMING INCMP	Camera aiming is not completed	 Lane camera aiming is not ad- justed Lane camera aiming adjustment has been interrupted

DTC CONFIRMATION PROCEDURE

C1B01 CAM AIMING INCMP

< DTC/CIRCUIT DIAGNOSIS >	[LDW & LDP]	
1.PERFORM DTC CONFIRMATION PROCEDURE		
 Start the engine. Perform "All DTC Reading" with CONSULT. Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" ERA". 	of "LANE CAM-	
Is "C1B01" detected as the current malfunction?		
YES >> Refer to <u>DAS-419</u> , "LANE CAMERA UNIT : Diagnosis Procedure". NO >> Refer to <u>GI-53</u> , "Intermittent Incident".		
LANE CAMERA UNIT : Diagnosis Procedure	INFOID:000000007911770	
1.CAMERA AIMING ADJUSTMENT		
 Perform the camera aiming. Refer to <u>DAS-394. "Description"</u>. Erase all self-diagnosis results with CONSULT. Perform "All DTC Reading". Check if the "C1B01" is detected in "Self Diagnostic Result" of "LANE CAMERA". 		
Is "C1B01" detected? YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u> .		

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C1B03 ABNRML TEMP DETECT ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03 (83)	CAM ABNRML TMP DETCT	Temperature around lane camera unit is excessively high	Interior room temperature is exces- sively high

ADAS CONTROL UNIT : Diagnosis Procedure

1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

- 1. Perform "All DTC Reading" with CONSULT.
- 2. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA"

Is "C1B03" detected?

- YES >> Refer to DAS-420, "LANE CAMERA UNIT : DTC Logic".
- NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

- 1. Erase all self-diagnosis results with CONSULT.
- 2. Perform "All DTC Reading".
- 3. Check if the "C1B03" is detected in "Self Diagnostic Result" of "ICC/ADAS"

Is "C1B03" detected?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000007911773

INFOID:000000007911774

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03	ABNRML TEMP DETECT	Temperature around lane camera unit is ex- cessively high	Interior room temperature is exces- sively high

LANE CAMERA UNIT : Diagnosis Procedure

1.COOLING LANE CAMERA UNIT

- 1. Wait for 10 minutes or more to cool the lane camera unit.
- 2. Erase All self-diagnosis results with CONSULT.
- 3. Perform "All DTC Reading".
- 4. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B03" detected?

- YES >> Replace the lane camera unit. Refer to <u>DAS-457</u>, "Removal and Installation".
- NO >> Inspection End.

INFOID:000000007911771

INFOID:000000007911772

U0104 ADAS CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0104 ADAS CAN 1

DTC Logic

INFOID:000000007911775

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DTC DETECTION LOGIC В Possible causes DTC Trouble diagnosis name DTC detecting condition С If lane camera unit detects an error signal that U0104 ADAS CAN CIR 1 is received from ADAS control unit via ITS ADAS control unit communication NOTE: D If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-429. "LANE CAMERA UNIT : DTC Logic". E DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. E 2. Turn the LDP system ON. 3. Perform "All DTC Reading" with CONSULT. Check if the "U0104" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-4 ERA". Is "U0104" detected as the current malfunction? >> Refer to DAS-421, "Diagnosis Procedure". YES Н >> Refer to GI-53, "Intermittent Incident". NO **Diagnosis** Procedure INFOID:000000007911776 1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "LANE CAMERA". J Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-429, "LANE CAMERA UNIT : DTC Logic". NO >> GO TO 2. Κ 2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358, "DTC Index". Μ NO >> Replace the lane camera unit. Refer to DAS-457, "Removal and Installation".

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U0121 VDC CAN 2

DTC Logic

INFOID:000000007911777

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0121" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-211.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0121" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0121" detected as the current malfunction?

- YES >> Refer to DAS-422, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911778

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0121" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0126 STRG SEN CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0126 STRG SEN CAN 1

DTC Logic

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126	STRG SEN CAN CIR1	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor
NOTE: If DTC "U0126 "ADAS CONTE	5" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-429</u>

DTC CONFIRMATION PROCEDURE

- 1. Start the engine. E 2. Turn the LDP system ON. 3. Perform "All DTC Reading" with CONSULT. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-Δ ERA". Is "U0126" detected as the current malfunction? >> Refer to DAS-423, "Diagnosis Procedure". YES Н >> Refer to GI-53, "Intermittent Incident". NO **Diagnosis** Procedure INFOID:000000007911780 Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "LANE CAMERA". J Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-429, "LANE CAMERA UNIT : DTC Logic". >> GO TO 2. NO Κ 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-358, "DTC Index". Μ NO >> Replace the lane camera unit. Refer to DAS-457, "Removal and Installation".
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[LDW & LDP]

INFOID:000000007911779

1.PERFORM DTC CONFIRMATION PROCEDURE

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U0401 ECM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0401 ECM CAN 1

DTC Logic

INFOID:000000007911781

[LDW & LDP]

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

- YES >> Refer to DAS-424, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911782

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429</u>, "ADAS CONTROL UNIT : <u>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-108, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0402 TCM CAN 1

DTC detecting condition

< DTC/CIRCUIT DIAGNOSIS >

U0402 TCM CAN 1

DTC DETECTION LOGIC

Trouble diagnosis

name

DTC Logic

DTC

(On board dis-

play)

U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communi- cation	ТСМ
NOTE: If DTC "U0402 "ADAS CONTE	2" is detected alor ROL UNIT : DTC L	ng with DTC "U1000", first diagnose th ogic".	ne DTC "U1000". Refer to <u>DAS-429.</u>
DTC CONFIR 1.PERFORM	MATION PROCE	EDURE	
 Start the e Turn the L Perform "A Check if th Is "U0402" dete YES >> Re NO >> Re 	ngine. DP system ON. Il DTC Reading" v e "U0402" is detec ected as the currer fer to <u>DAS-425, "I</u> fer to <u>GI-53, "Inter</u>	vith CONSULT. Sted as the current malfunction in "Self E <u>nt malfunction?</u> Diagnosis Procedure". <u>mittent Incident"</u> .	Diagnostic Result" of "ICC/ADAS".
Diagnosis F	Procedure		INFOID:00000007911784
1.CHECK SE	LF-DIAGNOSIS R	ESULTS	
Check if "U100 Is <u>"U1000" dete</u> YES >> Pe Re NO >> GO 2. CHECK TC	0" is detected othe <u>ected?</u> ofform the CAN co offer to <u>DAS-429, "/</u> D TO 2. M SELF-DIAGNOS	er than "U0402" in "Self Diagnostic Resummunication system inspection. Repair MAS CONTROL UNIT : DTC Logic". SIS RESULTS	ult" of "ICC/ADAS". r or replace the malfunctioning parts.
Check if any D	TC is detected in "	Self Diagnostic Result" of "TRANSMISS	SION".
YES >> Pe <u>IN</u> NO >> Re	rform diagnosis or 1 <u>-55, "DTC Index"</u> . place the ADAS c	n the detected DTC and repair or repla ontrol unit. Refer to <u>DAS-79, "Removal</u>	ice the malfunctioning parts. Refer to and Installation".

DAS-425

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INFOID:000000007911783

Possible causes

U0405 ADAS CAN 2

INFOID:000000007911785

DTC Logic

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0405	ADAS CAN CIR 2	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U0405" detected as the current malfunction?

- YES >> Refer to <u>DAS-426, "Diagnosis Procedure"</u>.
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911786

1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429</u>, "LANE CAMERA UNIT : <u>DTC Logic</u>".
- NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-358, "DTC Index"</u>.
- NO >> Replace the lane camera unit. Refer to <u>DAS-457</u>, "Removal and Installation".

U0415 VDC CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0415 VDC CAN 1

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	С
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)	D
NOTE: If 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 <u>DAS-429.</u>	E
DTC CONFIF	RMATION PROCED	URE		
1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE		F
 Start the e Turn the L Perform "A Check if the 	engine. DP system ON. All DTC Reading" with he "U0415" is detected	CONSULT. d as the current malfunction in "Self Dia	ignostic Result" of "ICC/ADAS".	G
ls "U0415" det	tected as the current r	nalfunction?		
YES >> R NO >> R	efer to <u>DAS-427, "Dia</u> efer to GI-53, "Intermi	<u>gnosis Procedure"</u> . ttent Incident".		Н
Diagnosis I	Procedure		INEC/ID:00000007011728	
1.CHECK SE	ELF-DIAGNOSIS RES	ULTS		I
Check if "U10	00" is detected other t	han "U0415" in "Self Diagnostic Result"	of "ICC/ADAS".	J
<u>ls "U1000" det</u>	tected?			
YES >> Po R NO >> G	erform the CAN comn efer to <u>DAS-429, "AD/</u> O TO 2.	nunication system inspection. Repair o <u>AS CONTROL UNIT : DTC Logic"</u> .	r replace the malfunctioning parts.	K
2.CHECK AE	ACTUATOR AND E	ELECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "ABS".		L
Is any DTC de	etected?			
YES >> Po	erform diagnosis on tl RC-45, "DTC Index".	ne detected DTC and repair or replace	the malfunctioning parts. Refer to	M
NO >> R	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal an</u>	<u>d Installation"</u> .	
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[LDW & LDP]

Revision: March 2012

U0428 STRG SEN CAN 2

DTC Logic

INFOID:000000007911789

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428	STRG SEN CAN CIR2	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"LANE CAMERA UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U0428" detected as the current malfunction?

- YES >> Refer to <u>DAS-428</u>, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911790

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429</u>, "LANE CAMERA UNIT : DTC Logic".
- NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-358, "DTC Index"</u>.
- NO >> Replace the lane camera unit. Refer to <u>DAS-457</u>, "Removal and Installation".

< DTC/CIRCU	JIT DIAGNOSIS >		[LDW & LDP]	
U1000 CA	AN COMM CIRC	CUIT		^
ADAS CO	NTROL UNIT			A
ADAS COM	NTROL UNIT : De	escription	INFOID:000000007911791	В
CAN COMM CAN (Controll tiplex commu- vehicle is equ other control with 2 commu- Each control CAN commun- tion Signal Ch	UNICATION ler Area Network) is a sinication line with high ipped with many elect units during operation inication lines (CAN-H unit transmits/receives nication signal chart. Finart".	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 LAN-39, "CAN COMMUNICATIO	blications. It is an on-vehicle mul- nt error detection ability. Modern shares information and links with ion, control units are connected on transmission with less wiring. ata only. <u>N SYSTEM : CAN Communica-</u>	C D
 ITS COMMU ITS commu large quanti ITS commu 	NICATION nication is a multiplex ties of data at high spe nication 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.	F
ADAS CON	NTROL UNIT : D	C Logic	INFOID:000000007911792	
DTC DETEC	TION LOGIC			G
DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes	Η
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiv- ing CAN communication signal or ITS communi- cation signal for 2 seconds or more	CAN communication systemITS communication system	Ι
NOTE: If "U1000" is c ADAS CON 1.PERFORM	detected, first diagnose NTROL UNIT:Dia 1 THE SELF-DIAGNO3	e the CAN communication system. agnosis Procedure SIS	INFCID:000000007911793	J
1. Turn the i2. Turn the l3. Perform "4. Check if tIs "U1000" de	gnition switch ON. DP system ON, and t All DTC Reading" with he "U1000" is detected tected as the current r	hen wait for 30 seconds or more. CONSULT. d as the current malfunction in "Self Diagr nalfunction?	nostic Result" of "ICC/ADAS".	L
NO >> R	efer to <u>GI-53, "Intermi</u> MERA UNIT	ttent Incident".		Ν
LANE CAN	IERA UNIT : Des	cription	INFOID:00000007911794	
 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. 				DAS P
DTC DETEC	TION LOGIC			

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000007911796

[LDW & LDP]

1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.

2. Turn the LDP system ON, and then wait for 2 seconds or more.

3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U1000" detected as the current malfunction?

YES >> Refer to LAN-22, "Trouble Diagnosis Flow Chart".

NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

U1010 CONTROL UNIT (CAN)

<u>< DTC/CIRCUIT DIAGNOSIS ></u> U1010 CONTROL UNIT (CAN) ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

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

DTC detecting condition

ADAS CONTROL UNIT : DTC Logic

Trouble diagnosis name

DTC DETECTION LOGIC

DTC (On board

U1010 (110) CONTROL UNIT (CAN) If ADAS control unit detects malfunction by CAN controller initial diagnosis ADAS control unit ADAS CONTROL UNIT : Diagnosis Procedure APACONSCREDURE APACONSCREDURE	U1010 (110) CONTROL UNIT (CAN) If ADAS control unit detects malfunction by CAN controller initial diagnosis ADAS control unit ADAS CONTROL UNIT : Diagnosis Procedure	display)			
ADAS CONTROL UNIT : Diagnosis Procedure Image: Conservation of the system ON. 1. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". s"U1010" detected as the current malfunction? YES >> Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation". NO >> INSPECTION END ANE CAMERA UNIT Description CAN controller controls the communication of ITS communication signal and the error detection. ANE CAMERA UNIT : DTC Logic DTC Trouble diagnosis name DTC detecting condition U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit OTT Touble diagnosis name DTC detecting condition U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit Controller initial diagnosis ANE CAMERA UNIT : Diagnosis Procedure APOR CONSULT. . CANE CAMERA UNIT : Diagnosis Procedure APOR CONSULT. . Perform "All DTC Reading" with CONSULT. . . Perform "All DTC Reading" with CONSULT. . . Perform "All DTC Reading" with CONSULT. .	ADAS CONTROL UNIT : Diagnosis Procedure 1. PERFORM DTC CONFIRMATION PROCEDURE 1. Turn the LDP system ON. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 5. 'U1010' detected as the current malfunction? YES >> Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation". NO >> INSPECTION END ANE CAMERA UNIT : Description CAN controller controls the communication of ITS communication signal and the error detection. LANE CAMERA UNIT : DTC Logic CAN controller controls the communication of ITS communication signal and the error detection. LANE CAMERA UNIT : DTC Logic COTC DETECTION LOGIC DTC Trouble diagnosis name DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure ANE CAMERA UNIT : Diagnosis Procedure APPERORM DTC CONFIRMATION PROCEDURE 1. Turn the LDP system ON. 2. PERFORM DTC CONFIRMATION PROCEDURE 1. Turn the LDP system ON. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA" 1. Setting and the enderman unit Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END	U1010 (110)	CONTROL UNIT (CAN)	If ADAS control unit detects malfunction by CAN controller initial diagnosis	ADAS control unit
	1.PERFORM DTC CONFIRMATION PROCEDURE 1. Turn the LDP system ON. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". s"U1010" detected as the current malfunction? YES >> Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation". NO >> INSPECTION END ANE CAMERA UNIT	ADAS CON	NTROL UNIT : Dia	agnosis Procedure	INFOID:00000007911799
I. Turn the LDP system ON. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 5. "U1010" detected as the current malfunction? YES >> Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation". NO >> INSPECTION END _ANE CAMERA UNIT Description _ANE CAMERA UNIT : Description weat accommunication of ITS communication signal and the error detection. _ANE CAMERA UNIT : DTC Logic weat accommunication of ITS communication by CAN _ANE CAMERA UNIT : DTC Logic weat accommunication of ITS communication by CAN _ANE CAMERA UNIT : DTC Logic weat accommunication by CAN _DTC Trouble diagnosis name DTC detecting condition Possible causes _U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit _ANE CAMERA UNIT : Diagnosis Procedure weat accommon accommunication of "Lane camera unit" ANE accommunication of "Lane camera" _U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit _ANE CAMERA UNIT : Diagnosis Procedure weat accommunication of "Lane camera" Lane camera" _PERFORM DTC CONFIRMATION PRO	I. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction? YES >> Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation". NO >> INSPECTION END ANE CAMERA UNIT Description ANE CAMERA UNIT : Description wereacconcentration of ITS communication signal and the error detection. ANE CAMERA UNIT : DTC Logic wereacconcentration DTC Trouble diagnosis name DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN controller controls the CONFIRMATION PROCEDURE Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure wereacconcentration Perform "All DTC Confirmation Procedure ANE CAMERA UNIT : Diagnosis Procedure wereacconcentration by CAN controller initial diagnosis Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure wereacconcentration Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure wereacconcentration Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure wereacconcentration Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure wereacconcentration Lane camera unit Perform "All D	1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE	
ANE CAMERA UNIT INFOIL CONCENTION ANE CAMERA UNIT : Description INFOIL CONCENTION CAN controller controls the communication of ITS communication signal and the error detection. INFOIL CONCENTION ANE CAMERA UNIT : DTC Logic INFOIL CONCENTION OTC DETECTION LOGIC Inflane camera unit detects malfunction by CAN controller initial diagnosis U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN controller initial diagnosis ANE CAMERA UNIT : Diagnosis Procedure IPERFORM DTC CONFIRMATION PROCEDURE I. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. B. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s: "U1010" detected as the current malfunction? YES >> Replace the lane camera unit. Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END	ANE CAMERA UNIT IMPOLE CONSTRUCTION CAN controller controls the communication of ITS communication signal and the error detection. CAN controller controls the communication of ITS communication signal and the error detection. CANE CAMERA UNIT : DTC Logic DTC DETECTION LOGIC DTC Trouble diagnosis name DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure IMPOLE CONSECUTION CONTROL UNIT : Diagnosis Procedure I.PERFORM DTC CONFIRMATION PROCEDURE IMPOLE CONSULT. I. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. S. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s "U1010" detected as the current malfunction? YES >> Replace the lane camera unit. Refer to DAS-457, "Removal and Installation". NO >> INSPECTION END	I. Turn the L 2. Perform ", 3. Check if the set of the	DP system ON. All DTC Reading" with he "U1010" is detected tected as the current r eplace the ADAS cont ISPECTION END	CONSULT. d as the current malfunction in "Self Dia <u>nalfunction?</u> trol unit. Refer to <u>DAS-79, "Removal an</u>	gnostic Result" of "ICC/ADAS". d Installation".
ANE CAMERA UNIT : Description INFOIL DEGREGATION CONTROL UNIT : DTC Logic CAN controller controls the communication of ITS communication signal and the error detection. INFOIL DETECTION LOGIC DTC Trouble diagnosis name DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure INFOIL DETECTION LOGIC ANE CAMERA UNIT : Diagnosis Procedure INFOIL DETECTION LOGIC I.PERFORM DTC CONFIRMATION PROCEDURE Information of the common of the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s "U1010" detected as the current malfunction? YES YES >> Replace the lane camera unit. Refer to DAS-457, "Removal and Installation". NO >> INSPECTION END	ANE CAMERA UNIT : Description INFORMATION PROCEDURE CAN controller controls the communication of ITS communication signal and the error detection. INFORMATION PROCEDURE ANE CAMERA UNIT : DTC Logic INFORMATION PROCEDURE DTC Trouble diagnosis name DTC detecting condition Possible causes Inflane camera unit detects malfunction by CAN Lane camera unit OUTO CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure INFORMATION PROCEDURE 1. PERFORM DTC CONFIRMATION PROCEDURE INFORMATION PROCEDURE 1. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s "U1010" detected as the current malfunction? YES >> Replace the lane camera unit. Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END		IERA UNIT		
CAN controller controls the communication of ITS communication signal and the error detection. ANE CAMERA UNIT : DTC Logic DTC DETECTION LOGIC DTC Trouble diagnosis name DTC detecting condition U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN controller initial diagnosis Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure MFORE.000000000000000000000000000000000000	CAN controller controls the communication of ITS communication signal and the error detection. ANE CAMERA UNIT : DTC Logic DTC DETECTION LOGIC DTC Trouble diagnosis name DTC detecting condition U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure NFORCOMPOSITION ANE CAMERA UNIT : Diagnosis Procedure NFORCOMPOSITION PERFORM DTC CONFIRMATION PROCEDURE Image: Control of the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". S "U1010" detected as the current malfunction? YES YES >> Replace the lane camera unit. Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END		IERA UNIT : Des	cription	INFOID:00000007911800
ANE CAMERA UNIT : DTC Logic INFOLD 00000007911801 DTC DETECTION LOGIC DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure INFOLD 00000007911802 ANE CAMERA UNIT : Diagnosis Procedure INFOLD 000000007911802 PERFORM DTC CONFIRMATION PROCEDURE INFOLD 000000000000000000000000000000000000	ANE CAMERA UNIT : DTC Logic INFORMATION LOGIC DTC Trouble diagnosis name DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure Information of the controller initial diagnosis ANE CONFIRMATION PROCEDURE Information of the controller in the LDP system ON. PERFORM DTC CONFIRMATION PROCEDURE Information of "LANE CAMERA". Substrain the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". Substrain the substrain malfunction? YES >> Replace the lane camera unit. Refer to DAS-457, "Removal and Installation". NO >> INSPECTION END	CAN controlle	r controls the commur	nication of ITS communication signal an	d the error detection.
DTC Trouble diagnosis name DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN controller initial diagnosis Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure INFORMERA UNIT : Diagnosis Procedure INFORMOTE CONFIRMATION PROCEDURE 1. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. 2. Perform "All DTC Reading" with CONSULT. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s "U1010" detected as the current malfunction? YES >> Replace the lane camera unit. Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END	DTC DETECTION LOGIC DTC Trouble diagnosis name DTC detecting condition Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN Lane camera unit LANE CAMERA UNIT : Diagnosis Procedure Information procedure I.PERFORM DTC CONFIRMATION PROCEDURE Information procedure 1. Turn the LDP system ON. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". S "U1010" detected as the current malfunction? YES YES >> Replace the lane camera unit. Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END	ANE CAM	IERA UNIT : DTO	CLogic	INFOID:00000007911801
Dic House diagnosis name Dic detecting condition Possible cadees U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN controller initial diagnosis Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure Import of the controller initial diagnosis Import of the camera unit 1.PERFORM DTC CONFIRMATION PROCEDURE Import of the controller initial diagnosis Import of the camera unit 1. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. Import of the controller of the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s "U1010" detected as the current malfunction? YES >> Replace the lane camera unit. Refer to DAS-457, "Removal and Installation". YES >> INSPECTION END >> INSPECTION END	Dic House diagnosis name Dic detecting controller Possible causes U1010 CONTROL UNIT (CAN) If lane camera unit detects malfunction by CAN controller initial diagnosis Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure INFOLD-00000007911802 1. PERFORM DTC CONFIRMATION PROCEDURE INFOLD-00000007911802 1. Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s "U1010" detected as the current malfunction? YES >> Replace the lane camera unit. Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END		TION LOGIC	DTC detecting condition	Possible sources
U1010 CONTROL UNIT (CAN) Infance camera unit controller initial diagnosis Lane camera unit ANE CAMERA UNIT : Diagnosis Procedure INFORMATION PROCEDURE 1. PERFORM DTC CONFIRMATION PROCEDURE 1. 1. Turn the LDP system ON. 2. 2. Perform "All DTC Reading" with CONSULT. 3. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". s "U1010" detected as the current malfunction? YES >> Replace the lane camera unit. Refer to DAS-457. "Removal and Installation". NO >> INSPECTION END	U1010 CONTROL UNIT (CAN) Interegation during controller initial diagnosis Lane camera unit LANE CAMERA UNIT : Diagnosis Procedure Information of the controller initial diagnosis Information of the controller initial diagnosis 1. PERFORM DTC CONFIRMATION PROCEDURE Information of the controller initial diagnosis Information of the controller initial diagnosis 1. PERFORM DTC CONFIRMATION PROCEDURE Information of the controller initial diagnosis Information of the controller initial diagnosis 1. Turn the LDP system ON. Information of the controller initial diagnosis Information of the controller initial diagnosis 2. Perform "All DTC Reading" with CONSULT. Information of the controller initial diagnosis Information of the controller initial diagnosis 3. Check if the "U1010" is detected as the current malfunction? Information of the control of t	DIC		If lane camera unit detects malfunction by CAN	
ANE CAMERA UNIT : Diagnosis Procedure PERFORM DTC CONFIRMATION PROCEDURE Perform "All DTC Reading" with CONSULT. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA". <u>s "U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u> . NO >> INSPECTION END	ANE CAMERA UNIT : Diagnosis Procedure 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Turn the LDP system ON. 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA". <u>s "U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457. "Removal and Installation"</u> . NO >> INSPECTION END	U1010	CONTROL UNIT (CAN)	controller initial diagnosis	Lane camera unit
 PERFORM DTC CONFIRMATION PROCEDURE Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAMERA". <u>s "U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u>. NO >> INSPECTION END 	 PERFORM DTC CONFIRMATION PROCEDURE Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA". <u>s "U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457. "Removal and Installation"</u>. NO >> INSPECTION END 		IERA UNIT : Diag	gnosis Procedure	INFOID:000000007911802
 Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA". <u>s "U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u>. NO >> INSPECTION END 	 Turn the LDP system ON. Perform "All DTC Reading" with CONSULT. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA". <u>s "U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457. "Removal and Installation"</u>. NO >> INSPECTION END 	1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE	
<u>s "U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u> . NO >> INSPECTION END	s <u>"U1010" detected as the current malfunction?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u> . NO >> INSPECTION END	 Turn the L Perform ", Check if t ERA". 	DP system ON. All DTC Reading" with he "U1010" is detecte	CONSULT. ed as the current malfunction in "Self I	Diagnostic Result" of "LANE CAM-
YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u> . NO >> INSPECTION END	 YES >> Replace the lane camera unit. Refer to <u>DAS-457, "Removal and Installation"</u>. NO >> INSPECTION END 	<u>s "U1010" det</u>	tected as the current r	nalfunction?	
		YES >> R NO >> IN	eplace the lane came ISPECTION END	a unit. Refer to <u>DAS-457, "Removal an</u>	d Installation".

[LDW & LDP]

INFOID:000000007911797

Possible causes

В

С

INFOID:000000007911798

D

U150B ECM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150B ECM CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U150B" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U150B" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150B" detected as the current malfunction?

- YES >> Refer to DAS-432, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911804

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150B" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "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".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>EC-108. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

INFOID:000000007911803
U150C VDC CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150C VDC CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	2
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit))
NOTE: If DTC "U1500 "ADAS CONTI	C" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the I <u>c"</u> .	DTC "U1000". Refer to <u>DAS-429.</u>	_
DTC CONFIF	RMATION PROCED	URE		
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	F	-
 Start the e Turn the L Perform "A Check if the 	ngine. DP system ON. All DTC Reading" with ne "U150C" is detected	CONSULT. d as the current malfunction in "Self Dia	gnostic Result" of "ICC/ADAS".	3
Is "U150C" det	tected as the current r	malfunction?		
YES >> Re NO >> Re	efer to <u>DAS-433, "Diag</u> efer to GI-53, "Intermit	<u>gnosis Procedure"</u> . tent Incident"	ŀ	1
Diagnosis F	Procedure			
	loccuire		INFOID:00000007911806	
1. CHECK SE	LF-DIAGNOSIS RES	ULTS		
Check if "U100	00" is detected other th	nan "U150C" in "Self Diagnostic Result"	of "ICC/ADAS".	J
<u>Is "U1000" det</u>	ected?			
YES >> Pe Re	efform the CAN comme efer to DAS-429, "ADA	AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.	_
NO >> G	O TO 2.		T	
2. СНЕСК АВ	S ACTUATOR AND E	ELECTRIC UNIT (CONTROL UNIT) SEL	F-DIAGNOSIS RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "ABS".	L	-
Is any DTC de	tected?			
YES >> Pe	erform diagnosis on th	ne detected DTC and repair or replace	the malfunctioning parts. Refer to \mathbb{N}	Л
NO >> Re	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".	
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Revision: March 2012

[LDW & LDP]

INFOID:000000007911805

А

В

U150D TCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150D TCM CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	ТСМ

NOTE:

If DTC "U150D" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U150D" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150D" detected as the current malfunction?

- YES >> Refer to DAS-434, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911808

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150D" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429</u>, "ADAS CONTROL UNIT : <u>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-55, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

U150E BCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150E BCM CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	BCM
NOTE: f DTC "U150I 'ADAS CONTI	E" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-429.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
1. Start the e 2. Turn the L 3. Perform "/	ngine. DP system ON. All DTC Reading" with	CONSULT.	
4. Check if th s "U150E" det	ne "U150E" is detected tected as the current r	d as the current malfunction in "Self Dia nalfunction?	gnostic Result" of "ICC/ADAS".
YES >> Re NO >> Re	efer to <u>DAS-435, "Diag</u> efer to <u>GI-53, "Intermit</u>	<u>gnosis Procedure"</u> . <u>ttent Incident"</u> .	
Diagnosis F	Procedure		INFOID:00000007911810
1. CHECK SE	LF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other th	nan "U150E" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>s "U1000" det</u>	ected?		
YES >> Pe Re	erform the CAN comn efer to <u>DAS-429, "ADA</u>	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.
NO >> G	O TO 2.		
2.CHECK BC	M SELF-DIAGNOSIS	RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "BCM".	
<u>s any DTC de</u>	tected?		
YES >> Pe	erform diagnosis on th CS-49. "DTC Index".	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> R	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".

INFOID:000000007911809

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< DTC/CIRCUIT DIAGNOSIS >

U1500 CAM CAN 2

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	
U1500 (145)	CAM CAN CIRC 2	ADAS control unit detects an error signal that is received from lane camera unit via ITS com- munication	Lane camera unit	

NOTE:

If DTC "U1500" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>. "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1500" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1500" detected as the current malfunction?

- YES >> Refer to DAS-436, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53. "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911812

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1500" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-365, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1501 CAM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U1501 CAM CAN 1

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1501 (145)	CAM CAN CIRC 1	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit
NOTE: If DTC "U150 "ADAS CONT	1" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the I <u>c"</u> .	DTC "U1000". Refer to <u>DAS-429.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
 Start the e Turn the L Perform "/ Check if the the start of the start	engine. .DP system ON. All DTC Reading" with ne "U1501" is detected	CONSULT. I as the current malfunction in "Self Diag	gnostic Result" of "ICC/ADAS".
<u>ls "U1501" det</u>	ected as the current n	nalfunction?	-
YES >> Re NO >> Re	efer to <u>DAS-437, "Diac</u> efer to <u>GI-53, "Intermit</u>	<u>gnosis Procedure"</u> . <u>ttent Incident"</u> .	
Diagnosis F	Procedure		INFOID:00000007911814
1 .CHECK SE	ELF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other th	nan "U1501" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" det</u>	ected?		
YES >> Pe	erform the CAN comn	nunication system inspection. Repair or	replace the malfunctioning parts.
NO >> G	0 TO 2.	AS CONTROL UNIT . DTC LOGIC.	
2.CHECK LA	NE CAMERA UNIT S	ELF-DIAGNOSIS RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "LANE CAMERA	".
<u>Is any DTC de</u>	tected?		
YES >> Pe D	erform diagnosis on th <u>AS-365, "DTC Index"</u> .	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> R	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".

Ν

Ρ

[LDW & LDP]

INFOID:000000007911813

А

В

< DTC/CIRCUIT DIAGNOSIS >

U1512 HVAC CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1512 (162)	HVAC CAN CIRC 3	ADAS control unit detects an error signal that is received from A/C auto amp. via CAN communication	A/C auto amp.

NOTE:

If DTC "U1512" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1512" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1512" detected as the current malfunction?

- YES >> Refer to <u>DAS-438</u>, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911816

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1512" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK A/C AUTO AMP. SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>HAC-44, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1513 METER CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U1513 METER CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	С
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter	D
NOTE: If DTC "U151; "ADAS CONT	3" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the I <u>c"</u> .	DTC "U1000". Refer to <u>CCS-159.</u>	E
DTC CONFIF	RMATION PROCED	URE		
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE		F
1. Start the e	engine.			
 Turn the L Perform "A Check if the check of /li>	DP system ON. All DTC Reading" with ne "U1513" is detected	CONSULT. I as the current malfunction in "Self Diag	gnostic Result" of "ICC/ADAS".	G
<u>ls "U1513" det</u>	ected as the current n	nalfunction?	-	
YES >> Re	efer to <u>DAS-439, "Dia</u>	<u>anosis Procedure"</u> .		Н
NO >> Re	efer to <u>GI-53, "Intermit</u>	tent Incident".		
Diagnosis F	Procedure		INFOID:00000007911818	
1.CHECK SE	LF-DIAGNOSIS RES	ULTS		
Check if "U100	00" is detected other the	nan "U1513" in "Self Diagnostic Result"	of "ICC/ADAS".	J
<u>Is "U1000" det</u>	ected?			
YES >> Pe	erform the CAN comm	nunication system inspection. Repair or	replace the malfunctioning parts.	
NO >> G	0 TO 2.	to control ontri Dio Logic.		K
2.снеск сс	MBINATION METER	SELF-DIAGNOSIS RESULTS		
Check if any D	TC is detected in "Se	f Diagnostic Result" of "METER/M&A".		L
Is any DTC de	tected?			
YES >> Pe	erform diagnosis on th	ne detected DTC and repair or replace	the malfunctioning parts. Refer to	М
NO >> Re	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".	
				N
				1.1

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[LDW & LDP]

INFOID:000000007911817

А

В

< DTC/CIRCUIT DIAGNOSIS >

U1516 CAM CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1516 (166)	CAM CAN CIRC 3	ADAS control unit detects an error signal that is received from lane camera unit via ITS com- munication	Lane camera unit

NOTE:

If DTC "U1516" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1516" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1516" detected as the current malfunction?

- YES >> Refer to DAS-440, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911820

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1516" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-365, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

< DTC/CIR(POWE	R SUPPL	Y AND GF	ROUND CIRCUIT	[LDW & LDP]	
POWER	SUPPLY	Y AND	GROUNE		Т		
ADAS CO	ONTROL	UNIT					А
ADAS CC	NTROL (JNIT : D	iagnosis F	Procedure		INFOID:000000007911823	В
Regarding V	Viring Diagra	am informa	tion, refer to	<u>DAS-366, "W</u>	iring Diagram".		С
1.снески	ADAS CONT		POWER SU	JPPLY CIRCL	JIT		
Check volta	ge between	ADAS con	trol unit harn	ess connecto	r and ground.		D
	Terminal		0		-		_
(+)	(-)	- Condition	Voltage			
ADAS co	ontrol unit	_	Ignition	(Approx.)			
Connector	Terminal	Ground	switch		-		F
B104	16	Cround	UFF	Battery volt-	-		
			ON	age	-		G
Is the inspect YES >> NO >> 2.CHECK/	<u>ction result n</u> GO TO 2. Repair the A ADAS CONT	i <u>ormal?</u> ADAS conti FROL UNIT	ol unit powe	r supply circui CIRCUIT	it.		Η
 Turn the Disconr Check f 	e ignition swi nect the ADA or continuity	tch OFF. S control ι between Α	unit connecto	r. I unit harness	connector and ground.		I
					-		J
Connecto	AS control unit	ninal	Ground	Continuity			
B104		6		Yes	-		Κ
Is the inspect YES >> NO >> LANE CA	Ction result n Inspection E Repair the A MERA U	iormal? End. ADAS conti INIT	ol unit groun	d circuit.	-		L
LANE CA	MERA UI	NIT : Dia	gnosis Pr	ocedure		INFOID:000000007911824	M
Regarding V	Viring Diagra	am informa	tion, refer to	<u>DAS-366, "W</u>	'iring Diagram".		Ν
1.снески	_ANE CAME	RA UNIT I	POWER SUF	PPLY CIRCUI	Т		DAS
Check voltag	ge between	lane came	ra unit harne	ss connector	and ground.		

Ρ

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

	Terminal		Condition	
(+)		(-)	Condition	Voltage
Lane ca	mera unit		Ignition	(Approx.)
Connector	Terminal		switch	
		Ground	OFF	0 V
R5	7		ON	Battery volt- age

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the lane camera unit power supply circuit.

2.check lane camera unit ground circuit

- 1. Turn the ignition switch OFF.
- 2. Disconnect the lane camera unit connector.

3. Check for continuity between lane camera unit harness connector and ground.

Lane ca	mera unit		Continuity
Connector	Terminal	Ground	Continuity
D5	1	Ground	Vec
	5		165

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair the lane camera unit ground circuit.

		WARN	ING SYS	STEMS SV		
< DTC/CIRC	UIT DIAGN	IOSIS >			[LDW & LDP]	
WARNIN	G SYST	EMS SW	/ITCH (CIRCUIT		
Compone	nt Functio	n Check				
					INF-OID:00000000/911825	
1. CHECK V	VARNING S	YSTEMS SV	VITCH INP	UT SIGNAL		
1. Turn the	ignition swit	tch ON.				
2. Select th 3. With one	e DATA MO	NITOR item	"WARN S	YS SW″ of "IC check the m	C/ADAS" with CONSULT.	
o. marope		arning oyoto				
Monitor item		Condition		Monitor status		
WARN SYS	Warning syst	tems switch is p	pressed	On		
SW Warning systems switch is not pressed			not pressed	OFF		
Is the inspec	tion result n	ormal?				
YES >> \ NO >> F	Warning sys Refer to <u>DAS</u>	tems switch S-443, "Diag	circuit is no nosis Proc	ormal. <u>edure"</u> .		
Diagnosis Procedure			INFOID:000000007911826			
Ũ						
			. .			
Regarding W	/iring Diagra	im informatic	on, refer to	<u>DAS-366, "W</u>	<u>ring Diagram"</u> .	
1. CHECK V	VARNING S	YSTEMS SV	VITCH SIG	SNAL INPUT		
1. Turn the	ignition swit	tch ON.				
2. Check vo	oltage betwe	een ADAS co	ontrol unit h	narness conn	ctor and ground.	
	Torminala					
(+	-)	(_)	Condition			
) ntrol unit	(-)	Volt	Warning	Voltage	
			systems	(Αρριολ.)		
Connector	Terminal	Ground	switch			
B104	1		Pressed	0 V		
	-		Released	12 V		
Is the inspec	tion result n	ormal?				
	Replace the	ADAS contr	ol unit. Ref	er to <u>DAS-79</u>	"Removal and Installation".	
YES >> I						
YES >> I NO >> (2 outpower			VIICH			
NO >> 0 2. CHECK V	VARNING S	YSTEMS SV				
$\frac{\text{YES}}{\text{NO}} \Rightarrow 0$ $\frac{2.\text{CHECK V}}{1. \text{ Turn ignit}}$	VARNING S	YSTEMS SV OFF.				
NO >> (2.CHECK V 1. Turn igni 2. Remove 3. Check w	VARNING S ition switch (warning system varning system	YSTEMS SV OFF. stems switch	Refer to DA	\S-444 "Com	onent Inspection"	
NO >> 0 2.CHECK V 1. Turn igni 2. Remove 3. Check w Is the inspec	VARNING S ition switch (warning system rarning system tion result no	YSTEMS SV OFF. stems switch ems switch. I ormal?	Refer to <u>DA</u>	\S-444, "Com	oonent Inspection".	
YES >> F NO >> (2.CHECK V 1. Turn igni 2. Remove 3. Check w Is the inspec YES >> (VARNING S ition switch (warning syste rarning syste tion result no GO TO 3.	YSTEMS SV OFF. stems switch ems switch. I <u>ormal?</u>	Refer to <u>DA</u>	\S-444, "Com	onent Inspection".	
YES >> I NO >> 0 2.CHECK V 1. Turn igni 2. Remove 3. Check w Is the inspec YES >> 0 NO >> F	VARNING S ition switch (warning syste arning syste tion result ne GO TO 3. Replace the	YSTEMS SV OFF. stems switch ems switch. I ormal? warning sys	Refer to <u>DA</u>	\ <u>S-444, "Com</u> h. Refer to <u>D</u>	<u>ponent Inspection"</u> . <u>S-313, "Removal and Installation"</u> .	
$\begin{array}{rrrr} YES & >> F\\ NO & >> (\\ \hline 2.CHECK V \\ \hline 1. & Turn igni \\ 2. & Remove \\ 3. & Check w \\ \hline 3. & Check w \\ \hline Is the inspec \\ YES & >> (\\ NO & >> F \\ \hline 3.CHECK V \end{array}$	VARNING S ition switch (warning syste rarning syste tion result no GO TO 3. Replace the VARNING S	YSTEMS SV OFF. stems switch ems switch. I ormal? warning sys YSTEMS SV	Refer to <u>DA</u> tems switc VITCH GR	AS-444, "Com h. Refer to <u>D</u> OUND CIRCI	<u>conent Inspection"</u> . <u>S-313, "Removal and Installation"</u> . IT	
$\begin{array}{rrr} YES & >> F\\ NO & >> (2.CHECK V)\\ \hline 1. & Turn igni\\ 2. & Remove\\ 3. & Check w\\ \hline Is the inspect\\ YES & >> (2.CHECK V)\\ \hline 0.CHECK V\\ \hline Check contin$	VARNING S ition switch (warning syste tion result n GO TO 3. Replace the VARNING S	YSTEMS SV OFF. stems switch. ormal? warning sys YSTEMS SV n warning sys	tems switc	AS-444, "Com h. Refer to <u>D</u> / OUND CIRCI	<u>Sonent Inspection"</u> . <u>S-313, "Removal and Installation"</u> . IT	

Warning systems switch			Continuity
Connector	Connector Terminal		Continuity
M126	2	-	Yes
		<u> </u>	·

Is the inspection result normal?

YES >> GO TO 4.

WARNING SYSTEMS SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair harness or connector.

4. CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

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

ADAS control unit		Warning systems switch		Continuity
Connector	Terminal	Connector Terminal		Continuity
B104	1	M126	1	Yes

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5. CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR SHORT

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

ADAS control unit			Continuity
Connector	Terminal	Ground	Continuity
B104	1		No

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000007911827

1.CHECK WARNING SYSTEMS SWITCH

Check continuity of warning systems switch.

Terr	ninal	Condition	Continuity
1	2	When warning systems switch is pressed	Yes
-	1 2	When warning systems switch is released	No

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace warning systems switch.

	W	/ARNING	SYSTEM	MS ON IN	DICATOR CIRCUIT	
< DTC/CIRC	UIT DIAGN	IOSIS >				[LDW & LDP]
WARNIN	G SYST	EMS ON		ATOR CIF	RCUIT	
Compone	nt Functio	on Check				INFOID:000000007911828
1.снеск и	VARNING S	YSTEMS OF		DR		
1. Turn the	ignition swi	tch ON.				
 Select th With operation 	ne active tes erating the te	t item "WARI est item, che	NING SYST	FEM IND" of ' ation.	ICC/ADAS" with CONSULT.	
On	: Warning	systems ON	l indicator	illuminates	-	
Off	: warning	systems ON	Indicator	is turned Of	·F	
	tion result n	ormal? nd				
NO >>	Refer to <u>DAS</u>	<u>5-445, "Diag</u>	nosis Proce	edure".		
Diagnosis	Procedu	re				INFOID:000000007911829
D	//// D'				des Disses I	
Regarding V	viring Diagra	m informatio	on, reter to [<u>JAS-366, "W</u>	ring Diagram".	
4						
1. CHECK V	VARNING O	N INDICATO		SUPPLI CI	RCUIT	
1. CHECK V	VARNING O	N INDICATO			RCUIT	
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign	VARNING O ition switch (ect warning ition switch (N INDICATO OFF. systems swi ON.	tch connect	tor.	RCUIT	
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v	VARNING O ition switch (ect warning ition switch (oltage betwe	N INDICATO OFF. systems swi ON. een warning	tch connect	tor.	connector and ground.	
1. Turn ign 2. Disconn 3. Turn ign 4. Check v	VARNING O ition switch (ect warning ition switch (oltage betwe	N INDICATO OFF. systems swi ON. een warning	tch connect	tor.	connector and ground.	
1. Turn ign 2. Disconn 3. Turn ign 4. Check v	VARNING O ition switch (ect warning ition switch (oltage betwee Termin	N INDICATO OFF. systems swi ON. een warning	tch connect	vitch harness	COIT	
1. Turn ign 2. Disconn 3. Turn ign 4. Check v	VARNING O ition switch (ect warning ition switch (oltage between Termin (+)	N INDICATO OFF. systems swi ON. een warning nals	tch connect systems sw	vitch harness	connector and ground.	
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switch	N INDICATO OFF. systems swir ON. een warning hals	tch connect systems sw	vitch harness Voltage (Approx.)	connector and ground.	
1. CHECK N 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switch	N INDICATO OFF. systems swi ON. een warning hal G	tch connect systems sw (-)	vitch harness Voltage (Approx.)	connector and ground.	
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switcl (+) 5	N INDICATO OFF. systems swi ON. een warning nals h nal G	tch connect systems sw (-) round	vitch harness Voltage (Approx.)	connector and ground.	
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspec	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switch (+) systems switch 5 <u>stion result ne</u>	N INDICATO OFF. systems swir ON. een warning hal G ormal?	tch connect systems sw (-) round	vitch harness Voltage (Approx.)	connector and ground.	
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES >> NO >>	VARNING O ition switch (ect warning ition switch (oltage betwe Termin (+) systems switch (+) systems switch (+) 5 ition result ne GO TO 2. Repair the w	N INDICATO OFF. systems swi ON. een warning nals h nal G ormal?	tch connect systems sw (-) round	vitch harness Voltage (Approx.) Battery voltage	connector and ground.	
1.CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES >> NO >> 2.CHECK V	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switch (+) systems switch (-) systems swit	N INDICATO OFF. systems swir ON. een warning hal G ormal? varning syste YSTEMS ON	tch connect systems sw (-) round tems ON indi	Voltage (Approx.) Battery voltage	connector and ground. supply circuit.	
1.CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspec YES >> NO >> 2.CHECK V 1. Turn ign	VARNING O ition switch (ect warning ition switch (oltage betwe Termin (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (N INDICATO OFF. systems swi ON. een warning als h hal G ormal? varning syste YSTEMS ON	tch connect systems sw (-) round Ems ON indi	Voltage (Approx.) Battery voltage	connector and ground. supply circuit.	
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES >> NO >> 2. CHECK V 1. Turn ign 2. Disconn	VARNING O ition switch (ect warning ition switch (oltage betwe Termin (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA	N INDICATO OFF. systems swi ON. een warning nals h hal G ormal? varning syste YSTEMS ON OFF. S control uni	tch connect systems sw (-) round Ems ON indi N INDICATO	Voltage (Approx.) Battery voltage	connector and ground. supply circuit.	
1.CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES >> NO >> 2.CHECK V 1. Turn ign 2. Disconn 3. Check c	VARNING O ition switch (oltage betwe Termin (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet	N INDICATO OFF. systems swi ON. een warning als h hal G ormal? varning syste YSTEMS ON OFF. S control uni ween the AD	tch connect systems sw (-) round ems ON indi N INDICATO	Voltage (Approx.) Battery voltage	connector and ground. supply circuit. OR OPEN connector and warning systen	ns switch harness
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES >> 1 NO >> 2. CHECK V 1. Turn ign 2. Disconn 3. Check c connector	VARNING O ition switch (oltage betwe (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet or.	N INDICATO OFF. systems swi ON. een warning mals h hal G ormal? varning syste YSTEMS ON OFF. S control uni ween the AD	tch connect systems sw (-) round ems ON indi N INDICATO	Voltage (Approx.) Battery voltage Cator power so DR SIGNAL F onnector. unit harness	connector and ground. Supply circuit. OR OPEN connector and warning systen	ns switch harness
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES >> NO >> 2.CHECK V 1. Turn ign 2. Disconn 3. Check c connector	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet or.	N INDICATO OFF. systems swi ON. een warning als h h hal G Ormal? varning syste YSTEMS ON OFF. S control uni ween the AD Warning syste	tch connect systems sw (-) round ems ON indi N INDICATO	Voltage (Approx.) Battery voltage	connector and ground. supply circuit. OR OPEN connector and warning systen	ns switch harness
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspec YES >> NO >> 2.CHECK V 1. Turn ign 2. Disconn 3. Check c connector ADAS co Connector	VARNING O ition switch (ect warning ition switch (oltage betwe termin (+) systems switch (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet or.	N INDICATO OFF. systems swi ON. een warning als h hal G ormal? varning syste YSTEMS ON OFF. S control uni ween the AD Warning syste Warning syste	tch connect systems sw (-) round ems ON indi N INDICATO it harness c DAS control stems switch Terminal	Voltage (Approx.) Battery voltage	connector and ground. supply circuit. OR OPEN connector and warning systen	ns switch harness
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES NO 2. CHECK V 1. Turn ign 2. CHECK V 1. Turn ign 3. Check c connector ADAS cc Connector B104	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switch (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet or.	N INDICATO OFF. systems swir ON. een warning h h nal G ormal? varning syste YSTEMS ON OFF. S control uni ween the AD Warning syste Connector M126	tch connect systems sw (-) round ems ON indi N INDICATO it harness c DAS control stems switch Terminal 6	Voltage (Approx.) Battery voltage Cator power = DR SIGNAL F onnector. unit harness	connector and ground. supply circuit. OR OPEN connector and warning systen	ns switch harness
 1. CHECK \\ Turn ign Disconn Turn ign Check v Warning Connector M126 Is the inspective of the second seco	VARNING O ition switch (ect warning ition switch (oltage betwe Termin (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet or. ontrol unit Terminal 4 tion result not	N INDICATO OFF. systems swi ON. een warning als h hal ormal? varning syste YSTEMS ON OFF. S control uni ween the AE Warning sys Connector M126 ormal?	tch connect systems sw (-) round ems ON indi N INDICATO it harness c DAS control stems switch Terminal 6	Voltage (Approx.) Battery voltage Cator power = DR SIGNAL F onnector. unit harness Continuity Yes	connector and ground. supply circuit. OR OPEN connector and warning systen	ns switch harness
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspect YES NO 2. CHECK V 1. Turn ign 2. Disconn 3. Check c Connector B104 Is the inspect YES >	VARNING O ition switch (ect warning ition switch (oltage betwee Termin (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet or. ontrol unit Terminal 4 ction result ne GO TO 3.	N INDICATO OFF. systems swir ON. een warning mals h h nal G ormal? varning syste YSTEMS ON OFF. S control uni ween the AD Warning sys Connector M126 ormal?	tch connect systems sw (-) round ems ON indi N INDICATO it harness c DAS control stems switch Terminal 6	Voltage (Approx.) Battery voltage Cator power = DR SIGNAL F onnector. unit harness	connector and ground. supply circuit. OR OPEN connector and warning systen	ns switch harness
1. CHECK V 1. Turn ign 2. Disconn 3. Turn ign 4. Check v Warning Connector M126 Is the inspec YES >> NO >> 2. CHECK V 1. Turn ign 2. Disconn 3. Check c connector B104 Is the inspec YES >> NO >>	VARNING O ition switch (ect warning ition switch (oltage betwe Termin (+) systems switch (+) systems switch GO TO 2. Repair the w VARNING S ition switch (ect the ADA ontinuity bet or. ontrol unit Terminal 4 etion result no GO TO 3. Repair the h	N INDICATO OFF. systems swi ON. een warning als h hal ormal? varning syste YSTEMS ON OFF. S control univeen the AE Warning sys Connector M126 ormal? arnesses or	tch connect systems sw (-) round ems ON indi N INDICATO it harness c DAS control stems switch Terminal 6 connectors	Voltage (Approx.) Battery voltage Cator power = DR SIGNAL F onnector. unit harness Continuity Yes	connector and ground. supply circuit. OR OPEN connector and warning systen	ns switch harness

WARNING SYSTEMS ON INDICATOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ADAS control unit			Continuity	
Connector	Terminal	Ground	Continuity	
B104	4		No	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK WARNING SYSTEMS ON INDICATOR

Check the warning systems ON indicator. Refer to DAS-446, "Component Inspection".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> Replace warning systems switch. DAS-313, "Removal and Installation".

Component Inspection

INFOID:000000007911830

1. CHECK WARNING SYSTEMS ON INDICATOR

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

Terminals			Warning sys-
(+)	(-)	tor	
5	6	When the battery voltage is applied	On
5 6		When the battery voltage is not applied	Off

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace the warning systems switch. Refer to DAS-313, "Removal and Installation".

WARNING BUZZER CIRCUIT

[LDW	&	LDP]
------	---	------

WARNING	BUZZER	CIRCUIT			Λ
Component	Function Ch	neck		INFOID:00000007911831	A
1.CHECK WAR	RNING BUZZE	R			В
 Turn the igr Select the a With operat 	nition switch ON active test item ting the test iter	l. "LDP BUZZER n, check the op	" of "ICC/ADAS eration.	' with CONSULT.	С
On :	Warning buzze	er is activated.			
Off :	Warning buzze	er is not activa	ted.		D
Is the inspection	n result normal?	<u>?</u>			
YES >> Insp NO >> Ref	pection End.	"Diagnosis Pro	cedure"		Е
	rocoduro		<u>icedure</u> .		
Diagnosis Fi	locedule			INFOID:00000007911832	_
					F
Regarding Wirir	ng Diagram info	ormation, refer t	o <u>DAS-366. "W</u>	iring Diagram".	
					G
1.CHECK WAR	RNING BUZZE	R POWER SUP	PPLY CIRCUIT		
1. Turn ignitio	n switch OFF.				Н
2. Disconnect	the warning bu	zzer connector			
4. Check volta	age between the	e warning buzz	er harness con	nector and ground.	
	0	Ū			
	Terminals				
(+	+)	(–)	Voltage		J
Warning	g buzzer		(Approx.)		
Connector	Terminal	Ground			
M60	1		Battery voltage		K
Is the inspection	n result normal?	<u>?</u>			
YES >> GO	TO 2.	huzzar powar	aupply airquit		L
			RCUIT		
 1. Turn ignition 2. Check cont 	n switch OFF.	the warning bu	zzer harness co	onnector and ground.	IVI
			1		
Warning	j buzzer		Continuity		Ν
Connector	Terminal	Ground			
M60	3		Yes		DAS
		<u>(</u>			
NO >> Rer	pair the harness	ses or connecto	ors.		Ľ
3.CHECK WAR	RNING BUZZE	R SIGNAL CIR	CUIT FOR OPE	N	Р
	the ADAS cont		tor		

Disconnect the ADAS control unit connector. 1.

2. Check continuity between the ADAS control unit harness connector and warning buzzer harness connector.

< DTC/CIRCUIT DIAGNOSIS >

WARNING BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

ADAS control unit		Warning buzzer		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
B104	12	M60	2	Yes	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR SHORT

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

ADAS co	ADAS control unit		Continuity
Connector	Terminal	Ground	Continuity
B104	12		No

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5. CHECK WARNING BUZZER OPERATION

- 1. Connect the warning buzzer connector.
- 2. Turn ignition switch ON.
- 3. Apply ground to warning buzzer terminal 2.
- 4. Check condition of the warning buzzer.

Does warning buzzer sound?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> Replace the warning buzzer.

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SYMPTOM DIAGNOSIS LDW & LDP SYSTEM SYMPTOMS

Symptom Table

NOTE:

For the operational conditions of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP), refer to the following descriptions.

