SECTION DAS DRIVER ASSISTANCE SYSTEM

А

В

С

D

Ε

CONTENTS

PRECAUTIONS 5 Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-SIONER" SIONER" 5 Precautions For Harness Repair 5
SYSTEM DESCRIPTION6
COMPONENT PARTS
SYSTEM 7 System Description 7 Fail-safe (ADAS Control Unit) 9
DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)
ECU DIAGNOSIS INFORMATION17
ADAS CONTROL UNIT

(CONFIGURATION (ADAS CONTROL UNIT)34 Description	F
I	DTC/CIRCUIT DIAGNOSIS	G
(C1A00 CONTROL UNIT	Н
	C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2	
•	C1A03 VEHICLE SPEED SENSOR	K
	C1A13 STOP LAMP RELAY40 DTC Description40 Diagnosis Procedure41 Component Inspection46	L
(C1A14 ECM	N
	C1A17 ICC SENSOR49 DTC Description49 Diagnosis Procedure49	Ν
•	C1A34 COMMAND ERROR	DA
(C1B53 SIDE RADAR RIGHT MALFUNCTION51 DTC Description	F
(C1B54 SIDE RADAR LEFT MALFUNCTION52 DTC Description	

U0121 VDC CAN 2 DTC Description Diagnosis Procedure	53 53 53
U0235 ICC SENSOR CAN 1	55
DTC Description Diagnosis Procedure	55 55
U0401 ECM CAN 1 DTC Description Diagnosis Procedure	56 56
U0402 TCM CAN 1	58
DTC Description Diagnosis Procedure	58 58
U0415 VDC CAN 1	60
Diagnosis Procedure	60
U0433 DIST SEN CAN CIRC 2	62
Diagnosis Procedure	62 62
U1000 CAN COMM CIRCUIT	63
Description	63
DIC Description Diagnosis Procedure	63 64
U1321 CONFIGURATION	65
DTC Description Diagnosis Procedure	65 65
U1503 SIDE RDR L CAN 2	66
DTC Description Diagnosis Procedure	66 66
111504 SIDE RDR L CAN 1	68
DTC Description	68 68
U1505 SIDE RDR R CAN 2	70
DTC Description	70
Diagnosis Procedure	70
U1506 SIDE RDR R CAN 1	72
DTC Description Diagnosis Procedure	72 72
U1507 LOST COMM(SIDE RDR R)	74
DTC Description Diagnosis Procedure	74 74
U1508 LOST COMM(SIDE RDR L) DTC Description	75 75
Diagnosis Procedure	75
POWER SUPPLY AND GROUND CIRCUIT Diagnosis Procedure	77 77
REMOVAL AND INSTALLATION	78
ADAS CONTROL UNIT	78

PRECAUTION	79
PRECAUTIONS	79
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-	
SIONER"	79
Precautions For Harness Repair	79
ICC System Service	80
PFCW/FEB System Service	80
Blind Spot Warning/Rear Cross Traffic Alert (RC-	
TA) System Service	80
SYSTEM DESCRIPTION	81
COMPONENT DADTS	04
	81
	81
ICC Sensor	83
ICC Steering Switch	83
Brake Pedal Position Switch / Stop Lamp Switch	83
ICC Brake Hold Kelay	84
	84
	84
Side Kadar LH/KH	84
Biling Spot Warning Indicator LH/RH	84
SYSTEM	85
PFCW	85
PFCW : System Description	85
BSW	86
BSW : System Description	87
- ,	
RCTA	89
RCTA : System Description	89
Fail-safe (ADAS Control Unit)	90
Fail-safe	91
Fail-safe (Side Radar)	91
OPERATION	92
PFCW/FEB. BSW/RCTA	92
PFCW/FEB. BSW/RCTA : Switch Name and	
Function	92
	52
HANDLING PRECAUTION	93
Precautions for Predictive Forward Collision	
Warning	93
Precautions for Blind Spot Warning	93
Precautions for Rear Cross Traffic Alert	94
UNIT)	95
CONSULT Function (ICC/ADAS)	95
	104
	101
CONSULT Function (LASER/RADAR) 1	101
DIAGNOSIS SYSTEM (SIDE RADAR LH)	105

CONSULT Function (SIDE RADAR LEFT)	105
DIAGNOSIS SYSTEM (SIDE RADAR RH) CONSULT Function (SIDE RADAR RIGHT)	 106 106
ECU DIAGNOSIS INFORMATION	107
ADAS CONTROL UNIT	107
Reference Value	107
Fail-safe (ADAS Control Unit)	111
DTC Inspection Priority Chart	112
DIC Index	112
ICC SENSOR	114
Reference Value	114
Fail-safe	117
DTC Inspection Priority Chart	117
DTC Index	118
SIDE RADAR LH	120
Reference Value	120
Fail-safe (Side Radar)	121
DTC Inspection Priority Chart	121
	121
SIDE RADAR RH	122
Reference Value	122
Fail-safe (Side Radar)	123
DTC Inspection Priority Chart	123
	123
WIRING DIAGRAM	124
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS	124 124
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram	 124 124 124
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION	124 124 124 13 3
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW	124 124 124 133
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow	124 124 124 133 133 133
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow	124 124 133 133 133
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING	124 124 124 133 133 133
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description	124 124 124 133 133 136 136
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure	124 124 124 133 133 136 136 136 136
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description	124 124 124 133 133 133 136 136 136
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure ACTION TEST	124 124 124 133 133 136 136 136 136
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure ACTION TEST BLIND SPOT WARNING	124 124 124 133 133 136 136 136 137 137
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure ACTION TEST BLIND SPOT WARNING BLIND SPOT WARNING : Description	124 124 124 133 133 133 136 136 136 137 137 137
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure ACTION TEST BLIND SPOT WARNING BLIND SPOT WARNING : Description BLIND SPOT WARNING : Work Procedure	124 124 124 133 133 133 136 136 137 137 137 137
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure ACTION TEST BLIND SPOT WARNING BLIND SPOT WARNING : Description BLIND SPOT WARNING : Work Procedure RCTA	124 124 124 133 133 133 136 136 136 137 137 137 137
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure ACTION TEST BLIND SPOT WARNING BLIND SPOT WARNING : Description BLIND SPOT WARNING : Work Procedure RCTA RCTA	124 124 124 133 133 133 136 136 136 137 137 137 137 137 138
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram	124 124 124 133 133 133 136 136 136 137 137 137 137 138 138 138
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram	124 124 124 133 133 133 136 136 136 137 137 137 137 138 138
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description Work Procedure ACTION TEST BLIND SPOT WARNING BLIND SPOT WARNING : Description BLIND SPOT WARNING : Work Procedure RCTA RCTA : Description RCTA : Work Procedure DTC/CIRCUIT DIAGNOSIS	124 124 124 133 133 133 136 136 136 137 137 137 137 138 138 138
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS Wiring Diagram BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW Work Flow ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR Description	124 124 124 133 133 133 136 136 136 137 137 137 137 138 138 138 139 139
WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS	124 124 124 133 133 133 136 136 136 136 137 137 137 137 138 138 139 139 139

105	C1B51 BLIND SPOT WARNING INDICATOR	
106	SHORT CIRCUIT	A
106	DIC Description	
	Diagnosis Procedure	
107	C1B52 BLIND SPOT WARNING INDICATOR	В
107	OPEN CIRCUIT142	
107	DTC Description142	0
111	Diagnosis Procedure142	C
112	C1B55 RADAR BLOCKAGE144	
112	DTC Description144	D
114	Diagnosis Procedure144	
114	U0104 ADAS CAN 1 146	
117	DTC Description	E
117	Diagnosis Procedure	
118		
120	DTC Description 149	F
120	Diagnosis Procedure 148	
121		
121	U1000 CAN COMM CIRCUIT150	G
121	SIDE RADAR LH150	
122	SIDE RADAR LH : Description	
122	SIDE RADAR LH : DTC Description	
123	SIDE RADAR LH : Diagnosis Procedure150	
123	SIDE RADAR RH 151	
123	SIDE RADAR RH : Description	I
124	SIDE RADAR RH : DTC Description	
	SIDE RADAR RH : Diagnosis Procedure152	J.
124	LI1010 CONTROL LINIT (CAN) 153	0
124		
133	SIDE RADAR LH	K
422	SIDE RADAR LH : DEScription	
133	SIDE RADAR LH : Diagnosis Procedure 153	
155	SIDE TO LEAT ET L'Diagnosis Frocedure	L
IG	SIDE RADAR RH	
136	SIDE RADAR RH : Description	
136	SIDE RADAR RH : Diagnosis Procedure 154	N
130		
137	POWER SUPPLY AND GROUND CIRCUIT 155	N
137	SIDE RADAR LH155	IN
137	SIDE RADAR LH : Diagnosis Procedure155	
137	SIDE RADAR RH	DA
137	SIDE RADAR RH : Diagnosis Procedure	
138		
138	RIGHT/LEFT SWITCHING SIGNAL CIRCUIT. 157	Ρ
	Diagnosis Procedure157	
139	WARNING BUZZER CIRCUIT158	
139	Component Function Check158	
139	Diagnosis Procedure158	
139		

DRIVER ASSISTANCE SYSTEM SYMP-	160
Symptom Table	160
SYSTEM SETTINGS CANNOT BE TURNED	
ON/OFF ON THE INTEGRAL SWITCH	161
Description	161
Diagnosis Procedure	161
CHIME DOES NOT SOUND	162
Description	162
Diagnosis Procedure	162
FREQUENTLY CANNOT DETECT THE VEHI-	164
Description	164
Diagnosis Procedure	164
THE SYSTEM DOES NOT DETECT THE VE-	
HICLE AHEAD AT ALL	166
Description	166
Diagnosis Procedure	166

NORMAL OPERATING CONDITION	167 167
REMOVAL AND INSTALLATION	169
ICC SENSOR	 169
Exploded View	169
Removal and Installation	169
ICC STEERING SWITCH	 171
Exploded View	171
Removal and Installation	171
WARNING BUZZER	 173
Exploded View	173
Removal and Installation	173
SIDE RADAR	 174
Exploded View	174
Removal and Installation	174
BLIND SPOT WARNING INDICATOR	 175
Exploded View	175
Removal and Installation	175

< 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. 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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.
- Improper repair, 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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 or batteries, and wait at least three minutes before performing any service.

Precautions For Harness Repair

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

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

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



INFOID:000000012874217

• 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.

Revision: December 2015

SKIB8767E

A

Е

< SYSTEM DESCRIPTION > SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000012874218

INFOID:000000012874219



A. View with center console assembly removed.

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

ADAS Control Unit

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



< SYSTEM DESCRIPTION >

SYSTEM

System Description

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		e	Description	
		Closed throttle positi	on signal	Receives idle position state (ON/OFF).	
		Accelerator pedal position signal		Receives accelerator pedal position (angle).	N
		ICC prohibition signal		Receives an operable/inoperable state of the ICC system.	
		Engine speed signal		Receives engine speed.	N
	CAN com- munica- tion	CAN com- munica- tion ICC steering switch signal Stop lamp switch sig	MAIN switch signal	Receives the operational state of the ICC steering switch.	
ECM			SET/ - switch sig- nal		DA
2011			CANCEL switch sig- nal		P
			RES/ + switch sig- nal		I
			DISTANCE switch signal		
			nal	Receives an operational state of the brake pedal.	
		Brake pedal position	switch signal	Receives an operational state of the brake pedal.	

[ADAS CONTROL UNIT]

INFOID:000000012874220

А

В

F

SYSTEM

[ADAS CONTROL UNIT]

< 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 select lever position.
		Output shaft revolution signal	Receives the number of revolutions of output shaft.
ABS actuator	CAN com-	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels.
and electric unit (control unit)	munica- tion	Yaw rate signal	Receives yaw rate acting on the vehicle.
、		Stop lamp switch signal	Receives an operational state of the brake pedal.
	CAN com	Parking brake switch signal	Receives an operational state of the parking brake.
Combination meter	munica- tion	System selection signal	Receives a selection state of each item in "Driving Aids" selected with the integral switch of the information display.
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.
		Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor
Steering angle sensor	CAN com- munica- tion	Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel.
		Steering angle speed signal	Receives the turning angle speed of the steering wheel.
ICC sensor	ITS com- munica- tion	ICC Sensor signal	Receives detection results, such as the presence or ab- sence of a leading vehicle and distance from the vehicle.
Side radar LH, RH	ITS com- munica- tion	Vehicle detection signal	Receives vehicle detection condition of detection zone.

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.
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

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

Reception unit		Signal na	me	Description
			Vehicle ahead detec- tion indicator signal	
			Set vehicle speed indi- cator signal	
			Set distance indicator signal	
		Meter display	SET switch indicator signal	Transmits a signal to display a state of the system on
Combination meter	CAN commu- nication	signal	ON/OFF switch indica- tor signal	the information display.
meter			FEB system display signal	
			PFCW system display signal	
			BSW system display signal	
		FEB warning la	mp signal	 Transmits a signal to turn ON the lamp. Transmits an ON/OFF state of the Forward Emergency Brake.
ICC sensor	ITS commu- nication	ADAS control st	tatus	Transmits ADAS status.
		Vehicle speed s	ignal	Transmits a vehicle speed calculated by the ADAS control unit.
Side radar LH, RH	ITS commu- nication	Blind Spot Warning indicator signal		Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator.
		Blind Spot Warr nal	ning indicator dimmer sig-	Transmits a Blind Spot Warning indicator dimmer sig- nal to dimmer Blind Spot Warning indicator.
ICC brake hold relay	ICC brake hold	d relay drive signa	al	Activates the brake hold relay and turns ON the stop lamp.

DESCRIPTION

- ADAS^{*} control unit controls the following systems based on ITS communication signal and CAN communication signal from each control unit.
 NOTE:
 - *: Advanced Driver Assistance Systems
- Intelligent Cruise Control (ICC)
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

System	Reference	
Intelligent Cruise Control (ICC)	CCS-11. "System Description"	N
Forward Emergency Braking (FEB)	BRC-187. "System Description"	
Predictive Forward Collision Warning (PFCW)	DAS-85, "PFCW : System Description"	
Blind Spot Warning (BSW)	DAS-87, "BSW : System Description"	DAS
Rear Cross Traffic Alert (RCTA)	DAS-89. "RCTA : System Description"	

Fail-safe (ADAS Control Unit)

INFOID:000000012874221

L

Μ

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

SYSTEM

< SYSTEM DESCRIPTION >

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

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

CONSULT Function (ICC/ADAS)

APPLICATION ITEMS

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

Diagnosis mode	Description	(
Configuration	 The vehicle specification that is written in ADAS control unit can be displayed or stored. The vehicle specification can be written when ADAS control unit is replaced. 	
Work support	Displays causes of automatic system cancellation occurred during system control.	[
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit.	
Data Monitor	Displays ADAS control unit input/output data in real time.	
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load.	1
ECU Identification	Displays ADAS control unit part number.	
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication.	ſ

CONFIGURATION

Configuration includes functions as follows.

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

WORK SUPPORT

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

NOTE:

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

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

Display Items for The Cause of Automatic Cancellation

Cause of cancellation	Intelligent Cruise Control (ICC)	Description	D/ F
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication.	
NO RECORD	×	_	

SELF DIAGNOSTIC RESULT Refer to <u>DAS-22, "DTC Index"</u>. INFOID:000000012874222

А

В

IN

L

Μ

< SYSTEM DESCRIPTION >

NOTE:

- The details of time display are as per the following:
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- ODO/TRIP METER (Mileage) and VOLTAGE(IGN voltage) is displayed on FFD (Freeze Frame Data).

DATA MONITOR

NOTE:

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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
MAIN SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch.
SET/COAST SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
CANCEL SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
RESUME/ACC SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
DISTANCE SW [On/Off]	×			Indicates [ON/OFF] status as judged from ICC steering switch.
CRUISE OPE [On/Off]	×	×		Indicates whether controlling or not (ON means "controlling").
BRAKE SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC brake switch signal (ECM trans- mits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from stop lamp switch signal (ECM trans- mits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]	×			Indicates [ON/OFF] status of idle switch read from ADAS control unit through CAN communication (ECM transmits ON/OFF status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	×		Indicates set distance memorized in ADAS control unit.
CRUISE LAMP [On/Off]	×	×		Indicates [ON/OFF] status of MAIN switch indicator output.
OWN VHCL [On/Off]	×			NOTE: The item is displayed, but it is not monitored.
VHCL AHEAD [On/Off]	×			Indicates [ON/OFF] status of vehicle ahead detection indicator output.
ICC WARNING [On/Off]	×			Indicates [ON/OFF] status of ICC system warning lamp output.
VHCL SPEED SE [km/h] or [mph]	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN 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.
THRTL SENSOR [deg]	×	×		NOTE: The item is displayed, but it is not monitored.
ENGINE RPM [rpm]	×			Indicates engine speed read from ADAS control unit through CAN 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).

Revision: December 2015

< SYSTEM DESCRIPTION >

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
YAW RATE [deg/s]	×			NOTE: The item is displayed, but it is not monitored.
BA WARNING [On/Off]	×			Indicates [ON/OFF] status of FEB indicator lamp output.
STP LMP DRIVE [On/Off]	×	×		Indicates [ON/OFF] status of ICC brake hold relay drive output.
D POSITION SW [On/Off]	×			Indicates [ON/OFF] status of "D" or "M" positions read from ADAS control unit through CAN communication; ON when position "D" or "M" (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×			Indicates shift position signal read from ADAS control unit through CAN communication (TCM transmits shift position signal through CAN communication).
PKB SW [On/Off]	×			Parking brake switch status [ON/OFF] judged from the parking brake switch sig- nal that ADAS control unit readout via CAN communication is displayed (com- bination meter transmits the parking brake switch signal via CAN F communication).
PWR SUP MONI [V]	×	×		Indicates IGN voltage input by ADAS control unit.
VHCL SPD AT [km/h] or [mph]	×			Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	×		Indicates throttle position read from ADAS control unit through CAN communi- cation (ECM transmits accelerator pedal position signal through CAN communi- cation).
GEAR [1, 2, 3, 4, 5, 6, 7]	×			Indicates CVT gear position read from ADAS control unit through CAN commu- nication (TCM transmits current gear position signal through CAN communica- tion).
CLUTCH SW SIG [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from clutch pedal position signal (ECM transmits ICC clutch switch signal through CAN communication).
NP SW SIG [On/Off]	×			Indicates [ON/OFF] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communication).
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. $$\mathbb{M}$$
ON ROOT GUIDANCE [On/Off]	×			NOTE: The item is displayed, but it is not monitored
DYNA ASIST SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
IBA SW [On/Off]	×	×		NOTE: The item is displayed, but it is not monitored.
NAVI ICC DISP [On/Off]				NOTE: The item is displayed, but it is not monitored.
Shift position [Off, P, R, N, D, M/T1 - 7]			×	Indicates shift position read from ADAS control unit through CAN 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).

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

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

Revision: December 2015

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

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

ACTIVE TEST

CAUTION:

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

Test item	Description	
METER LAMP	The FEB warning lamp can be illuminated by ON/OFF operations as necessary.	K
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated.	
ADAS BUZZER	Sounds a buzzer used for BSW, RCTA by arbitrarily operating ON/OFF.	L
METER BUZZER	Sounds a buzzer used for ICC, PFCW, FEB by arbitrarily operating ON/OFF.	
BRAKE ACTUATOR 1		R.
BRAKE ACTUATOR 2	Activates the brake by an arbitrary operation.	IV
BRAKE ACTUATOR 3		

METER LAMP NOTE:

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

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

STOP LAMP

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

Ν

Н

J

< SYSTEM DESCRIPTION >

[ADAS CONTROL UNIT]

METER BUZZER

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

ADAS BUZZER

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

BRAKE ACTUATOR

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting



ECU IDENTIFICATION Displays ADAS control unit parts number.

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor item		Condition	Value/Status
	When MAIN (ON/OFF) switch is pressed.		On
MAIN SW		When MAIN (ON/OFF) switch is not pressed.	Off
	Ignition quitch ON	When SET/COAST switch is pressed.	On
SET/COAST SW		When SET/COAST switch is not pressed.	Off
	Ignition switch ON	When CANCEL switch is pressed.	On
CANCEL SW		When CANCEL switch is not pressed.	Off
DESLIME/ACC SW/	Ignition switch ON	When RESUME/ACCELERATE switch is pressed.	On
RESUME/ACC SW		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
	the ICC system	When ICC system is not controlling.	Off
BRAKE SW	Ignition switch ON	When brake or clutch pedal is depressed.	Off
	ignition switch orv	When brake or clutch pedal is not depressed.	On
	Ignition switch ON	When brake pedal is depressed.	On
		When brake pedal is not depressed.	Off
IDI E SW	Engine running	Idling	On
IDLE 3W		Except idling (depress accelerator pedal)	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
	Start the engine and press	ICC system ON (MAIN switch indicator ON).	On
	MAIN switch	ICC system OFF (MAIN switch indicator OFF).	Off
OWN VHCL	NOTE: The item is indicated, but not n	nonitored	Off
VHCL AHEAD	Drive the vehicle and activate	When a vehicle ahead is detected (vehicle ahead detection indicator ON).	On
	the ICC system	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 malfunction ON).	On
	MAIN switch	When ICC system is normal (ICC system malfunction OFF).	Off

INFOID:000000012874223 В

А

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
VHCL SPEED SE	While driving		Displays the ve- hicle speed cal- culated by 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: ICC system PFCW system FEB system 	On
		When the buzzer of the following system not operates:ICC systemPFCW systemFEB system	Off
THRTL SENSOR	NOTE: The item is indicated, but not n	nonitored.	0.0
ENGINE RPM	Engine running		Equivalent to ta- chometer read- ing
		Wiper not operating.	Off
WIPER SW	Ignition switch ON	Wiper LO operation.	Low
		Wiper HI operation.	High
YAW RATE	NOTE: The item is indicated, but not n	0.0	
	Engine running	FEB OFF indicator lamp ON.When FEB system is malfunctioning.When FEB system is turned to OFF.	On
BA WARNING		FEB OFF indicator lamp OFF.When FEB system is normal.When FEB system is turned to ON.	Off
STP I MP DRIVE	Drive the vehicle and activate	When ICC brake hold relay is activated.	On
	the ICC system	When FEB system is turned to ON. When ICC brake hold relay is activated. When ICC brake hold relay is not activated. When ICC brake hold relay is not activated. When the selector lever is in "D" position or manual	
		When the selector lever is in "D" position or manual mode.	On
D POSITION SW	Engine running	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
		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
GEAR	While driving	·	Displays the gear position

< ECU DIAGNOSIS INFORMATION >

Monitor item		Condition	Value/Status
	Ignition switch ON	When clutch or brake pedal is depressed.	On
CLUTCH SW SIG	Ignition switch ON	When clutch or brake pedal is not depressed.	Off
	Ignition switch ON	When the shift lever is in neutral position.	On
NP 3W 3IG		When the shift lever is in any position other than neutral.	Off
	Start the engine and press	When ICC system is deactivated.	Off
MODE SIG	MAIN switch	When ICC system is activated.	ICC
		SET switch indicator ON.	On
SET DISP IND	Press SET/COAST Switch	SET switch indicator OFF.	Off
DISTANCE	Drive the vehicle and activate the ICC system	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	When a vehicle ahead is detected.	Displays the rel- ative speed.
	the ICC system	When a vehicle ahead is not detected.	0.0
ON ROOT GUIDE	NOTE: The item is indicated, but not n	nonitored.	Off
	Ignition owitch ON	When the PFCW system is ON.	On
FCW SYSTEM ON	Ignition switch ON	When the PFCW system is OFF.	Off
Shift position	Engine runningWhile driving	Displays the shift position	
	Turn signal lamps OFF.	Off	
Turn sincel	Turn signal lamp LH blinking.	LH	
rum signai	Turn signal lamp RH blinking.	RH	
	Turn signal lamp LH and RH blinking.		LH&RH
	While driving	Vehicle turning right.	Negative value
SIDE G	while anving	Vehicle turning left.	Positive value
FUNC ITEM	Ignition switch ON	·	FUNC3
FUNC ITEM (FCW)	Engine running		On
FUNC ITEM (BSW)	Engine running		On
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not n	nonitored	Off
		"Forward Emergency Braking" set with the integral switch is ON.	On
FCW SELECT	Ignition switch ON	"Forward Emergency Braking" set with the integral switch is OFF.	Off
		"Blind Spot Warning" set with the integral switch is ON.	On
BOW SELECT	Ignition switch UN	"Blind Spot Warning" set with the integral switch is OFF.	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not monitored.		Off
		Items set with the integral switch can be switched nor- mally.	On
SYS SELECTABILITY	Ignition switch ON	Items set with the integral switch cannot be switched normally.	Off
	_	When the BSW system is malfunctioning.	On
BSW WARN LMP	Engine running	When the BSW system is normal.	Off

< ECU DIAGNOSIS INFORMATION >

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

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT

PHYSICAL VALUES



[ADAS CONTROL UNIT]

А

В

D

JSOIA0705ZZ

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

Fail-safe (ADAS Control Unit)

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

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

INFOID:000000012874224

Ν

DAS

< ECU DIAGNOSIS INFORMATION >

DTC Inspection Priority Chart

INFOID:000000012874225

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

Priority	Detected items (DTC)
1	U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)
2	U1000: CAN COMM CIRCUIT U1321: CONFIGURATION
3	 C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF
4	 C1A01: POWER SUPPLY CIR C1A02: POWER SUPPLY CIR 2 C1A13: STOP LAMP RLY FIX C1A14: ECM CIRCUIT C1A34: COMMAND ERROR U0121: VDC CAN CIR 2 U0235: ICC SENSOR CAN CIRC 1 U0401: ECM CAN CIR 1 U0402: TCM CAN CIR 1 U0415: VDC CAN CIR 1 U0433: ICC SENSOR CAN CIRC 2 U1503: SIDE RDR L CAN CIR 2 U1504: SIDE RDR L CAN CIR 1 U1505: SIDE RDR R CAN CIR 2 U1506: SIDE RDR R CAN CIR 1
5	C1A03: VHCL SPEED SE CIRC
6	C1A00: CONTROL UNIT

DTC Index

INFOID:000000012874226

Systems for fail-safe

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

DTC		Fail-safe	Peference
CONSULT	CONSOLI UISPIAY	System	Reference
NO DTC IS DE- TECTED. FUR- THER TESTING MAY BE RE- QUIRED	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED		_
U1507	LOST COMM (SIDE RDR R)	D, E	DAS-74
U1508	LOST COMM (SIDE RDR L)	D, E	<u>DAS-75</u>
U1000 ^{NOTE}	CAN COMM CIRCUIT	A, B, C, D, E	DAS-63
U1321	CONFIGURATION	A, B, C, D, E	DAS-66
C1A17	ICC SENSOR MALF	A, B, C	<u>DAS-47</u>
C1B53	SIDE RDR R MALF	D, E	DAS-51
C1B54	SIDE RDR L MALF	D, E	DAS-52
C1A01	POWER SUPPLY CIR	A, B, C, D, E	DAS-37
C1A02	POWER SUPPLY CIR 2	A, B, C, D, E	<u>DAS-37</u>

< ECU DIAGNOSIS INFORMATION >

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

DTC		Fail-safe	Deference	
CONSULT		System	Reference	C
C1A13	STOP LAMP RLY FIX	A, B, C	<u>DAS-40</u>	0
C1A14	ECM CIRCUIT	A, B, C	<u>DAS-47</u>	
C1A34	COMMAND ERROR	A, B, C	DAS-50	D
U0121	VDC CAN CIR 2	A, B, C, D, E	DAS-53	
U0235	ICC SENSOR CAN CIRC 1	A, C, D, E	DAS-55	F
U0401	ECM CAN CIR 1	A, B, C, D, E	DAS-56	
U0402	TCM CAN CIR 1	A, B, C, D, E	DAS-58	
U0415	VDC CAN CIR 1	A, B, C, D, E	DAS-60	F
U0433	ICC SENSOR CAN CIRC 2	A, B, C	DAS-62	
U1503	SIDE RDR L CAN CIR 2	D, E	DAS-66	
U1504	SIDE RDR L CAN CIR 1	D, E	DAS-68	G
U1505	SIDE RDR R CAN CIR 2	D, E	DAS-70	
U1506	SIDE RDR R CAN CIR 1	D, E	DAS-72	Н
C1A03	VHCL SPEED SE CIRC	D, E	DAS-38	
C1A00	CONTROL UNIT	A, B, C, D, E	DAS-36	

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.

