SECTION AVIGATION SYSTEM

CONTENTS

DISPLAY AUDIO	DTC/CIRCUIT DIAGNOSIS35
PRECAUTION6	POWER SUPPLY AND GROUND CIRCUIT35
PRECAUTIONS	AUDIO UNIT
SIONER"	MICROPHONE SIGNAL CIRCUIT
PREPARATION8	STEERING SWITCH SIGNAL A CIRCUIT38 Description
PREPARATION	Diagnosis Procedure
SYSTEM DESCRIPTION9	STEERING SWITCH SIGNAL B CIRCUIT40 Description40
COMPONENT PARTS	Diagnosis Procedure40 Component Inspection40
SYSTEM11	STEERING SWITCH SIGNAL GND CIRCUIT 42 Description
System Description 11 DIAGNOSIS SYSTEM (AUDIO UNIT) 15	Component Inspection42
Description15 On Board Diagnosis Function15	CAMERA IMAGE SIGNAL CIRCUIT
ECU DIAGNOSIS INFORMATION18	SYMPTOM DIAGNOSIS
AUDIO UNIT18 Reference Value	AUDIO SYSTEM
WIRING DIAGRAM22	NORMAL OPERATING CONDITION48
DISPLAY AUDIO	Description
BASIC INSPECTION	
DIAGNOSIS AND REPAIR WORKFLOW33 Work Flow	Removal and Installation

FRONT DOOR SPEAKER51

А

В

С

D

Е

F

G

Н

J

Κ

L

M

AV

0

Ρ

Removal and Installation	
	51
Removal and Installation	52 52
TWEETER Removal and Installation	53 53
MICROPHONE	54 54
STEERING SWITCH Exploded View Removal and Installation	55 55 55
REAR VIEW CAMERA Removal and Installation Adjustment	56 56 56
USB CONNECTOR AND AUX JACK Removal and Installation	57 57
ANTENNA BASE	58
Exploded View	58
Removal and Installation	58
ANTENNA FEEDER	59
AUDIO WITH NAVIGATION	59
PRECAUTION	60
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER"	60 60
Precautions for Removing Battery Terminal	
Precaution for Trouble Diagnosis Precaution for Harness Repair	60 61 61
Precaution for Trouble Diagnosis Precaution for Harness Repair	60 61 61 62
Precaution for Trouble Diagnosis Precaution for Harness Repair	60 61 61 62
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION	60 61 61 62 62
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION	60 61 62 62 62 63
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS	60 61 61 62 62 62 63 63
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS Component Parts Location	60 61 61 62 62 62 63 63 63
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS Component Parts Location Component Description	60 61 61 62 62 63 63 63 63 64
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS Component Parts Location Component Description System Description Fail-Safe (Around View Monitor Control Unit)	60 61 61 62 62 63 63 63 63 64 66 75
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS Component Parts Location Component Description System Description	60 61 62 62 62 63 63 63 63 64 66 75
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS Component Parts Location Component Description System Description Fail-Safe (Around View Monitor Control Unit) DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)	60 61 62 62 63 63 63 64 66 75 77
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS Component Parts Location Component Description	60 61 61 62 62 63 63 63 63 63 64 66 75 77 77 77
Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION COMPONENT PARTS Component Parts Location	60 61 62 62 62 63 63 63 63 64 66 65 75 77 78

CONSULT Function80
ECU DIAGNOSIS INFORMATION83
NAVI CONTROL UNIT83Reference Value83DTC Index86
AROUND VIEW MONITOR CONTROL UNIT 88 Reference Value
WIRING DIAGRAM94
NAVIGATION SYSTEM
BASIC INSPECTION109
DIAGNOSIS AND REPAIR WORKFLOW109
NAVIGATION SYSTEM 109 NAVIGATION SYSTEM : Work Flow 109
AROUND VIEW MONITOR SYSTEM 110 AROUND VIEW MONITOR SYSTEM : Work Flow . 111
INSPECTION AND ADJUSTMENT113
ADDITIONAL SERVICE WHEN REPLACING NAVI CONTROL UNIT
ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT 113 ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description
CONFIGURATION (NAVI CONTROL UNIT) 113 CONFIGURATION (NAVI CONTROL UNIT) : De- scription
CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)
PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT 115 PREDICTIVE COURSE LINE CENTER POSI- TION ADJUSTMENT : Description 116 PREDICTIVE COURSE LINE CENTER POSI- TION ADJUSTMENT : Work Procedure 116 CALIBRATING CAMERA IMAGE (APOLIND VIEW)
MONITOR)

VIEW MONITOR) : Description	i
DTC/CIRCUIT DIAGNOSIS	5
	,
DTC Logic 123	
Diagnosis Procedure	•
C1A39 STEERING ANGLE SENSOR124	ļ
DTC Logic	
DTC Logic	;
Diagnosis Procedure 125	,
U0416 ABS ACTUATOR AND ELECTRIC	
UNIT (CONTROL UNIT)126	j
DTC LOGIC	
U0428 STEERING ANGLE SENSOR127	,
Dic Logic	,
U1000 CAN COMM CIRCUIT	5
NAVI CONTROL UNIT) 1
NAVI CONTROL UNIT : DTC Logic	
NAVI CONTROL UNIT : Diagnosis Procedure 128	
AROUND VIEW MONITOR CONTROL UNIT 128	;
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT :	\$
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT : Description	;
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT : Description	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT : Description	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 Description 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT : Description	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT : Description	
AROUND VIEW MONITOR CONTROL UNIT128AROUND VIEW MONITOR CONTROL UNIT128Description128AROUND VIEW MONITOR CONTROL UNIT128DTC Logic128AROUND VIEW MONITOR CONTROL UNIT128Diagnosis Procedure128U1010 CONTROL UNIT (CAN)130NAVI CONTROL UNIT130NAVI CONTROL UNIT130NAVI CONTROL UNIT130	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT : Description	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 Description 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 Diagnosis Procedure 128 U1010 CONTROL UNIT (CAN) 130 NAVI CONTROL UNIT 130 NAVI CONTROL UNIT : DTC Logic 130 AROUND VIEW MONITOR CONTROL UNIT 130	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 Description 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 U1010 CONTROL UNIT (CAN) 130 NAVI CONTROL UNIT 130 NAVI CONTROL UNIT 130 AROUND VIEW MONITOR CONTROL UNIT 130	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 Description 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 Diagnosis Procedure 128 U1010 CONTROL UNIT (CAN) 130 NAVI CONTROL UNIT 130 NAVI CONTROL UNIT 130 AROUND VIEW MONITOR CONTROL UNIT 130 DEscription 130 AROUND VIEW MONITOR CONTROL UNIT 130	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 Description 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 Diagnosis Procedure 128 U1010 CONTROL UNIT (CAN) 130 NAVI CONTROL UNIT 130 NAVI CONTROL UNIT 130 NAVI CONTROL UNIT 130 AROUND VIEW MONITOR CONTROL UNIT 130	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 Description 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 U1010 CONTROL UNIT (CAN) 130 NAVI CONTROL UNIT 130 NAVI CONTROL UNIT 130 NAVI CONTROL UNIT 130 AROUND VIEW MONITOR CONTROL UNIT 130	
AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 Description 128 AROUND VIEW MONITOR CONTROL UNIT 128 DTC Logic 128 AROUND VIEW MONITOR CONTROL UNIT 128 AROUND VIEW MONITOR CONTROL UNIT 128 U1010 CONTROL UNIT (CAN) 130 NAVI CONTROL UNIT 130 AROUND VIEW MONITOR CONTROL UNIT 130	
AROUND VIEW MONITOR CONTROL UNIT128AROUND VIEW MONITOR CONTROL UNIT128Description128AROUND VIEW MONITOR CONTROL UNIT128DTC Logic128AROUND VIEW MONITOR CONTROL UNIT128U1010 CONTROL UNIT (CAN)130NAVI CONTROL UNIT130NAVI CONTROL UNIT130AROUND VIEW MONITOR CONTROL UNIT130DTC Logic130U111A REAR CAMERA IMAGE SIGNAL CIR- CUIT131DTC Logic131	

U111B SIDE CAMERA RH IMAGE SIGNAL	•
CIRCUIT134	Α
DTC Logic	
Diagnosis Flocedure	R
U111C FRONT CAMERA IMAGE SIGNAL	D
CIRCUIT	
DTC LOGIC	С
U111D SIDE CAMERA LH IMAGE SIGNAL	_
DTC Logic 140	D
Diagnosis Procedure	
	F
DTC Logic 143	
U1217 NAVI CONTROL UNIT144	F
DIC Logic	
U1229 NAVI CONTROL UNIT145	
DTC Logic145	G
U1232 STEERING ANGLE SENSOR 146	
DTC Logic146	Н
Diagnosis Procedure146	
U1244 GPS ANTENNA 147	
DTC Logic147	
Diagnosis Procedure147	
U1258 SATELLITE RADIO ANTENNA	
DTC Logic148	J
Diagnosis Procedure148	
U1263 USB	К
DTC Logic149	
Diagnosis Procedure149	
U1264 AMP	L
DTC Logic150	
Diagnosis Procedure150	в. Л
U12AA CONFIGURATION ERROR 151	IVI
DTC Logic151	
1112AB ANTENNA 152	AV
DTC Logic	
Diagnosis Procedure152	
U12AC NAVI CONTROL UNIT 153	0
DTC Logic	
	D
DTC Logic	Г
2 · • Logio	
U12AE NAVI CONTROL UNIT	
DIG LOGIC155	
U12AF NAVI CONTROL UNIT156	
DTC Logic156	

U12B0 POWER SUPPLY VOLTAGE 157 DTC Logic157
U12B1 POWER SUPPLY VOLTAGE 158 DTC Logic
U1304 CAMERA IMAGE CALIBRATION 159 DTC Logic
U1305 CONFIG UNFINISH
POWER SUPPLY AND GROUND CIRCUIT 161
NAVI CONTROL UNIT161 NAVI CONTROL UNIT : Diagnosis Procedure161
AROUND VIEW MONITOR CONTROL UNIT161 AROUND VIEW MONITOR CONTROL UNIT : Di- agnosis Procedure
MICROPHONE SIGNAL CIRCUIT
CAMERA IMAGE SIGNAL CIRCUIT 165 Description
STEERING SWITCH SIGNAL A CIRCUIT 166 Description
STEERING SWITCH SIGNAL B CIRCUIT 168 Description
STEERING SWITCH GROUND CIRCUIT 170 Description
SYMPTOM DIAGNOSIS172
NAVIGATION SYSTEM 172 Symptom Table
HANDS-FREE PHONE SYMPTOMS 176 Symptom Table
NORMAL OPERATING CONDITION
REMOVAL AND INSTALLATION
NAVI CONTROL UNIT 182 Removal and Installation
FRONT DOOR SPEAKER 183

Removal and Installation183
REAR DOOR SPEAKER184
Removal and Installation184
TWEETER 185 Removal and Installation 185
WOOFER186 Removal and Installation
ANTENNA BASE187
Exploded View
GPS ANTENNA
MICROPHONE
AROUND VIEW MONITOR CONTROL UNIT 190 Removal and Installation 190
FRONT CAMERA191 Removal and Installation191
REAR CAMERA192
Removal and Installation192
SIDE CAMERA
STEERING ANGLE SENSOR194
Exploded View
STEERING SWITCH195
Exploded View
Removal and Installation
Removal and Installation
ANTENNA FEEDER197
Feeder Layout
PRECAUTION198
PRECAUTION
PRECAUTION 198 PRECAUTIONS 198 Precaution for Supplemental Restraint System 198 (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- 198 SIONER" 198 Precautions for Removing Battery Terminal 198
PRECAUTION 198 PRECAUTIONS 198 Precaution for Supplemental Restraint System 198 (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- 198 SIONER" 198 Precautions for Removing Battery Terminal 198 SYSTEM DESCRIPTION 200
PRECAUTION 198 PRECAUTIONS 198 Precaution for Supplemental Restraint System 198 (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- 198 SIONER" 198 Precautions for Removing Battery Terminal 198 SYSTEM DESCRIPTION 200 COMPONENT PARTS 200
PRECAUTION 198 PRECAUTIONS 198 Precaution for Supplemental Restraint System 198 (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- 198 SIONER" 198 Precautions for Removing Battery Terminal 198 SYSTEM DESCRIPTION 200 COMPONENT PARTS 200 Component Parts Location 200 Component Description 200

SYSTEM	203
INTEGRATED CONTROL SYSTEM INTEGRATED CONTROL SYSTEM : System De- scription	203 203
HANDLING PRECAUTION	209 209
DIAGNOSIS SYSTEM (MULTI DISPLAY UNIT) CONSULT Function	210 210 212
	212
MULTI DISPLAY UNIT Reference Value DTC Inspection Priority Chart DTC Index	212 212 214 215
WIRING DIAGRAM	216
INTEGRATED CONTROL SYSTEM	216 216
BASIC INSPECTION	220
DIAGNOSIS AND REPAIR WORK FLOW Work Flow	220 220
DTC/CIRCUIT DIAGNOSIS	222
U1000 CAN COMM CIRCUIT Description DTC Logic Diagnosis Procedure	222 222 222 222
U1010 CONTROL UNIT (CAN) Description	223 223

	_
DTC Logic223 Diagnosis Procedure	3 3 A
U1402 ENGINE SPEED SIGNAL	L L B
	_
DTC Logic) -
Diagnosis Procedure	5 C
U1406 BOOST PRESSURE INPUT 220	5
DTC Logic226	; D
Diagnosis Procedure226	6
U1412 LONG ACC INPUT	
DTC Logic	,
Diagnosis Procedure	7
U1413 TRANS ACC INPUT	8 F
DTC Logic	3
Diagnosis Procedure228	3
POWER SUPPLY AND GROUND CIRCUIT 229	G
MULTI DISPLAY UNIT)
MULTI DISPLAY UNIT : Diagnosis Procedure229	Э Н
SYMPTOM DIAGNOSIS 230)
INTEGRATED CONTROL SYSTEM 230)
Symptom Table230)
REMOVAL AND INSTALLATION	J
MULTI DISPLAY UNIT	l
Exploded View	l
Removal and Installation23	K

M

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< PRECAUTION > PRECAUTION PRECAUTIONS

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

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, 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 "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Removing Battery Terminal

INFOID:000000012947019

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		
YD25DDTi	: 2 minutes		



NOTE:

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

 After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.
 NOTE:

PRECAUTIONS

< PRECAUTION > [DISPLAY AUDIO]	
 Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF. Example of high-load driving Driving for 30 minutes or more at 140 km/h (86 MPH) or more. 	A
 Driving for 30 minutes or more on a steep slope. For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch. NOTE: 	В
If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.	С
NOTE: The removal of 12V battery may cause a DTC detection error.	D
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< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000012202452

Tool name		Description
Power tool	PBIC0191E	Loosening screws

SYSTEM DESCRIPTION **COMPONENT PARTS**

Component Parts Location

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13. Audio unit

Component Description

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Part name	Description	
Audio unit	Controls audio system and hands-free phone system functions.Sound signals are output to each speaker.	L
Steering switch	Operation for audio and hands-free phone are possible.Steering switch signal (operation signal) is output to audio unit.	_
Front door speaker	Inputs sound signal from audio unit.Outputs mid and low range sounds.	M
Tweeter	Inputs sound signal from audio unit.Outputs high range sounds.	AV
Rear door speaker	Inputs sound signal from audio unit.Outputs high, mid and low range sounds.	_
Antenna base	 A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted. ANTENNA AMP. Radio signal received by rod antenna is amplified and transmitted to audio unit. Power (antenna amp. ON signal) is supplied from audio unit. SATELLITE RADIO ANTENNA Receives satellite radio waves and outputs it to audio unit. 	P
Microphone	 Used for hands-free phone operation. Microphone signal is transmitted to audio unit. Power (microphone VCC) is supplied from audio unit. 	_

COMPONENT PARTS

< SYSTEM DESCRIPTION >

Part name	Description
USB connector and AUX jack	 Sound signal of auxiliary input is transmitted to audio unit. Sound signal of USB input is transmitted to audio unit.
Rear view camera	Camera power supply is input from audio unit.The image of vehicle rear view is transmitted to audio unit.

< SYSTEM DESCRIPTION >

SYSTEM



AUDIO SYSTEM

The audio system consists of the following components:

- Audio unit
- Front door speakers
- Rear door speakers
- Tweeters
- Steering wheel audio control switches
- USB interface
- AUX in jack
- Antenna amp.
- Rod antenna
- Satellite radio.

Μ When the audio system is on, AM/FM signals received by the rod antenna are amplified by the antenna amp. and sent to the audio unit. The audio unit then sends audio signals to the front door speakers and rear door speakers.

Refer to Owner's Manual for audio system operating instructions.

USB INTERFACE FUNCTION

- iPod[®] or music files in USB memory can be played.
 Sound signals are transmitted from USB interface to the audio unit and output to each speaker.
- iPod[®] is recharged when connected to USB interface.

iPod[®] is a trademark of Apple inc., registered in the U.S. and other countries.

HANDS-FREE PHONE SYSTEM

- Bluetooth[®] control is built into audio unit.
- The connection between cellular phone and audio unit is performed with Bluetooth[®] communication.
- The voice guidance signal is input from the audio unit and output to the front speakers when operating the cellular phone.

When A Call Is Originated

Revision: November 2015

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SYSTEM

< SYSTEM DESCRIPTION >

- Spoken voice sound output from the microphone (microphone signal) is input to audio unit.
- Audio unit outputs to cellular phone with Bluetooth[®] communication as a TEL voice signal.
- · Voice sound is then heard at the other party.

When Receiving A Call

- Voice sound is input to own cellular phone from the other party.
- TEL voice signal is input to audio unit by establishing Bluetooth[®] communication from cellular phone, and the signal is output to front speakers.

SPEED SENSITIVE VOLUME SYSTEM

Volume level of this system goes up and down automatically in proportion to the vehicle speed. The control level can be selected by the customer. Refer to Owner's Manual for operating instructions.

REAR VIEW MONITOR FUNCTION

Operation Description

- When the selector lever is shifted to the reverse position, the rear view monitor image is displayed.
- When the selector lever is shifted to any position other than the reverse position, the original image (the image displayed before the rear view monitor image) is displayed.

Camera Image Operation Principle

- The audio unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the audio unit when power is supplied from the audio unit.
- The audio unit combines a warning message and fixed guide lines with an image received from the rear view camera to display a rear view camera image on the screen.

Vehicle Width and Distance Guide Lines Display Function at Rear View Monitor Display

• The vehicle width and distance guide lines are displayed at the rear view monitor display to allow the driver to more easily judge distances between the vehicle and objects and help the driver back into a parking space.



Vehicle Width and Distance Guide Lines Display Function at Rear View Monitor Display

Precautions for Vehicle Width And Distance Guide Lines Display on the Rear View Monitor Display Vehicle width and distance guide lines on the display may be different from actual lines depending on vehicle conditions and road conditions.

Precautions for road conditions

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

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Since guide lines are drawn based on the road, a different distance may be displayed if a protruding block is
present nearby.



Precautions for block

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SYSTEM

< SYSTEM DESCRIPTION >

Since guide lines are drawn based on the road, a different distance may be displayed if a protruding block is
present nearby.



DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AUDIO UNIT)

Description

The audio unit on board diagnosis performs the functions listed in the table below:

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INFOID:0000000012202457

[DISPLAY AUDIO]

	Mode	Description		
	Self Diagnosis	Audio unit diagnosis.		
	Display Diagnosis	The following check functions are available: color tone check by color spectrum bar display and gray scale check by gradation bar display.		
Confirmation/ Adjustment	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, lights, reverse, EQ pin, ignition, destination and camera type.		
	Speaker Test	The connection of a speaker can be confirmed by test tone.		
	Camera System	Guiding line position that overlaps rear view camera image can be adjust- ed.		
	AV COMM Diagnosis	Displayed but not used.		
	Delete Unit Connection Log	Erase the connection history of unit and error history.		
	Version Information	Displays the audio system version information.		
	Initialize Setting	Initializes the audio unit memory.		

On Board Diagnosis Function

METHOD OF STARTING

- Turn the ignition ON. 1.
- Turn the audio unit OFF. 2.
- 3. While pressing the preset 1 button, turn the volume control dial clockwise and counterclockwise quickly approximately 15 times or more. Shifting from current screen to previous screen is performed by pressing BACK button.



The trouble diagnosis initial screen is displayed, and Self Diagnosis or Confirmation/Adjustment can be 4. selected.

SELF DIAGNOSIS MODE

Audio Unit Self Diagnosis

- Select Self Diagnosis.
- 2. Self diagnosis screen is displayed. The bar graph visible in center of screen indicates progress of self diagnosis.
- Ο 3. Diagnosis results are displayed after the self diagnosis is completed. The unit names and the connection lines are color coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Unit malfunction ¹	Red	Green

1: Control unit (audio unit) is displayed in red.

Replace audio unit if Self Diagnosis did not run because control unit malfunction is indicated. The symptom is audio unit internal error. Refer to AV-50, "Removal and Installation".



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DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

4. Comments of self diagnosis results can be viewed in the diagnosis result screen.

Audio Unit Self Diagnosis Results

Only Unit Part Is Displayed In Red						
Screen switch	Description	Possible cause				
Control unit	Malfunction is detected in audio unit power supply and ground circuits.	 Audio unit power supply or ground circuits. Refer to <u>AV-35</u>, "<u>AUDIO UNIT</u>: <u>Diagnosis Procedure</u>". If no malfunction is detected in audio unit power supply and ground circuits, replace audio unit. Refer to <u>AV-50</u>, "<u>Removal and Installation</u>". 				

Audio Unit Confirmation/Adjustment

- 1. Select Confirmation/Adjustment.
- 2. Select each switch on the Confirmation/Adjustment screen to display the relevant trouble diagnosis screen. Press the BACK switch to return to the initial Confirmation/Adjustment screen.





Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

Diagnosis results	Display	Vehicle status	Remarks	
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	- Changes in indication may be delayed. This is normal.	
venicie speed	OFF	Vehicle speed = 0 km/h (0 MPH)		
Lights	ON	Lighting switch is ON		
Vehicle speed Lights Reverse	OFF Lighting switch is OFF			
Poverse	ON	Shift position is in "R"	Changes in indication may be delayed. This is normal	
Reverse OFF Shi		Shift position is in other than "R"	Changes in indication may be delayed. This is normal.	

Speaker Test

Select Speaker Test to display the Speaker Diagnosis screen. Press Start to generate a test tone in a speaker. Press Start again to generate a test tone in the next speaker. Press End to stop the test tones.

Camera System

Use this mode to adjust the guide line display position of the rear view monitor if necessary after removing the rear view camera.

Delete Unit Connection Log

DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >	[DISPLAY AUDIO]
Deletes any unit connection records and error records from the audio un unit that has been removed).	it memory (clears the records of the
Version Information Displays audio system version numbers.	
Initialize Settings Deletes data stored from the audio unit.	

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ECU DIAGNOSIS INFORMATION AUDIO UNIT

Reference Value

INFOID:000000012202458

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
2 (W)	3 (GR)	Sound signal front speaker LH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
4 (LG)	5 (V)	Sound signal rear speaker LH	Output	ON	Sound output	(V) 1 0 1 2 ms SKIB3609E
					Keep pressing SOURCE switch.	0 V
6	15			Ignition	Keep pressing SEEK UP switch.	1.0 V
(G)	(V)	Steering switch signal A	Input	switch ON	Keep pressing SEEK DOWN switch.	2.0 V
					Keep pressing TEL switch.	3.0 V
					Except for above.	5.0 V
7 (L)	Ground	ACC power supply	Input	ACC	_	Battery voltage
8 (GR)	Ground	Illumination control signal ground		ON	_	0 V

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terr (Wire)	ninal color)	Description			Condition	Reference value	А
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	
					 Lighting switch 1ST When meter illumination is maximum 	(V) 15 10 5 0 2.5 ms JPNIA1687GB	B C D
9 (V)	Ground	Illumination control signal	Input	ON	 Lighting switch 1ST When meter illumination is step 11 	(V) 15 10 5 0 → 4 2.5 ms	E
					 Lighting switch 1ST When meter illumination is minimum 	JPNIA1686GB	G
11 (G)	12 (R)	Sound signal front speaker RH	Output	ON	Sound output	(V) 1 0 -1 • 2ms SKIB3609E	H
13 (BR)	14 (Y)	Sound signal rear speaker RH	Output	ON	Sound output		J K L
16 (R)	15 (V)	Steering switch signal B	Input	lgnition switch ON	Keep pressing VOL DOWN switch. Keep pressing VOL UP switch. Keep pressing TEL END switch.	0 V 1.0 V 2.0 V	M
					Except for above.	5.0 V	
18 (Y)	Ground	Vehicle speed signal (8- pulse)	Input	ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	0 0 20 ms JSNIA0012GB	0 P
19 (BR)	Ground	Battery power supply	Input	OFF	_	Battery voltage	
20 (B)	Ground	Ground		ON		0 V	

Revision: November 2015

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AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

verr Wire)	minai e color)	Description			Condition	Reference value	
+	-	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	
33 (L)	Ground	Camera ground	_	ON	_	0 V	
34 (LG)	Ground	Camera power supply	Output	lgnition switch ON	Shift position is in "R"	6.2 V	
35 (V)	Ground	Camera image signal	Input	lgnition switch ON	At camera images is dis- played.	(V) 0.4 −0.4 • • • 40µs skiB2251J	
36	—	Shield	—	_	—	_	
37 (W)	Ground	Microphone signal	Input	ON	While speaking into micro- phone.	(V) 2.5 2.0 1.5 1.0 0.5 0 ★ 2ms PKIB5037J	
38 (B)	Ground	Microphone VCC	Input	ON	—	5.0 V	
39		Shield		_	_	_	
44 (B)	Ground	Camera detection signal	_	ON	—	0 V	
50 (G)	Ground	Reverse signal	Input	ON	Selector lever in R (re- verse)	Battery voltage	
53 (L)	Ground	AUX audio signal LH	Input	ON	AUX audio signal received	(V) 1 0 -1 • 2ms SKIB3609E	
54 (G)	Ground	AUX audio signal RH	Input	ON	AUX audio signal received	(V) 1 0 -1 • 2ms SKIB3609E	
55 (Y)	Ground	AUX audio signal ground		ON	_	0 V	
56		Shield				_	
61		V BUS signal				_	
62	—	USB D– signal	_	_		_	
63	—	USB D+ signal		—	—	_	
65	—	USB ground	—	—	—	_	

Revision: November 2015

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terr (Wire	Terminal Descriptio		ninal Description Condition		Condition	Reference value	A
+	-	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	
66	—	Antenna amp. ON signal	Output	ACC	—	Battery voltage	В
67	—	Antenna signal	Input	_	—	—	
69		Satellite radio antenna sig- nal	Input		Not connected to satellite antenna connector.	5.0 V	С

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DISPLAY AUDIO

< WIRING DIAGRAM > WIRING DIAGRAM

DISPLAY AUDIO

Wiring Diagram

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Connector Name Commetor Name Commetor Name Commetor Name Name Name Name Name Name Name Name	D
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Connector No. Bit Connector No. N Connector No. N Connector No. N Connector No. N	G
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Connector No. D44	Connector Name REAR DOOR SPEAKER RH	Connector Type NS02FW-CS		E			9 1			- - - -	No Wire Signal Name [Specification]	1 LG -	2 GR -			Connector No. D61	Connector Name WIRE TO WIRE		Connector Type NS10MW-CS	á	(Third)	1 0 1 0 1		5 6 7 8 9 10			Truminal Calar Of	No. Wire Signal Name [Specification]	1 V	4 L -		7 LG -	8 GR -	9 BR -	10 Y -	
Connector No. D24	Connector Name FRONT DOOR SPEAKER LH	Connector Type NS02FW-CS					2 1				No Wire View Signal Name [Specification]	1 W -	2 P .			Connector No. D41	Connector Name WIRE TO WIRE		Connector Type NS10MW-CS	6	(http://www.com/article/articl			5 6 7 8 9 10			Tornitadi Calar Of	No. Wire Signal Name [Specification]	1 V .	4 L -	. 9	7 LG -	8 GR -	9 BR -	10 Y -	
Terminal Color Of Signal Name (Specification)	1 P -	2 W -	3 SB -	4 V -	7 6 -	8 BG -	- 51 6	10 Y -	11 W -	12 SB -		15 P -	16 LG -	17 BR -	18 P -	19 V -	24 G -	25 R -	38 G -	- 8 B	40 V -	41 P -	42 R -	43 GR -	44 W -	45 Y		, - 87	49 R	50 LG -	52 BR -					
DISPLAY AUDIO	18 M	19 R -	24 R -	25 G -	38 G -	39 8 -	40 LG -	41 Y -	43 P -	44 V -	W	50 P			Connector No. D4	Connector Name FRONT DOOR SPEAKER RH		Connector Type NS02FW-CS	4	E			2 1				No Mice Signal Name [Specification]		2 R -	-		Connector No. D22	Connector Name WIRE TO WIRE		Connector Type TH40FW-CS15	(1) (1) (1) (1) (1) (1) (1) (1)