LDW: DAS-320, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description"

LDP: DAS-323, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description"

Symptom		Possible cause	Inspection item/Reference page	
	Lane departure warning in- dicator light (Yellow) does not illuminate.	Combination meter ADAS control unit	Lane departure warning indica- tor light does not turned ON Refer to <u>DAS-451, "Description"</u>	E
Indicator/warning lamps do not illuminate when ignition switch OFF \Rightarrow ON	LDP ON indicator lamp (Green) does not illuminate.	Combination meterADAS control unit	LDP ON indicator lamp does not turned ON Refer to <u>DAS-452. "Description"</u>	F
	Warning systems ON indica- tor does not illuminate.	 Harness between ADAS control unit and warning sys- tems switch Warning systems switch ADAS control unit 	Warning systems ON indicator circuit Refer to <u>DAS-445, "Component Function Check"</u>	G
	Lane departure warning in- dicator light (Yellow) and LDP ON indicator lamp (Green) does not illuminate.	 Combination meter ADAS control unit 	 Lane departure warning indicator light does not turned ON Refer to <u>DAS-451. "Description"</u> LDP ON indicator lamp does not turned ON Refer to <u>DAS-452. "Description"</u> 	H
	 All of indicator/warning lamps does not illuminate; Lane departure warning indicator light (Yellow) LDP ON indicator lamp (Green) Warning systems ON indi- cator 	 Power supply and ground circuit of ADAS control unit ADAS control unit 	Power supply and ground circuit of ADAS control unit Refer to <u>DAS-441, "ADAS CON- TROL UNIT : Diagnosis Proce-</u> <u>dure"</u>	K
LDW system is not activated. (Indicator/warning lamps illumi- nate when ignition switch OFF \Rightarrow ON)	Warning systems ON indica- tor is not turned ON ⇔ OFF when operating warning systems switch	 Harness between ADAS control unit and warning sys- tems switch Harness between warning systems switch and ground Warning systems switch ADAS control unit 	 Warning systems switch circuit Refer to <u>DAS-443. "Compo-</u><u>nent Function Check"</u> LDW system setting can not be turned ON/OFF on the nav- igationscreen Refer to <u>DAS-454. "Diagnosis</u> <u>Procedure"</u> 	M
	Warning buzzer is not sounding. (Lane departure warning in- dicator light is activated.)	 Harness between the IPDM E/R and warning buzzer Harness between ADAS control unit and warning buzzer Harness between warning buzzer and ground Warning buzzer ADAS control unit 	Warning buzzer circuit Refer to <u>DAS-447, "Component</u> <u>Function Check"</u>	DA P

LDW & LDP SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

Symptom		Possible cause	Inspection item/Reference page
LDP system is not activated. (LDW system is functioning nor- mally)	Indicator lamp is not turned ON ⇔ OFF when operating dynamic driver assistance switch	 Dynamic driver assistance switch Combination meter ADAS control unit AV control unit 	 Dynamic driver assistance switch (ICC steering switch) Refer to <u>DAS-408. "Compo-</u><u>nent Inspection"</u> LDP system setting can not be turned ON/OFF in the vehicle information display Refer to <u>DAS-454. "Descrip-</u><u>tion"</u>
	Warning is functioning but yawing is not functioning.	_	 Cause of auto-cancel 2 Refer to <u>DAS-334</u>. "CON- <u>SULT Function (ICC/ADAS)"</u> Normal operating condition Refer to <u>DAS-455</u>. "Descrip- <u>tion"</u>
 Warning functions are not timely (Example) Does not function when driving on lane markers Functions when driving in a lane Functions in a different position from the actual position. 		 Camera aiming adjustment Lane camera unit ADAS control unit 	Camera aiming adjustment DAS-394, "Description"
Functions when changing the course in direction of the turn sig- nal		Turn indicator signal (CAN)BCMADAS control unit	System operates even when us- ing turn signal Refer to <u>DAS-453</u> , "Description"

LANE DEPARTURE WARNING LAMP DOES NOT TURNED ON

< SYMPTOM DIAGNOSIS >

LANE DEPARTURE WARNING LAMP DOES NOT TURNED ON

Description

The lane departure warning lamp in the combination meter does not turn ON when turning on the ignition $\ensuremath{\,\mathbb{B}}$ switch

Diagnosis Procedure	ID:000000007911835	
1. CHECK LANE DEPARTURE WARNING LAMP	C	2
 Check that "LANE DEPARTURE W/L" operate normally in "ACTIVE TEST" of "ICC/ADAS". Operate the test items to check that the lane departure warning lamp blinks Is the inspection result normal? 	C)
YES >> GO TO 4. NO >> GO TO 2.	E	_
2. CHECK COMBINATION METER		
Turn the ignition switch from OFF to ON to check that "LANE W/L" included in "DATA MONITOR" ir M&A" operates normally.	יו "METER/	-
<u>Is the inspection result normal?</u> YES >> Replace the combination meter. Refer to <u>MWI-93, "Removal and Installation"</u> . NO >> GO TO 3.	C	5
3. CHECK SELF-DIAGNOSIS RESULTS OF COMBINATION METER		
 Perform "All DTC Reading" with CONSULT. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to <u>MWI-25</u>, "DTC 	⊢ <u>C Index"</u> .	-
Is any DTC detected?		
YES >> Repair or replace malfunctioning parts. NO >> GO TO 4.	I	
4. CHECK SELF-DIAGNOSIS RESULTS OF ADAS CONTROL UNIT		1
Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" Refer to <u>DAS-358</u> , "DTC Index Is any DTC detected?	<u>x"</u> .	
YES >> Repair or replace malfunctioning parts. NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u> .	K	<
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[LDW & LDP]

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LDP ON INDICATOR LAMP DOES NOT TURNED ON

< SYMPTOM DIAGNOSIS >

LDP ON INDICATOR LAMP DOES NOT TURNED ON

Description

The LDP ON indicator lamp in the combination meter does not turn ON when turning on the ignition switch

Diagnosis Procedure

INFOID:000000007911837

INFOID:000000007911836

1.CHECK LDP ON INDICATOR LAMP

1. Check that "LDP ON IND" operate normally in "ACTIVE TEST" of "ICC/ADAS".

2. Check if the LDP ON indicator lamp illuminates when operates each test item.

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2. CHECK COMBINATION METER

Turn the ignition switch from OFF to ON to check that "LDP IND" included in "DATA MONITOR" in "METER/ M&A" operates normally.

Is the inspection result normal?

YES >> Replace the combination meter. Refer to <u>MWI-93</u>, "Removal and Installation".

NO >> GO TO 3.

3.CHECK SELF-DIAGNOSIS RESULTS OF COMBINATION METER

- 1. Perform "All DTC Reading" with CONSULT.
- 2. Check if the DTC is detected in self-diagnosis results of "METER/M&A" Refer to MWI-25, "DTC Index".

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> GO TO 4.

4.CHECK SELF-DIAGNOSIS RESULTS OF ADAS CONTROL UNIT

Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" Refer to DAS-358, "DTC Index".

Is any DTC detected?

- YES >> Repair or replace malfunctioning parts.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

THE SYSTEM OPERATES EVEN WHEN USING TURN SIGNAL

< SYMPTOM DIAGNOSIS > [LDW & LDP] THE SYSTEM OPERATES EVEN WHEN USING TURN SIGNAL Description [NFOLD:00000007911838 The warning of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP) and the yaw moment

The warning of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP) and the yaw moment control are activated during the use of a turn signal. **NOTE:**

For the operational conditions of Lane Departure Warning (LDW) and Lane Departure Prevention (LDP), refer to the following descriptions.

- LDW: DAS-320, "LANE DEPARTURE WARNING (LDW) SYSTEM : System Description"
- LDP: DAS-323, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description"

Diagnosis Procedure

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1.CHECK TURN SIGNAL OPERATION

Check that both right and left turn signals are normal.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts. Refer to <u>DAS-449, "Symptom Table"</u>.

2. CHECK SELF-DIAGNOSIS RESULTS

1. Perform "All DTC Reading" with CONSULT.

2. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" Refer to <u>DAS-358</u>, "<u>DTC Index</u>".

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts.

NO >> Replace ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

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LDW/LDP SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHICLE IN-FORMATION DISPLAY

< SYMPTOM DIAGNOSIS >

[LDW & LDP]

LDW/LDP SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHI-CLE INFORMATION DISPLAY

Description

INFOID:000000007911840

INFOID:000000007911841

- LDW system setting is not selectable in the vehicle information display.
- LDP system setting is not selectable in the vehicle information display. **NOTE:**
- When the ignition switch is in ACC position, LDW or LDP system settings cannot be changed.
- "Lane Departure Warning" or "Lane Departure Prevention" is not indicated in the vehicle information display.
- The switching between ON and OFF cannot be performed by operating the vehicle information display.
- The item of "Lane Departure Warning" or "Lane Departure Prevention" in the vehicle information display is not active.
- After turning ON the ignition switch or starting the engine, LDW or LDP settings of the vehicle information display cannot be selected for several tens of seconds under the following conditions:
- After replacing AV control unit.
- After erasing connection history of the vehicle information display.
- After erasing self-diagnosis results of the meter unit.
- The LDW or LDP system setting differs from the one set at the previous driving. **NOTE:**

Turn OFF the ignition switch and wait for 5 seconds or more.

Diagnosis Procedure

1.CHECK LDP SYSTEM SETTING

- 1. Start the engine.
- 2. Check that the LDP system settings is selectable in the vehicle information display.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.PERFORM THE SELF-DIAGNOSIS

- 1. Perform "All DTC Reading" with CONSULT.
- Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" and "METER/M&A". Refer to the following.
- ICC/ADAS: <u>CCS-59, "DTC Index"</u>

METER/M&A: <u>MWI-25, "DTC Index"</u>

Is any DTC detected?

YES >> Repair or replace malfunctioning parts.

NO >> INSPECTION END

 $\mathbf{3}$. Check data monitor of adas control unit

Check that "LDP SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT. <u>Is the inspection result normal?</u>

YES >> Refer to <u>DAS-323</u>, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description". NO >> GO TO 4.

4.CHECK THE VEHICLE INFORMATION DISPLAY SWITCH

Operate the vehicle information display switch to check that the vehicle information display operates properly. <u>Is the inspection result normal?</u>

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> Repair or replace malfunctioning parts.

NORMAL OPERATING CONDITION

Description

PRECAUTIONS FOR LANE DEPARTURE WARNING (LDW)

- LDW system is only a warning device to inform the driver of a potential unintended lane departure. It will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of the vehicle at all times.
- LDW system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- LDW system may not function properly under the following conditions:
- On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers; or lane markers covered with water, dirt or snow, etc.
- On roads where the discontinued lane markers are still detectable.
- On roads where there are sharp curves.
- On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs. (The LDW system could detect these items as lane markers.)
- On roads where the traveling lane merges or separates.
- When the vehicle's traveling direction does not align with the lane marker.
- When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection G range.
- When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
- When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
- When strong light enters the lane camera unit. (For example, the light directly shines on the front of the vehicle at sunrise or sunset.)
- When a sudden change in brightness occurs. (For example, when the vehicle enters or exits a tunnel or under a bridge.)

PRECAUTIONS FOR LANE DEPARTURE PREVENTION (LDP)

- LDP system will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of vehicle at all times.
- LDP system is primarily intended for use on well-developed freeways or highways. It may not detect the lane markers in certain roads, weather or driving conditions.
- Using the LDP system under some conditions of road, lane marker or weather, or when driver change lanes without using the turn signal could lead to an unexpected system operation. In such conditions, driver needs to correct the vehicle's direction with driver's steering operation to avoid accidents.
- When the LDP system is operating, avoid excessive or sudden steering maneuvers. Otherwise, driver could lose control of the vehicle.
- The LDP system will not operate at speeds below approximately 70 km/h (45 MPH) or if it cannot detect lane markers.
- The LDP system may not function properly under the following conditions, and do not use the LDP system:
- During bad weather (rain, fog, snow, wind, etc.).
- When driving on slippery roads, such as on ice or snow, etc.
- When driving on winding or uneven roads.
- When there is a lane closure due to road repairs.
- When driving in a makeshift lane.
- When driving on roads where the lane width is too narrow.
- When driving with a tire that is not within normal tire conditions (for example, tire wear, low tire pressure, DAS installation of spare tire, tire chains, non-standard wheels).
- When the vehicle is equipped with non-original brake parts or suspension parts.
- Excessive noise will interfere with the warning chime sound, and the chime may not be heard.
- The functions of the LDP system (warning and brake control assist) may or may not operate properly under the following conditions:
- On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; non-standard lane markers or lane markers covered with water, dirt or snow, etc.
- On roads where discontinued lane markers are still detectable.
- On roads where there are sharp curves.

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

- On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs (The LDP system could detect these items as lane markers.).
- On roads where the traveling lane merges or separates.
- When the vehicle's traveling direction does not align with the lane marker.
- When traveling close to other vehicle in front of the vehicle, which obstructs the lane camera unit detection range.
- When rain, snow or dirt adheres to the windshield in front of the lane camera unit.
- When the headlights are not bright due to dirt on the lens or if the aiming is not adjusted properly.
- When strong light enters the lane camera unit (For example, the light directly shines on the front of the vehicle at sunrise or sunset.)
- When a sudden change in brightness occurs (For example, when the vehicle enters or exits a tunnel or under a bridge.)
- While the LDP system is operating, driver may hear a sound of brake operation. This is normal and indicates that the LDP system is operating properly.

< REMOVAL AND INSTALLATION > **REMOVAL AND INSTALLATION** LANE CAMERA UNIT

Exploded View

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	V 8.3 (0.85, 73)	LOIA0043GB
1. Lane camera unit 2.	Roof rail 🖉 Front	
A. Lens cover B.	Lane camera unit harness connector	Н
Removal and Installation		INFOID:000000007911843
REMOVAL		I
 Remove headlining assembly. Refer Disconnect the lane camera unit har Remove three lane camera bolts. 	to INT-25. "Removal and Installation". ness connector from the lane camera unit.	J
4. Remove lane camera unit.		K
INSTALLATION Installation is in the reverse order of rem	oval.	
CAUTION: • Remove the camera lens cover from	the replacement lane camera unit before aiming.	L
 Do not drop or impact the lane came Perform additional service when rep 	era unit. lacing lane camera unit. Refer to <u>DAS-393, "Desc</u>	<mark>ription"</mark> . M

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WARNING SYSTEMS SWITCH

Removal and Installation

REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-23, "Removal and Installation".
- 2. Remove three screws (A, B) that retain the lower switch assembly (2).
 - (1) :Upper switch assembly
 - (C) :Upper switch assembly screws



- 3. Release upper (B) and lower (C) tab using a suitable tool (A), then remove the warning system switch (1) from the lower switch assembly.
 - (2) :Dimmer switch
 - (3) :AC 120V outlet main switch
 - (4) :Heated steering wheel switch



INSTALLATION Installation is in the reverse order of removal.

CAUTION:

< REMOVAL AND INSTALLATION >

Removal and Installation

DYNAMIC DRIVER ASSISTANCE SWITCH

Always perform the DCA system action test to check that the system operates normally after replacing the millimeter wave sensor, replacing the accelerator pedal, or repairing any DCA system malfunction. Refer to <u>DAS-156</u>, "Work Procedure".

DYNAMIC DRIVER ASSISTANCE SWITCH

[LDW & LDP]

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DAS-459

< REMOVAL AND INSTALLATION >

WARNING BUZZER

Removal and Installation

REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-23, "Removal and Installation".
- 2. Remove screw (�).
- 3. Disconnect the harness connector (A) from the sonar buzzer (1).
- 4. Remove the sonar buzzer (1).



INSTALLATION Installation is in the reverse order of removal. [LDW & LDP]

PRECAUTIONS [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< PRECAUTION > PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT **PRF-TENSIONER**" INFOID:00000008487561

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. Information necessary to service the system safely is included in the SR and SB section of this Service Man-D ual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in E 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 E 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 3 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. NOTE:

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



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Precaution for Blind Spot Warning/Blind Spot Intervention System Service INFOLD:0000007911849

WARNING:

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

- Never use the Blind Spot Intervention system when driving with free rollers or a chassis dynamometer.
- Never perform the active test while driving.
- Never disassemble and remodel the lane camera unit.
- Do not use the lane camera unit that is removed from the vehicle.
- Never change BSW initial state $ON \Rightarrow OFF$ 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.

COMPONENT PARTS [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

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< SYSTEM DESCRIPTION >

COMPONENT PARTS [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]



- 1. Lane camera unit
- 4. Vehicle information display

ABS actuator and electric unit (control

- 7. unit) Refer to <u>DAS-464, "Component Descrip-</u> <u>tion"</u>.
- 10. Warning systems switch
- 13. Blind Spot Warning/Blind Spot Intervention indicator LH
- 16. Side radar RH
 - o. (view with rear bumper cover removed)

Component Description

2. ICC steering switch

5.

BCM (with the combination meter removed)

Refer to <u>DAS-464</u>, "Component <u>Description"</u>. ECM

- 8. Refer to <u>DAS-464</u>, "Component. <u>Description"</u>.
- 11. Warning systems ON indicator

14. (view with rear bumper cover re-

Side radar LH

moved)

- Steering angle sensor (view with steering wheel removed)
- Refer to <u>DAS-464. "Component De-</u> scription".
- 6. Blind Spot Warning/Blind Spot Intervention indicator RH

TCM

3.

9. Refer to <u>DAS-464</u>, "Component <u>De</u>scription".

Warning buzzer

12. (view with instrument panel LH removed)

ADAS control unit

(view of rear luggage room area with 15. rear panel assembly removed)

Refer to <u>DAS-464. "Component De-</u> scription".

< SYSTEM DESCRIPTION >

COMPONENT PARTS

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Component	Component Description	
ADAS control unit	 Being connected with side radar (LH and RH) via ITS communication, receives vehicle detection signal and transmits Blind Spot Warning/Blind Spot Intervention indicator signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to side radar Being connected with lane camera unit via ITS communication, receives detected lane condition signal Receives steering angle sensor signal from steering angle sensor via CAN communication Judges a Blind Spot Warning/Blind Spot Intervention indicator ON/OFF state and an approach state to the lane marker, based on each signal and calculates yaw moment to help return the vehicle back to the center of the lane. Transmits target yaw moment signal to ABS actuator and electric unit (control unit) Activates the warning buzzer and warning systems ON indicator Transmits Blind Spot Intervention ON indicator signal and Blind Spot Intervention warning lamp signal to combination meter via CAN communication 	A B C D
Side radar LH/ RH	 Being connected with ADAS control unit via ITS communication, transmits vehicle detection signal Receives Blind Spot Intervention indicator signal and Blind Spot Intervention indicator dimmer signal from ADAS control unit and transmits an indicator operation signal to Blind Spot Intervention indicator LH/RH RH side radar equips right/left switching signal circuit for identifying LH or RH because the parts of side radar are common for right and left 	E
Blind Spot Warning/Blind Spot In- tervention indicator LH/ RH	Receives Blind Spot Warning/Blind Spot Intervention indicator operation signal from side radar LH/ RH and turns OFF, turns ON or blinks	G
Lane camera unit	 Detects the lane marker by the built-in camera Transmits detected lane condition signal to ADAS control unit 	
ABS actuator and electric unit (control unit)	 Transmits vehicle speed signal to ADAS control unit via CAN communication Transmits yaw rate signal/side G sensor signal to ADAS control unit via CAN communication Receives a target yaw moment signal from the ADAS control unit via CAN communication and controls brake pressure of four wheels, respectively 	
Warning systems switch	Inputs the switch signal to ADAS control unit	
Dynamic driver assistance switch	Inputs the switch signal to ECM	
Warning systems ON indicator (On the warning systems switch)	Indicates BSW system status	J
Warning buzzer	Receives buzzer signal from ADAS control unit and sounds buzzer.	
Combination meter	 Turns the Blind Spot Warning/Blind Spot Intervention warning lamp and Blind Spot Intervention ON indicator ON/OFF according to the signals from the ADAS control unit via CAN communica- tion Receives Blind Spot Intervention ON indicator signal, and Blind Spot Warning/Blind Spot Inter- vention warning lamp signal via CAN communication. Transmits the system selection signal to ADAS control unit via CAN communication. 	
Steering angle sensor	Transmits steering angle sensor signal to ADAS control unit via CAN communication	
BCM	 Transmits turn indicator signal to ADAS control unit via CAN communication Transmits dimmer signal to ADAS control unit via CAN communication 	Μ
ECM	Transmits the accelerator pedal position signal, engine speed signal and ICC steering switch signal (dynamic driver assistance switch signal) to ADAS control unit via CAN communication	Ν
ТСМ	Transmits the output shaft speed signal, input speed signal, current gear position signal and shift position signal to ADAS control unit via CAN communication	

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SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM : System Description

INFOID:000000007911852

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

ADAS control unit receives signals via CAN communication. It also detects vehicle conditions that are necessary for BSW control.

Input Signal Item

Transmit unit	Signal name		Description	
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	
BCM CAN communication		Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp	
		Dimmer signal	Receives ON/OFF state of dimmer signal	
Combination meter	CAN communication	System selection signal	Receives a selection state of each item in "Driving Aids" selected with the vehicle information display	
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.	
Warning sys- tems switch	Warning systems switch signal		Receives an ON/OFF state of the warning systems switch	

Output Signal Item

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Reception unit	Signal name		Description
Combination meter	CAN communication	Blind Spot Warning/Blind Spot In- tervention warning lamp signal	Transmits a Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to turn ON the Blind Spot Warning/Blind Spot Intervention warning lamp
		Blind Spot Intervention ON indic- tor signal	Transmits a Blind Spot Intervention ON indictor lamp signal to turn ON the Blind Spot Intervention ON indic- tor lamp
Side radar LH, RH	ITS communication	Blind Spot Warning/Blind Spot In- tervention indicator signal	Transmits a Blind Spot Warning/Blind Spot Interven- tion indicator signal to turn ON the Blind Spot Warning/ Blind Spot Intervention indicator
		Blind Spot Warning/Blind Spot In- tervention indicator dimmer signal	Transmits a Blind Spot Warning/Blind Spot Interven- tion indicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
Warning sys- tems ON indi- cator	Warning systems ON indicator signal		Turns ON the warning systems ON indicator
Warning buzz- er	Warning buzzer operation signal		Activates the warning buzzer

FUNCTION DESCRIPTION

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



 If the driver then activates the turn signal, a buzzer will sound twice and the Blind Spot Warning/Blind Spot Intervention indicator will blink.
 NOTE:

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



BSW SYSTEM OPERATION DESCRIPTION

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

Operation Condition of BSW System

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

- When the warning systems switch is turned ON^{*} or Blind Spot Intervention system turned ON.
- When the vehicle drives at 32 km/h (20 MPH) or more to the forward direction.

NOTE:

- *: When the BSW system setting in the vehicle information display is ON.
- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed is reduced below approximately 29 km/h (18 MPH)
- The BSW system may not function properly, depending on the situation. Refer to <u>DAS-479</u>, "Precautions for <u>Blind Spot Warning/Blind Spot Intervention</u>".

BULB CHECK ACTION AND FAIL-SAFE INDICATION

Vehicle condition/Driver's operation	Blind Spot Warning/ Blind Spot Intervention indicator	Warning systems ON indicator	Indication on the combination meter
When DTC is detected	OFF	ON	OFF → Orange Malfunction Please See Owner's Manual
SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Vehicle condition/Driver's operation	Blind Spot Warning/ Blind Spot Intervention indicator	Warning systems ON indicator	Indication on the combination meter	Д
When radar blockage is detected	OFF	ON	Unavailable: Side Radar Obstruction	
When the warning systems switch is pressed (When the settings of LDW system, FCW system, and BSW system in the vehicle information display are "OFF")	OFF	Blink	Unavailable All Systems are disable ALOTA013268	C

*: Blinking cycle when the side radar blockage condition



NOTE:

Time shown in the figure is approximate time.

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (ADAS Control Unit) INFOLD.00000008491680

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

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

Revision: March 2012

2013 Infiniti JX

BLIND SPOT WARNING (BSW) SYSTEM : Fail-safe (Side Radar)

INFOID:000000007911855

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels control, and a chime will sound and the "Please see owner's manual" message appears in the vehicle information display.

TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then the "Unavailable Side Radar Obstruction" message appears in the vehicle information display and the warning systems ON indicator will blink. Also, under the following conditions, the operation may be temporarily cancelled.

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

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

BLIND SPOT INTERVENTION SYSTEM

BLIND SPOT INTERVENTION SYSTEM : System Description

INFOID:000000007911856

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Si	gnal name		Description	
		Accelerator pedal position sig- nal		Receives accelerator pedal position (angle)	
ECM	CAN communication	ICC steering switch signal	Dynamic driv- er assistance switch signal	Receives the operational state of the ICC steering switch	
		Engine speed signal		Receives engine speed	
		Input speed sig	gnal	Receives the number of revolutions of input shaft	
TCM CAN communication	CAN communication	Current gear position signal		Receives a current gear position	
	CAN communication	Shift position signal		Receives a select lever position	
		Output shaft revolution signal		Receives the number of revolutions of output shaft	

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Transmit unit	Signal name		Description
		ABS malfunction signal	Receives a malfunction state of ABS
		ABS operation signal	Receives an operational state of ABS
		TCS malfunction signal	Receives a malfunction state of TCS
		TCS operation signal	Receives an operational state of TCS
ABS actuator	CAN communication	VDC OFF switch signal	Receives an ON/OFF state of VDC
(control unit)	CAN communication	VDC malfunction signal	Receives a malfunction state of VDC
		VDC operation signal	Receives an operational state of VDC
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
		Yaw rate signal	Receives yaw rate acting on the vehicle
		Side G sensor signal	Receives lateral G acting on the vehicle
Combination		Parking brake switch signal	Receives an operational state of the parking brake
meter CAN communication	System selection signal	Receives a selection state of each item in "Driving Aids" selected with the vehicle information display	
BCM	CAN communication	Turn indicator signal	Receives an operational state of the turn signal lamp and the hazard lamp
		Dimmer signal	Receives ON/OFF state of dimmer signal
		Steering angle sensor mal- function signal	Receives a malfunction state of steering angle sensor
Steering angle sensor	CAN communication	Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel
		Steering angle speed signal	Receives the turning angle speed of the steering wheel
Millimeter wave sensor	ITS communication	Millimeter wave sensor signal	Receives detection results, such as the presence or ab- sence of a leading vehicle and distance from the vehicle
Lane camera unit	ITS communication	Detection lane condition sig- nal	Receives detection results of lane marker
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.

Output Signal Item

Reception unit	Si	gnal name	Description	
ABS actuator and electric unit (control unit)	CAN communication	Target yaw moment signal	Transmits a target yaw moment signal to generate yaw moment to the vehicle	L
Combination	CAN communication	Blind Spot Warning/Blind Spot Intervention warning lamp sig- nal	Transmits a Blind Spot Warning/Blind Spot Intervention warning lamp signal to turn ON the Blind Spot Warning/ Blind Spot Intervention warning lamp	Μ
meter	CAN communication	Blind Spot Intervention ON in- dictor lamp signal	Transmits a Blind Spot Intervention ON indictor lamp sig- nal to turn ON the Blind Spot Intervention ON indictor lamp	Ν
Lane camera	ITS communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit	DA
unit		Turn indicator signal	Transmits a turn indicator signal received from BCM	

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SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Reception unit	Signal name		Description
		Blind Spot Warning/Blind Spot Intervention indicator signal	Transmits a Blind Spot Warning/Blind Spot Intervention in- dicator signal to turn ON the Blind Spot Warning/Blind Spot Intervention indicator
Side radar LH, RH	ITS communication	Blind Spot Warning/Blind Spot Intervention indicator dimmer signal	Transmits a Blind Spot Warning/Blind Spot Intervention in- dicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit
Warning buzzer	Warning buzzer operation signal		Activates the warning buzzer

FUNCTION DESCRIPTION

- The Blind Spot Intervention system can help alert the driver of other vehicles in adjacent lanes when changing lanes. Blind Spot Intervention always operates together with BSW.
- The Blind Spot Intervention system operates above approximately 60 km/h (37 MPH).
- The Blind Spot Intervention system uses side radar installed near the rear bumper to detect other vehicles beside vehicle in an adjacent lane.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- This detection zone starts from the outside mirror of vehicle and extends approximately 10 ft (3.0 m) behind the rear bumper, and approximately 10 ft (3.0 m) sideways.
- If the Blind Spot Warning/Blind Spot Intervention indicator is illuminated while vehicle is approaching a lane marker, the Blind Spot Warning/Blind Spot Intervention indicator blinks and an audible warning will sound three times. Then the system applies the brakes on one side of the vehicle for a short period of time to help return the vehicle back to the center of the lane.



- Blind Spot Intervention operates regardless of turn signal usage.
- The brightness of Blind Spot Warning/Blind Spot Intervention indicator lights is adjusted automatically depending on the brightness of the ambient light.

NOTE:

- Blind Spot Intervention is typically activated earlier than LDP when getting closer to the lane marker.
- Warning and brake control will only be activated if the Blind Spot Warning/Blind Spot Intervention indicator is already illuminated when vehicle approaches a lane marker.
- If another vehicle comes into the detection zone after vehicle has crossed a lane marker, no warning or brake control will be activated.

BLIND SPOT INTERVENTION SYSTEM OPERATION DESCRIPTION

- ADAS control unit enables Blind Spot Intervention system.
- Turn ON the dynamic driver assistance switch, and Blind Spot Intervention system setting in the vehicle information display. Then Blind Spot Intervention ON indicator comes on.
- Combination meter turns Blind Spot Intervention ON indicator lamp ON/OFF according to the signals from ADAS control unit via CAN communication.
- Side radar detects a vehicle in the adjacent lane, and transmits the vehicle detection signal to ADAS control unit via ITS communication.
- Side radar receives vehicle speed signal from ADAS control unit and changes its detecting function.

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

 Lane camera unit monitors lane markers of t nal to ADAS control unit via ITS communicat ADAS control unit starts the control as follo 	he traveling lane and transmits the detected lane condition sig- ion. ws. based on a vehicle detection signal, lane condition signal.	А
 turn signal and dimmer signal transmitted fro Blind Spot Warning/Blind Spot Intervention i indicator dimmer signal transmission to side 	m BCM via CAN communication: ndicator signal and Blind Spot Warning/Blind Spot Intervention radar.	В
 Buzzer signal transmission to warning buzze Calculation of necessary yaw moment and and electric unit (control unit). 	r. transmission of the target yaw moment signal to ABS actuator	С
 Side radar transmits an indicator operation s according to Blind Spot Warning/Blind Spot Blind Spot Intervention indicator dimmer sign 	ignal to the Blind Spot Warning/Blind Spot Intervention indicator Intervention indicator operation signal and Blind Spot Warning/ al.	D
ABS actuator and electric unit (control unit) of the target yaw moment signal.	controls brake pressure of four wheels respectively according to	D
 Operation Condition of Blind Spot Intervention Sy ADAS control unit performs the control when the Blind Spot Intervention ON indicator: ON 	vstem ne following conditions are satisfied.	Ε
 When the vehicle drives at 60 km/h (37 MPH NOTE: When the Blind Spot Intervention system set 	l) or more to the forward direction.	F
 The Blind Spot Intervention system may not in <u>"Precautions for Blind Spot Warning/Blind Spot</u> Blind Spot Intervention braking will not oper 	ting in the vehicle information display is Grv. function properly, depending on the situation. Refer to <u>DAS-479</u> , <u>not Intervention</u> ". ate or will stop operating and only a warning chime will sound	G
 under the following conditions. When the brake pedal is depressed. When the accelerator pedal is depressed when the accelerator pedal is depressed when steering quickly. 	ile brake control assist is provided.	Н
 When the ICC, DCA, FCW or IBA warnings When the hazard warning flashers are opera When driving on a curve at a high speed. 	sound. ted.	I
 Under the following conditions, the Blind Spo sound and the Blind Spot Intervention ON ind Spot Intervention system will not be available When the VDC system (except TCS function 	t Intervention system will be turned off automatically, a beep will dicator will blink. The BSW system is still available, but the Blind until the conditions no longer exist.) or ABS operates.	J
When the VDC system is turned OFF.When the SNOW mode switch is turned ON.		Κ

BULB CHECK ACTION AND FAIL-SAFE INDICATION.

Vehicle condition/Driver's operation	Blind Spot Warning/Blind Spot Interven- tion indicator	Warning buzzer	Indication on the combination meter	M
When DTC is detected	OFF	Веер	BSI ON (Yellow)	N DAS
When radar blockage is detected	OFF	Веер	LOIA0137GB Unavailable: Side Radar Obstruction	P

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Vehicle condition/Driver's operation	Blind Spot Warning/Blind Spot Interven- tion indicator	Warning buzzer	Indication on the combination meter
When the camera detects that the interior tem- perature is high	OFF	Веер	Unavailable: High Cabin Temp.
When the dynamic driver assistance switch is turned ON with settings of DCA system, LDP sys- tem and Blind Spot Intervention system OFF	OFF		Blink (Approx. 3 sec.) Unavailable All Systems are disable

*: Blinking cycle when the side radar blockage condition or lane camera unit high temperature condition



NOTE:

Time shown in the figure is approximate time.

BLIND SPOT INTERVENTION SYSTEM : Fail-safe (ADAS Control Unit)

INFOID:00000008368325

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

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

SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

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System	Buzzer	Warning lamp/Indicator lamp	Description	
Blind Spot Intervention (BSI)	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel	-
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel	E

BLIND SPOT INTERVENTION SYSTEM : Fail-safe (Lane Camera Unit)

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the BSI system warning light (orange) in the vehicle information display.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and the "Unavailable High Cabin Temp." message appears in the vehicle information display.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON.

BLIND SPOT INTERVENTION SYSTEM : Fail-safe (Side Radar)

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSI system warning light (orange) in the vehicle information display.

TEMPORARY DISABLED STATUS AT BLOCKAGE

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the "Unavailable Side Radar Obstruction" message appears in the vehicle information display. Also, under the following conditions, the operation may be temporarily cancelled.

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

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OPERATION BLIND SPOT WARNING (BSW) SYSTEM

BLIND SPOT WARNING (BSW) SYSTEM : Switch Name and Function

INFOID:000000007911860



No.	Name	Function
1	Warning systems switch	Turns BSW system ON/OFF (When the setting of BSW system in the vehicle information display is ON)
2	BSW setting screen (the vehicle information display)	Changes setting of BSW system (ON/OFF)

BLIND SPOT WARNING (BSW) SYSTEM : System Display and Warning INFOLD:00000007911861

INDICATOR AND WARNING LAMP



No.	Name	Description
1	Warning systems ON indicator	 Indicates that the FCW system, LDW system, and/or BSW system is ON Blinks when the setting of LDW, FCW, and BSW are "OFF" and the warning systems switch is pressed

DISPLAY AND WARNING OPERATION

,	Vehicle condition/	Driver's operatio	on	Ac	tion
Warning systems ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of ve- hicle detec- tion within detection area	Indication on the Blind Spot Warning/Blind Spot In- tervention indicator	Buzzer
OFF	_		_	OFF	OFF

OPERATION [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

,	Vehicle condition/	Driver's operatio	on	Action			
Warning systems ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of ve- hicle detec- tion within detection area	Indication on the Blind Spot Warning/Blind Spot In- tervention indicator	Buzzer	B	
	Less than ap- prox. 29 (18)	Less than ap- prox. — 29 (18)		OFF	OFF	С	
ON	Approx. 32 (20) or more	—	Vehicle is absent	OFF	OFF		
		OFF	Vehicle is detected	ON	OFF	D	
				Blink	Short continuous beep	E	
		ON (vehicle de-	Before turn signal oper- ates Vehicle is detected	200 ms Indicator OFF 200 ms JSOIA0251GB	80 ms Buzzer ON Buzzer OFF 550 ms	F	
		32 (20) or more ON (vehicle d tected dire tion)		Vehicle is detected af- ter turn sig- nal operates	Blink 200 ms Indicator ON Indicator OFF 200 ms JSOIA0251GB	OFF	H

NOTE:

- If vehicle speed exceeds approximately 32 km/h (20MPH), BSW function operates until the vehicle speed becomes lower than approximately 29km/h (18MPH).
- Time shown in the figure is approximate time.
- Always Blind Spot Intervention system operates together with BSW system. Whenever Blind Spot Intervention system is turned on by
 pushing the dynamic driver assistance switch, BSW system also be turned on even if the BSW system is turned off. However, at this
 time the warning systems ON indicator remains OFF.

BLIND SPOT INTERVENTION SYSTEM



No.	Name	Function	Р
1	Dynamic driver assistance switch	Turns Blind Spot Intervention, LDP, and DCA systems ON/OFF	
2	Blind Spot Intervention setting screen (The vehicle information display)	Changes setting of Blind Spot Intervention system (ON/OFF)	

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BLIND SPOT INTERVENTION SYSTEM : System Display and Warning

INDICATOR AND WARNING LAMP



No.	Name	Description
1	Blind Spot Intervention ON indicator (green)	 Turns ON when Blind Spot Warning/Blind Spot Intervention system is malfunc- tioning

DISPLAY AND WARNING OPERATION

Whenever the Blind Spot Intervention system is turned on, the BSW system will also be on.

Vehicle condition/Driver's operation			Action			
Blind Spot In- terven- tion ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Status of vehicle de- tection approach to within de- tection lane area		Indication on the Blind Spot Warning/Blind Spot In- tervention indicator	Brake control	Buzzer
OFF	—	_	_	OFF	OFF	OFF
_	Less than approx. 60 (37)	_	_	OFF	OFF	OFF
		Vehicle is absent	_	OFF	OFF	OFF
		Vehicle is detected	Not approach- ing	ON	OFF	OFF
Green	Approx			Blink		Short continuous beeps
Green	Approx. 60 (37) or more	Vehicle is detected	Approach- ing	200 ms Indicator ON Indicator OFF 200 ms JSOIA0251GB Time shown in the figure is ap- proximate time.	ON	50 ms Buzzer OFF 50 ms JSOIA0334GB Time shown in the figure is ap- proximate time.

BSI system warning light (orange)

HANDLING PRECAUTION

HANDLING PRECAUTION

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

А Precautions for Blind Spot Warning/Blind Spot Intervention INFOID:000000007911864 LANE CAMERA UNIT HANDLING B Refer to DAS-331, "Precautions for Lane Departure Warning/Lane Departure Prevention". SIDE RADAR HANDLING С Side radar for Blind Spot Warning/Blind Spot Intervention system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install an accessory or paintwork near the side radar. Do not strike or damage the areas around the side radar. • Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. **BLIND SPOT WARNING & BLIND SPOT INTERVENTION** Ε The Blind Spot Warning and Blind Spot Intervention systems are not a replacement for proper driving procedure and are not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning and Blind Spot Intervention system. F • Using the Blind Spot Intervention system under some road, lane marker or weather conditions could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents. The Blind Spot Warning and Blind Spot Intervention systems may not provide a warning or brake control for vehicles that pass through the detection zone quickly. Do not use the Blind Spot Warning or Blind Spot Intervention systems when towing a trailer. • Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. Н The side radar may not be able to detect and activate Blind Spot Warning/Blind Spot Intervention when certain objects are present such as: - Pedestrians, bicycles, animals. - Several types of vehicles such as motorcycles. -Oncoming vehicles. - Vehicles remaining in the detection zone when driver accelerate from a stop. - A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. - A vehicle approaching rapidly from behind. - A vehicle which vehicle overtakes rapidly. Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles. Κ • 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, L foliage and parked vehicles may occasionally be detected. This is a normal operating condition. BLIND SPOT INTERVENTION M Do not use the Blind Spot Intervention system under the following conditions because the system may not function properly. - During bad weather (e.g. rain, fog, snow, wind, etc.) - When driving on slippery roads, such as on ice or snow, etc. Ν - When driving on winding or uneven roads. - When there is a lane closure due to road repairs. - When driving in a makeshift lane. DAS - When driving on roads where the lane width is too narrow. When driving with a tire that is not within normal tire conditions (e.g. tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels). - When the vehicle is equipped with non-original brake parts or suspension parts. P The camera may not detect lane markers in the following situations and the Blind Spot Intervention system may not operate properly. - On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; vellow painted lane markers: nonstandard lane markers: lane markers covered with water, dirt, snow, etc. - On roads where discontinued lane markers are still detectable. - On roads where there are sharp curves.

HANDLING PRECAUTION [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs.
- On roads where the traveling lane merges or separates.
- When the vehicle is traveling direction does not align with the lane markers.
- When traveling close to the vehicle in front of driver, which obstructs the lane camera unit detection range.
- When rain, snow or dirt adheres to the windshield in front of a lane camera unit.
- When the headlights are not bright due to dirt on the lens or if aiming is not adjusted properly.
- When strong light enters a lane camera unit. (e.g. light directly shines on the front of the vehicle at sunrise or sunset.)
- When a sudden change in brightness occurs. (e.g. when the vehicle enters or exits a tunnel or under a bridge.)
- The Blind Spot Intervention system will not operate if your vehicle is on a lane marker when another vehicle enters the detection zone. In this case only the BSW system operates.
- Blind Spot Intervention braking will not operate or will stop operating and only a warning chime will sound under the following conditions.
- When the brake pedal is depressed.
- When the accelerator pedal is depressed while brake control assist is provided.
- When steering quickly.
- When the ICC, DCA, FCW or IBA warnings sound.
- When the hazard warning flashers are operated.
- When driving on a curve at a high speed.

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) TION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

On Board Diagnosis Function

DESCRIPTION

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

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)
- 1. Turn the ignition switch OFF.
- 2. Start the engine.
- Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.
 NOTE:

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



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to <u>DAS-508</u>, "<u>DTC Index</u>".



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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

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

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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

Ass	umed abnormal part	Inspection item	
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combina- tion meter operates. Refer to <u>MWI-17</u> , "Description"	
ICC steering switch malfunc	tion		
Harness malfunction betwee	n ICC steering switch and ECM	Perform the inspection for DTC"C1A06". Refer to <u>C</u> 109 "Diagnosis Procedure"	
ECM malfunction			
ADAS control unit malfunction	on	 Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-78, "Diagnosis Procedure"</u>. Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</u>. 	

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

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

NOTE:

- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.
- 4. DTC 55 is displayed after erasing.

NOTE: DTCs for existing malfunction can not be erased.

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

CONSULT Function (ICC/ADAS)

INFOID:00000008368327

PKIB8373B

10 sec

ON

OFF

ON

OFF

CANCEL

DISTANCE

switch

switch

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
Work Support	Displays causes of automatic system cancellation occurred during system control
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 Mntr	The result of transmit/receive diagnosis of CAN communication is displayed

WORK SUPPORT

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Work support items	Description	A
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following sys- tems Vehicle-to-vehicle distance control mode Conventional (fixed speed) cruise control mode Distance Control Assist (DCA) 	B
CAUSE OF AUTO-CANCEL 2	 Displays causes of automatic system cancellation occurred during control of the following systems Lane Departure Prevention (LDP) Blind Spot Intervention 	С
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following sys- tems • Backup Collision Intervention (BCI)	D

NOTE:

• Causes of the maximum five cancellations (system cancel) are displayed.

• The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

	node	ol mode			G
	control r	ruise contr	l Assist		Н
Cause of cancellation	icle distanc	ed speed) c	nce Contro	Description	I
	Vehicle-to-veh	Conventional (fixe	Distar		J K
OPERATING ABS	×		×	ABS function was operated	
OPERATING TCS	×	×	×	TCS function was operated	L
OPERATING VDC	×	×	×	VDC function was operated	
ECM CIRCUIT	×	×		ECM did not permit ICC operation	
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range	Μ
LASER TEMP	×		×	Temperature around millimeter wave sensor became low	
SNOW MODE SW	×		×	SNOW mode switch was pressed	Ν
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time	
VHCL SPD DOWN	×	×	×	 Vehicle speed lower than the speed as follows Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH) 	DAS
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise	Р
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed	
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from CVT vehicle speed	
FR RADAR BLOCKED	×		×	The front bumper near the millimeter sensor is blocked or dirty	
TIRE SLIP	×	×		Wheel slipped	
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) < SYSTEM DESCRIPTION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

PARKING BRAKE ON The parking brake is operating х x WHEEL SPD UNMATCH The wheel speeds of 4 wheels are out of the specified values × × × A vehicle ahead is not detected during the following driving when INCHING LOST х the vehicle speed is approximately 24 km/h (15 MPH) or less ADAS control unit received an abnormal signal with CAN commu-CAN COMM ERROR х × × nication ABS/TCS/VDC CIRC An abnormal condition occurs in VDC/TCS/ABS system × X × ECD CIRCUIT An abnormal condition occurs in ECD system X х × ASCD VHCL SPD DTAC Vehicle speed is detached from set vehicle speed X ASCD DOUBLE COMD Cancel switch and operation switch are detected simultaneously X The accelerator pedal actuator integrated motor temperature is APA HI TEMP x high ICC SENSOR CAN Communication error between ADAS control unit and the millime-× × COMM ERR ter wave sensor ABS WARNING LAMP ABS warning lamp ON × × NO RECORD х х ×

Display Items for The Cause of Automatic Cancellation 2

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

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) DTION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Cause of cancellation	Lane departure prevention	Blind spot intervention	Description	A B C
SNOW MODE SW	×		SNOW mode switch was pressed	
VDC OFF SW	×		VDC OFF switch was pressed	D
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control	
BSI WARNING	×		Blind Spot Intervention system was activated	
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control	Ε
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value	
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction	F
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control	
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction	G
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated	
BSI) CURVATURE		×	Road curve was more than the specified value	Н
BSI) Steering angle large		×	Steering angle was more than the specified value	
BSI) Brake is operated		×	Brake pedal was operated	
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage	
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified	
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker	J
BSI) Lane marker un- clear		×	Detected lane marker was unclear	
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value	K
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value	
BSI) Accel is operated		×	Accelerator pedal was depressed	L
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction	
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction	
BSI) R range		×	Selector lever was operated to R range	VI
BSI) Parking brake drift		×	Rear wheels lock was detected	
BSI) SNOW MODE SW		×	SNOW mode switch was pressed	Ν
BSI) VDC OFF SW		×	VDC OFF switch was pressed	
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control	A
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)	
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit	Ρ
NO RECORD	×	×		

Display Items for The Cause of Automatic Cancellation 3

Cause of cancellation	Backup Collision Intervention	Description		
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage		
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication		
ECD CIRCUIT	×	An abnormal condition occurs in ECD system		
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high		
Accel is operated	×	Accelerator pedal was depressed		
NO RECORD	×	—		

SELF DIAGNOSTIC RESULT Refer to <u>DAS-508, "DTC Index"</u>.

DATA MONITOR

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means "controlling")
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) < SYSTEM DESCRIPTION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

MAIN SIG (BSW/BSI) MAIN SIG (LDW/LDP) MAIN SIG Ċ ALL SIG (ICC) MAIN SIG (ICC) А Monitored item (BCI) Description [Unit] Indicates vehicle speed calculated from ADAS control unit through CAN com-VHCL SPEED SE × × × × × munication [ABS actuator and electric unit (control unit) transmits vehicle speed [km/h] or [mph] signal (wheel speed) through CAN communication] SET VHCL SPD Indicates set vehicle speed memorized in ADAS control unit × X [km/h] or [mph] **BUZZER O/P** Indicates [On/Off] status of ICC warning chime output × X [On/Off] ENGINE RPM Indicates engine speed read from ADAS control unit through CAN communica-Х tion (ECM transmits engine speed signal through CAN communication) [rpm] WIPER SW Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request E × [OFF/LOW/HIGH] signal through CAN communication) **BA WARNING** × Indicates [On/Off] status of IBA OFF indicator lamp output [On/Off] F STP LMP DRIVE × × × Indicates [On/Off] status of ICC brake hold relay drive output [On/Off] Indicates [On/Off] status of "D" or "M" positions read from ADAS control unit D RANGE SW through CAN communication; ON when position "D" or "M" (TCM transmits shift × [On/Off] position signal through CAN communication). NP RANGE SW Indicates shift position signal read from ADAS control unit through CAN commuх Н nication (TCM transmits shift position signal through CAN communication) [On/Off] Parking brake switch status [On/Off] judged from the parking brake switch signal PKB SW that ADAS control unit readout via CAN communication is displayed (Combina-X [On/Off] tion meter transmits the parking brake switch signal via CAN communication) **PWR SUP MONI** Indicates IGN voltage input by ADAS control unit × × [V] Indicates vehicle speed calculated from CVT vehicle speed sensor read from VHCL SPD CVT x ADAS control unit through CAN communication (TCM transmits CVT vehicle [km/h] or [mph] speed sensor signal through CAN communication) Indicates throttle position read from ADAS control unit through CAN communi-THRTL OPENING cation (ECM transmits accelerator pedal position signal through CAN communi-X × × [%] cation). MODE SIG Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise × [OFF, ICC, ASCD] control model SET DISP IND Indicates [On/Off] status of SET switch indicator output × [On/Off] M DISTANCE Indicates the distance from the vehicle ahead X [m] RELATIVE SPD Indicates the relative speed of the vehicle ahead Ν X [m/s] DYNA ASIST SW Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans-× [On/Off] mits ICC steering switch signal through CAN communication) DAS DCA ON IND The status [On/Off] of DCA system switch indicator output is displayed х [On/Off] DCA VHL AHED The status [On/Off] of vehicle ahead detection indicator output in DCA system × Ρ [On/Off] is displayed FCW SYSTEM ON Indicates [On/Off] status of FCW system × × [On/Off] Accelerator pedal actuator integrated motor temperature that the ADAS control APA TEMP × unit readout via ITS communication is displayed (Accelerator pedal actuator × [°C] transmits the integrated motor temperature via ITS communication)

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) TION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION > [BL

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)	
LDW SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDW system	
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of waning systems ON indicator output	
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output	
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output	
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output	
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
READY signal [On/Off]			×			Indicates LDP system settings	
Camera lost [Detect/Deviate/ Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection sig- nal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)	
Shift position [Off, P, R, N, D, M/ T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communica- tion (TCM transmits shift position signal through CAN communication)	
Turn signal [OFF/LH/RH/ LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)	
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)	
STATUS signal [Stnby/Warn/Cancl/ Off]			×			Indicates a control state of LDP system	
Lane unclear [On/Off]			×	×		Indicates an On/Off state of the lane marker. The On/Off state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)	
FUNC ITEM [FUNC3]	×	×	×	×		Indicates systems which can be set to On/Off by selecting "Driver Assistance" ⇒"Dynamic Assistance Settings" of the navigation system FUNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and Blind Spot Intervention	
DCA SELECT [On/Off]	×	×	×	×		Indicates an On/Off state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitored item [Unit]	(ICC) (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
BSI SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Intervention system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	
WARN SYS SW [On/Off]	×	×	×	×		Indicates [On/Off] status of warning systems switch	С
BSW/BSI WARN LMP [On/Off]				×		Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning lamp output	D
BSI ON IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention ON indicator output	F
BSW SYSTEM ON [On/Off]				×		Indicates [On/Off] status of BSW system	
BSI SYSTEM ON [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention system	F
BCP ON [On/Off]					×	Indicates [On/Off] status of BCP system	C
BCI SW ADAS [On/Off]					×	Indicates [On/Off] status of Backup Collision Intervention system	G
LDP_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Prevention system failure lamp	Н
LDW_ON_LAMP [On/Off]			×	×		Indicates [On/Off] status of LDW system	
LDW_FAIL_LAMP [On/Off]			×	×		Indicates [On/Off] status of Lane Departure Warning system failure lamp	
SYSTEM_CANCEL _MESSAGE [Request/No Re- quest]	×	×	×	×		Indicates system cancel message request	
CAM_HI_TEMP_M SG [On/Off]			×	×		Indicates high temperature message has been received	
ITS Setting Item(DCA) [On/Off]	×	×	×	×		Indicates [On/Off] status of Distance Control Assist installation	L
ITS Setting Item(LDP) [On/Off]	×	×	×	×		Indicates [On/Off] status of Lane Departure Prevention	Μ
ITS Setting Item(BSI) [On/Off]	×	×	×	×		Indicates [On/Off] status of Blind Spot Intervention system	
BSI FAIL IND [On/Off]				×		Indicates [On/Off] status of Blind Spot Intervention	
BSW ON IND [On/Off]				×		Indicates [On/Off] status of BSW system	
SR_BLK_MSG [On/Off]				×		Indicates [On/Off] status of messages received	
WARN_LANE_TIMI NG [-] [On/Off]			×			Indicates [On/Off] status of warning lane timing	
BSW_IND_BRIGHT NESS [Bright/Not Bright]				×		Indicates BSW warning lamp indicator brightness level	

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

< SYSTEM DESCRIPTION >

 				/	
[BLIND	SPOT	WARNING	& BLIND	SPOT	INTERVENTION]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
FCW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Forward Collision Warning system. Forward Collision Warning system can be set to On/Off by selecting "Driver Assistance" \Rightarrow "Dynamic Assistance Settings" of the navigation system	
LDW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Lane Departure Warning system. Lane Departure Warning system can be set to On/Off by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system	
BSW SELECT [On/ Off]	x	x	x	x		Indicates an On/Off state of Blind Spot Warning system. Blind Spot Warning system can be set to On/Off by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the navigation system	
ITS setting item (FCW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Forward Collision Warning	
ITS setting item (LDW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Lane Departure Warning	
ITS setting item (BSW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Blind Spot Warning	

ACTIVE TEST

CAUTION:

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

Test item	Description		
BRAKE ACTUATOR	Activates the brake by an arbitrary operation		
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Intelligent Cruise Control (ICC) Distance Control Assist (DCA) Forward Collision Warning (FCW) Intelligent Brake Assist (IBA) 		
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary		
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated		
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary		
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary		
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Lane Departure Warning (LDW) Lane Departure Prevention (LDP) Blind Spot Warning (BSW) Blind Spot Intervention 		
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF opera- tions as necessary		
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary		
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary		
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF opera- tions as necessary		

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) PTION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< SYSTEM DESCRIPTION > [BL

Test item	Description			
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessar			
LDW ON IND	The LDW ON indicator lamp can be illuminated by ON/OFF operations as necessary	-		
LDP FAIL IND	The LDP fail indicator lamp can be illuminated by ON/OFF operations as necessary	В		
LDW FAIL IND	The LDW fail indicator lamp can be illuminated by ON/OFF operations as necessary	-		
BSW ON IND	The BSW ON indicator lamp can be illuminated by ON/OFF operations as necessary	-		
BSI FAIL IND	The BSI fail indicator lamp can be illuminated by ON/OFF operations as necessary	C		

BRAKE ACTUATOR **NOTE:**

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

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

NOTE:



ICC BUZZER

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

METER LAMP

NOTE:

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

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DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) TION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Test item	Oper- ation	Description	MAIN switch indicatorICC system warning lampIBA OFF indicator lamp
Off		 Stops sending the following signals to exit from the test Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	OFF
METER LAMP	 Transmits the following signals to the combination meter via CAN communication Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	ON	

STOP LAMP

Test item	Oper- ation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal be- low to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ACTIVE PEDAL

CAUTION:

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

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting



DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) TION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

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NOTE:

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

Test item	Opera- tion	Description	DCA system switch indicator	
	Off	Stops transmitting the DCA system switch indicator signal be- low to end the test	—	
DCA INDICATOR	On	Transmits the DCA system switch indicator signal to the com- bination meter via CAN communication	ON	

LDP BUZZER

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

WARNING SYSTEM IND

Test item	Oper- ation	Description	Warning systems ON indicator	(
WARNING SYSTEM	Off	Stops transmitting the warning systems ON indicator signal below to end the test	_	
IND	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON	ŀ

LDP ON IND

Test item	Oper- ation	Description	LDP ON indicator lamp (Green)	
	Off	Stops transmitting the LDP ON indicator lamp signal be- low to end the test	_	
	On	Transmits the LDP ON indicator lamp signal to the com- bination meter via CAN communication	ON	

LANE DEPARTURE W/L

Test item	Oper- ation	Description	Lane departure warning lamp (Yellow)	
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp sig- nal below to end the test	_	M
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON	N

BSW/BSI WARNING LAMP

Test item	Oper- ation	Description	Blind Spot Warning/Blind Spot Inter- vention warning lamp (Yellow)	DAS
RSW/RSI W/ARNING	Off	Stops transmitting the Blind Spot Warning/Blind Spot In- tervention warning lamp signal below to end the test	_	P
LAMP	On	Transmits the Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to the combination meter via CAN communication	ON	I

BSI ON INDICATOR

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT) TION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Test item	Oper- ation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention ON indicator sig- nal to the combination meter via CAN communication	ON

LDW ON INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW ON INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

LDP FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure prevention ON indica- tor lamp (Yellow)
LDP FAIL INDICATOR	Off	Stops transmitting the Lane Departure prevention ON indicator signal below to end the test	_
	On	Transmits the Lane Departure prevention ON indicator signal to the combination meter via CAN communication	ON

LDW FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW FAIL INDICA- TOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

BSW ON INDICATOR

Test item	Oper- ation	Description	Blind Spot Warning ON indicator lamp (Yellow)
BSW ON INDICATOR	Off	Stops transmitting the Blind Spot Warning ON indicator signal below to end the test	_
	On	Transmits the Blind Spot Warning ON indicator signal to the warning lamp on the door	ON

BSI FAIL INDICATOR

Test item	Oper- ation	Description	Blind Spot Intervention FAIL indicator lamp (Yellow)
BSI FAIL INDICATOR	Off	Stops transmitting the Blind Spot Intervention FAIL indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention FAIL indicator sig- nal to the warning lamp on the door	ON

ECU IDENTIFICATION

ADAS control unit part number is displayed.

DIAGNOSIS SYSTEM (SIDE RADAR LH) N > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< 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	(
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-514, "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	F

DATA MONITOR

Monitored Item [unit]		Description	
	Off	Side radar is normal.	
SIDE RADAR MALF	On	Side radar is malfunctioning.	J
BLOCKAGE COND	Off	Side radar is not blocked.	
	On	Side radar is blocked.	ĸ
VEHICLE DETECT	Off	Does not detect a vehicle within detection area.	
	On	Detects a vehicle within detection area.	

ACTIVE TEST

CAUTION:

• Never perform the active test while driving.

 Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description	Ν
BSW/BSI INDICATOR	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indi- cator.	
DRIVE	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indica- tor.	DAS

ECU IDENTIFICATION

Side radar part number is displayed.

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INFOID:000000007911867

DIAGNOSIS SYSTEM (SIDE RADAR RH)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (SIDE RADAR RH)

CONSULT Function (SIDE RADAR RIGHT)

INFOID:000000007911868

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-516. "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

Monitored Item [unit]		Description
	Off	Side radar is normal.
	On	Side radar is malfunctioning.
BLOCKAGE COND	Off	Side radar is not blocked.
	On	Side radar is blocked.
	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:

• Never perform the active test while driving.

 Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description
BSW/BSI INDICATOR DRIVE	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indi- cator.
	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indica- tor.

ECU IDENTIFICATION

Side radar part number is displayed.

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (LANE CAMERA UNIT)

CONSULT Function (LANE CAMERA)

APPLICATION ITEMS

CONSULT performs the following functions by communicating with the lane camera unit.

Diagnosis mode	Description	C
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the lane camera unit	
Data Monitor	Displays lane camera unit input/output data in real time	
Work support	Performs the camera aiming	L
ECU identification	Displays lane camera unit part number	
		E

WORK SUPPORT

Work support items	Description
AUTO AIM	Outputs camera unit, calculates dislocation of the camera, and displays adjustment direction.