Κ

J

А

В

Μ

Ν

< WIRING DIAGRAM >

INFOID:000000012874227

WIRING DIAGRAM DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

 \mathbb{A} A WARNING BUZZER (M60) **-**AROUND VIEW MONITOR CONTROL UNIT (M96) Σ CAN 5 26 6 B142 B464 9 ШM BLIND SPOT WARNING INDICATOR RH D111 4 CAN SYS: **[**] SIDE RADAR RH (B466) B142 B464 M84 H91 M84 D101 B464 B463 B92 TO CAN SYSTEM BLIND SPOT WARNING INDICATOR LH D21 4 15C M168 FUSE BLOCK (J/B) (M68) 8 SIDE RADAR LH M40 B463 M168 8 10A B69 B463 B69 (A40) B92 80 AAOWA0145GB

DRIVER ASSISTANCE SYSTEM



Ρ



Revision: December 2015

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEMS

[ADAS CONTROL UNIT]



AAOIA0463GB

Revision: December 2015

18		Connector No. M168	Connector Name WIRE TO WIRE	Connector Type TH40MW-CS15 Connector Color WHITE	8 128 138 148 158 	1084118/128/138/138/138/138/138/138/138/138/138/13	[techrotisecheckprotpactpactpactpactpactpactpactpactpactpac	Zrdzedzedzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordzadordz		Terminal Color of Signal Name	No. Wire ogramment	15C B -	2	NTROL UNIT Connector No M170	Connector NameOINT CONNECTOR-M09	Connector Type BJ30FW	Connector Color WHITE				33 32 31 30 29 28 27 28 25 24 23		Terminal Color of Signal Name	No. Wire		11 LG -		(AL CABLE)				<u></u>			
	M91 WIDE TO WIDE		WHITE		28 38 48 58 68 78 88 98 108 118	188/1982/08/218/228/248/258/268 (368/378/389/398/398/ 288/298/308/318/328/338/348/358			of Signal Name		1		M96	AROUND VIEW MONITOR CON	TH40FW-NH	WHITE			6 8 10 12 14 16 18 20 22 24 26 28	5 7 9 11 13 15 17 19 21 23 25 27		of Signal Name	CAN-L	CAN-H	GND	IdN	M149	COMBINATION SWITCH (SPIR/	TK08FGY	GRAY		22 21 20 19 18 17 16			
:	Connector No.	Connector Tune	Connector Color		₽ 	168178]		Terminal Color No. Wire	15B B	18B G		Connector No.	Connector Name	Connector Type	Connector Color	EB.	ЗН	2 4	1 3	C F	No. Wire	24 Y	26 L	в <mark>3</mark>	40 FG	Connector No.	Connector Name	Connector Type	Connector Color	(La la	H.S.			
	M68 El ISE EL OCK / LEV	NOT GERD_CS	BROWN		7R 6R 5R 4R 3R 2R 1R	16R 15R 14R 13R 12R 11R 10R 9R 8R			f Signal Name	1		M71	VDC OFF SWITCH	TH08FB-NH	BLACK		K		4 3 2 1 8 7 6 5		Signal Name	1			M84	WIRE TO WIRE	TH32FW-NH	WIIIE			15 14 13 12 11 10 9 7 6 5 4 3 2 1 31 30 29 27 26 25 24 23 2 1		Signal Name	1	
	Connector No.	Connector Tune	Connector Color		0.11				Terminal Color of No. Wire	2R LG		Connector No.	Connector Name	Connector Type	Connector Color			H.S.			Terminal Color of	6 P	8		Connector No.	Connector Name	Connector Type			Ч	16 32		Terminal Color of No. Wire	3 FG	

DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

AAOIA0464GB

< WIRING DIAGRAM >

DRIVER ASSISTANCE SYSTEMS

[ADAS CONTROL UNIT]



Ρ



Color of Wire g

Terminal No.

œ

Connector Name

Connector No.

Connector Color

H.S.

Connector Type

DRIVER ASSISTANCE SYSTEMS

< WIRING DIAGRAM >

[ADAS CONTROL UNIT]

AAOIA0466GB

Connector Name

Connector No.

Connector Color

H.S.

E

Connector Type

Color of Wire

Terminal No.

≥ ٩

ო ŝ

α



AAOIA0467GB

1		D111	BLIND SPOT WARNING/BLIND SPOT INTERVENTION INDICATOR RH	TH04MW-NH	r WHITE			4 3 2 1			or of Signal Name			_																			
188		Connector No.	Connector Name	Connector Type	Connector Color	E	H.S.				Terminal Colo	- NO.	- 4																				
	RE TO WIRE	40FW-CS15	HTE		20 130 140 140 00 80 70 80 70 10	20 120 120 20 20 20 20 20 20 20 20 20 20 20 20 2			Signal Name	1	I		-	IND SPOT WARNING/BLIND SPOT		HTE				4 3 2 1		Signal Name	1	-	0	RE TO WIRE	40FW-CS15	HTE			128 128 128 148 48 98 / 16 98 28 48 98 28 48 28 28 28 28 28 28 28 28 28 28 28 28 28	a rzłaczkaszkoncia i dazekaccia artekacci la ustaczkancia i daze	
No. D3	Name WI	TH TH	Color W		150 140 13	460450440430			Color of Wire	8	M/L		No. D2	Name BL	The	Color WF						Color of Wire	M/L	в	No.	Name WI	TH TH	Color WH			468458448438	landanolano	
Connector	Connector	Connector	Connector (ų	S H				Terminal No.	15C	18C		Connector	Connector	Connector.	Connector		E		2		Terminal No.	-	4	Connector	Connector	Connector .	Connector		E E	2		
465	IDE RADAR LH	AD08FB-6P	LACK						Signal Name	POSITION INDICATOR	LED DRIVE	POWER	CAN-H	GND		466	IDE RADAR RH	AD08FB-6P	LACK					Signal Name	POSITION INDICATOR	LED DRIVE	POWER	CAN-H	GND				
No. B4	Name SI	Type JA	Color BL						Color of Wire	8	5	œ	_;	- @		No. B4	Name Sli	Type JA	Color BL					Color of Wire	8	σ	œ.	- ,	- @				
Connector	Connector	Connector	Connector	Ę	ЯH				Terminal No.	e	4	5	9	~ 8		Connector	Connector	Connector	Connector	ij	H.S.			Terminal No.	3	4	5	9 1	8				

AAOIA0468GB

ADDITIONAL SERVICE WHEN REPLACING ADAS CONTROL UNIT < BASIC INSPECTION > [ADAS CONTROL UNIT] BASIC INSPECTION

ADDITIONAL SERVICE WHEN REPLACING ADAS CONTROL UNIT

Description	INFOID:000000012874228	В
Always perform the ADAS control unit configuration after replacing the ADAS control unit. Work Procedure	INFOID:000000012874229	С
1. ADAS CONTROL UNIT CONFIGURATION		
CONSULT Perform the ADAS control unit configuration. Refer to DAS-34, "Description".		D
>> GO TO 2. 2.PERFORM SELF-DIAGNOSIS		E
 CONSULT 1. Turn ignition switch ON. 2. Select "Self Diagnostic Result" mode of "ICC/ADAS". 3. Check DTC 		F
Is DTC detected?		G
YES >> Perform the trouble diagnosis for the detected DTC. Refer to <u>DAS-22</u> , " <u>DTC Index</u> " NO >> Inspection End.	"	Η
		1

Ν

J

Κ

L

Μ

А

DAS

Ρ

CONFIGURATION (ADAS CONTROL UNIT)

< BASIC INSPECTION >

[ADAS CONTROL UNIT]

CONFIGURATION (ADAS CONTROL UNIT)

Description

INFOID:000000012874230

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

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

Work Procedure

INFOID:000000012874231

CAUTION:

- Use "Manual Configuration" only when "TYPE ID" of ADAS control unit cannot be read.
- If an error occurs during configuration, start over from the beginning.
- **1.**CHECKING TYPE ID (1)

Use FAST (service parts catalogue) to search ADAS control unit of the applicable vehicle and find "Type ID". Is "Type ID" displayed?

- YES >> Print out "Type ID" and GO TO 2.
- NO >> "Configuration" is not required for ADAS control unit. Replace in the usual manner. Refer to <u>DAS-</u><u>78, "Removal and Installation"</u>.

2.CHECKING TYPE ID (2)

CONSULT Configuration

- 1. Select "Before Replace ECU" of "Read/Write Configuration".
- 2. Check that "Type D" is displayed on the CONSULT screen.

Is "Type ID" displayed?

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

3. VERIFYING TYPE ID (1)

CONSULT Configuration

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

NOTE:

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

>> GO TO 4.

4.SAVING TYPE ID

CONSULT Configuration Save "Type ID" on CONSULT.

>> GO TO 5.

5.REPLACING ADAS CONTROL UNIT (1)

Replace ADAS control unit. Refer to DAS-78. "Removal and Installation".

>> GO TO 6.

6.WRITING (AUTOMATIC WRITING)

CONFIGURATION (ADAS CONTROL UNIT)

< BASIC INSPECTION >

 CONSULT Configuration Select "After Replace ECU" of "Re/programming, Configuration" or that of "Read / Write Configuration". Select the "Type ID" agreeing with the one stored on CONSULT and the one searched by using FAST 	А
(service parts catalogue) to write the "Type ID" into the ADAS control unit.	
NOTE: For the "Type ID" searched by using FAST (service parts catalog) use the last five digits of the "Type ID"	В
>> GO TO 9.	C
7.REPLACING ADAS CONTROL UNIT (2)	C
Replace ADAS control unit. Refer to DAS-78. "Removal and Installation".	
	D
>> GO TO 8.	
8.WRITING (MANUAL WRITING)	Е
(P)CONSULT Configuration	
1. Select "Manual Configuration".	
2. Select the "Type ID" searched by using FAST (service parts catalogue) to write the "Type ID" into the	F
NOTE:	
For the "Type ID" searched by using FAST (service parts catalog), use the last five digits of the "Type ID".	G
>> GO TO 9.	
9.VERIFYING TYPE ID (2)	Н
Compare "Type ID" written into the ADAS control unit with the one searched by using FAST (service parts cat- alogue) to check that these "Type ID" agree with each other.	
NOTE: For the "Type ID" searched by using FAST (service parts catalog) use the last five digits of the "Type ID"	I
>> GO TO 10.	J
10.RESTART ADAS BY IGN OFF/IGN ON	
1. Turn the ignition switch OFF.	K
2. Turn the ignition switch ON.	Γ
>> GO TO 11.	L
1. Perform "Self Diagnostic Result" of all systems.	М
2. Erase sen Diagnoslic Result.	
>> End of work.	
	Ν
	DAS

Ρ

DTC/CIRCUIT DIAGNOSIS C1A00 CONTROL UNIT

DTC Description

INFOID:000000012874232

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

PERFORM SELF DIAGNOSTIC RESULT

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "C1A00" detected as the current malfunction?

YES >> Refer to DAS-36, "Diagnosis Procedure".

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

Diagnosis Procedure

INFOID:000000012874233

1. CHECK SELF DIAGNOSTIC RESULT

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-22, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-78</u>, "Removal and Installation".
C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2 < DTC/CIRCUIT DIAGNOSIS > [ADAS CONTROL UNIT]

C1A01 POWER SUPPLY CIRCUIT 1, C1A02 POWER SUPPLY CIRCUIT 2

DTC Description

INFOID:000000012874234

А

В

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC de	etection condition	
			Diagnosis condition	When Ignition switch is ON.	
	POWER SUPPLY CIR		Signal (terminal)	-	
C1A01	(Power supply circuit)	1	Threshold	Less than 7.9 V	
			Diagnosis delay time	5 seconds or more	
			Diagnosis condition	When Ignition switch is ON.	
04400	POWER SUPPLY CIR 2		Signal (terminal)	-	
C1A02	(Power supply circuit 2)	2	Threshold	More than 19.3 V	
			Diagnosis delay time	5 seconds or more	
Intelligent Cr Forward Em Predictive Fo Blind Spot W	uise Control (ICC) ergency Braking (FEB) prward Collision Warning (PFCW) /arning (BSW)				
Rear Cross					
.PERFORM	DTC CONFIRMATION PROCED	URE			
CONSULT					
 Start the e Turn the M Perform "A Check if " "ICC/ADA 	Ingine. MAIN switch of ICC system ON. All DTC Reading" mode. C1A01" or "C1A02" is detected a S".	s the	current malfunction ir	n "Self Diagnostic Result" mode of	
<u>s "C1A01" or '</u>	C1A02" detected as the current r	nalfun	action?		
YES >> Re NO-1 >> To NO-2 >> Co	eter to <u>DAS-37, "Diagnosis Proce</u> o check malfunction symptom befor onfirmation after repair: Inspectior	dure". pre rep n End.	pair: Refer to <u>GI-42, "I</u>	ntermittent Incident".	
Diagnosis F	Procedure			INFOID:000000012874235	
CHECK AD	AS CONTROL UNIT POWER SU	JPPLY	AND GROUND CIR	CUIT	
Check power s	supply and ground circuit of ADAS	6 cont	rol unit. Refer to DAS-	77, "Diagnosis Procedure".	
s the inspection	on result normal?			-	
YES >> Re NO >> Re	eplace the ADAS control unit. Ref	er to [a parts	DAS-78, "Removal and s.	d Installation".	

C1A03 VEHICLE SPEED SENSOR

DTC Description

INFOID:000000012874236

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
 - U1000: Refer to DAS-63, "DTC Description".
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

(R)CONSULT

- Start the engine.
- 2. Turn the MAIN switch of ICC system ON.
- 3. Drive the vehicle at 30 km/h (19 MPH) or more.

CAUTION: Always drive safely.

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

Is "C1A03" detected as the current malfunction?

- >> Refer to DAS-38. "Diagnosis Procedure". YES
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

1. CHECK DTC PRIORITY

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

Is applicable DTC detected?

- >> Perform diagnosis of applicable. YES
- U1000: Refer to DAS-63, "DTC Description".
- NO >> GO TO 2.

DAS-38

INFOID:000000012874237

[ADAS CONTROL UNIT]

C1A03 VEHICLE SPEED SENSOR

Revision: December 2015

2. CHECK DATA MONITOR

Drive the vehicle at 19 mph (30 km/h) or more.

Start the engine.

1.

2.

3.

3. Check that the value of "VHCL SPD SE" in "Data Monitor" of "ICC/ADAS" is almost the same as the actual vehicle speed
CAUTION:
Be careful of the vehicle speed.
Is the inspection result normal?
 YES >> Replace the ADAS control unit. Refer to <u>DAS-78, "Removal and Installation"</u>. NO >> GO TO 3.
3. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF DIAGNOSTIC RESULT
Check if any DTC is detected in "Self Diagnostic Result" mode of "ABS".
Is any DTC detected?
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to BRC-228, "DTC Index".
NO >> Replace the ADAS control unit. Refer to <u>DAS-78</u> , "Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

[ADAS CONTROL UNIT]

А

В

С

D

Ε

F

G

Н

J

Κ

L

Μ

Ν

DAS

Ρ

< DTC/CIRCUIT DIAGNOSIS >

C1A13 STOP LAMP RELAY

DTC Description

INFOID:000000012874238

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
		Diagnosis condition	When Ignition switch is ON.	
		Signal (terminal)	-	
C1A13	STOP LAMP RLY FIX (Stop lamp relay fix)	Threshold	 Stop lamp inactive state continues for 0.3 seconds or more despite the outputting of an ICC sensor ICC brake hold relay drive signal The stop lamp remains ON for 60 seconds or more under the following conditions: Driving at 40 km/h (25 MPH) or more No stop lamp drive signal output from ADAS control unit No brake operation 	
		Diagnosis delay time	-	

POSSIBLE CAUSE

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

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63, "DTC Description"</u>.

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (1)

CONSULT

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

Is "C1A13" detected as the current malfunction?

YES >> Refer to <u>DAS-41, "Diagnosis Procedure"</u>.

NO >> GO TO 3.

< DTC/CIRCUIT DIAGNOSIS >

3.PERFORM DTC CONFIRMATION PROCEDURE (2)

 CONSULT Drive at the vehicle speed of brake pedal depressed. CAUTION: 	40 km/h (25 MPH) or more for approximate	ly 60 seconds or more without the
Always drive safely.		
If it is outside the above con	dition, repeat step 1.	
2. Perform "All DTC Reading" r	node.	
3. Check if "C1A13" is detected	ed as the current malfunction in the "Self I	Diagnostic Result" mode of "ICC/
ADAS".		
Is "C1A13" detected as the curre	nt malfunction?	
YES>> Refer to DAS-41, "DNO-1>> To check malfunctionNO-2>> Confirmation after re	<u>וagnosis Procedure"</u> . ו symptom before repair: Refer to <u>GI-42, "Ir</u> pair: Inspection End.	<u>itermittent Incident"</u> .
Diagnosis Procedure		INFOID-000000012874239
Regarding Wiring Diagram inform	nation, refer to <u>DAS-24, "Wiring Diagram"</u> .	
1. CHECK DTC PRIORITY		
If DTC "C1A13" is displayed with	DTC "U1000". first diagnose the DTC "U10)00".
Is applicable DTC detected?	ý G	
YES >> Perform diagnosis o	f applicable. Refer to DAS-63, "DTC Descri	ption".
NO >> GO TO 2.		
2.CHECK STOP LAMP SWITC	Н	
1. Select "Data Monitor" mode	of "ICC/ADAS".	
2. Select "STOP LAMP SW".	and a second	
3. Check that the function oper	ates normally according to the following col	nditions:
Monitor item	Condition	Status
	When brake pedal is applied	ON
STOP LAMP SW	When brake pedal is released	OFF
le the ineraction result normal?	When brake pedal is released	011
NO >> GO TO 3.		
3 CHECK STOP LAMP SWITC	Η ΙΝΥΤΑΙ Ι ΑΤΙΩΝ	
 Turn Ignition Switch OFF. Check stop Jamp switch for (correct installation Refer to BR-7 "Inspection	on"
Is the inspection result normal?	Sheet installation. Refer to <u>BRT7, Inspection</u>	<u>.</u>
VES >> GO TO 4		
NO >> Adjust stop lamp sw	itch installation. Refer to BR-13, "Adjustmer	nt".
4. CHECK STOP LAMP SWITC	H	—
Uneck stop lamp switch. Refer to	OCO-19, Component Inspection (Stop La	<u>mp Switch)"</u> .
is the inspection result normal?		
TES >> GU IU 5.	witch Refer to BR-20 "Exploded View"	
NO Replace stop lamp s	witch. Relef to $\underline{DR-20}$, Explored view.	

5. CHECK STOP LAMP FOR ILLUMINATION

1. Remove ICC brake hold relay.

< DTC/CIRCUIT DIAGNOSIS >

2. Check that the stop lamp is illuminated by depressing the brake pedal to turn the stop lamp ON. Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the stop lamp circuit, and repair or replace the malfunctioning parts.

6.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ECM

1. Turn the ignition switch OFF.

2. Disconnect stop lamp switch, ECM, rear combination lamp, and high-mounted stop lamp connectors.

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

Stop lan	np switch	E	Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
E38	2	E32	139	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 7.

NO >> Repair the harnesses or connectors.

7. CHECK ICC BRAKE HOLD RELAY CIRCUIT

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

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8.CHECK ICC BRAKE HOLD RELAY

- 1. Remove ICC brake hold relay.
- 2. Check ICC brake hold relay. Refer to DAS-46, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace ICC brake hold relay.

9. Perform self-diagnosis of ECM

CONSULT

- 1. Connect all connectors again if the connectors are disconnected.
- 2. Turn ignition switch ON.
- 3. Perform "All DTC Reading".

Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to <u>EC-105, "DTC Index"</u>.
 Is any DTC detected?

Is any DTC detected?

- YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result.
- NO >> Replace ADAS control unit. Refer to <u>DAS-78, "Removal and Installation"</u>.

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.

< DTC/CIRCUIT DIAGNOSIS >

	Te	erminal				
	(+) (–)					
I	ICC brake hold relay				(Approx.)	
Connector	Те	erminal	1	Ground		
E75		2			Battery voltage	
s the inspection result YES >> GO TO 11 NO >> Repair or 11.CHECK HARNES	<u>: normal?</u> replace ICC brake ho SS BETWEEN AND IC	ld relay power s CC BRAKE HOL	Supply circ	cuit. Y AND ADAS C	CONTROL UNIT	
 Disconnect ADAS Check for continu connector. 	control unit connecto ity between ICC bral	ors. ke hold relay ha	arness co	onnector and A	ADAS control unit harne	
ICC brake	hold relay	ļ ,	ADAS contro	ol unit	Opertionity	
Connector	Terminal	Connector		Terminal	Continuity	
E75	1	M182		14	Yes	
3. Check for continui	ty between ICC brake	e hold relay harr	ness conn	nector and grou	ind.	
ICC	brake hold relay			Ground		
Connector	Termina	al	Gro			
E75	1				No	
YES >> GO TO 12 NO >> Repair the 12.CHECK ADAS C CONSULT 1. Connect all conne 2. Select "STOP LAM 3. Perform "Active Te	e harnesses or connect ONTROL UNIT STAN ctors again if the cont /P" in "Active Test" m est and check the volt	ctors. IDARD VOLTAG nectors are disc ode of "ICC/AD age between AI	SE connected AS". DAS contr	I. rol unit harness	s connector and ground	
	Terminal			Condition		
(•	+)	(-)			Voltage	
ADAS co Connector	ontrol unit Terminal			Active Test ite "STOP LAMF	em (Approx.) o"	
		Ground		OFF	Battery voltage	
M182	14			ON	0 V	
s the inspection result YES >> GO TO 13	<u>t normal?</u> 3. \DAS control unit. Ref	fer to <u>DAS-78.</u> "	Removal	ON and Installation	<u>0 V</u> .	

Revision: December 2015

< DTC/CIRCUIT DIAGNOSIS >

(+)	(-)	Voltage	
ICC brake	e hold relay		(Approx.)	
Connector	Terminal	Ground		
E75	5		Battery voltage	

Is the inspection result normal?