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	G
	Н
MR MR 55 4 3 2 131/12 111/10 3 2 131/12 111/10 3 2 131/12 111/10 3 2 131/12 111/10 3 2 131/12 111/10 3 2 131/12 111/10 3 2 131/12 111/10 3 2 131/12 111/10 3 2 131/12 111/10 3 2 101/12 101/12 101/12 3 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 101/12 </td <td>I</td>	I
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	Connector No	ġ	F1	32	51		Connector No.	F49
				33	ж			TOTAL CONTRACT SOUTH STATE
	Connector N.	ame	WIKE IO WIKE	34	σ	- [For NISMO RS]	Connector Name	PAKK / NEUTRAL PUSITION SWITCH
	Connector Ty	ype	SAA36FB-RS10-SJZ2	34	٩	- [Except for NISMO RS]	Connector Type	FEA03FG-LC
	[37	σ	 [Without Intelligent Key] 	[
	E		L 191817161514131211 A	37	GR	 [With Intelligent Key] 	E	
	Š		16 17 16 15 14 15 14 10	38	я		-	¢
	Ċ.		24 23 22 21 20 19	39	GR		<u>6</u> 11	
			29 29 28 27 28	40	۵.			(123)
			200 00 31 00 00 00 00 00 00 00 00 00 00 00 00 00	41	BR	- [For NISMO RS]		
			4847494343443434140 J	41	>	- [Except for NISMO RS]		
				42	_	- [Except for NISMO RS]		
	Terminal C	Color Of		42	>	- [For NISMO RS]	Terminal Color	Of
	No.	Wire	Signal Name [Specification]	43	-	- [For NISMO RS]	No. Wi	e Signal Name [Specification]
	1	٩		43	>	- [Except for NISMO RS]	1	
	2	-		44	BR	- [Except for NISMO RS]	2 2	
	m	>	- [Except for NISMO RS]	44	0	- [For NISMO RS]	m	
	e	>	- [For NISMO RS]	45	BR			-
	4	8	- [For NISMO RS]	46	œ			
	4	GR	- [Except for NISMO RS]	47	>		Connector No.	M10
	5	PI		48	GR	- [With Intelligent Key]	Connector Name	WIDE TO WIDE
	2	9		48	٨	 [Without Intelligent Key] 		WINE IO WINE
	10	R	- [Except for NISMO RS]				Connector Type	TH40MW-CS15
	10	٨	- [For NISMO RS]				4	
	11	9	 [Except for NISMO RS] 	Connector	No.	F30	B	
•	11	۲	- [For NISMO RS]	Connector	ameN	TRANSMISSION RANGE SWITCH	2	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
-	12	9	-		-		6 11	ed effective and ordered ordered and the second ordered and and and and and and and and and an
	13	8	 [Except for NISMO RS] 	Connector	Type	YDX06FB-HS4		14 11 14 12 14 14 14 14 14 14 14 14 14 14 14 14 14
	13	BG	- [For NISMO RS]	ģ				
	14		- [For NISMO RS]	B		[[
	14	>	 [Except for NISMO RS] 					
-	15	BR	-	2			Terminal Color	Of Signal Name [Specification]
	16	٩				0 6 5 1 /	No. Wi	
-	17	SB	-				1	-
	18	9					2 6	
	19	9					3	
	20	BR		Terminal	Color Of	Signal Nama (Snacification)	4	
	21	υ		No.	Wire	Commenced and and and the	13 GI	•
	22	BR	- [For NISMO RS]	1	GR		14 GI	
	22	>	 [Except for NISMO RS] 	2	BR		15 L	
	23	œ		e	9		16 SHI	

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Connector No. Connector Name Connector Name Connector Name Connector Name Connector Name 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	D
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18 W -	Connector N	0.	V133	16	N	MANUAL MODE SHIFT DOWN SIGNAL	58	IG	
19 G -	Connector N	ame	COMBINATION SMITCH (SOIDAL CABLE)	17	G	WASHER LEVEL SWITCH SIGNAL	59	9	
20 R -				18	Я	SECURITY SIGNAL	62	٢	
26 R -	Connector Ty	ype 1	TK08FGY-1V	19	GR	AMBIENT SENSOR SIGNAL	63	w	,
27 SHIELD -	ſ			20	æ	AMBIENT SENSOR GROUND	64	0	,
28 V -	ľ		[[21	8	GROUND	65	GR	
29 L -				22	-	GROUND	99	7	
30 LG -	19.H		24 25 26	23	8	GROUND	67	>	
32 W -				24	-	FUEL LEVEL SENSOR GROUND	68	œ	
			31 32 33 34	25	8	VDC GROUND	70	^	,
				26	V	PADDLE SHIFTER DOWN SWITCH SIGNAL	71	R	
Connector No. M23				27	FG	BATTERY POWER SUPPLY	72	GR	
Connector Name M(IBE TO W(IBE	Terminal 0	Color Of	Signal Name (Snarification)	28	GR	IGNITION SIGNAL	73	9	
	No.	Wire	oliginar rearrie [opecification]	29	V	PASSENGER SEAT BELT WARNING SIGNAL	76	W	
Connector Type NH10MW-CS10	24	9		31	Р	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL	78	IG	
c	25	Ь		36	۲	MANUAL MODE SIGNAL	79	v	
	26	GR		37	G	NON-MANUAL MODE SIGNAL	80	IG	
A 5 6	31	R	-	38	Ρ	ALTERNATOR SIGNAL	83	P	-
21	32	8					84	9	
9 10 11 12 13	33	^					85	BR	
7 8 11 15 15 15 15 19 20	34	g		Connect	ar No.	M77	86	R	
				Connect	or Namo	WIDE TO WIDE	06	THIEFD	
							91	Y	
Terminal Color Of Signal Name (Secretification)	Connector N	lo.	VI34	Connect	or Type	TH80FW-CS16-TM4	92	BR	
No. Wire Operation	Connector N) owe	COMBINATION METER	ç		ĺ	95	Y	
3 8 .				ß			96	L	
4 Y -	Connector Ty	ype 1	TH40FW-NH	Ň			97	GR	
5 L -	¢			Ē		21 22 0013 0014 1400 001 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	98	6	
e b -	E					20 5 10 10 10 10 10 10 10 10 10 10 10 10 10	66	в	,
- BR -	Ň		K			2 00 00000 00000 00000 00000 00000 000000	100	IG	,
10 P -	Ċ.		201 51 51 51 51 51 51 51 51 51 51 51 51 51						
11 8 -		•							
12 SHIELD -		-		Termina	I Color Of	Cianal Massa [Casaifiantian]	Connector N	M111	
13 W -				No.	Wire	orginal realine (openingation)	Connector N	MIRE TO WIRE	
18 8 .					L				
	Terminal (Color Of	Signal Name [Specification]	4	^		Connector T	pe TH04FW-NH	
	No.	Wire		9	٩		ģ		
	1	_	CAN-H	10	ж		ß		
	2	Ρ	CAN-L	11	R	-	ŝ		R
	4	~	VEHICLE SPEED SIGNAL (8-PULSE)	12	LG		Ċ.	Ľ	
	5	9	PADDLE SHIFTER UP SWITCH SIGNAL	13	V			7	321
	9	BR	FUEL LEVEL SENSOR SIGNAL	14	SHIELD			1	
	2	æ	AIR BAG SIGNAL	34	ΓC				
	80	٩		35	SB				
	6	N	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)	36	8		Terminal 0	olor Of Signal P	ame [Snecification]
	10	SB	PARKING BRAKE SWITCH SIGNAL	37	Р		No.	Wire	inconcentration in

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[DISPLAY AUDIO]



JRNWF0737GB

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE



DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2.

2.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected. Refer to <u>AV-46</u>, "Symptom Table".

>> GO TO 3.

3. DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

Is malfunctioning part detected?

YES >> GO TO 4. NO >> GO TO 2.

4. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.

2. Reconnect parts or connectors disconnected during Diagnostic Procedure.

>> GO TO 5.

5.FINAL CHECK

Refer to confirmed symptom in step 2, and make sure that the symptom is not detected. Has the symptom been repaired?

YES >> INSPECTION END

>> GO TO 2. NO

	FUWER SUP	FLI AND GRU	JUND CIRCUIT	
< DTC/CIRCUIT DIA	GNOSIS >			[DISPLAY AUDIO]
DTC/CIRCU	IT DIAGNO	SIS		
POWER SUPP	LY AND GROU	ND CIRCUIT		
AUDIO UNIT				
AUDIO UNIT : Di	agnosis Procedu	ſe		INECID-0000001220246
		-		
CHECK FUSE	a fuses are not blown			
	ig luses are not blown	1.		
	Signal name		Fuse No.	
Bat	tery power supply		34	
Acception Acceptication Acception Acception Acception Acception Acception Ac			19	
YES >> Replace the NO >> GO TO 2	he blown fuse after re	pairing the affected	circuit.	
2. CHECK POWER S				
Check voltage betwee	n audio unit connecto	r and ground.		
		g		
Audio	o unit		Condition	Voltage
Connector	Terminal	Ground	Institute autitate ON	(Approx.)
M129	10		Ignition switch: OFF	Battery voltage
	t normal?		ignition switch. Of f	
s the inspection result				
s the inspection result YES >> GO TO 3.				
s the inspection result YES >> GO TO 3. NO >> Repair or	replace harness or co	nnectors.		
Is the inspection result YES >> GO TO 3. NO >> Repair or 3.CHECK GROUND	replace harness or co CIRCUIT	nnectors.		
s the inspection result YES >> GO TO 3. NO >> Repair or 3.CHECK GROUND 1. Turn ignition swite Disconnect audio	replace harness or co CIRCUIT h OFF.	nnectors.		
s the inspection result YES >> GO TO 3. NO >> Repair or CHECK GROUND CHECK GROUND Turn ignition switc Disconnect audio Check continuity b	replace harness or co CIRCUIT h OFF. unit connector . petween audio unit con	nnectors.	d.	
s the inspection result YES >> GO TO 3. NO >> Repair or CHECK GROUND 1. Turn ignition switc 2. Disconnect audio 3. Check continuity b	replace harness or co CIRCUIT h OFF. unit connector . between audio unit con	nnectors.	d.	
s the inspection result YES >> GO TO 3. NO >> Repair or CHECK GROUND CHECK GROUND Disconnect audio Connector	replace harness or co CIRCUIT h OFF. unit connector . between audio unit con	nnectors.	d.	Continuity
s the inspection result YES >> GO TO 3. NO >> Repair or CHECK GROUND CHECK GROUND Disconnect audio Check continuity to Connector	replace harness or co CIRCUIT :h OFF. unit connector . between audio unit con Audio unit 	nnectors.	d. Ground	Continuity

< DTC/CIRCUIT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

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[DISPLAY AUDIO]

1. CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector and microphone connector .

3. Check continuity between audio unit connector and microphone connector .

Audi	io unit	Micro	phone	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	37		1	
M130	38	R2	4	Existed
	39		2	

4. Check continuity between audio unit connector and ground.

Audi	o unit		Continuity
Connector	Terminal	Ground	Continuity
M130	37	Ground	Not existed
WI I SO	38		NOT EXISTED

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2. CHECK MICROPHONE VCC VOLTAGE

- 1. Connect audio unit connector .
- 2. Turn ignition switch ON.
- 3. Check voltage between terminals of audio unit connector .

(Audi	+) o unit	(-)	Voltage (Approx.)
Connector	Terminal		
M130	38	Ground	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace audio unit. Refer to <u>AV-50, "Removal and Installation"</u>.

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.

2. Check signal between terminals of audio unit connector .
MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

-) Audio	⊦) o unit	(-)	Condition	Reference value
Connector	Terminal	-		
M130	37	Ground	While speaking into microphone.	(V) 2.5 2.0 1.5 1.0 0.5 0 • • • 2ms PKiB5037J

Is the inspection result normal?

 >> Replace audio unit. Refer to <u>AV-50, "Removal and Installation"</u>.
 >> Replace microphone. Refer to <u>AV-54, "Removal and Installation"</u>. YES

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< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL A CIRCUIT

Description

Transmits the steering switch signal to audio unit.

Diagnosis Procedure

1. CHECK STEERING SWITCH SIGNAL A CIRCUIT

- 1. Disconnect audio unit connector and spiral cable connector.
- 2. Check continuity between audio unit harness connector and spiral cable harness connector.

Audio unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M129	6	M33	24	Existed

3. Check continuity between audio unit harness connector and ground.

Audi	o unit		Continuity
Connector	Terminal	Ground	Continuity
M129	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to <u>SR-15. "Removal and Installation"</u>.

3.CHECK AUDIO UNIT VOLTAGE

1. Connect audio unit connector and spiral cable connector.

2. Turn ignition switch ON.

3. Check voltage between audio unit harness connector.

	Pro			
(+) (–)				Voltage
	Audio unit			(Approx.)
Connector	Terminal	Connector	Terminal	
M129	6	M129	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace audio unit. Refer to <u>AV-50, "Removal and Installation"</u>.

4.CHECK STEERING SWITCH

- 1. Turn ignition switch OFF.
- 2. Check steering switch. Refer to AV-38, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to <u>AV-55, "Removal and Installation"</u>.

Component Inspection

Measure the resistance between the steering switch connector.

Revision: November 2015

[DISPLAY AUDIO]

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STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

Steerin Terr	g switch minal	- Condition	Resistance (Approx.) Ω
		TEL switch ON	716 – 730
14		SEEK DOWN switch ON	318 – 324
14		SEEK UP switch ON	120 – 122
	17	SOURCE switch ON	0
		TEL END switch ON	318 – 324
15	15	VOL UP switch ON	120 – 122
		VOL DOWN switch ON	0



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< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL B CIRCUIT

Description

Transmits the steering switch signal to audio unit.

Diagnosis Procedure

1. CHECK STEERING SWITCH SIGNAL B CIRCUIT

- 1. Disconnect audio unit connector and spiral cable connector.
- 2. Check continuity between audio unit harness connector and spiral cable harness connector.

Audio unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M129	16	M33	31	Existed

3. Check continuity between audio unit harness connector and ground.

Audi	o unit		Continuity
Connector	Terminal	Ground	Continuity
M129	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to <u>SR-15. "Removal and Installation"</u>.

3.CHECK AUDIO UNIT VOLTAGE

1. Connect audio unit connector and spiral cable connector.

2. Turn ignition switch ON.

3. Check voltage between audio unit harness connector.

	Pro			
(+) (–)				Voltage
	Audio unit			(Approx.)
Connector	Terminal	Connector	Terminal	
M129	16	M129	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace audio unit. Refer to <u>AV-50, "Removal and Installation"</u>.

4.CHECK STEERING SWITCH

- 1. Turn ignition switch OFF.
- 2. Check steering switch. Refer to AV-40, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to <u>AV-55</u>, "Removal and Installation".

Component Inspection

Measure the resistance between the steering switch connector.

Revision: November 2015

INFOID:000000012202466

INFOID:000000012202467

INFOID:000000012202468

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

Steerin Terr	g switch minal	- Condition	Resistance (Approx.) Ω
		TEL switch ON	716 – 730
14		SEEK DOWN switch ON	318 – 324
14		SEEK UP switch ON	120 – 122
	17	SOURCE switch ON	0
		TEL END switch ON	318 – 324
15		VOL UP switch ON	120 – 122
		VOL DOWN switch ON	0



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STEERING SWITCH SIGNAL GND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL GND CIRCUIT

Description

Transmits the steering switch signal to audio unit.

Diagnosis Procedure

1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

- 1. Disconnect audio unit connector and spiral cable connector.
- 2. Check continuity between audio unit harness connector and spiral cable harness connector.

Audio unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M129	15	M33	33	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to <u>SR-15, "Removal and Installation"</u>.

3.CHECK GROUND CIRCUIT

1. Connect audio unit connector.

2. Check continuity between audio unit harness connector and ground.

Audio unit			Continuity
Connector	Terminal	Ground	Continuity
M129	15		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace audio unit. Refer to <u>AV-50, "Removal and Installation"</u>.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.

Check steering switch. Refer to <u>AV-42, "Component Inspection"</u>.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to <u>AV-55, "Removal and Installation"</u>.

Component Inspection

Measure the resistance between the steering switch connector.

INFOID:000000012202471

[DISPLAY AUDIO]

INFOID:000000012202469

INFOID:000000012202470

STEERING SWITCH SIGNAL GND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

Steerin Terr	g switch ninal	- Condition	Resistance (Approx.) Ω
		TEL switch ON	716 – 730
11		SEEK DOWN switch ON	318 – 324
14		SEEK UP switch ON	120 – 122
	17	SOURCE switch ON	0
		TEL END switch ON	318 – 324
15		VOL UP switch ON	120 – 122
		VOL DOWN switch ON	0



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CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

CAMERA IMAGE SIGNAL CIRCUIT

Description

• The audio unit supplies power to the rear view camera when receiving a reverse signal.

• The rear view camera transmits camera images to the audio unit when power is supplied from the audio unit.

Diagnosis Procedure

INFOID:000000012202473

INFOID:000000012202472

1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector and rear view camera connector.
- 3. Check continuity between audio unit harness connector and rear view camera harness connector.

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M130	34	D111	1	Existed

4. Check continuity between audio unit harness connector and ground.

Audio unit			Continuity
Connector	Terminal	Ground	Continuity
M130	34		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VOLTAGE CAMERA POWER SUPPLY

- 1. Connect audio unit connector and rear view camera connector.
- 2. Turn ignition switch ON.
- 3. Shift the selector lever to "R" position.
- 4. Check voltage between audio unit harness connector and ground.

(+) Audio unit (-)		Condition	Voltage	
Connector	Terminal			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
M130	34	Ground	Shift position is in "R".	6.2 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace audio unit. Refer to <u>AV-50, "Removal and Installation"</u>.

$\mathbf{3}$.check continuity camera image signal circuit

1. Turn ignition switch OFF.

- 2. Disconnect audio unit connector and rear view camera connector.
- 3. Check continuity between audio unit harness connector and rear view camera harness connector.

Audi	Audio unit Rear view camera		Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
M130	35	D111	3	Existed	

4. Check continuity between audio unit harness connector and ground.

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Audi	io unit		Continuity
Connector	Terminal	Ground	Continuity
M130	35		Not existed
Is inspection	n result norm	al?	
YES >>	GO TO 4.		
NO >> Repair namess or connector.			
4.CHECK	CAMERA IM	AGE SIGNAL	
1. Connec	t audio unit o	connector and rear view	v camera connector.
2. Turn ign	nition switch	ON.	
	a a la atar la u	orto "D" position	

3. Shift the selector lever to "R" position.

4. Check signal between audio unit harness connector and ground.

(-	+)	(–)				
Audio	o unit		Condition	Standard	Reference value	_
Connector	Terminal					F
M130	35	Ground	At camera image is displayed.	Waveform according to camera image is input.	(V) 0.4 0 −0.4 •••40µs SKIB2251J	G

Is inspection result normal?

YES >> Replace audio unit. Refer to AV-50, "Removal and Installation".

NO >> Replace rear view camera. Refer to <u>AV-56, "Removal and Installation"</u>.

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SYMPTOM DIAGNOSIS AUDIO SYSTEM

Symptom Table

INFOID:000000012202474

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	Audio unit	Malfunction in audio unit. Refer to <u>AV-35, "AUDIO UNIT : Diagnosis</u> <u>Procedure"</u> .
	No sound from all speakers.	Audio unit power supply and ground circuits malfunction. Refer to <u>AV-35</u> , "AUDIO UNIT : Diagnosis <u>Procedure"</u> .
No sound comes out or the level of the sound is low.	Only a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH, etc.) does not output sound.	 Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Malfunction in speaker. Refer to: Malfunction in audio unit.
	Noise comes out from all speakers.	Malfunction in audio unit.
Noise is mixed with audio.	Noise comes out only from a certain speak- er (front door speaker LH, front door speak- er RH, rear door speaker LH, rear door speaker RH, etc.).	 Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Malfunction in speaker. Poor Installation of speaker (e.g. back- lash and looseness). Refer to: Malfunction in audio unit.
	Noise is mixed with radio only (when the vehicle hits a bump or while driving over bad roads)	Poor connector connection of antenna or antenna feeder.
No radio reception or poor reception.	 Other audio sounds are normal. Any radio station cannot be received or poor reception is caused even after mov- ing to a service area with good reception (e.g. a place with clear view and no ob- stacles generating external noises). 	 Antenna amp. ON signal circuit malfunction. Poor connector connection of antenna or antenna feeder.
Buzz/rattle sound from speaker	The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usu- ally something nearby the speaker is caus- ing the buzz/rattle.	Refer to "SQUEAK AND RATTLE TROU- BLE DIAGNOSIS" in the appropriate interi- or trim section.

RELATED TO HANDS-FREE PHONE

AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Possible malfunction location / Action to take	A
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.		
Hands-free phone cannot be activated.	 Hands-free phone operation can be made, but the communication cannot be established. Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation. 	Audio unit malfunction. Replace audio unit. Refer to <u>AV-50, "Removal and Installation"</u> .	E
Originating sound is not heard	Voice operation does work.		D
by the other party with hands- free phone communication.	Voice operation does not work.	Microphone signal circuit malfunction. Refer to <u>AV-36, "Diagnosis Procedure"</u> .	
The other party's voice cannot be heard by hands-free phone.	_	TEL voice sound signal circuits malfunction.	E

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location	
Camera image is not shown.	The guide line display is normal.	Camera image signal circuit. Refer to <u>AV-44, "Diagnosis</u> <u>Procedure"</u> .	G
Comora imaga daga pat quitab	"Reverse" is not turned ON on "Vehicle Signals" screen of "Confirmation/Adjust- ment".	Reverse signal circuit malfunction.	Н
Camera image does not switch.	"Reverse" is turned ON on "Vehicle Sig- nals" screen of "Confirmation/Adjust- ment".	Replace audio unit. Refer to <u>AV-50, "Removal and Instal-</u> lation".	I

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location / Action to take	J
None of the steering switch operations work.	Steering switch signal ground circuit. Refer to <u>AV-42</u> , "Diagnosis Procedure".	
Only specified switch cannot be operated.	Replace steering switch. Refer to AV-55. "Removal and Installation".	- N
"SOURCE", "SEEK UP", "SEEK DOWN" and "TEL" switches are not operated.	Steering switch signal A circuit. Refer to <u>AV-38. "Diagnosis Procedure"</u> .	
"VOL UP", "VOL DOWN" and "TEL END" switches are not operated.	Steering switch signal B circuit. Refer to <u>AV-40, "Diagnosis Procedure"</u> .	

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location / Action to take	/ \\
iPod [®] or USB memory can not be recognized.	_	USB and AUX harnessUSB connector and AUX jack	0

 $iPod^{(R)}$ is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	USB and AUX harnessUSB connector and AUX jack

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

NOTE:

Audio operation information, refer to Owner's Manual.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check that noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment. Then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check that the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the red book Compact Disc Standard and may not play.

Symptoms	Cause and counter measure	
	Check that the CD was inserted correctly.	
	Check that the CD is scratched or dirty.	
	Check that there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.	
Cannot play	The player will play correctly after it returns to the normal temperature if there is a temperature increase error.	
	Only the music CD files (CD-DA data) will be played if there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD.	
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played.	
	Check that the finalization process, such as session close and disc close, is done for the disc.	
	Check that the CD is protected by copyright.	
Poor sound quality	Check that the CD is scratched or dirty.	
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multi session disc, some time may be required before the music starts playing.	
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.	
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.	
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.	

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

RELATED TO HANDS-FREE PHONE

INFOID:000000012202475

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

Symptom	Cause and Counter measure
Does not recognize cellular phone connection (No connection is displayed on the display at the guide).	Some Bluetooth [®] enabled cellular phones may not be recognized by the in-vehicle phone module. Refer to "RELATED TO HANDS-FREE PHONE (Check Compati- bility)" in <u>AV-46, "Symptom Table"</u> .
Cannot use hands-free phone.	 Customer will not be able to use a hands-free phone under the following conditions: The vehicle is outside of the telephone service area. The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. The cellular phone is locked to prevent it from being dialed. NOTE: While a cellular phone is connected through the Bluetooth[®] wireless connection, the battery power of the cellular phone may distance.
	charge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality.	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

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REMOVAL AND INSTALLATION AUDIO UNIT

Removal and Installation

REMOVAL

- 1. Remove cluster lid C. Refer to IP-13, "Removal and Installation".
- 2. Remove audio unit screws.
- 3. Disconnect audio unit connectors to remove audio unit and brackets as a single unit.
- 4. Remove brackets screws to remove audio unit.

INSTALLATION

Install in the reverse order of removal.

< REMOVAL AND INSTALLATION > FRONT DOOR SPEAKER А **Removal and Installation** INFOID:000000012202477 REMOVAL В 1. Remove front door finisher. Refer to INT-13, "Removal and Installation". 2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door С speaker. **INSTALLATION** Install in the reverse order of removal. D Е F Н J Κ L

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REAR DOOR SPEAKER

INFOID:000000012202478

Removal and Installation

REMOVAL

- 1. Remove rear door finisher. Refer to INT-16, "Removal and Installation".
- 2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

INSTALLATION

Install in the reverse order of removal.

< REMOVAL AND INSTALLATION >

TWEETER

		Λ
Removal and Installation	INFOID:000000012202479	A
REMOVAL		В
 Remove front pillar garnish. Refer to <u>INT-18. "FRONT PILLAR GARNISH : Removal and Ins</u> Remove tweeter clip, then disconnect tweeter connector and remove tweeter. 	stallation".	0
INSTALLATION Install in the reverse order of removal.		C
		D

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< REMOVAL AND INSTALLATION >

MICROPHONE

INFOID:000000012202480

[DISPLAY AUDIO]

Removal and Installation

REMOVAL

- 1. Remove headlining. Refer to <u>INT-27, "NORMAL ROOF : Removal and Installation"</u> (normal roof) or <u>INT-30, "SUNROOF : Removal and Installation"</u> (sunroof).
- 2. Remove microphone connector and pawl to remove microphone.

INSTALLATION

Install in the reverse order of removal.

STEERING SWITCH		Λ
Exploded View	INFOID:000000012202481	~
Refer to <u>SR-12, "Exploded View"</u> . Removal and Installation	INFOID:000000012202482	В
REMOVAL Refer to <u>ST-9, "Removal and Installation"</u> .		С
INSTALLATION Install in the reverse order of removal.		D
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< REMOVAL AND INSTALLATION >

REAR VIEW CAMERA

Removal and Installation

REMOVAL

- 1. Remove back door lower finisher. Refer to <u>INT-39</u>, "BACK DOOR LOWER FINISHER : Removal and <u>Installation"</u>.
- 2. Remove connector to remove rear view camera.

INSTALLATION

Install in the reverse order of removal.

Adjustment

INFOID:000000012202484

INFOID:000000012202483

Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

- Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
- 2. Set into "Camera system" mode of Confirmation / Adjustment mode.



3. Press "1" or "2" switches, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

Selected pattern

4. Make fine adjustment to the correction line of the rear of the vehicle with "3", "4", "5" or "6" switches so that its position is aligned with the guiding line. Press "ENTER/SETTING" switch and record the adjusted guiding line position to the camera control unit.

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Up/Down adjustment range: (-20) - (20)Left/Right adjustment range: (-20) - (20)

Set Back + - + + Use (1) (2) button to select range marking type <04/07> Use (3) (4) button to adjust Up and DOWN position <00, 00> Use (5) (6) button to adjust LEFT and RIGHT position, select OK <00, 00> JSNIA18762Z

CAUTION:

Never operate other function such as pressing BACK while writing index data.



[DISPLAY AUDIO]

< REMOVAL AND INSTALLATION >	[DISPLAY AUDIO]
USB CONNECTOR AND AUX JACK	
Removal and Installation	INFOID:000000012202485
REMOVAL Remove cluster tray. Refer to <u>IP-13, "Removal and Installation"</u>. Push the pawl from the back of cluster tray to remove USB connector and AUX jack NSTALLATION 	ς.
nstall in the reverse order of removal.	

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< REMOVAL AND INSTALLATION >

ANTENNA BASE Exploded View



- 1. Antenna rod
- 2. Antenna base
- O. N·m (kg-m, in-fb)

Removal and Installation

REMOVAL

- 1. Remove headlining. Refer to <u>INT-27, "NORMAL ROOF : Removal and Installation"</u> (normal roof) or <u>INT-30, "SUNROOF : Removal and Installation"</u> (sunroof).
- 2. Disconnect antenna feeder connector.
- 3. Remove nut to remove antenna base.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.

INFOID:000000012202487

ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

ANTENNA FEEDER

[DISPLAY AUDIO]

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▲: Indicates that the part is connected at points with same symbol in actual vehicle.

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< PRECAUTION > PRECAUTION PRECAUTIONS

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

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, 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 "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Removing Battery Terminal

INFOID:000000012947018

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		
YD25DDTi	: 2 minutes		



NOTE:

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

 After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.
 NOTE:

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

• Example of high-load driving

< PRECAUTION >

the ignition switch.

NOTE:

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

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

- Driving for 30 minutes or more at 140 km/h (86 MPH) or more.

Driving for 30 minutes or more on a steep slope.

Precaution for Trouble Diagnosis

AV COMMUNICATION SYSTEM

- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

AV COMMUNICATION SYSTEM

 Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]

• Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)

For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON

Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.