SELF DIAGNOSTIC RESULT Refer to DAS-519, "DTC Index".

DATA MONITOR

Monitored item [Unit]		Description	
LC INACCURAT	[On/Off]	Lane camera unit status	
AIMING RESULT	[OK/NOK]	Result of camera aiming	
AIMING DONE	[OK/NG]	Status that camera aiming is done	
CAM HIGH TEMP	[NORMAL/ High]	Status of lane camera unit high temperature judgment	J
VHCL SPD SE	[km/h] or [mph]	Vehicle speed received from ADAS control unit via ITS communication	K
TURN SIGNAL	[Off, LH, RH, LH/RH]	Status of "Turn signal" determined from ADAS control unit via ITS communication	
LANE DETCT LH	[On/Off]	Left side lane marker detection	L
LANE DETCT RH	[On/Off]	Right side lane marker detection	
CROSS LANE LH	[On/Off]	Condition that the vehicle is crossing left lane marker	
CROSS LANE RH	[On/Off]	Condition that the vehicle is crossing right lane marker	IVI
WARN LANE LH	[On/Off]	Warning for left lane marker	
WARN LANE RH	[On/Off]	Warning for right lane marker	N
VALID POS LH	[VLD/INVLD]	Lateral position for left lane marker is valid	
VALID POS RH	[VLD/INVLD]	Lateral position for right lane marker is valid	
XOFFSET	[pixel]	Lane camera unit installation condition	DA
AIM CHECK YAW	[deg]	Check result of camera aiming	
AIM CHECK ROLL	[deg]	Check result of camera aiming	Р
AIM CHECK PITCH	[deg]	Check result of camera aiming	
FCTRY AIM YAW	[deg]	Lane camera unit installation condition	
FCTRY AIM ROL	[deg]	Lane camera unit installation condition	
FCTRY AIM PIT	[deg]	Lane camera unit installation condition	
ADAS MALF	[On/Off]	ADAS control unit status	

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ECU identification Lane camera part number is displayed.

ADAS CONTROL UNIT > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Condition	Value/Status
		When MAIN switch is pressed	On
MAIN SW	Ignition switch ON	When MAIN switch is not pressed	Off
SET/COAST SW	Ignition switch ON	When SET/COAST switch is pressed	On
SET/COAST SW		When SET/COAST switch is not pressed	Off
CANCEL SW		When CANCEL switch is pressed	On
	Ignition switch ON	When CANCEL switch is not pressed	Off
	Ignition switch ON When MAIN switch is pressed Ignition switch ON When MAIN switch is not pressed Ignition switch ON When SET/COAST switch is not pressed Ignition switch ON When CANCEL switch is not pressed Ignition switch ON When CANCEL switch is not pressed / Ignition switch ON When RESUME/ACCELERATE switch is not pressed / Ignition switch ON When RESUME/ACCELERATE switch is not pressed / Ignition switch ON When DISTANCE switch is not pressed Ignition switch ON When ICC system is controlling Drive the vehicle and activate the vehicle-to-vehicle distance control mode When ICC system is not controlling Ignition switch ON When brake pedal is depressed Ignition switch ON When brake pedal is not depressed Ignition switch ON When BCI switch is pressed Ignition switch ON When BCI switch is not pressed Ignition switch ON When BCI switch is not pressed Ignition switch ON When BCI switch is not pressed Ignition switch ON When BCI system is ON Ignition switch ON When BCI system is OFF • Start the engine and trum	On	
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is not pressed	Off
	Ignition switch ON	When DISTANCE switch is pressed	On
DISTANCE SW		When DISTANCE switch is not pressed	Off
	Drive the vehicle and activate	When ICC system is controlling	On
CRUISE OPE	the vehicle-to-vehicle distance control mode	When ICC system is not controlling	Off
		When brake pedal is depressed	Off
BRAKE SW	Ignition switch ON	When brake pedal is not depressed	On
		When brake pedal is depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is not depressed	Off
	Engine running	Idling	On
IDLE SW		Except idling (depress accelerator pedal)	Off
	Ignition switch ON	When BCI switch is pressed	On
BCI SW		When BCI switch is not pressed	Off
BCI SYSTEM ON	Ignition switch ON	When BCI system is ON	On
		When BCI system is OFF	Off
	 Start the engine and turn the ICC system ON Press the DISTANCE switch to change the vehi- cle-to-vehicle distance set- ting 	When set to "long"	Long
		When set to "middle"	Mid
SET DISTANCE		When set to "short"	Short
CRUISE LAMP	Start the engine and press MAIN switch	ICC system ON (MAIN switch indicator ON)	On
		ICC system OFF (MAIN switch indicator OFF)	Off
	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
		When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
	Start the engine and press MAIN switch	When ICC system is malfunctioning (ICC system warning lamp ON)	On
ICC WARNING		When ICC system is normal	Off

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< ECU DIAGNOSIS INFORMATION >

ADAS CONTROL UNIT

Monitor item	Condition		Value/Status
VHCL SPEED SE	While driving		Displays a vehi- cle speed calcu- lated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
BUZZER O/P	Engine running	 When the buzzer of the following system operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	On
		 When the buzzer of the following system not operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	Off
ENGINE RPM	Engine running		Equivalent to ta- chometer read- ing
BA WARNING	Engine running	IBA OFF indicator lamp ONWhen IBA system is malfunctioningWhen IBA system is turned to OFF	On
		IBA OFF indicator lamp OFFWhen IBA system is normalWhen IBA system is turned to ON	Off
	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
STP LMP DRIVE		When ICC brake hold relay is not activated	Off
	Engine running	When the selector lever is in "D" position or manual mode	On
D RANGE SW		When the selector lever is in any position other than "D" or manual mode	Off
		When the selector lever is in "N", "P" position	On
NP RANGE SW	Engine running	When the selector lever is in any position other than "N", "P"	Off
	Ignition owitch ON	When the parking brake is applied	On
PKB SW	Ignition switch ON	When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of CVT ve- hicle speed sen- sor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position
	Start the engine and press MAIN switch	When ICC system is deactivated	Off
MODE SIG		When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
	Drive the vehicle and acti-	SET switch indicator ON	On
SET DISP IND	vate the conventional (fixed speed) cruise control modePress SET/COAST switch	SET switch indicator OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the dis- tance from the preceding vehi- cle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance	When a vehicle ahead is detected	Displays the rel- ative speed.
	control mode	When a vehicle ahead is not detected	0.0
Camera lost	Drive the vehicle and activate	Both side lane markers are detected	Detect
	the LDW system, LDP system or Blind Spot Intervention sys-	Deviate side lane marker is lost	Deviate
	tem	Both side lane markers are lost	Both
Lane unclear		Lane marker is unclear	On
Lane unclear	vvnile driving	Lane marker is clear	Off
		When the LDP system is ON	Stnby
	Drive the vehicle with the LDP	When the LDP system is operating	Warn
STATUS signal	system turned ON	When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off
		When dynamic driver assistance switch is pressed	On
DYNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is not pressed	Off
	Start the engine and press dy- namic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
DCA ON IND		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
ΑΡΑ ΤΕΜΡ	Engine running		Display the ac- celerator pedal actuator inte- grated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator ped- al actuator
	Ignition switch ON	FCW set with the vehicle information display ON	On
		FCW set with the vehicle information display OFF	Off
	Ignition switch ON	LDW set with the vehicle information display ON	On
	Ignition Switch ON	LDW set with the vehicle information display OFF	Off
	Ignition switch ON	LDW ON indicator ON	On
		LDW ON indicator OFF	Off
	Start the engine and press dy-	LDP ON indicator lamp ON	On
LDP ON IND	namic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp OFF	Off
	Drive the vehicle and activate	Lane departure warning lamp ON	On
LANE DPRT W/L	the LDW system or LDP sys- tem	Lane departure warning lamp OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition		Value/Status
LDW BUZER OUT- PUT	Drive the vehicle and activate the LDW/LDP system or Blind Spot Warning/Blind Spot Inter- vention system	When the buzzer of the following system operatesLDW/LDP systemBlind Spot Warning/Blind Spot Intervention system	On
		 When the buzzer of the following system does not operate LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	Off
	Start the engine and press dy-	When the LDP system is ON	On
LDP SYSTEM ON	Namic driver assistance switch (When LDP system setting is ON)	When the LDP system is OFF	Off
	Start the engine and press dy- namic driver assistance switch (When LDP system setting is ON)	When the LDP system is ON	On
READY signal		When the LDP system is OFF	Off
Shift position	Engine runningWhile driving		Displays the shift position
	Turn signal lamps OFF		Off
Turn signal	Turn signal lamp LH blinking		LH
runn olghun	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH bl	inking	LH&RH
	While driving	Vehicle turning right	Negative value
SIDE G	write driving	Vehicle turning left	Positive value
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not monitored		Off
FUNC ITEM (NV- DCA)	NOTE: The item is indicated, but not monitored		Off
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is ON	On
		"Distance Control Assist" set with the vehicle informa- tion display is OFF	Off
	Ignition switch ON	"Lane Departure Prevention" set with the vehicle infor- mation display is ON	On
		"Lane Departure Prevention" set with the vehicle infor- mation display is OFF	Off
	Ignition switch ON	"Blind Spot Intervention" set with the vehicle information display is ON	On
BSI SELECT		"Blind Spot Intervention" set with the vehicle information display is OFF	Off
	Ignition switch ON	When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
DRIVE MODE STATS		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
		 When position od drive mode select switch is in following states: In the middle of SNOW-ECO In the middle of ECO-STANDARD In the middle of STANDARD-SPORTS 	Mid
		A signal other than those above is input	ERROR
	Institute and the ON	When warning systems switch is pressed	On
WARN SYS SW	Ignition switch ON	When warning systems switch is not pressed	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
		Blind Spot Intervention ON indicator ON	On
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator OFF	Off
	legitien ewiteb ON	When the BSW system is ON	On
BSW STSTEM ON		When the BSW system is OFF	Off
	Start the engine and press dy- namic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON	On
BSI SYSTEM ON		When the Blind Spot Intervention system is OFF	Off
		LDP system fail lamp ON	On
LDP FAIL LAMP	Ignition switch ON	LDP system fail lamp OFF	Off
		LDW ON indicator ON	On
LDW ON LAMP	Ignition switch ON	LDW ON indicator OFF	Off
		LDW system fail lamp ON	On
LDW FAIL LAMP	ignition switch ON	LDW system fail lamp OFF	Off
SYSTEM_CANCEL_ MESSAGE	Engine running	Request signal to cancel warning systems	No request Slippery road Snow mode ON VDC OFF
CAM_HI_TEMP_	Camera temperature above 100°c (212°F)	On	
MSG	Ignition switch ON	Camera temperature below 100°c (212°F)	Off
ITS Setting Item (DCA)	Ignition switch ON	MENU> SETTINGS> DAS> DCA ON/OFF	On
			Off
		On	
ITS Setting Item (LDP)	Ignition switch ON	MENU> SETTINGS> DAS> LDP ON/OFF	Off
	Ignition switch ON	MENU> SETTINGS> DAS> BCI ON/OFF	On
ITS Setting Item (BSI)			Off
	Ignition switch ON	BSI system fail lamp ON	On
BSI FAIL IND		BSI system fail lamp OFF	Off
BSW ON IND	Ignition switch ON	BSW system indicator ON	On
		BSW system indicator OFF	Off
	Ignition switch ON	Sensor blocked warning message ON	On
SK_BLK_MSG		Sensor blocked warning message OFF	Off
WARN_LANE_ TIMING	Engine running	Calibration is required	Nothing
BSW_IND_ BRIGHTNESS	Ignition switch ON	Adjust BRIGHTNESS as needed	Normal
	Drive the vehicle and activate	Lane departure warning is operating	On
WARN KEQ	the LDP system	Lane departure warning is not operating	Off
FCW SELECT [ON/	Ignition switch ON	Forward Collision Warning set with the vehicle informa- tion display ON	On
OFF]		Forward Collision Warning set with the vehicle informa- tion display OFF	Off

< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Monitor item	Condition		Value/Status
LDW SELECT [ON/ OFF]	Ignition switch ON	Lane Departure Warning set with the vehicle informa- tion display ON	On
		Lane Departure Warning set with the vehicle informa- tion display ON	Off
BSW SELECT [ON/ OFF]	Ignition switch ON	Blind Spot Warning set with the vehicle information display ON	On
		Blind Spot Warning set with the vehicle information display ON	Off
ITS setting item (FCW) [ON/OFF]	Ignition switch ON	MENU> SETTINGS> DAS> FCW ON/OFF	On
			Off
ITS setting item (LDW) [ON/OFF]	Ignition switch ON	MENU> SETTINGS> DAS> LDW ON/OFF	On
			Off
ITS setting item (BSW) [ON/OFF]	Ignition switch ON	MENU> SETTINGS> DAS> BSW ON/OFF	On
			Off
Battery circuit OFF	Ignition switch ON	Battery circuit OFF	On
		Battery circuit ON	Off

TERMINAL LAYOUT PHYSICAL VALUES


< ECU DIAGNOSIS INFORMATION >

ADAS CONTROL UNIT

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Termir (Wire	nal No. color)	Description			Condition	Value
+	_	Signal name	Input/ Output		Condition	(Approx.)
1		Warning systems	Input	Ignition	When warning systems switch is not pressed	12 V
(BR)		switch	input	ON	When warning systems switch is pressed	0 V
4		Warning systems ON	Output	Ignition	Warning systems ON indi- cator ON	0 V
(W)		indicator	Output	ON	Warning systems ON indi- cator OFF	12 V
5		ICC brake hold relay		Ignition	_	12 V
(G)		drive signal	Output	switch ON	At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	_	lgnition switch ON	_	0 V
7 (L)	Ground	ITS communication-H	_	_	_	(
8 (Y)		ITS communication-L	_	—	—	_
10		BCI OFF switch	Input	Ignition	When BCI OFF switch is not pressed	12 V
(BG)		Der of this switch	input	ON	When BCI OFF switch is pressed	0 V
12	-			Ignition	Warning buzzer operation	0 V
(G)		Warning buzzer signal	Output	switch ON	Warning buzzer not oper- ating	12 V
14 (B)		CAN -H	—	_	—	_
15 (W)		CAN -L	_	_	—	
16 (R)		Ignition power supply	Input		Ignition switch ON	Battery Voltage

Fail-safe

INFOID:000000008368316

Μ

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

System	Buzzer	Warning lamp/Indicator lamp	Description	N
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel	
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel	DAC
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel	Ρ
Forward Collision Warning (FCW)	High-pitched tone	Warning message	Cancel	
Distance Control Assist (DCA)	High-pitched tone	DCA system warning	Cancel	
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel	

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< ECU DIAGNOSIS INFORMATION >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	—	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000008368317

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

Priority	Detected items (DTC)
1	C1A0A: CONFIG UNFINISHED U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)
2	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	C1B00: CAMERA UNIT MALF C1F02: APA C/U MALF C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF

< ECU DIAGNOSIS INFORMATION >

N > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Priority	Detected items (DTC)	
	C1A01: POWER SUPPLY CIR	
	C1A02: POWER SUPPLY CIR 2 C1A04: ABS/TCSA/DC CIPC	
	CTA04: ABS/TCS/VDC CIRC CTA05: BRAKE SW/STOP L SW/	
	C1A06: OPERATION SW CIRC	
	C1A12: LASER BEAM OFFCNTR	
	C1A13: STOP LAMP RLY FIX	
	C1A14: ECM CIRCUIT	
	C1A16: RADAR STAIN	
	C1A18: LASER AIMING INCMP	
	CTAZA: ICC SEN PWR SUP CIR CTAZA: ICC SENSOR HIGH TEMP	
	CTA21. ICC SENSOR HIGH TEMP CTA24: NP RANGE	
	C1A26: ECD MODE MALF	
	C1A27: ECD PWR SUPLY CIR	
	C1A33: CAN TRANSMISSION ERR	
	C1A34: COMMAND ERROR	
	C1A35: APA CIR	
	C1A36: APA CAN COMM CIR	
	• C1A37: APA CAN CIR 2	
	CTA38: APA CAN CIR T CTA39: STRC SEN CIR	
	C1A40: SYSTEM SW CIBC	
	C1B01: CAM AIMING INCMP	
	C1B03: CAM ABNRML TMP DETCT	
	C1B56: SONAR CIRCUIT	
	C1B57: AVM CIRCUIT	
	C1F01: APA MOTOR MALF	
	C1F05: APA PWR SUPLY CIR LI0121: VDC CAN CID 2	
4	U0121. VDC CAN CIR 2 U0126: STRG SEN CAN CIR 1	
7	U0235: ICC SENSOR CAN CIRC 1	
	• U0401: ECM CAN CIR 1	
	• U0402: TCM CAN CIR 1	
	• U0415: VDC CAN CIR 1	
	U0428: STRG SEN CAN CIR 2	
	• U1500: CAM CAN CIR 2	
	U 150 T. CAM CAN CIR T U 150 T. CAM CAN COMM CIR	
	U1503: SIDE RDR L CAN CIR 2	
	• U1504: SIDE RDR L CAN CIR 1	
	U1505: SIDE RDR R CAN CIR 2	
	U1506: SIDE RDR R CAN CIR 1	
	U1521: SONAR CAN COMMUNICATION	
	U1522: SONAR CAN COMMUNICATION	
	U1523: SONAR CAN COMMUNICATION	
	U1524: AVM CAN COMMUNICATION U1525: AVM CAN COMMUNICATION	
	U150B' FCM CAN CIRC 3	
	• U150C: VDC CAN CIRC 3	
	• U150D: TCM CAN CIRC 3	
	U150E: BCM CAN CIRC 3	
	U150F: AV CAN CIRC 3	
	U1512: HVAC CAN CIRC3	
	U1513: METER CAN CIRC 3	
	U1514: STRG SEN CAN CIRC 3 U1515: ICC SENSOR CAN CIRC 3	
	U1516: CAM CAN CIRC 3	
	• U1517: APA CAN CIRC 3	
	U1518: SIDE RDR L CAN CIRC 3	
	U1519: SIDE RDR R CAN CIRC 3	
5	C1A03: VHCL SPEED SE CIRC	
6	C1A15: GEAR POSITION	
7	C1A00 ⁻ CONTROL UNIT	

Revision: March 2012

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< ECU DIAGNOSIS INFORMATION >

DTC Index

INFOID:000000008368318

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.

Systems for fail-safe

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

DTC				W	arning la	mp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-73</u>
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-102</u>
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-104</u>
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-105</u>
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	<u>CCS-109</u>
C1A0A	10	CONFIG UNFINISHED	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	Perform configuration
C1A12	12	LASER BEAM OFFCN- TR	ON	ON				A, C, D, E	<u>CCS-111</u>
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	<u>CCS-113</u>

< ECU DIAGNOSIS INFORMATION >

BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

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В

С

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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DTC	2			W	arning la	mp		Fail-safe		
			lamp	amp	g lamp	ention warning lamp	ention			D
CONSULT	On board display	CONSULT display	em warning	⁻ indicator la	rture warnin	l Spot Interv	Ilision Interv	System	Reference	F
			ICC syste	IBA OFI	Lane depa	/arning/Blinc	Backup Co			G
						Blind Spot M				Η
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-119</u>	
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-120</u>	
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	CCS-122	J
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	<u>CCS-124</u>	
C1A18	18	LASER AIMING INCMP	ON	ON				A, C, D, E	<u>CCS-125</u>	
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	<u>CCS-127</u>	K
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-129</u>	
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	<u>CCS-131</u>	
C1A27	27	ECD PWR SUPLY CIR	ON	ON				A, B, C, D, E	<u>CCS-132</u>	
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	<u>CCS-134</u>	Μ
C1A34	34	COMMAND ERROR	ON					A, B, E	<u>CCS-135</u>	
C1A35	35	APA CIR	ON				ON	A, E, H	<u>CCS-136</u>	Ν
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	<u>CCS-137</u>	
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	<u>CCS-138</u>	
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	<u>CCS-139</u>	
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-140</u>	
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	<u>CCS-133</u>	Ρ
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	<u>DAS-416</u>	
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	<u>DAS-418</u>	
C1B03	83	CAM ABNRML TMP DE- TCT							DAS-420	
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-575	
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-576	

< ECU DIAGNOSIS INFORMATION >

> [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- Systems for fail-safe
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DTC	;			W	arning la	mp		Fail-safe		
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference	
C1B56	87	SONAR CIRCUIT					ON	Н	DAS-742	
C1B57	88	AVM CIRCUIT					ON	Н	DAS-743	
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	<u>CCS-143</u>	
C1F02	92	APA C/U MALF	ON				ON	A, E, H	<u>CCS-144</u>	
C1F05	95	APA PWR SUPLY CIR	ON				ON	A, E, H	<u>CCS-145</u>	
NO DTC IS DETECT- ED. FUR- THER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	_	_	_	_		_	_	
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-147</u>	
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-149</u>	
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	<u>CCS-151</u>	
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-152</u>	
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-153</u>	
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-155</u>	
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-157</u>	
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-75</u>	
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-76	
U1500	145	CAM CAN CIR 2			ON	ON		F, G	DAS-436	
U1501	146	CAM CAN CIR 1			ON	ON		F, G	<u>DAS-437</u>	
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	<u>CCS-166</u>	

< ECU DIAGNOSIS INFORMATION >

BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

А

В

С

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- H: Backup Collision Intervention (BCI)

DTC)			W	arning la	mp		Fail-safe		
						arning lamp				D
			dme	du	lamp	ntion wa	ention			E
CONSULT	On board display	CONSULT display	em warning le	⁻ indicator lar	ture warning	Spot Interve	llision Interve	System	Reference	F
			ICC syste	IBA OFF	Lane depar	Varning/Blind	Backup Co			G
						Blind Spot V				H
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	DAS-601	I
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-602	
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-603	J
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-604	
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-605	K
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-606	
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-162</u>	L
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-163</u>	
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-164</u>	M
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-165</u>	
U150F	161	AV CAN CIRC 3							<u>DAS-77</u>	
U1512	162	HVAC CAN CIRC3			ON	ON		F, G	<u>DAS-438</u>	Ν
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-167</u>	
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-168</u>	DAS
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	<u>CCS-169</u>	
U1516	166	CAM CAN CIRC 3			ON	ON		F, G	<u>DAS-440</u>	Р
U1517	167	APA CAN CIRC 3	ON				ON	A, B, E, H	<u>CCS-170</u>	
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	DAS-611	
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-612	
U1521	177	SONAR CHECKSUM					ON	Н	DAS-779	
U1522	178	SONAR MESSAGE					ON	Н	DAS-780	

< ECU DIAGNOSIS INFORMATION >

|> [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- Systems for fail-safe
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- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTC	;		Warning lamp					Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
U1523	179	SONAR CAN DLC					ON	Н	<u>DAS-781</u>
U1524	180	SONAR CAN DLC					ON	Н	DAS-782
U1525	181	AVM MESSAGE					ON	Н	<u>DAS-783</u>

NOTE:

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

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

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< ECU DIAGNOSIS INFORMATION > SIDE RADAR LH

Reference Value

VALUES ON THE DIAGNOSIS TOOL

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status	
	Side radar is normal.	Off	(
SIDE RADAR MALF	Side radar is malfunctioning.	On	
	Side radar is not blocked.	Off	[
BEOCKAGE COND	Side radar is blocked.	On	
	Radar does not detect a vehicle.	Off	
VEHICLE DETECT	Radar detects a vehicle.	On	E

TERMINAL LAYOUT

US01A024422

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	K
2 (B)	Ground	Ground	_	_	0 V	
3 (Y)	_	ITS communication-L		_	_	L
4 (L)	_	ITS communication-H		_	_	N
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	
6 (W)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF \Rightarrow ON (bulb check)	6 V	N

Fail-safe

INFOID:000000007911875

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the "Please see owner's manual" message in the vehicle information display.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSI system warning light (orange) in the vehicle information display.

TEMPORARY DISABLED STATUS AT BLOCKAGE

Ρ

В

F

Н

INFOID:000000007911874

А

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the "Unavailable Side Radar Obstruction" message appears in the vehicle information display and the warning systems ON indicator will blink. Also, under the following conditions, the operation may be temporarily cancelled.

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

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the "Unavailable Side Radar Obstruction" message appears in the vehicle information display. Also, under the following conditions, the operation may be temporarily cancelled.

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

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

DTC Inspection Priority Chart

INFOID:000000007911876

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:000000007911877

×: Applicable

DTC		Blind Spot Warning/Blind Spot Intervention warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	<u>DAS-571</u>
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-572
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-573
C1B55	RADAR BLOCKAGE	Blink	×	DAS-577
U1000	CAN COMM CIRCUIT	ON	×	DAS-578
U1010	CONTROL UNIT (CAN)	ON	×	DAS-581
U0104	ADAS CAN CIR1	ON	×	DAS-583
U0405	ADAS CAN CIR2	ON	×	DAS-590

SIDE RADAR RH [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SIDE RADAR RH

Reference Value

VALUES ON THE DIAGNOSIS TOOL

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status	_
	Side radar is normal.	Off	C
SIDE RADAR MALF	Side radar is malfunctioning.	On	
	Side radar is not blocked.	Off	D
BEOCHAGE COND	Side radar is blocked.	On	
	Radar does not detect a vehicle.	Off	
VEHICLE DETECT	Radar detects a vehicle.	On	E

TERMINAL LAYOUT

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PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value	J
+	_	Signal name	Input/ Output	Condition	(Approx.)	K
1 (B)	Ground	Right/Left switching signal	Input	_	0 V	
2 (B)	Ground	Ground	_	_	0 V	L
3 (Y)	_	ITS communication-L	_	_	_	N
4 (L)		ITS communication-H	_	_	_	
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	N
6 (W)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF \Rightarrow ON (bulb check)	6 V	

Fail-safe

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FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the "Please see owner's manual" appears in the vehicle information display.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSI system warning light (orange) in the vehicle information display.

DAS-515

SIDE RADAR RH

< ECU DIAGNOSIS INFORMATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the "Unavailable Side Radar Obstruction" message appears in the vehicle information display and the warning systems ON indicator will blink. Also, under the following conditions, the operation may be temporarily cancelled.

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

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

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the "Unavailable Side Radar Obstruction" message appears in the vehicle information display. Also, under the following conditions, the operation may be temporarily cancelled.

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

DTC Inspection Priority Chart

INFOID:000000007911880

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:000000007911881

×: Applicable

DTC		Blind Spot Warning/Blind Spot Intervention warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	<u>DAS-571</u>
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-572
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-573
C1B55	RADAR BLOCKAGE	Blink	×	DAS-577
U1000	CAN COMM CIRCUIT	ON	×	DAS-579
U1010	CONTROL UNIT (CAN)	ON	×	DAS-581
U0104	ADAS CAN CIR1	ON	×	DAS-583
U0405	ADAS CAN CIR2	ON	×	DAS-590

LANE CAMERA UNIT

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

LANE CAMERA UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
	Lane camera unit malfunction	On
LC INACCURAT	Lane camera unit normal	Off
	Camera aiming is completed	ОК
AIMING DONE	Camera aiming is not adjusted	NG
Monitor Item Condition LC INACCURAT Lane camera unit malfunction Iane camera unit normal AIMING DONE Camera aiming is completed Iane camera unit normal AIMING RESULT Camera aiming is not adjusted Iane camera aiming is completed AIMING RESULT Camera aiming is not completed Iane camera unit is adequate CAM HIGH TEMP When the temperature around lane camera unit is adequate When the temperature around the lane camera unit is high VHCL SPD SE VHCL SPD SE While driving Ai TURN SIGNAL Turn signal lamp LH and RH blinking Turn signal lamp LH blinking Turn signal lamp LH and RH blinking Turn signal lamp SOFF Iane test is detected LANE DETCT LH Left side lane marker is detected Iane test is not detected LANE DETCT RH Right side lane marker is not detected Ine vehicle is crossing left side lane marker CROSS LANE LH The vehicle is crossing left side lane marker Ine vehicle is not crossing right side lane marker CROSS LANE RH Warning for left side lane Warning for left side lane WARN LANE LH Warning for left side lane Warning for right side lane <td>ОК</td>	ОК	
AIMING RESULI	Camera aiming is not completed	NOK
	When the temperature around lane camera unit is adequate	NORMAL
CAM HIGH TEMP	When the temperature around the lane camera unit is high	High
VHCL SPD SE	While driving	Approximately equivalent to speed- ometer reading
	Turn signal lamp LH and RH blinking	LH/RH
	Turn signal lamp LH blinking	LH
IURN SIGNAL	Turn signal lamp RH blinking	RH
	Turn signal lamps OFF	Off
LANE DETCT LH	Left side lane marker is detected	On
LANE DETCI LH	Left side lane marker is not detected	Off
	Right side lane marker is detected	On
LANE DETCT RH	Right side lane marker is not detected	Off
CROSS LANE LH	The vehicle is crossing left side lane marker	On
	The vehicle is not crossing left side lane marker	Off
	The vehicle is crossing right side lane marker	On
CRUSS LANE RH	The vehicle is not crossing right side lane marker	Off
	Warning for left side lane	On
WARN LANE LH	Camera aiming is not adjusted NG ING RESULT Camera aiming is not adjusted OK Camera aiming is not adjusted OK Camera aiming is not adjusted NOK W HIGH TEMP When the temperature around lane camera unit is adequate NORMAL When the temperature around the lane camera unit is high Approximately equivalent to spoometer reading CL SPD SE While driving Approximately equivalent to spoometer reading Turn signal lamp LH and RH blinking LH/RH Turn signal lamp SOFF Off Left side lane marker is detected On RE DETCT LH Left side lane marker is not detected Off Right side lane marker is not detected Off Off Right side lane marker is not detected Off Off DSS LANE LH The vehicle is rorossing left side lane marker On The vehicle is not crossing right side lane marker Off On RN LANE LH Warning for left side lane On Not warning for right side lane Off On ID POS LH Lateral positin for left side lane On	Off
LANE DETCT RH CROSS LANE LH CROSS LANE RH WARN LANE LH WARN LANE RH VALID POS LH	Warning for right side lane	On
	Not warning for right side lane	Off
	Lateral position for left side lane marker is valid	VLD
VALID POS LH	Lateral position for left side lane marker is invalid	INVLD
	Lateral position for right side lane marker is valid	VLD
VALID POS RH	Lateral position for right side lane marker is invalid	INVLD
XOFFSET	Camera aiming is completed	Approx. 180 pixel
	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	$0\pm5.0~\text{deg}$
	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	$0\pm5.0~\text{deg}$
	Camera aiming is not completed	0.0 deg
FUIRT AIM PH	Camera aiming is completed	$0\pm5.0~\text{deg}$
	ADAS control unit malfunction	On
ADAS MALF	ADAS control unit normal	Off

DAS-517

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TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	
1 (B)		Ground	_	_	0 V	
4 (BR)		ITS communication-H	_	_	_	
5 (B)	Ground	Ground	_	_	0 V	
7 (LG)		Ignition power supply	Input	Ignition switch ON	Battery voltage	
8 (Y)		ITS communication-L	_	_	_	

Fail-safe

INFOID:000000008368320

FAIL-SAFE CONTROL BY DTC

Lane Departure Warning (LDW)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, and turns ON the "Please see owner's manual" message in the vehicle information display.

Lane Departure Prevention (LDP)

If a malfunction occurs in the lane camera unit, ADAS control unit cancels control, sounds a beep, and turns ON the LDP system warning light (orange) in the vehicle information display.

TEMPORARY DISABLED STATUS AT HIGH TEMPERATURE

Lane Departure Warning (LDW)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the lane warning systems ON indicator on the switch will blink and the following message appears on the meter display "Unavailable High Cabin Temp.".
- When interior temperature is reduced, the system will resume operation automatically and the warning systems ON indicator on the switch will stop blinking.

Lane Departure Prevention (LDP)

- If the vehicle is parked in direct sunlight under high temperature conditions, the system may be deactivated automatically. And the buzzer sounds and the "Unavailable High Cabin Temp." message appears in the vehicle information display.
- When interior temperature is reduced, the system will resume when dynamic driver assistance switch is turned OFF and turned ON.

DTC Inspection Priority Chart

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

Revision: March 2012

DAS-518

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INFOID:000000008368321

LANE CAMERA UNIT

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Priority	Detected items (DTC)	A
1	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)	
2	C1A50: ADAS MALFUNCTION	В
3	 C1B01: CAM AIMING INCMP C1B03: ABNRML TEMP DETECT U0104: ADAS CAN CIR1 U0126: STRG SEN CAN CIR1 U0405: ADAS CAN CIR2 U0428: STRG SEN CAN CIR2 	С
4	C1B00: CAMERA UNIT MALF	D

DTC Index

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				x: Applicable
DTC		Warning indicator lamp (orange / Message)	Fail-safe	Reference
C1A50	ADAS MALFUNCTION	ON		DAS-436
C1B00	CAMERA UNIT MALF	ON	×	DAS-416
C1B01	CAM AIMING INCMP	ON	×	DAS-418
C1B03	ABNRML TEMP DETECT	Message	×	DAS-420
U0104	ADAS CAN CIR1	ON	×	DAS-421
U0126	STRG SEN CAN CIR1	ON	×	DAS-423
U0405	ADAS CAN CIR2	ON	×	DAS-426
U0428	STRG SEN CAN CIR2	ON	×	DAS-428
U1000	CAN COMM CIRCUIT	ON	×	DAS-429
U1010	CONTROL UNIT (CAN)	ON	×	DAS-431
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WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

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Revision: March 2012



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Signal Name	GND1	GND2	IGN	BAT	CAN-L	CAN-H	
Color of Wire	в	в	BG	Μ	٩	Г	
Terminal No.	+	2	21	22	38	39	





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< WIRING DIAGRAM >	[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]
Connector No. M38 Connector Name JOINT CONNECTOR-M29 Connector Name JOINT CONNECTOR-M29 Connector Color WHITE Image: Signal Name Image: Signal Name	Connector No. M41 Connector Name JOINT CONNECTOR-M18 Connector Name JOINT CONNECTOR-M18 Connector Color WHITE Terminal No. Color of Signal Name 3 P -
Connector No. M37 Connector Name JOINT CONNECTOR-M28 Connector Name JOINT CONNECTOR-M28 Connector Color WHITE Image: Color of Color of Color of Signal Name Image: Color of Co	Terminal No. Color of Wire Signal Name 14A LG - 80A Y - 81A L -
Connector No. M36 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Color WHITE Mise Signal Name P V Color of Mire Signal Name	

DRIVER ASSISTANCE SYSTEMS





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< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEMS [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]







AROUND VIEW MONITOR CONTROL UNIT

Connector Name

Signal Name	GND	IGN	CAN-H	CAN-L	V-CAN 1 GND
Color of Wire	В	ГG	В	Μ	SHIELD
Terminal No.	t	ю	27	28	29



Signal Name	I	I	I	
Color of Wire	SHIELD	в	Μ	
Terminal No.	11	12	13	

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Connector No.





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DRIVER ASSISTANCE SYSTEMS [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Revision: March 2012

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	Signal Name	Ι	BCP OFF SW	I	WARNING BUZZER	Ι	CAN-H	CAN-L	IGNITION
	Color of Wire	I	BG	I	ŋ	I	ш	Ν	щ
	Terminal No.	6	10	11	12	13	14	15	16

Signal Name	I	I	1	1	I	I	I	I	I	I	I	I	I
Color of Wire	ш	GR	SHIELD	œ	В	۳	×	Μ	ш	ш	GR	SHIELD	В
Terminal No.	6	10	1	19	20	21	27	28	29	30	31	32	33



Signal Name	WARNING SYSTEM SV	I	I	WARNING SYSTEM ON IND	BRAKE HOLD RLY DRIVE SIGNAL	GND	ITS COMM-H	ITS COMM-L
Color of Wire	BR	I	I	×	IJ	в	_	۲
Terminal No.	-	2	e	4	5	9	7	8

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	lõ				12	X [
	L T			~	13	24
	2			σ	4	25
	0			4	15	26
	Ţ		[2	16	27
	١ <u>ठ</u>			9	17	28
	E	Ш		~	18	29
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	B109	SIDE RADAR RH	BLACK	
	Connector No.	Connector Name	Connector Color	

2 3 4 5 6	Signal Name
-	Color of Wire
H.S.	erminal No.

Signal Name	I	I	1	I	I	1	
Wire	В	В	≻	L	Н	N	
Terminal No.	-	2	e	4	5	9	

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WIRING DIAGRAM >	[BLIND SPOT WARNING & BLIND SPOT INTERVENTION
Connector No. B146 Connector Name JOINT CONNECTOR-B12 Connector Color WHITE Image: State of the sta	Terminal No. Color of Wire Signal Name 2 L - 2 L - 3 L - Connector No. B404 Connector Name WIRE TO WIRE Tommal No. Color of Name 1 B
Connector No. B136 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE Image: State	Terminal No. Color of Wire Signal Name 1 G - 2 W - 3 BR - 4 G - 5 BG - 5 BG - 6 H - 7 WHE TO WIRE Connector No. B400 Connector No. MADO Connector No. MIRE TO WIRE Connector Color WIRE Connector No. MIRE TO WIRE Connec
Connector No. B124 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Color WHITE Image: State	Terminal No. Color of Wire Signal Name 20 Y - 21 L - 21 N - 1 Y - 2 Y - 3 Y -

DRIVER ASSISTANCE SYSTEMS

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8 7 6 5 4 3 2 1	20 19 18 17 16 15 14 13		Signal Name	-	Ι	-
11 10 9	23 22 21 2		Color of Wire	В	ГG	BR
12	24]	Terminal No.	5	9	7

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Connector Name WIRE TO WIRE

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Connector No.

Connector Color WHITE

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	ND SPOT WARNING/ ND SPOT INTERVEN- N INDICATOR RH	2	0 2 0	Signal Name 	3 DWN DWN	Signal Name
D11		r WHI	4	B ≷ Wire		Mire LG B
onnector No.	onnector Nam	onnector Colo	H.S.	arminal No. C.	onnector No. onnector Nam onnector Colo	2 C
or No. D101	ctor Name WIRE TO WIRE ctor Color WHITE			inal No. Color of Signal Name 11 SHIELD – 12 B – 13 W –	ector No. D502 ector Name WIRE TO WIRE ector Color WHITE	inal No. Color of Signal Name 2 B –









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DRIVER ASSISTANCE SYSTEMS

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000007911887

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:**
DIAGNOSIS AND REPAIR WORK FLOW

The customers are not professionals. Never assume that ' tomer mentioned this symptom".	maybe the customer means" or "maybe the cus-
>> GO TO 2.	
2.SELF-DIAGNOSIS WITH CONSULT	
 Perform "All DTC Reading" with CONSULT. Check if the DTC is detected on the self-diagnosis re ADAS". 	sults of "SIDE RADAR LEFT/RIGHT" and/or "ICC/
Is any DTC detected?	
YES >> GO TO 5.	
3 PRE-INSPECTION FOR DIAGNOSIS	
Perform pre-inspection for diagnosis Refer to DAS-543	aspection Procedure"
Tenom pre-inspection of diagnosis. Neter to <u>DAO-040, In</u>	
>> GO TO 4.	
4.ACTION TEST	
Perform Blind Spot Warning and Blind Spot Intervention Refer to <u>DAS-545</u> , "Work Procedure". Check if any other malfunctions occur.	system action test to check the operation status.
>> GO TO 6.	
5. TROUBLE DIAGNOSIS BY DTC	
 Check the DTC in the self-diagnosis results. Perform trouble diagnosis for the detected DTC. Re <u>Index"</u>(SIDE RADAR LEFT/RIGHT), <u>DAS-519</u>, "DTC "DTC Index" (ICC/ADAS). 	fer to <u>DAS-514, "DTC Index"</u> or <u>DAS-516, "DTC</u> <u>Index"</u> (LANE CAMERA UNIT) and/or <u>DAS-508,</u>
NOTE: If "DTC: U1000" is detected, first diagnose the CAN commu	unication system or ITS communication system.
>> GO TO 7.	
6.SYMPTOM DIAGNOSIS	
Perform the applicable diagnosis according to the diagnosi Table".	s chart by symptom. Refer to <u>DAS-623. "Symptom</u>
>> GO TO 7.	
7.MALFUNCTIONING PART REPAIR	
Repair or replace the identified malfunctioning parts.	
>> GO TO 8.	-
Ö .REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)	
 Erases self-diagnosis results. Perform "All DTC Reading" again after repairing or rep Check if any DTC is detected in self-diagnosis results UNIT" and "ICC/ADAS". 	lacing the specific items. of "SIDE RADAR LEFT/RIGHT", "LANE CAMERA
Is any DTC detected?	

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

 $9. {\sf REPAIR CHECK (ACTION TEST)}$

Perform the Blind Spot Warning and Blind Spot Intervention system action test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

YES >> GO TO 4.

NO >> Inspection End.

< BASIC INSPECTION >

PRE-INSPECTION FOR DIAGNOSIS [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

PRE-INSPECTION FOR DIAGNOSIS	-
	38
1.PERFORM PRE-INSPECTION OF LANE CAMERA UNIT	
Perform pre-inspection of lane camera unit. Refer to DAS-389, "Inspection Procedure".	-
>> GO TO 2.	
2. CHECK REAR BUMPER NEAR THE SIDE RADAR	
Are rear humper near the side radar contaminated with foreign materials?	_
YES >> Clean the rear bumper.	
NO >> GO TO 3. CHECK SIDE PADAR AND THE SIDE PADAR 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).	-
YES >> Inspection End.	
NO >> Install side radar properly.	

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ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT < BASIC INSPECTION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

ADDITIONAL SERVICE WHEN REPLACING LANE CAMERA UNIT

Description

Always adjust the camera aiming after removing and installing or replacing the lane camera unit. **CAUTION:**

The system does not operate normally unless the camera aiming adjustment is performed. Always perform it.

Work Procedure

INFOID:000000007911890

INFOID:000000007911889

1.CAMERA AIMING ADJUSTMENT

Perform the camera aiming adjustment. Refer to DAS-393, "Work Procedure".

>> GO TO 2.

2.BLIND SPOT WARNING/BLIND SPOT INTERVENTION SYSTEM ACTION TEST

 Perform the Blind Spot Warning/Blind Spot Intervention system action test. Refer to <u>DAS-545</u>, "Work Procedure".

2. Check that the Blind Spot Warning/Blind Spot Intervention system operates normally.

>> WORK END

< BASIC INSPECTION >

ACTION TEST

ACTION TEST [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Description

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Always perform the Blind Spot Warning and Blind Spot Intervention system action test to check that the tem operates normally after replacing the lane camera unit, replacing the side radar left (right), or repairing Blind Spot Intervention system malfunction.	sys- _B g any
Perform the Blind Spot Intervention system action test after checking that the LDP system operates norr because the Blind Spot Intervention system shares components with the LDP system.	mally ^C
WARNING:	D
Be careful of traffic conditions and safety around the vehicle when performing road test.	D
Fully understand the following items well before the road test;	
 Precautions: Refer to <u>DAS-462</u>, "Precaution for Blind Spot Warning/Blind Spot Intervention System Service". 	stem E
System description for Blind Spot Warning: Refer to DAS-466, "BLIND SPOT WARNING (BSW)	<u>SYS-</u>
System Description . System description for Blind Spot Intervention: Refer to <u>DAS-470, "BLIND SPOT INTERVENT</u> SYSTEM : System Description".	<u>FION</u> F
 Normal operating condition: Refer to <u>DAS-628</u>, "<u>Description</u>". 	
Work Procedure	007911892 G
WARNING: Be careful of traffic conditions and safety around the vehicle when performing road test. CAUTION:	Н
 Fully understand the following items well before the road test; Precautions: Refer to <u>DAS-462</u>, "<u>Precaution for Blind Spot Warning/Blind Spot Intervention System</u>". 	stem
 System description for Blind Spot Warning: Refer to <u>DAS-466, "BLIND SPOT WARNING (BSW) S</u> TEM : System Description" 	<u>SYS-</u>
• System description for Blind Spot Intervention: Refer to <u>DAS-470, "BLIND SPOT INTERVEN</u>]	ΓΙΟΝ J
SYSTEM : System Description"	
• Normal operating condition: Refer to <u>DAS-628, "Description"</u> .	
I .LDW/LDP SYSTEM ACTION TEST	K
Perform the LDW/LDP system action test. Refer to DAS-390, "Inspection Procedure".	
	L
>> GO TO 2.	
2. CHECK BSW SYSTEM SETTING	
1. Start the engine.	M
2. Check that the BSW system setting can be enabled/disabled in the vehicle information display.	
 Turn OFF the ignition switch and wait for 5 seconds or more. Check that the previous setting is saved when the engine starts again. 	Ν
>> GO TO 3.	
3. BSW SYSTEM ACTION TEST	DAS
 Enable the setting of the BSW system in the vehicle information display. Turn warning systems switch ON (warning systems ON indicator is ON) 	
NOTE: Plind Spot Intervention system is OFF	Р

3. Check BSW operation according to the following table.

< BASIC INSPECTION >

ACTION TEST [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Vehicle condition/ Driver's operation			on	Action		
Warning systems ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Turn signal condition	Status of ve- hicle detec- tion within detection area	Indication on the Blind Spot Warning/Blind Spot In- tervention indicator	Buzzer	
OFF		_	—	OFF	OFF	
	Less than ap- prox. 29 (18)	_	_	OFF	OFF	
		_	Vehicle is absent	OFF	OFF	
ON	Approx. 32 (20) or more ON (vehicle de- tected direc- tion)	OFF	Vehicle is detected	ON	OFF	
		Approx. 32 (20) or more ON (vehicle de-	Before turn signal oper- ates Vehicle is detected	Blink 200 ms Indicator ON Indicator OFF 200 ms JSOIA0251GB	Short continuous beep Buzzer ON Buzzer OFF 550 ms JSOIA0252GB	
		Vehicle is detected af- ter turn sig- nal operates	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.
- Always Blind Spot Intervention system operates together with BSW system. Whenever Blind Spot Intervention system is turned on by pushing the dynamic driver assistance switch, BSW system also be turned on even if the BSW system is turned off. However, at this time the warning systems ON indicator remains OFF.

>> GO TO 4.

4.CHECK BLIND SPOT INTERVENTION SYSTEM SETTING

- 1. Start the engine.
- 2. Check that the Blind Spot Intervention system setting can be enabled/disabled in the vehicle information display.
- 3. Turn OFF the ignition switch and wait for 5 seconds or more.
- 4. Check that the previous setting is saved when the engine starts again.

>> GO TO 5.

5. CHECK DYNAMIC DRIVER ASSISTANCE SWITCH

- 1. Start the engine.
- 2. After starting the engine wait for 5 seconds or more.
- 3. Enable the setting of the Blind Spot Intervention system in the vehicle information display.
- 4. Press the dynamic driver assistance switch.
- 5. Check that the Blind Spot Intervention ON indicator on the combination meter illuminates.
- 6. Check that the Blind Spot Intervention ON indicator turns OFF when the system is turned OFF by pressing the dynamic driver assistance switch.



< BASIC INSPECTION >	[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]	
7. Check that the Blind Spot Intervention C	N indicator turns OFF when the engine starts again.	
 NOTE: The Blind Spot Intervention ON indicator switch is turned ON within approximately 5 	does not illuminate even when the dynamic driver assistance seconds after starting the engine.	4
>> Inspection End	F	В
		С
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	I	L
	,	M
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DTC/CIRCUIT DIAGNOSIS

C1A00 CONTROL UNIT

DTC Logic

INFOID:000000007911893

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1A00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".
- Is "C1A00" detected as the current malfunction?
- YES >> Refer to <u>DAS-548</u>, "Diagnosis Procedure".
- NO >> Inspection End.

Diagnosis Procedure

INFOID:000000007911894

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 < DTC/CIRCUIT DIAGNOSIS > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000007911895

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	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 (2)	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
	RMATION PROC	EDURE	
. Start the e . Turn the E . Perform "// . Check if th ADAS". <u>s "C1A01" or</u>	All DTC Reading" All DTC Reading" he "C1A01" or "C1 (C1A02" detected	tion system ON. with CONSULT. A02" is detected as the current malfunctio as the current malfunction?	n in "Self Diagnostic Result" of "ICC/
YES >> R NO >> R	efer to <u>DAS-549.</u> efer to <u>GI-53. "Inte</u>	Diagnosis Procedure". ermittent Incident".	
)iagnosis F	Procedure		INFOID:00000007911890
.CHECK AD	AS CONTROL U	NIT POWER SUPPLY AND GROUND CI	RCUIT
theck powers	supply and ground on result normal?	control unit Refer to DAS-79 "Removal a	S-549, "Diagnosis Procedure".
NO >> R	epair or replace th	e malfunctioning parts.	

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C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000007911897

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) re- ceived by the ADAS control unit via CAN com- munication, are inconsistent	 Wheel speed sensor ABS actuator and electric unit (control unit) ADAS control unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04". • Refer to <u>DAS-579</u>, "ADAS CONTROL UNIT : <u>DTC Logic</u>" for DTC "U1000".

• Refer to DAS-551, "DTC Logic" for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- Drive the vehicle at 30 km/h (19 MPH) or more.
 CAUTION:

Always drive safely.

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

Is "C1A03" detected as the current malfunction?

YES-1 (Blind Spot Warning/Blind Spot Intervention warning lamp: ON)>>Refer to <u>DAS-550</u>, "Diagnosis Procedure".

YES-2 (Blind Spot Warning/Blind Spot Intervention warning lamp: OFF)>>Refer to CCS-104. "DTC Logic".

NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911898

1. CHECK SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</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-45, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

C1A04 ABS/TCS/VDC SYSTEM [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

INFOID:000000007911899

INFOID:000000007911900

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DTC DETECTION LOGIC

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

NOTE:

If DTC "C1A04" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

Diagnosis Procedure

1. CHECK SELF-DIAGNOSIS RESULTS	F
 Perform "All DTC Reading" with CONSULT. Check if the "U1000" is detected other than "C1A04" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? 	G
YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u> . NO >> GO TO 2.	Н
Z .CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS	
Check if any DTC is detected in "Self Diagnostic Result" of "ABS".	1
Is any DTC detected?	
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".	.1
NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u> .	0

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< DTC/CIRCUIT DIAGNOSIS >

C1A05 BRAKE SW/STOP LAMP SW _{5 >} [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:00000008368329

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) con- tinues for 10 seconds or more with vehicle speeds at approximately 40 km/h or more	 Stop lamp switch circuit ICC brake switch circuit Stop lamp switch ICC brake switch Incorrect stop lamp switch installation Incorrect ICC brake switch installation ECM ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

Diagnosis Procedure

INFOID:00000008368330

Regarding Wiring Diagram information, refer to <u>DAS-366, "Wiring Diagram"</u>.

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4.

NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3.CHECK STOP LAMP SWITCH

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

Is the inspection result normal?

YES >> GO TO 14.

NO >> GO TO 9.

4.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.

Check ICC brake switch for correct installation. Refer to <u>BR-15, "Adjustment"</u>.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Adjust ICC brake switch installation. Refer to <u>BR-15, "Adjustment"</u>.

C1A05 BRAKE SW/STOP LAMP SW

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION] < DTC/CIRCUIT DIAGNOSIS > 5.ICC BRAKE SWITCH INSPECTION Α 1. Disconnect ICC brake switch connector. Check ICC brake switch. Refer to DAS-555, "Component Inspection (ICC Brake Switch)". 2. Is the inspection result normal? В YES >> GO TO 6. NO >> Replace ICC brake switch. **6.**CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT 1. Turn the ignition switch ON. Check voltage between ICC brake switch harness connector and ground. 2. Terminals (+) (-) Voltage E (Approx.) ICC brake switch Connector Terminal Ground 1 E72 Battery voltage F Is the inspection result normal? YES >> GO TO 7. NO >> Repair the harnesses or connectors. I.CHECK HARNESS BETWEEN ICC BRAKE SWITCH AND ECM 1. Turn ignition switch OFF Н 2. Disconnect ECM connector. 3 Check for continuity between ICC brake switch harness connector and ECM harness connector. ICC brake switch FCM Continuity Connector Terminal Connector Terminal E72 2 E16 126 Yes Check for continuity between ICC brake switch harness connector and ground. 4. K ICC brake switch Continuity Connector Terminal Ground E72 2 No Is the inspection result normal? YES >> GO TO 8. NO >> Repair the harnesses or connectors. Μ **8.**PERFORM SELF-DIAGNOSIS OF ECM 1. Connect all connectors again if the connectors are disconnected. Ν 2. Turn ignition switch ON. Perform "All DTC Reading". 3. 4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to EC-108, "DTC Index". DAS Is any DTC detected? YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result. >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". NO Ρ **9.**CHECK STOP LAMP SWITCH INSTALLATION 1. Turn ignition switch OFF.

Check stop lamp switch for correct installation. Refer to <u>BR-15, "Adjustment"</u>.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Adjust stop lamp switch installation. Refer to <u>BR-15, "Adjustment"</u>.

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

10.STOP LAMP SWITCH INSPECTION

1. Disconnect stop lamp switch connector.

2. Check stop lamp switch. Refer to DAS-555, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace stop lamp switch.

11. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn the ignition switch ON.

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

(+)	(-)	Voltage
Stop lan	np switch		(Approx.)
Connector	Terminal	Cround	
E38	1	Ground	Ratten/ voltage
230	3		Dattery Voltage

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

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

Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E38	2	E16	122	Yes

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

Stop lamp switch			Continuity
Connector	Terminal	Ground	Continuity
E38	2		No

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair the harnesses or connectors.

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

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

Stop lan	np switch	ABS actuator and electric unit (control unit)		Continuity
Connector	Terminal	Connector	Terminal	
E38	4	E125	5	Yes

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

< DTC/CIRCUIT DIAGNOSIS >

C1A05 BRAKE SW/STOP LAMP SW S > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

	Stop la	mp switch				А
Con	nector	Terminal	Ground	Continuity		
E	38	4		No		D
Is the	inspec	tion result nor	mal?	<u> </u>		В
YES	>> (GO TO 14.				
NO	>>	Repair the har	nesses or connectors.			С
14. P	PERFO	RM SELF-DIA	AGNOSIS OF ECM			
1. Co	onnect	all connectors	s again if the connector	s are discon	nected.	
2. IU 3. Pé	ırn ıgn erform	Ition switch Of "All DTC Rea	N. dina"			D
4. Cl	neck if	any DTC is de	etected in "Self Diagnos	stic Result" c	f "ENGINE". Refer to <u>EC-108, "DTC_Index"</u> .	
<u>ls any</u>	DTC c	letected?				E
YES	>>	Repair or repla	ace the malfunctioning p	oarts identifi	ed by the self-diagnosis result.	
NO 15 -) <<	GO TO 15.				E
IJ.P	PERFO	ORM SELF-DIA	AGNOSIS OF ABS ACT	UATOR AN	D ELECTRIC UNIT (CONTROL UNIT)	Г
Check	if any	DTC is detect	ed in "Self Diagnostic F	Result" of "A	3S". Refer to <u>BRC-45, "DTC Index"</u> .	
ls any	DTC c	letected?				G
YES NO	>> >>	Repair or repla	ace the malfunctioning p	barts identified	d by the self-diagnosis result. "Removal and Installation"	
				(0 <u>DAO-73,</u>	<u>-removal and installation</u> .	
Com	pone	nt inspectic	on (ICC Brake Swi	lCN)	INFOID:00000008368331	
1.сн	ECK I	CC BRAKE SV	WITCH			
Check	for co	ntinuity betwe	en ICC brake switch te	minals		I
oncon				initiale.		
Terr	ninal		Condition	Continuity		
4	2	When brake peo	dal is depressed	No		J
I	2	When brake peo	dal is released	Yes		
ls the	inspec	tion result nor	mal?			K
YES	>>	nspection End	J.			
NO	>>	Replace ICC b	orake switch.			
Com	pone	nt Inspectio	on (Stop Lamp Sw	itch)	INFOID:00000008368332	L
1						
		TOP LAWP 5		<u> </u>		M
Check	for co	ntinuity betwe	en stop lamp switch ter	minals.		
Torn	ninal		Condition	Continuity		K.I
	minai	When brake per		Voc		IN
1	2	When brake per	tal is released	No	,	
		When brake per		Voc		DA
3	4	When brake per		No		
lo the	increa	tion rooult nor		INU		
	INSPEC	non result nor	<u>11181 /</u> N			Ρ
NO	>> >>	Replace stop I	amp switch			

C1A06 OPERATION SW

DTC Logic

INFOID:00000008368333

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A06 (6)	OPERATION SW CIRC	 Any switch of the ICC steering switch is detected as "ON" continuously for 60 seconds An ON/OFF state judgment of the ICC differs between ECM and ADAS control unit, and the state continues for 2 seconds or more 	 ICC steering switch circuit ICC steering switch ECM

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Wait for approximately 5 minutes after turning the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A06" detected as the current malfunction?

- YES >> Refer to <u>DAS-556, "Diagnosis Procedure"</u>.
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:00000008368334

Regarding Wiring Diagram information, refer to DAS-366, "Wiring Diagram".

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429</u>, "ADAS CONTROL UNIT : <u>DTC Logic</u>".

NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

- 1. Turn the ignition switch OFF.
- 2. Disconnect the ICC steering switch connector.
- 3. Check the ICC steering switch. Refer to DAS-557, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the steering wheel.

3.CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

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

Spiral cable		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity

C1A06 OPERATION SW [BLIND SPOT WARNING & BLIND SPOT INTERVENTION] < DTC/CIRCUIT DIAGNOSIS > 25 101 M30 E16 Yes 32 108 Check for continuity between spiral cable harness connector and ground. 3. Spiral cable Continuity Connector Terminal Ground 25 M30 No 32 Is the inspection result normal? YES >> GO TO 4. NO >> Repair the harnesses or connectors. **4.**CHECK SPIRAL CABLE Check for continuity between spiral cable terminals. Spiral cable Continuity Terminal 13 25 Yes 16 32 Is the inspection result normal? YES >> GO TO 5. NO >> Replace the spiral cable. 5.PERFORM SELF-DIAGNOSIS OF ECM 1. Connect the connectors of ICC steering switch and ECM connector. 2. Turn the ignition switch ON. Perform "All DTC Reading". 3. 4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Is any DTC detected? YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to EC-108, "DTC Index". >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". NO

Component Inspection

1.CHECK ICC STEERING SWITCH

Check resistance between ICC steering switch terminals.

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



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Is the inspection result normal?

YES >> Inspection End.

NO >> Replace the ICC steering switch.

DTC Logic

C1A14 ECM

INFOID:000000007911908

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DTC DETECTION LOGIC В DTC (On board dis-Trouble diagnosis name DTC detecting condition Possible causes play) · Accelerator pedal position sensor C1A14 ECM CIRCUIT If ECM is malfunctioning ECM (14)D · ADAS control unit NOTE: If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-579. E "ADAS CONTROL UNIT : DTC Logic" 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. E 2. Operate the Blind Spot Intervention system and drive. **CAUTION:** Always drive safely. G Stop the vehicle. 3. Perform "All DTC Reading" with CONSULT. 4. Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 5. Н Is "C1A14" detected as the current malfunction? YES >> Refer to DAS-559, "Diagnosis Procedure". NO >> Refer to GI-53, "Intermittent Incident". **Diagnosis** Procedure INFOID-000000007911909 1. CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "C1A14" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. YES Κ Refer to DAS-579, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. 2.PERFORM SELF-DIAGNOSIS OF ECM L Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Is any DTC detected? Μ YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to EC-108. "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

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C1A15 GEAR POSITION

Description

INFOID:000000007911910

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

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

DTC Logic

INFOID:000000007911911

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN com- munication and a gear position calculated by the ADAS control unit continues for approx- imately 11 minutes or more	 Input speed sensor Vehicle speed sensor CVT (output speed sensor) TCM

NOTE:

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

- Refer to DAS-579, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000".
- Refer to <u>DAS-550</u>, "DTC Logic" for DTC "C1A03".
- Refer to <u>DAS-551, "DTC Logic"</u> for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more. CAUTION:

Always drive safely.

- 4. Stop the vehicle.
- 5. Perform "All DTC Reading" with CONSULT.
- 6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".
- Is "C1A15" detected as the current malfunction?
- YES >> Refer to DAS-560, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911912

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-508, "DTC Index".

NO >> GO TO 2.

2.CHECK VEHICLE SPEED SIGNAL

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

CAUTION:

Be careful of the vehicle speed. Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 7.	А
3. CHECK GEAR POSITION	
Check that "GEAR" operates normally in "DATA MONITOR" of "ICC/ADAS". CAUTION: Be careful of the vehicle speed.	В
Is the inspection result normal?	
YES >> GO TO 5. NO >> GO TO 4.	С
4.CHECK GEAR POSITION SIGNAL	D
Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".	D
Is the inspection result normal? YES >> GO TO 5. NO >> GO TO 6.	Е
5. CHECK INPUT SPEED SENSOR SIGNAL	
Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".	F
Is the inspection result normal?	
YES >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u> . NO >> GO TO 6.	G
6.CHECK TCM SELF-DIAGNOSIS RESULTS	
 Perform "All DTC Reading". Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION". 	Н
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to	
TM-55. "DTC Index".	
NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u> .	I
CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS	0
 Perform All DTC Reading . Check if any DTC is detected in "Self Diagnostic Result" of "ABS". 	
Is any DTC detected?	K
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to	
NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u> .	L
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< DTC/CIRCUIT DIAGNOSIS >

C1A24 NP RANGE

DTC Logic

INFOID:000000007911913

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communica- tion and a current gear position signal contin- ues for 60 seconds or more	TCMTransmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.CHECK DTC REPRODUCE (1)

1. Start the engine.

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

Is "C1A24" detected as the current malfunction?

- YES >> Refer to DAS-562, "Diagnosis Procedure".
- NO >> GO TO 2.

2.CHECK DTC REPRODUCE (2)

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

Is "C1A24" detected as the current malfunction?

- YES >> Refer to DAS-562, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911914

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK NP POSITION SWITCH SIGNAL

Check that "NP RANGE SW" operates normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> GO TO 4.

4.PER	RFORM TCM SELF-DIAGNOSIS
1. Pei 2. Ch	rform "All DTC Reading". leck 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-55, "DTC Index"</u> .
NO	>> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000007911915

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to DAS-564, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911916

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579</u>, "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 <u>BRC-45. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

< DTC/CIF	RCUIT DIAGNOSIS >	[BLIND SPOT WARNING	& BLIND SPOT INTERVENTION]	
C1A50	ADAS CONTRO	L UNIT		,
DTC Log	gic		INFOID:00000007911917	F
DTC DET	ECTION LOGIC			E
DTC	Trouble diagnosis name	DTC detecting condition	Possible cause	(
C1A50	ADAS MALFUNCTION	If ADAS control unit is malfunctioning	ADAS control unit	
NOTE: If DTC "C ⁻ "ADAS CO 1	1A50" is detected along NTROL UNIT : DTC Lo	g with DTC "U1000", first diagnose the <u>gic"</u> .	e DTC "U1000". Refer to <u>DAS-579.</u>	[
I.PERFO	RM DTC CONFIRMATI	ON PROCEDURE		
 Start th Turn th Perform Check ERA". 	he engine. he Blind Spot Interventio m "All DTC Reading" wit t if the "C1A50" is detec	on system ON. th CONSULT. sted as the current malfunction in "Self	Diagnostic Result" of "LANE CAM-	E
<u>ls "C1A50"</u>	detected as the current	t malfunction?		
YES >	> Refer to <u>DAS-565, "Di</u>	agnosis Procedure".		
NO >:	Refer to <u>GI-53, "Interm</u>	<u>nittent Incident"</u> .		
Diagnos	is Procedure		INFOID:000000007911918	
1.снеск	LANE CAMERA UNIT	SELF-DIAGNOSIS RESULTS		I
Check if "L	J1000" is detected other	than "C1A50" in "Self Diagnostic Resu	It" of "LANE CAMERA".	
<u>ls "U1000"</u>	detected?	Ű		
YES >:	> Perform the CAN com	munication system inspection. Repair	or replace the malfunctioning parts.	
NO >:	> GO TO 2.	INE OR MERCEONIT . DTO LOGIO.		
2.снеск	ADAS CONTROL UNI	T SELF-DIAGNOSIS RESULTS		
Check if an	ny DTC is detected in "S	elf Diagnostic Result" of "ICC/ADAS".		
Is any DTC	<u>C detected?</u>			
YES >:	Perform diagnosis on DAS-508 "DTC Index"	the detected DTC and repair or replac	e the malfunctioning parts. Refer to	
NO >:	Replace the lane came	 era unit. Refer to <u>DAS-633, "Removal a</u>	and Installation".	
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C1A50 ADAS CONTROL UNIT

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C1B00 CAMERA UNIT MALF ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911919

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes		
C1B00 (81)	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit		
		RE			
I.PERFOR	M DTC CONFIRMATION	PROCEDURE			
 Start the Perform Check if <u>Is "C1B00" de</u> 	 Start the engine. Perform "All DTC Reading" with CONSULT. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "C1B00" detected as the current malfunction? 				
YES >> F NO >>	Refer to <u>DAS-566, "ADAS</u> NSPECTION END	CONTROL UNIT : Diagnosis Procedure".			
ADAS CO	NTROL UNIT : Diag	nosis Procedure	INFOID:000000007911920		
1.CHECK S	1.CHECK SELF-DIAGNOSIS RESULTS				
Check if "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA".					
Is "C1B00" detected?					
YES >> F NO >> F LANE CA	YES >> Refer to <u>DAS-566, "LANE CAMERA UNIT : DTC Logic"</u> NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u> . _ANE CAMERA UNIT				

LANE CAMERA UNIT : DTC Logic

INFOID:000000007911921

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B00	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "C1B00" detected as the current malfunction?

YES >> Refer to DAS-566, "LANE CAMERA UNIT : Diagnosis Procedure".

NO >> Inspection End.

LANE CAMERA UNIT : Diagnosis Procedure

1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA". Is any DTC detected?

DAS-566

INFOID:000000007911922

< DTC/CIRCUIT DIAGNOSIS >

C1B00 CAMERA UNIT MALF

SIS > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-519, "DTC Index"</u>.
 NO >> Replace the lane camera unit. Refer to <u>DAS-633, "Removal and Installation"</u>.
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C1B01 CAM AIMING INCMP ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911923

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

- **1.**PERFORM DTC CONFIRMATION PROCEDURE
- 1. Start the engine.
- 2. Operate the Blind Spot Intervention system and drive. CAUTION:

Always drive safely.

- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B01" detected as the current malfunction?

YES >> Refer to <u>DAS-568</u>, "ADAS CONTROL UNIT : Diagnosis Procedure". NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "C1B01" detected?

- YES >> Refer to DAS-568, "LANE CAMERA UNIT : DTC Logic"
- NO >> GO TO 2.

2. CHECK DATA MONITOR

- 1. Start the engine.
- 2. Check that "OK" is indicated for the value of "AIMING RESULT" in "DATA MONITOR" of "LANE CAM-ERA".

Is "OK" indicated?

YES >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

NO >> Replace the lane camera unit. Refer to DAS-633, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000007911925

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

INFOID:000000007911924

< DTC/CIRCUIT DIAGNOSIS >

C1B01 CAM AIMING INCMP

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

1.PERFORM DTC CONFIRMATION PROCEDURE	Λ
 Start the engine. Perform "All DTC Reading" with CONSULT. Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA". 	В
Is "C1B01" detected as the current malfunction? YES >> Refer to DAS-569, "LANE CAMERA UNIT : Diagnosis Procedure". NO >> Refer to GI-53, "Intermittent Incident".	С
LANE CAMERA UNIT : Diagnosis Procedure	
1.CAMERA AIMING ADJUSTMENT	D
 Perform the camera aiming. Refer to <u>DAS-394, "Description"</u>. Erase all self-diagnosis results with CONSULT. Perform "All DTC Reading". Check if the "C1B01" is detected in "Self Diagnostic Result" of "LANE CAMERA" 	Е
 4. Check if the CTBOT is detected in Self Diagnostic Result of LANE CAMERA . <u>Is "C1B01" detected?</u> YES >> Replace the lane camera unit. Refer to <u>DAS-633, "Removal and Installation"</u>. NO >> Inspection End. 	F
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< DTC/CIRCUIT DIAGNOSIS > [B C1B03 ABNRML TEMP DETECT

ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911927

INFOID:000000007911928

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03 (83)	CAM ABNRML TMP DETCT	Temperature around lane camera unit is excessively high	Interior room temperature is exces- sively high

ADAS CONTROL UNIT : Diagnosis Procedure

1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

- 1. Perform "All DTC Reading" with CONSULT.
- 2. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA"

Is "C1B03" detected?

- YES >> Refer to DAS-570, "LANE CAMERA UNIT : DTC Logic"
- NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

- 1. Erase all self-diagnosis results with CONSULT.
- 2. Perform "All DTC Reading".
- 3. Check if the "C1B03" is detected in "Self Diagnostic Result" of "ICC/ADAS"

Is "C1B03" detected?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000007911929

INFOID:000000007911930

DTC DETECTION LOGIC

DTC	DTC Trouble diagnosis name DTC detecting condition		Possible causes
C1B03	ABNRML TEMP DETECT	Temperature around lane camera unit is ex- cessively high	Interior room temperature is exces- sively high

LANE CAMERA UNIT : Diagnosis Procedure

1.COOLING LANE CAMERA UNIT

- 1. Wait for 10 minutes or more to cool the lane camera unit.
- 2. Erase all self-diagnosis results with CONSULT.
- 3. Perform "All DTC Reading".
- 4. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B03" detected?

- YES >> Replace the lane camera unit. Refer to <u>DAS-633</u>, "Removal and Installation".
- NO >> Inspection End.

C1B50 SIDE RADAR MALFUNCTION [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

< DTC/CIRCUIT DIAGNOSIS >

C1B50 SIDE RADAR MALFUNCTION

DTC LOGIC

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DTC DETECTION LOGIC В DTC Trouble diagnosis name DTC detecting condition Possible causes С SIDE RDR MALFUNC-C1B50 Side radar malfunction Side radar TION DTC CONFIRMATION PROCEDURE D 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. Е 2. Perform "All DTC Reading" with CONSULT. 3. Check if the "C1B50" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR RIGHT/LEFT". Is the "C1B50" detected as the current malfunction? F >> Refer to DAS-571, "Diagnosis Procedure". YES NO >> Inspection End. **Diagnosis** Procedure INFOID:000000007911932 1. CHECK SELF-DIAGNOSIS RESULT Н Check if any DTC other than "C1B50" is detected in "Self Diagnostic Result" of "SIDE RADAR LEFT/RIGHT" Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunction part. Refer to DAS-I 516, "DTC Index" (SIDE RADAR RIGHT) or DAS-514, "DTC Index" (SIDE RADAR LEFT). >> Replace the side radar. Refer to DAS-630, "Removal and Installation". NO Κ

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C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

DTC Logic

INFOID:000000007911933

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B51	BSW/BSI IND SHORT CIR	Short circuit in Blind Spot Warning/Blind Spot Intervention indicator circuit is detected. (Over current is detected)	 Blind Spot Warning/Blind Spot Intervention indicator circuit. Blind Spot Warning/Blind Spot Intervention indicator. Side radar.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Perform "All DTC Reading" with CONSULT.
- 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-571. "Diagnosis Procedure".
- NO >> Inspection End.

Diagnosis Procedure

INFOID:000000007911934

Regarding Wiring Diagram information, refer to DAS-520. "Wiring Diagram".

1. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR SHORT

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

Side radar			Continuity
Connector	Terminal	Ground	Continuity
B416 (LH)	ű	6	No
B109 (RH)	0		TNU TNU

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-630</u>, "Removal and Installation".
- NO >> Inspection End.

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

DTC Logic

INFOID:000000007911935

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DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B52	BSW/BSI IND OPEN CIR	Open circuit in Blind Spot Warning/Blind Spot Intervention indi- cator circuit is detected.	 Blind Spot Warning/Blind Spot Intervention indica- tor circuit. Blind Spot Warning/Blind Spot Intervention indica- tor. Side radar.
DTC CC	ONFIRMATION PROC	EDURE	
1.PERF	FORM DTC CONFIRMA	TION PROCEDURE	
 Star Perf Che RIG Is the "C YES NO 	form "All DTC Reading" v eck if the "C1B52" is dete HT/LEFT". 21B52" detected as the c >> Refer to <u>DAS-571, "</u> >> Inspection End.	with CONSULT. ected as the current malfunction in "Self Diagnostic I <u>urrent malfunction?</u> <u>Diagnosis Procedure"</u> .	Result" of "SIDE RADAR
Diagno	osis Procedure		INFOID:000000007911936
Regardi	ng Wiring Diagram inforr	nation, refer to <u>DAS-520, "Wiring Diagram"</u> .	
1. CHE	CK BLIND SPOT WARN	ING/BLIND SPOT INTERVENTION INDICATOR CIF	RCUIT FOR OPEN 1
 Turr Disc ness Che indic 	n ignition switch OFF. connect side radar harne s connector. eck continuity between s cator harness connector.	ess connector and Blind Spot Warning/Blind Spot Ir ide radar harness connector and Blind Spot Warnin	tervention indicator har- g/Blind Spot Intervention

Side	radar	Blind Spot W Spot Interven	Varning/Blind ntion indicator	Continuity
Connector	Terminal	Connector	Terminal	-
B416 (LH)	6	D21 (LH)	1	Vec
B109 (RH)	0	D111 (RH)	I	165
Is the inspec	ction result no	ormal?		

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2. CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR OPEN 2

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

>> GO TO 2.

>> Repair the harnesses or connectors.

YES

NO

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Blind Spot V Spot Interver	Varning/Blind ntion indicator		Continuity
Connector	Terminal	Ground	
D21 (LH)	1		Vec
D111 (RH)	4		165

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

 $\mathbf{3}$. Check side radar voltage output

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

Blind Spot V Spot Interver	Varning/Blind ntion indicator		Condition	Voltage
Connector	Terminal	Ground		(Applox.)
D21 (LH)			Ignition switch	
D111 (RH)	1		$OFF \Rightarrow ON$ (Approx. 2 sec.)	6 V

Is the inspection result normal?

- YES >> Replace Blind Spot Warning/Blind Spot Intervention indicator.
- NO >> Replace side radar. Refer to DAS-630, "Removal and Installation".

C1B53 SIDE RADAR RIGHT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B53 SIDE RADAR RIGHT MALFUNCTION

DTC Logic

DTC DETECTION LOGIC	

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause	
C1B53 (84)	SIDE RDR R MALF	ADAS control unit detects that side radar RH has a malfunction.	Side radar RH	
DTC CON	FIRMATION PROCEDU	JRE		
1.PERFO	RM DTC CONFIRMATION	N PROCEDURE		
1. Start th 2. Perform 3. Check Is "C1B53" YES >: NO >:	ne engine. m "All DTC Reading" with if the "C1B53" is detected <u>detected as the current m</u> > Refer to <u>DAS-575, "Diag</u> > Refer to <u>GI-53, "Intermit</u>	CONSULT. I as the current malfunction in "Self Diagn nalfunction? mosis Procedure". trent Incident".	ostic Result" of "ICC/ADAS".	
Diagnos	s Procedure		INFOID:00000007911938	
1.снеск	SELF-DIAGNOSIS RESU	JLTS		
Check if "L	1000" is detected other th	an "C1B53" in "Self Diagnostic Result" of	"ICC/ADAS".	
<u>ls "U1000"</u>	detected?			
YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u> .				
	SELF-DIAGNUSIS RESU			
Check if ar	iy DTC is detected in "Sel	f Diagnostic Result" of "SIDE RADAR RIG	SHT".	
Is any DIC	detected?			
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-514. "DTC Index" (SIDE RADAR I H) DAS-516. "DTC Index" (SIDE RADAR RH)				
NO >:	Replace the ADAS contr	ol unit. Refer to DAS-79, "Removal and I	<u>stallation</u> .	

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C1B54 SIDE RADAR LEFT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

C1B54 SIDE RADAR LEFT MALFUNCTION

DTC Logic

INFOID:000000007911939

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B54 (85)	SIDE RDR L MALF	ADAS control unit detects that side radar LH has a malfunction.	Side radar LH

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

2. Perform "All DTC Reading" with CONSULT.

3. Check if the "C1B54" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B54" detected as the current malfunction?

- YES >> Refer to DAS-575. "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911940

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "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-514, "DTC Index" (SIDE RADAR LH), DAS-516, "DTC Index" (SIDE RADAR RH).
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
C1B55 RADAR BLOCKAGE [BLIND SPOT WARNING & BLIND SPOT INTERVENTION] < DTC/CIRCUIT DIAGNOSIS >

C1B55 RADAR BLOCKAGE

DTC Logic

INFOID:000000007911941

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DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause	0
C1B55	RADAR BLOCKAGE	Side radar is blocked.	Stain or foreign materials is deposit- ed.	C
NOTE:	" may be detected under the fol	owing conditions except for possible cause. (Expla	in to the customer about the difference	D

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:000000007911942

1.CHECK THE REAR BUMPER
Check rear bumper near the side radar contaminated with foreign materials.

>> GO TO 2.

2. CHECK THE SIDE RADAR

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

>> GO TO 3. 3. CHECK THE SIDE RADAR INSTALL CONDITION	J
Check side radar installation condition (installation position, properly tightened, a bent bracket).	K
>> GO TO 4. 4. INTERVIEW	L
 Ask if there is stain or foreign materials. Ask if there is any temporary ambient condition such as splashing water, mist or fog. Ask if there is any object such as ice, frost or dirt obstructing the side radar. 	M

Is any of above conditions seen?

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

NO >> Inspection End.

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U1000 CAN COMM CIRCUIT SIDE RADAR LH

SIDE RADAR LH : Description

INFOID 000000007911943

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-39, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

ITS COMMUNICATION

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

SIDE RADAR LH : DTC Logic

INFOID:000000007911944

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:000000007911945

1.PERFORM THE SELF-DIAGNOSIS

- 1. Start the engine.
- Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more. 2.
- 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?

- >> Refer to LAN-22, "Trouble Diagnosis Flow Chart". YES
- >> Refer to GI-53, "Intermittent Incident". NO

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:000000007911946

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-39, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

ITS COMMUNICATION

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

U1000 CAN COMM CIRCUIT [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SIDE RADAR RH : DTC Logic INFOID:000000007911947 А DTC DETECTION LOGIC В DTC Possible causes Trouble diagnosis name DTC detecting condition If Side radar RH is not transmitting or receiving U1000 CAN COMM CIRCUIT ITS communication system ITS communication signal for 2 seconds or more SIDE RADAR RH : Diagnosis Procedure INFOID:000000007911948 **1**.PERFORM THE SELF-DIAGNOSIS D 1. Start the engine. 2. Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more. 3. Perform "All DTC Reading" with CONSULT. Ε Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR 4. RIGHT". Is "U1000" detected as the current malfunction? F >> Refer to LAN-22, "Trouble Diagnosis Flow Chart". YES NO >> Refer to GI-53, "Intermittent Incident". ADAS CONTROL UNIT ADAS CONTROL UNIT : Description INFOID:000000007911949 Н 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-39, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart". ITS COMMUNICATION Κ 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:000000007911950 Μ

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes	Ν
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiv- ing CAN communication signal or ITS communi- cation signal for 2 seconds or more	CAN communication systemITS communication system	DA

NOTE:

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

ADAS CONTROL UNIT : Diagnosis Procedure

1.PERFORM THE SELF-DIAGNOSIS

1. Turn the ignition switch ON.

Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more. 2.

- Perform "All DTC Reading" with CONSULT. 3.
- Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 4.

DAS-579

INFOID:000000007911951

U1000 CAN COMM CIRCUIT

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Is "U1000" detected as the current malfunction?

YES >> Refer to LAN-22, "Trouble Diagnosis Flow Chart".

NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

INFOID:000000007911952

ITS COMMUNICATION

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

LANE CAMERA UNIT : DTC Logic

INFOID:000000007911953

DTC DETECTION LOGIC

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

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000007911954

1.PERFORM THE SELF-DIAGNOSIS

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

Is "U1000" detected as the current malfunction?

- YES >> Refer to LAN-22. "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

U1010

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- 1. Tur 2. Pe
- 3. Ch
- RIG

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CAN co the error detection.

DAS-581

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SIDE F	RADAR LH : DTC L	ogic	INFOID:000000007911956
OTC DE	TECTION 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 F	RADAR LH : Diagno	sis Procedure	INFOID:000000007911957
1.снес	CK SELF-DIAGNOSIS RI	ESULT	
1. Turn 2. Perfo 3. Cheo LEF	the Blind Spot Interventi orm "All DTC Reading" w ck if the "U1010" is deteo T".	on system ON. ith CONSULT. cted as the current malfunction in "Self Diagnostic F	Result" of "SIDE RADAR
YES NO SIDE F	>> Replace the side rada >> INSPECTION END RADAR RH	ar LH. Refer to <u>DAS-630, "Removal and Installation</u> "	<u>.</u>
SIDE F	KADAR RH : Descri	ntion	
		ption	INFOID:000000007911958
CAN con	troller controls the comm	nunication of ITS communication signal and the erro	INFOID:000000007911958
CAN con SIDE F	atroller controls the comm RADAR RH : DTC L	ption nunication of ITS communication signal and the erro ogic	INFCID:000000007911958 r detection. INFCID:000000007911959
CAN con SIDE F DTC DE	TECTION LOGIC	nunication of ITS communication signal and the erro OgiC	INFOID:000000007911958 r detection. INFOID:000000007911959
CAN con SIDE F DTC DE	Trouble diagnosis name	DTC detecting condition	INFOID:000000007911958 r detection. INFOID:000000007911959 Possible cause
CAN con SIDE F DTC DE DTC U1010	Trouble diagnosis name	DTC detecting condition If Side radar RH detects malfunction by CAN controller initial diagnosis.	INFOID:000000007911958 r detection. INFOID:000000007911959 Possible cause Side radar RH
CAN con SIDE F DTC DE DTC U1010 SIDE F	ADAR RH : DTC L TECTION LOGIC Trouble diagnosis name CONTROL UNIT (CAN)	DTC detecting condition If Side radar RH detects malfunction by CAN controller initial diagnosis. DSIS Procedure	INFOID:000000007911958 r detection. INFOID:000000007911959 Possible cause Side radar RH
CAN con SIDE F DTC DE DTC U1010 SIDE F 1.CHEC	ADAR RH : DTC L TECTION LOGIC Trouble diagnosis name CONTROL UNIT (CAN) RADAR RH : Diagno	DTC detecting condition If Side radar RH detects malfunction by CAN controller initial diagnosis.	INFOID:000000007911958 r detection. INFOID:000000007911959 Possible cause Side radar RH INFOID:000000007911960
CAN con SIDE F DTC DE DTC DE U1010 SIDE F 1.CHEC 1. Turn 2. Perfo 3. Chec RIGH	Trouble diagnosis name CONTROL UNIT (CAN) CK SELF-DIAGNOSIS RI the Blind Spot Interventi orm "All DTC Reading" w ck if the "U1010" is detect HT".	DTC detecting condition DTC detecting condition If Side radar RH detects malfunction by CAN controller initial diagnosis. DSIS Procedure ESULT on system ON. ith CONSULT. cted as the current malfunction in "Self Diagnostic F	r detection. INFOID:000000007911959 Possible cause Side radar RH INFOID:000000007911960 Result" of "SIDE RADAR
CAN con SIDE F DTC DE DTC DE U1010 SIDE F 1.CHEC 1. Turn 2. Perfo 3. Chec RIGH S "U1010 YES NO ADAS	ADAR RH : DTC L TECTION LOGIC Trouble diagnosis name CONTROL UNIT (CAN) ADAR RH : Diagno CK SELF-DIAGNOSIS RI the Blind Spot Interventi orm "All DTC Reading" w ck if the "U1010" is detected as the currer >> Replace the side rada >> INSPECTION END CONTROL LINIT	DTC detecting condition OGIC DTC detecting condition If Side radar RH detects malfunction by CAN controller initial diagnosis. DSIS Procedure ESULT on system ON. ith CONSULT. cted as the current malfunction in "Self Diagnostic F at malfunction? ar RH. Refer to DAS-630, "Removal and Installation	r detection. INFOID:00000007911959 Possible cause Side radar RH INFOID:000000007911960 Result" of "SIDE RADAR
CAN con SIDE F DTC DE DTC DE U1010 SIDE F 1.CHEC 1. Turn 2. Perfo 3. Cheo RIGH S"U1010 YES NO ADAS	ADAR RH : DTC L TROUBLE diagnosis name CONTROL UNIT (CAN) CONTROL UNIT (CAN) CONTROL UNIT (CAN) CADAR RH : Diagno CK SELF-DIAGNOSIS RI The Blind Spot Interventi OTM "All DTC Reading" w ck if the "U1010" is detected The State of the side radio Source of the side radio Source of the side radio Source of the side radio CONTROL UNIT	DTC detecting condition OGIC DTC detecting condition If Side radar RH detects malfunction by CAN controller initial diagnosis. DSIS Procedure ESULT on system ON. ith CONSULT. cted as the current malfunction in "Self Diagnostic F t malfunction? ar RH. Refer to DAS-630, "Removal and Installation Description	r detection. INFOID:000000007911959 Possible cause Side radar RH INFOID:000000007911960 Result" of "SIDE RADAR ".

U1010 CONTROL UNIT (CAN)

SIDE RADAR LH

< DTC/CIRCUIT DIAGNOSIS >

SIDE RADAR LH : Description

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DTC D

INFOID:000000007911955

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ADAS CONTROL UNIT : Diagnosis Procedure

Trouble diagnosis name

CONTROL UNIT (CAN)

ADAS CONTROL UNIT : DTC Logic

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the Blind Spot Intervention system ON.
- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "U1010" detected as the current malfunction?

DTC detecting condition

If ADAS control unit detects malfunction by

CAN controller initial diagnosis

- YES >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".
- NO >> INSPECTION END

LANE CAMERA UNIT

< DTC/CIRCUIT DIAGNOSIS >

DTC DETECTION LOGIC

DTC (On board

> display) U1010

> > (110)

LANE CAMERA UNIT : Description

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

LANE CAMERA UNIT : DTC Logic

DTC DETECTION LOGIC

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

LANE CAMERA UNIT : Diagnosis Procedure

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the Blind Spot Intervention system ON.
- 2. Perform "All DTC Reading" with CONSULT.
- Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U1010" detected as the current malfunction?

- YES >> Replace the lane camera unit. Refer to DAS-633, "Removal and Installation".
- NO >> INSPECTION END

INFOID:000000007911963

Possible causes

ADAS control unit

INFOID:000000007911962

INFOID:000000007911964

INFOID:000000007911965

INFOID:000000007911966

U0104 ADAS CAN 1 SIDE RADAR

SIDE RADAR : DTC Logic

INFOID:000000007911967

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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 "UC (SIDE RAI	0104" is detected along with DTC " DAR LH), <u>DAS-579, "SIDE RADA</u>	U1000", first diagnose the DTC "U1000". Refer to <u>DAS-578, "</u> <u>R RH : DTC Logic"</u> (SIDE RADAR RH).	SIDE RADAR LH : DTC Logic"
DTC CC 1.PERI	ONFIRMATION PROCED	URE IN PROCEDURE	
1. Star	the engine.	n system ON	
3. Perl 4. Che RIG	form "All DTC Reading" with eck if the U0104 is detected HT/LEFT".	CONSULT d as the current malfunction in "Self Diagnostic F	Result" of "SIDE RADAR
<u>Is the D</u> YES NO	<u>TC "U0104" detected?</u> >> Refer to <u>DAS-583, "SID</u> >> Refer to <u>GI-53, "Intermi</u>	DE RADAR : Diagnosis Procedure". ttent Incident".	
SIDE F	RADAR : Diagnosis P	rocedure	INFOID:000000007911968
1. CHE	CK SELF-DIAGNOSIS RES	SULTS	
Check if Is "U100	[•] "U1000" is detected other t 00" detected?	han "U0104" in "Self Diagnostic Result" of "SIDE	RADAR RIGHT/LEFT".
YES	>> Perform the CAN comm Refer to <u>DAS-578</u> , "SIE <u>RH : DTC Logic</u> " (SIDE >> GO TO 2.	munication system inspection. Repair or replace (<u>DE RADAR LH : DTC Logic"</u> (SIDE RADAR LH), <u>[</u> RADAR RH).	the malfunctioning parts. DAS-579, "SIDE RADAR
2.CHE	CK ADAS CONTROL UNIT	SELF-DIAGNOSIS RESULTS	
Check if	any DTC is detected in "Se TC detected?	If Diagnostic Result" of "ICC/ADAS".	
NO LANE	 >> Perform diagnosis on t DAS-508, "DTC Index". >> Replace side radar LH CAMERA UNIT 	he detected DTC and repair or replace the malfu or RH. Refer to <u>DAS-630, "Removal and Installati</u>	on"
LANE	CAMERA UNIT : DTO	C Logic	INFOID:000000007911969
DTC DE	ETECTION LOGIC		

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	Ρ
U0104	ADAS CAN CIR 1	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit	

NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-580</u>, <u>"LANE CAMERA UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0104" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U0104" detected as the current malfunction?

- YES >> Refer to DAS-584, "LANE CAMERA UNIT : Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000007911970

1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "LANE CAMERA". Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-580, "LANE CAMERA UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</u>.
- NO >> Replace the lane camera unit. Refer to <u>DAS-633</u>, "Removal and Installation".

U0121 VDC CAN 2

DTC Logic

INFOID:000000007911971

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DTC DETECT	FION LOGIC		
DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)
NOTE: If DTC "U0121 "ADAS CONTF	l" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-579.</u>
DTC CONFIR	MATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
 Start the e Turn the B Perform "A Check if th Is "U0121" dete YES >> Re NO >> Re 	ngine. lind Spot Intervention All DTC Reading" with le "U0121" is detected ected as the current m efer to <u>DAS-585, "Diac</u> efer to <u>GI-53, "Intermit</u>	system ON. CONSULT. I as the current malfunction in "Self Dia <u>nalfunction?</u> <u>anosis Procedure"</u> . <u>tent Incident"</u> .	gnostic Result" of "ICC/ADAS".
Diagnosis F	Procedure		INFOID:00000007911972
1.CHECK SE	LF-DIAGNOSIS RES	ULTS	
Check if "U100	0" is detected other th	nan "U0121" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>Is "U1000" dete</u>	ected?		
YES >> Pe	rform the CAN comm	nunication system inspection. Repair of	r replace the malfunctioning parts.
NO >> G0	D TO 2.	to bourned built . Dro Logic .	
2.CHECK AB	S ACTUATOR AND E	LECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS
Check if any D	TC is detected in "Sel	f Diagnostic Result" of "ABS".	
Is any DTC det	tected?		
YES >> Pe <u>BF</u> NO >> Re	rform diagnosis on th <u>RC-45, "DTC Index"</u> . eplace the ADAS cont	ne detected DTC and repair or replace	the malfunctioning parts. Refer to distallation".

U0126 STRG SEN CAN 1 ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911973

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0126" detected as the current malfunction?

YES >> Refer to <u>DAS-586, "ADAS CONTROL UNIT : Diagnosis Procedure"</u>. NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000007911974

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

 $\mathbf{2}.$ 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-45. "DTC Index".

NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>.

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000007911975

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126	STRG SEN CAN CIR1	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-580</u>, <u>"LANE CAMERA UNIT : DTC Logic"</u>.

U0126 STRG SEN CAN 1	
< DTC/CIRCUIT DIAGNOSIS > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]	
DTC CONFIRMATION PROCEDURE	Δ
1. PERFORM DTC CONFIRMATION PROCEDURE	A
 Start the engine. Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA". 	В
Is "U0126" detected as the current malfunction?	С
YES >> Refer to <u>DAS-587, "LANE CAMERA UNIT : Diagnosis Procedure"</u> . NO >> Refer to <u>GI-53, "Intermittent Incident"</u> .	D
LANE CAMERA UNIT : Diagnosis Procedure	D
1.CHECK SELF-DIAGNOSIS RESULTS	E
Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "LANE CAMERA".	
Is "U1000" detected?	F
YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-580, "LANE CAMERA UNIT : DTC Logic"</u> .	F
NO >> GO TO 2.	
2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS	G
Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".	
Is any DTC detected?	Н
DAS-508, "DTC Index".	
NO >> Replace the lane camera unit. Refer to <u>DAS-633</u> , "Removal and Installation".	I
	J
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	L
	Μ
	NI
	IN
	DA
	Ρ

U0401 ECM CAN 1

DTC Logic

INFOID:000000007911977

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

- YES >> Refer to DAS-588, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911978

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "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-108. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0402 TCM CAN 1

DTC Logic

INFOID:000000007911979

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DTC DETECTION LOGIC В DTC Trouble diagnosis (On board dis-DTC detecting condition Possible causes name play) If ADAS control unit detects an error signal U0402 TCM CAN CIRC1 TCM that is received from TCM via CAN communi-(122) D cation NOTE: If DTC "U0402" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-579. E "ADAS CONTROL UNIT : DTC Logic". DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE F 1. Start the engine. 2. Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. 3. G 4. Check if the "U0402" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". Is "U0402" detected as the current malfunction? Н YES >> Refer to DAS-589, "Diagnosis Procedure". >> Refer to GI-53, "Intermittent Incident". NO Diagnosis Procedure INFOID:000000007911980 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "U0402" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-579, "ADAS CONTROL UNIT : DTC Logic". Κ 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 Μ TM-55, "DTC Index". >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". NO

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U0405 ADAS CAN 2 SIDE RADAR

SIDE RADAR : DTC Logic

INFOID:000000007911981

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-578</u>, "SIDE RADAR LH : <u>DTC Logic</u>" (SIDE RADAR LH), <u>DAS-579</u>, "SIDE RADAR RH : <u>DTC Logic</u>" (SIDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

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

Is the DTC "U0405" detected?

- YES >> Refer to <u>DAS-590</u>, "SIDE RADAR : Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

SIDE RADAR : Diagnosis Procedure

INFOID:000000007911982

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-578, "SIDE RADAR LH : DTC Logic"</u> (SIDE RADAR LH), <u>DAS-579, "SIDE RADAR RH : DTC Logic"</u> (SIDE RADAR RH).
- NO >> GO TO 2.

2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</u>.

NO >> Replace side radar LH or RH. Refer to DAS-630. "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000007911983

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0405	ADAS CAN CIR 2	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-580</u>, <u>"LANE CAMERA UNIT : DTC Logic"</u>.

U0405 ADAS CAN 2
< DTC/CIRCUIT DIAGNOSIS > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]
DTC CONFIRMATION PROCEDURE
1.PERFORM DTC CONFIRMATION PROCEDURE
 Start the engine. Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA".
Is "U0405" detected as the current malfunction?
YES >> Refer to <u>DAS-591, "LANE CAMERA UNIT : Diagnosis Procedure"</u> . NO >> Refer to <u>GI-53, "Intermittent Incident"</u> .
LANE CAMERA UNIT : Diagnosis Procedure
1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS
Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "LANE CAMERA".
<u>Is "U1000" detected?</u> YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-580. "LANE CAMERA UNIT : DTC Logic"
NO >> GO TO 2.
2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS
Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".
Is any DTC detected?
DAS-508, "DTC Index".
NO >> Replace the lane camera unit. Refer to <u>DAS-633</u> , "Removal and Installation".

U0415 VDC CAN 1

DTC Logic

INFOID:000000007911985

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to <u>DAS-592, "Diagnosis Procedure"</u>.
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911986

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0428 STRG SEN CAN 2 [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U0428 STRG SEN CAN 2 ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000007911987

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	C
U0428 (131)	STRG SEN CAN CIR2	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor	C
NOTE: If DTC "U042 "ADAS CONT	8" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c</u> ".	DTC "U1000". Refer to <u>DAS-579,</u>	E
DTC CONFIE	RMATION PROCED DTC CONFIRMATIO	URE N PROCEDURE		F
 Start the e Turn the E Perform " 	ngine. Blind Spot Intervention All DTC Reading" with	system ON. CONSULT.		(
4. Check if the second	ne "U0428" is detected ected as the current r efer to <u>DAS-593, "AD</u>	d as the current malfunction in "Self Dia nalfunction? AS CONTROL UNIT : Diagnosis Proce	ignostic Result" of "ICC/ADAS". dure".	ŀ
NO >> Refer to GI-53, "Intermittent Incident". ADAS CONTROL UNIT : Diagnosis Procedure INFOLD:00000007911988				
1.CHECK SE	LF-DIAGNOSIS RES	ULTS		L.
Is "U1000" def YES >> Po R R NO >> G	ected? erform the CAN commerced the commerced of the comm	nunication system inspection. Repair o	r replace the malfunctioning parts.	ŀ
2.CHECK AE	S ACTUATOR AND E	ELECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS	L
Check if any DTC is detected in "Self Diagnostic Result" of "ABS". <u>Is any DTC detected?</u> YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to				N
NO >> R LANE CAN	<u>RC-45, "DTC Index"</u> . eplace the ADAS cont IERA UNIT	rol unit. Refer to <u>DAS-79, "Removal an</u>	d Installation".	Ν
LANE CAM	IERA UNIT : DTO	CLogic	INFOID:00000007911989	D/
DTC DETEC	TION LOGIC			

_	DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	F
	U0428	STRG SEN CAN CIR2	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor	

NOTE:

If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-580.</u> "LANE CAMERA UNIT : DTC Logic".

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U0428" detected as the current malfunction?

- YES >> Refer to DAS-594, "LANE CAMERA UNIT : Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000007911990

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-580, "LANE CAMERA UNIT : DTC Logic".

NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</u>.
- NO >> Replace the lane camera unit. Refer to <u>DAS-633</u>, "Removal and Installation".

U150B ECM CAN 3

DTC Logic

INFOID:000000007911991

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(On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM
NOTE: If DTC "U150I "ADAS CONT	B" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the l <u>c"</u> .	DTC "U1000". Refer to <u>DAS-579.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
1. Start the e2. Turn the E3. Perform "/4. Check if the second se	engine. Blind Spot Intervention All DTC Reading" with ne "U150B" is detected tected as the current n efer to <u>DAS-595, "Diac</u> efer to <u>GI-53, "Intermit</u>	system ON. CONSULT. d as the current malfunction in "Self Dia nalfunction? gnosis Procedure". tent Incident".	gnostic Result" of "ICC/ADAS".
Diagnosis F	Procedure		INFOID:00000007911992
1.CHECK SE	LF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other th	nan "U150B" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" det</u>	ected?		
YES >> Pe Re	erform the CAN comm efer to <u>DAS-579, "ADA</u>	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.
NO	O TO 2.		
NO >> G	M SELF-DIAGNOSIS	RESULTS	
NO >> G 2.снеск ес			
2.CHECK EC	TC is detected in "Sel	If Diagnostic Result" of "ENGINE".	
2.CHECK EC Check if any D Is any DTC de	DTC is detected in "Sel etected?	If Diagnostic Result" of "ENGINE".	

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U150C VDC CAN 3

DTC Logic

INFOID:000000007911993

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150C" detected as the current malfunction?

- YES >> Refer to DAS-596, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007911994

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U150D TCM CAN 3

DTC Logic

INFOID:000000007911995

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OTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	ТСМ
NOTE: If DTC "U150 "ADAS CONT	D" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the l <u>c"</u> .	DTC "U1000". Refer to <u>DAS-579.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
1. Start the e2. Turn the E3. Perform "/4. Check if the time of	engine. Blind Spot Intervention All DTC Reading" with ne "U150D" is detected tected as the current r efer to <u>DAS-597, "Diac</u> efer to <u>GI-53, "Intermit</u>	system ON. CONSULT. d as the current malfunction in "Self Dia <u>malfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> .	gnostic Result" of "ICC/ADAS".
Diagnosis F	Procedure		INFOID:00000007911996
1.CHECK SE	ELF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other th	nan "U150D" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" det</u>	ected?		
YES >> Pe Re NO >> G	erform the CAN comn efer to <u>DAS-579, "ADA</u> O TO 2.	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.
	M SELF-DIAGNOSIS	RESULTS	
Z .UHEUK IU	TC is detected in "Sel	If Diagnostic Result" of "TRANSMISSIO	N".
Check if any D			
Check if any D Is any DTC de	tected?		

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U150E BCM CAN 3

DTC Logic

INFOID:000000007911997

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	ВСМ

NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150E" detected as the current malfunction?

- YES >> Refer to DAS-598, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007911998

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BCS-49. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1500 CAM CAN 2

DTC Logic

INFOID:000000007911999

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DTC DETEC	TION LOGIC		
DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1500 (145)	CAM CAN CIRC 2	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit
NOTE: If DTC "U150 "ADAS CONT	0" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-579.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE	
 Start the e Turn the E Perform "<i>i</i> Check if the example of /li>	engine. Blind Spot Intervention All DTC Reading" with he "U1500" is detected tected as the current n efer to <u>DAS-599, "Diac</u> efer to <u>GI-53, "Intermit</u>	system ON. CONSULT. d as the current malfunction in "Self Diag nalfunction? gnosis Procedure". ttent Incident".	gnostic Result" of "ICC/ADAS".
Diagnosis I	Procedure		INFOID:00000007912000
1.CHECK SE	ELF-DIAGNOSIS RES	ULTS	
Check if "U10	00" is detected other t	han "U1500" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" det</u>	tected?		
YES >> Po R NO >> G	erform the CAN comn efer to <u>DAS-579, "AD/</u> O TO 2.	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	r replace the malfunctioning parts.
2.CHECK LA	NE CAMERA UNIT S	ELF-DIAGNOSIS RESULTS	
Check if any D Is any DTC de	DTC is detected in "Se etected?	If Diagnostic Result" of "LANE CAMERA	۹".
YES >> Po D NO >> R	erform diagnosis on th <u>AS-519, "DTC Index"</u> . eplace the ADAS cont	ne detected DTC and repair or replace rol unit. Refer to <u>DAS-79, "Removal and</u>	the malfunctioning parts. Refer to discussion distribution distributicadad distributicadad distributicadad di

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U1501 CAM CAN 1

DTC Logic

INFOID:000000007912001

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1501 (145)	CAM CAN CIRC 1	ADAS control unit detects an error signal that is received from lane camera unit via ITS com- munication	Lane camera unit

NOTE:

If DTC "U1501" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1501" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1501" detected as the current malfunction?

- YES >> Refer to DAS-600, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007912002

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1501" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-519. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1503 SIDE RDR L CAN 2 [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1503 SIDE RDR L CAN 2

DTC Logic

INFOID:000000007912003

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1503 (150)	SIDE RDR L CAN CIR 2	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication	Side radar LH
NOTE: If DTC "U1503 • Refer to <u>DA</u> • Refer to <u>DA</u>	3" is detected along with D S-579. "ADAS CONTROL S-606. "DTC Logic" for D7	DTC "U1000", or "U1508", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". ⁻ C "U1508".	DTC "U1000" or "U1508".
DTC CONFI	RMATION PROCEDUR	E	
1.PERFORM	1 DTC CONFIRMATION P	ROCEDURE	
 Start the e Turn the E Perform " Check if t 	engine. Blind Spot Intervention sys All DTC Reading" with CC he "U1503" is detected as	tem ON. NSULT. the current malfunction in "Self Diagnostic F	Result" of "ICC/ADAS".
<u>Is "U1503" de</u>	tected as the current malf	unction?	
NO >> R	efer to <u>GI-53, "Intermitten</u>	<u>t Incident"</u> .	
Diagnosis I	Procedure		INFOID:00000007912004
1.CHECK SE	ELF-DIAGNOSIS RESULT	S	
Check if "U10	00" or "U1508" is detected	l other than "U1503" in "Self Diagnostic Resu	ult" of "ICC/ADAS".
<u>Is "U1000" or</u>	<u>"U1508" detected?</u>		
YES-1 >> U fu YES-2 >> U NO >> G	1000 detected: Perform the inctioning parts. Refer to 1/1508 detected: Refer to 1/2507 TO 2.	AS-606, "DTC Logic".	Repair or replace the mal- gic".
2.CHECK SI	DE RADAR LH SELF-DIA	GNOSIS RESULTS	
Check if any [OTC is detected in "Self Di	agnostic Result" of "SIDE RADAR LEFT".	
Is any DTC de	etected?		
YES >> P	erform diagnosis on the d	etected DTC and repair or replace the malf	unctioning parts. Refer to
NO >> R	eplace the ADAS control u	unit. Refer to <u>DAS-79, "Removal and Installa</u>	tion".

U1504 SIDE RDR L CAN 1

DTC Logic

INFOID:000000007912005

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1504 (151)	SIDE RDR L CAN CIR 1	ADAS control unit detects an error signal that is 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-579, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000".

• Refer to <u>DAS-606, "DTC Logic"</u> for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1504" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1504" detected as the current malfunction?

- YES >> Refer to DAS-602, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007912006

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" or "U1508" detected?

YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579</u>, "ADAS CONTROL UNIT : DTC Logic".

YES-2 >> U1508 detected: Refer to <u>DAS-606. "DTC Logic"</u>.

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-514. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1505 SIDE RDR R CAN 2 [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1505 SIDE RDR R CAN 2

DTC Logic

INFOID:000000007912007

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1505 (152)	SIDE RDR R CAN CIR 2	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH
NOTE: If DTC "U1509 • Refer to <u>DA</u> • Refer to <u>DA</u>	5" is detected along with D <u>S-579. "ADAS CONTROL</u> <u>S-605. "DTC Logic"</u> for DT	TC "U1000", or "U1507", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". ⁻ C "U1507".	DTC "U1000" or "U1507".
DTC CONFII	RMATION PROCEDUR	E ROCEDURE	
 Start the e Turn the I Perform " Check if t Is "U1505" de 	engine. Blind Spot Intervention sys All DTC Reading" with CC he "U1505" is detected as tected as the current malfu	tem ON. NSULT. the current malfunction in "Self Diagnostic F unction?	Result" of "ICC/ADAS".
YES >> R NO >> R	efer to <u>DAS-603</u> , "Diagnos efer to <u>GI-53, "Intermittent</u>	sis Procedure". Incident".	
Diagnosis	Procedure		INFOID:000000007912008
1.снеск за	ELF-DIAGNOSIS RESULT	S	
Check if "U10 <u>Is "U1000" or</u>	00" or "U1507" is detected "U1507" detected?	other than "U1505" in "Self Diagnostic Res	ult" of "ICC/ADAS".
YES-1 >> U ft YES-2 >> U NO >> G	1000 detected: Perform the inctioning parts. Refer to $\underline{\Box}$ 11507 detected: Refer to \underline{D} GO TO 2.	ne CAN communication system inspection. I DAS-579, "ADAS CONTROL UNIT : DTC Lo AS-606, "DTC Logic".	Repair or replace the mal- <u>gic"</u> .
2.CHECK SI	DE RADAR RH SELF-DIA	GNOSIS RESULTS	
Check if any [OTC is detected in "Self Di	agnostic Result" of "SIDE RADAR RIGHT".	
Is any DTC de YES >> P	<u>etected?</u> erform diagnosis on the d AS-514 "DTC Index"	etected DTC and repair or replace the mal	functioning parts. Refer to
NO >> R	eplace the ADAS control u	unit. Refer to <u>DAS-79, "Removal and Installa</u>	<u>ation"</u> .

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U1506 SIDE RDR R CAN 1

DTC Logic

INFOID:000000007912009

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1506 (153)	SIDE RDR R CAN CIR 1	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1506" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507". • Refer to <u>DAS-579</u>, "ADAS CONTROL UNIT : <u>DTC Logic</u>" for DTC "U1000".

• Refer to <u>DAS-606, "DTC Logic"</u> for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1506" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1506" detected as the current malfunction?

- YES >> Refer to DAS-602, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007912010

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1506" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579</u>, "ADAS CONTROL UNIT : DTC Logic".

YES-2 >> U1507 detected: Refer to <u>DAS-606. "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-514, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1507 LOST COMM(SIDE RDR R)

U1507 LOST COMM(SIDE RDR R)

DTC Logic

DTC

DTC DETECTION LOGIC

(On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1507 (154)	LOST COMM(SIDE RDR R)	ADAS control unit cannot receive ITS commu- nication signal from side radar RH for 2 sec- onds or more	 Side radar RH right/left switching signal circuit ITS communication system Side radar RH
NOTE: DTC "U1507"	is detected along with	DTC "U1000", first diagnose the DTC "	U1507".
		URE	
I.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
 Start the e Turn the E Perform "// Check if the example of /li>	engine. Blind Spot Intervention All DTC Reading" with he "U1507" is detected tected as the current n efer to <u>DAS-605, "Diag</u> efer to <u>GI-53, "Intermit</u>	system ON. CONSULT. I as the current malfunction in "Self Dia <u>s</u> <u>nalfunction?</u> <u>pnosis Procedure"</u> . <u>tent Incident"</u> .	gnostic Result" of "ICC/ADAS".
Diagnosis I	Procedure		INFOID:000000007912012
1.CHECK RI	GHT/LEFT SWITCHIN	IG SIGNAL CIRCUIT	
Check right/let	ft switching signal circ	uit. Refer to DAS-616, "Diagnosis Proce	<u>dure"</u> .
Is the inspection	on result normal?		
YES >> Po R	erform the CAN comn efer to <u>LAN-39, "CAN</u>	nunication system inspection. Repair or COMMUNICATION SYSTEM : CAN Co	[·] replace the malfunctioning parts. <u>mmunication Signal Chart"</u> .
NO >> R	epair right/left switchin	g signal circuit.	

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[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

INFOID:000000007912011

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U1508 LOST COMM(SIDE RDR L) > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1508 LOST COMM(SIDE RDR L)

DTC Logic

INFOID:000000007912013

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1508 (155)	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 connectorITS communication systemSide radar LH

NOTE:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1508" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1508" detected as the current malfunction?

- YES >> Refer to <u>DAS-606</u>, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007912014

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-22</u>, "Trouble Diagnosis Flow Chart".
- NO >> Repair the terminal or connector.

U1512 HVAC CAN 3

DTC Logic

INFOID:000000007912015

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DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1512 (162)	HVAC CAN CIRC 3	ADAS control unit detects an error signal that is received from A/C auto amp. via CAN communication	A/C auto amp.
NOTE: If DTC "U151 "ADAS CONT	2" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the I <u>c"</u> .	DTC "U1000". Refer to <u>DAS-579.</u>
DTC CONFI	RMATION PROCED	URE	
1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE	
 Start the e Turn the E Perform ". Check if t <u>Is "U1512" de</u> YES >> R NO >> R 	engine. Blind Spot Intervention All DTC Reading" with he "U1512" is detected tected as the current n efer to <u>DAS-607, "Diac</u> efer to <u>GI-53, "Intermit</u>	system ON. CONSULT. I as the current malfunction in "Self Diag <u>nalfunction?</u> <u>gnosis Procedure"</u> . <u>tent Incident"</u> .	gnostic Result" of "ICC/ADAS".
Diagnosis I	Procedure		INFCID:00000007912016
1.CHECK SE	ELF-DIAGNOSIS RES	ULTS	
Check if "U10	00" is detected other th	nan "U1512" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" de</u>	tected?		
YES >> P R NO >> G	erform the CAN comn efer to <u>DAS-579, "ADA</u> O TO 2.	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.
2.CHECK A/	C AUTO AMP. SELF-D	DIAGNOSIS RESULTS	
Check if any [DTC is detected in "Se	f Diagnostic Result" of "HVAC".	
Is any DTC de	etected?		
YES >> P	erform diagnosis on th <u>AC-44, "DTC Index"</u> .	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NU >> R		roi unit. Refer to <u>DAS-79, "Removal and</u>	<u>a installation</u> .

U1513 METER CAN 3

DTC Logic

INFOID:000000007912017

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter

NOTE:

If DTC "U1513" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1513" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1513" detected as the current malfunction?

- YES >> Refer to DAS-608, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007912018

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1513" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK COMBINATION METER SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "METER/M&A".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>MWI-25, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1514 STRG SEN CAN 3 [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1514 STRG SEN CAN 3

DTC Logic

INFOID:000000007912019

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DTC DETEC	TION LOGIC					
DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes			
U1514 (164)	STRG SEN CAN CIRC 3	ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor			
NOTE: If DTC "U151 "ADAS CONT	4" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the l <u>c"</u> .	DTC "U1000". Refer to <u>DAS-579.</u>			
DTC CONFI	RMATION PROCED	URE				
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE				
 Start the e Turn the E Perform ", Check if the example of t	engine. Blind Spot Intervention All DTC Reading" with ne "U1514" is detected rected as the current n efer to <u>DAS-609, "Diac</u> efer to <u>GI-53, "Intermit</u>	system ON. CONSULT. d as the current malfunction in "Self Diag nalfunction? gnosis Procedure". ttent Incident".	gnostic Result" of "ICC/ADAS".			
Diagnosis I	Diagnosis Procedure					
1.CHECK SE	LF-DIAGNOSIS RES	ULTS				
Check if "U100 Is "U1000" det	00" is detected other the	nan "U1514" in "Self Diagnostic Result"	of "ICC/ADAS".			
YES >> Po R NO >> G	erform the CAN communication system inspection. Repair or replace the malfunctioning parts. efer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u> . O TO 2.					
2.CHECK AE	S ACTUATOR AND E	ELECTRIC UNIT (CONTROL UNIT) SEI	LF-DIAGNOSIS RESULTS			
Check if any D	TC is detected in "Se	If Diagnostic Result" of "ABS".				
YES >> Po B NO >> R	erform diagnosis on the <u>RC-45, "DTC Index"</u> . Place the ADAS cont	ne detected DTC and repair or replace rol unit. Refer to <u>DAS-79, "Removal and</u>	the malfunctioning parts. Refer to <u>d Installation"</u> .			

U1516 CAM CAN 3

DTC Logic

INFOID:000000007912021

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1516 (166)	CAM CAN CIRC 3	ADAS control unit detects an error signal that is received from lane camera unit via ITS com- munication	Lane camera unit

NOTE:

If DTC "U1516" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-579</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1516" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1516" detected as the current malfunction?