YES >> GO TO 14.

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

14.CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ECM

1. Disconnect ECM, rear combination lamp, and high-mounted stop lamp connectors and remove ICC brake hold relay.

2. Check for continuity between ICC brake hold relay harness connector and ECM harness connector.

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

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

ICC brake	hold relay		Continuity	
Connector Terminal		Ground	Continuity	
E75	3	-	No	

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair the harnesses or connectors.

15. CHECK ICC BRAKE HOLD RELAY

1. Remove ICC brake hold relay.

2. Check ICC brake hold relay. Refer to <u>DAS-46</u>, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace ICC brake hold relay.

16.CHECK STOP LAMP SWITCH

CONSULT

1. Select "Data Monitor" mode of "ICC/ADAS".

2. Select "STOP LAMP SW".

3. Check that the function operates normally according to the following conditions:

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

Is the inspection result normal?

YES >> GO TO 21.

NO >> GO TO 17.

17. CHECK STOP LAMP SWITCH INSTALLATION

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

Is the inspection result normal?

YES >> GO TO 18.

NO >> Adjust stop lamp switch installation. Refer to <u>BR-13, "Adjustment"</u>.

[ADAS CONTROL UNIT]

18.CHECK STOP LAMP SWITCH Check stop lamp switch. Refer to CCS-79, "Component Inspection (Stop Lamp Switch)" Is the inspection result normal? YES >> GO TO 19. В NO >> Replace stop lamp switch. Refer to BR-20, "Exploded View". 19. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT Check the voltage between stop lamp switch harness connector and ground. Terminal D (-) (+) Voltage (Approx.) Stop lamp switch Ε Terminal Ground Connector E38 1 Battery voltage Is the inspection result normal? YES >> GO TO 20. >> Repair or replace stop lamp switch power supply circuit. NO 20.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) Turn the ignition switch OFF. 1. Disconnect stop lamp switch and ABS actuator and electric unit (control unit). 2. Н Check for continuity between the stop lamp switch harness connector and the ABS actuator and electric 3. unit (control unit) harness connector. Stop lamp switch ABS actuator and electric unit (control unit) Continuity Connector Terminal Connector Terminal E38 E130 7 4 Yes Check for continuity between stop lamp switch harness connector and ground. Κ Stop lamp switch Continuity Terminal Ground Connector E38 4 No Is the inspection result normal? YES >> GO TO 21. NO M >> Repair the harnesses or connectors. 21. PERFORM SELF-DIAGNOSIS OF ECM (P)CONSULT Ν 1. Connect all connectors again if the connectors are disconnected. Turn ignition switch ON. 2. 3. Perform "All DTC Reading". DAS 4. Check if any DTC is detected in "Self Diagnostic Result" of "ENGINE". Refer to EC-105, "DTC Index". Is any DTC detected? YES >> Repair or replace the malfunctioning parts identified by the self-diagnosis result. Ρ NO >> GO TO 22. **22.** PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) CONSULT 1 Connect all connectors again if the connectors are disconnected. Turn ignition switch ON. 2. 3. Perform "All DTC Reading".

4. Check if any DTC is detected in "Self Diagnostic Result" of "ABS". Refer to BRC-228, "DTC Index".

< DTC/CIRCUIT DIAGNOSIS >

DAS-45

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-78. "Removal and Installation".

Component Inspection

INFOID:000000012874240

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.



C1A14 ECM

< DTC/CIRCUIT DIAGNOSIS >

C1A14 ECM

DTC Description

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition	
		Diagnosis condition	When Ignition switch is ON.	
01014	ECM CIRCUIT	Signal (terminal)	-	
C1A14	(ECM circuit)	Threshold	If ECM is malfunctioning	
		Diagnosis delay time	-	
POSSIBLE • ECM • ADAS con	CAUSE trol unit			
FAIL-SAFE The followin • Intelligent • Forward E • Predictive	g systems are canceled: Cruise Control (ICC) mergency Braking (FEB) Forward Collision Warning (P	FCW)		
I.CHECK	DTC PRIORITY			_
If DTC "C1A Is applicable YES >> NO >> 2 PERFOR	14" is displayed with DTC "U1 <u>DTC detected?</u> Perform diagnosis of applicab GO TO 2. M DTC CONFIRMATION PRO	000", first diagnose the le. Refer to <u>DAS-63, "D</u>	DTC "U1000". <u>TC Description"</u> .	
		JOEDORE		-
1. Start the 2. Operate CAUTIO	e engine. the ICC system and drive. N:			
3. Stop the 4. Perform 5. Check in	arive safety. e vehicle. "All DTC Reading" mode. f "C1A14" is detected as the c	urrent malfunction in "Se	elf Diagnostic Result" mode of "ICC/ADAS".	
<u>ls "C1A14" (</u>	letected as the current malfun	ction?		
YES >> NO-1 >> NO-2 >>	Refer to <u>DAS-47, "Diagnosis I</u> To check malfunction symptor Confirmation after repair: Insp	<u>Procedure"</u> . n before repair: Refer to ection End.	GI-42, "Intermittent Incident".	
Diagnosis	Procedure		INFOID:00000001287424	2
1.снески	DTC PRIORITY			
If DTC "C1A	14" is displayed with DTC "U1	000", first diagnose the	DTC "U1000".	-
Is applicable	DTC detected?			
YES >> NO >>	Perform diagnosis of applicab GO TO 2.	le. Refer to <u>DAS-63, "D</u>	TC Description".	
2.CHECK	SELF-DIAGNOSIS RESULTS			
Check if "U1	000" is detected other than "C	A14" in "Self Diagnost	ic Result" of "ICC/ADAS".	•

INFOID:000000012874241

А

В

C1A14 ECM

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to<u>DAS-63, "DTC Description"</u>.
- NO >> GO TO 3.

3.PERFORM SELF-DIAGNOSIS OF ECM

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>EC-105, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to DAS-78, "Removal and Installation".

C1A17 ICC SENSOR

[ADAS CONTROL UNIT]

< DTC/CIRCUIT DIAGNOSIS >

C1A17 ICC SENSOR

DTC Description

INFOID:000000012874243

А

C1A17 ICC SENSOR MALF Diagnosis condition When Ignition switch is ON. Signal (terminal) - Threshold If ICC sensor is malfunctioning Diagnosis delay time - OTE: Diagnosis delay time - DTC "C1A17" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS- escription". DAS- OSSIBLE CAUSE Core sensor - AlL-SAFE - - he following systems are canceled: - - Intelligent Cruise Control (ICC) Forward Emergency Braking (FEB) - Predictive Forward Collision Warning (PFCW) - - Miagnosis Procedure - - .CHECK ADAS CONTROL UNIT SELF DIAGNOSITIC RESULT - - CONSULT - - - . Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS : "U1000" detected? - YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. DAS-63. "DTC Description". NO >> GO TO 2.	t) DTC detection condition	ONSULT screen terms ouble diagnosis content)	DTC No.
C1A17 ICC SENSOR MALF (-) Signal (terminal) - Threshold If ICC sensor is malfunctioning Diagnosis delay time - NOTE: Threshold If ICC sensor is malfunctioning Diagnosis delay time - NOTE: Threshold If ICC sensor is malfunctioning Diagnosis delay time - NOTE: Threshold If ICC sensor is malfunctioning Diagnosis delay time - VOSSIBLE CAUSE Cossistent Cossistent - DAS- Description". POSSIBLE CAUSE Cossistent Cossistent - DAS- Das- Das- Signal (terminal) - POSSIBLE CAUSE Cossistent Control (ICC) Forward Emergency Braking (FEB) Forward Emergency Braking (FEB) Foredictive Forward Collision Warning (PFCW) Diagnosis Procedure Information Information Information . CHECK ADAS CONTROL UNIT SELF DIAGNOSITIC RESULT Information Information CONSULT Perform "All DTC Reading" mode. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS s"U1000"detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. DAS-63. "DTC Description". NO >> GO TO 2.	Diagnosis condition When Ignition switch is ON.		
CIAII7 (-) Threshold If ICC sensor is malfunctioning Diagnosis delay time - NOTE: f DTC "C1A17" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS- Description". POSSIBLE CAUSE CC sensor CC sensor FAIL-SAFE The following systems are canceled: Intelligent Cruise Control (ICC) Forward Emergency Braking (FEB) Predictive Forward Collision Warning (PFCW) Diagnosis Procedure Information of the second of the se	Signal (terminal) –	ENSOR MALF	01417
Diagnosis delay time - NOTE: f DTC "C1A17" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS- Description". POSSIBLE CAUSE CC sensor AIL-SAFE The following systems are canceled: Intelligent Cruise Control (ICC) Forward Emergency Braking (FEB) Predictive Forward Collision Warning (PFCW) Diagnosis Procedure Incelled I.CHECK ADAS CONTROL UNIT SELF DIAGNOSITIC RESULT Incelled CONSULT Perform "All DTC Reading" mode. CONSULT Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS s "U1000" detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. DAS-63. "DTC Description". NO >> GO TO 2.	Threshold If ICC sensor is malfunctioning		CIAT
NOTE: f DTC "C1A17" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to DAS- Description". POSSIBLE CAUSE CC sensor FAIL-SAFE The following systems are canceled: Intelligent Cruise Control (ICC) Forward Emergency Braking (FEB) Predictive Forward Collision Warning (PFCW) Diagnosis Procedure I.CHECK ADAS CONTROL UNIT SELF DIAGNOSITIC RESULT CONSULT Perform "All DTC Reading" mode. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS s "U1000" detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. DAS-63, "DTC Description". NO >> GO TO 2.	Diagnosis delay time –		
Predictive Forward Collision Warning (PFCW) Diagnosis Procedure CHECK ADAS CONTROL UNIT SELF DIAGNOSITIC RESULT CONSULT Perform "All DTC Reading" mode. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS <u>s "U1000" detected?</u> YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. DAS-63, "DTC Description". NO >> GO TO 2.		E ms are canceled: Control (ICC) ncy Braking (FEB)	POSSIBLE (CC sensor AIL-SAFE The following Intelligent C Forward En
 CHECK ADAS CONTROL UNIT SELF DIAGNOSITIC RESULT CONSULT Perform "All DTC Reading" mode. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS s "U1000"detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. <u>DAS-63, "DTC Description"</u>. NO >> GO TO 2. 	(PFCW)	d Collision Warning (Pf edure	Predictive F Diagnosis
 CONSULT Perform "All DTC Reading" mode. Check if "U1000" is detected other than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS <u>is "U1000"detected?</u> YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. <u>DAS-63, "DTC Description"</u>. NO >> GO TO 2. 		ONTROL UNIT SELF	1.CHECK A
 YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. <u>DAS-63. "DTC Description"</u>. NO >> GO TO 2. 		C Reading" mode.	CONSULT Perform ' Check if '
	than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS".	?	<u>s "U1000"de</u> t
2.CHECK ICC SENSOR SELF DIAGNOSTIC RESULT	than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS". detected DTC and repair or replace the malfunctioning parts. Refer to	 a diagnosis on the detail <u>, "DTC Description"</u>. 2. 	<u>s "U1000"dei</u> YES >> F NO >> G
Check if any DTC is detected in "Self Diagnostic Result" mode of "LASER/RADAR". s any DTC detected?	than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS". detected DTC and repair or replace the malfunctioning parts. Refer to 	 Is detected other that 1 diagnosis on the detected of the detected o	<u>s "U1000"det</u> YES >> F NO >> G CHECK IC
YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. <u>CCS-110. "DTC Logic"</u> .	than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS". detected DTC and repair or replace the malfunctioning parts. Refer to ". NOSTIC RESULT Diagnostic Result" mode of "LASER/RADAR".	 Is detected of left that <u>?</u> n diagnosis on the dete <u>. "DTC Description"</u>. 2. NSOR SELF DIAGNOS is detected in "Self Diag <u>d?</u> 	<u>s "U1000"de</u> YES >> F NO >> G CHECK IC Check if any I <u>s any DTC</u> d
NO >> Replace ADAS control unit. Refer to <u>DAS-78, "Removal and Installation"</u> .	than "C1A17" in "Self Diagnostic Result" mode of "ICC/ADAS". detected DTC and repair or replace the malfunctioning parts. Refer to ". NOSTIC RESULT Diagnostic Result" mode of "LASER/RADAR". detected DTC and repair or replace the malfunctioning parts. Refer to	 r) is detected other that r) diagnosis on the detected of the detected in th	<u>s "U1000"de</u> YES >> F NO >> G CHECK IC Check if any I <u>s any DTC d</u> YES >> F

DAS

Ρ

C1A34 COMMAND ERROR

< DTC/CIRCUIT DIAGNOSIS >

C1A34 COMMAND ERROR

DTC Description

INFOID:000000012874245

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "<u>DTC Description</u>".

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Always drive safely.

- 3. Stop the vehicle.
- 4. Perform "All DTC Reading" mode.
- 5. Check if "C1A34" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS".

Is "C1A34" detected as the current malfunction?

YES >> Refer to <u>DAS-50, "Diagnosis Procedure"</u>.

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

Diagnosis Procedure

INFOID:000000012874246

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A34" in "Self Diagnostic Result" of "ICC/ADAS".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-63, "DTC Description"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-78</u>, "Removal and Installation".

C1B53 SIDE RADAR RIGHT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

C1B53 SIDE RADAR RIGHT MALFUNCTION

DTC Description

DTC DETECTION LOGIC

DIC No.	CONSULT screen terms (Trouble diagnosis content)	D	TC detection condition
		Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	-
C1B53	(Side radar right malfunction)	Threshold	ADAS control unit detects that side radar RH has a malfunction
		Diagnosis delay time	-
POSSIBLE	CAUSE		
Side radar F	RH		
FAIL-SAFE			
The followin	g systems are canceled:		
 Blind Spot Rear Cross 	Warning (BSW) s Traffic Alert (RCTA)		
I.PERFOR	AMDIC CONFIRMATION PRO	DCEDURE	
CONSUL	T .		
1. Start the	e engine. "All DTC Reading" mode		
3. Check i	f "C1B53" is detected as the ci	urrent malfunction in "Self	Diagnostic Result" mode of "ICC/ADAS".
<u>ls "C1B53" (</u>	detected as the current malfun	ction?	C C C C C C C C C C C C C C C C C C C
YES >>	Refer to DAS-51, "Diagnosis I	Procedure".	
NO-1 >>	To check malfunction symptor	n before repair: Refer to <u>G</u>	I-42, "Intermittent Incident".
NO-2 >>	Confirmation after repair: Insp	ection End.	
Diagnosis	s Procedure		INFOID:000000012874248
	SELE DIAGNOSTIC RESULT		
	000" is detected other than "C	1P52" in "Solf Diagnostic I	Pocult" mode of "ICC/ADAS"
	letected?		Result mode of ICC/ADAS .
YES >>	Perform the CAN communica	tion system inspection Re	enair or replace the malfunctioning parts
	Refer to <u>DAS-63, "DTC Descr</u>	iption".	span of replace the manufactioning parts.
NO >>	GO TO 2.		
2.CHECK	SELF DIAGNOSTIC RESULT		
2.CHECK	DTC is detected in "Self Diag	nostic Result" mode of "SI	DE RADAR RIGHT".
2.CHECK	DTC is detected in "Self Diag	nostic Result" mode of "SI	DE RADAR RIGHT".
2.CHECK Check if any Is any DTC YES >>	DTC is detected in "Self Diag detected? Perform diagnosis on the detected	nostic Result" mode of "SI ected DTC and repair or r	DE RADAR RIGHT". eplace the malfunctioning parts. Refer to
2.CHECK	DTC is detected in "Self Diag detected? Perform diagnosis on the detected DAS-121, "DTC Index" (Side)	nostic Result" mode of "SI ected DTC and repair or re adar LH), <u>DAS-123, "DTC</u>	DE RADAR RIGHT". eplace the malfunctioning parts. Refer to <u>Index</u> " (Side radar RH).

[ADAS CONTROL UNIT]

INFOID:000000012874247

А

C1B54 SIDE RADAR LEFT MALFUNCTION

< DTC/CIRCUIT DIAGNOSIS >

C1B54 SIDE RADAR LEFT MALFUNCTION

DTC Description

INFOID:000000012874249

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "C1B54" detected as the current malfunction?

- YES >> Refer to DAS-51, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874250

1.CHECK SELF DIAGNOSTIC RESULT

Check if "U1000" is detected other than "C1B54" in "Self Diagnostic Result" mode of "ICC/ADAS". Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>DAS-63</u>, "DTC Description".

NO >> GO TO 2.

2.CHECK SELF DIAGNOSTIC RESULTS

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-121, "DTC Index"</u> (Side radar LH), <u>DAS-123, "DTC Index"</u> (Side radar RH).
- NO >> Replace the ADAS control unit. Refer to <u>DAS-78, "Removal and Installation"</u>.

U0121 VDC CAN 2

< DTC/CIRCUIT DIAGNOSIS >

U0121 VDC CAN 2

DTC Description

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition
		Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	-
U0121	VDC CAN CIR2 (VDC CAN circuit2)	Threshold	If ADAS control unit detects an error signal that is received from ABS actuator and elec- tric unit (control unit) via CAN communica- tion
		Diagnosis delay time	-
POSSIBLE C	AUSE		
ABS actuator a	and electric unit (control unit))	
FAIL-SAFE			
The following s	systems are canceled:		
 Intelligent Cr Enward Em 	uise Control (ICC)		
 Predictive For 	prward Collision Warning (PF	CW)	
Blind Spot W	/arning (BSW)	-	
Rear Cross	Iraffic Alert (RCTA)		
DTC CONFIF	RMATION PROCEDURE		
1. CHECK DT	C PRIORITY		
If DTC "U0121	" is displayed with DTC "U10	000", first diagnose the D	DTC "U1000".
<u>Is applicable D</u>	TC detected?		
YES >> Pe	erform diagnosis of applicable	e. Refer to <u>DAS-63, "DT</u>	<u>C Description"</u> .
		GEDURE	
CONSULT	naine		
2. Turn the M	AIN switch of ICC system C	N.	
3. Perform "A	All DTC Reading" mode.	waat waalf waati an in "Oak	
4. Check If "	JU121 IS detected as the cu	rrent maitunction in "Sei	f Diagnostic Result mode of ICC/ADAS.
VES >> Pa	ected as the current manufic	lion <u>e</u>	
NO-1 >> To	check malfunction symptom	before repair: Refer to	GI-42, "Intermittent Incident".
NO-2 >> Co	onfirmation after repair: Inspe	ection End.	
Diagnosis F	Procedure		INFOID:000000012874252
1 0150455			
If DTC "U0121	" is displayed with DTC "U10	000", first diagnose the D	DTC "U1000".
IS applicable D	<u>IC detected?</u>		
1ES >> Pe NO >> G	or applicable of applicable of applicable of applicable of the app	e. Refer to <u>DAS-63, "DT</u>	C Description [*] .
2.CHECK AB	S ACTUATOR AND ELECTI	RIC UNIT (CONTROL U	INIT) SELF-DIAGNOSIS RESULTS
Check if any D	TC is detected in "Self Diag	nostic Result" mode of "A	ABS".

INFOID:000000012874251

Α

В

U0121 VDC CAN 2

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>BRC-228, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-78</u>, "Removal and Installation".

U0235 ICC SENSOR CAN 1

< DTC/CIRCUIT DIAGNOSIS >

U0235 ICC SENSOR CAN 1

DTC Description

DTC DETECTION LOGIC

DTC No.	DTC No. CONSULT screen terms (Trouble diagnosis content) DTC detection condition		
		Diagnosis condition	When Ignition switch is ON.
		Signal (terminal)	-
U0235	ICC SENSOR CAN CIR1 (ICC sensor CAN circuit1)	Threshold	ADAS control unit detects an error signal that is received from ICC sensor via ITS communication
		Diagnosis delay time	-
POSSIBLE	CAUSE		
ICC sensor			
FAIL-SAFE			
 Ine following Intelligent (g systems are canceled: Cruise Control (ICC)		
Forward E	mergency Braking (FEB)		
Predictive	Forward Collision Warning (P	FCW)	
	IRMATION PROCEDURE		
I.CHECK D	DTC PRIORITY		
If DTC "U02:	35" is displayed with DTC "U1	000", first diagnose the	DTC "U1000".
	<u>DIC detected?</u> Perform diagnosis of applicab	Ne Pefer to DAS-63 "D	TC Description"
NO >>	GO TO 2.	ile. Relei to <u>DAS-03, D</u>	<u>To Description</u> .
2.PERFOR	M DTC CONFIRMATION PRO	OCEDURE	
	Г		
1. Start the	engine.		
3. Perform	"All DTC Reading" mode.	UN.	
4. Check if	"U0235" is detected as the c	urrent malfunction in "Se	elf Diagnostic Result" mode of "ICC/ADAS".
<u>ls "U0235" d</u>	etected as the current malfun	ction?	
YES >> NO-1 >>	Refer to <u>DAS-55, "Diagnosis I</u> To check malfunction symptor	<u>Procedure"</u> . m before repair: Refer to	GI-42. "Intermittent Incident".
NO-2 >>	Confirmation after repair: Insp	pection End.	
Diagnosis	Procedure		INFOID:000000012874254
1 CHECK [
	35" is displayed with DTC "11	000" first diagnose the	DTC "111000"
Is applicable	DTC detected?		
YES >>	Perform diagnosis of applicab	le. Refer to <u>DAS-63, "D</u>	TC Description".
NO >>	GO TO 2.		
2.CHECK	CC SENSOR SELF DIAGNO	STIC RESULT	
Check if any	DTC is detected in "Self Diag	pnostic Result" mode of	"LASER/RADAR".
Is any DTC o	detected?		· · · · · · · · · · · · · · · · · · ·
YES >>	Pertorm diagnosis on the det CCS-46. "DTC Index".	ected DTC and repair of	or replace the malfunctioning parts. Refer to

NO >> Replace the ADAS control unit. Refer to DAS-78, "Removal and Installation".

INFOID:000000012874253

А

В

U0401 ECM CAN 1

DTC Description

INFOID:000000012874255

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ECM

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "U0401" detected as the current malfunction?

- YES >> Refer to DAS-56, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874256

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".

NO >> GO TO 2.

2.CHECK ECM SELF DIAGNOSTIC RESULT

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

Is any DTC detected?

U0401 ECM CAN 1

[ADAS CONTROL UNIT]

DTC/	CIRCUIT DIAGNOSIS > [ADAS CONTROL UNIT]	
YES	>> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to	C
NO	>> Replace the ADAS control unit. Refer to <u>DAS-78, "Removal and Installation"</u> .	

U0402 TCM CAN 1

DTC Description

INFOID:000000012874257

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

тсм

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".
- NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

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

Is "U0402" detected as the current malfunction?

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

Diagnosis Procedure

INFOID:000000012874258

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".

NO >> GO TO 2.

2.CHECK TCM SELF DIAGNOSTIC RESULT

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

U0402 TCM CAN 1

[ADAS	CONTROL	UNIT]
-------	---------	-------

JIC/	CIRCUIT DIAGNOSIS > [ADAS CONTROL UNIT	Г]
ΈS	>> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer	to
10	<u>INI-58, DTC Index</u> . > Replace the ADAS control unit. Refer to <u>DAS-78, "Removal and Installation"</u> .	
		Į

U0415 VDC CAN 1

DTC Description

INFOID:000000012874259

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ABS actuator and electric unit (control unit)

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".
- NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "U0415" detected as the current malfunction?

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

Diagnosis Procedure

INFOID:000000012874260

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".

NO >> GO TO 2.

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

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

U0415 VDC CAN 1

[ADAS CONTROL UNIT]

< DTC/	CIRCUIT DIAGNOSIS >	[ADAS CONTROL UNIT]
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-78</u>, "Removal and 	Installation".

U0433 DIST SEN CAN CIRC 2

DTC Description

INFOID:000000012874261

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ICC sensor

ADAS control unit

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "U0433" detected as the current malfunction?

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

Diagnosis Procedure

INFOID:000000012874262

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63, "DTC Description"</u>.

NO >> GO TO 2.

2.check ICC sensor self diagnostic result

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

Is any DTC detected?

- YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>CCS-46, "DTC Index"</u>.
- NO >> Replace the ADAS control unit. Refer to <u>DAS-78</u>, "Removal and Installation".

DAS-62

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 vehicles are equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. D CAN communication signal chart. Refer to LAN-37, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

ITS COMMUNICATION

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

DTC Description

INFOID:000000012874264

DTC DETECTION LOGIC

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

NOTE:

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

POSSIBLE CAUSE

- CAN communication system
- ITS communication system

FAIL-SAFE

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

NOTE:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

(P)CONSULT

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

Is "U1000" detected as the current malfunction?

А

Ε

Ν

M

2016 Murano NAM

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Refer to DAS-56, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874265

1.PERFORM THE SELF DIAGNOSTIC RESULT

CONSULT

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

Is "U1000" detected as the current malfunction?

- YES >> Refer to LAN-21. "Trouble Diagnosis Flow Chart".
- NO >> Inspection End.

