SECTION AV
AUDIO, VISUAL & NAVIGATION SYSTEM

CONTENTS

BASE AUDIO

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009521168

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

Precaution for Work

INFOID:0000000009459904

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:

- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

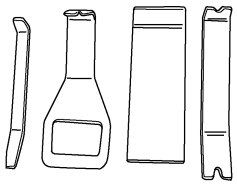
PREPARATION

PREPARATION

Special Service Tools

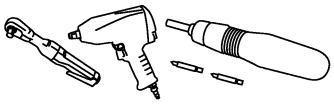
INFOID:0000000009459905

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:0000000009459906

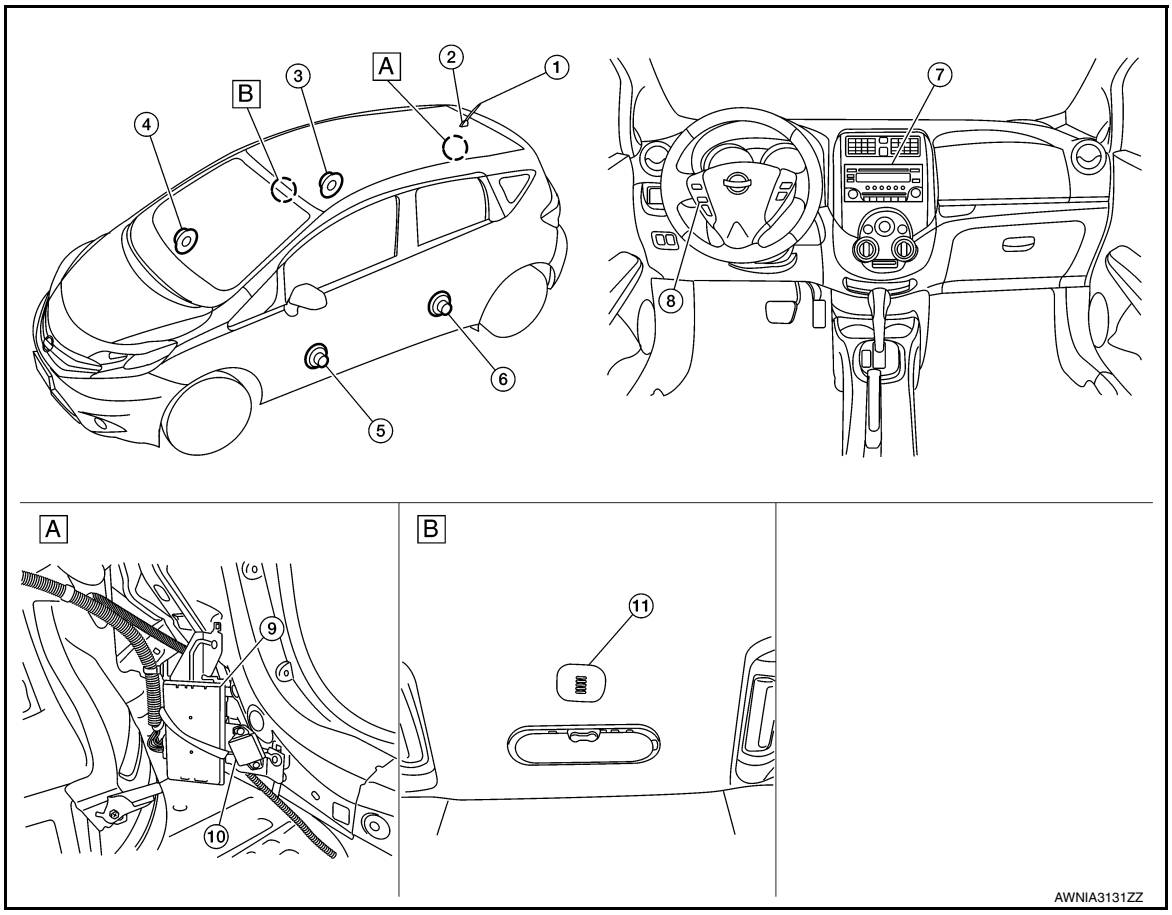
Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000009681838