- YES >> Refer to DAS-610, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000007912022

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1516" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-519. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1518 SIDE RDR L CAN 3 [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

U1518 SIDE RDR L CAN 3

DTC Logic

INFOID:000000007912023

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1518 (168)	SIDE RDR L CAN CIRC 3	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication	Side radar LH
NOTE: If DTC "U1518 • Refer to <u>DA</u> • Refer to <u>DA</u>	8" is detected along with D S-579. "ADAS CONTROL S-606. "DTC Logic" for D	DTC "U1000", or "U1508", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". TC "U1508".	DTC "U1000" or "U1508".
DTC CONFI	RMATION PROCEDUR	E	
1.PERFORM	1 DTC CONFIRMATION P	ROCEDURE	
 Start the e Turn the I Perform " Check if t 	engine. Blind Spot Intervention sys All DTC Reading" with CC he "U1518" is detected as	stem ON. NSULT. the current malfunction in "Self Diagnostic F	Result" of "ICC/ADAS".
<u>Is "U1518" de</u> YES >> R	tected as the current malf efer to DAS-611, "Diagnos	unction? sis Procedure".	
NU >> R	eter to <u>GI-53, "Intermitten</u>	<u>t Inclaent"</u> .	
Diagnosis i	Procedure		INFOID:000000007912024
1.CHECK SE	ELF-DIAGNOSIS RESULT	S	
Check if "U10 Is "U1000" or	00" or "U1508" is detected "U1508" detected?	I other than "U1518" in "Self Diagnostic Res	ult" of "ICC/ADAS".
YES-1 >> U fu YES-2 >> U NO >> G	1000 detected: Perform the functioning parts. Refer to 1/2 1508 detected: Refer to 1/2 GO TO 2.	ne CAN communication system inspection. F DAS-579, "ADAS CONTROL UNIT : DTC Lo AS-611, "DTC Logic".	Repair or replace the mal- <u>gic"</u> .
2.CHECK SI	DE RADAR LH SELF-DIA	GNOSIS RESULTS	
Check if any [DTC is detected in "Self D	agnostic Result" of "SIDE RADAR LEFT".	
Is any DTC de YES >> P	etected? erform diagnosis on the c AS-514 "DTC Index"	letected DTC and repair or replace the malf	unctioning parts. Refer to
NO >> R	eplace the ADAS control	unit. Refer to <u>DAS-79, "Removal and Installa</u>	<u>tion"</u> .

DAS

U1519 SIDE RDR R CAN 3

DTC Logic

INFOID:000000007912025

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1519 (169)	SIDE RDR R CAN CIRC 3	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1519" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507". • Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u> for DTC "U1000".

• Refer to <u>DAS-605, "DTC Logic"</u> for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1519" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1519" detected as the current malfunction?

- YES >> Refer to <u>DAS-605</u>, "DTC Logic".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000007912026

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1519" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-579, "ADAS CONTROL UNIT : DTC Logic"</u>.

YES-2 >> U1507 detected: Refer to <u>DAS-605. "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-516. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
| < DTC/CIR(| CUIT DIAGN | POWI | ER SUPI | PLY
[BLII | AND GF | ROUND CIRCUIT
WARNING & BLIND SPC | T INTERVENTION] | |
|--|---|--------------------------------|---------------------------|---------------------------|---------------------|--------------------------------------|------------------------|-----|
| POWER | | AND | GROUI | ND (| CIRCUI | Г | | A |
| ADAS CC | | JNIT : [| Diagnosi | s Pro | ocedure | | INFCID:00000008368380 | В |
| Regarding V | Viring Diagra | ım inform | ation, refer | to <u>DA</u> | <u> \S-53, "Wir</u> | ing Diagram". | | С |
| 1.снески | ADAS CONT | ROL UN | IT POWER | SUP | PLY CIRCL | ЛТ | | |
| Check voltage | ge between / | ADAS col | ntrol unit ha | arness | s connector | and ground. | | D |
| | Terminal | | | | | | | _ |
| (| +) | (-) | Condit | tion | Voltage | | | |
| ADAS co | ontrol unit | | Ignitio | on | (Approx.) | | | |
| Connector | Terminal | Ground | switc | cn
F | 0.1/ | | | F |
| B104 | 16 | Cround | OFF
ON | 1 | Battery volt- | | | G |
| Is the inspec | ction result n | ormal? | | | 9- | | | |
| YES >>
NO >>
2 CHECK | GO TO 2.
Repair the A | DAS con | trol unit po | wer su | upply circui | t. | | Н |
| 1. Turn the | e ignition swi | tch OFF. | | | | | | 1 |
| 2. Disconr | ect the ADA | S control | | ector. | ait barboss | connector and ground | | |
| J. CHECKI | or continuity | Detween | ADAS CON | iti Oi ui | III HAIHESS | | | 1 |
| AD | AS control unit | | | 0 | Continuity | | | 0 |
| Connecto | r Tern | ninal | Ground | 0 | ontinuity | | | |
| B104 | | 6 | | | Yes | | | K |
| YES >>
NO >>
SIDE RA | INSPECTIO
Repair the A
DAR LH | ormal?
N END
\DAS con | trol unit gro | ound o | circuit. | | | L |
| SIDE RAI | DAR LH : | Diagno | sis Proc | edur | e | | INFOID:000000007912030 | M |
| Regarding V | Viring Diagra | am inform | ation, refer | ⁻ to <u>DA</u> | <u>AS-520, "W</u> | iring Diagram". | | Ν |
| 1.снески | | | | | | | | DAS |
| Turn igr Disconr Check v | nition switch (
nect the side
voltage betwe | OFF.
radar LH
een side i | connector.
radar LH ha | arness | s connector | and ground. | | Р |

	Terminals		Condition		
(+)	(-)	Condition	Voltage	
Side ra	adar LH		lanition switch	(Approx.)	
Connector	Terminal	Ground	Ignition Switch		
B/16	5	Ground	OFF	0 V	
D410	5		ON	Battery voltage	

Is the inspection result normal?

YES >> GO TO 2.

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

2.CHECK GROUND CIRCUIT

Check continuity between side radar LH harness connectors and ground.

Side ra	adar LH		Continuity	
Connector	Terminal	Ground	Continuity	
B416	2		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

Regarding Wiring Diagram information, refer to <u>DAS-520, "Wiring Diagram"</u>.

1. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect the side radar RH connector.
- 3. Check voltage between side radar RH harness connector and ground.

	Terminals		Condition	Voltage (Approx.)	
(+)	(-)	Condition		
Side ra	idar RH		lanition switch		
Connector	Terminal	Ground	Ignition Switch		
B109	5	Ground	OFF	0 V	
	5		ON	Battery voltage	

Is the inspection result normal?

YES >> GO TO 2.

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

2.CHECK GROUND CIRCUIT

Check continuity between side radar RH harness connectors and ground.

Side ra	adar RH		Continuity	
Connector	Terminal	Ground	Continuity	
B109	2		Yes	

YES >> Inspection End.

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			R SUPP	LY AND GF						ONI
NO >>	Repair the s	ide radar R	H ground	circuit.					 	- 4
LANE CA	MERA U	NIT								
LANE CA	MERA UN	NT : Dia	gnosis P	rocedure					INFOID:00000000)8368381
Regarding V	Viring Diagra	m informat	ion, refer t	o <u>DAS-366, "W</u>	Viring	<u>g Dia</u>	<u>gram"</u> .			
1. CHECK L	ANE CAME	RA UNIT F	OWER SU	JPPLY CIRCUI	IT					
Check voltag	ge between l	ane camer	a unit harn	ess connector	and	l grou	ınd.			
	Terminal				—					
(-	+)	(-)	Conditio	n Voltage						
Lane car	mera unit		Ignition	(Approx.)						
Connector	Terminal		switch							
	_	Ground	OFF	0 V	_					
R5	7		ON	Battery volt- age	-					
s the inspec	ction result n	ormal?		Ū	-					
2.CHECK L	ANE CAME		BROUND C	CIRCUIT						
2. Disconn 3. Check fo	or continuity	camera un between la	it connecto ne camera	or. a unit harness c	conr	nectoi	r and g	round.		
Lan	ne camera unit			0	-					
Connector	r Tern	ninal	Ground	Continuity						
R5	1	-	Cround	Yes						
a tha inanac		ormal2			-					
YES >>	Inspection E	nd.								
NO >>	Repair the la	ane camera	unit grour	nd circuit.						

< DTC/CIRCUIT DIAGNOSIS >

RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000007912033

Regarding Wiring Diagram information, refer to DAS-520, "Wiring Diagram".

1.CHECK CONNECTOR

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal or connector.

2. CHECK CONTINUITY RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

- 1. Disconnect side radar RH connector.
- 2. Check continuity between side radar RH harness connectors and ground.

Side ra	adar RH		Continuity	
Connector	Terminal	Ground	Continuity	
B109	1		Yes	

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

		WARN	ING SY	STEMS SV	VITCH CIRCUIT	
< DTC/CIRC	UIT DIAGN	IOSIS >	[E	BLIND SPOT	WARNING & BLIND SPOT INTERVENTION]	
WARNIN	G SYST	EMS SW	/ITCH (CIRCUIT		Λ
Compone	nt Functio	on Check			INFOID:00000008368336	~
1 .CHECK V	VARNING S	YSTEMS SV		PUT SIGNAL		В
 Turn the Select th With ope 	ignition swit the DATA MC erating the w	tch ON. NITOR item /arning syste	"WARN S ms switch	YS SW" of "IO , check the m	CC/ADAS" with CONSULT. onitor status.	С
Monitor item		Condition		Monitor status	-	
WARN SYS	Warning syst	tems switch is p	pressed	On	-	D
SW	Warning syst	tems switch is r	not pressed	OFF		
Is the inspect YES >> NO >> I	<u>tion result n</u> Warning sys Refer to <u>DAS</u>	ormal? tems switch S-617, "Diag	circuit is n nosis Proc	ormal. <u>cedure"</u> .		E
Diagnosis	Procedu	re			INFOID:00000008368337	F
Regarding W 1. CHECK W 1. Turn the 2. Check w	Viring Diagra	m informatic YSTEMS SV tch ON. een ADAS co	on, refer to	DAS-366, "M GNAL INPUT harness conn	<u>'iring Diagram"</u> . ector and ground.	G
	Terminals				-	1
(+	+)	(-)	Condition	Voltago		
ADAS co	ontrol unit		Warning	(Approx.)		J
Connector	Terminal	Ground	systems switch			
B104	1	oround	Pressed	0 V	-	Κ
B104	Ι		Released	12 V	-	
Is the inspect YES >> I NO >> 0	tion result n Replace the GO TO 2.	ormal? ADAS contr	ol unit. Re	fer to <u>DAS-79</u>	. "Removal and Installation".	L
	VARNING S	YSTEMS SV	VITCH			Μ
 Turn ign Remove Check w <u>Is the inspec</u> 	ition switch (warning system varning system warning system varning system varning system source (varning system) varning sys	OFF. stems switch ems switch. F ormal?	Refer to <u>D</u>	<u>AS-618, "Con</u>	ponent Inspection".	Ν
NO >> 3.CHECK V	Replace the	warning sys YSTEMS SV	tems swite VITCH GF	ch. Refer to <u>D</u> ROUND CIRC	AS-313, "Removal and Installation". UIT	DAS
Check contin	nuity betwee	n warning sy	stems swi	tch harness c	onnector terminal and the ground.	Ρ

Warning sys	stems switch		Continuity	
Connector	Terminal	Ground	Continuity	
M126	2		Yes	

Is the inspection result normal?

YES >> GO TO 4.

WARNING SYSTEMS SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair harness or connector.

4.CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR OPEN

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

ADAS co	ontrol unit	Warning sys	Continuity	
Connector Terminal		Connector Terminal		Continuity
B104	1	M126	1	Yes

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5. CHECK WARNING SYSTEMS SWITCH SIGNAL INPUT CIRCUIT FOR SHORT

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

ADAS co	ontrol unit		Continuity	
Connector	Terminal	Ground	Continuity	
B104	1		No	

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:00000008368338

1. CHECK WARNING SYSTEMS SWITCH

Check continuity of warning systems switch.

Terminal		Condition	Continuity
1	2	When warning systems switch is pressed	Yes
I	2	When warning systems switch is released	No

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace warning systems switch.

			ID1				
WARNIN	GSYSI	EMS ON		ATOR CI	RCOIL		
Componer	nt Functio	on Check					INFOID:0000000836833
1. CHECK W	/ARNING S	YSTEMS OF		DR			
1. Turn the	ignition swi	tch ON.					_
 Select th With ope 	e active tes rating the te	t item "WAR est item, che	NING SYST	TEM IND" of ation.	"ICC/ADAS" \	with CONSUL	T.
On	: Warning	systems ON	l indicator	illuminates			
Off	: warning	systems Or	Indicator	is turned OI	FF		
	ion result n	ormal? nd					
NO >> F	Refer to DAS	<u>S-619, "Diag</u>	nosis Proce	edure".			
Diagnosis	Procedu	re					INFOID:00000000836834
- 0							
Degerding 14	iring Diagra	m informatio	n roforta l				
Regarding W	ning Diagra	miniormatic	ni, reter to <u>l</u>	<u>742-200, "W</u>	ining Diagram	<u>L</u> .	
1							
I.CHECK W	/ARNING ()	N INDICALC	OR POWER	L SUPPLY CI	RCUIT		
		~					
1. Turn igni 2 Disconne	tion switch	OFF. systems swi	tch connect	for			
 Turn igni Disconne Turn igni 	tion switch ect warning tion switch	OFF. systems swi ON.	tch connect	tor.			
 Turn igni Disconne Turn igni Check ve 	tion switch ect warning tion switch oltage betwe	OFF. systems swi ON. een warning	tch connect systems sw	tor. vitch harness	connector ar	nd ground.	
 Turn igni Disconne Turn igni Check ve 	tion switch (ect warning tion switch (oltage betwee Termir	OFF. systems swi ON. een warning	tch connect systems sw	tor. <i>v</i> itch harness	connector ar	nd ground.	
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1. Turn igni 2. Disconne 3. Turn igni 4. Check vo Warning Connector M126 Is the inspect YES >> C NO >> F 2.CHECK W 1. Turn igni	tion switch (ect warning tion switch (oltage between (+) systems switc (+) <u>systems switc</u> (+) <u>systems switc</u> (-) Solution result n GO TO 2. Repair the w /ARNING S	OFF. systems swi ON. een warning hal G ormal? varning syste YSTEMS ON	tch connect systems sw (-) round I sms ON indi	tor. vitch harness Voltage (Approx.) Battery voltage cator power DR SIGNAL F	connector ar - - - supply circuit FOR OPEN	nd ground.	
1. Turn igni 2. Disconne 3. Turn igni 4. Check vo Warning Connector M126 Is the inspect YES >> C NO >> F 2.CHECK W 1. Turn igni 2. Disconne	tion switch (ect warning tion switch (oltage betwee Termir (+) systems switc (+) systems switc (+) systems switc (+) systems switch (+) systems	OFF. systems swi ON. een warning hal G ormal? varning syste YSTEMS ON OFF. S control uni	tch connect systems sw (-) round round INDICATC	tor. vitch harness Voltage (Approx.) Battery voltage Icator power DR SIGNAL F	connector ar 	nd ground.	
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1. Turn igni 2. Disconne 3. Turn igni 4. Check vo Warning Connector M126 Is the inspect YES >> C NO >> F 2. CHECK W 1. Turn igni 2. Disconne 3. Check co connector B104 Is the inspect YES >> C	tion switch (ect warning tion switch (oltage betwee tion switch (oltage betwee tion switch (systems switch (+) systems switch for result n GO TO 2. Repair the w (ARNING S tion switch (ect the ADA ontinuity befor. trol unit Terminal 4 ion result n GO TO 3.	OFF. systems swi ON. een warning hal G ormal? varning syste YSTEMS ON OFF. S control uni ween the AE Warning sys Connector M126 ormal?	tch connect systems sw (-) round ms ON indi N INDICATO it harness c DAS control stems switch Terminal 6	tor. vitch harness Voltage (Approx.) Battery voltage Cator power DR SIGNAL F onnector. unit harness Continuity Yes	connector ar supply circuit FOR OPEN	nd ground.	stems switch harnes
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< DTC/CIRCUIT DIAGNOSIS >

ADAS co	ontrol unit		Continuity
Connector	Connector Terminal		Continuity
B104	4		No

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK WARNING SYSTEMS ON INDICATOR

Check the warning systems ON indicator. Refer to DAS-620, "Component Inspection".

Is the inspection result normal?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> Replace warning systems switch. <u>DAS-313, "Removal and Installation"</u>.

Component Inspection

INFOID:000000008368341

1. CHECK WARNING SYSTEMS ON INDICATOR

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

Terminals			Warning sys-
(+)	(-)	Condition	tems ON indica- tor
5	6	When the battery voltage is applied	On
5	0	When the battery voltage is not applied	Off

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace the warning systems switch. Refer to DAS-313, "Removal and Installation".

< DTC/CIRCUIT	DIAGNOSIS	>	BLIND SPOT WARNING & BLI	ND SPOT INTERVENTION]
WARNING	BUZZER (CIRCUIT		
Component F	-unction Ch	eck		INFOID:00000008368342
1 .CHECK WAR	NING BUZZEF	२		
1. Turn the ign	ition switch ON	l.		
 Select the a With operati 	ng the test item	LDP BUZZER n, check the op	of "ICC/ADAS" with CONSULT.	
On : V	Varning buzze	er is activated.		
Off : V	Varning buzze	er is not activa	ted.	
Is the inspection	result normal?) -		
YES >> Insp	ection End.	"Diagnosis Pro	ocedure"	
Diagnosis Pr	acedure	Diagnoolo i ii	<u></u> .	
Jiagi Usis Fli				INFOID:00000008368343
Regarding Wiring	g Diagram info	rmation, refer t	o <u>DAS-366, "Wiring Diagram"</u> .	
1. CHECK WAR	NING BUZZER	R POWER SUI	PPLY CIRCUIT	
1. Turn ignition	switch OFF.			
 Disconnect 1 Turn ignition 	the warning but i switch ON.	zzer connector		
4. Check voltag	ge between the	e warning buzz	er harness connector and ground.	
(.)	Terminals	()	-	
(+)) buzzer	(-)	Voltage (Approx.)	
Connector	Terminal	Ground	(*******	
M60	1	Ground	Battery voltage	
Is the inspection	result normal?)		
YES >> GO	TO 2.	-		
NO >> Rep	air the warning	buzzer power	supply circuit.	
2 .CHECK WAR	NING BUZZER	R GROUND CI	RCUIT	
1. Turn ignition	switch OFF.			
2. Check conti	nuity between t	ine warning bu	zzer narness connector and groun	α.
Warning	buzzer			
Connector	Terminal	Ground	Continuity	
M60	3		Yes	
Is the inspection	result normal?)	<u> </u>	
YES >> GO	TO 3.			
NO >> Rep	air the harness	ses or connecto	ors.	
J.CHECK WAR		R SIGNAL CIR	CUIT FOR OPEN	
1. Disconnect	the ADAS cont	rol unit connec	tor.	

2. Check continuity between the ADAS control unit harness connector and warning buzzer harness connector.

ADAS control unit		Warning	Continuity	
Connector	Terminal	Connector	Connector Terminal	
B104	12	M60	2	Yes

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR SHORT

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

ADAS co	ontrol unit		Continuity
Connector	Terminal	Ground	Continuity
B104	12		No

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the harnesses or connectors.

5. CHECK WARNING BUZZER OPERATION

- 1. Connect the warning buzzer connector.
- 2. Turn ignition switch ON.
- 3. Apply ground to warning buzzer terminal 2.
- 4. Check condition of the warning buzzer.

Does warning buzzer sound?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> Replace the warning buzzer.

BLIND SPOT WARNING & BLIND SPOT INTERVENTION SYSTEM SYMPTOMS < SYMPTOM DIAGNOSIS > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

SYMPTOM DIAGNOSIS

BLIND SPOT WARNING & BLIND SPOT INTERVENTION SYSTEM SYMP-TOMS

Symptom Table

INFOID:000000007912042

А

В

D

F

CAUTION:

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

NOTE:

- Refer to the following the operation condition of the Blind Spot Warning/Blind Spot Intervention system.
- Blind Spot Warning system: DAS-466. "BLIND SPOT WARNING (BSW) SYSTEM : System Description".
- Blind Spot Intervention system: <u>DAS-470</u>, "BLIND SPOT INTERVENTION SYSTEM : System Description".

Symptom		Possible cause	Inspection item/Reference page	
Indicator/warning lamps do not il- luminate when ignition switch OFF \Rightarrow ON.	Blind Spot Warning/Blind Spot Intervention warning lamp (orange) does not illu- minate	 Blind Spot Warning/Blind Spot Intervention warning lamp signal (CAN) Combination meter ADAS control unit Blind Spot Warning/Blind Spot Intervention warning lamp (combination meter) 	ADAS control unit Active test "BSW/BSI WARNING LAMP" and "BSI ON INDICATOR". Refer to <u>DAS-482, "CONSULT</u> <u>Function (ICC/ADAS)"</u> .	F
	Blind Spot Intervention ON indicator (Green) does not il- luminate	 Blind Spot Intervention ON in- dicator lamp signal (CAN) Combination meter ADAS control unit Blind Spot Intervention ON in- dicator (combination meter) 	 ADAS control unit Data monitor "BSW/BSI WARN LMP" and "BSI ON IND". Refer to <u>DAS-482. "CONSULT</u> <u>Function (ICC/ADAS)"</u> Combination meter Data monitor "BSW W/L" and "BSI IND" 	H
	Blind Spot Intervention ON indicator (Green) and Blind Spot Warning/Blind Spot In- tervention warning lamp (or- ange) do not illuminate	Combination meterADAS control unit	Refer to <u>DAS-482, "CONSULT</u> Function (ICC/ADAS)"	J
	 All of indicator/warning lamps do not illuminate; Blind Spot Warning/Blind Spot Intervention warning lamp Blind Spot Intervention ON indicator Warning systems ON indi- cator 	 Power supply and ground circuit of ADAS control unit ADAS control unit Combination meter 	Power supply and ground circuit of ADAS control unit. Refer to DAS-565. "Diagnosis Procedure"	K L M
	Warning systems ON indica- tor (on the warning systems switch) does not illuminate	 Harness between ADAS control unit and warning systems switch Warning systems switch ADAS control unit 	Warning systems ON indicator circuit. Refer to <u>DAS-565, "Diag-</u> nosis Procedure"	Ν
	Blind Spot Warning/Blind Spot Intervention indicator does not turn ON	 Harness between side radar and Blind Spot Warning/Blind Spot Intervention indicator Side radar LH/RH Blind Spot Warning/Blind Spot Intervention indicator 	Perform self-diagnosis of side ra- dar. Refer to <u>DAS-495</u> , "CON- <u>SULT Function (SIDE RADAR</u> <u>LEFT)" or <u>DAS-496</u>, "CONSULT <u>Function (SIDE RADAR</u> <u>RIGHT)"</u>.</u>	DAS P

BLIND SPOT WARNING & BLIND SPOT INTERVENTION SYSTEM SYMPTOMS < SYMPTOM DIAGNOSIS > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

Sympt	om	Possible cause	Inspection item/Reference page
BSW system is not activated. (Indicator/warning lamps illumi- nate when ignition switch OFF \Rightarrow	Warning systems ON indica- tor is not turned ON ⇔ OFF when operating warning sys- tems switch	 Harness between ADAS control unit and waning systems switch Harness between warning systems switch and ground ADAS control unit Warning systems switch 	 Warning systems switch circuit. Refer to <u>DAS-572</u>. "Diagnosis <u>Procedure"</u>. BSW system setting cannot be turned ON/OFF on the naviga- tion screen. Refer to <u>DAS-627</u>. "Descrip- tion"
ON.)	Buzzer is not sounding	 Buzzer power supply circuit. Harness between ADAS control unit and warning buzzer Harness between warning buzzer and ground. Warning buzzer ADAS control unit 	Warning buzzer circuit. Refer to DAS-621. "Diagnosis Procedure"
Blind Spot Intervention system is not activated.	Blind Spot Intervention ON indicator is not turned ON ⇔OFF when operating dy- namic driver assistance switch.	 Dynamic driver assistance switch Combination meter ADAS control unit 	 Dynamic driver assistance switch does not turn ON/OFF. Refer to <u>DAS-625</u>, "<u>Descrip-</u><u>tion</u>" Blind Spot Intervention system setting cannot be turned ON/ OFF on the navigation screen. Refer to <u>DAS-627</u>, "<u>Descrip-</u><u>tion</u>"
mally)	Warning is functioning but yawing is not functioning.	_	 Check "Cause of auto-cancel 2". Refer to <u>DAS-482</u>, "<u>CON-SULT Function (ICC/ADAS)</u>" Check normal operating condition. Refer to <u>DAS-628</u>, "<u>Description</u>"
 Blind Spot Intervention functions a functioning normally.) (Example) Does not function when approad Spot Warning/Blind Spot Intervenated. Functions when driving in the magnetic structure of the second structure	are not timely.(BSW system is ching a lane marker while Blind ention indicator lamp is illumi- niddle of lane.	 Camera aiming adjustment Lane camera unit 	Camera aiming adjustment. Re- fer to <u>DAS-544, "Work Proce-</u> dure".

SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF [BLIND SPOT WARNING & BLIND SPOT INTERVENTION] < SYMPTOM DIAGNOSIS > SWITCH DOES NOT TURN ON / SWITCH DOES NOT TURN OFF А Description INFOID:000000007912043 В The switch does not turn ON When the Blind Spot Intervention system setting is ON, the Blind Spot Intervention ON indicator does not illuminate even if the dynamic driver assistance switch is depressed. The switch does not turn OFF The Blind Spot Intervention ON indicator does not turn off even if the dynamic driver assistance switch is pressed when the Blind Spot Intervention ON indicator illuminates. **Diagnosis** Procedure INFOID-000000007912044 1.CHECK BLIND SPOT INTERVENTION SYSTEM SETTING Ε 1. Start the engine. 2. After starting the engine wait for 5 seconds or more. Check that Blind Spot Intervention system setting on the navigation screen is ON. 3. F Is Blind Spot Intervention system setting ON? YES >> GO TO 2. NO >> Enable the Blind Spot Intervention system setting. G 2. DYNAMIC DRIVER ASSISTANCE SWITCH INSPECTION 1. Start the engine. Н 2. Check that "DYNA ASIST SW" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT. Is the inspection result normal? YES >> GO TO 3. NO >> GO TO 5. **3.**CHECK BLIND SPOT INTERVENTION ON INDICATOR CIRCUIT 1. Start the engine. 2. Select the active test item "BSI ON IND" of "ICC/ADAS" with CONSULT. Check if the Blind Spot Intervention ON indicator illuminates when the test item is operated. 3. Is the inspection result normal? K YES >> GO TO 6. NO >> GO TO 4. 4.PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER 1. Perform "All DTC Reading" with CONSULT. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to MWI-25, "DTC Index". 2 M Is the inspection result normal? YES >> GO TO 7. NO >> GO TO 6. Ν 5.CHECK STEERING SWITCH CIRCUIT Check the steering switch circuit. Refer to DAS-407, "Diagnosis Procedure". Is the inspection result normal? DAS YES >> GO TO 6. NO >> GO TO 7. **O.**PERFORM THE SELF-DIAGNOSIS Ρ 1. Perform "All DTC Reading" with CONSULT. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to DAS-508, "DTC Index". 2. Is any DTC detected? YES >> GO TO 7. NO >> GO TO 8.

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

7.REPAIR OR REPLACE MALFUNCTIONING PARTS.

Repair or replace malfunctioning parts.

>> GO TO 8.

 $8. {\sf CHECK} \ {\sf BLIND} \ {\sf SPOT} \ {\sf INTERVENTION} \ {\sf SYSTEM}$

- Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to <u>DAS-545</u>, "<u>Description</u>" for action test.)
- 2. Check that the Blind Spot Intervention system is normal.

>> Inspection End.

BSW/BSI SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHICLE IN-FORMATION DISPLAY

< SYMPTOM DIAGNOSIS >

[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

BSW/BSI SYSTEM SETTINGS CANNOT BE TURNED ON/OFF IN VEHICLE INFORMATION DISPLAY

Description

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 BSW system setting is not selectable in the vehicle information display. Blind Spot Intervention system setting is not selectable in the vehicle information display. 	
NOTE: When the ignition switch is in ACC position, Blind Spot Warning or Blind Spot Intervention system settings	С
cannot be changed.	
 "Blind Spot Warning" or "Blind Spot Intervention" is not indicated in the vehicle information display. The switching between ON and OFF cannot be performed by operating the vehicle information display. 	D
- The item "Blind Spot Warning" or "Blind Spot Intervention" in the vehicle information display.	
• The Blind Spot Warning or Blind Spot Intervention system setting differs from the one set at the previous driving	E
NOTE:	
Turn OFF the ignition switch and wait for 5 seconds or more.	
Diagnosis Procedure	F
1. CHECK BLIND SPOT INTERVENTION SYSTEM SETTING	
1. Start the engine.	G
2. Check that the Blind Spot Intervention system settings is selectable in the vehicle information display.	
Is the inspection result normal?	Н
YES >> GO TO 3.	
2	
Z .PERFORM THE SELF-DIAGNOSIS	
 Perform self-diagnosis with CONSULT. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS" and "METER/M&A". Refer to the fol- 	
lowing.	
- ICC/ADAS: DAS-48, "DTC Index"	J
- METER/M&A: <u>MWI-25, "DTC Index"</u>	
Is any DTC detected?	Κ
YES >> Repair or replace malfunctioning parts. NO >> INSPECTION END	
3. CHECK DATA MONITOR OF ADAS CONTROL UNIT	L
Check that "BSI SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT.	
Is the inspection result normal?	
YES >> Refer to <u>DAS-470, "BLIND SPOT INTERVENTION SYSTEM : System Description"</u> . NO >> GO TO 4	Μ
4. CHECK THE VEHICLE INFORMATION DISPLAY SWITCH	
Operate the vehicle information display switch to check that the vehicle information display operates properly.	Ν
Is the inspection result normal?	
 YES >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>. NO >> Repair or replace malfunctioning parts. 	DA

NORMAL OPERATING CONDITION

Description

INFOID:000000007912047

PRECAUTIONS FOR BLIND SPOT WARNING (BSW) & BLIND SPOT INTERVENTION

- The Blind Spot Warning and Blind Spot Intervention systems are not a replacement for proper driving procedure and are not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning or Blind Spot Intervention system.
- Using the Blind Spot Intervention system under some road, lane marker or weather conditions could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The Blind Spot Warning and Blind Spot Intervention systems may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the Blind Spot Warning or Blind Spot Intervention systems when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Blind Spot Warning/Blind Spot Intervention when certain objects are present such as:
- Pedestrians, bicycles, animals.
- Several types of vehicles such as motorcycles.
- Oncoming vehicles.
- Vehicles remaining in the detection zone when driver accelerate from a stop.
- A vehicle merging into an adjacent lane at a speed approximately the same as vehicle.
- A vehicle approaching rapidly from behind.
- A vehicle which vehicle overtakes rapidly.
- Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles.
- The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away.
- The side radar are designed to ignore most stationary objects, however objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

PRECAUTIONS FOR BLIND SPOT INTERVENTION

- Do not use the Blind Spot Intervention system under the following conditions because the system may not function properly.
- During bad weather (e.g. rain, fog, snow, wind, etc.)
- When driving on slippery roads, such as on ice or snow, etc.
- When driving on winding or uneven roads.
- When there is a lane closure due to road repairs.
- When driving in a makeshift lane.
- When driving on roads where the lane width is too narrow.
- When driving with a tire that is not within normal tire conditions (e.g. tire wear, low tire pressure, installation of spare tire, tire chains, non-standard wheels).
- When the vehicle is equipped with non-original brake parts or suspension parts.
- The camera may not detect lane markers in the following situations and the Blind Spot Intervention system may not operate properly.
- On roads where there are multiple parallel lane markers; lane markers that are faded or not painted clearly; yellow painted lane markers; nonstandard lane markers; lane markers covered with water, dirt, snow, etc.
- On roads where discontinued lane markers are still detectable.
- On roads where there are sharp curves.
- On roads where there are sharply contrasting objects, such as shadows, snow, water, wheel ruts, seams or lines remaining after road repairs.
- On roads where the traveling lane merges or separates.
- When the vehicle is traveling direction does not align with the lane markers.
- When traveling close to the vehicle in front of driver, which obstructs the lane camera unit detection range.
- When rain, snow or dirt adheres to the windshield in front of a lane camera unit.
- When the headlights are not bright due to dirt on the lens or if aiming is not adjusted properly.
- When strong light enters a lane camera unit. (e.g. light directly shines on the front of the vehicle at sunrise or sunset.)
- When a sudden change in brightness occurs. (e.g. when the vehicle enters or exits a tunnel or under a bridge.)

DAS-628

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >	[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]	
 The Blind Spot Intervention system will no enters the detection zone. In this case only Blind Spot Intervention braking will not op 	t operate if your vehicle is on a lane marker when another vehicle y the BSW system operates. perate or will stop operating and only a warning chime will sound	A
 - When the brake pedal is depressed. - When the accelerator pedal is depressed v - When steering quickly 	while brake control assist is provided.	В
 When the ICC, DCA, FCW or IBA warning When the hazard warning flashers are ope When driving on a curve at a high speed. 	is sound. erated.	С
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SIDE RADAR [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

A. LH side

D. Harness connector

<u>REMOVAL AND INSTALLATION > [BLIND SPO</u> REMOVAL AND INSTALLATION SIDE RADAR

Exploded View

INFOID:00000008267088



- 7. Side radar RH
- B. RH side
- ← Front

Removal and Installation

REMOVAL AND INSTALLATION

Removal

1. Remove the rear bumper fascia assembly. Refer to EXT-20, "Removal and Installation".

8. Body side RH

C. Harness connector

2. Disconnect the harness connector (1) (3) from the side radar (RH or LH) as necessary.



NOTE:

This illustration is an example.

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

< REMOVAL AND INSTALLATION >	[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]	
Installation Installation is in the reverse order of remova	I.	A
Do not use the side radar if the lens has f	laws.	
 Always lock the side radar connector (2). Do not touch the side radar lens and keep 	lens area clean.	В
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BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR< REMOVAL AND INSTALLATION >[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

Exploded View

INFOID:000000008267102



1. Blind spot warning/blind spot intervention indicator 2. Front sash inner cover

Front door

A. Blind spot warning/blind spot inter-
vention indicator harness connector

Removal and Installation

REMOVAL AND INSTALLATION

Removal

- 1. Remove the door front sash inner cover (LH or RH) as necessary. Refer to <u>INT-15, "Removal and Installa-</u> tion".
- 2. Remove the blind spot warning/blind spot intervention indicator screws.
- 3. Remove the blind spot warning/blind spot intervention indicator.

Installation

Installation is in the reverse order of removal.

LANE CAMERA UNIT

Exploded View

INFOID:000000008267091

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WARNING SYSTEMS SWITCH

< REMOVAL AND INSTALLATION >

WARNING SYSTEMS SWITCH

Removal and Installation

INFOID:000000008267261

REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-23, "Removal and Installation".
- 2. Remove three screws (A, B) that retain the lower switch assembly (2).
 - (1) :Upper switch assembly
 - (C) :Upper switch assembly screws



[BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

- 3. Release upper (B) and lower (C) tab using a suitable tool (A), then remove the warning system switch (1) from the lower switch assembly.
 - (2) :Dimmer switch
 - (3) :AC 120V outlet main switch
 - (4) :Heated steering wheel switch



INSTALLATION Installation is in the reverse order of removal.

DYNAMIC DRIVER ASSISTANCE SWITCH

< REMOVAL AND INSTALLATION > [BLIND SPOT WARNING & BLIND SPOT INTERVENTION]

DYNAMIC DRIVER ASSISTANCE SWITCH

Removal and Installation

The dynamic driver assistance switch and ICC steering switch are serviced as an assembly. Refer to <u>CCS-190, "Removal and Installation"</u>.

CAUTION:

Always perform the DCA system action test to check that the system operates normally after replacing the millimeter wave sensor, replacing the accelerator pedal, or repairing any DCA system malfunction. Refer to <u>DAS-156</u>, "Work Procedure".

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WARNING BUZZER

Removal and Installation

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REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-23, "Removal and Installation".
- 2. Remove screw (�).
- 3. Disconnect the harness connector (A) from the sonar buzzer (1).
- 4. Remove the sonar buzzer (1).



INSTALLATION Installation is in the reverse order of removal.

PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT **PRF-TENSIONER**" INFOID:00000008487562

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. D 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 E 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 E 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 3 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. NOTE:

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



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PRECAUTIONS

Precaution for Backup Collision Intervention

[BCI]

WARNING:

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

- Never use the Backup Collision Intervention system when driving with free rollers or a chassis dynamometer.
- Never perform the active test while driving.
- Never 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.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:00000008235122



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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BCI]

1.	Blind Spot Warning/Blind Spot Inter- vention indicator RH	2.	ABS actuator and electric unit (con- trol unit) Refer to <u>DAS-640, "Component De-</u> <u>scription"</u> .	3.	Vehicle information display
4.	BCI switch	5.	Display unit	6.	Accelerator pedal actuator
7.	Blind Spot Warning/Blind Spot Inter- vention indicator LH	8.	ECM Refer to <u>DAS-640</u> , "Component <u>De</u> scription".	9.	Around View Monitor control unit (view with center console removed) Refer to <u>DAS-640, "Component De-</u> <u>scription"</u> .
10.	Warning buzzer (view with LH quarter panel finisher removed)	11.	Side radar LH (view with rear bumper cover re- moved)	12.	Rear sonar sensors
13.	ADAS control unit (view of rear luggage room area) Refer to <u>DAS-640, "Component De-</u>	14.	Side radar RH (view with rear bumper cover re- moved)		

Component Description

scription".

Component	Description
ADAS control unit	 Being connected with side radar (LH and RH) via ITS communication, receives vehicle detection signal and transmits Blind Spot Warning/Blind Spot Intervention indicator signal and Blind Spot Warning/Blind Spot Intervention indicator dimmer signal to side radar Receives steering angle sensor signal from steering angle sensor via CAN communication Calculates the approach with the object by the signal from a sensor. Transmits a brake fluid pressure control signal to ABS actuator and electric unit (control unit) via CAN communication. Transmits the buzzer output signal to the sonar control unit via CAN communication. Transmits BCI ON/OFF display signal and BCI system warning lamp signal to combination meter via CAN communication.
Side radar LH/ RH	 Being connected with ADAS control unit via ITS communication, transmits vehicle detection signal Receives Blind Spot Intervention indicator signal and Blind Spot Intervention indicator dimmer signal from ADAS control unit and transmits an indicator operation signal to Blind Spot Intervention indicator LH/RH RH side radar equips right/left switching signal circuit for identifying LH or RH because the parts of side radar are common for right and left
Blind Spot Warning/Blind Spot In- tervention indicator LH/ RH	Receives Blind Spot Warning/Blind Spot Intervention indicator operation signal from side radar LH/ RH and turns OFF, turns ON or blinks
ABS actuator and electric unit (control unit)	 Transmits vehicle speed signal to ADAS control unit via CAN communication Receives a brake fluid pressure control signal from the ADAS control unit via CAN communication and controls brake pressure.
BCI OFF switch	Inputs the switch signal to ADAS control unit
Rear sonar sensors (4)	Monitors the near rear surrounding area of the vehicle and transmits the signal to the sonar control unit which passes it to the ADAS control unit for BCI purposes.
Sonar buzzer	Receives buzzer signal from ADAS control unit via sonar control unit and sounds buzzer.
Combination meter (vehicle information display)	 Turns the BCI ON/OFF display and BCI system warning lamp according to the signals from the ADAS control unit via CAN communication. Receives BCI ON/OFF display signal and BCI system warning lamp signal via CAN communication.
ECM	Transmits the accelerator pedal position signal, engine speed signal to ADAS control unit via CAN communication
ТСМ	Transmits the current gear position signal and shift position signal to ADAS control unit via CAN communication
AVM control unit	Receives the various systems and camera signals and routes them to the center display via CAN communication

COMPONENT PARTS

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Component Description		Δ
Center display	Displays the various system screen signals according to the priority level received via CAN com- munication	A
Accelerator pedal actuator	Receives signal from ADAS control unit to push up accelerator via ITS communication.	R

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< SYSTEM DESCRIPTION >

SYSTEM

System Description

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description
ECM	CAN communication	Accelerator pedal position sig- nal	Receives accelerator pedal position (angle)
		Engine speed signal	Receives engine speed
тсм	CAN communication	Current gear position signal	Receives a current gear position
1 Civi	CAN communication	Shift position signal	Receives a select lever position
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS
		VDC malfunction signal	Receives a malfunction state of VDC
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
BCI OFF switch	Hard wire	BCI OFF switch signal	Receives the state of the BCI OFF switch request
Sonar control unit	ITS communication	Rear object detection signal	Receives objects detection result of rear area behind vehicle
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.

Output Signal Item

SYSTEM

< SYSTEM DESCRIPTION >

Reception unit	Si	gnal name	Description
ABS actuator and electric unit (control unit)	CAN communication	Brake fluid pressure control signal.	Transmits a brake fluid pressure control signal to activate the brake.
Combination meter	CAN communication	Turns the BCI ON/OFF dis- play and BCI system warning lamp.	Turns the BCI ON/OFF display and BCI system warning lamp to display a state of the system on the information display.
Sonar control unit	ITS communication	Warning buzzer signal	While the shifter is in reverse and backing up, transmits 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 display rear view while the shift lever is in reverse.
Accelerator pedal actuator	ITS communication	Push up accelerator signal	While backing up and obstacle appears, transmits a sig- nal to push up the accelerator pedal
		Blind Spot Warning/Blind Spot Intervention indicator signal	Transmits a Blind Spot Warning/Blind Spot Intervention in- dicator signal to turn ON the Blind Spot Warning/Blind Spot Intervention indicator
Side radar LH, RH	ITS communication	Blind Spot Warning/Blind Spot Intervention indicator dimmer signal	Transmits a Blind Spot Warning/Blind Spot Intervention in- dicator dimmer signal to dimmer Blind Spot Warning/Blind Spot Intervention indicator
	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit	

FUNCTION DESCRIPTION

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



- The BCI system uses the two side radars installed near the rear bumper to detect approaching vehicles and rear obstacles.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- The radar sensors detect the approaching vehicle from up to approximately 49 feet (15 m) away.



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< SYSTEM DESCRIPTION >

- The sonar sensors can detect rear obstacles of up to approximately 4.9 feet (1.5 m).
- If the radar detects a vehicle approaching from the side or the sonar detects close objects in the rear, the system gives visual and audible warnings, and applies the brake for a moment when the vehicle is moving backwards. If the driver's foot is on the accelerator pedal, the system pushes the accelerator upward before applying the brake. If the driver continues to press the accelerator, the system will not engage the brake.



The radar sensors may not be able to detect certain objects such as:

- · Pedestrians, bicycles, animals
- A vehicle that is passing at a speed greater than approximately 15 MPH (24 km/h)
- The radar sensors may not detect approaching vehicles in certain situations:



SYSTEM

< SYSTEM DESCRIPTION >

< STSTEW DESCRIPTION >			[20.]	
 BACKUP COLLISION INTERVENTION SYSTEM OPERATION DESCRIPTION ADAS control unit enables Backup Collision Intervention system. The BCI system is automatically turned ON every time the engine is started. Then BCI ON indicator comes 				
 On. Combination meter turns Backup Collision Intervention ON indicator lamp ON/OFF according to the signals from ADAS control unit via CAN communication. 			В	
 Side radar detects a vehicle approachin ITS communication. Side radar receives vehicle speed signa ADAS control unit starts the control as f 	ig, and transmi al from ADAS c follows, based	ts the vehicle control unit and on a vehicle d	detection signal to ADAS control unit via d changes its detecting function. etection signal.	С
Operation Condition of Backup Collision Inte ADAS control unit performs the control wit • Backup Collision Intervention ON indica • When the vehicle is moving in reverse a	ervention Syste hen the followi ator: ON at 5 MPH (8 kn	em ng conditions a n/h) or less	are satisfied.	D
NOTE:		ing of 1033.		E
 When the Backup Collision Intervention system setting is ON in the meter display. Backup Collision Intervention braking will not function properly under the following conditions: When driving with a tire that is not within normal tire conditions (pressure, wear, chain, spare, etc) When the vehicle is equipped with non-original brake parts or suspension parts. Do not use the BCI system when towing a trailer. 			F	
BULB CHECK ACTION AND FAIL-SA	BUI B CHECK ACTION AND FAIL-SAFE INDICATION			G
Vehicle condition/Driver's operation Backup Collision Interventory Warning tion buzzer Indication on the combination meter				Η
	indicator			
Engine running and shift lever in reverse	ON	OFF	BCI	J

Engine running and shift lever in reverse	ON	OFF	BCI BCI ALUIA011222	J
When DTC is detected	OFF	OFF	OFF (orange)	L
When radar blockage is detected	ON	Веер	Unavailable: Side Radar Obstruction	Ν
When the accelerator pedal actuator detects that the internal motor temperature is high.	ON	Веер	Unavailable: High Accelerator Temp.	
				DAS

SYSTEM

< SYSTEM DESCRIPTION >

Vehicle condition/Driver's operation	Backup Colli- sion Interven- tion indicator	Warning buzzer	Indication on the combination meter
Unless the driver overrides it and turns it off, the BCI system is always set to ON everytime the en- gine is started and the shifter placed in reverse.	OFF	_	BCI
The BCI system is turned off temporarily by push- ing the BCI switch. The BCI OFF display appears on the meter display. When the selector lever is shifted into R again the BCI system is turned ON.	OFF		BCI OFF

Fail-safe (ADAS Control Unit)

INFOID:000000008368382

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

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

Fail-safe (Side Radar)

INFOID:00000008368383

FAIL-SAFE CONTROL BY DTC

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSI system warning light (orange) in the vehicle information display.

TEMPORARY DISABLED STATUS AT BLOCKAGE

When the following message is appeared on the meter display, a chime will sound, the BCI system will be turned off automatically.

• When the accelerator pedal actuator detects that the internal motor temperature is high (over approximately 100 °C).

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SYSTEM		
< SYSTEM DESCRIPTION >	[BCI]	
When side radar blockage is detected.		

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OPERATION

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OPERATION



INFOID:000000008235134

Switch Name and Function



No.	Name	Function
1	BCI switch	Turns Backup Collision Intervention system ON/OFF

System Display and Warning

INFOID:00000008235135

INDICATOR AND WARNING LAMP

Press the BCI switch to toggle between ON and OFF. "BCI" will appear on the left side of the vehicle information display screen.



No.	Name	Description
	BCI indicator	Turns ON while Backup Collision Intervention system is ON
2	Backup Collision Intervention warn- ing lamp (orange)	Turns ON when Backup Collision Intervention system is malfunctioning

DISPLAY AND WARNING OPERATION

Vehicle condition/Driver's operation			Action		
Backup Collisiont Interven- tion ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Status of vehicle de- tection within de- tection area	Indication on the Backup Collision Intervention in- dicator	Brake control	Buzzer
OFF		_	OFF	OFF	OFF
OPERATION

< SYSTEM DESCRIPTION >

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Vehicle condition/Driver's operation				,		
Backup Collisiont Interven- tion ON indicator	Vehicle speed (Approx.) [km/h (MPH)]	Status of vehicle de- tection within de- tection area	Indication on the Backup Collision Intervention in- dicator	Brake control	Buzzer	E
	Less than approx. 5 MPH (8 km/h)	Vehicle is detected	ON	ON	ON	C
ON		Vehicle is absent	ON	OFF	OFF	E
	Approx. 5 MPH (8 km/h) or	Vehicle is detected	ON	ON	ON	E
more	more	Vehicle is not detected	ON	OFF	OFF	F

Under the following conditions, the Backup Collision Intervention system will be turned off automatically, a beep will sound. The Backup Collision Intervention system will not be available until the conditions no longer exist.

• When the accelerator pedal actuator detects that the internal motor temperature is high.

• When side radar blockage is detected.

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HANDLING PRECAUTION

Precautions for Blind Spot Warning/Blind Spot Intervention

- The four sonar sensors for Backup Collision Intervention system 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 (gray circular) area, under repair.

BACKUP COLLISION INTERVENTION

- The Backup Collision Intervention system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When backing up. always look in the direction driver will move to ensure it is safe to proceed. Never rely solely on the Backup Collision Intervention system.
- Using the Backup Collision Intervention system under some road or weather condition could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The Backup Collision Intervention system may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the Backup Collision Intervention system when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Backup Collision Intervention when certain objects are present such as:
- Pedestrians, bicycles, animals.
- A vehicle passing at a speed greater than approximately 15 MPH (24km/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 brakes engaged by the BCI system is relatively weaker on a slope than flat ground. On a steep slope, the system may not function properly.
- Do not use the BCI system under the following conditions because the system may not function properly:
- When driving with a tire that is not the within normal tire condition (example: tire wear, low pressure, spare tire, chain, non-standard wheels).
- When the vehicle is equipped with non-original brake parts or suspension parts.

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

On Board Diagnosis Function

DESCRIPTION

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

On Board Self-diagnosis System Diagram



METHOD OF STARTING

CAUTION:

Start condition of on board self-diagnosis

- ICC system OFF
- DCA system OFF
- Vehicle speed 0 km/h (0 MPH)
- 1. Turn the ignition switch OFF.
- 2. Start the engine.
- Wait for 5 seconds after starting the engine. Push up the RESUME/ACCELERATE switch 5 times and push down the SET/COAST switch 5 times within 10 seconds.
 NOTE:

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



4. The DTC is displayed on the set vehicle speed indicator (1) on the ICC system display on the information display when the on board self-diagnosis starts. Refer to <u>DAS-48</u>, "<u>DTC Index</u>".



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

WHEN THE ON BOARD SELF-DIAGNOSIS DOES NOT START

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

Ass	umed abnormal part	Inspection item	
Information display	Combination meter malfunction	Check that the self-diagnosis function of the combina- tion meter operates. Refer to <u>MWI-17</u> , " <u>Description</u> "	
ICC steering switch malfunc	tion		
Harness malfunction betwee	n ICC steering switch and ECM	 Perform the inspection for DTC"C1A06". Refer to <u>C4</u> <u>109. "Diagnosis Procedure"</u> 	
ECM malfunction			
ADAS control unit malfunction	on	 Check power supply and ground circuit of ADAS control unit. Refer to <u>DAS-78, "Diagnosis Procedure"</u>. Perform SELF-DIAGNOSIS for "ICC/ADAS" with CONSULT, and then check the malfunctioning parts. Refer to <u>DAS-48, "DTC Index"</u>. 	

HOW TO ERASE ON BOARD SELF-DIAGNOSIS

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

NOTE:

- Complete the operation within 10 seconds after pressing the CANCEL switch first.
- If the operation is not completed within 10 seconds, repeat the procedure from step 1.
- 4. DTC 55 is displayed after erasing.

NOTE:

DTCs for existing malfunction can not be erased.

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

CONSULT Function (ICC/ADAS)

INFOID:00000008376830

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
Work Support	Displays causes of automatic system cancellation occurred during system control
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 Mntr	The result of transmit/receive diagnosis of CAN communication is displayed

WORK SUPPORT

CANCEL ON switch OFF DISTANCE ON switch OFF

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Work support items	Description	A
CAUSE OF AUTO-CANCEL 1	Displays causes of automatic system cancellation occurred during control of the following sys- tems Vehicle-to-vehicle distance control mode Conventional (fixed speed) cruise control mode Distance Control Assist (DCA) 	В
CAUSE OF AUTO-CANCEL 2	Displays causes of automatic system cancellation occurred during control of the following sys- tems Lane Departure Prevention (LDP) Blind Spot Intervention 	С
CAUSE OF AUTO-CANCEL 3	Displays causes of automatic system cancellation occurred during control of the following sys- tems • Backup Collision Intervention (BCI)	D

NOTE:

• Causes of the maximum five cancellations (system cancel) are displayed.

• The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of Automatic Cancellation 1

Cause of cancellation	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Distance Control Assist	Description	G H J K
OPERATING ABS	×		×	ABS function was operated	
OPERATING TCS	×	×	×	TCS function was operated	L
OPERATING VDC	×	×	×	VDC function was operated	
ECM CIRCUIT	×	×		ECM did not permit ICC operation	
OPE SW VOLT CIRC	×	×	×	The ICC steering switch input voltage is not within standard range	M
LASER TEMP	×		×	Temperature around millimeter wave sensor became low	
SNOW MODE SW	×		×	SNOW mode switch was pressed	Ν
OP SW DOUBLE TOUCH	×	×		ICC steering switches were pressed at the same time	
VHCL SPD DOWN	×	×	×	 Vehicle speed lower than the speed as follows Vehicle-to-vehicle distance control mode is 24 km/h (15 MPH) Conventional (fixed speed) cruise control mode is 22 km/h (14 MPH) 	DAS
WHL SPD ELEC NOISE	×	×	×	Wheel speed sensor signal caught electromagnetic noise	Ρ
VDC/TCS OFF SW	×		×	VDC OFF switch was pressed	
VHCL SPD UNMATCH	×	×	×	Wheel speed became different from CVT vehicle speed	
FR RADAR BLOCKED	×		×	The front bumper near the millimeter sensor is blocked or dirty	
TIRE SLIP	×	×		Wheel slipped	
IGN LOW VOLT	×	×	×	Decrease in ADAS control unit IGN voltage	

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

Display Items for The Cause of Automatic Cancellation 2

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

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Cause of cancellation	Lane departure prevention	Blind spot intervention	Description	A B C
SNOW MODE SW	×		SNOW mode switch was pressed	
VDC OFF SW	×		VDC OFF switch was pressed	D
OPE VDC/ABS 2	×		The activation of VDC or ABS during a standby time of LDP system control	
BSI WARNING	×		Blind Spot Intervention system was activated	_
BSI) OPE VDC/TCS/ ABS 1		×	The activation of VDC, TCS, or ABS during Blind Spot Intervention system control	E
BSI) Vehicle dynamics		×	Vehicle behavior exceeds specified value	
BSI) Steering speed		×	Steering speed was more than the specified value in evasive direction	F
BSI) End by yaw angle		×	Yaw angle was the end of Blind Spot Intervention control	
BSI) Departure yaw large		×	Detected more than the specified value of yaw angle in departure direction	G
BSI) ICC WARNING		×	Target approach warning of ICC system, IBA system or FCW system was activated	
BSI) CURVATURE		×	Road curve was more than the specified value	Н
BSI) Steering angle large		×	Steering angle was more than the specified value	
BSI) Brake is operated		×	Brake pedal was operated	
BSI) IGN LOW VOLT		×	Decrease in ADAS control unit IGN voltage	
BSI) Lateral offset		×	Distance of vehicle and lane was detached in lateral direction more than the specified	
BSI) Lane marker lost		×	Lane camera unit lost the trace of lane marker	J
BSI) Lane marker un- clear		×	Detected lane marker was unclear	
BSI) Yaw acceleration		×	Detected yawing speed was more than the specified value	K
BSI) Deceleration large		×	Deceleration in a longitudinal direction was more than the specified value	
BSI) Accel is operated		×	Accelerator pedal was depressed	L
BSI) Departure steering		×	Steering wheel was steered more than the specified value in departure direction	
BSI) Evasive steering		×	Steering wheel was steered more than the specified value in the evasive direction	
BSI) R range		×	Selector lever was operated to R range	M
BSI) Parking brake drift		×	Rear wheels lock was detected	
BSI) SNOW MODE SW		×	SNOW mode switch was pressed	Ν
BSI) VDC OFF SW		×	VDC OFF switch was pressed	
BSI) OPE VDC/ABS 2		×	The activation of VDC or ABS during a standby time of Blind Spot Intervention system control	DA
BSI) Not operating con- dition		×	Did not meet the operating condition (vehicle speed, turn signal operation, etc.)	
Side Radar Lost		×	Unrecognized side radar LH or RH by the ADAS control unit	Ρ
NO RECORD	×	×	_	

Display Items for The Cause of Automatic Cancellation 3

< SYSTEM DESCRIPTION >

[RCI]

Cause of cancellation	Backup Collision Intervention	Description
IGN LOW VOLT	×	Decrease in ADAS control unit IGN voltage
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication
ECD CIRCUIT	×	An abnormal condition occurs in ECD system
APA HI TEMP	×	The accelerator pedal actuator integrated motor temperature is high
Accel is operated	×	Accelerator pedal was depressed
NO RECORD	×	

SELF DIAGNOSTIC RESULT Refer to <u>DAS-48, "DTC Index"</u>.