U1321 CONFIGURATION

< DTC/CIRCUIT DIAGNOSIS >

U1321 CONFIGURATION

DTC Description

DTC DETECTION LOGIC CONSULT screen terms DTC No. DTC detecting condition (Trouble diagnosis content) **Diagnosis condition** When ignition switch is on. Signal (terminal) U1321 NOT CONFIGURED Threshold If ADAS is not configured. Diagnosis delay time POSSIBLE CAUSE ADAS control unit not configured FAIL-SAFE The following systems are canceled: Intelligent Cruise Control (ICC) • Forward Emergency Braking (FEB) Predictive Forward Collision Warning (PFCW) Blind Spot Warning (BSW) Rear Cross Traffic Alert (RCTA) DTC CONFIRMATION PROCEDURE 1.PERFORM DTC CONFIRMATION PROCEDURE 1. Start the engine. Perform "All DTC Reading" mode. 2. Check if "U1321" is detected as the current malfunction in "Self Diagnostic Result" mode of "ICC/ADAS". 3. Is "U1321" detected as the current malfunction? YES >> Refer to DAS-65, "Diagnosis Procedure". NO >> Inspection End. Diagnosis Procedure INFOID:000000012874267 1.PERFORM CONFIGURATION OF ADAS CONTROL UNIT Perform configuration of ADAS control unit when DTC "U1321" is detected. >> Perform configuration of ADAS control unit. Refer to DAS-34, "Work Procedure".

Ρ

A INFOID:000000012874266

В

D

Е

Н

J

Κ

L

M

U1503 SIDE RDR L CAN 2

DTC Description

INFOID:000000012874268

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.

- U1000: Refer to <u>DAS-63</u>, "DTC Description".
- U1508: Refer to <u>DAS-75, "DTC Description"</u>.

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "U1503" detected as the current malfunction?

- YES >> Refer to <u>DAS-66</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874269

1.CHECK DTC PRIORITY

If DTC "U1503" is displayed with DTC "U1000" or "U1508", first diagnose the DTC "U1000" or "U1508". Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
 - U1000: Refer to <u>DAS-63, "DTC Description"</u>.
 - U1508: Refer to <u>DAS-75</u>, "DTC Description"

NO >> GO TO 2.

2.CHECK SIDE RADAR LH SELF DIAGNOSTIC RESULT

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

U1503 SIDE RDR L CAN 2

[ADAS CONTROL UNIT]

< DTC/	/CIRCUIT DIAGNOSIS > [ADAS CONTROL UNIT]	
YES	>> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-121, "DTC Index".	А
NO	>> Replace the ADAS control unit. Refer to DAS-78, "Removal and Installation".	
		В
		С
		D
		E
		F
		G
		Н
		I
		J

Ν

Κ

L

M

DAS

U1504 SIDE RDR L CAN 1

DTC Description

INFOID:000000012874270

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Side radar LH

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.

- U1000: Refer to <u>DAS-63</u>, "DTC Description".
- U1508: Refer to <u>DAS-75, "DTC Description"</u>.

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "U1504" detected as the current malfunction?

- YES >> Refer to <u>DAS-68</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874271

1.CHECK DTC PRIORITY

If DTC "U1504" is displayed with DTC "U1000" or "U1508", first diagnose the DTC "U1000" or "U1508". Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
 - U1000: Refer to <u>DAS-63, "DTC Description"</u>.
 - U1508: Refer to <u>DAS-75</u>, "DTC Description"

NO >> GO TO 2.

2.CHECK SIDE RADAR LH SELF DIAGNOSTIC RESULT

Check if any DTC is detected in "Self Diagnostic Result" mode of "SIDE RADAR LEFT". <u>Is any DTC detected?</u>

U1504 SIDE RDR L CAN 1

IADAS CONTROL UNIT1

< DTC	/CIRCUIT DIAGNOSIS > [ADAS CONTROL UNIT]	
YES	>> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-121 "DTC Index"	
NO	>> Replace the ADAS control unit. Refer to <u>DAS-78, "Removal and Installation"</u> .	

DAS

L

M

Ν

Ρ

U1505 SIDE RDR R CAN 2

DTC Description

INFOID:000000012874272

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.

- U1000: Refer to <u>DAS-63</u>, "DTC Description".
- U1507: Refer to <u>DAS-74, "DTC Description"</u>.

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "U1505" detected as the current malfunction?

- YES >> Refer to DAS-70, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874273

1.CHECK DTC PRIORITY

If DTC "U1505" is displayed with DTC "U1000" or "U1507", first diagnose the DTC "U1000" or "U1507". Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
 - U1000: Refer to <u>DAS-63</u>, "DTC Description".
 - U1507: Refer to <u>DAS-74, "DTC Description"</u>

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF DIAGNOSTIC RESULT

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

U1505 SIDE RDR R CAN 2

IADAS CONTROL UNIT1

< DTC	/CIRCUIT DIAGNOSIS > [ADAS CONTROL UNIT
YES	>> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer
NO	>> Replace the ADAS control unit. Refer to <u>DAS-78</u> , "Removal and Installation".

DAS

U1506 SIDE RDR R CAN 1

DTC Description

INFOID:000000012874274

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.

- U1000: Refer to <u>DAS-63</u>, "DTC Description".
- U1507: Refer to <u>DAS-74, "DTC Description"</u>.

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "U1506" detected as the current malfunction?

- YES >> Refer to <u>DAS-68</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874275

1.CHECK DTC PRIORITY

If DTC "U1506" is displayed with DTC "U1000" or "U1507", first diagnose the DTC "U1000" or "U1507". Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
 - U1000: Refer to <u>DAS-63</u>, "DTC Description".
 - U1507: Refer to <u>DAS-74, "DTC Description"</u>

NO >> GO TO 2.

2.CHECK SIDE RADAR RH SELF DIAGNOSTIC RESULTS

Check if any DTC is detected in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT". <u>Is any DTC detected?</u>
U1506 SIDE RDR R CAN 1

IADAS CONTROL LINITI

DTC/CIRCUIT DIAGNOSIS >	
'ES >> Perform diagnosis on the detected DTC and DAS-123 "DTC Index"	d repair or replace the malfunctioning parts. Refer to
NO >> Replace the ADAS control unit. Refer to DAS	S-78, "Removal and Installation".

Μ

Ν

DAS

Ρ

< DTC/CIRCUIT DIAGNOSIS >

U1507 LOST COMM(SIDE RDR R)

DTC Description

INFOID:000000012874276

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

- The following systems are canceled:
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-63</u>, "DTC Description".

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is "U1507" detected as the current malfunction?

- YES >> Refer to DAS-74, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874277

1.CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check right/left switching signal circuit. Refer to DAS-157. "Diagnosis Procedure".

Is the inspection result normal?

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

U1508 LOST COMM(SIDE RDR L)

< DTC/CIRCUIT DIAGNOSIS >

U1508 LOST COMM(SIDE RDR L)

DTC Description

INFOID:000000012874278

[ADAS CONTROL UNIT]

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DT	C detection condition	r
		Diagnosis condition	When Ignition switch is ON.	
	LOST COMM(SIDE RDR L)	Signal (terminal)	-	
U1508	[Lost communication (Side radar left)]	Threshold	ADAS control unit cannot receive ITS com- munication signal from side radar LH	
		Diagnosis delay time	2 seconds or more	г
POSSIBLE Side radar ITS commit Side radar FAIL-SAFE The following Blind Spot 	CAUSE LH harness connector unication system LH g systems are canceled: Warning (BSW)			F
Rear Cross	s Traffic Alert (RCTA)			
DTC CONF	IRMATION PROCEDURE			ŀ
1 .CHECK [DTC PRIORITY			
If DTC "U15	08" is displayed with DTC "U10	000", first diagnose the DT	C "U1000".	
Is applicable	DTC detected?	l l		
YES >> NO >> 2.PERFOR	Perform diagnosis of applicabl GO TO 2. M DTC CONFIRMATION PRC	e. Refer to <u>DAS-63, "DTC</u> DCEDURE	Description".	,
CONSULT 1. Start the 2 Turn the	F engine. Blind Spot Warning system O	N		
3. Perform	"All DTC Reading" mode.	· · · · · · · · · · · · · · · · · · ·		
4. Check if	"U1508" is detected as the cu	rrent malfunction in "Self D	Diagnostic Result" mode of "ICC/ADAS".	
YES >>	Refer to DAS-75. "Diagnosis F	Procedure".		
NO-1 >> NO-2 >>	To check malfunction symptom Confirmation after repair: Inspe	n before repair: Refer to <u>GI</u> ection End.	-42, "Intermittent Incident".	ľ
Diagnosis	Procedure		INFOID:000000012874279	
1.снеска	DTC PRIORITY			ľ
If DTC "U15	08" is displayed with DTC "U10	000", first diagnose the DT	C "U1000".	D
Is applicable	DTC detected?			
YES >> NO >>	Perform diagnosis of applicabl GO TO 2.	e. Reter to <u>DAS-63, "DTC</u>	Description".	
2.CHECK 8	SIDE RADAR HARNESS CON	NECTOR		
 Turn the Check the 	e ignition switch OFF. he terminals and connectors o	f the side radar LH for dan	nage, bend and short (unit side and con-	

nector side).

Is the inspection result normal?

В

U1508 LOST COMM(SIDE RDR L)

< DTC/CIRCUIT DIAGNOSIS >

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

< DTC/CIRCUIT DIAGNOSIS > POWER SUPPLY AND GROUND CIRCU Diagnosis Procedure Regarding Wiring Diagram information, refer to DAS-24. "W 1.CHECK FUSES Check that the following fuse is not blown: Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO =>> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCULATION POWER SUPPLY	IT //iring Diagram". Fuse No. 29 (10A) :ted circuit. UIT or and ground.
POWER SUPPLY AND GROUND CIRCU Diagnosis Procedure Regarding Wiring Diagram information, refer to DAS-24, "\/ 1.CHECK FUSES Check that the following fuse is not blown: Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRCE Check voltage between ADAS control unit harness connect	/iring Diagram". Fuse No. 29 (10A) :ted circuit. CUIT or and ground.
Diagnosis Procedure Regarding Wiring Diagram information, refer to DAS-24, "M 1.CHECK FUSES Check that the following fuse is not blown: Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect	/iring Diagram". Fuse No. 29 (10A) ted circuit. CUIT or and ground.
Regarding Wiring Diagram information, refer to DAS-24, "W 1.CHECK FUSES Check that the following fuse is not blown: Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect	/iring Diagram". Fuse No. 29 (10A) xted circuit. CUIT or and ground.
Regarding Wiring Diagram information, refer to DAS-24, "W 1.CHECK FUSES Check that the following fuse is not blown: Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Terminal	/iring Diagram". Fuse No. 29 (10A) :ted circuit. CUIT or and ground.
1.CHECK FUSES Check that the following fuse is not blown: Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect	Fuse No. 29 (10A) :ted circuit. CUIT or and ground.
Check that the following fuse is not blown: Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect	Fuse No. 29 (10A) ted circuit. CUIT or and ground.
Signal name Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect Terminal	Fuse No. 29 (10A) 29 Direction of and ground.
Ignition power supply Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect Terminal	29 (10A) cted circuit. CUIT or and ground.
Is the fuse blown? YES >> Replace the blown fuse after repairing the affect NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect Terminal	cted circuit. CUIT or and ground.
YES >> Replace the blown fuse after repairing the affect NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect	cted circuit. CUIT or and ground.
NO >> GO TO 2. 2.CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect Terminal	CUIT or and ground.
CHECK ADAS CONTROL UNIT POWER SUPPLY CIRC Check voltage between ADAS control unit harness connect Terminal	or and ground.
Check voltage between ADAS control unit harness connect	or and ground.
Terminal	
	Condition
(+) (-)	Voltage
ADAS control unit	(Approx.)
Connector Terminal Ground	
M182 3	
	ON Ballery voltage
YES >> GO TO 3. NO >> Repair the ADAS control unit power supply circ 3.CHECK ADAS CONTROL UNIT GROUND CIRCUIT	uit.
 Turn the ignition switch OFF. Disconnect the ADAS control unit connector. Check for continuity between ADAS control unit harnes 	s connector and ground.
ADAS control unit	Continuity
Connector Terminal	Ground
M182 1	Yes
Is the inspection result normal?	

REMOVAL AND INSTALLATION ADAS CONTROL UNIT

Removal and Installation

INFOID:000000012874281

REMOVAL

NOTE:

Before replacing ADAS control unit, perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to <u>DAS-33</u>, "<u>Description</u>".

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

(): Pawl



INSTALLATION

CAUTION:

Be sure to perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" when replacing ADAS control unit. Refer to <u>DAS-33</u>, "<u>Description</u>".

Installation is in the reverse order of removal.

CAUTION:

Be sure to perform "Configuration (ADAS control unit)" when replacing ADAS control unit. Refer to DAS-34, "Description".

< PRECAUTION > PRECAUTION PRECAUTIONS

А

Е

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

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

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.
- Improper repair, 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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 or batteries, and wait at least three minutes before performing any service.

Precautions For Harness Repair

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

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

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



INFOID:000000012874283

• 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 >

ICC System Service

INFOID:000000012874284

CAUTION:

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

PFCW/FEB System Service

INFOID:000000012874285

INFOID:000000012874286

CAUTION:

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

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

CAUTION:

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

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

System Maintenance

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

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

SYSTEM DESCRIPTION > SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000012874287 B



< SYSTEM DESCRIPTION >

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

G. View with center console assembly removed

No.	Component	Description
1.	BCM	 Transmits the turn indicator signal and position light request signal to ADAS control unit via CAN communication. Refer to <u>BCS-4</u>, "<u>BODY CONTROL SYSTEM</u>: <u>Component Parts Location</u>" for detailed installation location.
2.	ABS actuator and electric unit (control unit)	 ABS actuator and electric unit (control unit) transmits the vehicle speed signal (wheel speed), stop lamp signal and VDC/TCS/ABS system operation condition to ADAS control unit via CAN communication. ABS actuator and electric unit (control unit) controls the brake, based on a brake fluid pressure control signal received from ADAS control unit via CAN communication. Refer to <u>BRC-180, "Component Parts Location"</u> for detailed installation location.
3.	ECM	 Transmits the ICC brake switch signal, stop lamp switch signal, ICC steering switch signal, etc. to ADAS control unit via CAN communication. Refer to <u>EC-15</u>, "<u>ENGINE CONTROL SYSTEM</u>: <u>Component Parts Location</u>" for detailed installation location.
4.	ТСМ	 TCM transmits the signal related to CVT control to ADAS control unit. Refer to <u>TM-11, "CVT CONTROL SYSTEM : Component Parts Location"</u> for detailed installation location.
5.	Blind Spot Warning indicator LH	Poter to DAS 94 "Dlind Spot Warning Indicator H/DH"
6.	Blind Spot Warning indicator RH	Refer to DAS-04, bind Spot Warning Indicator Ln/Rn.
7.	Steering angle sensor	 Measures the rotation amount, rotation speed, and rotation direction of steering wheel, and then transmits them to ADAS control unit via CAN communication. Refer to <u>BRC-180, "Component Parts Location"</u> for detailed installation location.
8.	Combination meter	 Description: <u>DAS-84, "Combination Meter"</u>. Refer to <u>MWI-5, "METER SYSTEM : Component Parts Location"</u> for detailed installation location.
9.	ICC steering switch	Refer to DAS-83, "ICC Steering Switch".
10.	ICC sensor	Refer to DAS-83, "ICC Sensor".
11.	ICC brake hold relay	Refer to DAS-84, "ICC Brake Hold Relay".
12.	Side radar LH	Refer to DAS-84. "Side Radar I H/RH"
13.	Side radar RH	Noter to <u>Brie off</u> , olde Radar Ell/Ref.
14.	Warning buzzer	Refer to DAS-84, "Warning Buzzer".
15.	Brake pedal position switch	Refer to DAS-83 "Brake Pedal Position Switch / Ston Lamp Switch"
16.	Stop lamp switch	Noise to <u>57,0 50, Braker Guar Galler Owler / Glop Lamp Owler</u> .
17.	ADAS control unit	 ADAS control unit controls each system (ICC/PFCW/FEB/BSW/RCTA), based on ITS communication signals and CAN communication signals from each control unit. ADAS control unit transmits engine torque command value, brake fluid pressure control signal, and buzzer output signal to each units.

< SYSTEM DESCRIPTION >

ICC Sensor

- ICC sensor is installed behind the front bumper and detects a vehicle ahead by using millimeter waves.
- · ICC sensor detects radar reflected from a vehicle ahead by irradiating radar forward and calculates a distance from the vehicle ahead and relative speed, based on the detected signal.
- · ICC sensor transmits the presence/absence of vehicle ahead and the distance from the vehicle to ADAS control unit via ITS communication.

ICC Steering Switch

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

Brake Pedal Position Switch / Stop Lamp Switch

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



• Stop lamp switch is installed at the upper part of the brake pedal and detects a brake operation performed by the driver.

- Stop lamp switch is turned ON, when depressing the brake pedal.
- Stop lamp switch signal is input to ECM and ABS actuator and electric unit (control unit). Stop lamp switch signals are transmitted from ECM and ABS actuator and electric unit (control unit) to ADAS control unit via CAN communication.



F





[DRIVER ASSISTANCE SYSTEM]



INFOID:000000012874288

Ρ

D

А

Ε

ICC Brake Hold Relay

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



Combination Meter

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

Warning Buzzer

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



Side Radar LH/RH

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

Blind Spot Warning Indicator LH/RH

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



INFOID:000000012874295

communication.

INFOID:000000012874291

INFOID:000000012874292

INFOID:000000012874293

SYSTEM PFCW

PFCW : System Description

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit		Signal name	Description	
		ABS malfunction signal	Receives a malfunction state of ABS.	
		ABS operation signal	Receives an operational state of ABS.	J
		ABS warning lamp signal	Receives an operational state of ABS warning lamp.	
		TCS malfunction signal	Receives a malfunction state of TCS.	K
ABS actuator		TCS operation signal	Receives an operational state of TCS.	1 1
and electric unit	CAN communi-	VDC OFF switch signal	Receives an ON/OFF state of VDC.	
(control unit)		VDC malfunction signal	Receives a malfunction state of VDC.	L
		VDC operation signal	Receives an operational state of VDC.	
		Vehicle speed signal (ABS)	Receives wheel speeds of front wheels.	NЛ
		Yaw rate signal	Receives yaw rate acting on the vehicle.	IVI
		Stop lamp switch	Receives stop lamp switch state.	
		Engine speed signal	Receives engine speed.	Ν
ECM	CAN communi-	Stop lamp switch signal	Receives an operational state of the brake pedal.	
	cation	Brake pedal position switch signal	Receives an operational state of the brake pedal.	DA
Combination meter	CAN communi- cation	System selection signal	Receives a selection state each item in "Driver Aids" selected with the integral switch.	
ICC sensor	ITS communica- tion	ICC sensor signal	Receives detection results, such as the presence or absence of a leading vehicle and distance from the vehicle.	Ρ
		Input speed signal	Receives the number of revolutions of input shaft.	
TOM	CAN communi-	Shift position signal	Receives a selector lever position	
	cation	Current gear position signal	Receives a current gear position	
		Output shaft revolution signal	Receives the number of revolutions of output shaft.	

А

В

F

< SYSTEM DESCRIPTION >

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

Output Signal Item

Reception unit	Signal name		ie	Description
Combination meter	CAN commu- nication	Meter display	Vehicle ahead detec- tion indicator signal	Transmits a signal to display a state of the system on the combination meter.
		signal	PFCW/FEB system indicator signal	Transmits a signal to turn ON the PFCW/FEB system indicator.
		Buzzer output s	ignal	Transmits a buzzer output signal to activate the buzz- er.
ICC sensor	ITS communi- cation	Vehicle speed signal		Transmits a vehicle speed calculated by the ADAS control unit.

DESCRIPTION

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



NOTE:

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

FUNCTION DESCRIPTION

The distance from the vehicle in front of the vehicle ahead and a relative speed are calculated by using the ICC sensor and an ICC sensor signal is transmitted to the ADAS control unit via ITS communication. When judging the necessity of warning according to the received ICC sensor signal, the ADAS control unit transmits a warning buzzer signal and meter display signal to the combination meter via CAN communication.

PFCW Operating Condition

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

NOTE:

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

BSW

[DRIVER ASSISTANCE SYSTEM]

< SYSTEM DESCRIPTION >

BSW : System Description

INFOID:000000012874297

А

Н

Μ

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

ADAS control unit receives signals via CAN communication. It also detects vehicle conditions that are necessary for Blind Spot Warning control.

Input Signal Item

Transmit unit	Signal name		Description
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 "Driver Aids" selected with the integral switch.
Side radar LH, RH	ITS communication	Vehicle detection signal	Receives vehicle detection condition of detection zone.

Output Signal Item

Reception unit		Signal name	Description	
Combination meter	CAN communi- cation	BSW indicator signal	Transmits a BSW indicator signal to turn ON the BSW indicator on the combination meter.	Ν
Warning buzz- er	Warning buzzer	signal	Activates warning buzzer.	
		Blind Spot Warning indicator signal	Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator.	DAS
Side radar LH, RH	ITS communi- cation	Blind Spot Warning indicator dimmer sig- nal	Transmits a Blind Spot Warning indicator dimmer sig- nal to dimmer Blind Spot Warning indicator.	Р
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit.	

FUNCTION DESCRIPTION

• The BSW system can help alert the driver of other vehicles in adjacent lanes when changing lanes.

• The BSW system uses side radars installed near the rear bumper to detect vehicles in an adjacent lane.

• The side radars can detect vehicles on either side of vehicle within the detection zone shown as illustrated.

< SYSTEM DESCRIPTION >

- This detection zone starts from the outside mirror of vehicle and extends approximately 10 ft. (3.0 m) behind the rear bumper, and approximately 10 ft. (3.0 m) sideways.
- The BSW system operates above approximately 20 MPH (32 km/h).
- If the side radar detects vehicles in the detection zone, the Blind Spot Warning indicator illuminates.



• If the driver then activates the turn signal, a buzzer will sound twice and the Blind Spot Warning indicator will blink.

NOTE:

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



BLIND SPOT WARNING SYSTEM OPERATION DESCRIPTION

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

OPERATING CONDITION

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

NOTE:

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

DAS-88

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

- After the operating conditions of warning are satisfied, the warning continues until the vehicle speed reaches approximately 18 MPH (29 km/h)
- The Blind Spot Warning system may not function properly, depending on the situation. Refer to <u>DAS-80</u>, <u>"Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service"</u>.

RCTA

RCTA : System Description

SYSTEM DIAGRAM



ADAS CONTROL UNIT INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name		Description	J
тсм	CAN communi-	Current gear position signal	Receives a current gear position.	
cation	Shift position signal	Receives a select lever position.	V	
ABS actuator		ABS malfunction signal	Receives a malfunction state of ABS.	ľ
and electric unit (control unit)	CAN communi- cation	VDC malfunction signal	Receives a malfunction state of VDC.	
	Vehicle speed signal (ABS)	Receives wheel speeds of four wheels.	L	
Combination meter	CAN communi- cation	System selection signal	Receives a selection state of each item in "Driver Aids" selected with the integral switch.	
Side radar LH, RH	ITS communica- tion	Vehicle detection signal	Receives vehicle detection condition of detection zone.	N

Output Signal Item

Reception unit		Signal name	Description	
Combination meter	CAN communi- cation	BSW indicator signal	Transmits a BSW indicator signal to turn ON the BSW in- dicator on the combination meter.	DA
Warning buzzer	Warning buzzer o	output signal	Activates warning buzzer.	
		Blind Spot Warning indicator signal	Transmits a Blind Spot Warning indicator signal to turn ON the Blind Spot Warning indicator.	Ρ
Side radar LH, RH	ITS communica- tion	Blind Spot Warning indicator dimmer signal	Transmits a Blind Spot Warning indicator dimmer signal to dimmer Blind Spot Warning indicator.	
		Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit.	

FUNCTION DESCRIPTION

Ν

А

В

D

Е

Н

< SYSTEM DESCRIPTION >

- The Rear Cross Traffic Alert system can help alert the driver of approaching vehicles when the driver is backing out of a parking space.
- The RCTA system uses side radars installed near the rear bumper to detect approaching vehicles.
- The RCTA system operates at speeds below 5 MPH (8 km/h) whenever the vehicle is in reverse.
- The side radar can detect vehicles on either side of vehicle within the detection zone shown as illustrated.
- The radar sensors detect the approaching vehicle from up to approximately 20 m (66 ft) away.



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



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

REAR CROSS TRAFFIC ALERT SYSTEM OPERATION DESCRIPTION

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

Operation Condition of Rear Cross Traffic Alert System.