[AUDIO WITH NAVIGATION]

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< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000012202493

Tool name		Description
Power tool	PBIC0191E	Loosening screws

[AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000012202494 B



- 1. Side camera RH
- 4. Front door speaker LH
- 7. Rear camera
- 10. Antenna base (antenna amp. and satellite radio antenna)
- 13. Combination meter
- 16. Steering switch
- 19. Around view monitor control unit

- 2. Front camera
- 5. Rear door speaker LH
- 8. Rear door speaker RH
- 11. Front door speaker RH
- 14. GPS antenna
- 17. Steering angle sensor
- 20. Tweeter RH

- 3. Side camera LH
- 6. Woofer
- 9. Antenna rod
- 12. Microphone
- 15. Tweeter LH
- 18. USB connector and AUX jack
- 21. NAVI control unit

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

Component Description

[AUDIO WITH NAVIGATION]

INFOID:000000012202495

Part name	Description
NAVI control unit	 Operational switch of navigation system and audio system are integrated. Includes the audio, hands-free phone, navigation, satellite radio, rear view monitor, USB connection and AUX connection functions. Map data can be loaded from the SD-card inserted in the built-in SD-card slot. Sound signals are output to each speaker and woofer. It inputs the illumination signals that are required for the display dimming control. It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). Touch panel function can be operated for each system by touching a display directly. Camera image signal is input from around view monitor control unit.
Map SD-card	A collection of Map data.
Front door speaker	Outputs sound signal from NAVI control unit.Outputs mid and low range sounds.
Tweeter	Outputs sound signal from NAVI control unit.Outputs high range sounds.
Rear door speaker	Outputs sound signal from NAVI control unit.Outputs high, mid and low range sounds.
Woofer	 Woofer amp. ON signal is input from NAVI control unit. Outputs sound signal from NAVI control unit. Outputs low range sounds.
Steering switch	 Operations for audio and hands-free phone are possible. Steering switch signal (operation signal) is output to NAVI control unit.
Microphone	 Used for hands-free phone operation. Microphone signal is transmitted to NAVI control unit. Power (microphone VCC) is supplied from NAVI control unit.
GPS antenna	GPS signal is received and transmitted to NAVI control unit.
Antenna base	 A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted. ANTENNA AMP. Radio signal received by rod antenna is amplified and transmitted to NAVI control unit. Power (antenna amp. ON signal) is supplied from NAVI control unit. SATELLITE RADIO ANTENNA Receives satellite radio waves and outputs it to NAVI control unit.
Around view monitor control unit	 It supplies power to front camera, rear camera, and side camera. And then it superimposes the images from each camera and outputs them to NAVI control unit. Superimpose the guiding line and predicted course line to the camera image that outputs to NAVI control unit. It performs the reception/transmission of communication signal with each camera.
Combination meter	Receives the buzzer output signal from the around view monitor control unit via CAN communication.
Front camera	 It inputs the power supply from around view monitor control unit and outputs the image of the vehicle front to around view monitor control unit. It performs the reception/transmission of the communication signal with around view monitor control unit.
Rear camera	 It inputs the power supply from around view monitor control unit and outputs the image of the vehicle rear to around view monitor control unit. It performs the reception/transmission of the communication signal with around view monitor control unit.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

Part name	Description	
Side camera LH	 It inputs the power supply from around view monitor control unit and outputs the image of the vehicle LH to around view monitor control unit. It performs the reception/transmission of the communication signal with around view monitor control unit. 	
Side camera RH	 It inputs the power supply from around view monitor control unit and outputs the image of the vehicle RH to around view monitor control unit. It performs the reception/transmission of the communication signal with around view monitor control unit. 	
Steering angle sensor	It is connected to the around view monitor control unit and transmits the steer- ing angle sensor signal via CAN communication.	
USB connector and AUX jack	 Sound signal of auxiliary input is transmitted to NAVI control unit. Sound signal of USB input is transmitted to NAVI control unit. 	

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< SYSTEM DESCRIPTION >

SYSTEM

System Description

INFOID:000000012202496

[AUDIO WITH NAVIGATION]

SYSTEM DIAGRAM



DESCRIPTION

Refer to Owner's Manual for navigation and audio system operating instructions. Audio function and display are built into NAVI control unit.

This navigation has the following functions.

- · Map data on SD card.
- Full support for playback of music from iPod[®], iPhone, and USB device.
 High resolution full color touch panel 5.8 inch "QVGA" display.
- · FM/AM digital tuner.
- USB mass storage connection.
- Satellite radio.
- Bluetooth[®] audio streaming.
- RDS
- POI Support is included. User POI download.
- · Hands-free phone system.
- · Around view monitor function.

iPod[®] is a trademark of Apple inc., registered in the U.S. and other countries.

NAVIGATION SYSTEM FUNCTION

AV-66

< SYSTEM DESCRIPTION >

Description

- The navigation system can be operated by control panel of the NAVI control unit and display (touch panel) of A the NAVI control unit.
- Guide sound during the operation of the navigation system is output from NAVI control unit to front speaker.
- NAVI control unit calculates the vehicle location based on the signals from GYRO (angle speed sensor), vehicle sensor, and GPS satellite, as well as the map data from map SD card. It is displayed on display of the NAVI control unit.

POSITION DETECTION PRINCIPLE

The navigation system periodically calculates the vehicle's current position according to the following three signals:

- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map SD card (map-matching), and indicated on the screen as a vehicle mark. More accurate data is judged and used by comparing vehicle position detection results found by the GPS with the result by map-matching.

The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

Travel distance

Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.

Travel direction

Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



Туре	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).	Correct direction cannot be detected when vehicle speed is low.

More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

MAP-MATCHING

Map-matching compares a current location detected by the method in the "Location Detection Principle" with a road map data from map SD card.

NOTE:

The road map data is based on data stored in the map SD card.



The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive.

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 In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the vehicle mark has been repositioned.

Alternative routes will be shown in different order of priority, and the incorrect road can be avoided if there is an error in distance and/or direction.

They are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

• Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD card, or when road pattern stored in the map data and the actual road pattern are different due to repair.

The map-matching function may find another road and position the vehicle mark on it when driving on a road not present in the map. Then, the vehicle mark may change to it when the correct road is detected.

• Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map SD card is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.

GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).

The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.

Accuracy of the GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.
- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

NOTE:

- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

AUXILIARY INPUT FUNCTION

- Sound can be output from an external device by connecting a device with USB connector and AUX jack.
- AUX sound signals are transmitted to each speaker via NAVI control unit.

USB CONNECTION FUNCTION

• iPod[®] or music files in USB memory can be played.

[AUDIO WITH NAVIGATION]







IAUDIO WITH NAVIGATION1

< SYSTEM DESCRIPTION >	[AUDIO WITH NAVIGATION]	
· Sound signals are transmitted from USB connector and AUX jack to the	he NAVI control unit and to each	
speaker.		А
 iPod[®] is recharged when connected to USB connector and AUX jack. 		
iPod [®] is a trademark of Apple inc., registered in the U.S. and other countrie NOTE:	2S.	В
Use the enclosed USB harness when connecting $iPod^{\texttt{®}}$ to USB connector	and AUX jack.	
SPEED SENSITIVE VOLUME SYSTEM		
Volume level of this system gone up and down automatically in proportionThe control level can be selected by the customer.	n to the vehicle speed.	С
HANDS-FREE PHONE SYSTEM		
 Hands-free communication can be operated by connecting to cellular pho Operation is performed by steering switch. 	ne using Bluetooth [®] .	D
Guide sound that is heard during operation is output from NAVI control up	nit to front speaker.	F
AROUND VIEW MONITOR FUNCTION		_
• This system is equipped with wide-angle cameras on the front and rear of	f the vehicle and on both right and	
left door mirrors. The images from front view, rear view, front-side view shows the view from the top of the vehicle are displayed to monitor the view	(RH side), and birds-eye view that	F
 Around view monitor control unit cuts out and expands the image receive 	d from each camera to create each	
view.		0
 In front view and rear view, the vehicle width, distance lines and predict and displayed. In front-side view, the vehicle distance guiding line and played 	ve course lines are superimposed vehicle width guiding line are dis-	G
 The Birds-Eye view converts the images from 4 cameras into the overhe the vehicle on display. The vehicle icon that are displayed on the Birds 	ad view and displays the status of Eye view display are rendered by	Н
 around view monitor control unit. Moving Object Detection (MOD) is adopted that detects moving objects adopted that detects adopted that detects moving objects adopted that detects adopted that detects	cording to camera image and noti-	
fies the detection result to the driver.		
Around View Monitor Screen		
• Around view monitor combines and displays the travel direction view	and "Birds-Eye view", "Front-Side	.1
View".	an diaplay Marning magaza	0
are displayed in the language set at the Navigation System settings.	age on display. Warning messages	1Z
Screen constitution		K
	Front-Side view	
		L
		M

Front-Side view Front view or <u>||____</u> or Rear view P Birds-Eye view Birds-Eye view 坈 Check surroundings for safety Vehicle icon View icon JSNIA3982GB

Operation Description

- · Around view monitor operates by pressing the "CAMERA" switch or shifting the selector lever to the reverse position.
- When the selector lever is in any position other than the reverse position, the screen is switched to the around view monitor by pressing the "CAMERA" switch.

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< SYSTEM DESCRIPTION >

- The screen is switched to the around view monitor by shifting the selector lever to the reverse position.
- In the around view monitor, Birds-Eye view, Front-side view can be switched by pressing the "CAMERA" switch.
- The around view monitor is cancelled 3 minutes after pressing the "CAMERA" switch, and then the screen
 returns to the screen before displaying the around view monitor when selector lever is in a position other
 than the reverse position.
- In the Birds-Eye view, the invisible area is displayed to show the border of 4 camera images. In addition, red fixed lines are displayed in 4 corners of the vehicle icon. After turning the ignition switch ON, the invisible area is highlighted with yellow and red fixed lines are blink only once.



Around view monitor screen transition

FRONT VIEW

- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the "CAMERA" switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in front view and display the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- Around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed by CONSULT.



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MOVING OBJECT DETECTION (MOD)

- Moving Object Detection (MOD) is a function that notifies the driver of the presence of moving objects in the area around the vehicle. MOD detects moving objects from camera image, illuminates frame of view in yellow whenever "MOD" icon is displayed in blue, and sounds buzzer in combination meter.
- MOD detects moving objects while camera image is displayed on display.
- Around view monitor control unit performs the following process when moving objects are detected.
- Superimposes yellow frame line on camera image signal and outputs them to display.
- Transmits buzzer output signal to combination meter via CAN communication so that buzzer in combination meter sounds.
- Around view monitor control unit detects moving objects from camera image according to an image recognition method called optical flow.

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< SYSTEM DESCRIPTION >

- MOD does not detect a background as a moving object when the vehicle moves (when whole screen moves), but detects a moving object when an actual moving object is displayed on screen.
- Color of "MOD" icon indicates whether or not MOD is operative. "MOD" icon is displayed as shown in the following table. When MOD is operative, "MOD" icon is displayed in blue. When MOD is not operative, "MOD" icon is displayed in gray or orange. MOD icon is not displayed when MOD is off (permanent off).
- MOD illuminates frame of view in yellow and sounds buzzer, when any of the conditions in the following table are satisfied.

Operation Condition		View where MOD is operative
Shift position	Shift position Vehicle speed	
P and N position	0 km/h (0 MPH)	Birds-eye view
R position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	Rear view
D position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	Front view

• MOD does not operate or stops operation when any of the conditions in the following table are satisfied. "MOD" icon is displayed in gray or orange.

Operation stop condition	"MOD" icon color	Note
Front or rear door is open.	Gray	Operation of Birds-eye view stops when door is open.
Back door is open.	Gray	Operation of Birds-eye view and rear view stops when back door is open.
Rear camera installation angle is incorrect	Gray	Operation of rear view stops when rear view camera installation angle is incorrect.
Front camera image is abnormal (Temporary)	Gray	Operation of Birds-eye view and front view stops when front camera im- age is temporarily abnormal.
Side camera image is ab- normal (Temporary)	Gray	Operation of Birds-eye view stops when side camera image is temporarily abnormal.
Rear camera image is ab- normal (Temporary)	Gray	Operation of Birds-eye view and rear view stops when rear camera image is temporarily abnormal.
System malfunction	Orange	Refer to AV-93, "DTC Index"

FRONT-SIDE VIEW

• The front-side view image is from the side camera RH.

• In Front-Side view, display the vehicle distance guiding line and vehicle width guiding line.

Front-side view area and guiding line



BIRDS-EYE VIEW
SYSTEM

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- < SYSTEM DESCRIPTION >
- The image from the 4 cameras is cut out and converted into the overhead view, and the surroundings of the vehicle is displayed in birds-eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras.

Birds-Eye view display image



Birds-Eye view display area



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Camera Image Operation Principle

- If the camera image calibration is incomplete, the applicable camera position is indicated as an error on the Birds-Eye view display. (Calibration operation is necessary when replacing each camera or when replacing around view monitor control unit.)
- Around view monitor control unit receives the camera switch signal via CAN communication from NAVI control unit by pressing the "CAMERA" switch.
- Around view monitor control unit that receives the camera switch signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, and outputs them to the NAVI control unit.

Precautions for Vehicle Width Guide Line and Predictive Course Line Display on The Rear View Monitor Display Side distance guide lines and predictive course line on the display may be different from actual lines depending on vehicle conditions and road conditions.

PRECAUTIONS FOR ROAD CONDITIONS

 Since guide lines and predictive course line are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.





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[AUDIO WITH NAVIGATION]

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PRECAUTIONS FOR BLOCK

• Since guide lines and predictive course line are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.



Fail-Safe (Around View Monitor Control Unit)

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DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition	J
C1A03 VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) re- ceived by the around view monitor control unit via CAN communication, are inconsistent	MOD (Moving Object Detection) function is cancel	K
C1A39 STRG SEN CIR	If the steering angle sensor is malfunction	 MOD (Moving Object Detection) function is cancel Predicted course line is not displayed. 	L
U0122 VDC P-RUN DIAGNOSIS	If around view monitor control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN commu- nication	MOD (Moving Object Detection) function is cancel	M
U0416 VDC CHECKSUM DIAGNOSIS	If around view monitor control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN commu- nication	A MOD (Moving Object Detection) function is cancel	N
U0428 ST ANGLE SENSOR CALIBRA- TION	Neutral position adjustment of steering angle sensor is not complete.	 MOD (Moving Object Detection) function is cancel Predicted course line is not displayed. 	D

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< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U1000 CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	 The following functions are stopped When communication of steering angle sensor signal is not normal Predicted course line is not displayed. MOD (Moving Object Detection) function is stopped. When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal MOD (Moving Object Detection) function is stopped.
U1010 CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	The system using the CAN communication signal does not function.
U111A REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111B SIDE CAMERA RH IMAGE SIG- NAL	No-signal status of side camera RH image sig- nal is continued for 500 ms or more while igni- tion switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111C FRONT CAMERA IMAGE SIG- NAL	No-signal status of front camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111D SIDE CAMERA LH IMAGE SIG- NAL	No-signal status of side camera LH image sig- nal is continued for 500 ms or more while igni- tion switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U1232 ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	MOD (Moving Object Detection) function is stopped.Predicted course line is not displayed.
U1304 CAMERA IMAGE CALIB	 When camera calibration is incomplete. When camera information in around view monitor control unit and information read from camera are not the same. NOTE: Current malfunction is displayed only and is not saved. 	Unmatched icon X display (red) is displayed (applicable for unmatched camera only).
U1305 CONFIG UNFINISH	The vehicle setting of around view monitor con- trol unit is incomplete. NOTE: Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.

DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

On Board Diagnosis Function

ON BOARD DIAGNOSIS ITEM

Description

- On-board diagnosis is performed in service test mode.
- · On-board diagnosis checks if the system operates normally.

On Board Diagnosis Item

Service test mode

Ν	Node	Item	Content
Servio	ce version	_	The version data of the parts is shown displayed.
	FM monitor	—	The Change Mediator monitors the dy-
	AM monitor	_	namic values of the current tuner. If the band is switched within the radio moni- tor context, the active monitor is switched as well.
Service radio	SXM monitor	—	The version data is displayed.
	SXM functions	 Clear XM Chipset NVM Reset all XM settings XM CBM debug mode ON/OFF External Diag mode ON/OFF 	The current system status is displayed.
Service configuration	Destination input while driving		Destination input while driving can be disabled. CAUTION: Once the setting is changed, the original setting cannot be restored.
	Touch Display Calibration	_	The function allows connection of the position detection accuracy of the touch panel.
Service system status	Running system status	 SD card slot access Power Supply Speed Signal Direction Signal Illumination Signal GPS Antenna GPS tracking Satellites visible Satellites tracked Microphone Current Steer. wheel key Radio Antenna SXM Antenna USB Device iPod[®] firmware ver BT status 	The current system status is displayed.

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DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

[AUDIÓ WITH NAVIGATION]

Ν	lode	Item	Content
	System self test	 Bluetooth MODULE Access Malfunction SD-card Access Malfunction Radio-Antenna Circuit Malfunc- tion SXM Antenna Circuit Malfunc- tion GPS Antenna Circuit Malfunc- tion 	A system self test is executed: the result is stored into the error memory which is shown afterwards as a list of codes of the detected malfunctions.
Test function	Speaker test		This activates a sequence of test tone outputs to the four speaker lines one af- ter the other for 1 second. The frequen- cy can be chosen by user selection before (100 Hz and 4000 Hz).
	Display test		This provides a test sequence where test displays (plain colored display: e.g. white, black, red, blue, green) are shown one after the other. The respec- tive color is shown for an indicated peri- od of time (parameter). After the display test, the design of the display previously available is stored. While the screen shows a plain colored display, a pixel malfunction may be detected.

METHOD OF STARTING

- 1. Start the engine.
- 2. Turn OFF audio.
- 3. While pressing the "APPS·i" switch, turn the "+, –" dial counterclockwise 3 clicks or more first, then clockwise and counterclockwise 3 clicks or more, respectively. (After the diagnosis mode starts, the initial screen of the diagnosis mode appears.)



END ON-BOARD DIAGNOSIS Turn OFF ignition switch.

CONSULT Function

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CONSULT FUNCTIONS

CONSULT performs the following functions via communication with the NAVI control unit.

Direct Diagnostic Mode	Description
Ecu Identification	The NAVI control unit part number is displayed.
Self Diagnostic Result	The NAVI control unit self diagnostic results are displayed.
Data Monitor	The NAVI control unit input/output data is displayed in real time.
Configuration	The vehicle specification can be read and saved.The vehicle specification can be written when replacing NAVI control unit.

ECU IDENTIFICATION

The part number of NAVI control unit is displayed.

SELF DIAGNOSTIC RESULT

Revision: November 2015

DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

Refer to AV-86, "DTC Index".

DATA MONITOR

Monitor Item [Unit]	Description	R
VHCL SPD SIG [On/Off]	Indicates vehicle speed signal received from combination meter on CAN communication line.	D
ILLUM SIG [On/Off]	Indicates condition of illumination signal for the NAVI control unit.	C
IGN SIG [On/Off]	Indicates condition of ignition signal.	0
REV SIG [On/Off]	Indicates condition of reverse signal received from BCM.	

CONFIGURATION

Configuration has three functions as follows.

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

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[AUDIO WITH NAVIGATION]

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT) < SYSTEM DESCRIPTION > [AUDIO WITH NAVIGATION]

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

CONSULT Function

INFOID:000000012202500

APPLICATION ITEMS

CONSULT can display each diagnostic item using the diagnostic test modes shown as follows:

Test mode	Function
Ecu Identification	Around view monitor control unit part number can be read.
Self Diagnostic Result	Around view monitor control unit checks the conditions and displays memorized error.
Data Monitor	Around view monitor control unit input/output data in real time.
Work support	Changes setting of each function.
Configuration	 The vehicle specification that is written in around view monitor control unit can be displayed or stored. The vehicle specification can be written when around view monitor control unit is replaced.

ECU IDENTIFICATION

Displays the part number of around view monitor control unit.

SELF-DIAGNOSTIC RESULTS

- For details, refer to <u>AV-93, "DTC Index"</u>.
- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000] and [U1010] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
IGN counter (0 to 39)	 Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected. When "0" is displayed, it indicates that the system is presently malfunctioning. When any numerical number other than "0" is displayed, it indicates that system malfunction in the past is detected, but the system is presently normal. NOTE: Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→338→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.

DATA MONITOR

NOTE:

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

Monitor Item	Display	Description
ST ANGLE SENSOR SIGNAL	ON/OFF	Input status of steering angle sensor signal is displayed by ON/OFF.
REVERSE SIGNAL	ON/OFF	Input status of reverse signal is displayed by ON/OFF in real time.
VEHICLE SPEED SIGNAL	ON/OFF	Input status of vehicle speed signal is displayed by ON/OFF.
CAMERA SWITCH SIGNAL	ON/OFF	Input status of camera switch signal is displayed by ON/OFF.
CAMERA OFF SIGNAL	ON/OFF	Input status of camera OFF signal is displayed by ON/OFF.
ST ANGLE SENSOR TYPE	Absolute	Type of steering angle sensor is displayed. ("Absolute" is displayed on this vehi- cle.)
STEERING GEAR RATIO TYPE	Туре 0	Type of steering gear ratio is displayed. ("Type 0" is displayed on this vehicle.)
STEERING POSITION	LHD/RHD	Steering position is displayed.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

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[AUDIO WITH NAVIGATION]

Monitor Item	Display	Description	٨
REAR CAMERA IMAGE SIG- NAL	OK/NG	Input status of rear camera image signal is displayed by OK/NG in real time.	A
F-CAMERA IMAGE SIGNAL	OK/NG	Input status of front camera image signal is displayed by OK/NG in real time.	R
PA-SIDE CAMERA IMAGE SIG	OK/NG	Input status of side camera RH image signal is displayed by OK/NG in real time.	D
DR-SIDE CAMERA IMAGE SIG	OK/NG	Input status of side camera LH image signal is displayed by OK/NG in real time.	

WORK SUPPORT

Work support item	Function	
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera.	l
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH.	E
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH.	_
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera.	ŀ
INITIALIZE CAMERA IMAGE CALI- BRATION	The calibration can be initialized to NISSAN factory shipment condition.	(
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be per- formed.	
SELECT LANGUAGE OF WARNING MESSAGE	Language of warning message shown during camera image display can be selected.	ŀ
PREDICTIVE COURSE LINE DIS- PLAY	ON/OFF setting of predictive course line can be performed.	
STEERING ANGLE SENSOR AD- JUSTMENT	Steering angle sensor neutral position can be adjusted and registered.	
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.	,

Calibrating Camera Image (front camera, pass-side camera, dr-side camera, and rear camera)

Perform the calibration of camera image caused by the incorrect mounting position of each camera, etc. Always perform calibration after performing the following work.

- When each camera or each camera mount (e.g. front grille, door mirror, and others) is removed
- When replacing the around view monitor control unit

Refer to <u>AV-116, "CALIBRATING CAMERA IMAGE (AROUND VIEW</u> <u>MONITOR) : Work Procedure</u>" for the calibration procedure.



Adjustment range
Rotating direction
Upper/lower direction
Left/right direction

: 31 patterns (16 on the center) : (-22) - (+22) : (-22) - (+22)

Initialize Camera Image Calibration The calibration can be initialized to NISSAN factory shipment condition.

Select Language of Warning Message No need to be selected because it can change the language on setting of Navi by customer.

Predictive Course Line Display ON/OFF setting of predictive course line can be performed.

Revision: November 2015



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DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT) [AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

Steering Angle Sensor Adjustment

Steering angle sensor neutral position can be adjusted and registered.

CAUTION:

For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Non-Viewable Area Reminder

ON/OFF setting of the non-viewable area reminder can be performed.

CONFIGURATION

Configuration includes functions as follows.

Fur	nction	Description	
Road/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in around vie monitor control unit to store the specification in CONSULT.	
Read/White Conliguration	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the around view monitor control unit.	
Manual Configuration	-	Allows the writing of the vehicle specification into the around view monitor control unit by hand.	

ECU DIAGNOSIS INFORMATION NAVI CONTROL UNIT

Reference Value

INFOID:000000012202501 В

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TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description			Condition	Reference value	G
+	_	Signal name	Input/ Output		Condition	(Approx.)	
1 (R)	Ground	Woofer amp. ON signal	Output	Ignition switch — ON		12.0 V	Η
2 (W)	3 (GR)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output.	(V) 1 0 -1 * 2ms SKIB3609E	J
4 (LG)	5 (V)	Sound signal rear speaker LH	Output	lgnition switch ON	Sound output.	(V) 1 0 -1 • • 2ms SKIB3609E	L
					Keep pressing SOURCE switch.	0 V	AV
6	15			Ignition	Keep pressing SEEK UP switch.	0.9 V	
(G)	(V)	Steering switch signal A	Input	switch ON	Keep pressing SEEK DOWN switch.	1.9 V	0
					Keep pressing TEL switch.	2.4 V	
					Except for above.	3.3 V	Ρ
7 (L)	Ground	ACC power supply	Input	Ignition switch ACC		Battery voltage	
8 (L)		CAN-H	Input/ Output			_	

[AUDIO WITH NAVIGATION]

< ECU DIAGNOSIS INFORMATION >

(Wire color)		Description		Condition		Reference value														
+	_	Signal name	Input/ Output		Condition	(Approx.)														
				Ignition	 Lighting switch 1ST When meter illumination is maximum 	(V) 15 10 5 0 -2.5 ms JPNIA1687GB														
9 (V)	33 (GR)	Illumination control signal	Input	switch ON	Ignition - switch ON	switch ON	switch ON	switch ON	t switch ON	nput switch ON	Input switch ON	ut switch ON	ut switch ON	ut switch ON	switch ON	switch ON	switch ON	switch ON	 Lighting switch 1ST When meter illumination is step 11 	(V) 15 10 5 0 2.5 ms JPNIA1686GB
					 Lighting switch 1ST When meter illumination is minimum 	0 V														
10	—	Shield			_	_														
11 (G)	12 (R)	Sound signal front speaker RH	Output	lgnition switch ON	Sound output.	(V) 1 0 -1 * 2ms SKIB3609E														
13 (BR)	14 (Y)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output.	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1														
					Keep pressing VOL DOWN switch.	0 V														
16	15	Steering switch signal B	Input	Ignition switch	Keep pressing VOL UP switch.	0.9 V														
(K)	(V)	(V)		ON	Keep pressing TEL END switch.	1.9 V														
					Except for above.	3.3 V														
17 (P)	_	CAN-L	Input/ Output			_														

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description			Opendition	Reference value	А
+	-	Signal name	Input/ Output	•	Condition	(Approx.)	
18 (Y)	Ground	Vehicle speed signal (8- pulse)	Input	lgnition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	NOTE: The maximum voltage varies depending on the specification (destination unit).	B C D
19 (BR)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage	_
20 (B)	Ground	Ground	_	lgnition switch ON	_	_	F
21 (G)		AUX audio signal RH	Input		_	_	G
22 (Y)	_	AUX audio signal ground	_	_	_	_	Н
23 (L)		AUX audio signal LH	Input		_	0 V	
25 (G)	Ground	Reverse signal	Input	Ignition switch ON	Shift position is in R. Shift position is in other than R.	12.0 V 0 V	
26 (BR)	29 (Y)	Sound signal woofer	Output	Ignition switch ON	Sound output.	(V) 1 0 -1 • • • 2ms SKIB3609E	K
					 Lighting switch 1ST When meter illumination is maximum 	(V) 15 10 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	M AV
30 (V)	33 (GR)	Illumination control signal	Input	Ignition switch ON	 Lighting switch 1ST When meter illumination is step 11 	(V) 15 10 5 0 > - - - - - - - -	O P
					 Lighting switch 1ST When meter illumination is minimum 	0 V	

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description			Condition	Reference value
+	_	Signal name	Input/ Output		Condition	(Approx.)
34 (W)	Ground	Microphone signal	Input	lgnition switch ON	Give a voice.	(V) 2.5 2.0 1.5 1.0 0.5 0 ★ 2ms PKIB5037J
35 (B)	Ground	Microphone VCC	Output	lgnition switch ON	_	5.0 V
36	—	Shield		_	_	_
37	—	Shield	-	-	_	_
40 (LG)	Ground	Ignition signal	Input	lgnition switch ON	_	12.0 V
41 (B)	Ground	Camera image signal	Input	lgnition switch ON	When camera image is dis- played.	(V) 1 0 -1 -1 -1 -1 -1 -1 JSNIA0834GB
42	—	Shield			—	_
45	—	V BUS signal	Input/ Output	_	_	_
46	—	USB D+ signal	Output	_	_	_
47	—	USB ground	_	_	_	_
49	_	USB D– signal	Input/ Output	_	_	_
54	Ground	GPS antenna signal	Input	lgnition switch ON	Not connected to GPS an- tenna connector.	5.0 V
55	—	Shield		_	—	_
70	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	_	12.0 V
71		Antenna signal	Input			
73		Satellite radio antenna sig- nal	Input		Not connected to satellite antenna connector.	5.0 V

DTC Index

INFOID:000000012202502

DTC	Display item	Refer to
U1000	CAN COMM CIRC [U1000]	AV-128, "NAVI CONTROL UNIT : Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [U1010]	AV-130, "NAVI CONTROL UNIT : DTC Log- ic"
U1200	Cont Unit [U1200]	AV-143. "DTC Logic"

Revision: November 2015

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

DTC	Display item	Refer to
U1217	BLUETOOTH MODULE [U1217]	AV-144, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-145, "DTC Logic"
U1244	GPS ANTENNA CONN [U1244]	AV-147, "Diagnosis Procedure"
U1258	SATELLITE RADIO ANTENNA [U1258]	AV-148, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-149, "Diagnosis Procedure"
U1264	ANTENNA AMP TERMINAL [U1264]	AV-150, "Diagnosis Procedure"
U12AA	CONFIGURATION ERROR [U12AA]	AV-151, "DTC Logic"
U12AB	FM ANTENNA ERROR [U12AB]	AV-152, "DTC Logic"
U12AC	DISPLAY TEMPERATURE TOO HIGH [U12AC]	AV-153, "DTC Logic"
U12AD	ECU TEMPERATURE TOO HIGH [U12AD]	AV-154, "DTC Logic"
U12AE	INTERNAL AMP TEMP WARNING [U12AE]	AV-155. "DTC Logic"
U12AF	CD MECHANISM TEMP WARNING [U12AF]	AV-156, "DTC Logic"
U12B0	SUPPLY VOLTAGE UNDER 9V [U12B0]	AV-157, "DTC Logic"
U12B1	SUPPLY VOLTAGE OVER 16V [U12B1]	AV-158, "DTC Logic"

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< ECU DIAGNOSIS INFORMATION >

AROUND VIEW MONITOR CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

CONSULT MONITOR ITEM

Monitor Item		Condition	Value/Status
ST ANGLE SENSOR SIGNAL	Ignition switch	Steering angle sensor signal is input condi- tion.	ON
	ON	Except for above	OFF
	Ignition switch	Shift position is in "R"	ON
REVERSE SIGNAL	ON	Other than shift position is in "R"	OFF
	Ignition switch	Vehicle speed signal is input condition.	ON
VEHICLE SPEED SIGNAL	ON	Except for above	OFF
	Ignition switch	Pressing the "CAMERA" switch	ON
CAMERA SWITCH SIGNAL	ON	Except for above	OFF
CAMERA OFE SIGNAL	Ignition switch	While camera image is not indicated.	ON
	ON	While camera image is indicated.	OFF
ST ANGLE SENSOR TYPE ^{*2}	Ignition switch ON	_	Absolute
STEERING GEAR RATIO TYPE ^{*3}	Ignition switch ON	_	Туре 0
	Ignition switch	LHD models	LHD
STEERING FOSITION	ON	RHD models	RHD
	Ignition switch	Input status of rear camera image signal is normal.	ОК
REAR CAMERA IMAGE SIGNAL	ON	Input status of rear camera image signal is not normal.	NG
	Ignition switch	Input status of front camera image signal is normal.	ОК
F-CAIVIERA IIVIAGE SIGNAL	ON	Input status of front camera image signal is not normal.	NG
	Ignition switch	Input status of side camera RH image signal is normal.	ОК
FA-SIDE CAMERA IMAGE SIG	ON	Input status of side camera RH image signal is not normal.	NG
	Ignition switch	Input status of side camera LH image signal is normal.	ОК
	ON	Input status of side camera LH image signal is not normal.	NG

• *1: Once the signal is input, it remains ON indication until CONSULT is finished.