DATA MONITOR

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description
MAIN SW [On/Off]	×	×	×	×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
SET/COAST SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CANCEL SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
RESUME/ACC SW [On/Off]	×	×				Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
DISTANCE SW [On/Off]	×					Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)
CRUISE OPE [On/Off]	×	×				Indicates whether controlling or not (ON means "controlling")
BRAKE SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication)
STOP LAMP SW [On/Off]	×	×	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal (ECM transmits stop lamp switch signal through CAN communication)
IDLE SW [On/Off]	×				×	Indicates [On/Off] status of idle switch read from ADAS control unit through CAN communication (ECM transmits On/Off status through CAN communication)
SET DISTANCE [Short/Mid/Long]	×	×				Indicates set distance memorized in ADAS control unit
CRUISE LAMP [On/Off]	×	×				Indicates [On/Off] status of MAIN switch indicator output
OWN VHCL [On/Off]	×					Indicates [On/Off] status of own vehicle indicator output
VHCL AHEAD [On/Off]	×					Indicates [On/Off] status of vehicle ahead detection indicator output
ICC WARNING [On/Off]	×					Indicates [On/Off] status of ICC system warning lamp output

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
VHCL SPEED SE [km/h] or [mph]	×	×	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN com- munication [ABS actuator and electric unit (control unit) transmits vehicle speed signal (wheel speed) through CAN communication]	
SET VHCL SPD [km/h] or [mph]	×	×				Indicates set vehicle speed memorized in ADAS control unit	
BUZZER O/P [On/Off]	×				×	Indicates [On/Off] status of ICC warning chime output	
ENGINE RPM [rpm]	×					Indicates engine speed read from ADAS control unit through CAN communica- tion (ECM transmits engine speed signal through CAN communication)	
WIPER SW [OFF/LOW/HIGH]	×					Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication)	
BA WARNING [On/Off]	×					ndicates [On/Off] status of IBA OFF indicator lamp output	
STP LMP DRIVE [On/Off]	×	×			×	Indicates [On/Off] status of ICC brake hold relay drive output	
D RANGE SW [On/Off]	×					ndicates [On/Off] status of "D" or "M" positions read from ADAS control unit hrough CAN communication; ON when position "D" or "M" (TCM transmits shift position signal through CAN communication).	
NP RANGE SW [On/Off]	×					Indicates shift position signal read from ADAS control unit through CAN commu- nication (TCM transmits shift position signal through CAN communication)	
PKB SW [On/Off]	×					Parking brake switch status [On/Off] judged from the parking brake switch signal that ADAS control unit readout via CAN communication is displayed (Combination meter transmits the parking brake switch signal via CAN communication)	
PWR SUP MONI [V]	×	×				Indicates IGN voltage input by ADAS control unit	
VHCL SPD CVT [km/h] or [mph]	×					Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication)	
THRTL OPENING [%]	×	×			×	Indicates throttle position read from ADAS control unit through CAN communi- cation (ECM transmits accelerator pedal position signal through CAN communi- cation).	
MODE SIG [OFF, ICC, ASCD]	×					Indicates the active mode from ICC or ASCD [conventional (fixed speed) cruise control mode]	
SET DISP IND [On/Off]	×					Indicates [On/Off] status of SET switch indicator output	
DISTANCE [m]	×					Indicates the distance from the vehicle ahead	
RELATIVE SPD [m/s]	×					Indicates the relative speed of the vehicle ahead N	
DYNA ASIST SW [On/Off]	×	×		×		Indicates [On/Off] status as judged from ICC steering switch signal (ECM trans- mits ICC steering switch signal through CAN communication)	
DCA ON IND [On/Off]	×					he status [On/Off] of DCA system switch indicator output is displayed	
DCA VHL AHED [On/Off]	×					The status [On/Off] of vehicle ahead detection indicator output in DCA system s displayed	
FCW SYSTEM ON [On/Off]	×	×				Indicates [On/Off] status of FCW system	
APA TEMP [°C]	×				×	Accelerator pedal actuator integrated motor temperature that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the integrated motor temperature via ITS communication)	

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
APA PWR [V]	×				×	Accelerator pedal actuator power supply voltage that the ADAS control unit readout via ITS communication is displayed (Accelerator pedal actuator transmits the power supply voltage via ITS communication)	
m BCI) m System on System on Off JW ON LAMP JN/Off LDP ON IND LDP ON IND			Indicates [On/Off] status of LDW system				
LDW ON LAMP [On/Off]			×			Indicates [On/Off] status of waning systems ON indicator output	
LDP ON IND [On/Off]			×			Indicates [On/Off] status of LDP ON indicator lamp (Green) output	
LANE DPRT W/L [On/Off]			×			Indicates [On/Off] status of lane departure warning lamp (Yellow) output	
LDW BUZER OUT- PUT [On/Off]			×			Indicates [On/Off] status of warning buzzer output	
LDP SYSTEM ON [On/Off]			×			Indicates [On/Off] status of LDP system	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
READY signal [On/Off]			×			Indicates LDP system settings	
Camera lost [Detect/Deviate/ Both]			×	×		Indicates a lane marker detection state judged from a lane marker detection sig- nal read by the ADAS control unit via ITS communication (Lane camera unit transmits a lane marker signal via ITS communication)	
Shift position [Off, P, R, N, D, M/ T1 - 7]			×	×	×	Indicates shift position read from ADAS control unit through CAN communica- tion (TCM transmits shift position signal through CAN communication)	
Turn signal [OFF/LH/RH/ LH&RH]			×	×		Indicates turn signal operation status read from ADAS control unit through CAN communication (BCM transmits turn indicator signal through CAN communication)	
SIDE G [G]			×	×		Indicates lateral G acting on the vehicle. This lateral G is judged from a side G sensor signal read by ADAS control unit via CAN communication (The ABS actuator and electric unit (control unit) transmits a side G sensor signal via CAN communication)	
STATUS signal [Stnby/Warn/Cancl/ Off]			×			Indicates a control state of LDP system	
Lane unclear [On/Off]			×	×		Indicates an On/Off state of the lane marker. The On/Off state is judged from a detected lane condition signal read by the ADAS control unit via ITS communication (The lane camera unit transmits a detected lane condition signal via ITS communication)	
FUNC ITEM [FUNC3]	×	×	×	×		dicates systems which can be set to On/Off by selecting "Driver Assistance" >"Dynamic Assistance Settings" of the navigation system UNC3: Distance Control Assist (DCA), Lane Departure Prevention (LDP) and lind Spot Intervention	
DCA SELECT [On/Off]	×	×	×	×		Indicates an On/Off state of DCA system. DCA system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	
LDP SELECT [On/Off]	×	×	×	×		Indicates an ON/OFF state of LDP system. LDP system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dynamic Assistance Settings" of the meter system	

< SYSTEM DESCRIPTION >

(LDW/LDP) MAIN SIG (BSW/BSI) MAIN SIG (BCI) Ċ ALL SIG MAIN SIG (ICC) А (ICC) Monitored item Description [Unit] Indicates an ON/OFF state of Blind Spot Intervention system. Blind Spot Inter-BSI SELECT vention system can be set to ON/OFF by selecting "Driver Assistance"⇒"Dy-× × × × [On/Off] namic Assistance Settings" of the meter system WARN SYS SW x Indicates [On/Off] status of warning systems switch X × X [On/Off] **BSW/BSI WARN** Indicates [On/Off] status of Blind Spot Warning/Blind Spot Intervention warning LMP х lamp output [On/Off] **BSI ON IND** Indicates [On/Off] status of Blind Spot Intervention ON indicator output Х [On/Off] Ε BSW SYSTEM ON Indicates [On/Off] status of BSW system × [On/Off] **BSI SYSTEM ON** Indicates [On/Off] status of Blind Spot Intervention system F × [On/Off] BCP ON Indicates [On/Off] status of BCP system × [On/Off] BCI SW ADAS Indicates [On/Off] status of Backup Collision Intervention system X [On/Off] LDP FAIL LAMP Indicates [On/Off] status of Lane Departure Prevention system failure lamp X X Н [On/Off] LDW ON LAMP Indicates [On/Off] status of LDW system X Х [On/Off] LDW FAIL LAMP Indicates [On/Off] status of Lane Departure Warning system failure lamp х × [On/Off] SYSTEM_CANCEL MESSAGE × x × x Indicates system cancel message request [Request/No Request] CAM_HI_TEMP_M Indicates high temperature message has been received SG × X [On/Off] **ITS Setting** Item(DCA) Indicates [On/Off] status of Distance Control Assist installation х × X X [On/Off] **ITS Setting** Μ Item(LDP) Indicates [On/Off] status of Lane Departure Prevention × × × × [On/Off] ITS Setting Ν Item(BSI) Indicates [On/Off] status of Blind Spot Intervention system X X × × [On/Off] **BSI FAIL IND** Indicates [On/Off] status of Blind Spot Intervention X [On/Off] DAS BSW ON IND Indicates [On/Off] status of BSW system × [On/Off] SR_BLK_MSG Ρ Indicates [On/Off] status of messages received X [On/Off] WARN_LANE_TIMI NG [-] Indicates [On/Off] status of warning lane timing × [On/Off] BSW IND BRIGHT NESS Indicates BSW warning lamp indicator brightness level × [Bright/Not Bright]

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Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (LDW/LDP)	MAIN SIG (BSW/BSI)	MAIN SIG (BCI)	Description	
WARN REQ [On/Off]			×			Indicates an ADAS control unit judged warning state (On/Off) of LDP system	
FCW SELECT [On/ Off]	x	x	x	x		ndicates an On/Off state of Forward Collision Warning system. Forward Colli- ion Warning system can be set to On/Off by selecting "Driver Assistance" \Rightarrow Dynamic Assistance Settings" of the navigation system	
LDW SELECT [On/ Off]	x	x	x	x		ndicates an On/Off state of Lane Departure Warning system. Lane Departure Warning system can be set to On/Off by selecting "Driver Assistance"⇒"Dynam- c Assistance Settings" of the navigation system	
BSW SELECT [On/ Off]	x	x	x	x		ndicates an On/Off state of Blind Spot Warning system. Blind Spot Warning sys- em can be set to On/Off by selecting "Driver Assistance"⇒"Dynamic Assis- ance Settings" of the navigation system	
ITS setting item (FCW) [On/Off]	x	x	x	x		ndicates [On/Off] status of Forward Collision Warning	
ITS setting item (LDW) [On/Off]	x	x	x	x		dicates [On/Off] status of Lane Departure Warning	
ITS setting item (BSW) [On/Off]	x	x	x	x		Indicates [On/Off] status of Blind Spot Warning	

ACTIVE TEST

CAUTION:

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

Test item	Description
BRAKE ACTUATOR	Activates the brake by an arbitrary operation
ICC BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Intelligent Cruise Control (ICC) Distance Control Assist (DCA) Forward Collision Warning (FCW) Intelligent Brake Assist (IBA)
METER LAMP	The ICC system warning lamp, MAIN switch indicator and IBA OFF indicator lamp can be illuminated by ON/OFF operations as necessary
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated
ACTIVE PEDAL	The accelerator pedal actuator can be operated as necessary
DCA INDICATOR	The DCA system switch indicator can be illuminated by ON/OFF operations as necessary
LDP BUZZER	Sounds a buzzer used for following systems by arbitrarily operating ON/OFF Lane Departure Warning (LDW) Lane Departure Prevention (LDP) Blind Spot Warning (BSW) Blind Spot Intervention
WARNING SYSTEM IND	Warning systems ON indicator (on warning systems switch) can be illuminated by ON/OFF opera- tions as necessary
LDP ON IND	The LDP ON indicator lamp can be illuminated by ON/OFF operations as necessary
LANE DEPARTURE W/L	The Lane departure warning lamp can be illuminated by ON/OFF operations as necessary
BSW/BSI WARNING LAMP	The Blind Spot Warning/Blind Spot Intervention warning lamp can be illuminated by ON/OFF opera- tions as necessary

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Test item	Description	,
BSI ON INDICATOR	The Blind Spot Intervention ON indicator can be illuminated by ON/OFF operations as necessary	F
LDW ON IND	The LDW ON indicator lamp can be illuminated by ON/OFF operations as necessary	
LDP FAIL IND	The LDP fail indicator lamp can be illuminated by ON/OFF operations as necessary	E
LDW FAIL IND	The LDW fail indicator lamp can be illuminated by ON/OFF operations as necessary	
BSW ON IND	The BSW ON indicator lamp can be illuminated by ON/OFF operations as necessary	
BSI FAIL IND	The BSI fail indicator lamp can be illuminated by ON/OFF operations as necessary	C

BRAKE ACTUATOR **NOTE:**

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

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

NOTE:



ICC BUZZER

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

METER LAMP

NOTE:

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

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< SYSTEM DESCRIPTION >

Test item	Oper- ation	Description	MAIN switch indicatorICC system warning lampIBA OFF indicator lamp
	Off	 Stops sending the following signals to exit from the test Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	OFF
METER LAMP	On	 Transmits the following signals to the combination meter via CAN communication Meter display signal ICC warning lamp signal IBA OFF indicator lamp signal 	ON

STOP LAMP

Test item	Oper- ation	Description	Stop lamp
STOP LAMP	Off	Stops transmitting the ICC brake hold relay drive signal be- low to end the test	OFF
	On	Transmits the ICC brake hold relay drive signal	ON

ACTIVE PEDAL

CAUTION:

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

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting



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< SYSTEM DESCRIPTION >

NOTE:

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

Test item	Opera- tion	Description	DCA system switch indicator	
DCA INDICATOR	Off	Stops transmitting the DCA system switch indicator signal be- low to end the test	_	
	On	Transmits the DCA system switch indicator signal to the com- bination meter via CAN communication	ON	

LDP BUZZER

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

WARNING SYSTEM IND

Test item	Oper- ation	Description	Warning systems ON indicator	(
WARNING SYSTEM	Off	Stops transmitting the warning systems ON indicator signal below to end the test	_	
	On	Transmits the warning systems ON indicator signal to the warning systems ON indicator	ON	ŀ

LDP ON IND

Test item	Oper- ation	Description	LDP ON indicator lamp (Green)	
LDP ON IND	Off	Stops transmitting the LDP ON indicator lamp signal be- low to end the test	—	,
	On	Transmits the LDP ON indicator lamp signal to the com- bination meter via CAN communication	ON	ŀ

LANE DEPARTURE W/L

Test item	Oper- ation	Description	Lane departure warning lamp (Yellow)	
LANE DEPARTURE W/L	Off	Stops transmitting the lane departure warning lamp sig- nal below to end the test	_	M
	On	Transmits the lane departure warning lamp signal to the combination meter via CAN communication	ON	NI

BSW/BSI WARNING LAMP

Test item	Oper- ation	Description	Blind Spot Warning/Blind Spot Inter- vention warning lamp (Yellow)	DAS
BSW/BSI WARNING LAMP	Off	Stops transmitting the Blind Spot Warning/Blind Spot In- tervention warning lamp signal below to end the test	_	Þ
	On	Transmits the Blind Spot Warning/Blind Spot Interven- tion warning lamp signal to the combination meter via CAN communication	ON	I

BSI ON INDICATOR

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< SYSTEM DESCRIPTION >

Test item	Oper- ation	Description	Blind Spot Intervention ON indicator lamp (Green)
BSI ON INDICATOR	Off	Stops transmitting the Blind Spot Intervention ON indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention ON indicator sig- nal to the combination meter via CAN communication	ON

LDW ON INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW ON INDICATOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

LDP FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure prevention ON indica- tor lamp (Yellow)
LDP FAIL INDICATOR	Off	Stops transmitting the Lane Departure prevention ON indicator signal below to end the test	_
	On	Transmits the Lane Departure prevention ON indicator signal to the combination meter via CAN communication	ON

LDW FAIL INDICATOR

Test item	Oper- ation	Description	Lane Departure Warning ON indicator lamp (Yellow)
LDW FAIL INDICA- TOR	Off	Stops transmitting the Lane Departure Warning ON indi- cator signal below to end the test	_
	On	Transmits the Lane Departure Warning ON indicator signal to the combination meter via CAN communication	ON

BSW ON INDICATOR

Test item	Oper- ation	Description	Blind Spot Warning ON indicator lamp (Yellow)
BSW ON INDICATOR	Off	Stops transmitting the Blind Spot Warning ON indicator signal below to end the test	_
	On	Transmits the Blind Spot Warning ON indicator signal to the warning lamp on the door	ON

BSI FAIL INDICATOR

Test item	Oper- ation	Description	Blind Spot Intervention FAIL indicator lamp (Yellow)
BSI FAIL INDICATOR	Off	Stops transmitting the Blind Spot Intervention FAIL indi- cator signal below to end the test	_
	On	Transmits the Blind Spot Intervention FAIL indicator sig- nal to the warning lamp on the door	ON

ECU IDENTIFICATION

ADAS control unit part number is displayed.

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	0
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.	
ECU identification	Displays part number of side radar.	

SELF DIAGNOSTIC RESULT

Self Diagnostic Result

Displays memorized DTC in side radar LH. Refer to DAS-514, "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	F

DATA MONITOR

Monitored Item [unit]		Description	
	Off	Side radar is normal.	
SIDE RADAR MALF	On	Side radar is malfunctioning.	J
BLOCKAGE COND	Off	Side radar is not blocked.	
	On	Side radar is blocked.	ĸ
	Off	Does not detect a vehicle within detection area.	
VEHICLE DETECT	On	Detects a vehicle within detection area.	

ACTIVE TEST

CAUTION:

• Never perform the active test while driving.

 Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description	Ν
BSW/BSI INDICATOR	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indi- cator.	
DRIVE	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indica- tor.	DAS

ECU IDENTIFICATION

Side radar part number is displayed.

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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-516, "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

Monitored Item [unit]		Description
SIDE RADAR MALE	Off	Side radar is normal.
	On	Side radar is malfunctioning.
	Off	Side radar is not blocked.
BEOCIAGE COND	On	Side radar is blocked.
	Off	Does not detect a vehicle within detection area.
	On	Detects a vehicle within detection area.

ACTIVE TEST

CAUTION:

• Never perform the active test while driving.

 Active test cannot be started while the Blind Spot Warning/Blind Spot Intervention indicator is illuminated.

Active test item	Operation	Description
BSW/BSI INDICATOR	On	Outputs the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indi- cator.
DRIVE	Off	Stops the voltage to illuminate the Blind Spot Warning/Blind Spot Intervention indica- tor.

ECU IDENTIFICATION

Side radar part number is displayed.

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< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor item		Condition	Value/Status
	Ignition switch ON	When MAIN switch is pressed	On
MAIN SW		When MAIN switch is not pressed	Off
	Ignition switch ON	When SET/COAST switch is pressed	On
SET/COAST SW	Ignition switch ON	When SET/COAST switch is not pressed	Off
	Ignition quitab ON	When CANCEL switch is pressed	On
CANCEL SW	Ignition switch ON	When CANCEL switch is not pressed	Off
	Ignition owitch ON	When RESUME/ACCELERATE switch is pressed	On
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is not pressed	Off
	Ignition quitab ON	When DISTANCE switch is pressed	On
DISTANCE SW		When DISTANCE switch is not pressed	Off
	Drive the vehicle and activate	When ICC system is controlling	On
CRUISE OPE	the vehicle-to-vehicle distance control mode	When ICC system is not controlling	Off
	Ignition quitab ON	When brake pedal is depressed	Off
BRAKE SW	Ignition switch ON	When brake pedal is not depressed	On
	Instition quitab ON	When brake pedal is depressed	On
STOP LAMP SW	Ignition switch ON	When brake pedal is not depressed	Off
	Engine running	Idling	On
IDLE SVV		Except idling (depress accelerator pedal)	Off
	Ignition switch ON	When BCI switch is pressed	On
BCI SVV		When BCI switch is not pressed	Off
	Ignition switch ON	When BCI system is ON	On
BCISTSTEMUUN		When BCI system is OFF	Off
	• Start the engine and turn the	When set to "long"	Long
	 ICC system ON Press the DISTANCE switch to change the vehi- cle-to-vehicle distance set- ting 	When set to "middle"	Mid
SET DISTANCE		When set to "short"	Short
CRUISE LAMP	Start the engine and press	ICC system ON (MAIN switch indicator ON)	On
UNUISE LAIMP	MAIN switch	ICC system OFF (MAIN switch indicator OFF)	Off
VHCI AHFAD	Drive the vehicle and activate	When a vehicle ahead is detected (vehicle ahead detection indicator ON)	On
	control mode	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
ICC WARNING	Start the engine and press	When ICC system is malfunctioning (ICC system warning lamp ON)	On
	MAIN switch	When ICC system is normal (ICC system warning lamp OFF)	Off

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< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
VHCL SPEED SE	While driving		Displays a vehi- cle speed calcu- lated by the ADAS control unit
SET VHCL SPD	While driving	When vehicle speed is set	Displays the set vehicle speed
		 When the buzzer of the following system operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	On
DUZZER U/F		 When the buzzer of the following system not operates Vehicle-to-vehicle distance control mode DCA system FCW system IBA system 	Off
ENGINE RPM	Engine running		Equivalent to ta- chometer read- ing
		IBA OFF indicator lamp ONWhen IBA system is malfunctioningWhen IBA system is turned to OFF	On
BA WARNING		IBA OFF indicator lamp OFFWhen IBA system is normalWhen IBA system is turned to ON	Off
	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When ICC brake hold relay is activated	On
STP LMP DRIVE		When ICC brake hold relay is not activated	Off
D RANGE SW		When the selector lever is in "D" position or manual mode	On
		When the selector lever is in any position other than "D" or manual mode	Off
		When the selector lever is in "N", "P" position	On
NP RANGE SW	Engine running	When the selector lever is in any position other than "N", "P"	Off
PKB SW	Ignition switch ON	When the parking brake is applied	On
		When the parking brake is released	Off
PWR SUP MONI	Engine running		Power supply voltage value of ADAS control unit
VHCL SPD AT	While driving		Value of CVT ve- hicle speed sen- sor signal
THRTL OPENING	Engine running	Depress accelerator pedal	Displays the throttle position
		When ICC system is deactivated	Off
MODE SIG	Start the engine and press MAIN switch	When vehicle-to-vehicle distance control mode is activated	ICC
		When conventional (fixed speed) cruise control mode is activated	ASCD
	Drive the vehicle and acti-	SET switch indicator ON	On
SET DISP IND	 vate the conventional (fixed speed) cruise control mode Press SET/COAST switch 	SET switch indicator OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
DISTANCE	Drive the vehicle and activate the vehicle-to-vehicle distance control mode	When a vehicle ahead is detected	Displays the dis- tance from the preceding vehi- cle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the vehicle-to-vehicle distance	When a vehicle ahead is detected	Displays the rel- ative speed.
	control mode	When a vehicle ahead is not detected	0.0
	Drive the vehicle and activate	Both side lane markers are detected	Detect
Camera lost	or Blind Spot Intervention svs-	Deviate side lane marker is lost	Deviate
	tem	Both side lane markers are lost	Both
	While driving	Lane marker is unclear	On 🛛
	while driving	Lane marker is clear	Off
		When the LDP system is ON	Stnby
	Drive the vehicle with the LDP	When the LDP system is operating	Warn
STATUS Signal	system turned ON	When the LDP system is canceled	Cancl
		When the LDP system is OFF	Off G
DVNA ASIST SM	Ignition quitch ON	When dynamic driver assistance switch is pressed	On
DTNA ASIST SW	Ignition switch ON	When dynamic driver assistance switch is not pressed	Off
DCA ON IND	Start the engine and press dy- namic driver assistance switch (When DCA system setting is ON)	DCA system OFF (DCA system switch indicator OFF)	Off
		DCA system ON (DCA system switch indicator ON)	On
DCA VHL AHED	Drive the vehicle and activate the DCA system	When a vehicle ahead is not detected (vehicle ahead detection indicator OFF)	Off
		When a vehicle ahead is detected (vehicle ahead de- tection indicator ON)	On
APA TEMP	Engine running		Display the ac- celerator pedal K actuator inte- grated motor temperature
APA PWR	Ignition switch ON		Power supply voltage value of accelerator ped- al actuator
FOW SYSTEM ON	Ignition switch ON	FCW set with the vehicle information display ON	On
		FCW set with the vehicle information display OFF	Off
	Ignition switch ON	LDW set with the vehicle information display ON	On N
	Ignition switch ON	LDW set with the vehicle information display OFF	Off
	Ignition switch ON	LDW ON indicator ON	On DA
		LDW ON indicator OFF	Off
	Start the engine and press dy-	LDP ON indicator lamp ON	On
LDP ON IND	namic driver assistance switch (When LDP system setting is ON)	LDP ON indicator lamp OFF	Off
	Drive the vehicle and activate	Lane departure warning lamp ON	On
LANE DPRT W/L	the LDW system or LDP sys- tem	Lane departure warning lamp OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
LDW BUZER OUT- PUT	Drive the vehicle and activate	When the buzzer of the following system operatesLDW/LDP systemBlind Spot Warning/Blind Spot Intervention system	On
	Spot Warning/Blind Spot Inter- vention system	 When the buzzer of the following system does not operate LDW/LDP system Blind Spot Warning/Blind Spot Intervention system 	Off
	Start the engine and press dy-	When the LDP system is ON	On
LDP SYSTEM ON	namic driver assistance switch (When LDP system setting is ON)	When the LDP system is OFF	Off
	Start the engine and press dy-	When the LDP system is ON	On
READY signal	(When LDP system setting is ON)	When the LDP system is OFF	Off
Shift position	Engine runningWhile driving		Displays the shift position
	Turn signal lamps OFF		Off
Turn signal	Turn signal lamp LH blinking		LH
	Turn signal lamp RH blinking		RH
	Turn signal lamp LH and RH bl	inking	LH&RH
SIDE G	While driving	Vehicle turning right	Negative value
	while anying	Vehicle turning left	Positive value
FUNC ITEM	Ignition switch ON	FUNC3	
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not n	Off	
FUNC ITEM (NV- DCA)	NOTE: The item is indicated, but not monitored		Off
	Ignition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is ON	On
DCA SELECT	Ignition switch ON	"Distance Control Assist" set with the vehicle informa- tion display is OFF	Off
		"Lane Departure Prevention" set with the vehicle infor- mation display is ON	On
LDP SELECT	Ignition switch ON	"Lane Departure Prevention" set with the vehicle infor- mation display is OFF	Off
		"Blind Spot Intervention" set with the vehicle information display is ON	On
BSISELEUT	Ignition switch ON	"Blind Spot Intervention" set with the vehicle information display is OFF	Off
		When drive mode select switch position is STANDARD	STD
		When drive mode select switch position is in SPORT	SPORT
DRIVE MODE STATS		When drive mode select switch position is in ECO	ECO
		When drive mode select switch position is in SNOW	SNOW
	Ignition switch ON	 When position od drive mode select switch is in following states: In the middle of SNOW-ECO In the middle of ECO-STANDARD In the middle of STANDARD-SPORTS 	Mid
		A signal other than those above is input	ERROR
	Instition quitab CN	When warning systems switch is pressed	On
WARN SYS SW	Ignition switch UN	When warning systems switch is not pressed	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
BSW/BSI WARN LMP	Ignition switch ON	Blind Spot Warning/Blind Spot Intervention warning lamp ON	On
		Blind Spot Warning/Blind Spot Intervention warning lamp OFF	Off
	legitien ewiteb ON	Blind Spot Intervention ON indicator ON	On
BSI ON IND	Ignition switch ON	Blind Spot Intervention ON indicator OFF	Off
	legitien ewiteb ON	When the BSW system is ON	On
BSW SYSTEM ON	Ignition switch ON	When the BSW system is OFF	Off
BSI SYSTEM ON	Start the engine and press dy- namic driver assistance switch (When Blind Spot Intervention system setting is ON)	When the Blind Spot Intervention system is ON When the Blind Spot Intervention system is OFF	On Off
	system setting is ON)	LDP system fail lamp ON	On
LDP FAIL LAMP	Ignition switch ON		Off
			011
LDW ON LAMP	Ignition switch ON		011 Off
LDW FAIL LAMP	Ignition switch ON		01
		LDW system fail lamp OFF	
SYSTEM_CANCEL_ MESSAGE	Engine running	Request signal to cancel warning systems	No request Slippery road Snow mode ON VDC OFF
CAM_HI_TEMP_	Ignition switch ON	Camera temperature above 100°c (212°F)	On
MSG		Camera temperature below 100°c (212°F)	Off
ITS Setting Item	Instition quitab ON		On
(DCA)	Ignition switch ON		Off
	Ignition switch ON	MENU> SETTINGS> DAS> LDP ON/OFF	On
ITS Setting Item (LDP)		MENU> SETTINGS> DAS> LDP ON/OFF	Off
			On
ITS Setting Item (BSI)	Ignition switch ON	MENU> SETTINGS> DAS> BCI ON/OFF	Off
		BSI system fail lamp ON	On
BSI FAIL IND	Ignition switch ON	BSI system fail lamp OFF	Off
	Instition out to b	BSW system indicator ON	On
B2M ON IND	Ignition switch UN	BSW system indicator OFF	Off
		Sensor blocked warning message ON	On
SK_BLK_MSG	Ignition switch ON	Sensor blocked warning message OFF	Off
WARN_LANE_ TIMING	Engine running	Calibration is required	Nothing
BSW_IND_ BRIGHTNESS	Ignition switch ON	Adjust BRIGHTNESS as needed	Normal
	Drive the vehicle and activate	Lane departure warning is operating	On
	the LDP system	Lane departure warning is not operating	Off
FCW SELECT [ON/ OFF]	Ignition switch ON	Forward Collision Warning set with the vehicle informa- tion display ON	On
		Forward Collision Warning set with the vehicle informa- tion display OFF	Off

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
LDW SELECT [ON/		Lane Departure Warning set with the vehicle informa- tion display ON	On
OFF]		Lane Departure Warning set with the vehicle informa- tion display ON	Off
BSW SELECT [ON/	Ignition switch ON	Blind Spot Warning set with the vehicle information display ON	On
OFF]		Blind Spot Warning set with the vehicle information display ON	Off
ITS setting item	Ignition switch ON	MENUS SETTINGSS DASS FOW ON/OFF	On
(FCW) [ON/OFF]		MENO-SETTINGS-DAS-TOW ON/OFT	Off
ITS setting item	Ignition switch ON	MENU> SETTINGS> DAS> LDW ON/OFF	On
(LDW) [ON/OFF]			Off
ITS setting item	Ignition switch ON	MENU> SETTINGS> DAS> BSW ON/OFF	On
(BSW) [ON/OFF]			Off
Battery circuit OFF	Ignition switch ON	Battery circuit OFF	On
		Battery circuit ON	Off

TERMINAL LAYOUT PHYSICAL VALUES



< ECU DIAGNOSIS INFORMATION >

[BCI]

Termir (Wire	nal No. color)	Description			Condition	AValue
+	_	Signal name	Input/ Output		Condition	(Approx.)
1		Warning systems	Input	Ignition	When warning systems switch is not pressed	12 V
(BR)		switch	mput	ON	When warning systems switch is pressed	0 V C
4	-	Warning systems ON	Output	Ignition	Warning systems ON indi- cator ON	0 V
(W)		indicator	Output	ON	Warning systems ON indi- cator OFF	12 V
5		ICC brake hold relay		Ignition	—	12 V
(G)		drive signal	Output	switch ON	At "STOP LAMP" test of "Active test"	0 V
6 (B)		Ground	_	Ignition switch ON	_	0 V F
7 (L)	Ground	ITS communication-H		_	_	— G
8 (Y)		ITS communication-L		—	—	_
10	-	BOLOEE switch	loout	Ignition	When BCI OFF switch is not pressed	12 V
(BG)		Berorr switch	mput	ON	When BCI OFF switch is pressed	0 V
12				Ignition	Warning buzzer operation	0 V
(G)		Warning buzzer signal	Output	switch ON	Warning buzzer not oper- ating	12 V J
14 (B)		CAN -H	_	_	—	_
15 (W)		CAN -L	_	_	—	r
16 (R)		Ignition power supply	Input		Ignition switch ON	Battery Voltage

Fail-safe

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

System	Buzzer	Warning lamp/Indicator lamp	Description	Ν
Vehicle-to-vehicle distance control mode	High-pitched tone	ICC system warning lamp	Cancel	
Conventional (fixed speed) cruise control mode	High-pitched tone	ICC system warning lamp	Cancel	DAC
Intelligent Brake Assist (IBA)	High-pitched tone	IBA OFF indicator lamp	Cancel	Ρ
Forward Collision Warning (FCW)	High-pitched tone	Warning message	Cancel	
Distance Control Assist (DCA)	High-pitched tone	DCA system warning	Cancel	
Lane Departure Warning (LDW)	—	Lane departure warning lamp	Cancel	

Revision: March 2012

< ECU DIAGNOSIS INFORMATION >

System	Buzzer	Warning lamp/Indicator lamp	Description
Lane Departure Prevention (LDP)	Low-pitched tone	Lane departure warning lamp	Cancel
Blind Spot Warning (BSW)	_	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Blind Spot Intervention	Low-pitched tone	Blind Spot Warning/Blind Spot Intervention warning lamp	Cancel
Backup Collision Intervention (BCI)	High-pitched tone	Backup Collision Intervention warning indicator	Cancel

DTC Inspection Priority Chart

INFOID:000000008376836

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

Priority	Detected items (DTC)
1	C1A0A: CONFIG UNFINISHED U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)
2	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	 C1B00: CAMERA UNIT MALF C1F02: APA C/U MALF C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF

< ECU DIAGNOSIS INFORMATION >

Priority	Detected items (DTC)	
	C1A01: POWER SUPPLY CIR	— A
	C1A02: POWER SUPPLY CIR 2	
	C1A04: ABS/TCS/VDC CIRC	
	CTAU5: BRAKE SW/STOP L SW CTAU6: OPEDATION SW CIPC	E
	CTAUD. OPERATION SW CIRC CTAUD. LASER BEAM OFECNTR	
	C1A13: STOP I AMP RI Y FIX	
	C1A14: ECM CIRCUIT	С
	C1A16: RADAR STAIN	
	C1A18: LASER AIMING INCMP	
	C1A2A: ICC SEN PWR SUP CIR	
	C1A21: ICC SENSOR HIGH TEMP	D
	CIA24: NP RANGE	
	CIA33: CAN TRANSMISSION ERR	E
	C1A34: COMMAND ERROR	
	C1A35: APA CIR	
	C1A36: APA CAN COMM CIR	F
	C1A37: APA CAN CIR 2	1
	C1A38: APA CAN CIR 1	
	C1A39: STRG SEN CIR	
	CIA40: SYSTEM SW CIRC CIB01: CAM AIMING INCMD	G
	CIBUT. CAM ARMING INCOMP CIBUT. CAM ARMING INCOMP CIBUT. CAM ARMING INCOMP	
	C1B56: SONAR CIRCUIT	
	C1B57: AVM CIRCUIT	H
	C1F01: APA MOTOR MALF	
	C1F05: APA PWR SUPLY CIR	
	• U0121: VDC CAN CIR 2	1
4	U0126: STRG SEN CAN CIR 1	1
	UU235: ICC SENSOR CAN CIRC 1 U0401: ECM CAN CIRC 1	
	• U0401. ECM CAN CIR 1 • U0402: TCM CAN CIR 1	
	• U0415: VDC CAN CIR 1	J
	U0428: STRG SEN CAN CIR 2	
	U1500: CAM CAN CIR 2	
	U1501: CAM CAN CIR 1	K
	U1502: ICC SEN CAN COMM CIR	
	U1503: SIDE RDR L CAN CIR 2	
	U1504: SIDE RDR L CAN CIR 1	
		L
	U1500. SIDE RDR R CAN CIR T U1521: SONAR CAN COMMUNICATION	
	U1522: SONAR CAN COMMUNICATION	
	U1523: SONAR CAN COMMUNICATION	N
	U1524: AVM CAN COMMUNICATION	
	U1525: AVM CAN COMMUNICATION	
	U150B: ECM CAN CIRC 3	N
	U150C: VDC CAN CIRC 3	14
	U150D: TCM CAN CIRC 3 U150E: DCM CAN CIRC 2	
	U1512: HVAC CAN CIRC3	DA
	U1513: METER CAN CIRC 3	
	U1514: STRG SEN CAN CIRC 3	
	U1515: ICC SENSOR CAN CIRC 3	P
	U1516: CAM CAN CIRC 3	1
	• U1517: APA CAN CIRC 3	
	U1518: SIDE RDR L CAN CIRC 3	
	U1519: SIDE RDR R CAN CIRC 3	
5	C1A03: VHCL SPEED SE CIRC	
6	C1A15: GEAR POSITION	
7	C1A00: CONTROL UNIT	

< ECU DIAGNOSIS INFORMATION >

DTC Index

INFOID:000000008376837

[BCI]

NOTE:

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

Systems for fail-safe

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

DTC	2			W	arning la	Imp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1A00	0	CONTROL UNIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-73</u>
C1A01	1	POWER SUPPLY CIR	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A02	2	POWER SUPPLY CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-74</u>
C1A03	3	VHCL SPEED SE CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-102</u>
C1A04	4	ABS/TCS/VDC CIRC	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-104</u>
C1A05	5	BRAKE SW/STOP L SW	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-105</u>
C1A06	6	OPERATION SW CIRC	ON		ON	ON		A, B, E, F, G	<u>CCS-109</u>
C1A0A	10	CONFIG UNFINISHED	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	Perform configuration
C1A12	12	LASER BEAM OFFCN- TR	ON	ON				A, C, D, E	<u>CCS-111</u>
C1A13	13	STOP LAMP RLY FIX	ON	ON			ON	A, B, C, D, E, H	<u>CCS-113</u>

< ECU DIAGNOSIS INFORMATION >

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В

С

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTO	0			Warning lamp Warning lamp ICC system warning lamp ICC system warning lamp IBA OFF indicator lamp IBA OFF indicator lamp IBA OFF indicator lamp ICC system warning lamp IBA OFF indicator lamp ICC system warning lamp ICC system warning lamp ICC Solution warning lamp ICC system warning lamp ICC System warning lamp ICC system warning lamp ICC Solution warning la				Fail-safe		
						arning lamp				D
			amp	du	g lamp	ention wa	ention			Е
CONSULT	On board	CONSULT display	ו warning l	ndicator la	ıre warninç	spot Interve	sion Interv	/stem	Reference	F
	display		ICC system	IBA OFF i	Lane departu	Varning/Blind S	Backup Colli	ର୍ଜ		G
						Blind Spot V				H
C1A14	14	ECM CIRCUIT	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-119</u>	.
C1A15	15	GEAR POSITION	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-120</u>	-
C1A16	16	RADAR STAIN	ON	ON				A, C, D, E	<u>CCS-122</u>	J
C1A17	17	ICC SENSOR MALF	ON	ON				A, B, C, D, E	<u>CCS-124</u>	
C1A18	18	LASER AIMING INCMP	ON	ON				A, C, D, E	<u>CCS-125</u>	IZ.
C1A21	21	ICC SENSOR HIGH TEMP	ON	ON				A, B, C, D, E	<u>CCS-127</u>	ĸ
C1A24	24	NP RANGE	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-129</u>	
C1A26	26	ECD MODE MALF	ON	ON				A, B, C, D, E	<u>CCS-131</u>	
C1A27	27	ECD PWR SUPLY CIR	ON	ON				A, B, C, D, E	<u>CCS-132</u>	-
C1A33	33	CAN TRANSMISSION ERR	ON					A, B, E	<u>CCS-134</u>	Μ
C1A34	34	COMMAND ERROR	ON					A, B, E	<u>CCS-135</u>	
C1A35	35	APA CIR	ON				ON	A, E, H	<u>CCS-136</u>	Ν
C1A36	36	APA CAN COMM CIR	ON				ON	A, E, H	<u>CCS-137</u>	
C1A37	133	APA CAN CIR 2	ON				ON	A, B, E, H	<u>CCS-138</u>	
C1A38	132	APA CAN CIR 1	ON				ON	A, B, E, H	<u>CCS-139</u>	DAG
C1A39	39	STRG SEN CIR	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-140</u>	
C1A2A	80	ICC SEN PWR SUP CIR	ON	ON				A, C, D, E	<u>CCS-133</u>	Р
C1B00	81	CAMERA UNIT MALF			ON	ON		F, G	<u>DAS-416</u>	
C1B01	82	CAM AIMING INCMP			ON	ON		F, G	<u>DAS-418</u>	
C1B03	83	CAM ABNRML TMP DE- TCT							DAS-420	
C1B53	84	SIDE RDR R MALF				ON	ON	G, H	DAS-575	
C1B54	85	SIDE RDR L MALF				ON	ON	G, H	DAS-576	

< ECU DIAGNOSIS INFORMATION >

- Systems for fail-safe
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DTC	;			W	arning la	Imp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
C1B56	87	SONAR CIRCUIT					ON	Н	DAS-742
C1B57	88	AVM CIRCUIT					ON	Н	DAS-743
C1F01	91	APA MOTOR MALF	ON				ON	A, E, H	<u>CCS-143</u>
C1F02	92	APA C/U MALF	ON				ON	A, E, H	<u>CCS-144</u>
C1F05	95	APA PWR SUPLY CIR	ON				ON	A, E, H	<u>CCS-145</u>
NO DTC IS DETECT- ED. FUR- THER TESTING MAY BE REQUIRED	55	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED							_
U0121	127	VDC CAN CIR 2	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-147</u>
U0126	130	STRG SEN CAN CIR 1	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-149</u>
U0235	144	ICC SENSOR CAN CIRC 1	ON	ON				A, B, C, D, E	<u>CCS-151</u>
U0401	120	ECM CAN CIR 1	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-152</u>
U0402	122	TCM CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-153</u>
U0415	126	VDC CAN CIR 1	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-155</u>
U0428	131	STRG SEN CAN CIR 2	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-157</u>
U1000 ^{NOTE}	100	CAN COMM CIRCUIT	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>DAS-75</u>
U1010	110	CONTROL UNIT (CAN)	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	DAS-76
U1500	145	CAM CAN CIR 2			ON	ON		F, G	DAS-436
U1501	146	CAM CAN CIR 1			ON	ON		F, G	<u>DAS-437</u>
U1502	147	ICC SEN CAN COMM CIR	ON	ON				A, B, C, D, E	<u>CCS-166</u>

< ECU DIAGNOSIS INFORMATION >

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В

С

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- H: Backup Collision Intervention (BCI)

DTC	2			W	arning la	mp		Fail-safe		0
						ming lamp				D
			g lamp	lamp	ng lamp	vention wa	rvention			Е
CONSULT	On board display	CONSULT display	tem warninç	F indicator	arture warni	d Spot Inter	ollision Inte	System	Reference	F
			ICC sys	IBA OF	Lane dep	/arning/Blin	Backup C			G
						Blind Spot V				Η
U1503	150	SIDE RDR L CAN CIR 2				ON	ON	G, H	DAS-601	
U1504	151	SIDE RDR L CAN CIR 1				ON	ON	G, H	DAS-602	
U1505	152	SIDE RDR R CAN CIR 2				ON	ON	G, H	DAS-603	J
U1506	153	SIDE RDR R CAN CIR 1				ON	ON	G, H	DAS-604	
U1507	154	LOST COMM (SIDE RDR R)				ON	ON	G, H	DAS-605	K
U1508	155	LOST COMM (SIDE RDR L)				ON	ON	G, H	DAS-606	
U150B	157	ECM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-162</u>	L
U150C	158	VDC CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-163</u>	
U150D	159	TCM CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-164</u>	Μ
U150E	160	BCM CAN CIRC 3	ON		ON	ON	ON	A, B, E, F, G, H	<u>CCS-165</u>	
U150F	161	AV CAN CIRC 3							<u>DAS-77</u>	
U1512	162	HVAC CAN CIRC3			ON	ON		F, G	<u>DAS-438</u>	Ν
U1513	163	METER CAN CIRC 3	ON	ON	ON	ON	ON	A, B, C, D, E, F, G, H	<u>CCS-167</u>	
U1514	164	STRG SEN CAN CIRC 3	ON	ON		ON	ON	A, B, C, D, E, G, H	<u>CCS-168</u>	DAS
U1515	165	ICC SENSOR CAN CIRC 3	ON	ON				A, B, C, D, E	<u>CCS-169</u>	
U1516	166	CAM CAN CIRC 3			ON	ON		F, G	<u>DAS-440</u>	Р
U1517	167	APA CAN CIRC 3	ON				ON	A, B, E, H	<u>CCS-170</u>	
U1518	168	SIDE RDR L CAN CIRC 3				ON	ON	G, H	<u>DAS-611</u>	
U1519	169	SIDE RDR R CAN CIRC 3				ON	ON	G, H	DAS-612	
U1521	177	SONAR CHECKSUM					ON	Н	<u>DAS-779</u>	
U1522	178	SONAR MESSAGE					ON	Н	DAS-780	

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< ECU DIAGNOSIS INFORMATION >

[BCI]

- Systems for fail-safe
- A: Vehicle-to-vehicle distance control mode
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- E: Distance Control Assist (DCA)
- F: Lane Departure Warning (LDW)/Lane Departure Prevention (LDP)
- G: Blind Spot Warning (BSW)/Blind Spot Intervention
- H: Backup Collision Intervention (BCI)

DTO	C			W	arning la	mp		Fail-safe	
CONSULT	On board display	CONSULT display	ICC system warning lamp	IBA OFF indicator lamp	Lane departure warning lamp	Blind Spot Warning/Blind Spot Intervention warning lamp	Backup Collision Intervention	System	Reference
U1523	179	SONAR CAN DLC					ON	Н	<u>DAS-781</u>
U1524	180	SONAR CAN DLC					ON	Н	<u>DAS-782</u>
U1525	181	AVM MESSAGE					ON	Н	<u>DAS-783</u>

NOTE:

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

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

SIDE RADAR LH

Reference Value

VALUES ON THE DIAGNOSIS TOOL

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status	_
	Side radar is normal.	Off	C
SIDE RADAR MALF	Side radar is malfunctioning.	On	
BLOCKAGE COND	Side radar is not blocked.	Off	D
	Side radar is blocked.	On	
	Radar does not detect a vehicle.	Off	
VEHICLE DETECT	Radar detects a vehicle.	On	E

TERMINAL LAYOUT

123456 JSOIA024422

PHYSICAL VALUES

Termii (Wire	nal No. color)	Description		Condition	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	K
2 (B)	Ground	Ground		_	0 V	
3 (Y)	_	ITS communication-L	_	_	_	L
4 (L)	_	ITS communication-H		_	_	N
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	
6 (W)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF \Rightarrow ON (bulb check)	6 V	Ν

Fail-safe

INFOID:000000008376843

DAS

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FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the "Please see owner's manual" message in the vehicle information display.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSI system warning light (orange) in the vehicle information display.

TEMPORARY DISABLED STATUS AT BLOCKAGE

INFOID:00000008376842

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< ECU DIAGNOSIS INFORMATION >

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the "Unavailable Side Radar Obstruction" message appears in the vehicle information display and the warning systems ON indicator will blink. Also, under the following conditions, the operation may be temporarily cancelled.

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

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the "Unavailable Side Radar Obstruction" message appears in the vehicle information display. Also, under the following conditions, the operation may be temporarily cancelled.

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

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

DTC Inspection Priority Chart

INFOID:000000008376844

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:00000008376845

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	DTC	Blind Spot Warning/Blind Spot Intervention warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	<u>DAS-571</u>
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-572
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-573
C1B55	RADAR BLOCKAGE	Blink	×	DAS-577
U1000	CAN COMM CIRCUIT	ON	×	DAS-578
U1010	CONTROL UNIT (CAN)	ON	×	DAS-581
U0104	ADAS CAN CIR1	ON	×	DAS-583
U0405	ADAS CAN CIR2	ON	×	DAS-590

SIDE RADAR RH

Reference Value

VALUES ON THE DIAGNOSIS TOOL

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status	
	Side radar is normal.	Off	_ C
SIDE RADAR WALF	Side radar is malfunctioning.	On	
	Side radar is not blocked.	Off	D
BEOCKAGE COND	Side radar is blocked.	On	
VEHICLE DETECT	Radar does not detect a vehicle.	Off	_
	Radar detects a vehicle.	On	E

TERMINAL LAYOUT

123456) JSOIA024422

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	
1 (B)	Ground	Right/Left switching signal	Input	_	0 V	
2 (B)	Ground	Ground	_	_	0 V	L
3 (Y)		ITS communication-L	_	_	_	N
4 (L)		ITS communication-H	_	_	_	
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	Ν
6 (W)	Ground	Blind Spot Warning/Blind Spot Intervention indicator	Output	Approx. 2 sec. after ignition switch OFF \Rightarrow ON (bulb check)	6 V	D

Fail-safe

FAIL-SAFE CONTROL BY DTC

Blind Spot Warning (BSW)

If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the "Please see owner's manual" appears in the vehicle information display.

Blind Spot Intervention

If a malfunction occurs in the side radar, ADAS control unit cancels control, sounds a beep, and turns ON the BSI system warning light (orange) in the vehicle information display.

DAS-683

INFOID:000000008376847

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< ECU DIAGNOSIS INFORMATION >

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the "Unavailable Side Radar Obstruction" message appears in the vehicle information display and the warning systems ON indicator will blink. Also, under the following conditions, the operation may be temporarily cancelled.

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

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

Blind Spot Intervention

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the "Unavailable Side Radar Obstruction" message appears in the vehicle information display. Also, under the following conditions, the operation may be temporarily cancelled.

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

DTC Inspection Priority Chart

INFOID:000000008376848

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:000000008376849

 \times : Applicable

	DTC	Blind Spot Warning/Blind Spot Intervention warning lamp	Fail-safe	Reference page
C1B50	SIDE RDR MALFUNCTION	ON	×	<u>DAS-571</u>
C1B51	BSW/BSI IND SHORT CIR	ON	×	DAS-572
C1B52	BSW/BSI IND OPEN CIR	ON	×	DAS-573
C1B55	RADAR BLOCKAGE	Blink	×	DAS-577
U1000	CAN COMM CIRCUIT	ON	×	DAS-579
U1010	CONTROL UNIT (CAN)	ON	×	DAS-581
U0104	ADAS CAN CIR1	ON	×	DAS-583
U0405	ADAS CAN CIR2	ON	×	DAS-590
< WIRING DIAGRAM >

WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS

Wiring Diagram



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Connector No. M4 Connector Name FUSE BLOCK (J/B) Connector Color WHITE The BF SP 4P TO PITP (10P) SP 3P Image SP 4P TO PITP (10P) SP 3P	Terminal No.Color of WireSignal Name7PLG-8PBG-13PW-	Connector No. M23 Connector Name COMBINATION METER Connector Color WHITE	Terminal No. Color of Wire Signal Name 48 G SW GND
Connector No. M3 Connector Name FUSE BLOCK (J/B) Connector Color WHITE	Terminal No. Color of Signal Name 6N Wire -	Connector No. M11 Connector Name JOINT CONNECTOR-M03 Connector Color WHITE	Terminal No. Color of Wire Signal Name 1 Y - 2 Y - 3 W - 4 Y -
Connector No. M1 Connector Name WIRE TO WIRE Connector Color WHITE Mile TO WIRE 10 11 12 Mile TO WIRE 13 4 5 6 7 8 9 10 11 12	Terminal No.Color of WireSignal Name5GR-6LG-7L-8Y-	Connector No. M5 Connector Name CAN GATEWAY Connector Color WHITE	Terminal No.Color of WireSignal Name1LCAN-H6LCAN-H7PCAN-L12PCAN-L

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Revision: March 2012

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Signal Name	GND1	GND2	IGN	BAT	CAN-L	CAN-H	
Color of Wire	в	В	BG	M	Р	_	
Terminal No.	-	2	21	22	38	39	





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Signal Name

Terminal No.

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Connector N	lo. M12t	9	Connector N	o. M14	6	Connect	tor No.	M150		
Connector N	lame TWI SYS	N SWITCH (WARNING TEM SWITCH)	Connector Na Connector Co	ame CO	MBINATION SWITCH	Connect	tor Color	JOINT CON	INECTOR-M27	
Connector C	olor BLA	CK								
H.S.			S.H	20 19 18	17 16 15 14 13	S.H		20 19 18 7 6 20 19 18 11 23 130 29 28	5 4 3 2 1 7 16 15 14 13 12 3 27 26 25 24 23	
Terminal No	. Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	Termina	I No. Colo	r of S	signal Name	
-	>	1	13	e a		23	<u>а</u>	2	1	
2	m	I	16	: -	1	28	, IHS		1	
5	8	1		J		31	5		1	
9	σ	1					5	-		
							-			
Connector N	lo. M16	33	Connector N	o. M18	38	Connec	tor No.	M189		
Connector N	AV (AUC AUC ANC ANC TAIN	CONTROL UNIT (BOSE DIO SYSTEM - WITH REOUND SOUND SYSTEM NARNT SYSTEM MAENT SYSTEM	Connector N Connector C	ame WIF olor WH	RE TO WIRE	Connec	tor Name tor Color	WIRE TO V WHITE	VIRE	
Connector C	olor WHI	ITE	UNS H	1 2 3 4	5 6 7 8 9 10 11 12	SH	12 11	10 9 8 7 6	5 4 3 2 1	
H.S.	49 50 51 52 65 66 67 68	53 54 55 56 57 58 59 60 61 62 63 64 53 54 55 56 57 57 75 76 77 78 79 80		13 14 15 16	17 18 19 20 21 22 23 24		24 23 3	22 21 20 19 16	8 17 16 15 14 13	
Terminal No	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	Termina	I No. Wir	r of e	ignal Name	
62	٩	CAN-L	19	G	I	19	0	(5)	1	
78	_	CAN-H	20	W	I	20	5	>	I	
			21	В	I	21	В		I	
			22	~	1	22	> 		1	

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Connector Name JOINT CONNECTOR-E14

E70

Connector No.

Connector Color BLACK

2 4 3 2 1	Signal Name	I	1	I			CELERATOR PEDAL UATOR	HT GRAY	4 3 2 1
9	Color of Wire	٩	٩	٩		. E74	me ACC ACT	lor LIGI	6 5
品. H.S.	Terminal No.	-	~	ო		Connector No	Connector Na	Connector Co	国 H.S.

0 UE UE

Signal Name	I	I	I	I	I	I
Color of Wire	L	Г	L	٩	Ч	Ч
erminal No.	F	2	З	7	8	6

	VT CONNECTOR-E01	TE	3 7 6 5 4 3 2 1	9 18 17 16 15 14 13 12	0 29 28 27 26 25 24 23	Signal Name	1	1	1	1	I	1	1	1	I	
. E44	me JOI	lor WH	1 10 9	2 21 20 1	33 32 31 3	Color of Wire	æ	œ	٩	٩	٩.	U	σ	σ	G	
Connector No	Connector Na	Connector Co	SH			Terminal No.	4	5	12	13	14	19	20	21	22	

E71	JOINT CONNECTOR-E15	BLACK	
Connector No.	Connector Name	Connector Color	4

Connector No. E72 Connector Name ICC BRAKE SWITCH

Connector Color BROWN

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H.S. E



Signal Name	-	1	I	
Color of Wire	L	L	Γ	
Terminal No.	F	2	e	



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Signal Name

Color of Wire

Terminal No.

Signal Name

Color of Wire

Terminal No.

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Μ	>																					
I	WARNING BUZZER	I	CAN-H	CAN-L	IGNITION					Signal Name	1	I	I	I	I	I	I	I	I	I	I	1
I	G	I	В	Μ	В					Color of Wire	в	GR	SHIELD	В	æ	н	Ν	M	В	в	GR	SHIELD
_		_	_	_												_		_			_	

Terminal No.

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Signal Name

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Terminal No.	,	6	10	11	12	13	14	15	16
4	S CONTROL UNIT	TE	1		6 5 4 3 2 1	14 13 12 11 10 9		Signal Name	
. B10	me AD/	Ior WH			8	16 15		Color of	Wire
Connector No	Connector Na					юш		Terminal No	

BCP OFF SW

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Signal Name	WARNING SYSTEM SW	Ι	I	WARNING SYSTEM ON IND	BRAKE HOLD RLY DRIVE SIGNAL	GND	ITS COMM-H	ITS COMM-L	
Color of Wire	BR	I	I	Μ	G	в	Γ	≻	
Terminal No.	-	2	e	4	Ð	9	7	8	

Connector No.	B115
Connector Name	JOINT CONNECTOR-B08
Connector Color	WHITE
H.S. 22221 23222	9 8 7 6 5 4 3 2 1 20 19 18 17 16 15 14 13 12 31 30 29 28 27 26 25 24 23
]]

tor No. B103	tor Name JOINT CONNECTOR-B15	tor Color WHITE	
ecto	ecto	ecto	



	Signal Name	I	I	
Color of	Wire	٩	Μ	
	Terminal No.	-	3	

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Connector No.	B109
Connector Name	SIDE RADAR RH
Connector Color	BLACK
雨 H.S.	1 2 3 4 5 6

Signal Name	I	I	I	I	I	I
Color of Wire	в	В	≻	_	н	×
Terminal No.	-	2	e	4	5	9

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Revision: March 2012

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:00000008235159

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

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

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[BCI]

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", "SONAR", and/or "ICC/ADAS".

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 3.

3. PRE-INSPECTION FOR DIAGNOSIS

Perform pre-inspection for diagnosis. Refer to DAS-708, "Inspection Procedure".

>> GO TO 4.

4.ACTION TEST

Perform Backup Collision Intervention system action test to check the operation status. Refer to <u>DAS-709</u>, <u>"Work Procedure"</u>.

Check if any other malfunctions occur.

>> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

- 1. Check the DTC in the self-diagnosis results.
- Perform trouble diagnosis for the detected DTC. Refer to <u>DAS-682, "DTC Index"</u> or <u>DAS-684, "DTC Index"</u> (SIDE RADAR LEFT/RIGHT), <u>AV-488, "DTC Index"</u> (SONAR) and/or <u>CCS-59, "DTC Index"</u> (ICC/ ADAS).