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

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

Fail-safe (ADAS Control Unit)

INFOID:000000013399208

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

< SYSTEM DESCRIPTION >

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

Fail-safe

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

Fail-safe (Side Radar)

INFOID:000000013399207

E

Н

[DRIVER ASSISTANCE SYSTEM]

INFOID:000000013399209

FAIL-SAFE CONTROL BY DTC

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

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

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

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

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

Rear Cross Traffic Alert (RCTA)

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

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

Μ

Κ

L

Ν

DAS

< SYSTEM DESCRIPTION >

OPERATION PFCW/FEB, BSW/RCTA

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



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

HANDLING PRECAUTION [DRIVER ASSISTANCE SYSTEM]

HANDLING PRECAUTION A Precautions for Predictive Forward Collision Warning A Precautions for Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times. B Inter radar sensor does not detect the following objects: C C Predestinas, animals, or obstacles in the roadway: C Consing vehicles: The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle. C The radar sensor may not detect a second vehicle ahead in the following conditions: E Show or heavy rain. E Onriving in a tunnel. F The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. F Othyning in a tunnel. F Onriving in a tunnel. F Or rad spray from traveling vehicles is splashed. F Or ways keep the rearb sensor may not detect a second vehicle when the vehicle ahead is being towed. F Precautions for Blind Spot Warning system is located inside the rear bumper. F Ob not strike, damage, and scratch the side radar cean. J Do not strike, damage, and scratch the side	< SYSTEM DESCRIPTION >	[DRIVER ASSISTANCE SYSTEM]
Precautions for Predictive Forward Collision Warning • The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times. • The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times. • The radar sensor does not detect the following objects: • Predestinas, animals, or obstacles in the roadway. • Oncoming vehicles. • The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle. • The radar sensor may not detect a second vehicle ahead in the following conditions: • Show or heady rain. • Dirit, ice, snow or other material covering the radar sensor. • Interference by other radar sources. • Show or heady yrain. • Other adar sensor may not detect a second vehicle when the vehicle ahead is being towed. • The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. • Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning system is located inside the rear bumper. • Sible radar for Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side radar. • Do not strike, dramage, and scratch the side radar clean. • Do not strike, dramage, and scratch the side radar clean. • Do not strike, dramage, and scratch the side radar clean. • Do not strike, dramage, and scratch the side radar clean. • Do not strike, dramage, and scrat	HANDLING PRECAUTION	Δ
 The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times. The radar sensor does not detect the following objects: Predestrians, animals, or obstacles in the roadway. Oncoming vehicles. The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle. The radar sensor may not detect a second vehicle ahead in the following conditions: Show or heavy rain. Dirt, ice, snow or other material covering the radar sensor. Inter dreame by other radar sources. Show or nead spray from traveling vehicles is splashed. Driving in a tunnel. The radar sensor may not detect a second vehicle when fiving on a steep downhill slope or on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Frecautions for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not strike or damage the areas around the side radar. Jo not strike or damage the areas around the side radar. Jo not strike damage, and scratch the side radar clean. Jo not strike or damage the areas around the side radar. Jo not strike or damage the areas around the side radar. Jo not strike or damage, and scratch the side radar clean. Jo not strike or damage, and scratch the side radar clean. Jo not strike or damage, and scratch the side radar clean. Jo not strike or damage, and scratch the side radar clean. Jo not strike or damage, and scratch the side radar clean. Jo not strike or d	Precautions for Predictive Forward Collision Warning	INFOID:000000012874303
 The radar sensor does not detect the following objects: Pedestrians, animals, or obstacles in the roadway. Oncoming vehicles. Orcossing vehicles. Orcossing vehicles. The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle. The radar sensor may not detect a second vehicle ahead in the following conditions: Snow or heavy rain. Dirt, ice, snow or ther material covering the radar sensor. Interference by other radar sources. Snow or neavy rain The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar. Do not strike, damage, and scractch the side radar, especially the vent seal (gray circular) area, under repair. BLID SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system way not provide the warning for vehicles that pass through the detecton zone when driver accelerate from a stop. A vehicle approaching rapidly from behind. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. Preside radar	 The Predictive Forward Collision Warning system is designed to w not avoid a collision. It is the driver's responsibility to stay alert, drive all times. 	varn the driver before a collision, but will $$_{\rm B}$$ e safely and be in control of the vehicle at
 Crossing vencies. The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehicle, such as a motorcycle. The radar sensor may not detect a second vehicle ahead in the following conditions: Snow or heavy rain. Dift, ice, snow or other material covering the radar sensor. Interference by other radar sources. Snow or road spray from traveling vehicles is splashed. Driving in a tunnel. The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed. The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. The side radar may not be able to detect and activate Blind Spot Warning system. The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. A vehicle merging into an adjacent lane at	 The radar sensor does not detect the following objects: Pedestrians, animals, or obstacles in the roadway. Oncoming vehicles. 	С
 Fine todain sector may not detect a second vehicle anised in the following condutions. Snow or heavy rain. Dirt, ice, snow or other material covering the radar sensor. Interference by other radar sources. Snow or read spray from traveling vehicles is splashed. Driving in a tunnel. The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed. When the distance to the vehicle ahead is too close, the beam of the radar sensor on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning Sibe radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. Meets and any not be beard. Several types of vehicles such as motorcycles. Ontoming vehicles. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle merging into an adjacent lane at a speed approximately the same as v	 Crossing venicies. The Predictive Forward Collision Warning system does not function cle, such as a motorcycle. The radar sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the following system cle and the sensor may not detect a second vehicle ahead in the sensor may not detect a second vehicle ahead in the sensor may not detect a second vehicle ahead in the sensor may not detect a second vehicle ahead in the sensor may not detect a second vehicle ahead in the sensor may not detect a second vehicle ahead in the sensor may not detect and the sensor may not detect a second vehicle ahead in the sensor may not detect and the sensor may not detect a second vehicle ahead in the sensor may not detect and the sensor may not de	when a vehicle ahead is a narrow vehi-
 Dirt, ice, snow or other material covering the radar sensor. Interference by other radar sources. Snow or road spray from traveling vehicles is splashed. Driving in a tunnel. The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed. The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning SiDE RADAR HANDLING Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install an accessory or paint work near the side radar. Do not strike or damage the areas around the side radar. Jo not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. Oncoming vehicles. V	- Snow or heavy rain.	
 Show or road spray from traveling vehicles is splashed. Driving in a tunnel. The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed. The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning SIDE RADAR HANDLING Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install an accessory or paint work near the side radar. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. A vehicle approaching rapidly from behind. A vehicle approaching rapidly	 Dirt, ice, snow or other material covering the radar sensor. Interference by other radar sources. 	L
 The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed. The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning Sible RADAR HANDLING Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install an accessory or paint work near the side radar. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. Ne several types of vehicles such as motorcycles. Pedestrians, bicycles, animals. Several types of vehicles vanida at a speed approximately the same as vehicle. A vehicle which vehicle overtakes rapidly. Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles. P edidestriang in a adjacent lane at a speed approximately the same as vehicle. A vehicle which vehicle over	 Snow or road spray from traveling vehicles is splashed. Driving in a tunnel. 	F
 The radia sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning SIDE RADAR HANDLING Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install an accessory or paint work near the side radar. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. M the side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles such as motorycles. A vehicle sremaining 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 merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle whench vehicles or one is designed based on a standard lane width.	 The radar sensor may not detect a second vehicle when the vehicle When the distance to the vehicle aband is too close, the beam of the 	e ahead is being towed.
 Excessive noise will interfere with the warning tone sound, and it may not be heard. Precautions for Blind Spot Warning SIDE RADAR HANDLING Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install an accessory or paint work near the side radar. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. Meter radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. Oncoming vehicles. Vehicle merging in the adjacent lane at a speed approximately the same as vehicle. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle merging into an adjacent lane at a speed approximately the same as vehicles. Several types of vehicles signed based on a standard lane width. When driving in a wide	 When the distance to the vehicle aread is too close, the beam of the The radar sensor may not detect a second vehicle when driving or sharp curves. 	a steep downhill slope or on roads with
Frecautions for Bind Spot Warning SIDE RADAR HANDLING • Side radar for Blind Spot Warning system is located inside the rear bumper. • Always keep the rear bumper near the side radar clean. • Do not strike or damage the areas around the side radar. • Do not strike or damage the areas around the side radar. • Do not strike or damage the areas around the side radar. • Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING • The Bind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. • The Bind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. • Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. • The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: • Several types of vehicles such as motorcycles. • Oncoming vehicles. • Vehicle approaching rapidly from behind. • A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. • A vehicle which vehicle overtakes rapidly. • Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles. • Pedestriams, the side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles wind weak.	• Excessive noise will interfere with the warning tone sound, and it m	ay hot be heard.
 SIDE RADAR HANDLING Side radar for Blind Spot Warning system is located inside the rear bumper. Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install an accessory or paint work near the side radar. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. M Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. Oncoming vehicles. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. 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 may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away. 	Precautions for Blind Spot Warning	INFOID:000000012874304
 radar. Do not strike or damage the areas around the side radar. Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair. BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turnand look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles us as motorcycles. Oncoming vehicles. 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 area? 	 SIDE RADAR HANDLING Side radar for Blind Spot Warning system is located inside the rear Always keep the rear bumper near the side radar clean. Do not attach a sticker (including transparent material), install and 	bumper.
BLIND SPOT WARNING K • The Blind Spot Warning system is not a replacement for proper driving procedure and is not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. L • The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. M • Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. M • The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: N • Pedestrians, bicycles, animals. N • 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 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.	radar.Do not strike or damage the areas around the side radar.Do not strike, damage, and scratch the side radar, especially the vertex.	ل ent seal (gray circular) area, under repair.
 vent contact with venicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system. The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. The side radar may not be heard. The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. Oncoming vehicles. Vehicles remaining in the detection zone when driver accelerate from a stop. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle 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. 	 BLIND SPOT WARNING The Blind Spot Warning system is not a replacement for proper driving system is not a replacement for proper driving system. 	ing procedure and is not designed to pre-
 The Blind Spot Warning system may not provide the warning for vehicles that pass through the detection zone quickly. Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard. The side radar may not be heard. The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. Oncoming vehicles. Vehicles remaining in the detection zone when driver accelerate from a stop. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle approaching rapidly from behind. A vehicle which vehicle overtakes rapidly. Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles. The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away. 	and look in the direction driver will move to ensure it is safe to char Spot Warning system.	nge lanes. Never rely solely on the Blind
 Excessive noise (for example, addressiven volume, open venicle window) with interfere with the climite sound, and it may not be heard. The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. Oncoming vehicles. Vehicles remaining in the detection zone when driver accelerate from a stop. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle approaching rapidly from behind. A vehicle which vehicle overtakes rapidly. Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles. The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away. 	 The Blind Spot Warning system may not provide the warning for y zone quickly. Excessive noise (for example, audio system volume, open vehic 	vehicles that pass through the detection
 The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as: Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. Oncoming vehicles. Vehicles remaining in the detection zone when driver accelerate from a stop. A vehicle merging into an adjacent lane at a speed approximately the same as vehicle. A vehicle approaching rapidly from behind. A vehicle which vehicle overtakes rapidly. Severe weather or road spray conditions may reduce the ability of the radar to detect other vehicles. The side radar detection zone is designed based on a standard lane width. When driving in a wider lane, the side radar may not detect vehicles in an adjacent lane. When driving in a narrow lane, the side radar may detect vehicles driving two lanes away. 	sound, and it may not be heard.	
 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 may not be able to detect and activate Blind Spot V such as: 	varning when certain objects are present
 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. 	 Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles 	Ν
 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. 	- Oncoming vehicles.	
 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. 	 Vehicles remaining in the detection zone when driver accelerate fro A vehicle merging into an adjacent lane at a speed approximately the A vehicle approaching rapidly from behind. 	m a stop. DAS he same as vehicle.
	 A vehicle which vehicle overtakes rapidly. Severe weather or road spray conditions may reduce the ability of t The side radar detection zone is designed based on a standard land side radar may not detect vehicles in an adjacent lane. When driv detect vehicles driving two lanes away. 	he radar to detect other vehicles. P e width. When driving in a wider lane, the ing in a narrow lane, the side radar may

• The side radar is designed to ignore most stationary objects, however, objects such as guardrails, walls, foliage and parked vehicles may occasionally be detected. This is a normal operating condition.

HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

Precautions for Rear Cross Traffic Alert

[DRIVER ASSISTANCE SYSTEM]

INFOID:000000012874305

SIDE RADAR HANDLING

- Side radar for Rear Cross Traffic Alert system is located inside the rear bumper.
- Always keep the rear bumper near the side radar clean.
- Do not attach a sticker (including transparent material), install an accessory or paint work near the side radar.
- Do not strike or damage the areas around the side radar.
- Do not strike, damage, and scratch the side radar, especially the vent seal (gray circular) area, under repair.

REAR CROSS TRAFFIC ALERT

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

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ADAS CONTROL UNIT)

CONSULT Function (ICC/ADAS)

APPLICATION ITEMS

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

Diagnosis mode	Description	(
Configuration	 The vehicle specification that is written in ADAS control unit can be displayed or stored. The vehicle specification can be written when ADAS control unit is replaced. 	
Work support	Displays causes of automatic system cancellation occurred during system control.	[
Self Diagnostic Result	Displays the name of a malfunctioning system stored in the ADAS control unit.	
Data Monitor	Displays ADAS control unit input/output data in real time.	
Active Test	Enables an operational check of a load by transmitting a driving signal from the ADAS control unit to the load.	ľ
ECU Identification	Displays ADAS control unit part number.	[
CAN Diag Support Monitor	Displays a reception/transmission state of CAN communication and ITS communication.	ſ

CONFIGURATION

Configuration includes functions as follows.

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

WORK SUPPORT

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

NOTE:

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

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

Display Items for The Cause of Automatic Cancellation

Cause of cancellation	Cruise Control (ICC)	Description	N DA
	Intelligent		F
CAN COMM ERROR	×	ADAS control unit received an abnormal signal with CAN communication.	
NO RECORD	×	_	

SELF DIAGNOSTIC RESULT Refer to DAS-112, "DTC Index".

L

Μ

В

А

< SYSTEM DESCRIPTION >

NOTE:

- The details of time display are as per the following:
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- ODO/TRIP METER (Mileage) and VOLTAGE(IGN voltage) is displayed on FFD (Freeze Frame Data).

DATA MONITOR

NOTE:

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

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
MAIN SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch.
SET/COAST SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
CANCEL SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
RESUME/ACC SW [On/Off]	×	×		Indicates [ON/OFF] status as judged from ICC steering switch.
DISTANCE SW [On/Off]	×			Indicates [ON/OFF] status as judged from ICC steering switch.
CRUISE OPE [On/Off]	×	×		Indicates whether controlling or not (ON means "controlling").
BRAKE SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC brake switch signal (ECM transmits ICC brake switch signal through CAN communication).
STOP LAMP SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from stop lamp switch signal (ECM trans- mits stop lamp switch signal through CAN communication).
IDLE SW [On/Off]	×			Indicates [ON/OFF] status of idle switch read from ADAS control unit through CAN communication (ECM transmits ON/OFF status through CAN communication).
SET DISTANCE [Short/Mid/Long]	×	×		Indicates set distance memorized in ADAS control unit.
CRUISE LAMP [On/Off]	×	×		Indicates [ON/OFF] status of MAIN switch indicator output.
OWN VHCL [On/Off]	×			NOTE: The item is displayed, but it is not monitored.
VHCL AHEAD [On/Off]	×			Indicates [ON/OFF] status of vehicle ahead detection indicator output.
ICC WARNING [On/Off]	×			Indicates [ON/OFF] status of ICC system warning lamp output.
VHCL SPEED SE [km/h] or [mph]	×	×	×	Indicates vehicle speed calculated from ADAS control unit through CAN 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.
THRTL SENSOR [deg]	×	×		NOTE: The item is displayed, but it is not monitored.
ENGINE RPM [rpm]	×			Indicates engine speed read from ADAS control unit through CAN 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).

Revision: December 2015

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

Monitored item [Unit]	ALL SIG (ICC)	MAIN SIG (ICC)	MAIN SIG (BSW/)	Description
YAW RATE [deg/s]	×			NOTE: B The item is displayed, but it is not monitored.
BA WARNING [On/Off]	×			Indicates [ON/OFF] status of FEB indicator lamp output.
STP LMP DRIVE [On/Off]	×	×		Indicates [ON/OFF] status of ICC brake hold relay drive output.
D POSITION SW [On/Off]	×			Indicates [ON/OFF] status of "D" or "M" positions read from ADAS control unit through CAN communication; ON when position "D" or "M" (TCM transmits shift position signal through CAN communication).
NP RANGE SW [On/Off]	×			Indicates shift position signal read from ADAS control unit through CAN 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 sig- nal that ADAS control unit readout via CAN communication is displayed (com- bination meter transmits the parking brake switch signal via CAN F communication).
PWR SUP MONI [V]	×	×		Indicates IGN voltage input by ADAS control unit.
VHCL SPD AT [km/h] or [mph]	×			Indicates vehicle speed calculated from CVT vehicle speed sensor read from ADAS control unit through CAN communication (TCM transmits CVT vehicle speed sensor signal through CAN communication).
THRTL OPENING [%]	×	×		Indicates throttle position read from ADAS control unit through CAN communi- cation (ECM transmits accelerator pedal position signal through CAN communi- cation).
GEAR [1, 2, 3, 4, 5, 6, 7]	×			Indicates CVT gear position read from ADAS control unit through CAN commu- nication (TCM transmits current gear position signal through CAN communica- tion).
CLUTCH SW SIG [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from clutch pedal position signal (ECM transmits ICC clutch switch signal through CAN communication).
NP SW SIG [On/Off]	×			Indicates [ON/OFF] status as judged from park/neutral position switch signal (ECM transmits park/neutral position switch signal through CAN communica- tion).
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. $\hfill \mathbb{M}$
ON ROOT GUIDANCE [On/Off]	×			NOTE: The item is displayed, but it is not monitored
DYNA ASIST SW [On/Off]	×	×	×	Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
IBA SW [On/Off]	×	×		NOTE: The item is displayed, but it is not monitored.
NAVI ICC DISP [On/Off]				NOTE: The item is displayed, but it is not monitored.
Shift position [Off, P, R, N, D, M/T1 - 7]			×	Indicates shift position read from ADAS control unit through CAN 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).

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

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

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

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

ACTIVE TEST

CAUTION:

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

Test item	Description	
METER LAMP	The FEB warning lamp can be illuminated by ON/OFF operations as necessary.	k
STOP LAMP	The ICC brake hold relay can be operated by ON/OFF operations as necessary, and the stop lamp can be illuminated.	
ADAS BUZZER	Sounds a buzzer used for BSW, RCTA by arbitrarily operating ON/OFF.	L
METER BUZZER	Sounds a buzzer used for ICC, PFCW, FEB by arbitrarily operating ON/OFF.	
BRAKE ACTUATOR 1		
BRAKE ACTUATOR 2	Activates the brake by an arbitrary operation.	I\
BRAKE ACTUATOR 3		

METER LAMP NOTE:

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

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

STOP LAMP

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

Н

J

Ν

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

METER BUZZER

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

ADAS BUZZER

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

BRAKE ACTUATOR

NOTE:

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

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

NOTE:

The test is finished in 10 seconds after starting



ECU IDENTIFICATION Displays ADAS control unit parts number.

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ICC SENSOR)

CONSULT Function (LASER/RADAR)

CAUTION:

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

APPLICATION ITEMS

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

Diagnosis mode	Description	
Self Diagnostic Result	Displays malfunctioning system memorized in ICC sensor	F
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>DAS-118, "DTC Index"</u>.

DATA MONITOR

Monitored item [Unit]	Description	I
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].	J
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].	K
PWR SUP MONI [V]	Indicates IGN voltage input by ICC sensor	
DISTANCE [m]	Indicates the distance from the vehicle ahead	M
RELATIVE SPD [m/s]	Indicates the relative speed of the vehicle ahead	Ν
LASER OFFSET [m]	NOTE: The item is indicated but not used.	
LASER HEIGHT [m]	NOTE: The item is indicated but not used.	DAS
STEERING ANGLE [deg]	The steering angle is displayed.	Р
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	

[DRIVER ASSISTANCE SYSTEM]

INFOID:000000013399202

А

В

С

D

Н

< SYSTEM DESCRIPTION >

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

< SYSTEM DESCRIPTION >

[DRIVER ASSISTANCE SYSTEM]

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

WORK SUPPORT

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

ICC sensor Adjust Refer to <u>CCS-59, "Description"</u>.

ECU IDENTIFICATION

ICC sensor part number is displayed.

CAUSE OF AUTO CANCEL

Work support items	Description	
OPERATING ABS	ABS function was operated.	DAS
OPERATING TCS	TCS function was operated.	
OPERATING VDC	VDC function was operated.	
ECM CIRCUIT	ECM did not permit ICC operation.	P
OP SW VOLT CIRC	The ICC steering switch input voltage is not within standard range.	
OP SW DOUBLE TOUCH	The ICC steering switches were pressed at the same time.	
VHCL SPD DOWN	Vehicle speed is lower than 24 km/h (15 mph).	
WHL SPD ELEC NOISE	Wheel speed sensor signal caught electromagnetic noise.	
VDC/TCS OFF SW	VDC OFF switch was pressed.	

Revision: December 2015

J

Μ

Ν

< SYSTEM DESCRIPTION >

Work support items	Description
VHCL SPD UNMATCH	Wheel speed became different from CVT vehicle speed.
TIRE SLIP	Wheel slipped.
IGN LOW VOLT	Decrease in ICC sensor ignition voltage.
PARKING BRAKE ON	The parking brake is operating.
WHEEL SPD UNMATCH	The wheel speed of all four wheels are out of the specified values.
INCHING LOST	a vehicle ahead is not detected during the following driving when the vehicle speed is approxi- mately 24 km/h (15mph) or less.
CAN COMM ERROR	ICC sensor received an abnormal signal with CAN communication.
ABS/TCS/VDC CIRC	An abnormal condition occurs in VDC/TCS/ABS system.
ECD CIRCUIT	An abnormal condition occurs in ECD system.
ASCD VHCL SPD DTAC	Vehicle speed is detached from the set vehicle speed.
ASCD DOUBLE COMD	Cancel switch and operation switch are detected simultaneously.
FEB OPERATED	FEB activated.
VHL AHAD LOST (CLSE RANGE)	A vehicle ahead lost close range.
NO RECORD	-

DIAGNOSIS SYSTEM (SIDE RADAR LH) N > [DRIVER ASSISTANCE SYSTEM]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (SIDE RADAR LH)

CONSULT Function (SIDE RADAR LEFT)

DESCRIPTION

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

Select diag mode	Function	C
Self Diagnostic Result	Displays memorized DTC in the side radar.	
Data Monitor	Displays real-time data of side radar.	
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-121, "DTC Index".

FFD (Freeze Frame Data)

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

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

DATA MONITOR

Monitored item [Unit]	Description		
BSW/CTA WARN STATUS [On/Off]	Indicates [ON/OFF] status of vehicle detection	J	
CTA SYSTEM ON [On/Off]	Indicates [ON/OFF] status of Rear Cross Traffic Alert system		
BSW STATUS [On/Off]	Indicates [ON/OFF] status of Blind Spot Warning system	- K	
VHCL SPD SE [km/h]	Indicates vehicle speed [km/h]	L	
TURN SIGNAL [LH/RH/Off]	Indicates the [LH/RH/OFF] operation of the signal	_	
SHIFT POSITION [P/R/N/D]	Indicates position of transmission range switch	IVI	
LUMINANCE (LEFT) [Hi/Lo]	Indicates the left side luminance level of the radar	N	
LUMINANCE (RIGHT) [Hi/Lo]	Indicates the right side luminance level of the radar	_	

ACTIVE TEST

CAUTION:

• Never perform the "Active Test" while driving.

• "Active Test" cannot be started while the Blind Spot Warning indicator is illuminated.

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

INFOID:000000012874308

А

В

Е

DIAGNOSIS SYSTEM (SIDE RADAR RH)

CONSULT Function (SIDE RADAR RIGHT)

INFOID:000000012874309

[DRIVER ASSISTANCE SYSTEM]

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-123, "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
BSW/CTA WARN STATUS [On/Off]	Indicates [ON/OFF] status of vehicle detection
CTA SYSTEM ON [On/Off]	Indicates [ON/OFF] status of Rear Cross Traffic Alert system
BSW STATUS [On/Off]	Indicates [ON/OFF] status of Blind Spot Warning system
VHCL SPD SE [km/h]	Indicates vehicle speed [km/h]
TURN SIGNAL [LH/RH/Off]	Indicates the [LH/RH/OFF] operation of the signal
SHIFT POSITION [P/R/N/D]	Indicates position of transmission range switch
LUMINANCE (LEFT) [Hi/Lo]	Indicates the left side luminance level of the radar
LUMINANCE (RIGHT) [Hi/Lo]	Indicates the right side luminance level of the radar

ACTIVE TEST

CAUTION:

Never perform the active test while driving.

• Active test cannot be started while the Blind Spot Warning indicator is illuminated.