• *2: "Absolute" is always indicated on this vehicle.

• *3: "Type 0" is always indicated on this vehicle.

INFOID:000000012202503

[AUDIO WITH NAVIGATION]

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

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TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description			Condition	Standard	Reference value
+	_	Signal name	Signal name Input/ Output		Condition	Standard	(Approx.)
3		Shield		—	—	_	—
4 (B)	3	Camera image sig- nal	Output	lgni- tion switch ON	At camera image is displayed.	Waveform ac- cording to cam- era image is input.	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
5 (LG)	Ground	Front camera ground	_	Igni- tion switch ON	_	_	0 V
6 (R)	5 (LG)	Front camera power supply	Output	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	3.5 V or more	6.0 V
7		Shield		_			_
8 (V)	7	Front camera image signal	Input	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	Waveform ac- cording to cam- era image is input.	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
9 (G)	Ground	Side camera pas- senger side ground	_	lgni- tion switch ON	_	_	0 V
10 (L)	9 (G)	Side camera pas- senger side power supply	Output	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	3.5 V or more	6.0 V
11		Shield	_		_	_	

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

vire (Wire)	minai e color)	Description				Chandard	Reference value
+	_	Signal name	Input/ Output		Condition	Standard	(Approx.)
12 (Y)	11	Side camera pas- senger side image signal	Input	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	Waveform ac- cording to cam- era image is input.	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
13 (B)	Ground	Side camera driver side ground	_	lgni- tion switch ON	_	_	0 V
14 (W)	13 (B)	Side camera driver side power supply	Output	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	3.5 V or more	6.0 V
15	—	Shield					—
16 (R)	15	Side camera driver side image signal	Input	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	Waveform ac- cording to cam- era image is input.	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 JSNIA0834GB
17 (L)	Ground	Rear camera ground	_	lgni- tion switch ON	_	_	0 V
18 (LG)	17 (L)	Rear camera power supply	Output	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	3.5 V or more	6.0 V
19	—	Shield		_			_
20 (V)	19	Rear camera image signal	Input	lgni- tion switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	Waveform ac- cording to cam- era image is input.	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
24 (P)	_	CAN-L	Input/ Output	_	_		_
26 (L)	—	CAN-H	Input/ Output	—	—	—	_
32 (G)	Ground	Reverse signal	Input	lgni- tion switch	Shift position is in "R" Other than shift	7.0 V or more	12.0 V
1				ON	position is in "R"	3.0 V or less	0 V

Revision: November 2015

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

(Wire color)		Description			Condition	Standard	Reference value	A
+	-	Signal name	Input/ Jnal name Output		Condition	otandard	(Approx.)	
39 (B)	Ground	Ground		Igni- tion switch ON	_	_	0 V	B
40 (LG)	Ground	Ignition signal	Input	lgni- tion switch ON	_	7.0 V or more	Battery voltage	D

Fail-Safe (Around View Monitor Control Unit)

INFOID:000000012202504

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DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
C1A03 VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) re- ceived by the around view monitor control unit via CAN communication, are inconsistent	MOD (Moving Object Detection) function is cancel
C1A39 STRG SEN CIR	If the steering angle sensor is malfunction	 MOD (Moving Object Detection) function is cancel Predicted course line is not displayed.
U0122 VDC P-RUN DIAGNOSIS	If around view monitor control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN commu- nication	MOD (Moving Object Detection) function is cancel
U0416 VDC CHECKSUM DIAGNOSIS	If around view monitor control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN commu- nication	MOD (Moving Object Detection) function is cancel
U0428 ST ANGLE SENSOR CALIBRA- TION	Neutral position adjustment of steering angle sensor is not complete.	 MOD (Moving Object Detection) function is cancel Predicted course line is not displayed.
U1000 CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	 The following functions are stopped When communication of steering angle sensor signal is not normal Predicted course line is not displayed. MOD (Moving Object Detection) function is stopped. When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal MOD (Moving Object Detection) function is stopped.
U1010 CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	The system using the CAN communication signal does not function.
U111A REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U111B SIDE CAMERA RH IMAGE SIG- NAL	No-signal status of side camera RH image sig- nal is continued for 500 ms or more while igni- tion switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111C FRONT CAMERA IMAGE SIG- NAL	No-signal status of front camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111D SIDE CAMERA LH IMAGE SIG- NAL	No-signal status of side camera LH image sig- nal is continued for 500 ms or more while igni- tion switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U1232 ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	 MOD (Moving Object Detection) function is stopped. Predicted course line is not displayed.
U1304 CAMERA IMAGE CALIB	 When camera calibration is incomplete. When camera information in around view monitor control unit and information read from camera are not the same. NOTE: Current malfunction is displayed only and is not saved. 	Unmatched icon X display (red) is displayed (applicable for unmatched camera only).
U1305 CONFIG UNFINISH	The vehicle setting of around view monitor con- trol unit is incomplete. NOTE: Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.

DTC Inspection Priority Chart

INFOID:000000012202505

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

Priority	Detected items (DTC)
1	U1305: CONFIG UNFINISH
2	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	 C1A39: STRG SEN CIR U0122: VDC P-RUN DIAGNOSIS U0416: VDC CHECKSUM DIAGNOSIS U0428: ST ANGLE SENSOR CALIBRATION U111A: REAR CAMERA IMAGE SIGNAL U111B: SIDE CAMERA RH IMAGE SIGNAL U111C: FRONT CAMERA IMAGE SIGNAL U111D: SIDE CAMERA LH IMAGE SIGNAL U11232: ST ANGLE SEN CALIB U1304: CAMERA IMAGE CALIB
4	C1A03: VHCL SPEED SE CIRC

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

DTC Index

INFOID:000000012202506

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DTC	CONSULT display	Refer to
C1A03	VHCL SPEED SE CIRC	AV-123. "DTC Logic"
C1A39	STRG CIRCUIT	AV-124, "DTC Logic"
U0122	VDC P-RUN DIAGNOSIS	AV-125, "DTC Logic"
U0416	VDC CHECKSUM DIAGNOSIS	AV-126, "DTC Logic"
U0428	ST ANGLE SENSOR CALIBRATION	AV-127, "DTC Logic"
U1000	CAN COMM CIRCUIT	AV-128, "AROUND VIEW MONI- TOR CONTROL UNIT : DTC Log- ic"
U1010	CONTROL UNIT (CAN)	AV-130. "AROUND VIEW MONI- TOR CONTROL UNIT : DTC Log- ic"
U111A	REAR CAMERA IMAGE SIGNAL	AV-131, "DTC Logic"
U111B	SIDE CAMERA RH IMAGE SIGNAL	AV-134, "DTC Logic"
U111C	FRONT CAMERA IMAGE SIGNAL	AV-137, "DTC Logic"
U111D	SIDE CAMERA LH IMAGE SIGNAL	AV-140, "DTC Logic"
U1232	ST ANGLE SEN CALIB	AV-146, "DTC Logic"
U1304	CAMERA IMAGE CALIB	AV-159, "DTC Logic"
U1305	CONFIG UNFINISH	AV-160, "DTC Logic"

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[AUDIO WITH NAVIGATION]

INFOID:000000012202507

WIRING DIAGRAM NAVIGATION SYSTEM

Wiring Diagram



NAVIGATION SYSTEM

< WIRING DIAGRAM >

[AUDIO WITH NAVIGATION]



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< WIRING DIAGRAM >





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NAVIGATION SYSTEM

< WIRING DIAGRAM >

[AUDIO WITH NAVIGATION]



JRNWF0744GB

NAVIGATION SYSTEM										
33 BR -	Connect	or No.	E72	58	9		4	BG	- [For NISMO RS]	
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34 W - [For NISMO RS]	Connect	attine i	FROM LAWERA	62	>		5	91		_
37 L - [Without Intelligent Kev]	Connect	or Type	RH04FB	63	>		~	0		_
37 LG - [With Intelligent Kev]				64	PI		10	æ	- [Except for NISMO RS]	
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43 W - [Except for NISMO RS]				72	v		14	L	- [For NISMO RS]	
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4/ SB -	-	×		28	_		8	9		_
48 LG - [With Intelligent Key]	4	SHIELD		83	٢	×	19	9		
48 Y - [Without Intelligent Key]				\$8	P		20	BR		
	1			85	٩		21	9		_
	Connect	r No.	E105	98	ł		22	BB	- [For NISMO RS]	_
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48 BR -	4	>		Connect	or Type	SAA36FB-RS10-SIZ2	34	۹.	 [Except for NISMO RS] 	
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18	M	Connet	ctor No.	M33	16	N	MANUAL MODE SHIFT DOWN SIGNAL	23	я	SECURITY IND LAMP CONT	
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20				COMBINED AVAILAR (SCINEL CERTE)	18	ч	SECURITY SIGNAL	25	PI	NATS ANT AMP.	
26		Connet	ctor Type	TK08FGY-1V	19	GR	AMBIENT SENSOR SIGNAL	26	BR	THERMO AMP.	
27 SH	IELD -	[20	æ	AMBIENT SENSOR GROUND	27	>	A/C SW	
28	- ·	Ð			21	8	GROUND	28	9	BLOWER FAN SW	
29					22		GROUND	29	88	HAZARD SW	
30	- 91		<i>i</i>	24 25 26	23	8	GROUND	30	_	BK DOOR OPENER SW	
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				31 32 33 34	25		VDC GROUND	32	9	COMBI SW OUTPUT 5	
					26	>	PADDLE SHIFTER DOWN SWITCH SIGNAL	33	>	COMBI SW OUTPUT 4	
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Connector Type	NH10MW-CS10	24	9		31	٩	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL	37	U	DETENT SW	
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lerminal Col-	or Of Signal Name [Specification]	Conne	ctor No.	M34	Connecto.	r Iype	H40FB-NH	connect	or type	1H80FW-C516-1M4	
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12 SH	IELD -				Terminal	Color Of	Signal Mama [Snacification]	Termina	I Color Of	Simal Nama [Snarkfration]	
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		1	-	CAN-H	ŝ	υ	COMBI SW INPUT 2	10	œ		
		7	•	CAN-L	9	>	COMBI SW INPUT 1	11	æ		
		4	~	VEHICLE SPEED SIGNAL (8-PULSE)	7		KEY CYL UNLOCK SW	12	9		
		5	σ	PADDLE SHIFTER UP SWITCH SIGNAL	~	æ	KEY CYL LOCK SW	13	>		
		9	BR	FUEL LEVEL SENSOR SIGNAL	6	æ	STOP LAMP SW 1	14	SHIELD		
		2	æ	AIR BAG SIGNAL	10	N		34	P		
		80	٩		12	GR	DOOR LK & UNLK SW LOCK	35	SB		
		6	N	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)	13	BR	DOOR LK & UNLK SW UNLOCK	36	•		
		10	SB	PARKING BRAKE SWITCH SIGNAL	14	SB	OPTICAL SENS	37	d		
		11	9	BRAKE FLUID LEVEL SWITCH SIGNAL	15	W	REAR WINDOW DEF SW	52	R		
		13	GR	ILLUMINATION CONTROL SIGNAL	17	Y	OPTICAL SENS PWR SPLY	23	L	-	
		14	œ	MANUAL MODE SHIFT UP SIGNAL	18	^	RECEIVER GND	54	SB		

< WIRING DIAGRAM >

NAVIGATION SYSTEM

[AUDIO WITH NAVIGATION]

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Revision: November 2015



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INFOID:000000012202508

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW NAVIGATION SYSTEM

NAVIGATION SYSTEM : Work Flow

OVERALL SEQUENCE



• Reference 1... Refer to AV-78, "CONSULT Function".

- Reference 2[…] Refer to AV-86, "DTC Index".
- Reference 3... Refer to AV-172, "Symptom Table".

DETAILED FLOW

1.INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.

- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.

NO >> INSPECTION END

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

$\overline{2}$. DIAGNOSIS WITH CONSULT

 Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to <u>AV-78, "CONSULT Function"</u>. NOTE:

Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed.

- 2. When DTC is detected, follow the instructions below:
- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.

NO >> GO TO 4.

3.TROUBLE DIAGNOSIS FOR DTC

- 1. Check the DTC indicated in the self-diagnosis results.
- 2. Perform the relevant diagnosis referring to the DTC Index. Refer to <u>AV-86, "DTC Index"</u>.

>> GO TO 5.

4.TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to <u>AV-172, "Symptom</u> <u>Table"</u>.

>> GO TO 5.

5.ERROR PART REPAIR

- 1. Repair or replace the identified malfunctioning parts.
- Perform a self-diagnosis for "MULTI AV" with CONSULT. NOTE:
 - Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
- 3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.

NO >> INSPECTION END

AROUND VIEW MONITOR SYSTEM

DIAGNOSIS AND REPAIR WORKFLOW [AUDIO WITH NAVIGATION]

< BASIC INSPECTION >

AROUND VIEW MONITOR SYSTEM : Work Flow

INFOID:000000012202509

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OVERALL SEQUENCE



- Reference 1... Refer to AV-80, "CONSULT Function".
- Reference 2^{...} Refer to <u>AV-93, "DTC Index"</u>.
- Reference 3... Refer to <u>AV-172, "Symptom Table"</u>.

DETAILED FLOW

1.INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.

- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
 Check the symptom
- Check the symptom.
- Is the occurred symptom malfunction?

YES >> GO TO 2.

- NO >> INSPECTION END
- **2.** DIAGNOSIS WITH CONSULT
- Connect CONSULT and perform a self-diagnosis for "AVM". Refer to <u>AV-80, "CONSULT Function"</u>. NOTE:
 Shin to atom 4 of the diagnosis proceeding if "AVM" is not diagnosed.
- Skip to step 4 of the diagnosis procedure if "AVM" is not displayed. 2. When DTC is detected, follow the instructions below:
- Revision: November 2015

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[AUDIO WITH NAVIGATION]

- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.

NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.

2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-93, "DTC Index".

>> GO TO 5.

4.TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to <u>AV-172, "Symptom</u> <u>Table"</u>.

>> GO TO 5.

5.ERROR PART REPAIR

- 1. Repair or replace the identified malfunctioning parts.
- 2. Perform a self-diagnosis for "AVM" with CONSULT.
- NOTE:

Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.

3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.

NO >> INSPECTION END

	INSPECTION	AND ADJUSTMENT	
< BASIC INSPECTION >		[AUDIO WITH NAVIGATION]	
INSPECTION AND	ADJUSTMENT		
ADDITIONAL SERVICE WHEN REPLACING NAVI CONTROL UNIT			
ADDITIONAL SERVI	CE WHEN REPLA	CING NAVI CONTROL UNIT : Description	В
Perform the following opera Configuration, refer to <u>AV-1</u> ADDITIONAL SERV TROL UNIT	tions when replacing N. <u>13, "CONFIGURATION</u> ICE WHEN REPI	AVI control unit. (NAVI CONTROL UNIT) : Description". LACING AROUND VIEW MONITOR CON-	С
ADDITIONAL SERVIO	CE WHEN REPLA		D
			Е
<u>"CALIBRATING CAMERA I</u>		ACING AROUND VIEW MONITOR CONTROL UNIT. Refer to <u>AV-116,</u> / <u>MONITOR) : Work Procedure"</u> .	
			F
CONFIGURATION (N	IAVI CONTROL UI	NII): Description	
 Since vehicle specification vehicle specifications with cial Repair Requirement" 	ns are not included in the CONSULT. Refer to <u>A</u>	e NAVI control unit after replacement, it is required to write V-113, "CONFIGURATION (NAVI CONTROL UNIT) : Spe-	G
The NAVI control unit con	figuration includes func	tions as follows.	Н
Fun	ction	Description	
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in NAVI control unit to store the specification in CONSULT.	
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the NAVI control unit.	
Manual Configuration		Allows the writing of the vehicle specification into the NAVI control unit by hand.	J
CONFIGURATION (N	AVI CONTROL UI	NIT) : Special Repair Requirement INFOID:000000012202513	K
1.SAVING VEHICLE SPEC	CIFICATION		
CONSULT Configuration Perform "Before Replace E	CU", and save the curre	ent vehicle specification in CONSULT.	L
Is the vehicle specification s	saved normally?		M
NO >> GO TO 4.			
2.REPLACE NAVI CONTR	ROL UNIT		^//
Replace NAVI control unit.	Refer to <u>AV-182, "Remo</u>	val and Installation".	Av
3. WRITING VEHICLE SPECIFICATION			0
CONSULT Configuration Select "Configuration" or "After Replace ECU", and write the vehicle specification saved in CONSULT to NAVI control unit.			Ρ
>> GO TO 6.			
4.REPLACE NAVI CONTR	ROL UNIT		

>> GO TO 5.

5.WRITE VEHICLE SPECIFICATION

CONSULT Configuration

Select "Manual Configuration", and write the setting value as shown in the following table to NAVI control unit according to the vehicle specification.

CAUTION:

Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.

NOTE:

- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.
- · If selection items are not displayed on the CONSULT screen, touch "NEXT".

MANUAL SETTING ITEM		Detail
Items	Setting value	Detail
	MT	M/T models
TDANSMISSION	CVT	CVT models
TRANSIMISSION	AT	A/T models
	OTHER	Except for above
	BASE	_
	BOSE	With BOSE system
SOUND SYSTEM	BOSE SURROUND	With BOSE surround system
	ROCKFORD FOSGATE	Without BOSE system without woof- er
	ROCKFORD SUB WOOFER	Without BOSE system with woofer
	NONE	_
	AVM	—
	NONE/AVM	Without camera system or with around view monitor system
CAMERA SYSTEM	REAR	With rear view monitor system
	REAR+SIDE	With rear view monitor system and front-side view monitor function
	AVM+PA	With around view monitor system and parking assist function

>> GO TO 6.

6.PERFORM SELF-DIAGNOSIS

CONSULT Self Diagnostic Result

Perform self-diagnosis of CONSULT, and check whether or not DTC U12AA is detected.

 Is DTC U12AA detected?

 YES
 >> GO TO 5.

 NO
 >> GO TO 7.

7. OPERATION CHECK

Check that the operation of the NAVI control unit is normal.

>> WORK END CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

II	ISPECTION AND ADJUS	STMENT
< BASIC INSPECTION >		[AUDIO WITH NAVIGATION]
CONFIGURATION (AROU	IND VIEW MONITOR COI	NTROL UNIT) : Work Procedure
1. SAVING VEHICLE SPECIFICA	TION	
CONSULT Configuration	nd aque the current vehicle energi	figation in CONSULT
Is the vehicle specification saved	normally?	ication in CONSOLT.
YES >> GO TO 2.	<u>normany.</u>	
NO >> GO TO 4.		
Z .REPLACE AROUND VIEW MC	ONITOR CONTROL UNIT	
Replace around view monitor con	trol unit. Refer to <u>AV-190, "Remov</u>	val and Installation".
>> GO TO 3.		
3.WRITING VEHICLE SPECIFIC	ATION	
CONSULT Configuration Select "Configuration" or "After F around view monitor control unit.	Replace ECU", and write the ve	hicle specification saved in CONSULT to
>> GO TO 6		
4_{RFPI} ace around view mo		
Replace around view monitor con	trol unit Refer to AV-190 "Remov	val and Installation"
>> GO TO 5.		
5. WRITE VEHICLE SPECIFICAT	ΓΙΟΝ	
CONSULT Configuration Select "WRITE CONFIGURATION control unit depending on a vehicl	I - Manual selection" and write in e specification.	the following list at a around view monitor
Set	tting item	Detail
Items	Setting value	
TRANSMISSION	A/T	CVT models
	M/T	M/T models
>> GO TO 6		
6.PERFORM SELF-DIAGNOSIS	9	
CONSULT Self Diagnostic Page		
Perform self-diagnosis of CONSU	LT, and check whether or not DT	C U1305 is detected.
Is DTC U1305 detected?		
YES >> GO TO 5.		
7. OPERATION CHECK		
Check that the operation of the a	around view monitor control unit	and camera images (fixed quide lines and
predictive course lines) are norma		
>> WORK END		

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

< BASIC INSPECTION >

[AUDIO WITH NAVIGATION]

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description

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Adjust the center position of the predictive course line of the rear view monitor if it is shifted. Refer to <u>AV-116</u>, <u>"PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure"</u>.

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure

INFOID:000000012202516

1.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> END CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

INFOID:000000012202517

- Calibration must be performed after removing/replacing the cameras, removing parts (e.g. front grille, door mirror, and others) mounted on the cameras, or replacing the Around view monitor control unit.
- The use of CONSULT is required to perform calibration or writing of calibration results to the Around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.
- Calibrating camera image, refer to <u>AV-116</u>, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : <u>Work Procedure</u>".

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure

INFOID:000000012202518

CALIBRATION FLOWCHART

< BASIC INSPECTION >

[AUDIO WITH NAVIGATION]

Following the flowchart shown in the figure, perform the calibration.



NOTE:

View in the incomplete calibration state is indicated by " \boxtimes " on the around view monitor.



CALIBRATION PROCEDURE

1. AROUND VIEW MONITOR SCREEN CONFIRMATION

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< BASIC INSPECTION >

[AUDIO WITH NAVIGATION]

Check that there is no indication of "Incomplete calibration". <u>Is the "Incomplete calibration" display visible?</u>

YES >> GO TO 2. NO >> GO TO 4.



2.check that around view monitor control unit is replaced

Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

YES >> GO TO 3.

NO >> GO TO 6.

 $\mathbf{3}$.cancel the indication of incomplete calibration (perform this only after Replacing around view monitor control unit.)

CONSULT work support

 On the CONSULT screen, touch "CALIBRATING CAMERA IMAGE (FRONT CAMERA)", "CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)", "CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)", or "CALIBRATING CAMERA IMAGE (REAR CAMERA)" to accept the selection. NOTE:

To cancel the indication of Incomplete calibration, select items based on the target camera.

- 2. On the adjustment screen of each camera, touch "APPLY" button. After this, touch "OK" button.
 - CAUTION:
 - Never perform operations other than those mentioned above.
 - Never perform "Initialize Camera Image Calibration".
- 3. Display the around view monitor screen to check that there is no errors, such as deviations among the camera images.

Is there a malfunction?

YES >> Calibration end

4.CHECK THAT ANY CAMERA IS REPLACED

Check that the any camera is replaced.

Is the any camera replaced?

YES >> GO TO 6.

NO >> GO TO 5.

5. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 on the ground beside each axle using packing tape, etc.

2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)



< BASIC INSPECTION >



1.

Target lines 2

- A. Approx. 30 cm (11.8 in)
- Β. Approx. 1.0 m (39.3 in)
- 3. (P)CONSULT work support
 - Touch "FINE TUNING OF BIRDS-EYE VIEW" on the CONSULT screen.
- On the CONSULT screen, touch "SELECT" button to select right or left camera and perform camera calibration as instructed below:
- If the marker on the screen deviates from Target line 1, touch "AXIS X" button and "AXIS Y" button to Н adjust so that the marker is placed on the Target line 1.
- If Target line 2 is misaligned among the cameras, adjust each camera image to bring Target line 2 into a straight line.

CAUTION:

Never adjust the front camera and rear camera. Only adjust the right and left cameras.

Simplified target line adjustment method



1.

Crosshairs cursor (mark indicated

5.

- 4. Boundary between cameras
- the selected camera)
- Adjustment method for target lines 1 В. Α. (right)
- Adjustment method for target lines 2 (right)
- 5. Adjust right and left cameras. Touch "APPLY" on the CONSULT screen to display adjustment results.
- After adjusting right and left cameras, check that the marker is properly placed on the screen and there is 6. no deviation in Target line 1.

NOTE:

- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled on this mode by performing "Initialize Camera Image Calibration".

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< BASIC INSPECTION >

Is the difference corrected?

- YES >> On the CONSULT screen, touch "OK" button to complete writing to the around view monitor control unit.
- NO >> GO TO 6.

6.PERFORM "CALIBRATING CAMERA IMAGE"

Preparation of target line

- 1. Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
- 2. Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

Target line preparation procedure 1



Thread 1.

3.

2. Weight

5.

3. Packing tape (to fix the vinyl string) 6. Vinyl string

- Point RM0 (mark) 4.
- Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
- Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 4. 1.5 m (59 in) on both sides with packing tape.
- Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the 5. points FM and RM.



Target line preparation procedure 2

1.

4.

< BASIC INSPECTION >

[AUDIO WITH NAVIGATION]

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- 7. Point RR (mark)
- A. 75 cm (29.5 in)
- B. Approx. 1.5 m (59 in)

30 cm (11.8 in) C. [Vehicle width/ 2 + 30 cm (11.8 in) from the points FM and RM]

- 6. Draw the lines of the points FL RL and FR RR with vinyl string, and fix it with packing tape.
- Put a mark on the center of each axle, draw vertical lines to the lines of the points FL RL and FR RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.



6.

Triangle scale

4. Point RR

1

Perform "Calibrating Camera Image"

CONSULT work support

 On the CONSULT screen, touch "CALIBRATING CAMERA IMAGE (FRONT CAMERA)", "CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)", "CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)", or "CALIBRATING CAMERA IMAGE (REAR CAMERA)" to accept the selection. NOTE:

To cancel the indication of Incomplete calibration, select items based on the target camera.

Center position of axle

2. On the adjustment screen of each camera, adjust the parameter by touching the "AXIS X" button, "AXIS Y" button, and "ROTATE" button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

5.

Adjustment range	
Rotation direction (Center dial)	: 31 patterns (16 on the center)
Upper/lower direction (upper/lower switch)	: -22 - 22
Left/right direction (left/right switch)	: –22 – 22



 Touch "APPLY" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are shown on the camera screen. CAUTION:
 Check that "PRCSNG" is displayed. Do payor perform other of

Check that "PRCSNG" is displayed. Do never perform other operations while "PRCSNG" is displayed.

 Touch "OK" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are written to the around view monitor control unit. CAUTION:

Check that "PRCSNG" is displayed. Do never perform other operations while "PRCSNG" is displayed.

>> GO TO 7.

/.PERFORM "FINE TUNING OF BIRDS-EYE VIEW"

< BASIC INSPECTION >

[AUDIO WITH NAVIGATION]

This mode is designed to align the boundary between each camera image that could not be aligned in the "Calibrating Camera Image" mode.

CONSULT work support

- 1. Select "FINE TUNING OF BIRDS-EYE VIEW" by touching CONSULT screen.
- On the adjustment screen of each camera, adjust the parameter by touching the "AXIS X" button, "AXIS Y" button", and "ROTATE" button to place the calibration marker shown on the camera screen on the target line drawn on the ground. NOTE:

Touch "SELECT" button on the CONSULT screen to select the target camera.

 Touch "APPLY" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are shown on the camera screen.

CAUTION:

Check that "PRCSNG" is displayed. Do never perform other operations while "PRCSNG" is displayed.



4. Touch "OK" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are written to the around view monitor control unit.

CAUTION:

- Check that "PRCSNG" is displayed. Never perform other operations while "PRCSNG" is displayed.
- After pressing the "OK" button, never press buttons other than the "BACK" button. NOTE:
- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled in this mode by performing "Initialize Camera Image Calibration".