NOTE:

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

>> GO TO 7.

6.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to <u>DAS-790, "Symptom</u> <u>Table"</u>.

>> GO TO 7.

/.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 8.

8.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

- 1. Erases self-diagnosis results.
- 2. Perform "All DTC Reading" again after repairing or replacing the specific items.
- 3. Check if any DTC is detected in self-diagnosis results of "SIDE RADAR LEFT/RIGHT", "SONAR" and "ICC/ADAS".

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 9.

9.REPAIR CHECK (ACTION TEST)

DIAGNOSIS AND REPAIR WORK FLOW

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< BASIC	C INSPECTION >	[BCI]
Perform	the Backup Collision Intervention system action test. Check that the malfunctio	n symptom is solved or
no other	r symptoms occur.	
Is there	a malfunction symptom?	
YES	>> GO TO 4.	
NO	real mapeerion End.	
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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

Are 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:000000008235160

ACTION TEST

< BASIC INSPECTION > [BC	;]]
ACTION TEST	
Description	5163
Always perform the Backup Collision Intervention system action test to check that the system operates n mally after replacing the side radar (left or right), or repairing any Backup Collision Intervention system m function.	or- _B al-
WARNING: Be careful of traffic conditions and safety around the vehicle when performing road test. CAUTION:	С
 Fully understand the following items well before the road test; Precautions: Refer to <u>DAS-638</u>, "<u>Precaution for Backup Collision Intervention</u>". System description for Backup Collision Intervention: Refer to <u>DAS-642</u>, "<u>System Description</u>". Normal operating condition: Refer to <u>DAS-794</u>, "<u>Description</u>". 	D
Work Procedure	5164
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;	F

- F Precautions: Refer to <u>DAS-638</u>, "Precaution for Backup Collision Intervention".
- System description for Backup Collision Intervention: Refer to DAS-642, "System Description". • Normal operating condition: Refer to <u>DAS-794, "Description"</u>.
- **1**.CHECK BCI SYSTEM SETTING
- 1. Start the engine.

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- 2. Check that the BCI system setting can be enabled/disabled in the meter setting.
- 3. Turn OFF the ignition switch and wait for 30 seconds or more.
- 4. Check that the previous setting is saved when the engine starts again.

>> GO TO 2.

2.	ACTION TEST FOR BCI
1.	Enable the setting of the BCI system in the meter setting.
2.	Turn BCI OFF switch OFF (Backup Collision Intervention system ON indicator is ON).

3. Check the BCI operation according to the following table.

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ACTION TEST

< BASIC INSPECTION >

Vehicle condition		Action	Indication on the combination meter	Buzzer
0 MPH (0 km/ h) R range	If the radar detects an ap- proaching vehicle from the side.	 Chime sound (single beep) Flashes Blind spot warning indicator light on the side the approaching vehicle is de- tected. Yellow rectan- gular frame ap- pears in the display. 	BCI BCI BCI BCI BCI BCI BCI BCI BCI BCI	single beep
	No approaching vehicle	No action		_

NOTE:

After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches a speed above 5 MPH (8 km/h). Refer to <u>DAS-320</u>, "LANE DEPARTURE WARNING (LDW) SYS-<u>TEM : System Description"</u>.

>> GO TO 3.

 $\mathbf{3}$.CHECK BCI SYSTEM SETTING

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

>> GO TO 4.

4.ACTION TEST FOR BCI

- 1. Enable the setting of the BCI system on the navigation screen.
- 2. Turn BCI OFF switch OFF (BCI ON indicator lamp is ON).
- 3. Check the BCI operation according to the following table.

ACTION TEST

< BASIC INSPECTION >

Vehicle condition	Backup Colli- sion Interven- tion indicator	Warning buzzer	A Indication on the combination meter
Shift lever in reverse	ON	OFF	
When DTC is detected	OFF	Веер	OFF (orange)
When radar blockage is detected	ON	Веер	Unavailable: Side Radar Obstruction
When the accelerator pedal actuator detects that the internal motor temperature is high	ON	Веер	Unavailable: High Accelerator Temp.
Unless the driver overrides it and turns it off, the BCI system is always set to ON everytime the en- gine is started and the shifter placed in reverse.	OFF		BCI
The BCI system is turned off temporarily by push- ing the BCI switch. The BCI OFF display appears on the meter display. When the selector lever is switched into R again the BCI system is turned on.	OFF		

NOTE:

After the operating conditions are satisfied, the control continues until the vehicle reaches a speed above approximately 5 MPH (8 km/h). Refer to <u>DAS-323</u>, "LANE DEPARTURE PREVENTION (LDP) SYSTEM : System Description".

>> Inspection End.

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< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS C1A00 CONTROL UNIT

DTC Logic

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "C1A00" detected as the current malfunction?

YES >> Refer to DAS-712. "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008235166

1. CHECK SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-48. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

INFOID:000000008235165

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 [BCI]

< DTC/CIRCUIT DIAGNOSIS >

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Logic

INFOID:000000008235167

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A01 (1)	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 (2)	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 CONFIR	MATION PROC	EDURE	
. Start the e . Turn the B . Perform "A . Check if th ADAS".	ngine. Ilind Spot Interver All DTC Reading" ie "C1A01" or "C1	ition system ON. with CONSULT. A02" is detected as the current malfunctio	on in "Self Diagnostic Result" of "ICC/
<u>s "C1A01" or "</u> YES >> Re NO >> Re	<u>C1A02" detected</u> efer to <u>DAS-713. "</u> efer to <u>GI-53. "Inte</u>	as the current malfunction? Diagnosis Procedure". ermittent Incident".	
Diagnosis F	Procedure		INFOID:00000008235168
.CHECK AD	AS CONTROL U	NIT POWER SUPPLY AND GROUND CI	RCUIT
Check power s Diagnosis Process the inspectic	supply and groun cedure". on result normal?	d circuit of ADAS control unit. Refer to [DAS-784, "ADAS CONTROL UNIT :
YES >> Re NO >> Re	eplace the ADAS epair or replace th	control unit. Refer to <u>DAS-79, "Removal a</u> e malfunctioning parts.	and Installation".

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C1A03 VEHICLE SPEED SENSOR

DTC Logic

INFOID:000000008235169

[BCI]

DTC DETECTION LOGIC

DTC (On board display) Trouble diagnosis name		Trouble diagnosis name	DTC detecting condition	Possible causes
	C1A03 (3)	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) re- ceived by the ADAS control unit via CAN com- munication, are inconsistent	 Wheel speed sensor ABS actuator and electric unit (control unit) ADAS control unit

NOTE:

If DTC "C1A03" is detected along with DTC "U1000" or "C1A04", first diagnose the DTC "U1000" or "C1A04". • Refer to <u>DAS-745</u>, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000".

• Refer to DAS-715, "DTC Logic" for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- Drive the vehicle at 30 km/h (19 MPH) or more.
 CAUTION:

Always drive safely.

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

Is "C1A03" detected as the current malfunction?

YES-1 (Blind Spot Warning/Blind Spot Intervention warning lamp: ON)>>Refer to <u>DAS-714</u>, "Diagnosis Procedure".

YES-2 (Blind Spot Warning/Blind Spot Intervention warning lamp: OFF)>>Refer to <u>CCS-104, "DTC Logic"</u>.

NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000008235170

1. CHECK SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</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-45, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A04 ABS/TCS/VDC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

C1A04 ABS/TCS/VDC SYSTEM

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	
C1A04 (4)	(4) ABS/TCS/VDC CIRC If a malfunction occurs in the VDC/TCS/ABS ABS actuator and electric unuit)			
IOTE: f DTC "C1A0 ADAS CONT	4" is detected along ROL UNIT : DTC Log	with DTC "U1000", first diagnose the gic".	DTC "U1000". Refer to <u>DAS-745</u>	
Diagnosis F	Procedure		INFOID:0000000823517.	
1 .check se	LF-DIAGNOSIS RE	SULTS		
I. Perform "A 2. Check if th s "U1000" det	All DTC Reading" wit the "U1000" is detected ected?	h CONSULT. ed other than "C1A04" in "Self Diagnosti	c Result" of "ICC/ADAS".	
YES >> Pe Re NO >> G	erform the CAN com efer to <u>DAS-745, "AI</u> O TO 2.	munication system inspection. Repair c DAS CONTROL UNIT : DTC Logic".	r replace the malfunctioning parts	
2. СНЕСК АВ	S ACTUATOR AND	ELECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS	
Check if any D	TC is detected in "S	elf Diagnostic Result" of "ABS".		
e anv DTC de	tected?			
	rform diagnosia on	the detected DTC and repair or replace	the malfunctioning parts. Refer to	
YES >> Pe BI	RC-45, "DTC Index".		51	

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INFOID:000000008235171

C1A05 BRAKE SW/STOP LAMP SW

DTC Logic

INFOID:00000008376967

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A05 (5)	BRAKE SW/STOP L SW	A mismatch between a stop lamp switch signal and a ICC brake switch signal received from ECM and a stop lamp signal received from the ABS actuator and electric unit (control unit) con- tinues for 10 seconds or more with vehicle speeds at approximately 40 km/h or more	 Stop lamp switch circuit ICC brake switch circuit Stop lamp switch ICC brake switch Incorrect stop lamp switch installation Incorrect ICC brake switch installation ECM ABS actuator and electric unit (control unit)

NOTE:

If DTC "C1A05" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429</u>, <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

Diagnosis Procedure

INFOID:00000008376968

Regarding Wiring Diagram information, refer to <u>DAS-366, "Wiring Diagram"</u>.

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

Check that "STOP LAMP SW" and "BRAKE SW" operate normally in "DATA MONITOR" of "ICC/ADAS". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO-1 >> When "BRAKE SW" operation is malfunctioning: GO TO 4.

NO-2 >> When "STOP LAMP SW" operation is malfunctioning: GO TO 9.

3.CHECK STOP LAMP SWITCH

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

Is the inspection result normal?

YES >> GO TO 14.

NO >> GO TO 9.

4.CHECK ICC BRAKE SWITCH INSTALLATION

1. Turn ignition switch OFF.

Check ICC brake switch for correct installation. Refer to <u>BR-15, "Adjustment"</u>.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Adjust ICC brake switch installation. Refer to <u>BR-15, "Adjustment"</u>.

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		CIA	JJ DRAN	E 300/310	JF LAIVIF SVV	
< DTC/CIRC	UIT DIAGN	IOSIS >				[BCI]
5.ICC BRAN	KE SWITCH	INSPECTIO	ON			
1. Disconne	ect ICC brak	e switch cor	nnector.			
2. Check IC	tion result n	itch. Refer ti ormal?	0 <u>DAS-719</u>	, Component	Inspection (ICC Brake Switch)	
YES >> (<u>GO TO 6.</u>	<u>Jinar:</u>				
NO >> I	Replace ICC	brake swite	:h.			
6.CHECK IC	CC BRAKE S	SWITCH PC	WER SUP	PLY CIRCUIT		
1. Turn the	ignition swit	ch ON.				
2. Check ve	oltage betwe	en ICC brai	ke switch ha	arness conne	ctor and ground.	
	Termin	als				
	(+)		(-)	Voltage		
ICC I	brake switch		.,	(Approx.)		
Connector	Termir	nal G	round			
E72	1			Battery voltage		
Is the inspec	tion result no	ormal?				
YES >> (GO TO 7. Repair the h	arnesses or	connectors			
				פוגוודרנו געוי		
	ition outtob					
2. Disconn	ect ECM cor	nector.				
3. Check for	or continuity	between IC	C brake sw	itch harness o	connector and ECM harness connector.	
1001			~			
	Terminal	Connector	JVI	Continuity		
F72	2	F16	126	Yes		
4. Check for	- or continuity	between IC	C brake sw	itch harness c	connector and ground.	
	,				<u> </u>	
ICC bra	ake switch			Continuity		
Connector	Terminal	G	iround	Continuity		
E72	2			No		
Is the inspec	tion result no	ormal?				
YES >> (GO TO 8. Repair the h	arnesses or	connectors	\$		
8.PERFOR	M SEI F-DIA	GNOSIS O	F ECM	· ·		
1 Connect		ors again if t		ors are discor	nected	
2. Turn igni	ition switch (DN.				
3. Perform	"All DTC Re	ading".	"Salf Diago	octic Docult"		ov"
H. CHECK IT	any DICIS		Sen Diagn		DI LINGINE . REELO <u>EC-106, DIC ING</u>	<u> 57</u> .
YES >> I	Repair or rep	place the ma	Ifunctioning	g parts identifi	ed by the self-diagnosis result.	
NO >> I	Replace the	ADAS contr	ol unit. Ref	er to DAS-79,	"Removal and Installation".	
9.CHECK S	STOP LAMP	SWITCH IN	STALLATIO	NC		
1. Turn igni	ition switch (DFF.	ot installati	on Doforto C	P 15 "Adjustment"	
∠. Uneck Si	tion result of	non ior corre ormal?	ect installati		<u>rt-15, Aujustment</u> .	

YES

 >> GO TO 10.
 >> Adjust stop lamp switch installation. Refer to <u>BR-15, "Adjustment"</u>. NO

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

10.STOP LAMP SWITCH INSPECTION

- 1. Disconnect stop lamp switch connector.
- 2. Check stop lamp switch. Refer to DAS-719, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

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

11. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

(+)	(-)	Voltage	
Stop lan	np switch		(Approx.)	
Connector	Terminal	Cround		
E38	1 3	Ground	Battery voltage	

Is the inspection result normal?

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

12. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

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

Stop lan	np switch	E	Continuity	
Connector	Terminal	Connector Terminal		Continuity
E38	2	E16	122	Yes

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

Stop lan	np switch		Continuity
Connector Terminal		Ground	Continuity
E38	2		No

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair the harnesses or connectors.

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

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

Stop lan	np switch	ABS actuato unit (cor	Continuity	
Connector	Terminal	Connector	Terminal	
E38	4	E125	5	Yes

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

C1A05 BRAKE SW/STOP LAMP SW

< DTC/CIRCUIT DIAGNOSIS >

	Stop lan	np switch				А
Conn	ector	Terminal	Ground	Continuity		
E3	38	4		No		R
Is the ir	nspect	ion result nor	mal?			D
YES	>> (GO TO 14.				
	>> F	Repair the har	nesses or connectors.			С
14. PI	ERFO	RM SELF-DIA	AGNOSIS OF ECM			
1. Co	nnect	all connectors	s again if the connectors	s are discor	nected.	D
2. Tu 3. Pe	rform '	"All DTC Rea	N. dina".			
4. Ch	eck if	any DTC is de	etected in "Self Diagnos	tic Result" (of "ENGINE". Refer to <u>EC-108, "DTC Index"</u> .	
<u>ls any I</u>	DTC d	etected?				E
YES	>> F	Repair or repla	ace the malfunctioning p	arts identifi	ed by the self-diagnosis result.	
15 D						F
		RIVI SELF-DIA	AGINUSIS OF ABS ACT			
Check	it any	DTC is detect	ted in "Self Diagnostic R	lesult" of "A	BS". Refer to <u>BRC-45, "DTC Index"</u> .	
		<u>elecieu ?</u> Popoir or ropic	and the malfunctioning r	arta idantifi	ad by the colf diagnosis result	G
NO	>> F	Replace the A	DAS control unit. Refer	to DAS-79.	"Removal and Installation".	
Com	oner	nt Inspectio	on (ICC Brake Swit	ch)		Н
		n nopeoue			IM-OID:0000008376969	
1. CHE	ECK IC	C BRAKE SV	NITCH			
Check	for cor	ntinuity betwe	en ICC brake switch ter	minals.		
Term	inal		Condition	Continuity		J
1	2	When brake peo	dal is depressed	No		
		When brake peo	dal is released	Yes		
Is the in	nspect	ion result nor	mal?			Κ
YES NO	>> >> F	nspection End Replace ICC b]. orake switch			
Comm			nake switch.	tab)		L
Comp	oner	it inspectio	on (Stop Lamp Swi	lCN)	INFOID:00000008376970	
1. CHE	ECK S	TOP LAMP S	WITCH			
Check	for cor	ntinuity betwe	en stop lamp switch ter	minals.		IVI
		,				
Term	inal		Condition	Continuity		Ν
1	2	When brake peo	dal is depressed	Yes		
I	2 -	When brake peo	dal is released	No		
3	1	When brake peo	dal is depressed	Yes		DAS
5	4	When brake peo	dal is released	No		
Is the ir	nspect	ion result nor	mal?			Р
YES	>>	nspection End	d. Anna awitab			
NO	>> F	keplace stop l	amp switch.			

< DTC/CIRCUIT DIAGNOSIS >

C1A06 OPERATION SW

DTC Logic

INFOID:000000008376971

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes	
C1A06 (6)	OPERATION SW CIRC	 Any switch of the ICC steering switch is detected as "ON" continuously for 60 seconds An ON/OFF state judgment of the ICC differs between ECM and ADAS control unit, and the state continues for 2 seconds or more 	 ICC steering switch circuit ICC steering switch ECM 	

NOTE:

If DTC "C1A06" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-429.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Wait for approximately 5 minutes after turning the LDP system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1A06" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1A06" detected as the current malfunction?

- YES >> Refer to <u>DAS-720, "Diagnosis Procedure"</u>.
- NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000008376972

Regarding Wiring Diagram information, refer to DAS-366, "Wiring Diagram".

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-429, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK ICC STEERING SWITCH

- 1. Turn the ignition switch OFF.
- 2. Disconnect the ICC steering switch connector.
- 3. Check the ICC steering switch. Refer to DAS-721, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the steering wheel.

3.CHECK HARNESS BETWEEN SPIRAL CABLE AND ECM

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

Spira	l cable	E	Continuity	
Connector Terminal		Connector	Terminal	Continuity
C1A06 OPERATION SW

< DTC/CIRC	UIT DIAGI	NOSIS >			[BCI]
25		= 10	101	1	-
M30	32	– E16	108	Yes 08	
3. Check for	or continuity	v between sp	iral cable h	arness conne	ctor and ground.
					-
Spiral	cable			Continuity	•
Connector	Terminal	Gr	ound	Continuity	
M30	25		ound	No	
WIGO	32			NO	_
Is the inspec	tion result r	normal?			-
YES >> (GO TO 4.				
	Repair the r		connector	5.	
4.CHECK S	SPIRAL CAL	BLE			
Check for co	ntinuity betw	ween spiral (cable termii	nals.	
					-
	Spiral cab	le		Continuity	
	Termina				_
13		25		Yes	
16		32			-
Is the inspec	tion result r	normal?			
YES >> (NO >> I	GO TO 5. Replace the	spiral cable	1		
	M SELE-DU		E ECM		
				itab and ECM	aannaatar
2. Turn the	ianition sw	itch ON.	steering sw		connector.
3. Perform	"ĂII DTC R	eading".			
4. Check if	any DTC is	detected in	"Self Diagr	nostic Result"	of "ENGINE".
Is any DTC c	detected?	.			
YES >> Perform self-diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer					
NO >> I	Replace the	ADAS cont	rol unit. Ret	fer to <u>DAS-79</u>	, "Removal and Installation".
Compone	nt Inspec	tion			INFOID:000000008376973
A	- 1				
I.CHECK IC	CC STEER	ING SWITCI	4		

Check resistance between ICC steering switch terminals.

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



Is the inspection result normal?

- YES >> Inspection End.
- NO >> Replace the ICC steering switch.

C1A14 ECM

< DTC/CIRCUIT DIAGNOSIS > C1A14 ECM

DTC Logic

DTC DETECTION LOGIC В DTC (On board dis-Trouble diagnosis name DTC detecting condition Possible causes play) · Accelerator pedal position sensor C1A14 ECM CIRCUIT If ECM is malfunctioning ECM (14)D · ADAS control unit NOTE: If DTC "C1A14" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-745. E "ADAS CONTROL UNIT : DTC Logic" 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. E 2. Operate the Blind Spot Intervention system and drive. **CAUTION:** Always drive safely. G Stop the vehicle. 3. Perform "All DTC Reading" with CONSULT. 4. Check if the "C1A14" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 5. Н Is "C1A14" detected as the current malfunction? YES >> Refer to DAS-723, "Diagnosis Procedure". NO >> Refer to GI-53, "Intermittent Incident". **Diagnosis** Procedure INEOID:000000008235181 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "C1A14" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. YES Κ Refer to DAS-745, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. 2.PERFORM SELF-DIAGNOSIS OF ECM L Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Is any DTC detected? Μ YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to EC-108. "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". Ν

DAS

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[BCI]

INFOID:00000008235180

А

C1A15 GEAR POSITION

Description

INFOID:000000008235182

[BCI]

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

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

DTC Logic

INFOID:00000008235183

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A15 (15)	GEAR POSITION	A mismatch between a current gear position signal transmitted from TCM via CAN com- munication and a gear position calculated by the ADAS control unit continues for approx- imately 11 minutes or more	 Input speed sensor Vehicle speed sensor CVT (output speed sensor) TCM

NOTE:

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

- Refer to <u>DAS-745</u>, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000".
- Refer to <u>DAS-714</u>, "DTC Logic" for DTC "C1A03".
- Refer to <u>DAS-715, "DTC Logic"</u> for DTC "C1A04".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Drive the vehicle at 10 km/h (6 MPH) or faster for approximately 15 minutes or more. CAUTION:

Always drive safely.

- Stop the vehicle.
- 5. Perform "All DTC Reading" with CONSULT.
- 6. Check if "C1A15" is detected as the current malfunction in the "Self Diagnostic Result" of "ICC/ADAS".
- Is "C1A15" detected as the current malfunction?
- YES >> Refer to DAS-724, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000008235184

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-508, "DTC Index".

NO >> GO TO 2.

2. CHECK VEHICLE SPEED SIGNAL

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

CAUTION:

Be careful of the vehicle speed. Is the inspection result normal?

Revision: March 2012

C1A15 GEAR POSITION

< DTC/CIRCUIT DIAGNOSIS > [BCI]	
YES >> GO TO 3. NO >> GO TO 7.	А
3. CHECK GEAR POSITION	
Check that "GEAR" operates normally in "DATA MONITOR" of "ICC/ADAS".	R
CAUTION: Be careful of the vehicle speed	D
Is the inspection result normal?	
YES >> GO TO 5. NO >> GO TO 4.	С
4. CHECK GEAR POSITION SIGNAL	
Check that "GEAR" operates normally in "DATA MONITOR" of "TRANSMISSION".	D
Is the inspection result normal?	
YES >> GO TO 5. NO >> GO TO 6.	E
5. CHECK INPUT SPEED SENSOR SIGNAL	
Check that "INPUT SPEED" operates normally in "DATA MONITOR" of "TRANSMISSION".	F
Is the inspection result normal?	
 YES >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>. NO >> GO TO 6. 	G
6.CHECK TCM SELF-DIAGNOSIS RESULTS	
 Perform "All DTC Reading". Check if any DTC is detected in "Self Diagnostic Result" of "TRANSMISSION". 	Η
Is any DTC detected?	1
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to TM-55, "DTC Index".	1
NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u> , "Removal and Installation".	
7. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS RESULTS	J
 Perform "All DTC Reading". Check if any DTC is detected in "Self Diagnostic Result" of "ABS". 	K
Is any DTC detected?	
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to	
NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".	L
	M
	NI
	IN
	DA

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C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

C1A24 NP RANGE

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A24 (24)	NP RANGE	A mismatch between a shift position signal transmitted from TCM via CAN communica- tion and a current gear position signal contin- ues for 60 seconds or more	TCMTransmission range switch

NOTE:

If DTC "C1A24" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.CHECK DTC REPRODUCE (1)

1. Start the engine.

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

Is "C1A24" detected as the current malfunction?

- YES >> Refer to DAS-726, "Diagnosis Procedure".
- NO >> GO TO 2.

2.CHECK DTC REPRODUCE (2)

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

Is "C1A24" detected as the current malfunction?

- YES >> Refer to DAS-726. "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000008235186

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK NP POSITION SWITCH SIGNAL

Check that "NP RANGE SW" operates normally in "DATA MONITOR" of "ICC/ADAS".

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK TCM DATA MONITOR

Check that "SLCT LVR POSI" operates normally in "DATA MONITOR" of "TRANSMISSION".

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> GO TO 4.

DAS-726

INFOID:000000008235185

C1A24 NP RANGE

< DTC/CIRCUIT DIAGNOSIS >

	-
T.PERFORM TOM SELF-DIAGNOSIS	_
 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 t	O
TM-55, "DTC Index".	
NO >> Replace the ADAS control unit. Refer to <u>DAS-79, Removal and Installation</u> .	
	I
	ļ

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000008235187

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39 (39)	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "C1A39" is detected as the current malfunction in self-diagnosis results of "ICC/ADAS".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to DAS-728, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:00000008235188

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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-45. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1A50 ADAS CONTROL UNIT

DTC detecting condition

If ADAS control unit is malfunctioning

1. Start the engine.

< DTC/CIRCUIT DIAGNOSIS >

DTC DETECTION LOGIC

DTC Logic

DTC

C1A50

NOTE:

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C1A50 ADAS CONTROL UNIT

Trouble diagnosis name

ADAS MALFUNCTION

- 2.
- 3.
- >> Refer to DAS-729, "Diagnosis Procedure". YES G NO >> Refer to GI-53, "Intermittent Incident". **Diagnosis** Procedure INFOID:00000008235190 Н **1.**CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "C1A50" in "Self Diagnostic Result" of "LANE CAMERA". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-746, "LANE CAMERA UNIT : DTC Logic". NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-508, "DTC Index".
- NO

DAS

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INFOID:00000008235189

Possible cause

ADAS control unit

If DTC "C1A50" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-745. "ADAS CONTROL UNIT : DTC Logic". **1.**PERFORM DTC CONFIRMATION PROCEDURE E Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. Check if the "C1A50" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA". Is "C1A50" detected as the current malfunction? Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS". Κ >> Replace the lane camera unit. Refer to DAS-633, "Removal and Installation". Μ Ν

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C1B00 CAMERA UNIT MALF ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B00 (81)	CAMERA UNIT MALF	If lane camera unit is malfunctioning	Lane camera unit
DTC CONFI	RMATION PROCEDUF	RE	
1.PERFORM	M DTC CONFIRMATION I	PROCEDURE	
 Start the Perform ' Check if ' Is "C1B00" de 	engine. "All DTC Reading" with CO the "C1B00" is detected a etected as the current mal	DNSULT. s the current malfunction in "Self Diagnos function?	tic Result" of "ICC/ADAS".
YES >> F NO >> II	Refer to <u>DAS-730, "ADAS</u> NSPECTION END	CONTROL UNIT : Diagnosis Procedure".	
ADAS CO	NTROL UNIT : Diag	nosis Procedure	INFOID:00000008235192
1.снеск s	ELF-DIAGNOSIS RESUL	TS	
Check if "C1E Is "C1B00" de	300" is detected in "Self D etected?	agnostic Result" of "LANE CAMERA".	
YES >> F NO >> F LANE CA	Refer to <u>DAS-730, "LANE</u> Replace the ADAS control MERA UNIT	CAMERA UNIT : DTC Logic" unit. Refer to <u>DAS-79, "Removal and Ins</u> i	tallation".
LANE CAN	MERA UNIT : DTC L	ogic	INFCID:00000008235193
DTC DETEC	CTION LOGIC		

DTC Trouble diagnosis name DTC detecting condition Possible causes C1B00 CAMERA UNIT MALF If lane camera unit is malfunctioning Lane camera unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1B00" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "C1B00" detected as the current malfunction?

YES >> Refer to DAS-730, "LANE CAMERA UNIT : Diagnosis Procedure".

NO >> INSPECTION END

LANE CAMERA UNIT : Diagnosis Procedure

1.CHECK SELF-DIAGNOSIS RESULTS

Check if any DTC other than "C1B00" is detected in "Self Diagnostic Result" of "LANE CAMERA". Is any DTC detected?

INFOID:000000008235191

INFOID:000000008235194

C1B00 CAMERA UNIT MALF

DTC/	CIRCUIT DIAGNOSIS >	[BCI]
/ES	>> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. I	Refer to
0	>> Replace the lane camera unit. Refer to <u>DAS-633, "Removal and Installation"</u> .	

C1B01 CAM AIMING INCMP ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

- 1.PERFORM DTC CONFIRMATION PROCEDURE
- 1. Start the engine.
- 2. Operate the Blind Spot Intervention system and drive. CAUTION:

Always drive safely.

- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B01" detected as the current malfunction?

YES >> Refer to <u>DAS-732</u>, "ADAS CONTROL UNIT : Diagnosis Procedure". NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "C1B01" detected?

YES >> Refer to DAS-732. "LANE CAMERA UNIT : DTC Logic"

NO >> GO TO 2.

2. CHECK DATA MONITOR

- 1. Start the engine.
- 2. Check that "OK" is indicated for the value of "AIMING RESULT" in "DATA MONITOR" of "LANE CAM-ERA".

Is "OK" indicated?

YES >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

NO >> Replace the lane camera unit. Refer to DAS-633, "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

INFOID 00000008235195

INFOID:000000008235196

INFOID:000000008235197

C1B01 CAM AIMING INCMP

< DTC/CIRCUIT DIAGNOSIS > [BC]
1.PERFORM DTC CONFIRMATION PROCEDURE	-
 Start the engine. Perform "All DTC Reading" with CONSULT. Check if the "C1B01" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAN ERA". 	
Is "C1B01" detected as the current malfunction?	
YES >> Refer to <u>DAS-733</u> , "LANE CAMERA UNIT : <u>Diagnosis Procedure</u> ". NO >> Refer to <u>GI-53</u> , "Intermittent Incident".	
LANE CAMERA UNIT : Diagnosis Procedure	198
1.CAMERA AIMING ADJUSTMENT	
 Perform the camera aiming. Refer to <u>DAS-394, "Description"</u>. Erase all self-diagnosis results with CONSULT. Denform "All DTO Description". 	
 Perform All DTC Reading . Check if the "C1B01" is detected in "Self Diagnostic Result" of "LANE CAMERA". 	
Is "C1B01" detected?	
YES >> Replace the lane camera unit. Refer to <u>DAS-633, "Removal and Installation"</u> . NO >> INSPECTION END	

DAS

C1B03 ABNRML TEMP DETECT ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03 (83)	CAM ABNRML TMP DETCT	Temperature around lane camera unit is excessively high	Interior room temperature is exces- sively high

ADAS CONTROL UNIT : Diagnosis Procedure

1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

- 1. Perform "All DTC Reading" with CONSULT.
- 2. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA"

Is "C1B03" detected?

- YES >> Refer to DAS-734, "LANE CAMERA UNIT : DTC Logic"
- NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

- 1. Erase all self-diagnosis results with CONSULT.
- 2. Perform "All DTC Reading".
- 3. Check if the "C1B03" is detected in "Self Diagnostic Result" of "ICC/ADAS"

Is "C1B03" detected?

- YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".
- NO >> INSPECTION END

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:00000008235201

INFOID:00000008235202

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B03	ABNRML TEMP DETECT	Temperature around lane camera unit is ex- cessively high	Interior room temperature is exces- sively high

LANE CAMERA UNIT : Diagnosis Procedure

1.COOLING LANE CAMERA UNIT

- 1. Wait for 10 minutes or more to cool the lane camera unit.
- 2. Erase all self-diagnosis results with CONSULT.
- 3. Perform "All DTC Reading".
- 4. Check if the "C1B03" is detected in "Self Diagnostic Result" of "LANE CAMERA".

Is "C1B03" detected?

- YES >> Replace the lane camera unit. Refer to <u>DAS-633</u>, "Removal and Installation".
- NO >> INSPECTION END

INFOID:000000008235200

INFOID 00000008235199

C1B50 SIDE RADAR MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

C1B50 SIDE RADAR MALFUNCTION

DTC LOGIC

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1B50	SIDE RDR MALFUNC- TION	Side radar malfunction	Side radar
DTC CONF	IRMATION PROCEDU	JRE	
1 .PERFOR	M DTC CONFIRMATION	N PROCEDURE	
 Start the Perform Check if RIGHT/I 	engine. "All DTC Reading" with the "C1B50" is detected _EFT".	CONSULT. d as the current malfunction in "Sel	f Diagnostic Result" of "SIDE RADAR
<u>s the "C1B5</u> YES >>	<u>0" detected as the curre</u> Refer to <u>DAS-735, "Diag</u>	<u>nt malfunction?</u> Inosis Procedure".	
NO >>	INSPECTION END		
NO >> Diagnosis	INSPECTION END Procedure		INFOID:00000008235204
NO >> Diagnosis 1.CHECK S	INSPECTION END Procedure SELF-DIAGNOSIS RESU	JLT	INFOID:00000008235204
NO >> Diagnosis 1.CHECK s Check if any	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50	JLT " is detected in "Self Diagnostic Re	INFOID:00000008235204
NO >> Diagnosis I.CHECK s Check if any s any DTC o	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50 detected?	JLT " is detected in "Self Diagnostic Re	INFOID:00000008235204
NO >> Diagnosis I.CHECK S Check if any s any DTC o YES >> NO >>	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50 detected? Perform diagnosis on the 516, "DTC Index" (SIDE Replace the side radar. F	JLT " is detected in "Self Diagnostic Re e detected DTC and repair or replac RADAR RIGHT) or <u>DAS-514, "DTC</u> Refer to <u>DAS-630, "Removal and In</u>	INFOID:00000008235204 Sult" of "SIDE RADAR LEFT/RIGHT" the malfunction part. Refer to DAS- C Index" (SIDE RADAR LEFT). Stallation".
NO >> Diagnosis CHECK S Check if any S any DTC of YES >> NO >>	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50 detected? Perform diagnosis on the 516, "DTC Index" (SIDE Replace the side radar. F	JLT " is detected in "Self Diagnostic Re e detected DTC and repair or replace RADAR RIGHT) or <u>DAS-514, "DTC</u> Refer to <u>DAS-630, "Removal and In</u>	INFOID:000000008235204 Sult" of "SIDE RADAR LEFT/RIGHT" the malfunction part. Refer to <u>DAS- C Index"</u> (SIDE RADAR LEFT). Stallation".
NO >> Diagnosis CHECK S Check if any s any DTC o YES >> NO >>	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50 detected? Perform diagnosis on the <u>516, "DTC Index"</u> (SIDE Replace the side radar. F	JLT " is detected in "Self Diagnostic Re e detected DTC and repair or replac RADAR RIGHT) or <u>DAS-514, "DT(</u> Refer to <u>DAS-630, "Removal and In</u>	INFOID:000000008235204 Soult" of "SIDE RADAR LEFT/RIGHT" the malfunction part. Refer to <u>DAS- Index"</u> (SIDE RADAR LEFT). Stallation".
NO >> Diagnosis CHECK S Check if any s any DTC o YES >> NO >>	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50 detected? Perform diagnosis on the 516, "DTC Index" (SIDE Replace the side radar. F	JLT " is detected in "Self Diagnostic Re e detected DTC and repair or replac RADAR RIGHT) or <u>DAS-514, "DTC</u> Refer to <u>DAS-630, "Removal and In</u>	INFOID:00000000235204 Sult" of "SIDE RADAR LEFT/RIGHT" the malfunction part. Refer to <u>DAS- Index"</u> (SIDE RADAR LEFT). Stallation".
NO >> Diagnosis I.CHECK s Check if any <u>s any DTC (</u> YES >> NO >>	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50 detected? Perform diagnosis on the 516, "DTC Index" (SIDE Replace the side radar. F	JLT " is detected in "Self Diagnostic Re e detected DTC and repair or replac RADAR RIGHT) or <u>DAS-514, "DTC</u> Refer to <u>DAS-630, "Removal and In</u>	INFOID:00000000235204 Soult" of "SIDE RADAR LEFT/RIGHT" the malfunction part. Refer to <u>DAS-</u> <u>Index</u> " (SIDE RADAR LEFT). <u>stallation</u> ".
NO >> Diagnosis I.CHECK S Check if any s any DTC (YES >> NO >>	INSPECTION END Procedure SELF-DIAGNOSIS RESU DTC other than "C1B50 detected? Perform diagnosis on the 516, "DTC Index" (SIDE Replace the side radar. F	JLT " is detected in "Self Diagnostic Re e detected DTC and repair or replac RADAR RIGHT) or <u>DAS-514, "DTC</u> Refer to <u>DAS-630, "Removal and In</u>	sult" of "SIDE RADAR LEFT/RIGHT" the malfunction part. Refer to DAS- Index" (SIDE RADAR LEFT). stallation".

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[BCI]

INFOID:000000008235203

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C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

C1B51 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR SHORT CIRCUIT

DTC Logic

INFOID:000000008235205

[BCI]

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B51	BSW/BSI IND SHORT CIR	Short circuit in Blind Spot Warning/Blind Spot Intervention indicator circuit is detected. (Over current is detected)	 Blind Spot Warning/Blind Spot Intervention indicator circuit. Blind Spot Warning/Blind Spot Intervention indicator. Side radar.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Perform "All DTC Reading" with CONSULT.
- 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-735. "Diagnosis Procedure".
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:00000008235206

1.CHECK BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR CIRCUIT FOR SHORT

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

Side	radar	- Ground	Continuity
Connector	Terminal		
B416 (LH)	c		Not existed
B81 (RH)	0		NOL EXISTED

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-630</u>, "Removal and Installation".
- NO >> INSPECTION END

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR **OPEN CIRCUIT** [BCI]

< DTC/CIRCUIT DIAGNOSIS >

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR **OPEN CIRCUIT**

DTC Logic

INFOID:000000008235207

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DTC DETECTION LOGIC

DTC	Trouble diagnosis	name	C	OTC detecting condition	Possible cause
C1B52	BSW/BSI IND OPE	EN CIR	Open circuit in Blind cator circuit is detect	Spot Warning/Blind Spot Intervention indited.	 Blind Spot Warning/Blind Spot Intervention indica- tor circuit. Blind Spot Warning/Blind Spot Intervention indica- tor. Side radar.
TC CO	NFIRMATION	PROCE	DURE		
.PERF	ORM DTC CON	FIRMATI	ON PROCEDUP	RE	
 Start Perfo Cheo RIGH <u>s the "C"</u> YES NO 	the engine. frm "All DTC Rea ck if the "C1B52" HT/LEFT". <u>1B52" detected a</u> >> Refer to <u>DAS</u> >> INSPECTION	ading" wi ' is detec <u>as the cu</u> - <u>735, "D</u>	th CONSULT. ted as the curre rrent malfunction iagnosis Procedu	nt malfunction in "Self Diagnostic I <u>I?</u> ure".	Result" of "SIDE RADAR
Diagno	sis Procedure	e			INFOID:00000008235208
1 СНЕС					
2. Disco ness 3. Cheo indic	onnect side rada connector. ck continuity betw ator harness con	ween sid	s connector and e radar harness	d Blind Spot Warning/Blind Spot Ir connector and Blind Spot Warnin	ntervention indicator har- g/Blind Spot Intervention
\$	Side radar	Blind S Spot Inte	oot Warning/Blind ervention indicator	Continuity	
Connect	tor Terminal	Connec	tor Terminal		
B416 (L B109 (R	H) 6 H)	D77 (L D78 (R	H) 1 H)	Existed	
s the ins	pection result no	ormal?			
YES NO 2.CHEC	>> GO TO 2. >> Repair the ha XK BLIND SPOT	irnesses WARNIN	or connectors. IG/BLIND SPOT	INTERVENTION INDICATOR CIF	RCUIT FOR OPEN 2
Check co	ontinuity between	Blind Sp	oot Warning/Blind	d Spot Intervention indicator harnes	ss connector and ground.
Blind Sr	oot Warning/Rlind				

Blind Spot V Spot Interver	Varning/Blind ntion indicator		Continuity
Connector	Terminal	Ground	
D77 (LH)	1		Existed
D78 (RH)	4		LAISteu

C1B52 BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3. CHECK SIDE RADAR VOLTAGE OUTPUT

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

Blind Spot V Spot Interver	Varning/Blind ntion indicator		Condition	Voltage
Connector	Terminal	Ground		(Applox.)
D77 (LH)			Ignition switch	0.14
D78 (RH)	1		$OFF \Rightarrow ON$ (Approx. 2 sec.)	6 V

Is the inspection result normal?

YES >> Replace Blind Spot Warning/Blind Spot Intervention indicator.

NO >> Replace side radar. Refer to DAS-630, "Removal and Installation".

C1B53 SIDE RADAR RIGHT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

C1B53 SIDE RADAR RIGHT MALFUNCTION

DTC Logic

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INFOID:000000008235209

DTC DETECTION LOGIC В DTC С (On board Trouble diagnosis name DTC detecting condition Possible cause display) C1B53 ADAS control unit detects that side radar RH has SIDE RDR R MALF Side radar RH (84)a malfunction. D DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE Е 1. Start the engine. Perform "All DTC Reading" with CONSULT. 2. Check if the "C1B53" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 3. Is "C1B53" detected as the current malfunction? YES >> Refer to DAS-739, "Diagnosis Procedure". NO >> Refer to GI-53, "Intermittent Incident". G **Diagnosis** Procedure INFOID:000000008235210 1.CHECK SELF-DIAGNOSIS RESULTS Н Check if "U1000" is detected other than "C1B53" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-745, "ADAS CONTROL UNIT : DTC Logic". NO >> GO TO 2. J 2.CHECK SELF-DIAGNOSIS RESULTS Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT". Is any DTC detected? Κ >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to YES DAS-514, "DTC Index" (SIDE RADAR LH), DAS-516, "DTC Index" (SIDE RADAR RH). NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". Μ

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C1B54 SIDE RADAR LEFT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

C1B54 SIDE RADAR LEFT MALFUNCTION

DTC Logic

INFOID:000000008235211

[BCI]

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B54 (85)	SIDE RDR L MALF	ADAS control unit detects that side radar LH has a malfunction.	Side radar LH

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

2. Perform "All DTC Reading" with CONSULT.

3. Check if the "C1B54" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B54" detected as the current malfunction?

- YES >> Refer to DAS-739. "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000008235212

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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-514. "DTC Index" (SIDE RADAR LH), DAS-516. "DTC Index" (SIDE RADAR RH).
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

C1B55 RADAR BLOCKAGE

< DTC/CIRCUIT DIAGNOSIS >

C1B55 RADAR BLOCKAGE

DTC Logic

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INFOID:000000008235213

INFOID:000000008235214

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 fo	llowing conditions except for possible cause.	Explain to the customer about the difference
DTC "C1B55 between the	" may be detected under the for contamination detection function	llowing conditions except for possible cause. on and the indication when the malfunction is	Explain to the customer about the difference detected and tell them "This is not malfunc-
DTC "C1B55 between the tion".)	" may be detected under the for contamination detection function	llowing conditions except for possible cause. on and the indication when the malfunction is	Explain to the customer about the difference detected and tell them "This is not malfunc-
DTC "C1B55 between the tion".) • The side ra	" may be detected under the for contamination detection function adar may be blocked by tempor	llowing conditions except for possible cause. on and the indication when the malfunction is ary ambient conditions such as splashing wat	Explain to the customer about the difference detected and tell them "This is not malfunc- er, mist or fog.
DTC "C1B55 between the tion".) • The side ra • The blocke	" may be detected under the for contamination detection function adar may be blocked by tempored ad condition may also be cause	llowing conditions except for possible cause. on and the indication when the malfunction is ary ambient conditions such as splashing wat d by objects such as ice, frost or dirt obstructir	Explain to the customer about the difference detected and tell them "This is not malfunc- er, mist or fog. g the side radar.
DTC "C1B55 between the tion".) • The side ra • The blocke • Due to the	" may be detected under the for contamination detection function adar may be blocked by tempored condition may also be caused nature of radar technology it is	llowing conditions except for possible cause. on and the indication when the malfunction is ary ambient conditions such as splashing wat d by objects such as ice, frost or dirt obstructir possible to get a blockage warning and not ac	Explain to the customer about the difference detected and tell them "This is not malfunc- er, mist or fog. g the side radar. ually be blocked. This is rare and is known as

Diagnosis Procedure

1.CHECK THE REAR BUMPER

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

>> GO TO 2.

$2. {\sf CHECK THE SIDE RADAR}$

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

>> GO TO 3. 3.CHECK THE SIDE RADAR INSTALL CONDITION	J
Check side radar installation condition (installation position, properly tightened, a bent bracket).	ĸ
>> GO TO 4. 4. INTERVIEW	
1 Ask if there is stain or foreign materials	L
 Ask if there is any temporary ambient condition such as splashing water, mist or fog. Ask if there is any object such as ice, frost or dirt obstructing the side radar. 	M
s any of above conditions seen?	

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

NO >> INSPECTION END

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C1B56 SONAR CIRCUIT

DTC Logic

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B56 (87)	SONAR CIRCUIT MALF	ADAS control unit detects that rear sonar circuit has a malfunction.	Sonar control unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1B56" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "C1B56" detected as the current malfunction?

- YES >> Refer to DAS-742, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:00000008376865

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1B56" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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 "SONAR".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-676, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

INFOID:000000008376864

C1B57 AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

C1B57 AVM CIRCUIT

DTC Logic

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible cause
C1B57 (88)	AVM CIRCUIT MALF	ADAS control unit detects that AVM has a mal- function.	AVM control unit
DTC CON	FIRMATION PROCEDU	JRE	
1.PERFO	RM DTC CONFIRMATION	N PROCEDURE	
1. Start th 2. Perforn 3. Check <u>Is "C1B57"</u>	ne engine. m "All DTC Reading" with if the "C1B57" is detected detected as the current m Refer to DAS 743. "Diag	CONSULT. I as the current malfunction in "Self Diagn malfunction?	ostic Result" of "ICC/ADAS".
NO >:	Refer to <u>GI-53</u> , "Intermitities of the second s	tent Incident".	
Diagnosi	s Procedure		INEC/ID:00000008376867
۵			
1. CHECK	SELF-DIAGNOSIS RESU	JLTS	
Check if "L	1000" is detected other th	nan "C1B57" in "Self Diagnostic Result" of	"ICC/ADAS".
<u>ls "U1000"</u> YES >: NO >:	<u>detected?</u> > Perform the CAN comm Refer to <u>DAS-745, "ADA</u> > GO TO 2.	unication system inspection. Repair or re <u>S CONTROL UNIT : DTC Logic"</u> .	place the malfunctioning parts.
2.снеск	SELF-DIAGNOSIS RESU	JLTS	
Check if ar	ny DTC is detected in "Sel	f Diagnostic Result" of "AVM".	
Is any DTC	detected?	C .	
YES >:	Perform diagnosis on th DAS-676 "DTC Index"	e detected DTC and repair or replace the	e malfunctioning parts. Refer to
NO >:	Replace the ADAS contr	ol unit. Refer to <u>DAS-79, "Removal and Ir</u>	nstallation".

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[BCI]

INFOID:00000008376866

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U1000 CAN COMM CIRCUIT SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:000000008235215

[BCI]

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-39, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

ITS COMMUNICATION

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

SIDE RADAR LH : DTC Logic

INFOID:000000008235216

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:000000008235217

1.PERFORM THE SELF-DIAGNOSIS

- 1. Start the engine.
- 2. Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR LEFT".

Is "U1000" detected as the current malfunction?

- YES >> Refer to LAN-22, "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

SIDE RADAR RH

SIDE RADAR RH : Description

INFOID:000000008235218

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-39</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 plural units with 2 communication lines.
- ITS communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

U1000 CAN COMM CIRCUIT

Revision: March 2012

1.PERFORM THE SELF-DIAGNOSIS

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

INFOID:00000008235219

INFOID:00000008235221

INFOID:00000008235222

DTC DETECTION LOGIC

SIDE RADAR RH : DTC Logic

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	E
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				
1.PERFORM	M THE SELF-DIAGNO	SIS		Γ

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON, and then wait for 30 seconds or more.
- Perform "All DTC Reading" with CONSULT. 3.
- Check if the "U1000" is detected as the current malfunction in "Self Diagnostic Result" of "SIDE RADAR 4. RIGHT".

Is "U1000" detected as the current malfunction?

- >> Refer to LAN-22, "Trouble Diagnosis Flow Chart". YES
- NO >> Refer to GI-53, "Intermittent Incident".

ADAS CONTROL UNIT

ADAS CONTROL UNIT : 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 LAN-39, "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

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes	Ν
U1000 (100)	CAN COMM CIRCUIT	If ADAS control unit is not transmitting or receiv- ing CAN communication signal or ITS communi- cation signal for 2 seconds or more	CAN communication systemITS communication system	DAS

NOTE:

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

ADAS CONTROL UNIT : Diagnosis Procedure

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U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Is "U1000" detected as the current malfunction?

- >> Refer to <u>LAN-22</u>, "Trouble Diagnosis Flow Chart".
 >> Refer to <u>GI-53</u>, "Intermittent Incident". YES
- NO

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

ITS COMMUNICATION

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

LANE CAMERA UNIT : DTC Logic

INFOID:000000008235225

INFOID:000000008235224

DTC DETECTION LOGIC

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

LANE CAMERA UNIT : Diagnosis Procedure

1.PERFORM THE SELF-DIAGNOSIS

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

Is "U1000" detected as the current malfunction?

- YES >> Refer to LAN-22, "Trouble Diagnosis Flow Chart".
- NO >> Refer to GI-53, "Intermittent Incident".

INFOID:00000008235226

U1010 CONTROL UNIT (CAN)

<u>< DTC/CIRCUIT DIAGNOSIS ></u> U1010 CONTROL UNIT (CAN) SIDE RADAR LH

SIDE RADAR LH : Description

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

diagnosis

SIDE RADAR LH : DTC Logic

Trouble diagnosis name

CONTROL UNIT (CAN)

DTC DETECTION LOGIC

DTC

U1010

SIDE RADAR LH : Diagnosis Procedure	INFOID:000000008235229				
1.CHECK SELF-DIAGNOSIS RESULT		F			
 Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic ReLEFT". 	esult" of "SIDE RADAR	(
Is "U1010" detected as the current malfunction? YES >> Replace the side radar LH. Refer to <u>DAS-630, "Removal and Installation"</u> . NO >> INSPECTION END SIDE RADAR RH		ŀ			
SIDE RADAR RH : Description	INFOID:00000008235230				
CAN controller controls the communication of ITS communication signal and the error of SIDE RADAR RH : DTC Logic	CAN controller controls the communication of ITS communication signal and the error detection.				
DTC DETECTION LOGIC		I			
DTC Trouble diagnosis name DTC detecting condition	Possible cause	ŀ			
U1010 CONTROL UNIT (CAN) If Side radar RH detects malfunction by CAN controller initial diagnosis.	Side radar RH				
SIDE RADAR RH : Diagnosis Procedure	INFOID:00000008235232				

DTC detecting condition

If side radar LH detects malfunction by CAN controller initial

1. CHECK SELF-DIAGNOSIS RESULT

- 1. Turn the Blind Spot Intervention system ON.
- 2. Perform "All DTC Reading" with CONSULT.
- 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-630, "Removal and Installation"</u>.

NO >> INSPECTION END ADAS CONTROL UNIT

ADAS CONTROL UNIT : Description

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

DAS-747

[BCI]

INFOID:000000008235227

INFOID:00000008235228

Possible cause

Side radar LH

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INFOID:00000008235233

< DTC/CIRCUIT DIAGNOSIS > ADAS CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

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

ADAS CONTROL UNIT : Diagnosis Procedure

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the Blind Spot Intervention system ON.
- Perform "All DTC Reading" with CONSULT. 2.

Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 3. Is "U1010" detected as the current malfunction?

YES >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation".

>> INSPECTION END NO

LANE CAMERA UNIT

LANE CAMERA UNIT : Description

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

LANE CAMERA UNIT : DTC Logic

DTC DETECTION LOGIC

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

LANE CAMERA UNIT : Diagnosis Procedure

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the Blind Spot Intervention system ON.
- Perform "All DTC Reading" with CONSULT. 2.
- Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-3. ERA".

Is "U1010" detected as the current malfunction?

- YES >> Replace the lane camera unit. Refer to <u>DAS-633, "Removal and Installation"</u>.
- >> INSPECTION END NO

U1010 CONTROL UNIT (CAN)

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INFOID:000000008235235

INFOID:00000008235236

INFOID:00000008235237

[BCI]

INFOID-00000008235238

U0104 ADAS CAN 1 SIDE RADAR

SIDE RADAR : DTC Logic

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((SIDE RA	0104" is detected along with DTC " DAR LH), <u>DAS-745, "SIDE RADA</u> I	U1000", first diagnose the DTC "U1000". Refer to <u>DAS-744, "</u> <u>R RH : DTC Logic"</u> (SIDE RADAR RH).	SIDE RADAR LH : DTC Logic"
DTC CO 1.PERI	ONFIRMATION PROCED	URE IN PROCEDURE	
 Star Turr Turr Perf Che RIG 	t the engine. In the Blind Spot Intervention form "All DTC Reading" with eck if the U0104 is detected HT/LEFT".	n system ON. I CONSULT I as the current malfunction in "Self Diagnostic F	Result" of "SIDE RADAR
<u>Is the D</u> YES NO	<u>TC "U0104" detected?</u> >> Refer to <u>DAS-749, "SID</u> >> Refer to <u>GI-53, "Intermi</u>	E RADAR : Diagnosis Procedure". ttent Incident".	
SIDE F	RADAR : Diagnosis P	rocedure	INFOID:00000008235240
Check if	"U1000" is detected other t 00" detected?	han "U0104" in "Self Diagnostic Result" of "SIDE	RADAR RIGHT/LEFT".
YES	>> Perform the CAN comm Refer to <u>DAS-744, "SIE</u> <u>RH : DTC Logic"</u> (SIDE >> GO TO 2.	nunication system inspection. Repair or replace to <u>DE RADAR LH : DTC Logic"</u> (SIDE RADAR LH), <u>I</u> RADAR RH).	the malfunctioning parts. DAS-745, "SIDE RADAR
2.CHE	CK ADAS CONTROL UNIT	SELF-DIAGNOSIS RESULTS	
<u>ls any D</u> YES	 > Perform diagnosis on t > DAS-508 "DTC Index" 	he detected DTC and repair or replace the malfu	nctioning parts. Refer to
NO LANE	>> Replace side radar LH CAMERA UNIT	or RH. Refer to DAS-630, "Removal and Installati	on"
LANE	CAMERA UNIT : DTO	CLogic	INFOID:00000008235241
DTC DE	ETECTION LOGIC		

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	Р
U0104	ADAS CAN CIR 1	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit	

NOTE:

If DTC "U0104" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-746, "LANE CAMERA UNIT : DTC Logic".

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DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0104" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U0104" detected as the current malfunction?

- YES >> Refer to DAS-750, "LANE CAMERA UNIT : Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000008235242

1.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0104" in "Self Diagnostic Result" of "LANE CAMERA". Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-746. "LANE CAMERA UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-508, "DTC Index"</u>.
- NO >> Replace the lane camera unit. Refer to <u>DAS-633</u>, "Removal and Installation".

U0121 VDC CAN 2

< DTC/CIRCUIT DIAGNOSIS >

U0121 VDC CAN 2

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes		
U0121 (127)	VDC CAN CIR2	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)		
NOTE: If DTC "U0121 "ADAS CONTF	I" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-745.</u>		
DTC CONFIR	MATION PROCED	JRE			
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	F		
 Start the e Turn the B Perform "A Check if th Is "U0121" dete YES >> Re 	ngine. lind Spot Intervention II DTC Reading" with e "U0121" is detected ected as the current m efer to <u>DAS-751, "Diac</u>	system ON. CONSULT. I as the current malfunction in "Self Dia <u>malfunction?</u> Inosis Procedure".	gnostic Result" of "ICC/ADAS".		
NO >> Re	efer to GI-53, "Intermit	tent Incident".			
Diagnosis F	Procedure		INFOID:00000008235244		
1.снеск se	LF-DIAGNOSIS RESI	JLTS			
Check if "U100	0" is detected other th	nan "U0121" in "Self Diagnostic Result"	of "ICC/ADAS".		
Is "U1000" dete YES >> Pe Re NO >> GO 2.CHECK AB	 <u>s "U1000" detected?</u> YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>. NO >> GO TO 2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELE-DIAGNOSIS RESULTS. 				
Check if any D	TC is detected in "Sel	f Diagnostic Result" of "ABS"			
Is any DTC det	tected?				
YES >> Pe	erform diagnosis on th RC-45, "DTC Index".	e detected DTC and repair or replace	the malfunctioning parts. Refer to \mathbb{N}		
NO >> Re	place the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".		
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INFOID:000000008235243

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U0126 STRG SEN CAN 1 ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000008235245

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126 (130)	STRG SEN CAN CIR1	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745,</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0126" detected as the current malfunction?

YES >> Refer to <u>DAS-752</u>, "ADAS CONTROL UNIT : Diagnosis Procedure". NO >> Refer to <u>GI-53</u>, "Intermittent Incident".

ADAS CONTROL UNIT : Diagnosis Procedure

INFOID:000000008235246

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0126" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

 $\mathbf{2}.$ 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-45. "DTC Index".

NO >> Replace the ADAS control unit. Refer to <u>DAS-79, "Removal and Installation"</u>.