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

ECU DIAGNOSIS INFORMATION ADAS CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor item	Condition		Value/Status
MAINI SW	Ignition switch ON	When MAIN (ON/OFF) switch is pressed.	On
IVIAIN SVV		When MAIN (ON/OFF) switch is not pressed.	Off
	Ignition quitch ON	When SET/COAST switch is pressed.	On
SET/COAST SW		When SET/COAST switch is not pressed.	Off
CANCEL SW	Ignition quitch ON	When CANCEL switch is pressed.	On
CANCEL SW		When CANCEL switch is not pressed.	Off
	Ignition switch ON	When RESUME/ACCELERATE switch is pressed.	On
RESUME/ACC SW	Ignition switch ON	When RESUME/ACCELERATE switch is not pressed.	Off
	Ignition quitch ON	When DISTANCE switch is pressed.	On
JISTANCE SW	Ignition switch ON	When DISTANCE switch is not pressed.	Off
	Drive the vehicle and activate	When ICC system is controlling.	On
JILUISE OFE	the ICC system	When ICC system is not controlling.	Off
	Ignition switch ON	When brake or clutch pedal is depressed.	Off
DRAKE SVV		When brake or clutch pedal is not depressed.	On
	Ignition switch ON	When brake pedal is depressed.	On
DI OF LAIVIF SVV		When brake pedal is not depressed.	Off
		Idling	On
		Except idling (depress accelerator pedal)	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
	Start the engine and press	ICC system ON (MAIN switch indicator ON).	On
CRUISE LAMP	MAIN switch	ICC system OFF (MAIN switch indicator OFF).	Off
OWN VHCL	NOTE: The item is indicated, but not monitored		Off
VHCL AHEAD	Drive the vehicle and activate	When a vehicle ahead is detected (vehicle ahead detection indicator ON).	On
	the ICC system	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 malfunction ON).	On
	MAIN switch	When ICC system is normal (ICC system malfunction OFF).	Off

INFOID:000000013399197

А

В

ADAS CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

Monitor item		Value/Status	
VHCL SPEED SE	While driving	Displays the ve- hicle speed cal- culated by ADAS control unit	
SET VHCL SPD	While driving When vehicle speed is set.		Displays the set vehicle speed
BUZZER O/P		When the buzzer of the following system operates:ICC systemPFCW systemFEB system	On
		When the buzzer of the following system not operates:ICC systemPFCW systemFEB system	Off
THRTL SENSOR	NOTE: The item is indicated, but not n	nonitored.	0.0
ENGINE RPM	Engine running		Equivalent to ta- chometer read- ing
		Wiper not operating.	Off
WIPER SW	Ignition switch ON	Wiper LO operation.	Low
		Wiper HI operation.	High
YAW RATE	NOTE: The item is indicated, but not n	0.0	
BA WARNING	Engine running	FEB OFF indicator lamp ON.When FEB system is malfunctioning.When FEB system is turned to OFF.	On
		FEB OFF indicator lamp OFF.When FEB system is normal.When FEB system is turned to ON.	Off
STP I MP DRIVE	Drive the vehicle and activate	When ICC brake hold relay is activated.	On
	the ICC system	When ICC brake hold relay is not activated.	Off
	Engine running	When the selector lever is in "D" position or manual mode.	On
Drosmonow		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 quitch ON	When the parking brake is applied.	On
PKB SVV	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
GEAR	While driving		Displays the gear position
< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

Monitor item		Condition	Value/Status
	Instition quitab ON	When clutch or brake pedal is depressed.	On
CLUTCH SW SIG	Ignition switch ON	When clutch or brake pedal is not depressed.	Off
	Ignition owitch ON	When the shift lever is in neutral position.	On
NP SW SIG	When the shift lever is in any position other than neutral.		Off
	Start the engine and press	When ICC system is deactivated.	Off
MODE SIG	MAIN switch	When ICC system is activated.	ICC
		SET switch indicator ON.	On
SET DISP IND	Press SET/COAST Switch	SET switch indicator OFF.	Off
DISTANCE	Drive the vehicle and activate the ICC system	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	When a vehicle ahead is detected.	Displays the rel- ative speed.
	the loo system	When a vehicle ahead is not detected.	0.0
ON ROOT GUIDE	NOTE: The item is indicated, but not n	nonitored.	Off
	Ignition switch ON	When the PFCW system is ON.	On
TOW STOTEM ON		When the PFCW 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 b	linking.	LH&RH
SIDE G	While driving	Vehicle turning right.	Negative value
	·······g	Vehicle turning left.	Positive value
FUNC ITEM	Ignition switch ON		FUNC3
FUNC ITEM (FCW)	Engine running		On
FUNC ITEM (BSW)	Engine running		On
FUNC ITEM (NV-ICC)	NOTE: The item is indicated, but not n	nonitored	Off
	Ignition switch ON	"Forward Emergency Braking" set with the integral switch is ON.	On
I GW SELECT	Ignition switch ON	"Forward Emergency Braking" set with the integral switch is OFF.	Off
RSW/SELECT	Ignition switch ON	"Blind Spot Warning" set with the integral switch is ON.	On
DOW SELECT		"Blind Spot Warning" set with the integral switch is OFF.	Off
NAVI ICC SELECT	NOTE: The item is indicated, but not n	nonitored.	Off
		Items set with the integral switch can be switched nor- mally.	On
STS SELECTABILITY	ignition switch ON	Items set with the integral switch cannot be switched normally.	Off
		When the BSW system is malfunctioning.	On
DOVV VVARIN LIVIP		When the BSW system is normal.	Off

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

Monitor item		Condition	Value/Status
	legitien ewiteb ON	When the BSW system is ON.	On
BSW SYSTEM ON	Ignition switch ON	When the BSW system is OFF.	Off
		When the FEB/PFCW system is ON.	On
FCW STSTEM ON	Engine running	When the FEB/PFCW system is OFF.	Off
BATTERY CIRCUIT OFF	NOTE: The item is indicated, but not u	sed.	Off
SYSTEM CANCEL		System cancel display ON.	On
MESSAGE		System cancel display OFF.	Off
		BSW system display ON.	On
B3W ON INDICATOR		BSW system display OFF.	Off
SIDE RADAR BLOCK		Front bumper or side radar is dirty.	On
COND		Front bumper and side radar is clean.	Off
		BSW system OFF.	Nothing
BSW IND BRIGHT-	Ignition owitch ON	Blind Spot Warning indicator brightness bright.	Bright
NESS	Ignition switch ON	Blind Spot Warning indicator brightness normal.	Normal
		Blind Spot Warning indicator brightness dark.	Dark
	_ · ·	When speed limiter MAIN switch is pressed.	On
SL MAIN SW	Engine running	When speed limiter MAIN switch is not pressed.	Off
FUNC ITEM (FEB)	Engine running		On
	Ignition switch ON	"Forward Emergency Braking" set with the integral switch is ON.	On
FEB SELECT		"Forward Emergency Braking" set with the integral switch is OFF.	Off
		FEB system ON.	On
FEB SVV	Engine running	FEB system OFF.	Off
SL TARGET VEHI- CLE SPEED	While driving	When vehicle speed is set.	Displays the set vehicle speed
	Drive the vehicle and acti-	Speed limiter SET indicator ON.	On
SL SET LAMP	 vate the speed limiter Press speed limiter MAIN switch 	Speed limiter SET indicator OFF.	Off
	Drive the vehicle and acti-	Speed limiter system ON.	On
SL LIMIT LAMP vate the speed limiter • Press speed limiter MAIN switch		Speed limiter system OFF.	Off
ASCD CANCEL	Drive the vehicle and activate	ASCD cancelled by low vehicle speed.	On
(LOW SPEED)	the ASCD	Other than above.	Off
	Drive the vehicle and activate	ASCD cancelled by difference between set speed and vehicle speed.	On
(SPEED DIFF)		Other than above.	Off
	Drive the vehicle and activate	When accelerator pedal is full depressed.	On
	the speed limiter	Other than above.	Off

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

TERMINAL LAYOUT PHYSICAL VALUES

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

 24
 23
 22
 21
 20
 19
 18
 17
 16
 15
 14
 13

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

Fail-safe (ADAS Control Unit)

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

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

INFOID:000000013399198

Ν

Μ

А

В

D

JSOIA0705ZZ

DAS

Revision: December 2015

< ECU DIAGNOSIS INFORMATION >

DTC Inspection Priority Chart

INFOID:000000013399199

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

Priority	Detected items (DTC)
1	U1507: LOST COMM (SIDE RDR R) U1508: LOST COMM (SIDE RDR L)
2	U1000: CAN COMM CIRCUIT U1321: CONFIGURATION
3	C1A17: ICC SENSOR MALF C1B53: SIDE RDR R MALF C1B54: SIDE RDR L MALF
4	 C1A01: POWER SUPPLY CIR C1A02: POWER SUPPLY CIR 2 C1A13: STOP LAMP RLY FIX C1A14: ECM CIRCUIT C1A34: COMMAND ERROR U0121: VDC CAN CIR 2 U0235: ICC SENSOR CAN CIRC 1 U0401: ECM CAN CIR 1 U0402: TCM CAN CIR 1 U0415: VDC CAN CIR 1 U0433: ICC SENSOR CAN CIRC 2 U1503: SIDE RDR L CAN CIR 2 U1504: SIDE RDR L CAN CIR 1 U1505: SIDE RDR R CAN CIR 2 U1506: SIDE RDR R CAN CIR 1
5	C1A03: VHCL SPEED SE CIRC
6	C1A00: CONTROL UNIT

DTC Index

INFOID:000000013399200

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

DTC		Fail-safe	Peference
CONSULT	CONSULT display	System	Reference
NO DTC IS DE- TECTED. FUR- THER TESTING MAY BE RE- QUIRED	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED		_
U1507	LOST COMM (SIDE RDR R)	D, E	<u>DAS-74</u>
U1508	LOST COMM (SIDE RDR L)	D, E	DAS-75
U1000 ^{NOTE}	CAN COMM CIRCUIT	A, B, C, D, E	DAS-63
U1321	CONFIGURATION	A, B, C, D, E	DAS-66
C1A17	ICC SENSOR MALF	A, B, C	<u>DAS-47</u>
C1B53	SIDE RDR R MALF	D, E	DAS-51
C1B54	SIDE RDR L MALF	D, E	DAS-52
C1A01	POWER SUPPLY CIR	A, B, C, D, E	DAS-37
C1A02	POWER SUPPLY CIR 2	A, B, C, D, E	DAS-37

< ECU DIAGNOSIS INFORMATION >

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

DTC		Fail-safe	Deference	
CONSULT		System	Reference	С
C1A13	STOP LAMP RLY FIX	A, B, C	<u>DAS-40</u>	
C1A14	ECM CIRCUIT	A, B, C	<u>DAS-47</u>	
C1A34	COMMAND ERROR	A, B, C	DAS-50	D
U0121	VDC CAN CIR 2	A, B, C, D, E	DAS-53	
U0235	ICC SENSOR CAN CIRC 1	A, C, D, E	DAS-55	
U0401	ECM CAN CIR 1	A, B, C, D, E	DAS-56	
U0402	TCM CAN CIR 1	A, B, C, D, E	<u>DAS-58</u>	
U0415	VDC CAN CIR 1	A, B, C, D, E	<u>DAS-60</u>	F
U0433	ICC SENSOR CAN CIRC 2	A, B, C	DAS-62	
U1503	SIDE RDR L CAN CIR 2	D, E	DAS-66	_
U1504	SIDE RDR L CAN CIR 1	D, E	<u>DAS-68</u>	G
U1505	SIDE RDR R CAN CIR 2	D, E	<u>DAS-70</u>	
U1506	SIDE RDR R CAN CIR 1	D, E	DAS-72	Н
C1A03	VHCL SPEED SE CIRC	D, E	DAS-38	
C1A00	CONTROL UNIT	A, B, C, D, E	DAS-36	

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.

Κ

J

А

В

Μ

Ν

DAS

ICC SENSOR Reference Value

INFOID:000000013399203

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 ICC system.	When a vehicle ahead is detected	Displays the distance from the preceding vehicle
		When a vehicle ahead is not detected	0.0
RELATIVE SPD	Drive the vehicle and activate the	When a vehicle ahead is detected	Displays the rel- ative speed
	ico system.	When a vehicle ahead is not detected	0.0
LASER OFFSET	NOTE: The item is indicated but not used.		_
LASER HEIGHT	NOTE: The item is indicated but not used.		_
	Ignition switch ON	When setting the steering wheel in straight-ahead po- sition	0.0
STEERING ANGLE		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
		FCW system set with the information display is ON	ON
FCW SYSTEM ON	Engine running	FCW system set with the information display is OFF	OFF
		FCW system set with the information display is ON	ON
FUW SELECT	Engine running	FCW system set with the information display is OFF	OFF
PECW SELECT	Engine running	PFCW system set with the information display is ON	ON
		PFCW system set with the information display is OFF	OFF
FEB SW	NOTE: The item is indicated, but not used	—	
	Engine running	PFCW system set with the information display is ON	ON
LER SELECI		PFCW system set with the information display is OFF	OFF

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

Monitor item		Condition	Value/Status	
		When MAIN switch is pressed	On	A
MAIN SW	Ignition switch ON	When MAIN switch is not pressed	Off	
	Facine averian	Intelligent On inc. On the I Outline MAIN suitch status	On	В
ICC/ASCD MODE	Engine running	Intelligent Cruise Control System MAIN switch status	Off	
	Institute autitate ON	When SET/COAST switch is pressed	On	
SET/COAST SW	Ignition switch ON	When SET/COAST switch is not pressed	Off	С
		When CANCEL switch is pressed	On	
CANCEL SW	Ignition switch ON	When CANCEL switch is not pressed	Off	Γ
		When RESUME/ACC switch is pressed	On	D
RESUME/ACC SW	Ignition switch ON	When RESUME/ACC switch is not pressed	Off	
		When DISTANCE switch is pressed	On	E
DISTANCE SW	Ignition switch ON	When DISTANCE switch is not pressed	Off	
		When brake pedal is depressed	On	_
BRAKE SW	Ignition switch ON	When brake pedal is not depressed	Off	F
		When brake pedal is depressed	On	
STOP LAMP SW	Ignition switch ON	When brake pedal is not depressed	Off	G
		Idling	On	
IDLE SW	Engine running	Except idling (depress accelerator pedal)	Off	
	Start the engine and press MAIN	ICC system ON (MAIN switch indicator ON)	On	H
CRUISE LAMP	switch	ICC system OFF (MAIN switch indicator OFF)	Off	I
	Drive the vehicle and activate the	When a vehicle ahead is detected (vehicle ahead de- tection indicator ON)	On	
VHCL AHEAD	Intelligent Cruise Control System	When a vehicle ahead is detected (vehicle ahead de- tection indicator OFF)	Off	J
	Start the engine and turn the ICC	When set to "long"	LONG	
SET DISTANCE	 system ON Press the DISTANCE switch to 	When set to "middle"	MID	K
	change the distance setting	When set to "short"	SHORT	
THRT SENSOR [%]	Engine running	Depress accelerator pedal	Displays the throttle position	L
VEHICLE AHEAD DE- TECT	Engine running		_	N
STATIC OBSTACLE DETECT	Indicates [ON/Off] status of static obstacle detection			1.0
		 When the buzzer of the following system operates: Intelligent Cruise Control System PFCW system FEB system 	On	N
BUZZER O/P	Engine running	When the buzzer of the following system does not operate:		DA
		Intelligent Cruise Control SystemPFCW systemFEB system	Off	P
FUNC ITEM (FCW)			—	
FUNC ITEM (PFCW)				
FUNC ITEM (FEB)	Ignition switch ON	—	On	
FUNC ITEM (ICC)	1			
PRESS_ORDER	Engine running	—		

Revision: December 2015

< ECU DIAGNOSIS INFORMATION >

[DRIVER ASSISTANCE SYSTEM]

Monitor item		Condition	Value/Status
		When the selector lever is in "D" position or manual mode	On
D KANGE SW		When the selector lever is in any other than "D" or manual mode	Off
	Engine running	When the selector lever is in "N""P"	On
NP RANGE SW		When the selector lever is in any other than "N""P"	Off
	Ignition switch ON	When the parking brake is applied	On
PKD SW	Ignition switch ON	When the parking brake is released	Off
VHCL SPD AT	While driving	_	Value of CVT vehicle speed sensor signal
Shift position	Engine runningWhile driving	_	Displays the shift position
		System cancel display OFF	NO REQ
SYSTEM CANCEL MESSAGE	Engine running	System cancel reason is slippery road	SLIP
		System cancel reason is VDC OFF	VDC OFF
	Engine running	Meter indicates km/h	km/h
DISF VHCL SFD UNIT		Meter indicates mph	mph
	Engine running	Meter indicates km/h	km/h
		Meter indicates mph	mph
ADAS MALE		ADAS is malfunction	On
		ADAS is not malfunction	Off
STOP LAMP RELAY	Engine running	Stop lamp relay is fixed on	On
ON		Stop lamp relay is not fixed on	Off
STOP LAMP RELAY	Engine running	Stop lamp relay is fixed off	On
OFF		Stop lamp relay is not fixed off	Off
ACCEL COM VALUE 1 [m/s2]	Engine running	_	ICC sensor re- quest accel command to ADAS controller
		Intelligent Cruise Control System Off	Off
	Engine running	Intelligent Cruise Control System On	ICC
ICC STATUS		Intelligent Cruise Control System On and vehicle is stopped	STOP1
		Intelligent Cruise Control System On and Driver de- pressed accelerator pedal	ACCEL

TERMINAL LAYOUT



PHYSICAL VALUES

< ECU DIAGNOSIS INFORMATION >

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

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 inspec-	G
tion priority chart.	0

Priority	Detected items (DTC)	Ц
1	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)	
2	C1A50: ADAS MALFUNCTION C1A0C: ADAS MSG COUNTER C1A0C: ADAS CRC ERROR	1
	C1A01: POWER SUPPLY CIR C1A02: POWER SUPPLY CIR 2 C1A04: ABS/TCS/VDC CIRC C1A05: PBAKE SW/STOPL SW	J
	 C1A03: DIARE SWISTOF E SW C1A06: OPERATION SW CIRC C1A07: CVT CIRCUIT C1A12: LASER BEAM OFFCNTR 	K
	 C1A13: STOP_LAMP_RLY_FIX C1A14: ECM_CIRCUIT C1A16: RADAR STAIN C1A18: LASER AIMING INCMP 	L
3	 C1A21: UNIT HIGH TEMP C1A24: NP RANGE C1A26: ECD MODE MALF C1A27: ECD POWER SUPPLY CIRC 	M
	C1A39: STRG SEN CIR C1B5D: FEB OPE COUNT LIMIT C10B7: YAW RATE SENSOR U0121: VDC CAN CIR2	Ν
	 U153A: TCM CAN CIR 1 U153B: TCM CAN CIR 2 U153D: ECM CAN CIR 2 U1526: STEC SEN CAN CIR 1 	DA
	 00120: STRG SEN CAN CIR 1 00415: VDC CAN CIR 1 00428: STRG SEN CAN CIR2 	Ρ
4	C1A03: VEHC_SPEED_SE_CIRC	
5	C1A15: GEAR POSITION	
6	C1A00: CONTROL UNIT C1A17: ICC SENSOR MALF C1A0D: RADAR CAN CIR	

Revision: December 2015

INFOID:000000013399204

INFOID:000000013399205

F

< ECU DIAGNOSIS INFORMATION >

DTC Index

[DRIVER ASSISTANCE SYSTEM]

INFOID:000000013399206

×: Applicable

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 is switched 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 ··· 48 → 49 after returning to the normal condition whenever the ignition is switched OFF → ON. It returns to 0 when a malfunction is detected again in the process.
- If it is over 49, it is fixed to 49 until the self-diagnosis results are erased.

DTC			Fail	-safe fun	ction	
CONSULT	CONSULT display	ICC system warning lamp	Intelligent Cruise Control	Predictive Forward Collision Control	Forward Emergency Brake (FEB)	Reference
C1A00	CONTROL UNIT	ON	×	×	×	CCS-70, "DTC Logic"
C1A0C	ADAS CAN CIR 1	ON	×	×	×	CCS-116, "DTC Logic"
C1A0D	RADAR CAN CIR	ON	×	×	×	CCS-117, "DTC Logic"
C1A01	POWER SUPPLY CIR	ON	×	×	×	CCS-71, "DTC Logic"
C1A02	POWER SUPPLY CIR2	ON	×	×	×	CCS-71, "DTC Logic"
C1A03	VHCL SPEED SE CIRC	ON	×	×	×	CCS-72, "DTC Logic"
C1A04	ABS/TCS/VDC CIRC	ON	×	×	×	CCS-74, "DTC Logic"
C1A05	BRAKE SW/STOP L SW	ON	×	×	×	CCS-75, "DTC Logic"
C1A06	OPERATION SW CIRC	ON	х			CCS-80, "DTC Logic"
C1A07	CVT CIRCUIT	ON	×	×	×	CCS-113, "DTC Logic"
C1A12	LASER BEAM OFFCNTR	ON	×	×	×	CCS-83, "DTC Logic"
C1A13	STOP LAMP RLY FIX	ON	×	×	×	CCS-84, "DTC Logic"
C1A14	ECM CIRCUIT	ON	×	×	×	CCS-86, "DTC Logic"
C10B7	YAW RATE SENSOR	ON	×	×	×	CCS-104, "DTC Logic"
C1A15	GEAR POSITION	ON	×	×	×	CCS-88, "DTC Logic"
C1A16	RADAR BLOCKED	ON	×	×	×	CCS-90, "DTC Description"
C1A17	ICC SENSOR MALF	ON	х	×	×	CCS-92, "DTC Logic"
C1A18	LASER ALIGNMENT INCMPT	ON	×	×	×	CCS-93, "DTC Logic"
C1A21	UNIT HIGH TEMP	ON	×	×	×	CCS-94, "DTC Logic"
C1A24	NP RANGE	ON	×	×	×	CCS-95, "DTC Logic"
C1A26	ECD MODE MALF	ON	×	×	×	CCS-97, "DTC Logic"
C1A27	ECD POWER SUPPLY CIRCUIT	ON	×	×	×	CCS-99, "DTC Logic"
C1A39	STRG SENS CIR	ON	×	×	×	CCS-101, "DTC Logic"
C1A50	ADAS MALFUNCTION	ON	×	×	×	CCS-103, "DTC Logic"
C1B5D	FEB OPE COUNT LIMIT	ON	×	×	×	CCS-102, "DTC Logic"

[DRIVER ASSISTANCE SYSTEM]

FCU	DIAGNOSIS	INFORMATION >	
200			

1	SSISTANCE SYSTEM	IVER A	[DR			< ECU DIAGNOSIS INFORMATION >		
-		ction	-safe fun	Fail			DTC	
B	Reference	Forward Emergency Brake (FEB)	Predictive Forward Collision Control	Intelligent Cruise Control	ICC system warning lamp	CONSULT display	CONSULT	
	CCS-104, "DTC Logic"	×	×	×	ON	YAW RATE SENSOR	C10B7	
- E	CCS-114, "DTC Logic"	×	×	×	ON	TCM CAN CIR 1	U153A	
-	CCS-115, "DTC Logic"	×	х	×	ON	TCM CAN CIR 2	U153B	
F	CCS-115, "DTC Logic"	×	×	х	ON	ECM CAN CIR 2	U153D	
_	CCS-105, "DTC Logic"	×	×	×	ON	VDC CAN CIR2	U0121	
_	CCS-106, "DTC Logic"	×	х	×	ON	STRG SEN CAN CIR1	U0126	
G	CCS-107, "DTC Logic"	×	×	×	ON	ECM CAN CIR1	U0401	
_	CCS-108, "DTC Logic"	×	×	×	ON	VDC CAN CIR1	U0415	
- Н	CCS-109, "DTC Logic"	×	×	×	ON	STRG SEN CAN CIR2	U0428	
-	CCS-110, "DTC Logic"	х	×	×	ON	CAN COMM CIRCUIT	U1000	
-	CCS-111, "DTC Logic"	×	×	×	ON	CONTROL UNIT (CAN)	U1010	

J

Κ

L

M

Ν

DAS

Ρ

SIDE RADAR LH

Reference Value

INFOID:000000012874318

[DRIVER ASSISTANCE SYSTEM]

VALUES ON THE DIAGNOSIS TOOL

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
BSW/CTA WARN	BSW system is normal	On
STATUS	BSW system is malfunctioning	Off
CTA SYSTEM ON	CTA system is ON	On
	CTA system is OFF	Off
RSINI STATI IS	BSW system is ON	Off
53W 51A105	BSW system is OFF	On
VHCL SPD SE	Indicates current vehicle speed	km/h
	Left/right turn signal is ON	On
I UNIN SIGNAL	Left/right turn signal is OFF	Off
SHIFT POSITION	Shows the position of the transmission range switch	P/R/N/D/L
LUMINANCE(LEFT)	Shows radar left luminance level	Hi/Lo
LUMINANCE (RIGHT)	Shows radar right luminance level	Hi/Lo

TERMINAL LAYOUT



PHYSICAL VALUES

Term (Wir	iinal No. e color)	Description		Condition	Value	
+	_	Signal name	Input/ Output	Condition	(Approx.)	
3 (B)	Ground	Ground	_	_	0 V	
4 (G)	Ground	Blind Spot Warning indica- tor	Output	Approx. 2 sec. after ignition switch OFF \Rightarrow ON (bulb check)	6 V	
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	
6 (L)		ITS communication high		_	_	
7 (Y)		ITS communication low		_	—	
8 (B)	Ground	Ground		_	0 V	

[DRIVER ASSISTANCE SYSTEM]

Fail-safe (Side Radar)

< ECU DIAGNOSIS INFORMATION >

INFOID:000000012874319

А

E

F

Н

FAIL-SAFE CONTROL BY DTC

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

TEMPORARY DISABLED STATUS AT BLOCKAGE

Blind Spot Warning (BSW)

When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, D the operation may be temporarily cancelled:

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

Rear Cross Traffic Alert (RCTA)