>> Calibration end

DTC/CIRCUIT DIAGNOSIS C1A03 VEHICLE SPEED SENSOR

DTC Logic

DTC DETECTION LOGIC

INFOID:000000012202519

А

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A03	VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) re- ceived by the around view monitor control unit via CAN communication, are inconsistent	 ABS actuator and electric unit (control unit) Around view monitor control unit
NOTE: If DTC "C1 "AROUND	A03" is detected alor	ng with DTC "U1000", first diagnose th I <u>TROL UNIT : DTC Logic"</u> for DTC "U10	ne DTC "U1000". Refer to <u>AV-128,</u> 00".
DTC CON	FIRMATION PROCE	DURE	
1.PERFOR	RM DTC CONFIRMAT	ION PROCEDURE	
 Start th Perform Check 	e engine. n "All DTC Reading" w if the "C1A03" is deteo	ith CONSULT. ted as the current malfunction in "Self D	iagnostic Result" of "AVM".
<u>Is "C1A03"</u> YES >> NO-1 >> NO-2 >>	detected as the currer • Refer to <u>AV-123</u> , "Dia • To check malfunction • Confirmation after rep	<u>it malfunction?</u> gnosis Procedure". symptom before repair: Refer to <u>GI-45.</u> pair: INSPECTION END	"Intermittent Incident".
Diagnosi	s Procedure		INFOID:000000012202520
1.снеск	SELF-DIAGNOSIS RE	ESULTS	
Check if "U	1000" is detected othe	r than "C1A03" in "Self Diagnostic Resul	t" of "AVM".
<u>Is "U1000"</u>	detected?		
YES >>	• Perform the CAN cor Refer to <u>AV-128, "AR</u> • GO TO 2	nmunication system inspection. Repair OUND VIEW MONITOR CONTROL UN	or replace the malfunctioning parts. IT : DTC Logic".
2. CHECK	ABS ACTUATOR AND	ELECTRIC UNIT (CONTROL UNIT) S	ELF-DIAGNOSIS RESULTS
Check if an	y DTC is detected in "	Self Diagnostic Result" of "ABS".	
Is any DTC	detected?		
YES >>	Perform diagnosis or BRC-50, "DTC Index"	the detected DTC and repair or replac	e the malfunctioning parts. Refer to
	E AROLIND VIEW MO		
1 Replac	e the around view mor	nitor control unit Refer to AV-190 "Remo	oval and Installation"
2. Perforr Is "C1A03"	n DTC confirmation pro	ocedure. Refer to <u>AV-123, "DTC Logic"</u> .	in the mound of the second s
YES >>	Replace the ABS acti	uator and electric unit (control unit). Refe	er to <u>BRC-153, "Removal and Instal-</u>

C1A39 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

C1A39 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000012202521

[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
C1A39	STRG SEN CIR	If the steering angle sensor is malfunction	Steering angle sensor

NOTE:

If DTC "C1A39" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>AV-128,</u> <u>"AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the ignition switch ON.
- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "C1A39" is detected as the current malfunction in "Self Diagnostic Result" of "AVM".

Is "C1A39" detected as the current malfunction?

- YES >> Refer to <u>AV-124</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-45. "Intermittent Incident".
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000012202522

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "C1A39" in "Self Diagnostic Result" of "AVM".

Is "U1000" detected?

YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>AV-128, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"</u>.

NO >> GO TO 2.

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

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

Is any DTC detected?

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

NO >> GO TO 3.

3.PEPLACE AROUND VIEW MONITOR CONTROL UNIT

- 1. Replace the around view monitor control unit. Refer to AV-190, "Removal and Installation".
- 2. Perform DTC confirmation procedure. Refer to AV-124, "DTC Logic".

Is "C1A39" detected?

- YES >> Replace the steering angle sensor. Refer to <u>AV-194, "Removal and Installation"</u>.
- NO >> INSPECTION END

U0122 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) [AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U0122 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

DTC Logic

INFOID:000000012202523

А

В

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0122	VDC P-RUN DIAGNO- SIS	If around view monitor control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN commu- nication	ABS actuator and electric unit (control unit)
NOTE: If DTC "U01: "AROUND VI	22" is detected along EW MONITOR CONTR	with DTC "U1000", first diagnose the <u>ROL UNIT : DTC Logic"</u> .	DTC "U1000". Refer to <u>AV-128.</u>
DTC CONFI	RMATION PROCEDU	JRE	
1.PERFORM	M DTC CONFIRMATIO	N PROCEDURE	
Start the 2. Perform ' 3. Check if ' Is "U0122" de YES >> F NO-1 >> T NO-2 >> C	engine. "All DTC Reading" with the "U0122" is detected etected as the current m Refer to <u>AV-125. "Diagn</u> o check malfunction sy Confirmation after repair	CONSULT. I as the current malfunction in "Self Dia <u>nalfunction?</u> osis Procedure". mptom before repair: Refer to <u>GI-45, "In</u> TINSPECTION END	gnostic Result" of "AVM". ntermittent Incident".
Diagnosis	Procedure		NEO/D-00000042000504
	Trocedure		INFOID:000000012202524
1. CHECK S	ELF-DIAGNOSIS RESU	JLTS	
Check if "U10	000" is detected other th	nan "U0122" in "Self Diagnostic Result"	of "AVM".
<u>ls "U1000" de</u>	etected?		
YES >> F F NO >> C	Perform the CAN comm Refer to <u>AV-128, "AROU</u> GO TO 2.	nunication system inspection. Repair of IND VIEW MONITOR CONTROL UNIT	r replace the malfunctioning parts.
2.CHECK A	BS ACTUATOR AND E	LECTRIC UNIT (CONTROL UNIT) SE	LF-DIAGNOSIS RESULTS
Check if anv	DTC is detected in "Sel	f Diagnostic Result" of "ABS".	
<u>ís any DTC d</u>	etected?	5	
YES >> F	Perform diagnosis on th BRC-50, "DTC Index".	e detected DTC and repair or replace	the malfunctioning parts. Refer to
3 DEDI 1 OE			
J.PEPLACE	AROUND VIEW MON		
1. Replace 2. Perform l Is "U0122" de	the around view monito DTC confirmation proce etected?	or control unit. Refer to <u>AV-190, "Remov</u> edure. Refer to <u>AV-125, "DTC Logic"</u> .	al and Installation".
YES >> F	Replace the ABS actuat atton".	or and electric unit (control unit). Refer	to BRC-153. "Removal and Instal-
NO >>	NSPECTION END		

U0416 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

< DTC/CIRCUIT DIAGNOSIS >

U0416 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

DTC Logic

INFOID:000000012202525

[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0416	VDC CHECKSUM DI- AGNOSIS	If around view monitor control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN commu- nication	ABS actuator and electric unit (control unit)

NOTE:

If DTC "U0416" is detected along with DTC "U1000", first diagnose the DTC "U1000". Refer to <u>AV-128.</u> "<u>AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"</u>.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine.
- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "U0416" is detected as the current malfunction in "Self Diagnostic Result" of "AVM".

Is "U0416" detected as the current malfunction?

- YES >> Refer to AV-126. "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-45, "Intermittent Incident".
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000012202526

1.CHECK SELF-DIAGNOSIS RESULTS

Check if "U1000" is detected other than "U0416" in "Self Diagnostic Result" of "AVM".

Is "U1000" detected?

- YES >> Perform the CAN communication system inspection. Repair or replace the malfunctioning parts. Refer to <u>AV-128, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"</u>.
- NO >> GO TO 2.

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

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

Is any DTC detected?

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

NO >> GO TO 3.

3.PEPLACE AROUND VIEW MONITOR CONTROL UNIT

- 1. Replace the around view monitor control unit. Refer to AV-190, "Removal and Installation".
- 2. Perform DTC confirmation procedure. Refer to <u>AV-126, "DTC Logic"</u>.

Is "U0416" detected?

- YES >> Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-153</u>, "<u>Removal and Instal-</u><u>lation</u>".
- NO >> INSPECTION END

U0428 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

U0428 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000012202527

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				E
DTC	Trouble diagnosis name	DTC detecting condition	Possible causes	
U0428	ST ANGLE SENSOR CALIBRATION	The neutral position adjustment of the steering angle sensor is incomplete.	 Neutral position of steering angle sensor is not yet adjusted Steering angle sensor 	(
NOTE: If DTC " Logic".	'U0428" is detected al	long with DTC "U1232", first diagnose the DTC	"U1232". Refer to <u>AV-146, "DTC</u>	
Diagn	osis Procedure		INFOID:000000012202528	
1.ADJ	UST THE NEUTRAL F	POSITION OF THE STEERING ANGLE SENSC	R	E
When U	10428 is detected, adju	ust the neutral position of the steering angle sen	sor.	
				I
	>> Perform adjustm	ent of the neutral position of the steering ar	ngle sensor. Refer to <u>BRC-63.</u>	
CALITIC	<u>"Description"</u> .			(
For veh	nicles with VDC, adju	ust the steering angle sensor neutral position	n on the ABS actuator control	
unit sid	le.			
				ŀ

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U1000 CAN COMM CIRCUIT NAVI CONTROL UNIT

NAVI CONTROL UNIT : Description

INFOID-000000012202529

INFOID 000000012202530

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). 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 required data only. CAN Communication Signal Chart.

NAVI CONTROL UNIT : DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U1000	CAN COMM CIRCUIT (CAN communication cir- cuit)	NAVI control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

NAVI CONTROL UNIT : Diagnosis Procedure

1.PERFORM SELF-DIAGNOSTIC

1 Turn ignition switch ON and wait for 2 seconds or more.

2. Check "Self Diagnostic Result" of "MULTI AV".

Is "CAN COMM CIRCUIT" displayed?

YES >> Refer to LAN-17, "Trouble Diagnosis Flow Chart".

>> Refer to GI-45, "Intermittent Incident". NO

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Description

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). 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 required data only.

CAN Communication Signal Chart. Refer to LAN-30, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:000000012202533

INFOID:000000012202532

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	Around view monitor control unit is not trans- mitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system

NOTE:

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

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000012202534

1.PERFORM THE SELF-DIAGNOSIS

Revision: November 2015

[AUDIO WITH NAVIGATION]

INFOID:000000012202531

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[AUDIO WITH NAVIGATION]
 Start the engine. Perform "All DTC Reading" with CONSULT. Check if the "U1000" is detected as the current malfunction in "Self D 	iagnostic Result" of "AVM".
Is "U1000" detected as the current malfunction?	
YES >> Refer to <u>LAN-17</u> , "Trouble Diagnosis Flow Chart". NO >> Refer to <u>GI-45</u> , "Intermittent Incident".	В
	C
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< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN) NAVI CONTROL UNIT

NAVI CONTROL UNIT : DTC Logic

INFOID:000000012202535

[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	CAN initial diagnosis malfunction is detected.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182, "Removal and Installa-</u> tion".

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:000000012202536

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

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:000000012202537

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Around view monitor control unit

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000012202538

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.

- 2. Perform "All DTC Reading" with CONSULT.
- 3. Check if the "U1010" is detected as the current malfunction in "Self Diagnostic Result" of "AVM".

Is "U1010" detected as the current malfunction?

- YES >> Replace the around view monitor control unit. Refer to <u>AV-190, "Removal and Installation"</u>.
- NO >> INSPECTION END

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT AGNOSIS > [AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012202539

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	Trouble diagnosis na	ame	DTC de	etecting condition	Possible causes
U111A	REAR CAMERA IMA SIGNAL	AGE Camera	a image signal ci	rcuit is open or shorted.	 Camera image signal circuit be- tween rear camera and around view monitor control unit Around view monitor control unit Rear camera
тс сс	ONFIRMATION	PROCEDI	JRE		
.PERF	FORM DTC CON	FIRMATION	N PROCEDU	RE	
. Turr 2. Turr 3. Turr 4. Sele 5. Che	n the ignition switch n ignition switch C n ignition switch C ect "Self Diagnost eck DTC.	ch ON.)FF and wa)N and wait ic Result" n	it at least 30 s at least 30 so node of "AVM	seconds. econds or more. " using CONSULT.	
<u>s DTC l</u>	U111A detected?				
YES NO-1 NO-2	>> Refer to <u>AV-1</u> > To check mal >> Confirmation	31, "Diagno function syn after repair	osis Procedur mptom before : INSPECTIO	<u>re"</u> . e repair: Refer to <u>GI-45.</u> N END	"Intermittent Incident".
Diagno	osis Procedur	е			INFCID:00000001220254
.CHE	CK CONTINUITY	REAR CA	MERA POWE	R SUPPLY AND GRO	UND CIRCUIT
. Turr	n ignition switch C	DFF.			
. Turr . Disc . Che conr	n ignition switch C connect around vi eck continuity bety nector.	OFF. ew monitor ween aroun	control unit c d view monit	connector and rear cam or control unit harness	era connector. connector and rear camera harness
. Turr 2. Disc 5. Che coni Around v	n ignition switch C connect around vi eck continuity bety nector. view monitor control unit	DFF. ew monitor ween aroun Rear o	control unit c d view monit camera	connector and rear cam or control unit harness Continuity	era connector. connector and rear camera harness
. Turr 2. Disc 3. Che coni Around v Connec	r ignition switch C connect around vi eck continuity betw nector. view monitor control unit ctor Terminals 17 18	DFF. ew monitor ween aroun Rear of Connector D113	control unit c d view monit camera Terminals 7 8	connector and rear cam or control unit harness Continuity Existed	era connector. connector and rear camera harness
Turr Disc Disc Cone Connec M98 Che	rignition switch C connect around vi eck continuity betw nector.	DFF. ew monitor ween aroun Rear of Connector D113 ween aroun	control unit c d view monit camera Terminals 7 8 d view monito	connector and rear cam or control unit harness Continuity Existed	era connector. connector and rear camera harness
Turr Turr Disc Cone Connec M98 Che Around v	r ignition switch C connect around vi eck continuity betw nector.	DFF. ew monitor ween aroun Rear of Connector D113 ween aroun	control unit c d view monit camera Terminals 7 8 d view monito	connector and rear cam or control unit harness Continuity Existed or control unit harness o	era connector. connector and rear camera harness
I. Turr 2. Disc 3. Che coni Around v Connec M98 I. Che Around v	rignition switch C connect around vi eck continuity betw nector.	DFF. ew monitor ween aroun Rear of Connector D113 ween aroun	control unit c d view monit camera Terminals 7 8 d view monito	connector and rear cam or control unit harness Continuity Existed or control unit harness of Continuity	era connector. connector and rear camera harness
I. Turr 2. Disc 3. Che coni Around v Connec M98 I. Che Around v	n ignition switch C connect around vi eck continuity betw nector. ////////////////////////////////////	DFF. ew monitor ween aroun Rear of Connector D113 ween aroun Gro	control unit o d view monit camera Terminals 7 8 d view monito	Continuity Existed Continuity Existed Continuity	era connector. connector and rear camera harness
. Turr 2. Disc 3. Che coni Around v Connec M98 Around v Connec M98	rignition switch C connect around vi eck continuity betw nector. ////////////////////////////////////	DFF. ew monitor ween aroun Rear of Connector D113 ween aroun Gro	control unit o d view monit camera Terminals 7 8 d view monito	connector and rear cam or control unit harness Continuity Existed or control unit harness of Continuity Not existed	era connector. connector and rear camera harness
. Turr 2. Disc 3. Che coni Around v Connec M98 Around v Connec M98 <u>s inspec</u> YES	r ignition switch C connect around vi eck continuity betw nector. view monitor control unit ctor Terminals eck continuity betw view monitor control unit ctor Terminal 5 18 ction result norma >> GO TO 2	DFF. ew monitor ween aroun Rear of Connector D113 veen aroun Gro	control unit c d view monit camera Terminals 7 8 d view monito	Continuity Existed Continuity Existed Continuity Continuity Not existed	era connector. connector and rear camera harness
Turr Disc Disc Connec M98 Connec M98 Connec M98 S inspec YES NO	rignition switch C connect around vi eck continuity betw nector. view monitor control unit ctor Terminals ctor Terminal eck continuity betw view monitor control unit ctor Terminal ction result norma >> GO TO 2. >> Repair harne	DFF. ew monitor ween aroun Rear of Connector D113 ween aroun Gro al? ss or conne	control unit c d view monit camera Terminals 7 8 d view monito bund	connector and rear cam or control unit harness Continuity Existed or control unit harness of Continuity Not existed	era connector. connector and rear camera harness

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Terminal					Reference voltage	
(+) (–)		Condition	Standard			
Ar	ound view mo	onitor control	unit	Condition Standard		(Approx.)
Connector	Terminal	Connector	Terminal			
M98	18	M98	17	"CAMERA" switch (around view moni- tor switch) is ON or shift position is "R".	3.5 V or more	6.0 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to <u>AV-190, "Removal and Installation"</u>.

3. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect around view monitor control unit connector and rear camera connector.
- 3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector Terminals		
MQ8	19	D113	1	Evisted
10130	20		5	LAISted

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit			Continuity	
Connector	Terminals	Ground		
MOS	19		Not existed	
Mao	20		NOT EXISTED	

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4.CHECK CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.

2. Turn ignition switch ON.

3. Check signal between around view monitor control unit harness connector.

	Terr	ninal				Poforonco voluo
(·	+)	(·	-)	Condition	Condition	
Ar	Around view monitor control unit		Condition	Stanuaru	Reference value	
Connector	Terminal	Connector	Terminal	-		
M98	20	M98	19	Shift position is in "R".	Waveform accord- ing to camera image is input.	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1

Is inspection result normal?

Revision: November 2015

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC	/CIRCUIT DIAGNOSIS >	[AUDIO WITH NAVIGATION]
YES NO	>> Replace around view monitor control unit. Refer to <u>AV-190</u> , "Re >> Replace rear camera. Refer to <u>AV-192</u> , "Removal and Installation"	emoval and Installation". on". A
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		AV
		0
		P

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012202541

[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U111B	SIDE CAMERA RH IM- AGE SIGNAL	Camera image signal circuit is open or shorted.	 Camera image signal circuit be- tween side camera RH and around view monitor control unit Around view monitor control unit Side camera RH

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the ignition switch ON.
- 2. Shift the selector lever to "R" position.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U111B" is detected as the current malfunction in "Self Diagnostic Result" of "AVM".

Is "U111B" detected as the current malfunction?

- YES >> Refer to <u>AV-134</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-45, "Intermittent Incident".
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000012202542

1. CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
- 3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view r u	nonitor control nit	Door mirror (passenger side)		Continuity
Connector	Terminals	Connector Terminals		
MOR	9	00	6	Evistod
10190	10	D9	14	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit Connector Terminal		Ground	Continuity
M98	10		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.

2. Turn ignition switch ON.

3. Check voltage between around view monitor control unit harness connector and ground.

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

	Tern	ninal						А	
(-	+)	(-	-)	Condition		Standard	Reference voltage		
Are	ound view mo	nitor control u	unit				(Approx.)	В	
Connector	Terminal	Connector	Terminal	" O N N					
M98	10	M98	9	"CAM (arour tor sw shift p	ERA ["] switch nd view moni- itch) is ON or osition is "R".	3.5 V or more	6.0 V	С	
Is inspection YES >: NO >: 3. CHECK	on result no > GO TO 3 > Replace a CONTINU	o <u>rmal?</u> around viev IITY CAME	v monitor c RA IMAGE	control E SIGN	unit. Refer t NAL CIRCUI	o <u>AV-190, "Remov</u> T	al and Installation".	D	
 Turn ig Discor Check side) h 	nition swite inect aroun continuity arness cor	ch OFF. Id view mo between ar nnector.	nitor contro ound view	ol unit monit	connector ar or control un	nd door mirror (pas it harness connec	ssenger side) connector. tor and door mirror (passenger	F	
Around view monitor control Door mirror (pass unit side)				nger	Continuit	iy		G	
Connector	Terminal	s Conne	ctor Term	inals					
M98	11	D9	1	7 5	Existed			Н	
4 Check	continuity	between a	ound view	monit	or control un	it harness connec	tor and ground		
	continuity							Ι	
Around view	monitor cont	rol							
Connector	Terminal	s	Oneverd		Continuit	ty		J	
M98	11		Ground		Not existe	Not existed			
Is inspectio	on result no	ormal?							
YES > NO > 4. CHECK	> GO TO 4 > Repair ha CAMERA	arness or co IMAGE SI	onnector. GNAI					L	
1. Conne 2. Turn ig 3. Check	ct around v inition swite signal betv	view monito ch ON. ween arour	or control und view mo	nit cor nitor c	nnector and o	door mirror (passe arness connector	nger side) connector. terminals.	M	
	Terr	minal						AV	
(+)	(-)	4	Condition	Standard	Reference value		
Ar	ound view mo	onitor control	unit	-				0	
Connector	Ierminal	Connector	Ierminal						
M98	12	M98	11	Shif	t position is in "R".	Waveform accord- ing to camera image is input.	(V) (V)	Ρ	

Is inspection result normal?

Revision: November 2015

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

- >> Replace around view monitor control unit. Refer to <u>AV-190, "Removal and Installation"</u>.
 >> Replace side camera RH. Refer to <u>AV-193, "Removal and Installation"</u>. YES
- NO

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT AGNOSIS > [AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012202543

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	Trouble diagnosis na	me	DTC d	etecting condition	Possible causes
U111C	FRONT CAMERA IM AGE SIGNAL	Camera	a image signal c	ircuit is open or shorted.	 Camera image signal circuit be- tween front camera and around view monitor control unit Around view monitor control unit Front camera
DTC DTC DETECTION LOGIC DTC Trouble diagnosis name DTC detecting condition Possible causes U111C FRONT CAMERA IM- AGE SIGNAL Camera image signal circuit is open or shorted. Camera image signal circuit between front camera and around view monitor control unit Around view monitor control unit PERFORM DTC CONFIRMATION PROCEDURE . PERFORM DTC CONFIRMATION PROCEDURE . Turn the ignition switch ON. . Shift the selector lever to "R" position. . Perform "All DTC Reading" with CONSULT. . Check if the "U111C" is detected as the current malfunction in "Self Diagnostic Result" of "AVM". s "U111C" detected as the current malfunction? YES >> Refer to AV-137. "Diagnosis Procedure". NO-1 >> To check malfunction symptom before repair: Refer to GI-45, "Intermittent Incident". NO-2 >> Confirmation after repair: INSPECTION END Diagnosis Procedure Around view monitor control unit connector and front camera connector. Check CONTINUITY FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT Turn ignition switch OFF. Disconnect around view monitor control unit connector and front camera harm connector. Around view monitor control unit connector and front camera harm connector. Check continuity between around view monitor control unit harmess connector					
.PERF	ORM DTC CONF	IRMATION	N PROCEDU	IRE	
. Turn . Shift . Perfe . Chee <u>. "U111(</u> <u>. "U111(</u> YES NO-1 NO-2	the ignition switc the selector lever orm "All DTC Rea ck if the "U111C" i <u>C" detected as the</u> >> Refer to <u>AV-1</u> >> To check malf >> Confirmation a	h ON. r to "R" pos ding" with s detected <u>e current m</u> <u>37, "Diagno</u> unction syr after repair	sition. CONSULT. as the curre <u>alfunction?</u> <u>osis Procedu</u> mptom before : INSPECTIC	nt malfunction in "Self D <u>re"</u> . e repair: Refer to <u>GI-45,</u> DN END	iagnostic Result" of "AVM". <u>"Intermittent Incident"</u> .
iagno	sis Procedure	, ,			INFOID:0000000122025
Turn Disc Che	ignition switch O onnect around vie ck continuity betw	FF. w monitor een aroun	control unit o	connector and front came	era connector.
. Turn . Disc . Cheo conr	ignition switch Ol onnect around vie ck continuity betw nector.	FF. w monitor veen aroun Front o	control unit o d view monit camera	connector and front cam tor control unit harness o	era connector. connector and front camera harnes
. Turn . Disc . Cheo conr Around vi	ignition switch Ol onnect around vie ck continuity betw nector. ew monitor control unit tor Terminals	FF. w monitor veen aroun Front of Connector	control unit o d view monit camera Terminals	connector and front cam tor control unit harness o	era connector. connector and front camera harnes
. Turn . Disc . Cheo conr Around vi Connect	ignition switch Ol onnect around vie ck continuity betw nector. ew monitor control unit tor Terminals 5 6	FF. ew monitor reen aroun Front o Connector E72	control unit of d view monit camera Terminals 2 1	Continuity	era connector. connector and front camera harnes
. Turn Disc Chee conr Around vi Connect M98	ignition switch Ol onnect around vie ck continuity betw hector. ew monitor control unit tor Terminals 5 6 ck continuity betw	FF. ew monitor veen aroun Front of Connector E72 een arouno	control unit of d view monit camera Terminals 2 1 d view monito	connector and front cam tor control unit harness of Continuity Existed or control unit harness c	era connector. connector and front camera harnes onnector and ground.
. Turn Disc Chee conr Around vi Connect M98 . Chee	ignition switch Ol onnect around vie ck continuity betw hector. ew monitor control unit tor Terminals 5 6 ck continuity betw	FF. ew monitor reen aroun Front o Connector E72 reen arouno	control unit o d view monit camera Terminals 2 1 d view monito	Continuity Existed Control unit harness c	era connector. connector and front camera harnes onnector and ground.
. Turn . Disc . Cheo conr Around vi Connect M98 . Cheo Around vi	ignition switch Ol onnect around vie ck continuity betw hector. ew monitor control unit tor Terminals 5 6 ck continuity betw ew monitor control unit	FF. ew monitor veen aroun Front of Connector E72 een arouno	control unit of d view monit camera Terminals 2 1 d view monito	Continuity Existed Continuity Continuity Continuity Continuity	era connector. connector and front camera harnes onnector and ground.
. Turn . Disc . Cheo conr Around vi Connect M98 . Cheo Around vi	ignition switch Ol onnect around vie ck continuity betw hector. ew monitor control unit tor Terminals 5 6 ck continuity betw ew monitor control unit tor Terminal	FF. ew monitor veen aroun Front of Connector E72 een arouno Gro	control unit of d view monit camera Terminals 2 1 d view monito	Continuity Existed Continuity Existed Or control unit harness c	era connector. connector and front camera harnes onnector and ground.
. Turn . Disc . Cheo conr Around vi Connect Around vi Connect M98	ignition switch Ol onnect around vie ck continuity betw hector. wmit tor Terminals 5 6 ck continuity betw ew monitor control unit tor Terminal 6	FF. ew monitor reen aroun Front o Connector E72 een arouno Gro	control unit of d view monit camera Terminals 2 1 d view monito	Continuity Existed Continuity Existed Or control unit harness c Continuity Not existed	era connector. connector and front camera harnes
. Turn . Disc . Cheo conr Around vi Connect M98 . Cheo Around vi Connect M98 <u>s inspec</u>	ignition switch Ol onnect around vie ck continuity betw hector. we monitor control unit tor Terminals 6 ck continuity betw we monitor control unit tor Terminal 6 tion result normal >> GO TO 2	FF. ew monitor reen aroun Front o Connector E72 reen arouno Gro	control unit of d view monit camera Terminals 2 1 d view monito	Continuity Control unit harness c Continuity Existed or control unit harness c Continuity Not existed	era connector. connector and front camera harnes
. Turn . Disc . Cheo conr Around vi Connect M98 . Cheo Around vi Connect M98 <u>sinspec</u> YES NO	ignition switch Ol onnect around vie ck continuity betw hector.	FF. ew monitor reen aroun Front of Connector E72 een arouno Gro <u>?</u> es or conne	control unit of d view monit camera Terminals 2 1 d view monito bund	Continuity Existed Or control unit harness c Continuity Existed Or control unit harness c Continuity Not existed	era connector. connector and front camera harnes
. Turn . Disc . Cheo conr Around vi Connect M98 . Cheo M98 sinspec YES NO	ignition switch Ol onnect around vie ck continuity betw hector. w monitor control unit tor Terminals 5 6 ck continuity betw ew monitor control unit tor Terminal 6 tion result normal >> GO TO 2. >> Repair harnes CK VOLTAGE FRO	FF. ew monitor reen aroun Front o Connector E72 reen arouno Gro ? s or conne DNT CAME	control unit of d view monit camera Terminals 2 1 d view monito ound	Continuity Continuity Existed Or control unit harness c Continuity Not existed	era connector. connector and front camera harnes

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Terminal										
(+)	(-)		(-)		(-) Condition		Condition	Standard	Reference voltage
Around view monitor control unit		Condition	Standard	(Approx.)						
Connector	Terminal	Connector	Terminal							
M98	6	M98	5	"CAMERA" switch (around view moni- tor switch) is ON or shift position is "R".	3.5 V or more	6.0 V				

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to <u>AV-190, "Removal and Installation"</u>.

3. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect around view monitor control unit connector and front camera connector.
- 3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front	camera	Continuity
Connector	Terminals	Connector Terminals		
M98	7	F72	4	Evisted
	8	L12	3	LAISIEU

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit			Continuity	
Connector	Terminals	Ground		
M98	7	1	Not existed	
	8		NOT EXISTED	

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4.CHECK CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and front camera connector.

2. Turn ignition switch ON.

3. Check signal between around view monitor control unit harness connector terminals.

Terminal							
(+) (-)		Condition	Standard	Poforonoo valuo			
Around view monitor control unit		Condition	Standard	Relefence value			
Connector	Terminal	Connector	Terminal				
M98	8	M98	7	Shift position is in "R".	Waveform accord- ing to camera image is input.	(V) 1 0 -1 → 40 µ s JSNIA0834GB	

Is inspection result normal?

Revision: November 2015

	U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT
< DTC	(CIRCUIT DIAGNOSIS > [AUDIO WITH NAVIGATION]
YES NO	>> Replace around view monitor control unit. Refer to <u>AV-190, "Removal and Installation"</u> .
	Replace none cample. Refer to <u>reversity Removal and metallocity</u> .

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U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012202545

[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U111D	SIDE CAMERA LH IM- AGE SIGNAL	Camera image signal circuit is open or shorted.	 Camera image signal circuit be- tween side camera LH and around view monitor control unit Around view monitor control unit Side camera LH

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn the ignition switch ON.
- 2. Shift the selector lever to "R" position.
- 3. Perform "All DTC Reading" with CONSULT.
- 4. Check if the "U111D" is detected as the current malfunction in "Self Diagnostic Result" of "AVM".

Is "U111D" detected as the current malfunction?