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000008235247

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0126	STRG SEN CAN CIR1	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor

NOTE:

If DTC "U0126" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-746</u>, "LANE CAMERA UNIT : DTC Logic".

U0126 STRG SEN CAN 1			
< DTC/CIRCUIT DIAGNOSIS > [BCI]			
DTC CONFIRMATION PROCEDURE			
1.PERFORM DTC CONFIRMATION PROCEDURE			
 Start the engine. Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. Check if the "U0126" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA". 			
Is "U0126" detected as the current malfunction?			
NO >> Refer to GI-53, "LANE CAMERA UNIT : Diagnosis Procedure".			
LANE CAMERA UNIT : Diagnosis Procedure			
1.CHECK SELF-DIAGNOSIS RESULTS			
Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-746, "LANE CAMERA UNIT : DTC Logic". NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS			
Check if any DTC is detected in "Self Diagnostic Result" of "ICC/ADAS".			
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to			
NO >> Replace the lane camera unit. Refer to <u>DAS-633</u> , " <u>Removal and Installation</u> ".			

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U0401 ECM CAN 1

DTC Logic

INFOID:000000008235249

[BCI]

DTC DETECTION LOGIC

DTC (On board display)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0401 (120)	ECM CAN CIR1	If ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM

NOTE:

If DTC "U0401" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0401" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0401" detected as the current malfunction?

- YES >> Refer to DAS-754, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000008235250

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0401" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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".

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>EC-108, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0402 TCM CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0402 TCM CAN 1

DTC Logic

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INFOID:000000008235251

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0402 (122)	TCM CAN CIRC1	If ADAS control unit detects an error signal that is received from TCM via CAN communi- cation	ТСМ
NOTE: f DTC "U0402 'ADAS CONTF	2" is detected alor ROL UNIT : DTC L	ng with DTC "U1000", first diagnose th ogic".	ne DTC "U1000". Refer to <u>DAS-745.</u>
OTC CONFIR	MATION PROCE	EDURE	
1.PERFORM	DTC CONFIRMAT	ION PROCEDURE	
1. Start the ei 2. Turn the B 3. Perform "A 4. Check if th <u>Is "U0402" dete</u> YES >> Re	ngine. lind Spot Intervent II DTC Reading" w ie "U0402" is detected as the currer efer to <u>DAS-755, "E</u> ofer to <u>GL53</u> , "Inter	ion system ON. /ith CONSULT. /ted as the current malfunction in "Self I <u>nt malfunction?</u> Diagnosis Procedure". mittent Incident"	Diagnostic Result" of "ICC/ADAS".
Diagnosis P	Procedure	mittent modert.	INFOID:00000008235252
1 .check set	LF-DIAGNOSIS R	ESULTS	
Check if "U100	0" is detected othe	er than "U0402" in "Self Diagnostic Res	ult" of "ICC/ADAS".
ls "U1000" dete	ected?		
YES >> Pe Re NO >> GO	erform the CAN co efer to <u>DAS-745, "A</u> D TO 2.	mmunication system inspection. Repai	r or replace the malfunctioning parts.
2. снеск тс	M SELF-DIAGNOS	SIS RESULTS	
Check if any D	TC is detected in "	Self Diagnostic Result" of "TRANSMIS	SION".
Is any DTC det	tected?		
YES >> Pe	rform diagnosis o	n the detected DTC and repair or repla	ce the malfunctioning parts. Refer to
NO >> Re	place the ADAS c	ontrol unit. Refer to DAS-79, "Removal	and Installation".

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U0405 ADAS CAN 2 SIDE RADAR

SIDE RADAR : DTC Logic

INFOID:000000008235253

[BCI]

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-744</u>, "<u>SIDE RADAR LH</u>: <u>DTC Logic</u>" (SIDE RADAR LH), <u>DAS-745</u>, "<u>SIDE RADAR RH</u>: <u>DTC Logic</u>" (SIDE RADAR RH).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

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

Is the DTC "U0405" detected?

- YES >> Refer to <u>DAS-756</u>, "SIDE RADAR : Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

SIDE RADAR : Diagnosis Procedure

INFOID:000000008235254

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-744, "SIDE RADAR LH : DTC Logic"</u> (SIDE RADAR LH), <u>DAS-745, "SIDE RADAR RH : DTC Logic"</u> (SIDE RADAR RH).
- NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

Is any DTC detected?

YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-676, "DTC Index"</u>.

NO >> Replace side radar LH or RH. Refer to DAS-796. "Removal and Installation".

LANE CAMERA UNIT

LANE CAMERA UNIT : DTC Logic

INFOID:000000008235255

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0405	ADAS CAN CIR 2	If lane camera unit detects an error signal that is received from ADAS control unit via ITS communication	ADAS control unit

NOTE:

If DTC "U0405" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-746</u>, <u>"LANE CAMERA UNIT : DTC Logic"</u>.
U0405 ADAS CAN 2

< DTC/CIRCUIT DIAGNOSIS > [BCI]	
DTC CONFIRMATION PROCEDURE	
1.PERFORM DTC CONFIRMATION PROCEDURE	
 Start the engine. Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. Check if the "U0405" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM- ERA". 	
Is "U0405" detected as the current malfunction?	
YES >> Refer to <u>DAS-757, "LANE CAMERA UNIT : Diagnosis Procedure"</u> . NO >> Refer to <u>GI-53, "Intermittent Incident"</u> .	
LANE CAMERA UNIT : Diagnosis Procedure	
1. CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS	
Check if "U1000" is detected other than "U0405" in "Self Diagnostic Result" of "LANE CAMERA".	
<u>Is "U1000" detected?</u> YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-746, "LANE CAMERA UNIT : DTC Logic"</u> .	
NO $>>$ GO TO 2.	
2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS	
Check if any DTC detected in "Self Diagnostic Result" of "ICC/ADAS".	
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-676 "DTC Index"	
NO >> Replace the lane camera unit. Refer to <u>DAS-795, "Removal and Installation"</u> .	
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U0415 VDC CAN 1

DTC Logic

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U0415 (126)	VDC CAN CIR1	If ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0415" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0415" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U0415" detected as the current malfunction?

- YES >> Refer to DAS-758, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:00000008235258

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0415" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U0428 STRG SEN CAN 2 ADAS CONTROL UNIT

ADAS CONTROL UNIT : DTC Logic

INFOID:000000008235259

DTC DETECTION LOGIC

DTC (On board di play)	s- Trouble diagnosis name	DTC detecting condition	Possible causes
U0428 (131)	STRG SEN CAN CIR2	If ADAS control unit detects an error signal that is received from steering angle sensor via CAN communication	Steering angle sensor
NOTE: If DTC "U04 "ADAS CON	28" is detected along TROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c</u> ".	DTC "U1000". Refer to <u>DAS-745,</u>
DTC CONF 1.perfor	IRMATION PROCED M DTC CONFIRMATIO	URE N PROCEDURE	
 Start the Turn the Perform 	engine. Blind Spot Intervention "All DTC Reading" with	system ON. CONSULT.	
4. Check if <u>Is "U0428" d</u> YES >>	the "U0428" is detected etected as the current r Refer to DAS-759, "AD/	d as the current malfunction in "Self Dia nalfunction? AS CONTROL UNIT : Diagnosis Proce	gnostic Result" of "ICC/ADAS". dure".
ADAS CO	NTROL UNIT : Dia	agnosis Procedure	INFOID:00000008235260
1.CHECK S Check if "U1	SELF-DIAGNOSIS RES	ULTS han "U0428" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>Is "U1000" d</u> YES >>	<u>etected?</u> Perform the CAN comm Refer to <u>DAS-745. "AD/</u>	nunication system inspection. Repair o AS CONTROL UNIT : DTC Logic".	r replace the malfunctioning parts.
2.CHECK A	BS ACTUATOR AND E	ELECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS
Check if any Is any DTC of YES >>	DTC is detected in "Se detected? Perform diagnosis on tl	If Diagnostic Result" of "ABS". ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> LANE CA	BRC-45. "DTC Index". Replace the ADAS cont MERA UNIT	rol unit. Refer to <u>DAS-79, "Removal an</u>	d Installation".
LANE CA	MERA UNIT : DTC	CLogic	INFOID:00000008235261
DTC DETE	CTION LOGIC		

	DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	F
_	U0428	STRG SEN CAN CIR2	If lane camera unit detects an error signal that is received from steering angle sensor via ADAS control unit	Steering angle sensor	

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If DTC "U0428" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-746.</u> "LANE CAMERA UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U0428" is detected as the current malfunction in "Self Diagnostic Result" of "LANE CAM-ERA".

Is "U0428" detected as the current malfunction?

- YES >> Refer to DAS-760, "LANE CAMERA UNIT : Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

LANE CAMERA UNIT : Diagnosis Procedure

INFOID:000000008235262

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0428" in "Self Diagnostic Result" of "LANE CAMERA".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-746, "LANE CAMERA UNIT : DTC Logic".

NO >> GO TO 2.

2. CHECK ADAS CONTROL UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>CCS-59. "DTC Index"</u>.
- NO >> Replace the lane camera unit. Refer to <u>DAS-795</u>, "Removal and Installation".

U150B ECM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150B ECM CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150B (157)	ECM CAN CIRC 3	ADAS control unit detects an error signal that is received from ECM via CAN communication	ECM
NOTE: If DTC "U150 "ADAS CONT	B" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the l <u>c"</u> .	DTC "U1000". Refer to <u>DAS-745.</u>
DTC CONFIF 1.PERFORM	RMATION PROCED	URE N PROCEDURE	
1. Start the e 2. Turn the E 3. Perform "/ 4. Check if th Is "U150B" det	engine. Blind Spot Intervention All DTC Reading" with ne "U150B" is detected tected as the current r	system ON. CONSULT. d as the current malfunction in "Self Dia nalfunction?	gnostic Result" of "ICC/ADAS".
YES >> Re NO >> Re	efer to <u>DAS-761, "Diag</u> efer to <u>GI-53, "Intermit</u>	<u>gnosis Procedure"</u> . i <u>tent Incident"</u> .	
Diagnosis F	Procedure		INFOID:00000008235264
1 .check se	ELF-DIAGNOSIS RES	ULTS	
Check if "U100 s "U1000" det	00" is detected other tl ected?	nan "U150B" in "Self Diagnostic Result"	of "ICC/ADAS".
YES >> Pe Re NO >> G	erform the CAN comn efer to <u>DAS-745, "AD/</u> O TO 2.	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.
2.снеск ес	M SELF-DIAGNOSIS	RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "ENGINE".	
ls any DTC de	etected?		
YES >> Pe	erform diagnosis on th C-108. "DTC_Index".	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> R	eplace the ADAS cont	rol unit. Refer to DAS-79, "Removal and	d Installation".

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Revision: March 2012

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INFOID:000000008235263

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U150C VDC CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150C (158)	VDC CAN CIRC 3	ADAS control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U150C" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U150C" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150C" detected as the current malfunction?

- YES >> Refer to DAS-762, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000008235266

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150C" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-45. "DTC Index".
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U150D TCM CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U150D TCM CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150D (159)	TCM CAN CIRC 3	ADAS control unit detects an error signal that is received from TCM via CAN communication	ТСМ
NOTE: f DTC "U150I 'ADAS CONTI	D" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the <u>c"</u> .	DTC "U1000". Refer to <u>DAS-745.</u>
TC CONFIF	RMATION PROCED	URE	
.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
1. Start the e 2. Turn the B 3. Perform "A	Ingine. Ind Spot Intervention In DTC Reading" with	system ON. CONSULT.	
4. Check if th	ne "U150D" is detecte	d as the current malfunction in "Self Dia	gnostic Result" of "ICC/ADAS".
VES >> P	tected as the current r	maifunction?	
NO >> Re	efer to <u>GI-53, "Intermit</u>	itent Incident".	
Diagnosis F	Procedure		INFOID:00000008235268
1 .check se	LF-DIAGNOSIS RES	ULTS	
Check if "U100	0" is detected other the	nan "U150D" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" det</u>	ected?		
YES >> Pe Re	erform the CAN comn efer to <u>DAS-745, "ADA</u>	nunication system inspection. Repair or <u>AS CONTROL UNIT : DTC Logic"</u> .	replace the malfunctioning parts.
NO >> G(O TO 2.		
Z .CHECK TC	M SELF-DIAGNOSIS	RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "TRANSMISSIO	N".
ls any DTC de	tected?		
YES >> Pe	erform diagnosis on th	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> Re	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".

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INFOID:000000008235267

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U150E BCM CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U150E (160)	BCM CAN CIRC 3	ADAS control unit detects an error signal that is received from BCM via CAN communication	ВСМ

NOTE:

If DTC "U150E" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> <u>"ADAS CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U150E" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U150E" detected as the current malfunction?

- YES >> Refer to DAS-764, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:00000008235270

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U150E" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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-49. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

INFOID:000000008235269

U1500 CAM CAN 2

< DTC/CIRCUIT DIAGNOSIS >

U1500 CAM CAN 2

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1500 (145)	CAM CAN CIRC 2	ADAS control unit detects an error signal that is received from lane camera unit via ITS communication	Lane camera unit
NOTE: If DTC "U150 "ADAS CONT	0" is detected along ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the I <u>c"</u> .	DTC "U1000". Refer to <u>DAS-745.</u>
DTC CONFIF	RMATION PROCED	URE	
1.PERFORM	DTC CONFIRMATIO	N PROCEDURE	
1. Start the e	engine.		
 Turn the E Perform "/ Check if the content of the content	Blind Spot Intervention All DTC Reading" with he "U1500" is detected	system ON. CONSULT. d as the current malfunction in "Self Diag	gnostic Result" of "ICC/ADAS".
<u>s "U1500" det</u>	tected as the current n	nalfunction?	
YES >> R	eter to <u>DAS-765, "Diag</u> efer to GI-53, "Intermit	<u>gnosis Procedure"</u> . Itent Incident"	
	Procoduro	<u>itent moldent</u> .	
Diagnosis r	TOCEUUIE		INFOID:00000008235272
1. CHECK SE	ELF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other th	han "U1500" in "Self Diagnostic Result"	of "ICC/ADAS".
ls "U1000" det	tected?		
YES >> Pe	erform the CAN comn efer to <u>DAS-745, "ADA</u>	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic ["] .	replace the malfunctioning parts.
NO >> G	0 10 2.		
Z .CHECK LA	NE CAMERA UNIT S	ELF-DIAGNOSIS RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "LANE CAMERA	A".
<u>Is any DTC de</u>	etected?		
YES >> Pe	erform diagnosis on th AS-519 "DTC Index"	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> R	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".

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INFOID:000000008235271

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U1501 CAM CAN 1

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1501 (145)	CAM CAN CIRC 1	ADAS control unit detects an error signal that is received from lane camera unit via ITS com- munication	Lane camera unit

NOTE:

If DTC "U1501" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1501" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1501" detected as the current malfunction?

- YES >> Refer to DAS-766, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:00000008235274

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1501" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-519, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</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:000000008235275

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1503 (150)	SIDE RDR L CAN CIR 2	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication	Side radar LH
NOTE: If DTC "U1503 • Refer to DA • Refer to DA	3" is detected along with D <u>S-745, "ADAS CONTROL</u> <u>S-772, "DTC Logic"</u> for D1	TC "U1000", or "U1508", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". ⁻ C "U1508".	DTC "U1000" or "U1508".
DTC CONFI	RMATION PROCEDUR	E	
I.PERFORM	I DTC CONFIRMATION P	ROCEDURE	
 Start the e Turn the E Perform ", Check if the second s	engine. 3lind Spot Intervention sys All DTC Reading" with CC he "U1503" is detected as tected as the current malfi	tem ON. NSULT. the current malfunction in "Self Diagnostic F <u>unction?</u>	Result" of "ICC/ADAS".
YES >> R NO >> R	efer to <u>DAS-767, "Diagnos</u> efer to <u>GI-53, "Intermitten</u>	sis Procedure". <u>Incident"</u> .	
Diagnosis I	Procedure		INFOID:00000008235276
1.CHECK SE	ELF-DIAGNOSIS RESULT	S	
Check if "U10 Is "U1000" or	00" or "U1508" is detected "U1508" detected?	other than "U1503" in "Self Diagnostic Resu	ult" of "ICC/ADAS".
YES-1 >> U fu YES-2 >> U NO >> G	1000 detected: Perform the functioning parts. Refer to $\underline{\Box}$ 1508 detected: Refer to \underline{D} to TO 2.	ne CAN communication system inspection. F DAS-745, "ADAS CONTROL UNIT : DTC Log AS-772, "DTC Logic".	Repair or replace the mal- <u>gic"</u> .
2.CHECK SI	DE RADAR LH SELF-DIA	GNOSIS RESULTS	
Check if any D	TC is detected in "Self Di	agnostic Result" of "SIDE RADAR LEFT".	
Is any DTC de	stected?		
YES >> P	erform diagnosis on the d <u>AS-514, "DTC Index"</u> .	etected DTC and repair or replace the malf	functioning parts. Refer to
NO >> R	eplace the ADAS control u	unit. Refer to <u>DAS-79, "Removal and Installa</u>	<u>tion"</u> .

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U1504 SIDE RDR L CAN 1

DTC Logic

INFOID:000000008235277

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1504 (151)	SIDE RDR L CAN CIR 1	ADAS control unit detects an error signal that is 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 <u>DAS-745</u>, "ADAS CONTROL UNIT : <u>DTC Logic</u>" for DTC "U1000".

• Refer to <u>DAS-772, "DTC Logic"</u> for DTC "U1508".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1504" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1504" detected as the current malfunction?

- YES >> Refer to DAS-768, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000008235278

1.CHECK SELF-DIAGNOSIS RESULTS

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

Is "U1000" or "U1508" detected?

YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

YES-2 >> U1508 detected: Refer to DAS-772, "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-514. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</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:000000008235279

DTC DETECTION LOGIC В DTC (On board dis-Trouble diagnosis name DTC detecting condition Possible causes play) U1505 ADAS control unit detects an error signal that is re-SIDE RDR R CAN CIR 2 Side radar RH (152) ceived from side radar RH via ITS communication D NOTE: If DTC "U1505" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507". • Refer to DAS-745, "ADAS CONTROL UNIT : DTC Logic" for DTC "U1000". Е • Refer to DAS-771, "DTC Logic" for DTC "U1507". DTC CONFIRMATION PROCEDURE **1.**PERFORM DTC CONFIRMATION PROCEDURE F 1. Start the engine. 2. Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. G 3. Check if the "U1505" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 4. Is "U1505" detected as the current malfunction? Н >> Refer to DAS-769. "Diagnosis Procedure". YES >> Refer to GI-53, "Intermittent Incident". NO **Diagnosis** Procedure INFOID:00000008235280 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" or "U1507" is detected other than "U1505" in "Self Diagnostic Result" of "ICC/ADAS". J Is "U1000" or "U1507" detected? YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-745, "ADAS CONTROL UNIT : DTC Logic". Κ YES-2 >> U1507 detected: Refer to DAS-772, "DTC Logic". >> GO TO 2. NO 2.CHECK SIDE RADAR RH SELF-DIAGNOSIS RESULTS L Check if any DTC is detected in "Self Diagnostic Result" of "SIDE RADAR RIGHT". Is any DTC detected? Μ >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to YES DAS-516, "DTC Index". NO >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". Ν

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U1506 SIDE RDR R CAN 1

DTC Logic

INFOID:000000008235281

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DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1506 (153)	SIDE RDR R CAN CIR 1	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1506" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507". • Refer to <u>DAS-745</u>, "ADAS CONTROL UNIT : <u>DTC Logic</u>" for DTC "U1000".

• Refer to <u>DAS-772, "DTC Logic"</u> for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1506" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1506" detected as the current malfunction?

- YES >> Refer to DAS-768, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000008235282

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1506" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

YES-2 >> U1507 detected: Refer to DAS-772, "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 <u>DAS-516. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1507 LOST COMM(SIDE RDR R)

< DTC/CIRCUIT DIAGNOSIS >

U1507 LOST COMM(SIDE RDR R)

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1507 (154)	LOST COMM(SIDE RDR R)	ADAS control unit cannot receive ITS commu- nication signal from side radar RH for 2 sec- onds or more	 Side radar RH right/left switching signal circuit ITS communication system Side radar RH
NOTE: DTC "U1507"	is detected along with	DTC "U1000", first diagnose the DTC "	U1507".
DTC CONFI	RMATION PROCED	URE	
1.PERFORM	I DTC CONFIRMATIO	N PROCEDURE	
2. Turn the 3. Perform " 4. Check if t <u>Is "U1507" de</u> YES >> R NO >> R Diagnosis	Blind Spot Intervention All DTC Reading" with the "U1507" is detected tected as the current n tefer to <u>DAS-771, "Diac</u> tefer to <u>GI-53, "Intermit</u> Procedure	system ON. CONSULT. d as the current malfunction in "Self Dia <u>s</u> <u>nalfunction?</u> <u>gnosis Procedure"</u> . <u>ttent Incident"</u> .	gnostic Result" of "ICC/ADAS".
1.CHECK R	GHT/LEFT SWITCHIN	IG SIGNAL CIRCUIT	
Check right/le	ft switching signal circ	uit. Refer to DAS-787, "Diagnosis Proce	edure".
Is the inspect	ion result normal?		
YES >> P	erform the CAN com	nunication system inspection. Repair of	replace the malfunctioning parts.
NO >> R	epair right/left switchin	ng signal circuit.	

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[BCI]

A INFOID:000000008235283

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U1508 LOST COMM(SIDE RDR L)

< DTC/CIRCUIT DIAGNOSIS >

U1508 LOST COMM(SIDE RDR L)

DTC Logic

INFOID:000000008235285

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1508 (155)	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 connectorITS communication systemSide radar LH

NOTE:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1508" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1508" detected as the current malfunction?

YES >> Refer to <u>DAS-772</u>, "Diagnosis Procedure".

NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000008235286

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-22, "Trouble Diagnosis Flow Chart"</u>.
- NO >> Repair the terminal or connector.

U1512 HVAC CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U1512 HVAC CAN 3

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1512 (162)	HVAC CAN CIRC 3	ADAS control unit detects an error signal that is received from A/C auto amp. via CAN communication	A/C auto amp.
NOTE: If DTC "U151: "ADAS CONTI	2" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the I <u>c"</u> .	DTC "U1000". Refer to <u>DAS-745.</u>
DTC CONFIF	RMATION PROCED	URE	
1. PERFORM	DTC CONFIRMATIO	N PROCEDURE	
1 Start the e			-
2. Turn the E 3. Perform "A 4. Check if the full of th	Blind Spot Intervention All DTC Reading" with ne "U1512" is detected ected as the current n	system ON. CONSULT. I as the current malfunction in "Self Diag nalfunction?	gnostic Result" of "ICC/ADAS".
YES >> R	efer to DAS-773 "Dia	anosis Procedure"	
NO >> Re	efer to <u>GI-53, "Intermit</u>	tent Incident".	
Diagnosis F	Procedure		INFOID:00000008235288
1.CHECK SE	LF-DIAGNOSIS RES	ULTS	
Check if "U100	00" is detected other th	nan "U1512" in "Self Diagnostic Result"	of "ICC/ADAS".
<u>ls "U1000" det</u>	ected?		
YES >> Pe Re	erform the CAN commeter to DAS-745, "ADA	nunication system inspection. Repair or <u>AS CONTROL UNIT : DTC Logic"</u> .	replace the malfunctioning parts.
NO >> G	O TO 2.		
CHECK A/	C AUTO AMP. SELF-D	DIAGNOSIS RESULTS	
Check if any D	TC is detected in "Se	If Diagnostic Result" of "HVAC".	
ls any DTC de	tected?		
YES >> Pe <u>H</u> /	erform diagnosis on th AC-44, "DTC Index".	ne detected DTC and repair or replace	the malfunctioning parts. Refer to
NO >> Re	eplace the ADAS cont	rol unit. Refer to <u>DAS-79, "Removal and</u>	d Installation".

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INFOID:000000008235287

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U1513 METER CAN 3

DTC Logic

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1513 (163)	METER CAN CIRC 3	ADAS control unit detects an error signal that is received from combination meter via CAN communication	Combination meter

NOTE:

If DTC "U1513" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1513" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1513" detected as the current malfunction?

- YES >> Refer to DAS-774, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:000000008235290

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1513" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK COMBINATION METER SELF-DIAGNOSIS RESULTS

Check if any DTC is detected in "Self Diagnostic Result" of "METER/M&A".

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>MWI-25, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1514 STRG SEN CAN 3

DTC detecting condition

ADAS control unit detects an error signal that is

received from steering angle sensor via CAN

If DTC "U1514" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-745.

communication

< DTC/CIRCUIT DIAGNOSIS >

DTC DETECTION LOGIC

U1514 STRG SEN CAN 3

Trouble diagnosis name

STRG SEN CAN CIRC 3

DTC Logic

DTC (On board dis-

play)

U1514

(164)

NOTE:

INFOID:000000008235291 Possible causes

Steering angle sensor

ADAS CONTROL UNIT . DTC LOGIC
DTC CONFIRMATION PROCEDURE
1.PERFORM DTC CONFIRMATION PROCEDURE
 Start the engine. Turn the Blind Spot Intervention system ON. Perform "All DTC Reading" with CONSULT. Check if the "U1514" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". <u>Is "U1514" detected as the current malfunction?</u> YES >> Refer to <u>DAS-775, "Diagnosis Procedure"</u>. NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.
Diagnosis Procedure
1.CHECK SELF-DIAGNOSIS RESULTS
Check if "U1000" is detected other than "U1514" in "Self Diagnostic Result" of "ICC/ADAS".
Is "U1000" detected?
 YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "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-45, "DTC Index"</u> .
NO >> Replace the ADAS control unit. Refer to DAS-79. "Removal and Installation".

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U1516 CAM CAN 3

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1516 (166)	CAM CAN CIRC 3	ADAS control unit detects an error signal that is received from lane camera unit via ITS com- munication	Lane camera unit

NOTE:

If DTC "U1516" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1516" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1516" detected as the current malfunction?

- YES >> Refer to DAS-776, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:00000008235294

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1516" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK LANE CAMERA UNIT SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-519. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1518 SIDE RDR L CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U1518 SIDE RDR L CAN 3

DTC Logic

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INFOID:000000008235295

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1518 (168)	SIDE RDR L CAN CIRC 3	ADAS control unit detects an error signal that is re- ceived from side radar LH via ITS communication	Side radar LH
NOTE: If DTC "U1518 • Refer to DA • Refer to DA	8" is detected along with D <u>S-745, "ADAS CONTROL</u> <u>S-772, "DTC Logic"</u> for D1	TC "U1000", or "U1508", first diagnose the I <u>UNIT : DTC Logic"</u> for DTC "U1000". ⁻ C "U1508".	DTC "U1000" or "U1508".
DTC CONFI	RMATION PROCEDUR	E	
1.PERFORM	I DTC CONFIRMATION P	ROCEDURE	
1. Start the e 2. Turn the E 3. Perform ". 4. Check if t Is "U1518" de YES >> R NO >> R	engine. Blind Spot Intervention sys All DTC Reading" with CC he "U1518" is detected as tected as the current malfu efer to <u>DAS-777, "Diagnor</u> efer to <u>CL53</u> , "Intermitten	tem ON. NSULT. the current malfunction in "Self Diagnostic F <u>unction?</u> sis Procedure".	Result" of "ICC/ADAS".
Diagnosis I	Procedure	<u>indicitt</u> .	INECID-0000008235386
1. снеск se	ELF-DIAGNOSIS RESULT	S	W CD_000000000000000000000000000000000000
Check if "U10 Is "U1000" or	00" or "U1508" is detected "U1508" detected?	other than "U1518" in "Self Diagnostic Resu	ult" of "ICC/ADAS".
YES-1 >> U fu YES-2 >> U NO >> G	1000 detected: Perform the inctioning parts. Refer to 1508 detected: Refer to GO TO 2.	ne CAN communication system inspection. I DAS-745, "ADAS CONTROL UNIT : DTC Log AS-777, "DTC Logic".	Repair or replace the mal- <u>gic"</u> .
2.CHECK SI	DE RADAR LH SELF-DIA	GNOSIS RESULTS	
Check if any D	DTC is detected in "Self Di	agnostic Result" of "SIDE RADAR LEFT".	
Is any DTC de	etected?		
YES >> P	erform diagnosis on the d AS-514, "DTC Index".	etected DTC and repair or replace the malf	unctioning parts. Refer to
NU >> R	eplace the ADAS control t	Init. Refer to <u>DAS-79, Removal and Installa</u>	<u>llion</u> .

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U1519 SIDE RDR R CAN 3

< DTC/CIRCUIT DIAGNOSIS >

U1519 SIDE RDR R CAN 3

DTC Logic

INFOID:000000008235297

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1519 (169)	SIDE RDR R CAN CIRC 3	ADAS control unit detects an error signal that is re- ceived from side radar RH via ITS communication	Side radar RH

NOTE:

If DTC "U1519" is detected along with DTC "U1000", or "U1507", first diagnose the DTC "U1000" or "U1507". • Refer to <u>DAS-745</u>, "ADAS CONTROL UNIT : <u>DTC Logic</u>" for DTC "U1000".

• Refer to <u>DAS-771, "DTC Logic"</u> for DTC "U1507".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1519" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1519" detected as the current malfunction?

- YES >> Refer to <u>DAS-771, "DTC Logic"</u>.
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:00000008235298

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" or "U1507" is detected other than "U1519" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" or "U1507" detected?

YES-1 >> U1000 detected: Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

YES-2 >> U1507 detected: Refer to DAS-771, "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 <u>DAS-516. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1521 SONAR CHECKSUM

< DTC/CIRCUIT DIAGNOSIS >

U1521 SONAR CHECKSUM

DTC Logic

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INFOID:000000008376860

DTC DETECTION LOGIC		
DTC (On board dis- play)	me DTC detecting condition	Possible causes
U1521 SONAR CHECKSUN (177) ABNORMALITY	ADAS control unit detects an error signal that is received from sonar control unit via CAN communication	Sonar control unit
NOTE: If DTC "U1521" is detected alou "ADAS CONTROL UNIT : DTC L	ng with DTC "U1000", first diagnose the l	DTC "U1000". Refer to <u>DAS-745.</u>
DTC CONFIRMATION PROC	EDURE	
1.PERFORM DTC CONFIRMA	TION PROCEDURE	
 Start the engine. Turn the Backup Collision In Perform "All DTC Reading" v Check if the "U1521" is detected as the curre YES >> Refer to DAS-779, " 	tervention system ON. with CONSULT. cted as the current malfunction in "Self Diag nt malfunction? Diagnosis Procedure".	gnostic Result" of "ICC/ADAS".
Diagnosis Procedure	innitent incident.	INFOID:00000008376861
1.CHECK SELF-DIAGNOSIS R	ESULTS	
Check if "U1000" is detected othe	er than "U1521" in "Self Diagnostic Result"	of "ICC/ADAS".
Is "U1000" detected?		
YES >> Perform the CAN co Refer to <u>DAS-745, "/</u> NO >> GO TO 2.	ommunication system inspection. Repair or ADAS CONTROL UNIT : DTC Logic ["] .	r replace the malfunctioning parts.
2.check sonar system se	ELF-DIAGNOSIS RESULTS	
Check if any DTC is detected in '	Self Diagnostic Result" of "SONAR".	
Is any DTC detected?		
YES >> Perform diagnosis o	n the detected DTC and repair or replace.	
NO >> Replace the ADAS of	ex. control unit. Refer to DAS-79, "Removal and	the malfunctioning parts. Refer to

U1522 SONAR MESSAGE

DTC Logic

[BCI]

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1522 (178)	SONAR MESSAGE AB- NORMALITY	ADAS control unit detects an error signal that is received from sonar control unit via CAN communication	Sonar control unit

NOTE:

If DTC "U1522" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Backup Collision Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U1522" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1522" detected as the current malfunction?

- YES >> Refer to DAS-780, "Diagnosis Procedure".
- NO >> Refer to <u>GI-53, "Intermittent Incident"</u>.

Diagnosis Procedure

INFOID:000000008376859

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1522" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK SONAR SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-676. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1523 SONAR CAN DLC

< DTC/CIRCUIT DIAGNOSIS >

U1523 SONAR CAN DLC

DTC Logic

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INFOID:000000008376852

DTC DETECTION LOGIC В DTC (On board dis-Trouble diagnosis name DTC detecting condition Possible causes play) ADAS control unit detects an error signal that is U1523 SONAR CAN DLC ABreceived from sonar control unit via CAN com-Sonar control unit (179)NORMALITY D munication NOTE: If DTC "U1523" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS-745. E "ADAS CONTROL UNIT : DTC Logic". DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE F 1. Start the engine. 2. Turn the Backup Collision Intervention system ON. Perform "All DTC Reading" with CONSULT. 3. G Check if the "U1523" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS". 4. Is "U1523" detected as the current malfunction? Н YES >> Refer to DAS-781, "Diagnosis Procedure". >> Refer to GI-53, "Intermittent Incident". NO Diagnosis Procedure INFOID:00000008376853 1.CHECK SELF-DIAGNOSIS RESULTS Check if "U1000" is detected other than "U1523" in "Self Diagnostic Result" of "ICC/ADAS". Is "U1000" detected? YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to DAS-676, "DTC Index". Κ NO >> GO TO 2. 2.CHECK SONAR SELF-DIAGNOSIS RESULTS Check if any DTC is detected in "Self Diagnostic Result" of "SONAR". Is any DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to Μ DAS-676, "DTC Index". >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". NO Ν

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U1524 AVM CAN DLC

DTC Logic

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1524 (180)	AVM CAN DLC ABNOR- MALITY	ADAS control unit detects an error signal that is received from AVM via CAN communication	AVM control unit

NOTE:

If DTC "U1524" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>DAS-745.</u> "ADAS CONTROL UNIT : DTC Logic".

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Turn the Blind Spot Intervention system ON.
- 3. Perform "All DTC Reading" with CONSULT.

4. Check if the "U1524" is detected as the current malfunction in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1524" detected as the current malfunction?

- YES >> Refer to DAS-782, "Diagnosis Procedure".
- NO >> Refer to GI-53, "Intermittent Incident".

Diagnosis Procedure

INFOID:00000008376855

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U1524" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-745, "ADAS CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

2. CHECK SONAR SELF-DIAGNOSIS RESULTS

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

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-676. "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

U1525 AVM MESSAGE

DTC Logic

DTC DETECTION LOGIC

DTC (On board dis- play)	Trouble diagnosis name	DTC detecting condition	Possible causes
U1525 (181)	AVM MESSAGE AB- NORMALITY	ADAS control unit detects an error signal that is received from AVM via CAN communication	AVM control unit
NOTE: If DTC "U152: "ADAS CONT	5" is detected along v ROL UNIT : DTC Logi	with DTC "U1000", first diagnose the I <u>c"</u> .	DTC "U1000". Refer to <u>DAS-745.</u>
DTC CONFIF 1 .perform	RMATION PROCED	URE N PROCEDURE	
1.Start the e2.Turn the E3.Perform "/4.Check if the theta is theta is the theta is the theta is the theta is the theta i	engine. Backup Collision Interv All DTC Reading" with ne "U1525" is detected ected as the current n	rention system ON. CONSULT. I as the current malfunction in "Self Diag nalfunction?	gnostic Result" of "ICC/ADAS".
YES >> Re NO >> Re	efer to <u>DAS-783, "Diac</u> efer to <u>GI-53, "Intermit</u>	<u>gnosis Procedure"</u> . <u>tent Incident"</u> .	
Diagnosis F	Procedure		INFOID:00000008376863
1. CHECK SE	LF-DIAGNOSIS RES	ULTS	
Check if "U100 Is "U1000" det	00" is detected other the cted?	nan "U1525" in "Self Diagnostic Result"	of "ICC/ADAS".
YES >> Pe Re	erform the CAN comme efer to <u>DAS-745, "ADA</u>	nunication system inspection. Repair or AS CONTROL UNIT : DTC Logic".	replace the malfunctioning parts.
2.CHECK SC	NAR SELF-DIAGNO	SIS RESULTS	
Check if any D Is any DTC de	TC is detected in "Sel tected?	If Diagnostic Result" of "AVM".	
YES >> Pe <u>D</u> NO >> Re	erform diagnosis on th <u>AS-676, "DTC Index"</u> . eplace the ADAS cont	ne detected DTC and repair or replace rol unit. Refer to <u>DAS-79, "Removal and</u>	the malfunctioning parts. Refer to <u>d Installation"</u> .

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INFOID:000000008376862

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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 ADAS CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between ADAS control unit harness connector and ground.

	Terminal	Condition			
(+)	(-)	Condition	Voltage	
ADAS co	ontrol unit	-	Ignition	(Approx.)	
Connector	Terminal		switch		
	Ground		OFF	0 V	
B104	16		ON	Battery volt- age	

Is the inspection result normal?

YES >> GO TO 2.

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

2. CHECK ADAS CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.

- 2. Disconnect the ADAS control unit connector.
- 3. Check for continuity between ADAS control unit harness connector and ground.

ADAS co	ontrol unit		Continuity
Connector	Terminal	Ground	Continuity
B104	B104 6		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the ADAS control unit ground circuit.

SIDE RADAR LH

SIDE RADAR LH : Diagnosis Procedure

1.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect the side radar LH connector.

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

	Terminals		Condition	Voltage		
(+)	(-)	Condition			
Side radar LH			Ignition switch	(Approx.)		
Connector	Terminal	Ground	Ignition Switch			
D/16	5	Ground	OFF	0 V		
5410			ON	Battery voltage		

Is the inspection result normal?

YES >> GO TO 2.

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

2. CHECK GROUND CIRCUIT

Check continuity between side radar LH harness connectors and ground.

DAS-784

INFOID:000000008235302

INFOID:00000008235301

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BCI]

S	ide radar LH			Continuity		
Connecto	or Te	rminal	Ground	Continuity		
B416		2		Existed		
ls the inspe	ection resul	t normal?				
YES >> NO >> SIDE RA	INSPECT Repair the DAR RI	ION END e side rad H) lar LH ground c	ircuit.		
SIDE RA	DAR RH	I : Diag	nosis Proce	dure	INFOID:00000008235303	
1.снеск	POWER S		CIRCUIT			
1. Turn ig 2. Discon 3. Check	nition swite nect the sid voltage be	ch OFF. de radar I tween sid	RH connector. le radar RH har	ness connecto	r and ground.	
	Terminals					
(+	-)	(-)	- Condition	Voltage		
Side ra	dar RH		Ignition owitch	(Approx.)		
Connector	Terminal	Ground	Ignition switch			
B81	5	Ground	OFF	0 V		
DOT	0		ON	Battery voltage		
YES >> NO >> 2.CHECK	 GO TO 2. Repair the GROUND 	e side rad CIRCUIT	lar RH power si	upply circuit.		
Sheck cont	linuity betw	een side	radar RH harne	ess connectors	and ground.	
S	ide radar RH					
Connecto	or Te	rminal	Ground	Continuity		
B81		2		Existed		
s the inspe	ection resul	t normal?)			
YES >>	INSPECT)	,		
	Repair the ΔΜΕΡΔ	e side rad	iar RH ground o	circuit.		
		UNIT : I	Diagnosis P	rocedure	INFOID-000008235304	
1.снеск	LANE CAN	MERA UN	NIT POWER SU	JPPLY CIRCUI	Г	
Check volta	age betwee	en lane ca	amera unit harn	ess connector	and ground.	
	5				5	
	Termina	I	Conditio	2		
	(+)	(-	-)	Voltage		
Lane c	amera unit		Ignition	(Approx.)		
Connector	Termina	I	switch			
_		Gro	und OFF	0 V		
R5	7			Battery volt-		

Is the inspection result normal?

Revision: March 2012

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ON

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 2.

NO >> Repair the lane camera unit power supply circuit.

$2. {\sf CHECK} {\sf LANE} {\sf CAMERA} {\sf UNIT} {\sf GROUND} {\sf CIRCUIT}$

- 1. Turn the ignition switch OFF.
- 2. Disconnect the lane camera unit connector.

3. Check for continuity between lane camera unit harness connector and ground.

Lane ca	mera unit		Continuity
Connector	Terminal	Ground	Continuity
DE	1	Ground	Existed
13	5		LAISted

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Repair the lane camera unit ground circuit.

RIG	HT/LEFT S	WITCHING	SIGNAL CIRCUIT	
< DTC/CIRCUIT DIAGNOSIS	>			[BCI]
RIGHT/LEFT SWITCH	HING SIGN	VAL CIRCU	JIT	۵
Diagnosis Procedure				INFOID:00000008235305
1.CHECK CONNECTOR				Е
 Turn the ignition switch OF Check the terminals and connector side). 	F. onnectors of th	e side radar R⊦	I for damage, bend and shc	rt (unit side and con-
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the terminal? 2 OUTO 2.	l or connector.			D
2.CHECK CONTINUITY RIGH	HT/LEFT SWIT	CHING SIGNAI		
 Disconnect side radar RH Check continuity between 	side radar RH I	narness connec	tors and ground.	E
Side radar RH Connector Terminal	Ground	Continuity		F
B81 1		Existed	-	
Is the inspection result normal? YES >> INSPECTION END NO >> Repair barness or	<u>?</u>) connector			G
				Н
				J
				K
				L
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WARNING SYSTEMS SWITCH CIRCUIT

Component Function Check

1.CHECK BCI SYSTEM SWITCH INPUT SIGNAL

1. Turn the ignition switch ON.

2. Select the DATA MONITOR item "BCI SYS SW" of "ICC/ADAS" with CONSULT.

3. With operating the warning systems switch, check the monitor status.

Monitor item	Condition	Monitor status
BCI SW	BCI switch is pressed	On
DCI SW	BCI switch is not pressed	OFF

Is the inspection result normal?

YES >> Warning systems switch circuit is normal.

NO >> Refer to <u>DAS-788, "Diagnosis Procedure"</u>.

Diagnosis Procedure

INFOID:000000008235307

Regarding Wiring Diagram information, refer to DAS-685. "Wiring Diagram".

1. CHECK BCI OFF SWITCH SIGNAL INPUT

- 1. Turn the ignition switch ON.
- 2. Check voltage between ADAS control unit harness connector and ground.

	Terminals	Condition		
(+)	(-)	Condition	Voltage
ADAS control unit			BCI OFF	(Approx.)
Connector	Terminal	Ground	switch	
B104	B104 10		Pressed	0 V
5104	10		Released	12 V

Is the inspection result normal?

YES >> Replace the ADAS control unit. Refer to <u>DAS-79</u>, "Removal and Installation".

NO >> GO TO 2.

2. CHECK BCI OFF SWITCH

- 1. Turn ignition switch OFF.
- 2. Remove BCI OFF switch.

3. Check BCI OFF switch. Refer to DAS-789, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the BCI OFF switch.

3. CHECK BCI OFF SWITCH GROUND CIRCUIT

Check continuity between BCI OFF switch harness connector terminal and the ground.

BCI OF	F switch		Continuity
Connector Terminal		Ground	Continuity
M27 2			Yes

Is the inspection result normal?

YES >> GO TO 4.

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INFOID:00000008235306

		WARN	ING SYS	TEMS SV	/ITCH CIRCUIT
< DTC/CIR(CUIT DIAGN	NOSIS >			[BCI]
NO >>	Repair harn	ess or conne	ector.		
4.CHECK	BCI OFF SW	ITCH SIGN	AL INPUT C	CIRCUIT FOR	COPEN
 Disconr Check of tor. 	nect the ADA continuity bel	S control un tween the AI	it connector DAS control	: unit harness	connector and BCI OFF switch harness connec-
ADAS co	ontrol unit	BCI OF	F switch	0 // //	•
Connector	Terminal	Connector	Terminal	- Continuity	
B104	10	M27	6	Yes	
s the inspec	ction result n	ormal?	I		
YES >>	GO TO 5.				
NO >>	Repair the h	arnesses or	connectors		
D. CHECK E	BCI OFF SW	ITCH SIGN	AL INPUT C	CIRCUIT FOR	SHORT
Check conti	nuity betwee	n the ADAS	control unit	harness con	nector and ground.
ADA	S control unit			Continuity	
Connector	Termi	nal G	Fround		
B104	10			No	
<u>s the inspec</u> YES >> NO >>	<u>ction result n</u> Replace the Repair the h	ormal? ADAS contr arnesses or	ol unit. Refe connectors	er to <u>DAS-79</u>	"Removal and Installation".
Compone	ent Inspec	tion			INFOID:000000008235308
1					
I.CHECK	BCI OFF SW	/ITCH			
Check conti	nuity of BCI	OFF switch.			
T				0	
Ierminai				Continuity	
2 6	When BCI OF	-F switch is pre	ssed	Yes	
a tha increas			aseu	INU	,
	Inspection F	onnar <u>(</u> Ind			
NO >>	Replace wa	rning system	is switch.		
		• •			

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BACKUP COLLISION INTERVENTION SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS BACKUP COLLISION INTERVENTION SYSTEM SYMPTOMS

Symptom Table

INFOID:000000008235314

CAUTION:

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

NOTE:

Refer to the following the operation condition of the Backup Collision Intervention system.

Backup Collision Intervention system: DAS-642, "System Description".

Sympt	om	Possible cause	Inspection item/Reference page
	Backup Collisiont Interven- tion ON indicator (Green) does not illuminate	 Backup Collision Intervention ON indicator lamp signal (CAN) Combination meter ADAS control unit Backup Collision Intervention ON indicator (combination meter) 	 ADAS control unit Active test "BCI ON INDICATOR". Refer to <u>DAS-26</u>, "CONSULT <u>Function (ICC/ADAS)"</u>. ADAS control unit Data moni- tor "BCI WARN LMP". Refer to <u>DAS-26</u>, "CONSULT <u>Function (ICC/ADAS)"</u> Combination meter Data mon- itor "BCI W/L"" Refer to <u>MWI-17</u>, "CONSULT <u>Function (METER/M&A)"</u>
Indicator/warning lamps do not il- luminate when ignition switch OFF \Rightarrow ON.	 All of indicator/warning lamps do not illuminate; Backup Collision Interven- tion warning lamp Backup Collision Interven- tion ON indicator Warning systems ON indi- cator 	 Power supply and ground circuit of ADAS control unit ADAS control unit Combination meter 	Power supply and ground circuit of ADAS control unit. Refer to DAS-78, "Diagnosis Procedure"
	Backup Collision Interven- tion indicator does not turn ON	 Harness between side radar and Backup Collision Inter- vention indicator Side radar LH/RH Backup Collision Intervention indicator 	Perform self-diagnosis of side ra- dar. Refer to <u>DAS-665</u> , "CON- <u>SULT Function (SIDE RADAR</u> <u>LEFT)</u> " or <u>DAS-666</u> , "CONSULT <u>Function (SIDE RADAR</u> <u>RIGHT)</u> ".
	Buzzer is not sounding	 Buzzer power supply circuit. Harness between sonar control unit and sonar buzzer Harness between sonar buzzer and ground. Sonar buzzer Sonar control unit 	Refer to sonar buzzer for repair <u>AV-488, "DTC Index"</u>

BCI SYSTEM DOES NOT ACTIVATE

< SYMPTOM DIAGNOSIS > [B	CI]
BCI SYSTEM DOES NOT ACTIVATE	
Description	3235315
 The switch does not turn ON When the Backup Collision Intervention system setting is ON, the Backup Collision Intervention ON indicators does not illuminate even if the BCI OFF switch is depressed. 	ator
 The switch does not turn OFF The Backup Collision Intervention ON indicator does not turn off even if the BCI OFF switch is pressed w the Backup Collision Intervention ON indicator illuminates. 	hen
Diagnosis Procedure	3235316
1. CHECK BACKUP COLLISION INTERVENTION SYSTEM SETTING	
 Start the engine. After starting the engine wait for 5 seconds or more. Check that Backup Collision Intervention system setting on the navigation screen is ON. <u>Backup Collision Intervention system setting ON?</u> 	
NO >> Enable the Backup Collision Intervention system setting. 2.BCI OFF SWITCH INSPECTION	
 Start the engine. Check that "BCI SW" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT. 	
YES >> GO TO 3. NO >> GO TO 5. 3. CHECK BACKUP COLLISION INTERVENTION ON INDICATOR CIRCUIT	
 Start the engine. Select the active test item "BSI ON IND" of "ICC/ADAS" with CONSULT. Check if the Backup Collision Intervention ON indicator illuminates when the test item is operated. <u>Is the inspection result normal?</u> YES >> GO TO 6. NO =>> GO TO 4. 	
1. PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER	
 Perform "All DTC Reading" with CONSULT. Check if the DTC is detected in self-diagnosis results of "METER/M&A". Refer to <u>MWI-25, "DTC Index</u> is the inspection result normal? YES >> GO TO 7. 	<u>.</u> .
NO >> GO TO 6. 5 CHECK STEEDING SWITCH CIDCUIT	
Check the steering switch circuit. Refer to AV-646. "Diagnosis Procedure"	
s the inspection result normal? YES >> GO TO 6. NO >> GO TO 7.	
6. PERFORM THE SELF-DIAGNOSIS	
 Perform "All DTC Reading" with CONSULT. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS". Refer to <u>DAS-48, "DTC Index"</u>. Is any DTC detected? 	

YES >> GO TO 7.

NO >> GO TO 8.

< SYMPTOM DIAGNOSIS >

7.REPAIR OR REPLACE MALFUNCTIONING PARTS.

Repair or replace malfunctioning parts.

>> GO TO 8.

 $8. {\sf CHECK \ BACKUP \ COLLISION \ INTERVENTION \ SYSTEM}$

- Erase "self-diagnosis result", and then perform "All DTC Reading" again after performing the action test. (Refer to <u>DAS-709</u>, "<u>Description</u>" for action test.)
- 2. Check that the Backup Collision Intervention system is normal.

>> Inspection End.
BCI SYSTEM SETTING CANNOT BE TURNED ON/OFF

< SYMPTOM DIAGNOSIS >

BCI SYSTEM SETTING CANNOT BE TURNED ON/OFF

А Description INFOID:00000008235317 BCI system setting is not selectable on the navigation screen. B Backup Collision Intervention system setting is not selectable on the navigation screen. NOTE: When the ignition switch is in ACC position, Backup Collision Intervention system settings cannot be changed. - "Backup Collision Intervention" is not indicated on the navigation screen. - The switching between ON and OFF cannot be performed by operating the navigation system. The item "Backup Collision Intervention" on the navigation screen is not active. The Backup Collision Intervention system setting differs from the one set at the previous driving. NOTE: Turn OFF the ignition switch and wait for 5 seconds or more. E **Diagnosis** Procedure INFOID:000000008235318 1. CHECK BACKUP COLLISION INTERVENTION SYSTEM SETTING F 1. Start the engine. Check that the Backup Collision Intervention system settings is selectable on the navigation screen. 2. Is the inspection result normal? YES >> GO TO 3. NO >> GO TO 2. 2. PERFORM THE SELF-DIAGNOSIS Н 1. Perform self-diagnosis with CONSULT. Check if the DTC is detected in self-diagnosis results of "ICC/ADAS", "MULTI AV" and "METER/M&A". 2. Refer to the following. ICC/ADAS: DAS-48, "DTC Index" MULTI AV: AV-464, "DTC Index" METER/M&A: MWI-25, "DTC Index" Is any DTC detected? YES >> Repair or replace malfunctioning parts. NO >> Inspection End. K 3 . CHECK DATA MONITOR OF ADAS CONTROL UNIT Check that "BCI SELECT" operates normally in "DATA MONITOR" of "ICC/ADAS" with CONSULT. Is the inspection result normal? YES >> Refer to DAS-25, "On Board Diagnosis Function". NO >> GO TO 4. Μ **4**.CHECK MULTIFUNCTION SWITCH Operate the multifunction switch to check that the audio, navigation system, and air conditioner operate prop-Ν erly. Is the inspection result normal? >> Replace the ADAS control unit. Refer to DAS-79, "Removal and Installation". YES DAS NO >> Repair or replace malfunctioning parts.

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[BCI]

NORMAL OPERATING CONDITION

Description

INFOID:000000008235319

[BCI]

BACKUP COLLISION INTERVENTION

- The Backup Collision Intervention system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When backing up. always look in the direction driver will move to ensure it is safe to proceed. Never rely solely on the Backup Collision Intervention system.
- Using the Backup Collision Intervention system under some road or weather condition could lead to improper system operation. Always rely on driver's own steering and braking operation to avoid accidents.
- The Backup Collision Intervention system may not provide a warning or brake control for vehicles that pass through the detection zone quickly.
- Do not use the Backup Collision Intervention system when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.
- The side radar may not be able to detect and activate Backup Collision Intervention when certain objects are present such as:
- Pedestrians, bicycles, animals.
- A vehicle passing at a speed greater than approximately 15 MPH (24km/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 brakes engaged by the BCI system is relatively weaker on a slope than flat ground. On a steep slope, the system may not function properly.
- Do not use the BCI system under the following conditions because the system may not function properly:
- When driving with a tire that is not the within normal tire condition (example: tire wear, low pressure, spare tire, chain, non-standard wheels).
- When the vehicle is equipped with non-original brake parts or suspension parts.

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 (gray circular) area, under repair.

SONAR HANDLING

- The four sonar sensors for Backup Collision Intervention system 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

< REMOVAL AND INSTALLATION > **REMOVAL AND INSTALLATION**

LANE CAMERA UNIT

Exploded View

INFOID:000000008317661

INFOID:000000008317662

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С D E (в) F 8.3 (0.85, 73) AT.OTA0043 <⊐ Front Н

- 1 Lane camera unit
- 2. Roof rail R Lane camera unit harness connector
- A. Lens cover

Removal and Installation

REMOVAL

1. Remove headlining assembly. Refer to INT-25, "Removal and Installation".

(1

- 2. Disconnect the lane camera unit harness connector from the lane camera unit. 3. Remove three lane camera bolts.
- Remove lane camera unit. 4.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- Remove the camera lens cover from the replacement lane camera unit before aiming.
- Do not drop or impact the lane camera unit.
- Perform additional service when replacing lane camera unit. Refer to <u>DAS-393, "Description"</u>.

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SIDE RADAR

Exploded View

INFOID:000000008317663

INFOID:00000008317664



- 1. Bracket
- 4. Body side LH
- 7. Side radar RH
- B. RH side
- ← Front

- Bracket
 Bracket
- 8. Body side RH
- C. Harness connector
- C. Harness connector
- 3. Side radar LH
- 6. Bracket
- A. LH side
- D. Harness connector

Removal and Installation

REMOVAL AND INSTALLATION

Removal

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



NOTE:

This illustration is an example.

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

Installation

< REMOVAL AND INSTALLATION >	[BCI]
Installation is in the reverse order of removal.	
Do not use the side radar if the lens has flaws.	
 Always lock the side radar connector (2). Do not touch the side radar lens and keep lens area clean. 	

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SONAR SENSOR

Removal and Installation

REAR SONAR SENSORS

Removal

- 1. Remove rear bumper fascia assembly. Refer to EXT-20, "Removal and Installation".
- 2. Press sonar sensor spring (
- 3. Remove the sonar sensor (1) from rear bumper (2) as shown (≤ 2).
- 4. Disconnect the harness connector from sonar sensor (1) and remove.



Installation

Installation is in the reverse order of removal.

CAUTION:

The connector direction is within $\pm 10^{\circ}$ from the horizontal position when assembling the bumper.

- (A) : Horizontal position
- (a) :10°



FRONT SONAR SENSORS

Removal

- 1. Remove front bumper fascia. Refer to EXT-17. "Removal and Installation".
- 2. Press sonar sensor spring (+).
- 3. Remove the sonar sensor (1) from front bumper (2) as shown (≤ 2) .
- 4. Disconnect harness connector from sonar sensor (1) and remove.



Installation Installation is in the reverse order of removal. CAUTION: INFOID:000000008317667

The connector direction is within $\pm 10^{\circ}$ from the horizontal position when assembling the bumper.

- (A) : Horizontal position
- (a) : 10°



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REAR CAMERA

Removal and Installation

REMOVAL

- 1. Remove back door outer upper finisher. Refer to EXT-41, "Removal and Installation".
- 2. Remove rear camera screws, then remove rear camera (1).



INSTALLATION Installation is in the reverse order of removal. **NOTE:**

Perform camera image calibration. Refer to <u>AV-547, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR): Work Procedure"</u>.

INFOID:000000008317668

BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

< REMOVAL AND INSTALLATION >

BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR

Exploded View

INFOID:00000008317665

[BCI]

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Installation

Installation is in the reverse order of removal.

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METER CONTROL SWITCH

Removal and Installation

The backup collision intervention (BCI) switch is serviced as part of the meter control switch. Refer to <u>MWI-94</u>, <u>"Removal and Installation"</u>.

INFOID:00000008272183

INSTLLATION Installation is in the reverse order of removal.

Removal and Installation

< REMOVAL AND INSTALLATION >

REMOVAL

BUZZER

- 1. Remove luggage side lower finisher (RH). Refer to <u>INT-29, "LUGGAGE SIDE LOWER FINISHER :</u> <u>Removal and Installation"</u>.
- 2. Disconnect harness connector (1) from the buzzer.
- 3. Remove buzzer screws (A), then remove buzzer (2).

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