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

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

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

DTC Inspection Priority Chart

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	ŀ

DTC Index

INFOID:000000012874321

INFOID:000000012874320

×: Applicable

DTC		Fail-safe	Peference page	R.
		Blind Spot Warning/Rear Cross Traffic Alert		IV
C1B50	SIDE RDR MALFUNCTION	×	DAS-139	
C1B51	BSW/BSI IND SHORT CIR	×	DAS-140	Ν
C1B52	BSW/BSI IND OPEN CIR	×	DAS-142	
C1B55	RADAR BLOCKAGE	×	DAS-144	
U1000	CAN COMM CIRCUIT	×	DAS-150	DA
U1010	CONTROL UNIT (CAN)	×	DAS-153	
U0104	ADAS CAN CIR1	×	DAS-146	F
U0405	ADAS CAN CIR2	×	DAS-148	

SIDE RADAR RH

Reference Value

INFOID:000000012874322

[DRIVER ASSISTANCE SYSTEM]

VALUES ON THE DIAGNOSIS TOOL

CONSULT MONITOR ITEM

Monitor Item	Condition	Value/Status
BSW/CTA WARN	BSW system is normal	On
STATUS	BSW system is malfunctioning	Off
CTA SYSTEM ON	CTA system is ON	On
OROTOTEMON	CTA system is OFF	Off
RSIN/ STATUS	BSW system is ON	Off
BSW STATUS	BSW system is OFF	On
VHCL SPD SE	Indicates current vehicle speed	km/h
	Left/right turn signal is ON	On
TURN SIGNAL	Left/right turn signal is OFF	Off
SHIFT POSITION	Shows the position of the transmission range switch	P/R/N/D/L
LUMINANCE(LEFT)	Shows radar left luminance level	Hi/Lo
LUMINANCE (RIGHT)	Shows radar right luminance level	Hi/Lo

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	
3 (B)	Ground	Right/Left switching signal	Input	_	0 V	
4 (G)	Ground	Blind Spot Warning indica- tor	Output	Approx. 2 sec. after ignition switch OFF \Rightarrow ON (bulb check)	6 V	
5 (R)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage	
6 (L)		ITS communication high		_	_	
7 (Y)		ITS communication low		_	_	
8 (B)	Ground	Ground	_	_	0 V	

[DRIVER ASSISTANCE SYSTEM]

< ECU DIAGNOSIS INFORMATION > Fail-safe (Side Radar)

INFOID:000000012874323

А FAIL-SAFE CONTROL BY DTC Blind Spot Warning (BSW)/Rear Cross Traffic Alert (RCTA) If a malfunction occurs in the side radar, ADAS control unit cancels control, and turns ON the Blind Spot Warning indicator (orange) on the combination meter. TEMPORARY DISABLED STATUS AT BLOCKAGE Blind Spot Warning (BSW) When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, D 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. E Rear Cross Traffic Alert (RCTA) When the side radar is blocked, the operation is temporarily cancelled. Then the buzzer sounds and the Blind Spot Warning indicator (orange) is turned ON in the combination meter. Also, under the following conditions, F 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:000000012874324 If some DTCs are displayed at the same time, perform inspections one by one based on the following priority Н 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	ŀ

DTC Index

INFOID:000000012874325

×: Applicable

DTC		Fail-safe	Peference page	N
		Blind Spot Warning/Rear Cross Traffic Alert	Reference page	1\
C1B50	SIDE RDR MALFUNCTION	×	DAS-139	
C1B51	BSW/BSI IND SHORT CIR	×	DAS-140	Ν
C1B52	BSW/BSI IND OPEN CIR	×	DAS-142	
C1B55	RADAR BLOCKAGE	×	DAS-144	
U1000	CAN COMM CIRCUIT	×	DAS-151	DA
U1010	CONTROL UNIT (CAN)	×	DAS-154	
U0104	ADAS CAN CIR1	×	DAS-146	F
U0405	ADAS CAN CIR2	×	DAS-148	

< WIRING DIAGRAM >

WIRING DIAGRAM

DRIVER ASSISTANCE SYSTEMS

Wiring Diagram

INFOID:000000013399196





Ρ



£

40

139

Ġ

AAOWA0147GB

 ∇

[DRIVER ASSISTANCE SYSTEM]



AAOIA0463GB

Ρ

DRIVER ASSISTANCE SYS	TEMS
	[DRIVER ASSISTANCE SYSTEM]



AAOIA0464GB

[DRIVER ASSISTANCE SYSTEM]

А

В

С

D

Е

F

Н

J

Κ

L

Μ

Ν

DAS



Ρ

AAOIA0465GB



AAOIA0466GB



Р

AAOIA0467GB

.o.	00ta			33			
a	SIDE RADAR LH	Connector	Name	WIRE TO WIRE	Connector No	D111	
в	JAD08FB-6P	Connector	Type	rH40FW-CS15	Connector No.		
olor	BLACK	Connector	Color	NHITE			
		E			Connector Type	TH04MW-NH	
					Connector Cold	r WHITE	
		H.S.	15C 14C	13C 12C 11C 10C 9C 8C 7C 8C 5C 4C 3C 2C 1C	ł		
	1 2 3 4 5 6 7 8		460450440	Isecond conclusion Isecond conclusicity Isecond conclusion Iseco			
					H.S.		
						4 3 2 1	
Color Wire	of Signal Name	Terminal No.	Color of Wire	Signal Name			
8	POSITION INDICATOR	15C	8	1			ſ
9	LED DRIVE	18C	W/L	I	Terminal Co	or of Signal Name	
œ	POWER				- NO.	all	
-	CAN-H	Connector	No.	221			Τ
~ °	CAN-L	Connector	Name	3LIND SPOT WARNING/BLIND SPOT			
8	GND			NTERVENTION INDICATOR LH			
N	Dicc	Connector	lype	H04MW-NH			
Nomo Nomo		Connector	Color	NHITE			
Name							
Color	JADUGED-OF BLACK						
		H.S.					
				4 3 2 1			
		Terminal	Color of	Signal Name			
		- NO.	W/L				
Color	of	4	8	1			
Wire	Signal Name						
8	POSITION INDICATOR	Connector	No.	0101			
5	LED DRIVE	Connector	Name \	WIRE TO WIRE			
œ .	POWER	Connector	Type	TH40FW-CS15			
~ ~	CAN-H	Connector	Color	WHITE			
• •	GND						
	-	NEXEN			_		
		H.S.	15B 14P	138 128 118 108 98 88 78 68 58 48 38 28 18			
			46B45B44B 55B54B	438428418408398138813783689 26825824823822821820819814881778168 33852851851850849848781			
		Terminal	Color of	Signal Name			
		158		1			
				-			

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000012874327 B

[DRIVER ASSISTANCE SYSTEM]





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.

DAS-133

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[DRIVER ASSISTANCE SYSTEM]

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" mode.
- 2. Check if the DTC is detected on the "Self Diagnostic Results" of the following:
- "ICC/ADAS"
- "LASER/RADAR"
- "SIDE RADAR LEFT"
- "SIDE RADAR RIGHT"

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 3.

3.ACTION TEST

- 1. Perform the system action test to check the operation status of the following:
- BSW: Refer to <u>DAS-137</u>, "BLIND SPOT WARNING : Description".
- RCTA: Refer to DAS-138, "RCTA : Description".
- 2. Check if any other malfunctions occur.

>> GO TO 4.

4.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to <u>DAS-160</u>, "Symptom <u>Table"</u>.

>> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

CONSULT

- 1. Check the DTC in the "Self Diagnosis Results".
- 2. Perform trouble diagnosis for the following detected DTC:
- "ICC/ADAS": Refer to CCS-46, "DTC Index".
- "LASER/RADAR" Refer to CCS-46, "DTC Index".
- "SIDE RADAR LEFT": Refer to DAS-121, "DTC Index".
- "SIDE RADAR RIGHT": Refer to DAS-123, "DTC Index".

NOTE:

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

>> GO TO 6.

6.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 7.

7. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

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

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[DRIVER ASSISTANCE SYSTEM]

NO >> GO TO 8.	
8 REPAIR CHECK (ACTION TEST)	
Derferre the following existence that Check that the malfunction expectation is called as no other expect.	
occur	oms
BSW: Refer to <u>DAS-137, "BLIND SPOT WARNING : Description"</u> .	
RCTA: Refer to <u>DAS-138, "RCTA : Description"</u> .	
Is there a malfunction symptom?	
YES >> GO TO 4.	
NO >> Inspection End.	
	Γ

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR < BASIC INSPECTION > [DRIVER ASSISTANCE SYSTEM]

ADDITIONAL SERVICE WHEN REPLACING ICC SENSOR

Description

INFOID:000000012874328

• Always perform the radar alignment after removing and installing or replacing the ICC sensor. **CAUTION:**

The system does not operate normally unless the laser beam aiming adjustment is performed. Always perform it.

• Perform the PFCW system action test, check that the PFCW system operates normally.

Work Procedure

INFOID:000000012874329

1.RADAR ALIGNMENT

Perform the radar alignment. Refer to CCS-59. "Description".

>> GO TO 2.

2.ICC SYSTEM ACTION TEST

- 1. Perform the ICC system action test. Refer to <u>CCS-66, "Description"</u>.
- 2. Check that the ICC system operates normally.

>> Inspection End.

ACTION TEST

[DRIVER ASSISTANCE SYSTEM]

А

D

Ε

Н

Κ

INFOID:000000012874330

INFOID-000000012874331

< BASIC INSPECTION >
ACTION TEST
BLIND SPOT WARNING

BLIND SPOT WARNING : Description

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

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

Fully understand the following items well before the road test;

- Precautions: Refer to DAS-80, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".
- System description for Blind Spot Warning: Refer to <u>DAS-87, "BSW : System Description"</u>.
- Normal operating condition: Refer to DAS-167, "Description".

BLIND SPOT WARNING : Work Procedure

WARNING:

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

Fully understand the following items well before the road test;

- Precautions: Refer to <u>DAS-80</u>, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".
- System description for Blind Spot Warning: Refer to <u>DAS-87, "BSW : System Description"</u>.
- Normal operating condition: Refer to <u>DAS-167</u>, "Description".

1.CHECK BSW SYSTEM SETTING

1. Start the engine.

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

>> GO TO 2.

2.BSW SYSTEM ACTION TEST

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

Vehicle co	ondition/ Driv	er's operation		Action			1
Vehicle speed (Approx.)	Turn sig- nal condi- tion	Status of vehicle de- tection within detection area	Indication on the Blind Spot Warning indicator	Indication on the combination meter	Indicator color	Buzzer	
Less than approx. 18 MPH (29 km/h)	_	_	OFF	ON	White	OFF	IV
	_	Vehicle is absent	OFF	ON	White	OFF	N
	OFF	Vehicle is detected	ON	ON	White	OFF	
Approx. 20 MPH (32 km/h) or more	ON (vehicle	Before turn signal op- erates Vehicle is detected	Blink	Blink	Yellow (Blink)	Short con- tinuous beeps	DA
	direction)	Vehicle is detected af- ter turn signal operates	Blink	Blink	Yellow (Blink)	OFF	

AS

>> Inspection End.

RCTA

ACTION TEST

< BASIC INSPECTION >

RCTA : Description

[DRIVER ASSISTANCE SYSTEM]

INFOID:000000012874332

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

WARNING:

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

Fully understand the following items well before the road test;

- Precautions: Refer to <u>DAS-80, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service"</u>.
- System description for RCTA: Refer to <u>DAS-89, "RCTA : System Description"</u>.
 Normal operating condition: Refer to <u>DAS-167, "Description"</u>.

RCTA : Work Procedure

INFOID:000000012874333

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-80, "Blind Spot Warning/Rear Cross Traffic Alert (RCTA) System Service".
- System description for RCTA: Refer to DAS-89, "RCTA : System Description".
- Normal operating condition: Refer to DAS-167, "Description".

1. CHECK BSW/RCTA SYSTEM SETTING

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

>> GO TO 2.

2. ACTION TEST FOR RCTA

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

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

>> Inspection End.

DTC/CIRCUIT DIAGNOSIS C1B50 SIDE RADAR MALFUNCTION

DTC Description

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC d	etection condition	- 0
		Diagnosis condition	When Ignition switch is ON.	- D
0 (5 5 0	SIDE RDR MALFUNCTION	Signal (terminal)	-	
C1B50	(Side radar malfunction)	Threshold	Side radar malfunction	-
		Diagnosis delay time	-	E
POSSIBLE Side radar	CAUSE			F
FAIL-SAFE				I
The following	g systems are canceled:			
Blind Spot Bear Cross	Warning (BSW)			G
				Н
I.PERFOR	M DTC CONFIRMATION PRC	CEDURE		_
 CONSULT Start the Perform Check if BIGHT/I 	F engine. "All DTC Reading" mode. "C1B50" is detected as the cu FFT"	rrent malfunction in "Self Diag	nostic Result" mode of "SIDE RADAF	्
Is the "C1B5	0" detected as the current mal	function?		J
YES >> NO-1 >> NO-2 >> 0	Refer to <u>DAS-139. "Diagnosis</u> To check malfunction symptom Confirmation after repair: Inspo	Procedure". 1 before repair: Refer to <u>GI-42</u> ection End.	2, "Intermittent Incident".	K
Diagnosis	Procedure		INFOID:0000000128743;	35
1.PERFOR	M SELF DIAGNOSTIC			L
CONSULT 1. Turn ign 2. Select "S 3. Touch "E	r ition switch ON. Self Diagnostic Result" mode c FRASE"	of "SIDE RADAR LEFT/RIGH"	Γ".	M
 Turn ign Turn ign Check if 	ition switch OFF. ition switch ON. f any DTC other than "C1B5()" is detected in "Self Diagno	ostic Result" mode of "SIDE RADAF	N 2
Is any DTC of	detected?			DA
YES >>	Perform diagnosis on the dete <u>123, "DTC Index"</u> (Side Radar Replace the faulty side radar. I	cted DTC and repair or replac Right) or <u>DAS-121, "DTC Ind</u> Refer to <u>DAS-174, "Removal</u>	e the malfunction part. Refer to <u>DAS</u> <u>ex"</u> (Side Radar Left). and Installation".	P

А

В

С

INFOID:000000012874334

C1B51 BLIND SPOT WARNING INDICATOR SHORT CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [DRIVER ASSISTANCE SYSTEM]

C1B51 BLIND SPOT WARNING INDICATOR SHORT CIRCUIT

DTC Description

INFOID:000000012874336

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

• Blind Spot Warning indicator circuit.

- Blind Spot Warning indicator.
- Side radar.

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is the "C1B51" detected as the current malfunction?

- YES >> Refer to <u>DAS-140, "Diagnosis Procedure"</u>.
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874337

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

1. CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN 1

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

Side	radar	Blind Spot Wa	arning indicator	Continuity
Connector	Terminal	Connector	Terminal	Continuity
B465 LH	4	D21 LH	1	Vee
B466 RH	4	D111 RH		165

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connector.

C1B51 BLIND SPOT WARNING INDICATOR SHORT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

А

Н

J

Κ

L

Μ

Ν

$\overline{2}$.check blind spot warning indicator circuit for open 2

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

Blind Spot Warr	ning indicator		Continuity	В
Connector	Terminal	Cround	Continuity	
D21 LH	Δ	Ground	Vac	
D111 RH	4		Tes	C
Is the inspection result no	ormal?			
YES >> GO TO 3.				D
NO >> Repair or rep	place harness or conne	ector.		
3.CHECK SIDE RADAF	R VOLTAGE OUTPUT			
1. Connect side radar h	narness connector.			E
2. Check voltage betwee	en Blind Spot Warning	indicator harness conn	ector and ground.	

Blind Spot W	arning indicator	Condition		Voltage	F
Connector	Terminal		Condition	(Approx.)	
D21 LH		Ground	Ignition switch		G
D111 RH			$OFF \Rightarrow ON$ (Approx. 2 sec.)	6 V	0

Is the inspection result normal?

YES >> Replace Blind Spot Warning indicator. Refer to <u>DAS-175</u>, "Removal and Installation".

NO >> Replace side radar. Refer to <u>DAS-174</u>, "Removal and Installation".

DAS

Ρ

C1B52 BLIND SPOT WARNING INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

C1B52 BLIND SPOT WARNING INDICATOR OPEN CIRCUIT

DTC Description

INFOID:000000012874338

[DRIVER ASSISTANCE SYSTEM]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

- The following systems are canceled:
- Blind Spot Warning (BSW)
- Rear Cross Traffic Alert (RCTA)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is the "C1B52" detected as the current malfunction?

- YES >> Refer to <u>DAS-142</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874339

Regarding Wiring Diagram information, refer to DAS-124, "Wiring Diagram".

1. CHECK BLIND SPOT WARNING INDICATOR CIRCUIT FOR OPEN 1

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

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connector.

C1B52 BLIND SPOT WARNING INDICATOR OPEN CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

А

Н

J

Κ

L

Μ

Ν

$\overline{2}$.check blind spot warning indicator circuit for open 2

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

Blind Spot Warning indicator			Continuity	В
Connector	Terminal	Cround	Continuity	
D21 LH	4	Giouna	Vaa	_
D111 RH	4		Tes	С
Is the inspection result n	ormal?			
YES >> GO TO 3. NO >> Repair or re	place harness or conn	ector.		D
J. CHECK SIDE RADAF	R VOLTAGE OUTPUT			
 Connect side radar I Check voltage between 	narness connector. een Blind Spot Warnin	g indicator harness conr	nector and ground.	E

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

Is the inspection result normal?

YES >> Replace Blind Spot Warning indicator. Refer to DAS-175, "Removal and Installation".

NO >> Replace side radar. Refer to <u>DAS-174</u>, "Removal and Installation".

DAS

< DTC/CIRCUIT DIAGNOSIS >

C1B55 RADAR BLOCKAGE

DTC Description

INFOID:000000012874340

[DRIVER ASSISTANCE SYSTEM]

DTC DETECTION LOGIC

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

NOTE:

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

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

POSSIBLE CAUSE

Stain or foreign materials is deposited.

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is the DTC "C1B55" detected?

- YES >> Refer to DAS-144, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874341

1.CHECK THE REAR BUMPER

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

>> GO TO 2.

2.CHECK THE SIDE RADAR

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

>> GO TO 3.

3.CHECK THE SIDE RADAR INSTALL CONDITION

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

DAS-144
C1B55 RADAR BLOCKAGE

[DRIVER ASSISTANCE SYSTEM]

>> GO TO 4.	A
 4.INTERVIEW 1. Ask if there is stain or foreign materials. 2. Ask if there is any temporary ambient condition such as splashing water, mist or fog. 3. Ask if there is any object such as ice, frost or dirt obstructing the side radar. 	В
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".	С
NO >> Inspection End.	D
	Е
	F
	G
	Н
	I
	J
	K
	L
	Μ
	Ν
	DAS
	Ρ

U0104 ADAS CAN 1

DTC Description

INFOID:000000012874342

[DRIVER ASSISTANCE SYSTEM]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable. Refer to <u>DAS-150, "SIDE RADAR LH : DTC Description"</u> (Side Radar LH) or <u>DAS-151, "SIDE RADAR RH : DTC Description"</u> (Side Radar RH).
- NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

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

Is DTC "U0104" detected?

- YES >> Refer to <u>DAS-146</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874343

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-150</u>, "SIDE RADAR LH : <u>DTC Description</u>" (Side Radar LH) or <u>DAS-151</u>, "SIDE RADAR RH : <u>DTC Description</u>" (Side Radar RH).

NO >> GO TO 2.

2.self diagnostic result of adas control unit

CONSULT

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

DAS-146

 4. Check DTC. Is DTC detected? YES -> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-22. "DTC Index". NO -> Replace side radar LH or side radar RH. Refer to DAS-174, "Removal and Installation" 	< DTC/CIRCUIT DIAGNOSIS >	[DRIVER ASSISTANCE SYSTEM]
Is DTC detected? YES >> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to DAS-22. "DTC Index". NO >> Replace side radar LH or side radar RH. Refer to DAS-174. "Removal and Installation"	4. Check DTC.	
YES > Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to Ds2-22 "DTC Index". NO >> Replace side radar LH or side radar RH. Refer to DAS-174, "Removal and Installation"	Is DTC detected?	
N >> Replace side radar LH or side radar RH. Refer to <u>DAS-174. "Removal and Installation"</u>	YES >> Perform diagnosis on the detected DTC and rep DAS-22, "DTC Index".	pair or replace the malfunctioning parts. Refer to
	NO >> Replace side radar LH or side radar RH. Refer to	DAS-174, "Removal and Installation"

U0405 ADAS CAN 2

DTC Description

INFOID:000000012874344

[DRIVER ASSISTANCE SYSTEM]

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

ADAS control unit.

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-150, "SIDE RADAR LH : DTC Description"</u> (Side Radar LH) or <u>DAS-151, "SIDE RADAR RH : DTC Description"</u> (Side Radar RH).

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Start the engine.

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

Is DTC "U0405" detected?

- YES >> Refer to <u>DAS-148</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012874345

1.CHECK DTC PRIORITY

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

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>DAS-150, "SIDE RADAR LH : DTC Description"</u> (Side Radar LH) or <u>DAS-151, "SIDE RADAR RH : DTC Description"</u> (Side Radar RH).

NO >> GO TO 2.

2.self diagnostic result of adas control unit

CONSULT

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

DAS-148

[DRIVER	ASSISTANCE	SYSTEM]
---------	------------	---------

4. Ch	eck DTC.	
<u>Is DTC</u>	detected?	А
YES	>> Perform diagnosis on the detected DTC and repair or replace the malfunctioning parts. Refer to <u>DAS-22, "DTC Index"</u> .	
NO	>> Replace side radar LH or side radar RH. Refer to <u>DAS-174, "Removal and Installation"</u>	В
		С
		D
		Е
		F
		I
		G
		Н
		J
		Κ
		L
		Μ
		Ν
		DAS
		Р
		-

U1000 CAN COMM CIRCUIT SIDE RADAR LH

SIDE RADAR LH : Description

INFOID:000000012874346

[DRIVER ASSISTANCE SYSTEM]

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicles are equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. CAN communication signal chart. Refer to LAN-37, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

ITS COMMUNICATION

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

SIDE RADAR LH : DTC Description

INFOID:000000012874347

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000 CAN COMM CI (CAN communic		Diagnosis condition	When Ignition switch is ON.
	CAN COMM CIRCUIT (CAN communication circuit)	Signal (terminal)	-
		Threshold	If side radar LH is not transmitting or receiv- ing ITS communication signal
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

ITS communication system

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

- 1. Start the engine.
- 2. Turn the Blind Spot Warning system ON.
- 3. Perform "All DTC Reading" mode.
- 4. Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT/LEFT".

Is "U1000" detected?

- YES >> Refer to DAS-150, "SIDE RADAR LH : Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42. "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR LH : Diagnosis Procedure

INFOID:000000012874348

1.SELF DIAGNOSTIC RESULT

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

1. Start the engine.

- 2. Turn the Blind Spot Warning system ON, and then wait for 30 seconds or more.
- 3. Perform "ALL DTC READING" mode.
- Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR LEFT".

Is "U1000" detected?

- YES >> Refer to LAN-21, "Trouble Diagnosis Flow Chart".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR RH

SIDE RADAR RH : Description

CAN COMMUNICATION

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicles are equipped with many electronic control units, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads the required data only. CAN communication signal chart. Refer to <u>LAN-37</u>, <u>"CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"</u>.

ITS COMMUNICATION

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

SIDE RADAR RH : DTC Description

INFOID:000000012874350

INFOID:000000012874349

А

D

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC d	etection condition	
		Diagnosis condition	When Ignition switch is ON.	K
		Signal (terminal)	-	
U1000	(CAN communication circuit)	Threshold	If side radar RH is not transmitting or receiv- ing ITS communication signal	L
		Diagnosis delay time	2 seconds or more	

POSSIBLE CAUSE

ITS communication system

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

- 1. Start the engine.
- 2. Turn the Blind Spot Warning system ON.
- 3. Perform "All DTC Reading" mode.
- 4. Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT/LEFT".

Is "U1000" detected?

YES >> Refer to DAS-150, "SIDE RADAR LH : Diagnosis Procedure".

Ρ

M

Ν

- NO-1 >> To check malfunction symptom before repair: Refer to <u>GI-42. "Intermittent Incident"</u>.
- NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR RH : Diagnosis Procedure

INFOID:000000012874351

1.SELF DIAGNOSTIC RESULT

CONSULT

- 1. Start the engine.
- 2. Turn the Blind Spot Warning system ON, and then wait for 30 seconds or more.
- 3. Perform "ALL DTC READING" mode.
- 4. Check if "U1000" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

Is "U1000" detected?