- YES >> Refer to <u>AV-140</u>, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-45, "Intermittent Incident".
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000012202546

1. CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
- 3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror	(driver side)	Continuity
Connector	Terminals	Connector	Terminals	
M98	13	D30	6	Evisted
	14	000	14	LAISted

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit Connector Terminal		Ground	Continuity	

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.

2. Turn ignition switch ON.

3. Check voltage between around view monitor control unit harness connector and ground.

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

	Tern	ninal						А
(+)	(-	-)	Condition		Standard	Reference voltage	
Are	ound view mo	nitor control u	or control unit		Condition Standard (Approx.)		В	
Connector	Terminal	Connector	Terminal					
M98	14	M98	13	"CAM (arour tor sw shift p	ERA" switch nd view moni- itch) is ON or osition is "R".	3.5 V or more	6.0 V	С
Is inspection	on result no	ormal?						
YES >: NO >: 3. CHECK	> GO TO 3 > Replace a CONTINU	around viev IITY CAME	v monitor o RA IMAGE	control E SIGN	unit. Refer t NAL CIRCUI	o <u>AV-190, "Remo</u> T	val and Installation".	E
 Turn iç Discor Check side) h 	nition swite nect arour continuity arness cor	ch OFF. Id view mor between a nnector.	nitor contro around vie	ol unit w mor	connector ar hitor control	nd door mirror (dri unit harness con	ver side) connector. nector and door mirror (driver	F
Around view	monitor cont unit	rol Door r	nirror (driver	side)	Continui	ty		G
Connector	15	s Connec		11/1/21S				Н
M98	15	D30	1	5	Existed			
4. Check	continuity	between ar	ound view	monit	or control un	it harness conneo	tor and ground.	
	••••••							
Around view	r monitor cont unit	rol			Continui	ty		
Connector	Terminal	s	Ground					J
M98	15 16				Not existe	ed		
Is inspection	on result no	ormal?						
YES >> NO >> 4. CHECK	> GO TO 4 > Repair ha CAMERA	arness or co IMAGE SIO	onnector. GNAL					L
1. Conne 2. Turn ig 3. Check	ct around v inition swite signal betv	view monito ch ON. ween arour	or control und view mo	nit cor	nnector and o	door mirror (drivei arness connector	side) connector. terminals.	N
	Terr	minal						AV
(+)	(-)		Condition	Standard	Reference value	
Ar	ound view mo	onitor control	unit		Condition	Glandaru		С
Connector	Terminal	Connector	Terminal					
M98	16	M98	15	Shif	t position is in "R".	Waveform accord- ing to camera image is input.	(V) (V)	Ρ

Is inspection result normal?

Revision: November 2015

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

- >> Replace around view monitor control unit. Refer to <u>AV-190, "Removal and Installation"</u>.
 >> Replace side camera LH. Refer to <u>AV-193, "Removal and Installation"</u>. YES
- NO

U1200 NAVI CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

DTC Logic

U1200 NAVI CONTROL UNIT

[AUDIO WITH NAVIGATION]

INFOID:000000012202547

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DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U1200	Cont Unit (Control unit FLASH-ROM)	NAVI control unit malfunction is detected.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182, "Removal and Installa-</u> tion".

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U1217 NAVI CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

DTC Logic

U1217 NAVI CONTROL UNIT

[AUDIO WITH NAVIGATION]

INFOID:000000012202548

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U1217	BLUETOOTH MODULE (Bluetooth module connec- tion)	NAVI control unit malfunction is detected.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182, "Removal and Installa-</u> tion".
U1229 NAVI CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1229 NAVI CONTROL UNIT

DTC Logic

INFOID:000000012202549

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DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause	С
U1229	iPod CERTIFICATION (iPod certification error)	NAVI control unit malfunction is detected.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182, "Removal and Installa-</u> <u>tion"</u> .	D

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U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000012202550

[AUDIO WITH NAVIGATION]

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1232	ST ANGLE SEN CALIB	The neutral position registration of the steering angle sen- sor can not finish.	Steering angle sensorAround view monitor control unit

Diagnosis Procedure

INFOID:000000012202551

1. REGISTER THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

- 1. Turn the ignition switch ON.
- 2. Perform registration of the neutral position of the steering angle sensor. Refer to BRC-63, "Description".
- 3. Check "Self Diagnostic Result" of "AVM" with CONSULT.

Is "U1232" detected as the current malfunction?

YES >> GO TO 2.

NO >> INSPECTION END

2. CHECK STEERING ANGLE SENSOR

Check steering angle sensor. Refer to BRC-50. "DTC Index".

Is the inspection result normal?

- YES >> Replace the around view monitor control unit. Refer to AV-190, "Removal and Installation".
- NO >> Repair or replace malfunctioning parts.

U1244 GPS ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

U1244 GPS ANTENNA

DTC Logic

INFOID:000000012202552

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DIC NO.	CONSULT screen t (Trouble diagnosis co	erms ontent)	DTC detection condition	Possi	ble cause
U1244	GPS ANTENNA CON (GPS antenna conne	IN GPS anten ction) ed.	na connection malfunction is detect-	 GPS antenna c GPS antenna	onnector connection
iagnosi	s Procedure				INFOID:000000012202553
.GPS AN	TENNA CHECK				
isually che	eck GPS antenna a	nd antenna feed	er.		
the inspendent YES >>	<u>ection result normal</u> • GO TO 2	<u>?</u>			
NO >>	Repair malfunctior	ning parts.			
CHECK	NAVI CONTROL U	NIT VOLTAGE			
. Disconr	nect GPS antenna	connector.			
. Check	voltage between N	AVI control unit a	and ground.		
	(+)				-
	ontrol unit	()	Standard	Voltage	
NAVI co		()		(Approx.)	
NAVI co Ter	rminal				
NAVI contractor Ter	rminal 54	Ground		5.0 V	-
NAVI c Ter the inspe	minal 54 ection result normal	Ground	_	5.0 V	- •

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< DTC/CIRCUIT DIAGNOSIS >

U1258 SATELLITE RADIO ANTENNA

DTC Logic

INFOID:000000012202554

[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
SXM ANTENNA CONN [U1258]	Open or short to ground is detected in satellite antenna connection.	 Satellite antenna disconnection. Open or short to ground in satellite antenna signal circuit.

Diagnosis Procedure

INFOID:000000012202555

Regarding Wiring Diagram information, refer to AV-94, "Wiring Diagram".

1.SATELLITE ANTENNA INSPECTION

Visually inspect the satellite antenna and antenna feeder. Refer to <u>AV-197. "Feeder Layout"</u>. <u>Is inspection result normal?</u>

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK NAVI CONTROL UNIT VOLTAGE

- 1. Turn ignition switch ON.
- 2. Disconnect NAVI control unit harness connector.
- 3. Check voltage between NAVI control unit connector and ground.

NAVI control unit	Ground	Voltage	
Terminal	Ground	voltage	
73	_	5.0 V	

Is inspection result normal?

YES >> Replace satellite radio antenna. Refer to <u>AV-187, "Removal and Installation"</u>.

NO >> Replace NAVI control unit. Refer to <u>AV-182, "Removal and Installation"</u>.

U1263 USB

< DTC/CIRCUIT DIAGNOSIS >

U1263 USB

DTC Logic

INFOID:000000012202556

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DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U1263	USB OVERCURRENT (USB over current error)	Detection of overcurrent in USB connector.	 USB harness between the NAVI con- trol unit USB connector
Diagnosis	s Procedure		INFOID:000000012202557
1.CHECK	USB HARNESS		
Visually che	ck USB harness.		
Is the inspe	ction result normal?		
YES >> NO >>	GO TO 2. Replace USB harness.		
2.CHECK	USB CONNECTOR.		
Visually che	ck USB connector.		-
is the inspe	ction result normal?		
YES >> NO >>	Replace NAVI control un Replace USB connector	nit. Refer to <u>AV-182, "Removal and Inst</u> and AUX jack. Refer to <u>AV-196, "Remo</u>	<u>allation"</u> . oval and Installation".

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< DTC/CIRCUIT DIAGNOSIS > U1264 AMP.

[AUDIO WITH NAVIGATION]

DTC Logic

INFOID:000000012202558

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U1264	 ANTENNA AMP TERMI- NAL OPEN (Antenna amp terminal Open) ANTENNA AMP TERMI- NAL SHORT (Antenna amp terminal Short) 	Antenna amp. ON circuit is open or shorted.	Check antenna amp. ON signal circuit between the NAVI control unit and an- tenna base.

Diagnosis Procedure

INFOID:000000012202559

1. CHECK CONTINUITY BETWEEN NAVI CONTROL UNIT AND ANTENNA BASE

- 1. Turn ignition switch OFF.
- 2. Disconnect antenna base connector and NAVI control unit connector.
- 3. Check continuity between NAVI control unit harness connector and antenna base harness connector.

NAVI control unit		Antenna base		Continuity	
Connector	Terminals	Connector	Terminals	Continuity	
M316	70	M310	1	Existed	

4. Check continuity between NAVI control unit harness connector and ground.

NAVI co	ontrol unit		Continuity
Connector	Terminals	Ground	Continuity
M316	70		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VOLTAGE NAVI CONTROL UNIT

1. Connect NAVI control unit connector.

2. Turn ignition switch ON.

3. Check voltage between NAVI control unit harness connector and ground.

NAVI control unit		()	Voltage
Connector	Terminals	(-)	(Approx.)
M316	70	Ground	12.0 V

Is the inspection result normal?

YES >> Replace antenna base. Refer to <u>AV-187, "Removal and Installation"</u>.

NO >> Replace NAVI control unit. Refer to <u>AV-182, "Removal and Installation"</u>.

U12AA CONFIGURATION ERROR

< DTC/CIRCUIT DIAGNOSIS >

U12AA CONFIGURATION ERROR

DTC Logic

INFOID:000000012202560

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DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause	С
U12AA	CONFIGURATION ERROR (Configuration Error)	NAVI control unit is not properly configured or configuration is not recognized.	Perform configuration of NAVI control unit with CONSULT.	_

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U12AB ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

U12AB ANTENNA

DTC Logic

INFOID:000000012202561

[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U12AB	FM ANTENNA ERROR (Frequency modulation an- tenna error)	FM antenna connection error is detected.	FM antenna feeder connectionFM antenna feeder

Diagnosis Procedure

INFOID:000000012202562

1. WINDOW ANTENNA INSPECTION

Visually inspect the window antenna and antenna feeder. Refer to AV-197, "Feeder Layout".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning part.

2. CHECK CONTINUITY BETWEEN NAVI CONTROL UNIT AND ANTENNA BASE

- 1. Turn ignition switch OFF.
- 2. Disconnect antenna base connector and NAVI control unit connector.
- 3. Check continuity between NAVI control unit harness connector and antenna base harness connector.

NAVI co	ontrol unit	Antenr	na base	Continuity
Connector	Terminals	Connector	Terminals	Continuity
M316	71	M310	2	Existed

4. Check continuity between NAVI control unit harness connector and ground.

NAVI co	ontrol unit		Continuity
Connector	Terminals	Ground	Continuity
M316	71		Not existed

Is the inspection result normal?

YES >> Replace NAVI control unit. Refer to <u>AV-182, "Removal and Installation"</u>.

NO >> Repair harness or connector.

U12AC NAVI CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U12AC NAVI CONTROL UNIT

DTC Logic

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[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause	С
U12AC	DISPLAY TEMPERATURE TOO HIGH (Display temperature too high)	Excessive display circuit temperature is detect- ed.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182, "Removal and Installa-</u> tion".	D

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U12AD NAVI CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U12AD NAVI CONTROL UNIT

DTC Logic

INFOID:000000012202564

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U12AD	ECU TEMPERATURE TOO HIGH (Electronic control unit tem- perature too High)	Excessive internal ECU circuit temperature is detected.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182</u> , " <u>Removal and Installa-</u> <u>tion</u> ".

U12AE NAVI CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U12AE NAVI CONTROL UNIT

DTC Logic

INFOID:000000012202565

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[AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause	С
U12AE	INTERNAL AMP TEMP WARNING (Internal amplifier tempera- ture warning)	Excessive internal amplifier circuit temperature is detected.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182</u> , " <u>Removal and Installa-</u> <u>tion</u> ".	D

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U12AF NAVI CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U12AF NAVI CONTROL UNIT

DTC Logic

INFOID:000000012202566

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U12AF	CD MECHANISM TEMP WARNING (CD mechanism tempera- ture warning)	Excessive CD mechanism circuit temperature is detected.	Replace the NAVI control unit if the mal- function occurs constantly. Refer to <u>AV-182</u> , "Removal and Installa- tion".

U12B0 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

U12B0 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:000000012202567

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DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause	C
U12B0	SUPPLY VOLTAGE UN- DER 9V (Supply of the battery volt- age less than 9V continued for 20 seconds)	NAVI control unit supply voltage is less than the lower limit.	Power supply circuit	D

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[AUDIO WITH NAVIGATION]

U12B1 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

U12B1 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:000000012202568

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible cause
U12B1	SUPPLY VOLTAGE OVER 16V (Supply of the battery volt- age more than 16V contin- ued for 20 seconds)	NAVI control unit supply voltage is more than the upper limit.	Power supply circuit

U1304 CAMERA IMAGE CALIBRATION

< DTC/CIRCUIT DIAGNOSIS >

U1304 CAMERA IMAGE CALIBRATION

DTC Logic

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor	
U1304	CAMERA IMAGE CAL- IB	Camera calibration is incomplete. NOTE: Current malfunction is displayed only and is not saved.	Perform camera calibration.	

Diagnosis Procedure

1.PERFORM CALIBRATING CAMERA IMAGE

Perform camera calibration when DTC U1304 is detected.

>> Perform camera calibration. Refer to <u>AV-116, "CALIBRATING CAMERA IMAGE (AROUND VIEW</u> <u>MONITOR) : Description"</u> .	F
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[AUDIO WITH NAVIGATION]

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U1305 CONFIG UNFINISH

< DTC/CIRCUIT DIAGNOSIS >

U1305 CONFIG UNFINISH

DTC Logic

INFOID:000000012202571

[AUDIO WITH NAVIGATION]

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1305	CONFIG UNFINISH	The vehicle specifications of around view monitor control unit is incomplete.	Vehicle specifications for around view monitor control unit is incomplete

NOTE:

Current malfunction is displayed only and is not saved.

Diagnosis Procedure

INFOID:000000012202572

1.PERFORM CONFIGURATION OF AROUND VIEW MONITOR CONTROL UNIT

Perform configuration of around view monitor control unit when DTC U1305 is detected.

>> Perform configuration of around view monitor control unit. Refer to <u>AV-115</u>, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure".

	POWER SUF	PLY AND) GROL	JND CIRCUIT	
< DTC/CIRCUIT DIA	GNOSIS >			[AUDIO V	WITH NAVIGATION]
POWER SUPP	LY AND GROU	IND CIR	CUIT		
NAVI CONTROL	UNIT				
NAVI CONTROL	UNIT : Diagnosis	s Procedu	re		INFOID:000000012202573
1 .CHECK FUSE					
Check for blown fuses	3.				
	Power source			Fuse No.	
	Battery			34	
Ignitio	on switch ACC or ON			19	
Ignitio	n switch ON or START			3	
YES >> GO TO 2 NO >> Be sure to CHECK POWER S Check voltage betwee	o eliminate cause of m SUPPLY CIRCUIT en NAVI control unit ha	nalfunction b	efore insta ector and	alling new fuse. ground.	
Signal name	Connector No.	Termina	al No.	Ignition switch position	Value (Approx.)
Battery power supply	M108	19)	OFF	Battery voltage
ACC power supply	M108	7		ACC	Battery voltage
Ignition signal	M109	40)	ON	12.0 V
3. CHECK GROUND 1. Turn ignition swite 2. Disconnect NAVI 3. Check continuity	CIRCUIT ch OFF. control unit connector between NAVI control	unit harness		or and ground.	
Signal name	Connector No.	Terminal No.	lar	nition switch position	Continuity
Ground	M108	20		OFF	Existed.
Is inspection result OF YES >> INSPECT NO >> Repair ha AROUND VIEW AROUND VIEW	<u>K?</u> TON END Inness or connector. MONITOR CON	ITROL UI IROL UNI	NIT T : Dia	gnosis Procedure	INFOID:000000012202574
	3				
	Power source			Fuse No.	
	Ignition signal			3	
YES $>>$ GO TO 2. NO $>>$ Be sure to 2. CHECK AROUND	o eliminate cause of n VIEW MONITOR CO	nalfunction be	efore insta T POWEF	alling new fuse. R SUPPLY CIRCUIT	

Check voltage between around view monitor control unit harness connector and ground.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

(+) Around view monitor control unit		(-)	Condition	Standard voltage	Reference voltage (Approx.)
Connector	Terminal				
M98	40	Ground	Ignition switch ON	7.0 V or more	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the around view monitor control unit power supply circuit.

 $\mathbf{3}$.check around view monitor control unit ground circuit

1. Turn the ignition switch OFF.

2. Disconnect the around view monitor control unit connector.

3. Check for continuity between around view monitor control unit harness connector and ground.

Around view mo	onitor control unit		Continuity
Connector	Connector Terminal		Continuity
M98	39		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the around view monitor control unit ground circuit.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT

Description

NAVI control unit supplies power to microphone. The microphone transmits the sound voice to the NAVI control unit. $\ensuremath{\mathsf{B}}$

Diagnosis Procedure

INFOID:000000012202576

INFOID:000000012202575

1. CHECK CONTINUITY BETWEEN NAVI CONTROL UNIT AND MICROPHONE CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect NAVI control unit connector and microphone connector.
- 3. Check continuity between NAVI control unit harness connector and microphone harness connector.

NAVI control unit		Microphone		Continuit
Connector	Terminal	Connector	Terminal	Continuity
	34		1	
M109	35	R2	4	Existed
	36		2	
Check continuity b	etween NAVI control u	unit harness conneo	ctor and ground.	
Ν	IAVI control unit			a
Connector	Termina	al	Oreverd	Continuity
M100	34		Ground	
10109	35			NUL EXISTED
inspection result >> GO TO 2. >> Repair har	normal? ness or connector.			
e inspection result S >> GO TO 2. >> Repair har HECK VOLTAGE Connect NAVI con Furn ignition switch Check voltage betw	normal? ness or connector. MICROPHONE VCC trol unit connector. n ON. veen NAVI control uni	it harness connecto	or and ground.	
e inspection result S >> GO TO 2. >> Repair har HECK VOLTAGE Connect NAVI con Furn ignition switch Check voltage betw	normal? ness or connector. MICROPHONE VCC trol unit connector. n ON. veen NAVI control uni	it harness connecto	r and ground.	Voltago
e inspection result S >> GO TO 2. >> Repair har HECK VOLTAGE Connect NAVI con Turn ignition switch Check voltage betw	normal? ness or connector. MICROPHONE VCC trol unit connector. n ON. veen NAVI control uni (+)	it harness connecto	or and ground.	Voltage (Approx.)
e inspection result S >> GO TO 2. >> Repair har HECK VOLTAGE Connect NAVI con Furn ignition switch Check voltage betw Connector	normal? ness or connector. MICROPHONE VCC trol unit connector. n ON. veen NAVI control uni (+) IAVI control unit	it harness connecto	r and ground. (–)	Voltage (Approx.)

- 1. Turn ignition switch OFF.
- 2. Connect microphone connector.
- 3. Turn ignition switch ON.
- 4. Check signal between NAVI control unit harness connector.

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MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

(NAVI co	+) ontrol unit	(-)	Condition	Reference value
Connector	Terminal			
M109	34	Ground	Give a voice.	(V) 2.5 2.0 1.5 1.0 0.5 0 • + 2ms PKIB5037J

Is the inspection result normal?

>> Replace NAVI control unit. Refer to <u>AV-182</u>, "<u>Removal and Installation</u>".
> Replace microphone. Refer to <u>AV-189</u>, "<u>Removal and Installation</u>". YES

NO

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

CAMERA IMAGE SIGNAL CIRCUIT

Description

Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the NAVI control unit.

Diagnosis Procedure

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1. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT FOR OPEN

- 1. Turn ignition switch OFF.
- 2. Disconnect NAVI control unit harness connector and around view monitor control unit harness connector.
- 3. Check continuity between NAVI control unit harness connector and around view monitor control unit harness connector.

NAVI control unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M100	41	MOS	4	Evicted
101109	42	10190	3	LAISICU

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

2.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT FOR SHORT

Check continuity between NAVI control unit harness connector and ground.

NAVI co	ntrol unit		Continuity
Connector	Terminal	Ground	Continuity
M109	41		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3.CHECK CAMERA IMAGE SIGNAL

1. Connect NAVI control unit harness connector and around view monitor control unit harness connector.

2. Turn ignition switch ON.

3. Check the signal between NAVI control unit harness connector and ground.

	Terminals				
(+)		Condition	Peference value	ΔV
NAVI co	ontrol unit	(-)	Condition		
Connector	Terminal				
M109	41	Ground	At camera image is dis- played.	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	O P

Is the inspection result normal?

YES >> Replace NAVI control unit. Refer to <u>AV-182, "Removal and Installation"</u>.

NO >> Replace around view monitor control unit. Refer to AV-190, "Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL A CIRCUIT

Description

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

1. CHECK STEERING SWITCH SIGNAL A CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect NAVI control unit connector and spiral cable connector.
- 3. Check continuity between NAVI control unit harness connector and spiral cable harness connector.

NAVI co	ntrol unit	Spiral	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M108	6	M33	24	Existed

4. Check continuity between NAVI control unit harness connector and ground.

NAVI co	ontrol unit		Continuity
Connector	Terminal	Ground	Continuity
M108	6		Not existed
		10	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to <u>SR-15, "Exploded View"</u>.

3.CHECK NAVI CONTROL UNIT VOLTAGE

- 1. Connect NAVI control unit connector and spiral cable connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between NAVI control unit harness connector.

(+)		(
NAVI control unit				(Approx.)
Connector	Terminal	Connector	Terminal	
M108	6	M108	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace NAVI control unit. Refer to <u>AV-182, "Removal and Installation"</u>.

4.CHECK STEERING SWITCH

- 1. Turn ignition switch OFF.
- 2. Check steering switch. Refer to AV-166. "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to <u>AV-195, "Removal and Installation"</u>.

Component Inspection

Measure the resistance between the steering switch connector.

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INFOID:000000012202580

STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Steering switch		Condition	Resistance	
Terminal	Terminal		(Approx.) Ω	
		TEL switch ON	709 – 737	
14		SEEK DOWN switch ON	315 – 327	
	17	SEEK UP switch ON	119 – 123	
		SOURCE switch ON	0	
		TEL END switch ON	315 – 327	
15	VOL UP switch ON	119 – 123		
		VOL DOWN switch ON	0	

[AUDIO WITH NAVIGATION]



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< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL B CIRCUIT

Description

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

1. CHECK STEERING SWITCH SIGNAL B CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect NAVI control unit connector and spiral cable connector.
- 3. Check continuity between NAVI control unit harness connector and spiral cable harness connector.

NAVI co	ntrol unit	Spira	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M108	16	M33	31	Existed

4. Check continuity between NAVI control unit harness connector and ground.

NAVI control unit			Continuity
Connector	Terminal	Ground	Continuity
M108	16		Not existed
		10	•

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to <u>SR-15, "Exploded View"</u>.

3.CHECK NAVI CONTROL UNIT VOLTAGE

- 1. Connect NAVI control unit connector and spiral cable connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between NAVI control unit harness connector.

(+)	(-)		
	Voltage (Approx.)			
Connector	Terminal	Connector	Terminal	
M108	16	M108	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace NAVI control unit. Refer to <u>AV-182, "Removal and Installation"</u>.

4.CHECK STEERING SWITCH

- 1. Turn ignition switch OFF.
- 2. Check steering switch. Refer to AV-168. "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to <u>AV-195, "Removal and Installation"</u>.

Component Inspection

Measure the resistance between the steering switch connector.

INFOID:0000000012202584

INFOID:0000000012202582

INFOID:000000012202583

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Steering switch		Condition	Resistance
Terminal	Terminal	Condition	(Approx.) Ω
	17	TEL switch ON	709 – 737
14		SEEK DOWN switch ON	315 – 327
		SEEK UP switch ON	119 – 123
		SOURCE switch ON	0
15		TEL END switch ON	315 – 327
		VOL UP switch ON	119 – 123
		VOL DOWN switch ON	0

[AUDIO WITH NAVIGATION]



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< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH GROUND CIRCUIT

Description

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

INFOID:000000012202586

INFOID:000000012202585

1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect NAVI control unit connector and spiral cable connector.
- 3. Check continuity between NAVI control unit harness connector and spiral cable harness connector.

NAVI control unit		Spira	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M108	15	M33	33	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to <u>SR-15, "Exploded View"</u>.

3. CHECK GROUND CIRCUIT

1. Connect NAVI control unit connector.

2. Check continuity between NAVI control unit harness connector and ground.

NAVI control unit			Continuity
Connector	Terminal	Ground	Continuity
M108	15		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace NAVI control unit. Refer to <u>AV-182, "Removal and Installation"</u>.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.

2. Check steering switch. Refer to AV-170, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to <u>AV-195, "Removal and Installation"</u>.

Component Inspection

Measure the resistance between the steering switch connector.

INFOID:000000012202587

[AUDIO WITH NAVIGATION]

STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Steering switch		Condition	Resistance	
Terminal	Terminal		(Approx.) 02	
	17	TEL switch ON	709 – 737	
14		SEEK DOWN switch ON	315 – 327	
		SEEK UP switch ON	119 – 123	
		SOURCE switch ON	0	
15		TEL END switch ON	315 – 327	
		VOL UP switch ON	119 – 123	
		VOL DOWN switch ON	0	

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SYMPTOM DIAGNOSIS NAVIGATION SYSTEM

Symptom Table

INFOID:000000012202588

RELATED TO NAVIGATION

NOTE:

Combined part of AV switch and NAVI control unit.

Symptoms	Ch	eck items	Probable malfunction location / Action to take
Display does not turn ON.	All switches cannot be operated.		 NAVI control unit power supply and ground circuit. Refer to <u>AV-161. "NAVI CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>. Disconnect the battery negative ter- minal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit. Refer to <u>AV-182. "Re- moval and Installation"</u>.
	All switches can be operated.		Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit. Refer to <u>AV-182, "Removal and In-</u> <u>stallation"</u> .
All switches cannot be operat- ed.	Display does not turn ON.		 NAVI control unit power supply and ground circuit. Refer to <u>AV-161, "NAVI CONTROL</u> <u>UNIT : Diagnosis Procedure"</u>. Disconnect the battery negative ter- minal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit. Refer to <u>AV-182, "Re- moval and Installation"</u>.
	Display turn ON.		Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit. Refer to <u>AV-182, "Removal and In-</u> <u>stallation"</u> .
Only specified switch cannot be operated.	-		Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit. Refer to <u>AV-182, "Removal and In-</u> <u>stallation"</u> .
Map screen is not displayed.	Check that the map SD card is in the SD card slot. Check "SD Card As	"OK" is displayed for "SD Card Access".	Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace Map SD card.
(RGB image other than map is normal.)	Check "SD Card Ac- cess" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"OK" is not displayed for "SD Card Access".	Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit or Map SD card.

NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptoms	Check items		Probable malfunction location / Action to take
	Check that the map SD card is in the SD card slot.	"OK" is displayed for SD Card Access.	Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace Map SD card.
Voice guidance is not heard [*]	Check "SD Card Ac- cess" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"OK" is not displayed for SD Card Access.	Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit. Refer to <u>AV-182, "Removal and In-</u> <u>stallation"</u> .
Display does not dim.	Check "Illumination Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	"Illumination Signal" reaches 100% when the lighting switch is ON.	Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit. Refer to <u>AV-182, "Removal and In-</u> <u>stallation"</u> .
		"Illumination Signal" does not reach 100% when the lighting switch is ON.	Illumination signal circuit
Vehicle icon does not move.	Check "Speed Signal" in "SERVICE SYS- TEM STATUS", "SER- VICE MENU".	A value of "Speed Signal" changes according to vehi- cle speeds.	Disconnect the battery negative termi- nal. Reconnect the terminal. If the same symptom occurs, replace NAVI control unit or GPS antenna.
		A value of "Speed Signal" does not change according to vehicle speeds.	Vehicle speed signal circuit

*: check that voice guidance is set to on in the set up menu of navigation. *: check that the volume of voice guidance is not set to low.

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location	J
	No sound from all speakers.	NAVI control unit power supply and ground circuits mal- function. Refer to <u>AV-161</u> , "NAVI CONTROL UNIT : Diag- nosis Procedure".	K
No sound comes out or the lev- el of the sound is low.	Only a certain speaker (front right, front left, rear right, or rear left) does not out- put sound.	 Poor connector connection of speaker. Sound signal circuit malfunction between NAVI control unit and speaker. Malfunction in speaker. Malfunction in NAVI control unit. 	L
	Noise comes out from all speaker.	Malfunction in NAVI control unit.	
Noise is mixed with audio.	Noise comes out only from a certain	 Poor connector connection of speaker. Sound signal circuit malfunction between NAVI control unit and speaker. 	M
	speaker (front right, front left, rear right, or rear left).	 Malfunction in speaker. Poor installation of speaker (e.g. backlash and looseness) Malfunction in NAVI control unit. 	AV
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	Poor connector connection of antenna or antenna feeder.	0
Radio is not received or poor reception.	 Other audio sounds are normal. Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no ob- stacles generating external noises). 	 Antenna amp. ON signal circuit malfunction. Poor connector connection of antenna or antenna feeder. 	Ρ

NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items		Probable malfunction location / Action to take
iPod [®] or USB memory can not	With iPod [®] or USB memory Connected, check "USB Device" in	iPod [®] or USB memory name is displayed for "USB De- vice".	 USB and AUX harness USB connector and AUX jack NAVI control unit
be recognized.	"SERVICE STATUS", "SERVICE MENU".	"Removed" is displayed for "USB Device".	USB and AUX harnessUSB connector and AUX jack

iPod[®] is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO AUXILIARY INPUT **NOTE**:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	USB and AUX harnessUSB connector and AUX jack

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location / Action to take	
The screen switches when pressing the "CAMERA" switch or the shift po- sition is in "R", however, all views are not displayed.	_	Camera image signal circuit. Refer to <u>AV-165. "Diagnosis Proce-</u> <u>dure"</u> .	
It cannot be switched to rear view monitor even when the shift position is in "R".	The front view image is normal.	Reverse signal circuit (around view monitor control unit).	
The predictive course line display in front view and rear view is malfunc- tioning.	_		
 The front view screen is not displayed. The front of Birds-Eye view screen is not displayed. 			
 The rear view screen is not displayed. The rear of Birds-Eye view screen is not displayed. 	_	Perform "Self Diagnostic Result" of	
 The front-side screen is not displayed. The passenger side of Birds-Eye view screen is not displayed. 	_	Refer to <u>AV-80, "CONSULT Function"</u> .	
The driver side of Birds-eye view screen is not displayed.	_		
When shift position is in other than "R", the front-side and front screen or the Birds-Eye view and front screen remain displaying even if the vehicle speed increases.			