- YES >> Refer to LAN-21. "Trouble Diagnosis Flow Chart".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN) SIDE RADAR LH

SIDE RADAR LH : Description

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

SIDE RADAR LH : DTC Description

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
		Diagnosis condition	When Ignition switch is ON.	_
		Signal (terminal)	-	E
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Threshold	If side radar LH detects malfunction by CAN controller initial diagnosis	E
		Diagnosis delay time	-	Γ
POSSIBLE Side radar L	CAUSE H			G
FAIL-SAFE				
The following • Blind Spot • Rear Cross	g systems are canceled: Warning (BSW) s Traffic Alert (RCTA)			Н
DTC CONF	IRMATION PROCEDURE			
	M DTC CONFIRMATION PRO			
	-	JOEDONE		
1. Start the	engine.			J
2. Turn the	Blind Spot Warning system O	N.		
4. Check if	"U1010" is detected as the cu	rrent malfunction in "Self Diag	nostic Result" mode of "SIDE RADAR	Κ
LEFT".	ataatad2			
YES >>1	<u>elected?</u> Refer to DAS-150 "SIDE RAC	ARTH · Diagnosis Procedure	_ "	
NO-1 >>	To check malfunction sympton	n before repair: Refer to GI-42	2. "Intermittent Incident".	
NO-2 >>	Confirmation after repair: Inspe	ection End.		
SIDE RAE	OAR LH : Diagnosis Pro	cedure	INFOID:000000012874354	\mathbb{M}
	-			Ν
1 Start the	engine			
2. Turn the	Blind Spot Warning system O	N.		
3. Perform	"ALL DTC READING" mode.	ment malfunction in "Calf Dian		DA
4. Check II LEFT".	01010 is delected as the cu	ment manunction in Sen Diag	HOSTIC RESULT HODE OF SIDE RADAR	
<u>ls "U1010" d</u>	etected?			Ρ
YES >>	Replace the side radar LH. Re	efer to <u>DAS-174, "Removal an</u>	d Installation".	
	Inspection End.			
SIDE KAI				
SIDE RAD	DAR RH : Description		INFOID:000000012874355	

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

DAS-153

А

В

С

INFOID:000000012874352

INFOID:000000012874353

SIDE RADAR RH : DTC Description

INFOID:000000012874356

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When Ignition switch is ON.
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Signal (terminal)	-
		Threshold	If Side radar RH detects malfunction by CAN controller initial diagnosis
		Diagnosis delay time	-

POSSIBLE CAUSE

Side radar RH

FAIL-SAFE

The following systems are canceled:

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

- 1. Start the engine.
- 2. Turn the Blind Spot Warning system ON.
- 3. Perform "All DTC Reading" mode.
- 4. Check if "U1010" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

Is "U1010" detected?

- YES >> Refer to DAS-152, "SIDE RADAR RH : Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident".
- NO-2 >> Confirmation after repair: Inspection End.

SIDE RADAR RH : Diagnosis Procedure

INFOID:000000012874357

1.SELF DIAGNOSTIC RESULT

CONSULT

- 1. Start the engine.
- 2. Turn the Blind Spot Warning system ON.
- 3. Perform "ALL DTC READING" mode.
- 4. Check if "U1010" is detected as the current malfunction in "Self Diagnostic Result" mode of "SIDE RADAR RIGHT".

Is "U1010" detected?

- YES >> Replace the side radar RH. Refer to <u>DAS-174</u>, "Removal and Installation".
- NO >> Inspection End.

	POWER	SUPPLY AN	ID GROUND CIRCUI	Т
< DTC/CIRCUIT [DIAGNOSIS >		[DRIVER	R ASSISTANCE SYSTEM]
POWER SUP	PPLY AND GF	ROUND CIF	RCUIT	
SIDE RADAR	LH			
SIDE RADAR	LH : Diagnosis	Procedure		INFOID:000000012874358
Regarding Wiring	Diagram information	n, refer to <u>DAS-1</u>	24, "Wiring Diagram".	
1.CHECK FUSES	3			
Check that the follo	owing fuse is not blo	own:		
	Signal name		Fus	se No
	Ignition power supply		29	(10A)
Is the fuse blown?				· · ·
YES >> Replace	ce the blown fuse a	fter repairing the	affected circuit.	
2 CHECK DOWE		Ŧ		
		1		
2. Disconnect the	e side radar LH con	nector.		
3. Check voltage	between side rada	r LH harness cor	nnector and ground.	
	Torminala			
((+)	(-)	Condition	Valtaga
Side r	adar LH	()		(Approx.)
Connector	Terminal		Ignition switch	
B465	5	Ground	OFF	0 V
B403	5		ON	Battery voltage
Is the inspection re	esult normal?			
NO >> Repair	0 3. r the side radar LH i	power supply cire	cuit.	
3.CHECK GROU	ND CIRCUIT			
Check continuity b	etween side radar l	H harness conn	ector and ground.	
			U U	
	Side radar LH			Continuity
Connector		Terminal	Ground	
B465		3	-	Yes
la the inequation re	ault parmal?	8		
YES >> Inspection Repair NO >> Repair SIDE RADAR	ction End. r the side radar LH r RH	ground circuit.		D
		Drocoduro		
	aynosis וחח	FIUCEUUIE		INFOID:000000012874359
Regarding Wiring	Diagram information	n, refer to <u>DAS-2</u>	4, "Wiring Diagram".	
1.CHECK FUSES	6			

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

Check that the following fuse is not blown:

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

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect the side radar RH connector.

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

Terminals		Condition		
(+)		(-)	Condition	Voltage (Approx.)
Side radar RH			Ignition switch	
Connector	Terminal	Ground	Ignition Switch	
D466 5	Ground	OFF	0 V	
B400 5			ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK GROUND CIRCUIT

Check continuity between side radar RH harness connector and ground.

Side radar RH			Continuity
Connector	Terminal	Ground	Continuity
	3	Ground	Vac
D400	8	*	165

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair the side radar RH ground circuit.

R	IGHT/LEFT SWITCH		JIT DAGGIGTANCE SVOTEMI
< DTC/CIRCUIT DIAGNO	ISIS >		ASSISTANCE STSTEM]
RIGHT/LEFT SWI	CHING SIGNAL C	IRCUIT	
Diagnosis Procedure			INFOID:000000012874360
Regarding Wiring Diagram	information, refer to DAS-1	24, "Wiring Diagram".	
1			
1.CHECK CONNECTOR			
 Turn the ignition switch Check the terminals an nector side). 	nd connectors of the side ra	dar RH for damage, bend	and short (unit side and con-
Is the inspection result nor	mal?		
YES >> GO TO 2. NO >> Repair the terr	ninal or connector.		
2. CHECK CONTINUITY F	RIGHT/LEFT SWITCHING S	SIGNAL CIRCUIT	
 Disconnect side radar Check continuity between 	RH connector. een side radar RH harness	connectors and ground.	
Side ra	adar RH		• • • •
Connector	Terminal	Ground	Continuity
B466	3		Yes
YES >> Inspection End NO >> Repair harnes	l. s or connector.		

WARNING BUZZER CIRCUIT

Component Function Check

1.CHECK WARNING BUZZER

- 1. Select "ADAS BUZZER" in "Active Test" mode of "ICC/ADAS".
- 2. Check that the function operates normally.

Is the inspection result normal?

YES >> Inspection End.

NO >> Refer to <u>DAS-158</u>, "Diagnosis Procedure".

Diagnosis Procedure

Regarding Wiring Diagram information, refer to DAS-124, "Wiring Diagram".

1. CHECK WARNING BUZZER POWER SUPPLY CIRCUIT

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

Terminals			
(+)	(-)	Voltage
Warnin	g buzzer		(Approx.)
Connector	Terminal	Ground	
M60	1		Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the warning buzzer power supply circuit.

2.CHECK WARNING BUZZER GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Check continuity between the warning buzzer harness connector and ground.

Warning buzzer			Continuity
Connector	Terminal	Ground	Continuity
M60	3	*	Yes

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.CHECK WARNING BUZZER SIGNAL CIRCUIT FOR OPEN

- 1. Disconnect the ADAS control unit connector.
- Check continuity between the ADAS control unit harness connector and warning buzzer harness connector.

ADAS co	ontrol unit	Warning buzzer Connector Terminal		Continuity
Connector	Terminal			Continuity
B182	4	M60	2	Yes

Is the inspection result normal?

INFOID:000000012874361

INFOID:000000012874362

WARNING BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

4. CHECK WARNING BUZ Check continuity between th	ZER SIGNAL CIRCUIT FC e ADAS control unit harne	OR SHORT ess connector and ground.	
ADAS co	ntrol unit		Continuity
Connector	Terminal	Ground	Continuity
B182	4		No
NO >> Repair the harn 5. CHECK WARNING BUZ 1. Connect the warning bu 2. Turn ignition switch ON	ess or connector. ZER OPERATION zzer connector.		
 Apply ground to warning Check condition of the values Does warning buzzer sound) buzzer terminal 2. varning buzzer. <u>?</u>		
YES >> Replace the AD NO >> Replace the wa	AS control unit. Refer to Determing buzzer. Refer to DAS	DAS-78, "Removal and Install S-173, "Removal and Installa	<u>lation"</u> . I <u>tion"</u> .

DAS

Н

J

Κ

L

Μ

Ν

Р

SYMPTOM DIAGNOSIS DRIVER ASSISTANCE SYSTEM SYMPTOMS

Symptom Table

INFOID:000000012874363

Symptom	Confirm	nation item	Inspection item/Reference page
PFCW/FEB/BSW/RCTA indica-	All of driver assistance indicators do not illuminate.		System cannot be turned ON/ OFF using the integral switch. Refer to <u>DAS-161, "Description"</u> .
tors do not inuminate.	Other information display is r	not illuminated.	Combination meter. Refer to <u>MWI-29, "DTC Index"</u> .
FER/PECW/RSW/RCTA warn-	Information display is function	ning normally.	ADAS control unit. Refer to <u>DAS-22, "DTC Index"</u> .
ing display does not illuminate (Buzzer is functioning normally)	Information display is not functioning normally.		Perform On Board Diagnosis of Combination meter. Refer to <u>MWI-18. "On Board Di-</u> agnosis Function".
FEB/PFCW/BSW/RCTA warn- ing buzzer is not sounding (Warning display is functioning normally)	FEB/PFCW warning buzzer does not sound.		Chime does not sound. Refer to <u>DAS-162, "Description"</u> .
FEB/PFCW/BSW/RCTA warn- ing buzzer is not sounding (Warning display is functioning normally)	BSW/RCTA warning buzzer does not sound.		Chime does not sound. Refer to <u>DAS-158, "Component</u> <u>Function Check"</u> .
			Frequently cannot detect the vehicle ahead/Detection zone is short. Refer to <u>DAS-164</u> , "Description".
PFCW/FEB is not activated	PFCW and FEB are not activated.	System misidentifies a vehicle even though there is no vehicle ahead.	Perform radar alignment.
		System misidentifies a vehicle in the next lane.	Trefer to <u>CC3-39, Description</u> .
		System does not detect the vehicle ahead at all.	The system does not detect the vehicle ahead at all. Refer to <u>DAS-166. "Description"</u>

SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE INTEGRAL SWITCH

GWIIGH	
< SYMPTOM DIAGNOSIS > [DRIVER ASSISTANCE SYST	EM]
SYSTEM SETTINGS CANNOT BE TURNED ON/OFF ON THE INTEGR	RAL
SWITCH	A
Description)12874364 B
System setting is not selectable on the combination meter information display.	
Diagnosis Procedure	⁾¹²⁸⁷⁴³⁶⁵ C
1.CHECK DRIVER ASSISTANCE SYSTEM SETTING	
 Ignition On. Check that the driver assistance system setting can be turned ON/OFF with the integral switch in the bination meter information display using the steering switches. 	com-
<u>Is the inspection result normal?</u> YES >> Inspection End. NO >> GO TO 2	E
2. CHECK STEERING SWITCH CIRCUIT	F
Check the steering switches. Refer to <u>MWI-61, "Diagnosis Procedure"</u> .	
Is the inspection result normal?	G
YES >> GO TO 3. NO >> Repair or replace harness or connector.	0
3. CHECK STEERING SWITCH RESISTANCE	
Check the steering switches resistance. Refer to <u>MWI-61, "Component Inspection"</u> .	H
Is the inspection result normal? YES >> Replace combination meter. Refer to MWI-72, "Removal and Installation". NO >> Replace steering switches. Refer to AV-63, "Removal and Installation".	I
	J
	K
	L
	M

Ν

DAS

CHIME DOES NOT SOUND

Description

INFOID:000000012874366

[DRIVER ASSISTANCE SYSTEM]

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-164</u>, "<u>Descrip-</u> <u>tion</u>".)

Diagnosis Procedure

INFOID:000000012874367

1.PERFORM ACTIVE TEST

CONSULT

- 1. Select "METER BUZZER" in "Active Test" mode of "ICC/ADAS".
- 2. Check that the function operates normally.

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 3.

2.PERFORM THE SELF DIAGNOSTIC RESULT

1. Perform "All DTC Reading" mode.

2. Check if the "U1000" is detected in "Self Diagnosis Results" of "ICC/ADAS".

Is "U1000" detected?

YES >> GO TO 3.

NO >> GO TO 4.

3. CAN COMMUNICATIONS INSPECTION

Check the CAN communication and repair or replace malfunctioning parts. Refer to <u>DAS-63, "DTC Description"</u>.

>> Inspection End.

 ${f 4}.$ PERFORM THE SELF-DIAGNOSIS OF COMBINATION METER

1. Perform "All DTC Reading" with CONSULT.

2. Check if any DTC is detected in "Self Diagnosis Results" of "METER/M&A".

Is any DTC detected?

YES >> Repair or replace malfunctioning parts. Refer to <u>MWI-29, "DTC Index"</u>.

NO >> GO TO 5.

5.CHECK ICC WARNING CHIME CIRCUIT

Check meter buzzer. Refer to WCS-27, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

O.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

>> Inspection End.

CHIME DOES NOT SOUND

NCE SYSTEM]

А

В

D

Ε

F

Н

J

Κ

L

Μ

Ν

< SYMPTOM DIAGNOSIS >	[DRIVER ASSISTAN
7.REPLACE ADAS CONTROL UNIT	
Replace the ADAS control unit. Refer to DAS-78, "Removal ar	nd Installation".
>> Inspection End.	

$\mathbf{8}$. Check the malfunction symptom during warning chime operation

Understand the vehicle ahead detection condition when the malfunction occurred. If the warning chime should С have sounded, replace the ADAS control unit. Refer to DAS-78, "Removal and Installation".

>> Inspection End.

< SY

DAS

Ρ

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

Description

INFOID:000000012874368

Symptom check: Detection function may become unstable under the following conditions.

- When the vehicle is driving on a curve such as S-curve where the curvature changes.
- When the vehicle is driving on up-and-down road or passing the peak or foot of slope or passing the break of the inclination of hill.

Diagnosis Procedure

INFOID:000000012874369

```
1.VISUAL CHECK (1)
```

Check ICC sensor for contamination and foreign materials.

Does contamination or foreign materials exist?

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

2. WIPE OUT DIRT AND FOREIGN MATERIAL

Clean the contamination and foreign material from the ICC sensor.

>> GO TO 7.

3.VISUAL CHECK (2)

Check ICC sensor and ICC sensor bracket for damage or looseness.

Does damage or looseness exist?

YES >> Repair or replace affected components. Refer to CCS-134, "Removal and Installation".

NO >> GO TO 4.

4.PERFORM RADAR ALIGNMENT

1. Perform radar alignment. Refer to CCS-59, "Description".

- 2. Perform action test. Refer to CCS-66. "Description".
- 3. Check that the vehicle ahead detection performance improves.

Does it improve?

- YES >> Inspection End.
- NO >> GO TO 5.

5.REPLACE ICC SENSOR

- 1. Replace the ICC sensor. Refer to DAS-78, "Removal and Installation".
- 2. Perform radar alignment. Refer to CCS-59. "Description".
- 3. Perform action test. Refer to <u>CCS-66. "Description"</u>.
- 4. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> Inspection End.

NO >> GO TO 6.

Ö.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-78, "Removal and Installation".

>> GO TO 7.

7. CHECK ICC SYSTEM

- Erase "Self Diagnostic Result", and then perform "ALL DTC Reading" again after performing the action test. (Refer to <u>CCS-66, "Description"</u> for action test.)
- 2. Check that the ICC system is normal.

FREQUENTLY CANNOT DETECT THE VEHICLE AHEAD / DETECTION ZONE IS SHORT

< SYMPTOM DIAGNOSIS >

[DRIVER ASSISTANCE SYSTEM]

>> Inspection Er	nd.
------------------	-----

A
В
С
D
E
F
G
Η
I
J
Κ
L
Μ
Ν

DAS

Р

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL < SYMPTOM DIAGNOSIS > [DRIVER ASSISTANCE SYSTEM]

THE SYSTEM DOES NOT DETECT THE VEHICLE AHEAD AT ALL

Description

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

Diagnosis Procedure

INFOID:000000012874371

INFOID:000000012874370

1. CHECK INFORMATION DISPLAY

1. Start the "Self Diagnosis mode" of combination meter. Refer to <u>MWI-18, "On Board Diagnosis Function"</u>.

2. Check that the segment of information display is displayed normally.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the combination meter. Refer to <u>MWI-72, "Removal and Installation"</u>.

2.VISUAL CHECK (1)

Check ICC sensor for contamination and foreign materials.

Does contamination or foreign materials exist?

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

 $\mathbf{3}$. WIPE OUT DIRT AND FOREIGN MATERIAL

Clean the contamination and foreign material from the ICC sensor.

>> Inspection End.

4.VISUAL CHECK (2)

Check ICC sensor and ICC sensor bracket for damage or looseness.

Does damage or looseness exist?

YES >> Repair or replace affect components. Refer to CCS-134. "Removal and Installation".

NO >> GO TO 5.

5.PERFORM RADAR ALIGNMENT

- 1. Perform radar alignment. Refer to CCS-59, "Description".
- 2. Perform action test. Refer to <u>CCS-66. "Description"</u>.
- 3. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> Inspection End.

NO >> GO TO 6.

6.REPLACE ICC SENSOR

- 1. Replace the ICC sensor. Refer to CCS-134, "Removal and Installation".
- 2. Perform radar alignment. Refer to <u>CCS-59. "Description"</u>.
- 3. Perform action test. Refer to CCS-66. "Description".
- 4. Check that the vehicle ahead detection performance improves.

Does it improve?

YES >> Inspection End. NO >> GO TO 7.

I.REPLACE ADAS CONTROL UNIT

Replace the ADAS control unit. Refer to DAS-78, "Removal and Installation".

>> Inspection End.

NORMAL OPERATING CONDITION

Description

INFOID:000000012874372

PRECAUTIONS FOR PREDICTIVE FORWARD COLLISION WARNING (PFCW)	В
• The Predictive Forward Collision Warning system is designed to warn the driver before a collision, but will not avoid a collision. It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times.	
 The radar sensor does not detect the following objects: Pedestrians, animals, or obstacles in the roadway. 	С
- Oncoming vehicles.	D
 The Predictive Forward Collision Warning system does not function when a vehicle ahead is a narrow vehi- 	D
 The radar sensor may not detect a second vehicle ahead in the following conditions: Snow or heavy rain. 	Е
 Dirt, ice, snow or other material covering the radar sensor. Interference by other radar sources. 	
 Snow or road spray from traveling vehicles is splashed. Driving in a tunnel. 	F
 The radar sensor may not detect a second vehicle when the vehicle ahead is being towed. When the distance to the vehicle ahead is too close, the beam of the radar sensor is obstructed. The radar sensor may not detect a second vehicle when driving on a steep downhill slope or on roads with sharp curves. 	G
• Excessive noise will interfere with the warning tone sound, and it may not be heard.	Н
PRECAUTIONS FOR BLIND SPOT WARNING	
• The Blind Spot Warning system are not a replacement for proper driving procedure and are not designed to prevent contact with vehicles or objects. When changing lanes, always use the side and rear mirrors and turn and look in the direction driver will move to ensure it is safe to change lanes. Never rely solely on the Blind Spot Warning system	I
 The Blind Spot Warning system may not provide the warning or the control for vehicles that pass through the detection zone quickly. 	J
• Excessive noise (for example, audio system volume, open vehicle window) will interfere with the chime sound, and it may not be heard.	
• The side radar may not be able to detect and activate Blind Spot Warning when certain objects are present such as:	Κ
 Pedestrians, bicycles, animals. Several types of vehicles such as motorcycles. 	
- Oncoming vehicles.	L
 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. 	M
 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 	Ν
 The side radar is designed to ignore most stationary objects, however, objects such as guardrails, walls, foli- age and parked vehicles may occasionally be detected. This is a normal operating condition. 	DAS
PRECAUTIONS FOR REAR CROSS TRAFFIC ALERT (RCTA)	
 Always check surroundings and turn to check what is behind you before backing up. The radar sensors detect approaching (moving) vehicles. The radar sensors cannot detect every object such as: Pedestrians, bicycles, motorcycles, animals or child operated toy vehicles. A vehicle that passing at speeds greater than approximately 30 KM/H (19 MPH) 	Ρ

- A vehicle that passing at speeds greater than approximately 8 KM/H (19 MH)
 A vehicle that passing at speeds greater than approximately 8 KM/H (5 MPH)
- The radar sensors may not detect approaching vehicles in certain situations:
- When the vehicle that is parked next to you obstructs the beam of the radar sensor.
- When the vehicle is parked in an angled parking space.
- When the vehicle is parked on an incline.

А

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

- When an approaching vehicle turns into your vehicles parking lot isle.
- When the angle formed by your vehicle is too small.
- The following conditions may reduce the ability of the radar to detect other vehicles:
- Severe weather
- Road spray
- Ice build up on the vehicle
- Frost on the vehicle
- Dirt build up on the vehicle
- Do not attach stickers (including transparent material), install accessories or apply additional paint near the radar sensors. These conditions may reduce the ability of the radar to detect other vehicles.
- Do not use RCTA systems when towing a trailer.
- Excessive noise (e.g. audio system volume, open vehicle window) will interfere with the chime sound and it
 may not be heard.

< REMOVAL AND INSTALLATION >

Exploded View

SEC. 253

REMOVAL AND INSTALLATION ICC SENSOR

 $(\mathbf{1})$

(2)

Install ICC sensor bracket to front bumper reinforcement.

2. ICC sensor

A. Refer to INSTALLATION

DAS-169

REMOVAL

- Remove front bumper fascia. Refer to EXT-24, "Exploded View". 1.
- 2. Disconnect the harness connector from the ICC sensor.
- 3. Remove ICC sensor bracket bolts.

1. Front bumper reinforcement

4. ICC sensor bracket

Removal and Installation

Remove bolts and detach ICC sensor from ICC sensor bracket.

INSTALLATION

Install ICC sensor to ICC sensor bracket.

· Install ICC sensor bolts loosely and then tighten in sequence as shown.

ICC sensor bolts : 3.8 N·m (0.39 kg-m, 34 in-lb)

4 AWRIA286877

Ρ

Κ

L

[DRIVER ASSISTANCE SYSTEM]

INFOID:000000012874373







3. ICC sensor harness connector

< > Front

AWBIA2866Z

INFOID:000000012874374

А

В

D

Е

• Install ICC sensor bracket bolts loosely and then tighten in sequence as shown.

ICC sensor bracket bolts : 10.0 N·m (1.0 kg-m, 7 ft-lb)



Installation of remaining components is in the reverse order of removal. **CAUTION:**

- Always perform the ICC sensor alignment and check the operation after removal, installation or replacement of ICC sensor. Refer to <u>CCS-56, "Description"</u>.
- Do not touch ICC sensor face.
- Do not drop or shock ICC sensor.
- Make sure ICC sensor harness is installed without any twists.

< REMOVAL AND INSTALLATION >

ICC STEERING SWITCH

[DRIVER ASSISTANCE SYSTEM]

Exploded View

INFOID:000000012874375

А

L



REMOVAL

NOTE:

The ICC steering and audio switches are serviced as an assembly.

- 1. Remove steering wheel. Refer to ST-30, "Removal and Installation".
- 2. Release pawls (←) and remove steering wheel rear finisher (1) from steering wheel (2).



ICC STEERING SWITCH

< REMOVAL AND INSTALLATION >

[DRIVER ASSISTANCE SYSTEM]

- 3. Remove ICC steering and audio switch assembly screws (\Leftarrow).
- 4. Remove ICC steering and audio switch assembly (1) from steering wheel (2).



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Always perform the ICC system action test to check that the ICC system operates normally after replacing the ICC sensor or repairing any ICC system malfunction. Refer to <u>CCS-66, "Description"</u>.

< REMOVAL AND INSTALLATION > WARNING BUZZER

Exploded View

INFOID:000000012874377



REMOVAL

- 1. Remove the instrument lower panel LH. Refer to IP-24, "Removal and Installation".
- 2. Remove screw and remove warning buzzer.
- 3. Remove screw and remove bracket (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

DAS

Ρ

Κ

L

Μ

Ν

А

< REMOVAL AND INSTALLATION >

SIDE RADAR

Exploded View

INFOID:000000012874379

[DRIVER ASSISTANCE SYSTEM]



1. Side radar

← Front

NOTE:

LH shown, RH similar.

Removal and Installation

INFOID:000000012874380

REMOVAL

- 1. Remove the rear bumper fascia. Refer to EXT-27, "Removal and Installation".
- Disconnect the harness connector from side radar. 2.
- 3. Remove the nuts and remove the side radar.

INSTALLATION

Installation is in the reverse order of removal.

< REMOVAL AND INSTALLATION >

BLIND SPOT WARNING INDICATOR

Exploded View

INFOID:000000012874381

А

[DRIVER ASSISTANCE SYSTEM]



2. Remove screws and remove blind spot warning indicator.

INSTALLATION

1.

Installation in the reverse order of removal.

J

Κ

L

Μ

Ν