RELATED TO STEERING SWITCH

NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptoms	Possible malfunction location / Action to take	~
All steering switches are not operated.	Steering switch signal ground circuit. Refer to <u>AV-170, "Diagnosis Pro-</u> <u>cedure"</u> .	Ρ
Only specified switch cannot be operated.	Replace steering switch. Refer to AV-195, "Removal and Installation".	
"SOURCE", "SEEK UP", "SEEK DOWN", and "TEL" switches are not operated.	Steering switch signal A circuit. Refer to <u>AV-166</u> , " <u>Diagnosis Procedure</u> ".	L
"VOL DOWN", "VOL UP", "TEL END" switches are not oper- ated.	Steering switch signal B circuit. Refer to <u>AV-168, "Diagnosis Procedure"</u> .	С

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< SYMPTOM DIAGNOSIS >

HANDS-FREE PHONE SYMPTOMS

Symptom Table

INFOID:000000012202589

RELATED TO HANDS-FREE PHONE

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	NAVI control unit
Hands-free phone cannot be established.	_	NAVI control unit power supply and ground circuit. Refer to <u>AV-161</u> , "NAVI CONTROL UNIT : Diagnosis <u>Procedure</u> ".
The other party's voice cannot	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
be heard by hands-free phone.	Audio system sound does not sound.	Refer to AV-172, "Symptom Table".

RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. Refer to <u>AV-170. "Diagnosis Pro-</u> cedure".
Only specified switch cannot be operated.	Replace steering switch. Refer to AV-195, "Removal and Installation".
"SOURCE", "SEEK UP", "SEEK DOWN", and "TEL" switches are not operated.	Steering switch signal A circuit. Refer to <u>AV-166, "Diagnosis Procedure"</u> .
"VOL DOWN", "VOL UP", "TEL END" switches are not oper- ated.	Steering switch signal B circuit. Refer to <u>AV-168</u> , "Diagnosis Procedure".

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000012202590

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NOTE:

For Navigation system operation information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No imago io displayed	The brightness is at the lowest setting.	Adjust the brightness of the display.
no image is displayed.	The display is turned off.	Press "☀/♪" to turn on the display.
No voice guidance is available or the volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the voice guidance volume level.
No map is displayed on the screen.	The map SD card is not inserted.	Insert the map SD card correctly.
	A screen other than map screen is displayed.	Press "MAP".
The screen is too dim. The move- ment is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.

NOTE:

Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the "red book" Compact Disc Standard and may not play.

Symptom	Cause and Counter measure	
	Check if the CD was inserted correctly.	
	Check if the CD is scratched or dirty.	M
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.	
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.	AV
Cannot play	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.	0
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.	D
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.	Г
	Check if the finalization process, such as session close and disc close, is done for the CD.	
	Check if the CD is protected by copyright.	
Poor sound quality	Check if the CD is scratched or dirty.	

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

Symptom	Cause and Counter measure	
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.	
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.	
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.	
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3" or ".wma", or when play is prohibited by copyright protection, the player will skip to the next song.	
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.	
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.	
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.	

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

MAP SD CARD

Symptom	Possible cause	Possible solution
The message "Error" an		Check the map SD card data. Files can be lost.
pears.	The SD card is not recognized by the system.	If you see any damage, replace the map SD card.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Route information is not dis-	Route calculation has not yet been performed.	Set the destination and perform route calculation.
played.	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is cancelled.	Turn on the route guidance.
The auto reroute calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consider- ation, but the same route was calculated.	This is not a malfunction.
	Roads near the destination cannot be calculated.	Reset the destination to a main or or- dinary road, and recalculate the route.
The suggested route is not dis-	The starting point and destination are too close.	Set a more distant destination.
played.	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and per- form a global route calculation based on multiple route calculations.
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets.	Reset the destination to a main or or- dinary road, and recalculate the route.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptom	Possible cause	Possible solution	٨
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect data on the map SD card.	Updated information will be included in the next version of the map SD card.	A
The suggested route does not exactly connect to the starting point, waypoints, or destina- tion.	There is no data for route calculation closes to these loca- tions.	Set the starting point, waypoints and destination on a main road, and perform route calculation.	B

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads and locations differ between 2D and 3D view.	This is because the quantity of the displayed in- formation is reduced so that the screen does not become difficult to read. There is also a chance that the names of roads or locations may be displayed several times, and that the names appearing on the screen may be differ- ent because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
the correct position.	The position and direction of the vehicle icon may be incorrect depending on the driving en- vironments and the levels of positioning accu- racy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is travelling on a new road, the vehicle icon is located on another nearby road.	The system automatically places the vehicle icon on the nearest available road, because the new road is not stored in the map data.	Updated road information will be included in the next version of the map SD card.
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using <day night=""> when you turn on the headlights.</day>
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Press "MAP".
The vehicle icon is not displayed.	The current location map screen is not displayed.	Press "MAP".
The location of the vehicle icon is	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while [at approximately 30 km/h (19 MPH) for about 30 minutes] to automatically correct the vehicle icon position.
	The map data has an error or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map SD card.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution	
	In some cases, voice guidance is not available even when the vehicle should make a turn.	This is not a malfunction.	C
Voice guidance is not available	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again	Г
	Voice guide is set to off.	Turn voice guidance ON.	
	Route guidance is set to off.	Route guidance is set to ON.	
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.	

RELATED TO TRAFFIC INFORMATION

AV

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

Symptom	Possible cause	Possible solution
	The traffic information is not set to on.	Set the traffic information to on.
The traffic information is	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.
With the automatic de- tour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fasted rote taking into consideration such things as traffic jams.
The route does not avoid road section with traffic information stat- ing it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.
Traffic information dis- played differs from in- formation from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regula- tions. Always observe safe driving practices and follow all traffic regulations.

RELATED TO HANDS-FREE PHONE

Symptom	Cause and Counter measure
Cannot use hands-free phone	 Customer will not be able to use a hands-free phone under the following conditions. The vehicle is outside of the telephone service area. The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. The cellular phone is locked to prevent it from being dialed. NOTE: While a cellular phone is connected through the Bluetooth[®] wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth[®] Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

RELATED TO TELEPHONE

Symptoms	Cause and Counter measure
System fails to interpret the com- mand correctly.	1. Ensure that the command format is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at a level appropriate to the ambient noise level in the vehicle.
	 4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). NOTE: If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. Refer to <u>AV-77, "On Board Diagnosis Function"</u> .
NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptoms	Cause and Counter measure	^
The system consistently selects the wrong entry from the phone book.	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.	A
	2. Replace one of the names being confused with a new name.	R

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REMOVAL AND INSTALLATION NAVI CONTROL UNIT

Removal and Installation

INFOID:000000012202591

REMOVAL

CAUTION:

Before replacing NAVI control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to <u>AV-113, "ADDITIONAL SERVICE WHEN REPLACING NAVI CON-</u><u>TROL UNIT : Description"</u>.

- 1. Remove cluster lid C. Refer to IP-13, "Removal and Installation".
- 2. Remove NAVI control unit screws.
- 3. Disconnect NAVI control unit connectors to remove NAVI control unit and brackets as a single unit.
- 4. Remove brackets screws to remove NAVI control unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Be sure to perform "Read/Write Configuration" when replacing NAVI control unit. For details, refer to <u>AV-113, "ADDITIONAL SERVICE WHEN REPLACING NAVI CONTROL UNIT : Description"</u>.

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INFOID:000000012202592

FRONT DOOR SPEAKER Removal and Installation REMOVAL

- 1. Remove front door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door speaker.

INSTALLATION

Install in the reverse order of removal.

< REMOVAL AND INSTALLATION >

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REAR DOOR SPEAKER

Removal and Installation

INFOID:000000012202593

REMOVAL

- 1. Remove rear door finisher. Refer to INT-16, "Removal and Installation".
- 2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

INSTALLATION

Install in the reverse order of removal.

[AUDIO WITH NAVIGATION]

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< REMOVAL AND INSTALLATION >

TWEETER

Re	moval and Installation	INFOID:00000001
RE	MOVAL	
1.	Remove front pillar garnish. Refer to INT-18, "FRONT PILLAR GARNISH : Removal and Inst	stallation".
2.	Remove tweeter clip, then disconnect tweeter connector and remove tweeter.	
INS	STALLATION	

Install in the reverse order of removal.

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Removal and Installation

INFOID:000000012202595

[AUDIO WITH NAVIGATION]

REMOVAL

- 1. Remove luggage side lower finisher LH. Refer to <u>INT-35. "LUGGAGE SIDE LOWER FINISHER :</u> <u>Removal and Installation"</u>.
- 2. Disconnect woofer connector.
- 3. Remove woofer screws to remove woofer.

INSTALLATION

Install in the reverse order of removal.

[AUDIO WITH NAVIGATION]

< REMOVAL AND INSTALLATION >

ANTENNA BASE





3. Remove nut to remove antenna base.

INSTALLATION

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Install in the reverse order of removal.

CAUTION:

REMOVAL

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If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.

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< REMOVAL AND INSTALLATION >

GPS ANTENNA

[AUDIO WITH NAVIGATION]

Removal and Installation

INFOID:000000012202598

REMOVAL

- 1. Remove instrument panel. Refer to IP-13. "Removal and Installation".
- 2. Remove antenna feeder clip, then remove GPS antenna screw and remove GPS antenna.

INSTALLATION

Install in the reverse order of removal.

< REMOVAL AND INSTALLATION >

MICROPHONE А **Removal and Installation** INFOID:000000012202599 REMOVAL В Remove headlining. Refer to INT-27, "NORMAL ROOF : Removal and Installation" (normal roof) or INT-1. 30, "SUNROOF : Řemoval and Installation" (sunroof). С 2. Remove microphone connector and pawl to remove microphone. **INSTALLATION** Install in the reverse order of removal. D Ε F Н J Κ L Μ AV Ο Ρ

AROUND VIEW MONITOR CONTROL UNIT

< REMOVAL AND INSTALLATION >

[AUDIO WITH NAVIGATION]

INFOID:000000012202600

AROUND VIEW MONITOR CONTROL UNIT

Removal and Installation

REMOVAL

CAUTION:

Before replacing around view monitor control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to <u>AV-113</u>, "<u>ADDITIONAL SERVICE WHEN</u> <u>REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description</u>".

- 1. Remove globe box assembly. Refer to IP-13, "Removal and Installation".
- 2. Remove harness clip mounted to the bracket.
- 3. Remove the mounting screws (A) and pull the around view monitor control unit (1) together with the bracket.



- 4. Disconnect connectors to remove around view monitor control unit and bracket from the vehicle as a single unit.
- 5. Remove bracket screws to remove around view monitor control unit.

INSTALLATION

- 1. Install in the reverse order of removal.
- 2. Perform camera image calibration. Refer to <u>AV-116</u>, "CALIBRATING CAMERA IMAGE (AROUND VIEW <u>MONITOR)</u>: <u>Description</u>".

CAUTION:

- Be sure to perform "Read/Write Configuration" when replacing around view monitor control unit. For details, refer to <u>AV-113, "ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CON-TROL UNIT : Description"</u>.
- Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

< REMOVAL AND INSTALLATION >

FRONT CAMERA	Δ
Removal and Installation	A
REMOVAL	В
 Remove front grille. Refer to <u>EXT-26. "Removal and Installation"</u>. Remove front camera mounting screws to remove front camera from front grille. 	С
 Install in the reverse order of removal. Perform camera image calibration. Refer to <u>AV-116, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description"</u>. 	D
Perform the calibration and perform the writing to the around view monitor control unit when remov- ing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.	Ε
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REAR CAMERA

Removal and Installation

INFOID:000000012202602

[AUDIO WITH NAVIGATION]

REMOVAL

- 1. Remove back door lower finisher. Refer to <u>INT-39</u>, "BACK DOOR LOWER FINISHER : Removal and <u>Installation"</u>.
- 2. Remove connector to remove rear view camera.

INSTALLATION

- 1. Install in the reverse order of removal.
- 2. Perform camera image calibration. Refer to <u>AV-116</u>, "CALIBRATING CAMERA IMAGE (AROUND VIEW <u>MONITOR) : Description</u>".

CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit. < REMOVAL AND INSTALLATION >

SIDE CAMERA А Removal and Installation INFOID:000000012202603 REMOVAL В Remove door mirror under cover from door mirror. Refer to <u>MIR-18, "DOOR MIRROR ASSEMBLY : Dis-</u> assembly and Assembly". С 2. Remove screws to remove side camera from door mirror under cover. INSTALLATION D 1. Install in the reverse order of removal. 2. Perform camera image calibration. Refer to AV-116, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description". Е **CAUTION:** Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit. F Н Κ L Μ

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STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

STEERING ANGLE SENSOR

Exploded View

DISASSEMBLY

INFOID:000000012202604



[AUDIO WITH NAVIGATION]

- 1. Spiral cable
- 2. Steering angle sensor

Removal and Installation

REMOVAL

- 1. Remove spiral cable. Refer to <u>SR-15. "Removal and Installation"</u>.
- 2. Remove steering angle sensor from spiral cable.

INSTALLATION

- 1. Install in the reverse order of removal.
- 2. Perform steering angle sensor neutral position adjustment. Refer to BRC-63, "Description".

< REMOVAL AND INSTALLATION >

STEERING SWITCH		Λ
Exploded View	INFOID:000000012202606	
Refer to <u>SR-12, "Exploded View"</u> . Removal and Installation	INFOID:000000012202607	В
REMOVAL Refer to <u>ST-9, "Removal and Installation"</u> .		С
INSTALLATION Install in the reverse order of removal.		D
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< REMOVAL AND INSTALLATION >

USB CONNECTOR AND AUX JACK

Removal and Installation

REMOVAL

- 1. Remove cluster tray. Refer to IP-13, "Removal and Installation".
- 2. Push the pawl from the back of cluster tray to remove USB connector and AUX jack.

INSTALLATION

Install in the reverse order of removal.

INFOID:000000012202608

ANTENNA FEEDER

< REMOVAL AND INSTALLATION > ANTENNA FEEDER

[AUDIO WITH NAVIGATION]

Feeder Layout



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▲: Indicates that the part is connected at points with same symbol in actual vehicle.



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< PRECAUTION > PRECAUTION PRECAUTIONS

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

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, 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 "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Removing Battery Terminal

INFOID:000000012947016

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		
YD25DDTi	: 2 minutes		



NOTE:

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

 After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.
 NOTE:

PRECAUTIONS

< PRECAUTION >	[INTEGRATED CONTROL SYSTEM]
 Turbocharger cooling pump may operate in a few minutes after Example of high-load driving Driving for 30 minutes or more at 140 km/h (86 MPH) or more. 	the ignition switch is turned OFF.
 Driving for 30 minutes or more on a steep slope. For vehicles with the 2-batteries, be sure to connect the main bat the ignition switch. NOTE: 	ery and the sub battery before turning ON $$_{\mbox{\scriptsize B}}$$
If the ignition switch is turned ON with any one of the terminals nected, then DTC may be detected.After installing the 12V battery, always check "Self Diagnosis Res	of main battery and sub battery discon- C ult" of all ECUs and erase DTC.
NOTE: The removal of 12V battery may cause a DTC detection error.	D
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SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000012202612



Component Description

INFOID:000000012202613

Unit	Description	
Multi display unit	 A multi display unit integrating a color display and an operation panel is adopted. The display indicates the air conditioner operation status, driving mode, information, and setting screen. The unit transmits operation signals for air conditioner and drive mode to the respective units via CAN communication. It receives the drive mode selection, information display/setting, and necessary information for controlling the air conditioner control functions from the respective units via CAN communication. 	
Combination meter	 Transmits the following signals to the multi display unit via CAN communication. Vehicle speed signal Odometer signal 	

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

Unit	Description	
	Transmits the following signals to the multi display unit via CAN communication. Engine speed signal Eucloconsumption monitor signal	A
	 Engine status signal Engine torque signal Boost pressure signal 	В
ECM	 Boost pressure signal Receives the following signals from TCM via CAN communication and changes over the throttle position characteristic (CVT models). ECO mode signal NORMAL mode signal SPORT mode signal 	С
	 Receives the following signals from the multi display unit via CAN communication and changes over the throttle position characteristic (M/T models). ECO mode signal 	D
	- NORMAL mode signal - SPORT mode signal	Ε
BCM	Transmits the position light request signal to the multi display unit via CAN communication.	
TCM (CVT models)	 Receives the following signals from the multi display unit via CAN communication and changes over the gear shift line. ECO mode signal NORMAL mode signal SPORT mode signal Transmits the following signals to ECM via CAN communication. Drive mode select signal 	F
A/C auto amp.	 Transmits the A/C display signal to the multi display unit via CAN communication. Receives the following signals from the multi display unit via CAN communication. ECO mode signal A/C ECO setting signal A/C switch operation signal 	H
EPS control unit	 Receives the following signals from the multi display unit via CAN communication. ECO mode signal NORMAL mode signal SPORT mode signal 	J
ABS actuator and electric unit (control unit)	Transmits the following signals to the multi display unit via CAN communication.Side G sensor signalDecel G sensor signal	K

Multi Display Unit

- A multi display unit integrating a color display and an operation panel is adopted.
- · It is connected to other units via CAN communication and performs the drive mode control, air conditioner control, display of various information, and various settings.
- The display can show the drive mode (NORMAL, SPORT, ECO), drive information (travel time, mileage, average vehicle speed), ECO information (fuel consumption history), setting screen as well as engine power, providing information on the vehicle status according to the driver's operation.
- For the operation switch section, newly developed unique switches are adopted, which respectively have 2 types of symbols and functions.



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UNIQUE SWITCH

The switch integrates 2 types of LEDs^{*}, filters that pass or absorb specified wavelengths (filter 1, filter 2), and filters adapted to both display colors (filter 3), enabling 2 different symbols to be displayed at a same position by LED changeover.

*: Abbreviation of light emitting diode. It is a semiconductor device that lights up when electric current is applied.

Operation description of unique switch

Revision: November 2015

INFOID:000000012202614

COMPONENT PARTS

< SYSTEM DESCRIPTION >

In drive mode

• LED1 lights up, the light from LED1 passes filter 1 and filter 3, and "ECO INFO" is displayed.

In air conditioner mode

• LED2 lights up, the light from LED2 passes filter 2 and filter 3, and " J" is displayed.



[INTEGRATED CONTROL SYSTEM]

<u>SYSTEM DESCRIPTION > [INT</u> SYSTEM INTEGRATED CONTROL SYSTEM INTEGRATED CONTROL SYSTEM : System Description

SYSTEM DIAGRAM



• *1: M/T models

*2: CVT models

MULTI DISPLAY UNIT INPUT/OUTPUT SINGNAL

Output signal

Reception unit	Signal name	Description	R./
	A/C operation signal	Transmits the air conditioner operation status to the A/C auto amp.	IV
A/C auto amp	ECO mode signal	Transmits the "D-MODE" ECO switch status of the multi display unit.	
vo auto amp.	A/C ECO setting signal	Transmits the "CLIMATE ECO" ON/OFF status on the SET UP screen of the multi display unit.	AV
ECM (M/T models)	ECO mode signal	Transmits the "D-MODE" ECO switch status of the multi display unit.	
	NORMAL mode signal	Transmits the "D-MODE" NORMAL switch status of the multi display unit.	0
	SPORT mode signal	Transmits the "D-MODE" SPORT switch status of the multi display unit.	
	ECO mode signal	Transmits the "D-MODE" ECO switch status of the multi display unit.	Ρ
(CVT models)	NORMAL mode signal	Transmits the "D-MODE" NORMAL switch status of the multi display unit.	
	SPORT mode signal	Transmits the "D-MODE" SPORT switch status of the multi display unit.	

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INFOID:000000012202615

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

Reception unit	Signal name	Description
EPS control unit	ECO mode signal	Transmits the "D-MODE" ECO switch status of the multi display unit.
	NORMAL mode signal	Transmits the "D-MODE" NORMAL switch status of the multi display unit.
	SPORT mode signal	Transmits the "D-MODE" SPORT switch status of the multi display unit.

Input signal

input signal			
Transmit unit	Signal name	Description	
A/C auto amp.	A/C display signal	Receives a display signal according to the air conditioner status from the A/C auto amp.	
	Engine speed signal	Receives the engine speed signal.	
	Engine torque signal	Receives the engine torque signal calculated by ECM.	
ECM	Fuel consumption monitor signal	Receives the consumption monitor signal calculated by ECM.	
	Boost pressure signal	Receives the boost pressure signal calculated by ECM.	
	Engine status signal	Receives the engine status signal.	
BCM	Position light request signal	Receives a position light request signal according to the light switch status.	
ABS actuator and electric unit (control unit)	Decel G sensor signal	Receives the decel. G sensor signal calculated by the ABS actuator and electric unit (control unit).	
	Side G sensor signal	Receives the side G sensor signal calculated by the ABS actuator and electric unit (control unit).	
Combination meter	Vehicle speed signal	Receives the vehicle speed signal.	
	Odometer signal	Receives the odometer signal.	

SYSTEM DESCRIPTION

- The multi display unit receives necessary information for controlling the following functions from the respective units via CAN communication.
- D-MODE function
- Information display/setting
- Air conditioner adjustment function. Refer to HAC-12, "System Description".
- The multi display unit transmits the status of user-selected D-MODE (NORMAL, SPORT, or ECO) to the TCM (CVT models), ECM (M/T models), EPS control unit and A/C auto amp. For the D-MODE functions, refer to <u>DMS-7, "System Description"</u>.
- TCM transmits to ECM the D-MODE status (NORMAL, SPORT, or ECO) received from the multi display unit (CVT models).
- ECM (M/T models) and EPS control unit receives the D-MODE status (NORMAL, SPORT, or ECO) from the multi display unit.
- The A/C auto amp. receives the air conditioner switch operation signal, ECO mode signal, and ECO mode switch signal from the multi display unit.
- The multi display unit integrates a diagnosis function that allows a diagnosis by CONSULT.

Nissan Dynamic Control System Display/Setting Functions

Catego	ory	Display function	Display content
CLIMATE		CLIMATE CONTROL	HAC-12, "System Description"
DRIVE MODE	NORMAL	ENGINE TORQUE GAUGE	Displays the engine torque in 5 grades when NORMAL is selected with the D-MODE switch.
		VOLTMETER	Displays the voltage input to the multi display unit in 5 grades along with engine torque gauge when NORMAL is selected with the D-MODE switch.
	SPORT	BOOST GAUGE	Displays the boost gauge reading in 5 grades when SPORT is selected with the D-MODE switch.
	ECO	INSTANTANEOUS FUEL CONSUMPTION GAUGE	Displays the instantaneous fuel consumption in 5 grades when ECO is selected with the D-MODE switch.

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

Category		Display function Display content		^
	G-FORCE		Displays the status of side G and decel. G.	А
Drive Information	Drive Infor-	Travel time	 Displays the total time of key switch ON from a reset to a next reset. If the total time exceeds 100 hours, the display is reset to "00:00:00" and the time calculation restarts. 	В
	mation	Average speed	Displays the average speed during key switch ON from a reset to a next reset.	С
		Travel distance	Displays the mileage during key switch ON from a reset to a next re- set.	
ECO Information		Fuel consumption history	Displays the fuel consumption history data on the basis of daily, weekly, drive interval and reset interval.	D

Engine Torque Gauge

The engine torque gauge displays the engine torque level in 5 grades based on the engine torque signal received from ECM via CAN communication.



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Voltmeter

The voltmeter reads the input voltage of the multi display unit and displays the voltage level in 5 grades according to the reading.



< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]





The boost gauge displays the boost level in 5 grades based on the boost pressure signal received from ECM via CAN communication.





Boost gauge display characteristic

Instantaneous Fuel Consumption

The instantaneous fuel consumption gauge displays the instantaneous fuel consumption in 5 grades, which is calculated from the fuel consumption monitor signal received from ECM via CAN communication and the vehicle speed signal received from the combination meter via CAN communication.



< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]



G-Force

The G-FORCE gauge displays the decel G level and side G level in 3 grades respectively, which are calculated based on the decel G sensor signal and side G sensor signal received from the ABS actuator and electric unit (control unit) via CAN communication.



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Drive Information

The travel time, average speed, and mileage are displayed as follows.

- Travel time: Displays the time calculated by the multi display unit.
- Average speed: Calculated from the odometer signal and vehicle speed signal received from the combination meter via CAN communication.
- Mileage: Calculated from the odometer signal and vehicle speed signal received from the combination meter via CAN communication.





The fuel economy record is calculated from the fuel consumption monitor signal received from ECM via CAN communication and the vehicle speed signal received from the combination meter via CAN communication.



Set Up

< SYSTEM DESCRIPTION >

The following items can be set.

- Display Brightness
- Button Brightness
- Select Language
- Select Units
- Clock Time Setting
- CLIMATE ECO
- Auto Interior Illumination
- Selective Door Unlock
- Auto Headlight Sensitivity



Display/operation restrictions

- To secure safety, some functions are not allowed for user operation during driving.
- The functions subject to the display/operation restriction are as follows.

Fur	nction	Condition	Control content
ECO information	Daily Reset, Weekly Reset, Reset at Start, and Manual Reset	Driving	Cannot be operated (Reset, page scroll)
(Fuel Economy Record)	Daily Reset, and Weekly Reset	When no time is set	Fuel consumption history is not displayed (Warning message appears)
SET UP		Driving	 Item selection and setting are not available No display

Driving status judgment criterion

 The driving status is judged from the vehicle speed signal received from the combination meter via CAN communication. The driving status is displayed on the multi display unit and operation restrictions are applied as necessary.



[INTEGRATED CONTROL SYSTEM]

HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

HANDLING PRECAUTION

Integrated Control System

- The engine torque, engine power, boost, and instantaneous fuel consumption are provided for information purposes only. They are not intended to prompt the driver to adjust driving style. The readings may be slightly delayed relative to the actual vehicle behaviors. This is not a malfunction.
- The voltmeter reading cannot be used as an indicator for battery replacement because it indicates the input voltage to the multi display unit, not the battery voltage.
- The SET UP screen are viewable and operable only while the vehicle is stopped.
- The ECO information screen is operable only while the vehicle is stopped.
- If no time setting is performed, the daily and weekly fuel consumption history data are not displayed.
- The readings may differ from the actual values depending on driving conditions.

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DIAGNOSIS SYSTEM (MULTI DISPLAY UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (MULTI DISPLAY UNIT)

CONSULT Function

INFOID:000000012202617

[INTEGRATED CONTROL SYSTEM]

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with multi display unit.

Diagnosis mode	Description
Self Diagnostic Results	Displays malfunctioning systems stored in the multi display unit.
Data Monitor	Displays the multi display unit input/output data in real time.
Active Test	The multi display unit sends a drive signal to electronic components to check their operation.
CAN Diag Support Monitor	Displays CAN communication status.

SELF DIAGNOSTIC RESULT Refer to <u>AV-215, "DTC Index"</u>.

DATA MONITOR

NOTE:

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

Monitor item	Unit	Description
ECO SW	On / Off	Displays the ECO switch signal status sent via CAN communication.
NORMAL SW	On / Off	Displays the NORMAL switch signal status sent via CAN communication.
SPORTS SW	On / Off	Displays the SPORTS switch signal status sent via CAN communication.
BOOST PRESSURE	kPa	Displays the boost pressure signal value received from ECM via CAN com- munication.
ENGINE SPEED	Tr/min	Displays the engine speed signal value received from ECM via CAN com- munication.
ENGINE TORQUE	Nm	Displays the engine torque signal value received from ECM via CAN com- munication.
BATTERY VOLTAGE	V	Displays the input voltage value.
FUEL CONSUMPTION	mm ³	Displays the fuel consumption signal value received from ECM via CAN communication.
VEHICLE SPEED	km/h	Displays the vehicle speed signal value received from the combination meter via CAN communication.
LONG ACC	G	Displays the decel G signal received from ABS actuator and electric unit (control unit) via CAN communication.
TRANCE ACC	G	Displays the side G signal received from ABS actuator and electric unit (control unit) via CAN communication.
DIST TOTAL	km	Displays the mileage signal value received from the combination meter via CAN communication.
POSI LIGHT REQ	On / Off	Displays the parking lamp signal value received from BCM via CAN com- munication.
CLUSTER ILL REQ	On / Off	Displays the dimming signal value received from BCM via CAN communication.
ENGINE STATUS	STOP / STALL / RUN / CRA	Displays the engine status signal value received from ECM via CAN com- munication.
A/C SW [*]	On / Off	Displays the A/C switch signal status sent via CAN communication.
AUTO SW [*]	On / Off	Displays the AUTO switch signal status sent via CAN communication.
RR DEF SW [*]	On / Off	Displays the RR DEF switch signal status sent via CAN communication.
FR DEF SW [*]	On / Off	Displays the FR DEF switch signal status sent via CAN communication.

Revision: November 2015

DIAGNOSIS SYSTEM (MULTI DISPLAY UNIT)

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

Monitor item	Unit	Description
VENT SW1 [*]	On / Off	Displays the air outlet switch signal status sent via CAN communication.
VENT SW2*	VENT / B/L / FOOT / D/F	Displays the air outlet switch signal status sent via CAN communication.
INTAKE SW [*]	On / Off	Displays the air intake switch signal status sent via CAN communication.
INTAKE SW LONG PUSH [*]	On / Off	Displays the air intake switch hold signal status sent via CAN communica- tion.
OFF SW [*]	On / Off	Displays the OFF switch signal status sent via CAN communication.
TEMP SW1 [*]	On / Off	Displays the temperature control dial signal status sent via CAN communi- cation.
FAN SW1 [*]	On / Off	Displays the fan control dial signal status sent via CAN communication.
A/C SW IND	On / Off	Displays the A/C switch indicator signal value received from the A/C auto amp. via CAN communication.
A/C INDICATOR	On / Off	Displays the A/C display signal value received from the A/C auto amp. via CAN communication.
OFF INDICATOR	On / Off	Displays the OFF display signal value received from the A/C auto amp. via CAN communication.
AIR VENT IND	Non-display/VENT / B/L / FOOT / D/F / DEF	Displays the air outlet indicator signal value received from the A/C auto amp. via CAN communication.
FR DEF SW IND	On / Off	Displays the RF DEF indicator signal value received from the A/C auto amp. via CAN communication.
FRE SW IND	On / Off	Displays the FRE indicator signal value received from the A/C auto amp. via CAN communication.
REC SW IND	On / Off	Displays the REC indicator signal value received from the A/C auto amp. via CAN communication.
RR DEF SW IND	On / Off	Displays the RR DEF indicator signal value received from the IPDM E/R via CAN communication.
AUTO IND	Off / Auto	Displays the AUTO indicator signal value received from the A/C auto amp. via CAN communication.
TEMP IND	°C	Displays the temperature setting unit signal value received from the A/C auto amp. via CAN communication.
FAN IND	Off / speed	Displays the fan setting signal value received from the A/C auto amp. via CAN communication.

*: This is not used to determine ON/OFF of the indicator lamp.

ACTIVE TEST

Test Item	Description	
INDICATOR	The test activates the switch illuminations, display illuminations, and switch LEDs in the AIR CON mode and D-MODES to see if they are functioning normally.	A

Indicator

Test Item	Function	
INDICATOR	 The sequence below is repeated. All indicators remain ON for 5 seconds in AIR CON mode All indicators remain ON for 5 seconds in D-MODE. 	Ρ

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[INTEGRATED CONTROL SYSTEM]

ECU DIAGNOSIS INFORMATION MULTI DISPLAY UNIT

Reference Value

INFOID:000000012202618

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor item		Test condition	Reference value/Status
	Ignition switch ON	ECO mode	On
ECO SW	Ignition switch ON	Other than the above	Off
	Ignitian quitab ON	NORMAL mode	On
NORMAL SW	Ignition switch ON	Other than the above	Off
	Ignition quitab ON	SPORT mode	On
SPORTS SW	Ignition switch ON	Other than the above	Off
BOOST PRESSURE	Ignition switch ON	Engine running	Values according to boost pressure
ENGINE SPEED [Tr/min]	Ignition switch ON	Engine running	Values according to en- gine speed
ENGINE TORQUE [Nm]	Ignition switch ON	Engine running	Values according to en- gine torque
BATTERY VOLTAGE [V]	Ignition switch ON	_	Values according to input voltage
FUEL CONSUMPTION [mm ³]	Ignition switch ON	Engine running	Values according to in- stantaneous fuel con- sumption
VEHICLE SPEED [km/h]	Ignition switch ON	Driving	Values according to vehi- cle speed
LONG ACC [G]	Ignition switch ON	Driving	Values according to decel. G
TRANCE ACC [G]	Ignition switch ON	Driving	Values according to side G
DIST TOTAL [km/h]	Ignition switch ON	_	Values according to mile- age
POSU IGHT REO	Ignition switch ON	Light SW at 1st or 2nd position	On
	Ignition ownon on	Light switch OFF	Off
	lanition switch ON	Block the light beam from the auto light sensor when the light switch is in the 1st position, 2nd position or AUTO position.	On
		Expose the auto light sensor to light when the light switch is OFF or in the 1st position, 2nd position or AUTO position.	Off
		Engine stop	STOP
ENGINE STATUS	Ignition switch ON	Engine stall	STALL
	ignition switch or	Engine running	RUN
		Engine cranking	CRA
A/C SW [*]	Ignition switch ON	Cycles On/Off whenever the A/C switch is pressed.	On→Off→On
AUTO SW [*]	Ignition switch ON	Cycles On/Off whenever the AUTO switch is pressed.	On→Off→On

Revision: November 2015

MULTI DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[INTEGRATED CONTROL SYSTEM]

Monitor item		Test condition	Reference value/Status	
	Ignition switch ON	While the rear DEF switch is held down	On	- A
KK DEF SW	Ignition switch ON	Other than the above	Off	-
FR DEF SW [*]	Ignition switch ON	Cycles On/Off whenever the front DEF switch is pressed.	On→Off→On	B
VENT SW1 [*]	Ignition switch ON	Cycles On/Off whenever the VENT, B/L, FOOT, or D/F switch is pressed.	On→Off→On	0
		Press the VENT switch.	VENT	
	Ignition switch ON	Press the B/L switch.	B/L	-
VENT SVV2	Ignition switch ON	Press the FOOT switch.	FOOT	D
		Press the D/F switch.	D/F	-
INTAKE SW [*]	Ignition switch ON	Cycles On/Off whenever the intake switch is pressed.	On→Off→On	E
INT SW LONG PUSH [*]	Ignition switch ON	Cycles On/Off whenever the intake switch is held down.	On→Off→On	_
Off SW [*]	Ignition switch ON	Cycles On/Off whenever the OFF switch is held down.	On→Off→On	F
TEMP SW1 [*]	Ignition switch ON	Cycles On/Off whenever the temperature con- trol dial is turned clockwise or counterclock- wise.	On→Off→On	G
FAN SW1 [*]	Ignition switch ON	Cycles On/Off whenever the fan control dial is turned clockwise or counterclockwise.	On→Off→On	F
	Ignition switch ON	A/C switch indicator ON	On	-
AC SWIND	Ignition switch ON	Cycles On/Off whenever the VENT, B/L, FOOT, or D/F switch is pressed. Press the VENT switch. Press the B/L switch. Press the D/F switch. Cycles On/Off whenever the intake switch is pressed. Cycles On/Off whenever the intake switch is held down. Cycles On/Off whenever the OFF switch is held down. Cycles On/Off whenever the temperature con- trol dial is turned clockwise or counterclock- wise. Cycles On/Off whenever the fan control dial is turned clockwise or counterclockwise. A/C switch indicator ON A/C switch indicator OFF A/C indicator OFF A/C indicator OFF A/C indicator OFF Air conditioner OFF Other than the above Air conditioner OFF VENT mode B/L mode FOOT mode D/F mode DEF mode Front DEF switch indicator ON Other than the above FRE switch indicator ON Other than the above REC switch indicator ON Other than the above Rear DEF switch indicator ON Other than the above Rear DEF switch indicator ON	Off	_
	Ignition switch ON	A/C indicator ON	On	
	Ignition Switch Oly	A/C indicator OFF	Off	_
	Ignition switch ON	Air conditioner OFF	On	J
	ignation of the	Other than the above	Off	_
		Air conditioner OFF	Nothing displayed.	-
		VENT mode	VENT	_ K
AIR VENT IND	Ignition switch ON	B/L mode	B/L	_
	5	FOOT mode	FOOT	
		D/F mode	D/F	_
		DEF mode	DEF	-
FR DEF SW IND	Ignition switch ON	Front DEF switch indicator ON	On	N
		Other than the above	Off	-
FRE SW IND	Ignition switch ON	FRE switch indicator ON	On	A١
	-	Other than the above	Off	
REC SW IND	Ignition switch ON	REC switch indicator ON	On	-
	-	Other than the above	Off	C
RR DEF SW IND	Ignition switch ON	Rear DEF switch indicator ON	On	-
		Other than the above	Off	- □
AUTO IND	Ignition switch ON	MANUAL mode	Off	-
	-	AUTO mode	Auto	-
TEMP IND [°C]	Ignition switch ON		Displays the temperature set by the user.	_
FAN IND	Ignition switch ON	Air conditioner OFF	Off	_
		Displays a value according to the fan speed.	1 to 7 speed	

Revision: November 2015

MULTI DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

*: This is not used to determine ON/OFF of the indicator lamp.

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Standard	Reference	
+	_	Signal name	Input/ Output			Standard	(Approx.)	
1 (Y)	10 (B) 11 (B)	Battery power sup- ply	Input	Ignition s	witch OFF	9 V – 16 V	Battery power supply	
2	10 (B)	Illumination signal	Input	Ignition	Lighting switch 1ST position.	9 V – 16 V	12 V	
(V)	11 (B)	indimination signal	input	OFF	Lighting switch OFF position.	0 V	0 V	
5	10 (B)	Illumination control	Input	Ignition switch	 Lighting switch 1ST position. When illumina- tion control level is maximum. Lighting switch 	0 V – 16 V	(V) 15 10 5 0 2.5 ms JPNIA1687GB (V) 15 (V) 15 (V) 15 (V) 15 (V) 15 (V) 15 (V) (V) 15 (V) (V) (V) (V) (V) (V) (V) (V)	
(GR)	11 (B)	signal			ON	 1ST position. When illumina- tion control level is midway. 		10 50 2.5 ms JPNIA1686GB
					 Lighting switch 1ST position. When meter illu- mination is mini- mum. 		12 V	
6 (L)	_	CAN -H			_	_	_	
7 (LG)	10 (B) 11 (B)	Ignition power sup- ply	Input	Ignition switch ON		9 V – 16 V	Battery power supply	
12 (P)		CAN -L				_	_	

DTC Inspection Priority Chart

INFOID:000000012202619

When multiple DTCs are displayed simultaneously, check one by one according to the following priority list.

MULTI DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[INTEGRATED CONTROL SYSTEM]

Priority	DTC inspection priority order item	A
1	U1000 : CAN COMM CIRCUIT U1010 : CONTROL UNIT (CAN)	
2	U1402 : ENGINE SPEED SIGNAL U1405 : ENGINE TORQUE SIGNAL U1406 : BOOST PRESSURE INPUT U1412 : LONG ACC INPUT	E
	U1413 : TRANS ACC INPUT	C

DTC Index

INFOID:000000012202620

D

DTC	CONSULT display	Refer to
U1000	CAN COMM CIRCUIT	AV-222, "Diagno- sis Procedure"
U1010	CONTROL UNIT (CAN)	AV-223, "Diagno- sis Procedure"
U1402	ENGINE SPEED SIGNAL	AV-224, "Diagno- sis Procedure"
U1405	ENGINE TORQUE SIGNAL	AV-225, "Diagno- sis Procedure"
U1406	BOOST PRESSURE INPUT	AV-226, "Diagno- sis Procedure"
U1412	LONG ACC INPUT	AV-227, "Diagno- sis Procedure"
U1413	TRANS ACC INPUT	AV-228, "Diagno- sis Procedure"

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WIRING DIAGRAM

INTEGRATED CONTROL SYSTEM

Wiring Diagram

INFOID:000000012202621


INTEGRATED CONTROL SYSTEM [INTEGRATED CONTROL SYSTEM]

Connector No. E84 Connector Name IOINT CONNET OR-E02 Max Mic No. Vire 3 L 1 - 2 L	7 7 1 8 P - - 10 P - - 11 P - - 12 P - - 11 P - - 12 All All PLATE-LHH - - Connector Yam TrM - - TrM - - - Connector Yam TrM - - TrM - - - TrM - - - TrM - - -	
146 v SPNSOR POWER SUPLY 147 cR SCMAGEROUND 148 v SSNSOR GEOUND 149 cR SSNSOR GEOUND 149 cR SSNSOR GEOUND 150 cR SSNSOR GEOUND 151 cR SSNSOR GEOUND 152 cR SSNSOR GEOUND 153 cR SSNSOR GEOUND 154 cR SSNSOR GEOUND 155 cR SSNSOR GEOUND 152 cR SSNSOR GEOUND Connector Name ss crunor and utcr transmont with	Terrnival No. Color Of Wire Signal Name [Specification] No. Wire BAT (INTE) 2 L BAT (INTE) 3 B GANT (SOL) 4 B GANT (SOL) 5 R CANT (SOL) 6 G GANT (SOL) 11 B F GANT (SOL) 12 W CANT (SOL) CANT (SOL) 13 G CANT (SOL) CANT (SOL) 14 R CANT (SOL) CANT (SOL) 15 V CANT (SOL) CANT (SOL) 16 V CANT (SOL) CANT (SOL) 17 W DF R CANT (SOL) 18 CANT (SOL) CANT (SOL) CANT (SOL) 19 V CANT (SOL) CANT (SOL) 21 V CANT (SOL) CANT (SOL) 221 L CANT (SOL) CANT (SOL) 23 L CANT (SOL) CANT (SOL) 23 <td< td=""><td></td></td<>	
109 0 IGMTION SWITCH 111 F ACDSTEENDER SWITCH 111 F ACDSTEENDER SWITCH 112 F STROSE GROUND 112 F STROSE GROUND 113 F FERLAY (SEL APC) 114 F STROSE GROUND 115 F FERLAY (SEL APC) 116 G BAREAY (SEL APC) 117 Y STROSE GROUND 118 O SERGER OLIVENS WITCH 119 V ACLILRANCK FOR APC) MON 119 V SERGER OLIVENS WITCH 119 V ACCLIRANCK FERLAR STROME 111 V ACCLIRANCK FERLAR STROME 112 G FILE LOWER SUPERV 112 G FILE LOWER SUPERV 112 G FILE CONTEGLI ANCK FERAPK 112	0.15 0.15 Connector Name EtA Connector Name EtA Connector Name EtA Finite State Eta State	
INTEGRATED CONTROL SYSTEM Connector No. E13 connector Name Connector Nam Connector Name </td <td>31 1 1 32 1 1 1 33 0 1 1 Connector Name ECM 1 1 No. Sgnal Name (SpaceRing) 1 1 No. Sgnal Name (SpaceRing) 1 1 103 B Ant Nac Connon Nacronon Nacron Nacronon Nacron Nacronon Nacron Nacron Nacronon</td> <td></td>	31 1 1 32 1 1 1 33 0 1 1 Connector Name ECM 1 1 No. Sgnal Name (SpaceRing) 1 1 No. Sgnal Name (SpaceRing) 1 1 103 B Ant Nac Connon Nacronon Nacron Nacronon Nacron Nacronon Nacron Nacron Nacronon	

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			R POWER SUPPLY	RECOGNITION SIGNAL	UND	R SUPPLY	I SUPPLY	DNTROL SIGNAL	I SIGNAL	NAL	GNAL 4	GIVAL 5 GNAL 2	GNAL 1	R SUPPLY	PBR F/B SIGNAL		GNAL	BNAL	GNAL 4	GIVAL 3 GNAL 2	GNAL 1			LE)			F	101 101 101 101	13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	01 00 00 10 00 00 10 10		ification]		PUT 5	PUT 4	PUT 3	PUT 2	PUT 1	CK SW	< SW	SW 1	
	CAN-H	CAN+L	INTAKE DOOR MOTOR PB	A/C AUTO AMP. CONNECTION	SENSOR GRO	IGNITION POWE	BATTERY POWER	POWER TRANSISTOR CC	BLOWER FAN ON	A/C ON SIG	A/MIX DRIVE SI	A/MIX DRIVE SI	A/MIX DRIVE SI	IGNITION POWE	INTAKE DOOR MOTOR I	GROUNE	REC DRIVE SI-	FRE DRIVE SIV	MODE DRIVE SI	MODE DRIVE SI	MODE DRIVE SI		468	ICM (BODY CONTROL MODU	H40FB-NH				2 3 4 5 5 7 8 3 10 12 7 23 24 55 26 27 28 29 39 31 31 32			Signal Name (Sner	0	COMBI SW IN	COMBI SW IN	COMBI SW IN	COMBI SW IN	COMBI SW IN	KEY CYL UNLO	KEY CYL LOCI	STOP LAMP :	
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	GROUND	FUEL LEVEL SENSOR GROUND	VDC GROUND	PADDLE SHIFTER DOWN SWITCH SIGNAL	BATTERY POWER SUPPLY	IGNITION SIGNAL	PASSENGER SEAT BELT WARNING SIGNAL	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL	MANUAL MODE SIGNAL	NON-MANUAL MODE SIGNAL	ALTERNATOR SIGNAL		M37	EPS CONTROL LINIT		TH08FW-NH		K	ſ	4 2 1			Cinned Name (Canadification)		CAN-H CAN-H	IGN		M50	A /C ALITO ANAD	A/CAULO AMP. Truncew Nu				2 3 4 5 6 7 8 9 10 11 12 13 14 15 17 18 19 20	21 22 30 30 30 30 40				Signal Name [Specification]	function and a supervised by	IN-VEHICLE SENSOR SIGNAL	IN JAKE SENSOR SIGNAL
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	LINE PRESSURE SOLENOID VALVE	CAN-H	OUTPUT SPEED SENSOR	PRI MARY SPEED SENSOR	SELECT SOLENOID VALVE	TORQUE CONVERTER CLUTCH SOLENOID VALVE	SECONDARY PRESSURE SOLENOID VALVE	PRIMARY PRESSURE SOLENOID VALVE	GROUND	GROUND	BATTERY POWER SUPPLY	IGNITION POWER SUPPLY	IGNITION POWER SUPPLY			M34	COMBINATION METER		TH40FW-NH		K	20 19 18 17 16 15 14 13 11 10 9 8 7 6 5 4 2 1	38 37 38 31 33 33 33 33 33 33 33 33 33 33 33 33		f Stens Name (Snerification)		CAN-H	VEHICLE SPEED SIGNAL (8-PULSE)	PADDLE SHIFTER UP SWITCH SIGNAL	FUEL LEVEL SENSOR SIGNAL		SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)	PARKING BRAKE SWITCH SIGNAL	BRAKE FLUID LEVEL SWITCH SIGNAL	ILLUMINATION CONTROL SIGNAL	MANUAL MODE SHIFT UP SIGNAL	ACC POWER SUPPLY	MANUAL MODE SHIFT DOWN SIGNAL	WASHER LEVEL SWITCH SIGNAL	SECURITY SIGNAL	AMBIENT SENSOR SIGNAL	AMBIENT SENSOR GROUND
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D CONTROL SYSTEM	DATE I/O (SEL 3)	P RANGE SW	CVT FLUID TEMPERATURE SENSOR	SECONDARY PRESSURE SENSOR	SENSOR GROUND	SENSOR POWER SUPPLY	STEP MOTOR D	STEP MOTOR C	STEP MOTOR B	STEP MOTOR A	CAN-L	DRIMARY SPEED SENSOR	SECONDARY SPEED SENSOR	LOCK-UP SELECT SOLENOID VALVE	TORQUE CONVERTER CLUTCH SOLENOID VALVE	SECONDARY PRESSURE SOLENOID VALVE	LINE PRESSURE SOLENOID VALVE	GROUND	IGNITION POWER SUPPLY	BALLERY POWERSUPPLY (INEMURY BACK-UP) IGNITION POINER SLIPPLY			T03		KH40FB-K28-L-KH		33 34 35 37 38 39 40 47 48 23 24 26 37 38 39 40 47 48	1112 1617 00 10 10	2 4 5 6 7 41 42		: ; ;	Signal Name [Specification]		D RANGE SW	N RANGE SW	R RANGE SW	P RANGE SW	SENSOR GROUND	CVT FLUID TEMPERATURE SENSOR	SECONDARY PRESSURE SENSOR	PRIMARY PRESSURE SENSOR	CAN-L
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EGRAT	N	-	SB	۵.	7	LG	g	>	BG	~	≏ -	- Ba	3 ~	٦	9	5		-	-	-	-	ta Na	tor No.		adki io		10				al Colo	>	-	>	2	5	2	>	S	۹	-	

JRNWF0755GB

INTEGRATED CONTROL SYSTEM



JRNWF0756GB

BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000012202622

DESCRIPTION OF TROUBLE DIAGNOSIS FLOWCHART



DETAILS OF TROUBLE DIAGNOSIS FLOWCHART

1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain as much information as possible about the conditions and environment under which the malfunction occurs.

>> GO TO 2.

2.CHECK SYMPTOM

• Check the symptom based on the information obtained from the customer.

Check if any other malfunctions are present.

>> GO TO 3.

3.CONSULT SELF-DIAGNOSIS

- 1. Perform "MULTI DISPLAY" "self diagnosis" by connecting CONSULT.
- 2. When DTC is detected, follow the instructions below:
- Record DTC and Freeze Frame Data.

NOTE:

If "CAN COM CIRC [U1000]" is displayed, start the diagnosis from the CAN communication system. Refer to <u>AV-222, "Diagnosis Procedure"</u>.

Is any DTC No. displayed?

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

4.DTC/SYSTEM DIAGNOSIS

DIAGNOSIS AND REPAIR WORK FLOW < BASIC INSPECTION > [INTEGRATED CONTROL SYSTEM] 1. Perform a DTC/system diagnosis and repair or replace any malfunctioning part.

 Perform a DTC/system diagnosis and repair or replace any malfunctioning part. When DTC is detected, follow the instructions below: Becord DTC and Freeze Frame Data 	A
>> GO 10 6.	B
J. PERFORM DIAGNOSIS BY SYMPTOM	
Perform a diagnosis by symptom and repair or replace any malfunctioning part.	С
>> GO 10 6.	_
O.FINAL CHECK	D
Check that the multi display unit functions normally.	
Does it operate normally?	E
YES >> End of trouble diagnosis NO >> GO TO 2	
	_
	F
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DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000012202623

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

Refer to <u>LAN-30</u>, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart" for details of the communication signal.

DTC Logic

INFOID:000000012202624

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Malfunction detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT	Multi display unit cannot transmit and receive any CAN communication signal for 2 seconds or more	CAN communication system

Diagnosis Procedure

INFOID:000000012202625

1.PERFORM SELF-DIAGNOSIS

- 1. Turn the ignition switch ON and hold it for 2 seconds or more.
- 2. Using CONSULT, check the "self diagnosis result" of "MULTI DISPLAY".

Is CAN communication system displayed?

- YES >> Refer to LAN-17, "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-45, "Intermittent Incident"</u>.

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description

Initial diagnosis of multi display unit

DTC Logic

INFOID:000000012202627

INFOID:000000012202626

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DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Malfunction detection condition	Probable malfunction location
U1010	CONTROL UNIT (CAN)	Malfunction is detected during initial diagnosis of multi display unit CAN controller	Multi display unit
Diagno	sis Procedure		INFOID:000000012202628
1 .REPL	ACE THE MULTI DISP	LAY UNIT	
If DTC L	11010 is detected, repla	ce the multi display unit. <u>AV-231, "Remo</u>	oval and Installation".
	>> INSPECTION END		

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U1402 ENGINE SPEED SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

U1402 ENGINE SPEED SIGNAL

DTC Logic

INFOID:000000012202629

[INTEGRATED CONTROL SYSTEM]

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Malfunction detection condition	Probable malfunction location
U1402	ENGINE SPEED SIGNAL	ECM continuously transmits abnormal engine speed signal for 2 seconds or more	ECM

Diagnosis Procedure

INFOID:000000012202630

1.PERFORM ECM SELF DIAGNOSIS

Using CONSULT, check the "self diagnosis result" of "ENGINE" and repair or replace any malfunctioning parts.

>> Refer to <u>EC-115, "DTC Index"</u> (MR FOR NISMO RS MODELS) or <u>EC-706, "DTC Index"</u> (MR EXCEPT FOR NISMO RS MODELS).

U1405 ENGINE TORQUE SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

U1405 ENGINE TORQUE SIGNAL

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Malfunction detection condition	Probable malfunction location
U1405	ENGINE TORQUE SIG- NAL	ECM continuously transmits abnormal engine torque signals for 2 seconds or more	ECM
Diagno	osis Procedure		INFOID:000000012202632
1.PERI	FORM ECM SELF-DIAC	GNOSIS	
Using C	ONSULT, check the "sel	f diagnosis result" of "ENGINE" and repart	air or replace any malfunctioning parts.
	>> Refer to EC-115, "	DTC Index" (MR FOR NISMO RS MC	DELS) or <u>EC-706, "DTC Index"</u> (MR
	LAGEFTT OR NIG	NO KS MODELS).	

[INTEGRATED CONTROL SYSTEM]

INFOID:000000012202631

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U1406 BOOST PRESSURE INPUT

DTC Logic

INFOID:000000012202633

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Malfunction detection condition	Probable malfunction location
U1406	BOOST PRESSURE IN- PUT	ECM continuously transmits abnormal boost pressure signals for 2 seconds or more	ECM

Diagnosis Procedure

INFOID:000000012202634

1.PERFORM ECM SELF-DIAGNOSIS

Using CONSULT, check the "self diagnosis result" of "ENGINE" and repair or replace any malfunctioning parts.

>> Refer to <u>EC-115, "DTC Index"</u> (MR FOR NISMO RS MODELS) or <u>EC-706, "DTC Index"</u> (MR EXCEPT FOR NISMO RS MODELS).

< DTC/CIRCUIT DIAGNOSIS >

U1412 LONG ACC INPUT

DTC Logic

INFOID:000000012202635

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[INTEGRATED CONTROL SYSTEM]

DTC DETECTION LOGIC В Display contents of CON-DTC Malfunction detection condition Probable malfunction location SULT С Abnormal decel G sensor signals are input LONG ACC INPUT U1412 from ABS actuator and electric unit (control ABS actuator and electric unit (control unit) unit) for 2 seconds or more D **Diagnosis** Procedure INEOID:000000012202636 **1.**PERFORM ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS Е Using CONSULT, check the "self diagnosis result" of "ABS" and repair or replace any malfunctioning parts. F >> Refer to BRC-50, "DTC Index". Н Κ L Μ AV

< DTC/CIRCUIT DIAGNOSIS >

U1413 TRANS ACC INPUT

DTC Logic

INFOID:000000012202637

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Malfunction detection condition	Probable malfunction location
U1413	TRANS ACC INPUT	Abnormal side G sensor signals are input from ABS actuator and electric unit (control unit) for 2 seconds or more	ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:000000012202638

1. perform abs actuator and electric unit (control unit) self-diagnosis

Using CONSULT, check the "self diagnosis result" of "ABS" and repair or replace any malfunctioning parts.

>> Refer to <u>BRC-50, "DTC Index"</u>.

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	SUPP		GROL	IND CIRCU	<u>,</u> IIT		
MULTI DI	ISPLAY	UNIT					
MULTI DI	SPLAY	UNIT : D	iagnosis	s Procedure			INFOID:000000012202639
1.CHECK	USES						
Check if any	of the fol	lowing fuse	s are blow	n:			
		Signal name	9			Fuse No.	
	Ва	ttery power su	upply			13	
		Ignition powe	er			3	
Is the check YES >> NO >> 2.CHECK F	<u>result nor</u> GO TO 2. Replace f POWER S	mal? use with a UPPLY CI	new one a RCUIT	fter repairing the	e applicable circu	it.	
					i ana groana.		
(Multi di	splay unit	_)	Signal name	Ignition switch	Standard	Reference value
Connector	Terminal	rminal Connector Terminal		Signarhame	Ignition Switch	Standard	Telefence value
M90	1	M90	10	Battery power supply	OFF	9 V – 16 V	Battery voltage
	7	_	11	Ignition power	ON	9 V – 16 V	Battery voltage
YES >> NO >> 3. CHECK (1. Turn ign 2. Remove 3. Check for	GO TO 3. Repair ha GROUND ition switc e multi disp or continu	rness betw CIRCUIT h OFF. play unit co ity betweer	een fuse a nnector. n multi disp	nd multi display	unit.	ground.	
Connec	ctor	Termin	al		Continuity	/	
		10		Ground	Exists		
M90		11			Exists		
<u>Is the check</u> YES >> NO >>	result nor INSPECT Repair the	<u>mal?</u> ION END e harnesse	s or conne	ctors.			/

SYMPTOM DIAGNOSIS INTEGRATED CONTROL SYSTEM

Symptom Table

INFOID:000000012202640

Symptoms	Check items	Possible malfunction location/Action to take
Switches are inconstative	All switches do not work.	Perform self-diagnosis of CONSULT. Refer to <u>AV-210, "CONSULT Function"</u> .
Switches are inoperative	Only (one) specified switch does not work.	Replace multi display unit. Refer to <u>AV-231, "Removal and Installation"</u> .

< REMOVAL AND INSTALLATION > **REMOVAL AND INSTALLATION**

MULTI DISPLAY UNIT

Exploded View

REMOVAL Refer to IP-12, "Exploded View".

DISASSEMBLY



Removal and Installation

- Refer to IP-12, "Exploded View". **CAUTION:**
- When performing the work, use a shop cloth to protect the parts from damage.
- Always fix the harness clamp in position.

INSTALLATION

1.

4.

REMOVAL

Install in the reverse order of removal.

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