A. Luggage side lower finisher (RH) removed
B. Front of headliner

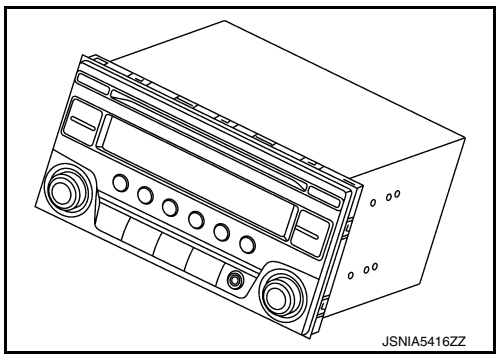
No.	Component	Function
1.	Rod antenna	Refer to AV-10, "Rod Antenna, Antenna Amp. and Antenna Feeder".
2.	Antenna base (antenna amp.)	
3.	Rear door speaker RH	Refer to AV-9, "Speaker".
4.	Front door speaker RH	
5.	Front door speaker LH	
6.	Rear door speaker LH	
7.	Audio unit	Refer to AV-8, "Audio unit".
8.	Steering wheel audio control switches	Refer to AV-10, "Steering Switch".
9.	Bluetooth® control unit	Refer to AV-9, "Bluetooth Control Unit".
10.	Bluetooth® antenna	Refer to AV-10, "Bluetooth Antenna".
11.	Microphone	Refer to AV-10, "Microphone".

Audio unit

INFOID:0000000009681839

DESCRIPTION

- AM/FM electronic tuner radio, CD player, and auxiliary input jack are integrated into the audio unit.
- The audio unit supports CD-R/CD-RW and provides the playback of MP3/WMA music files.

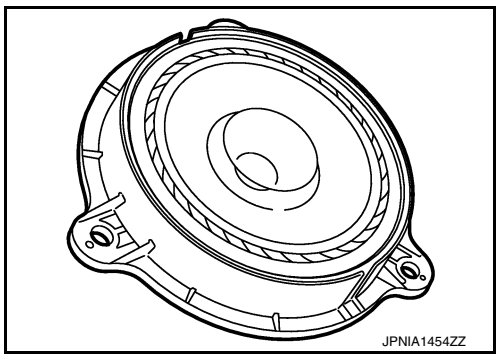

JSNIA5416ZZ

Speaker

INFOID:0000000009681840

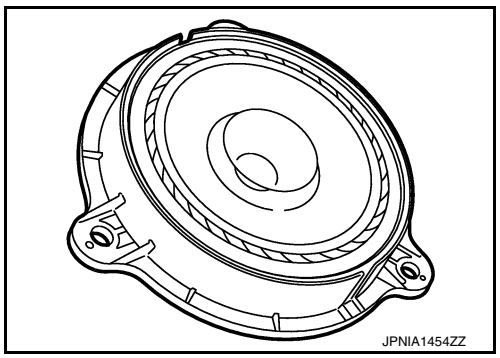
FRONT DOOR SPEAKER

- 16.5 cm (6.5 in) speakers are installed in the bottom of the front doors.
- Sound signals are input from the audio unit to output high, mid and low range sounds.


JPNIA1454ZZ

REAR DOOR SPEAKER

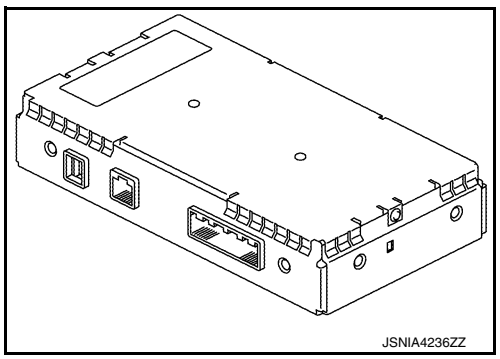
- 16.5 cm (6.5 in) speakers are installed in the bottom of the rear doors.
- Sound signals are input from the audio unit to output high, mid and low range sounds.


JPNIA1454ZZ

Bluetooth Control Unit

INFOID:0000000009681852

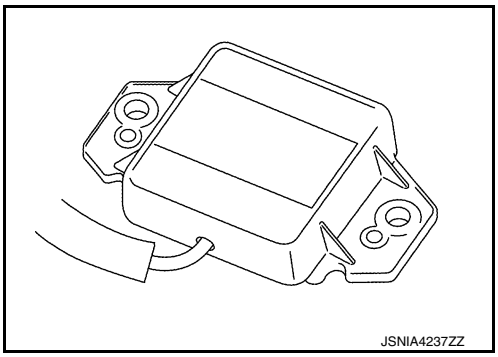
- Inputs the TEL voice signal from Bluetooth® antenna and outputs it to the audio unit
- Connected to the audio unit via AV communication.


JSNIA4236ZZ

Bluetooth Antenna

INFOID:0000000009681853

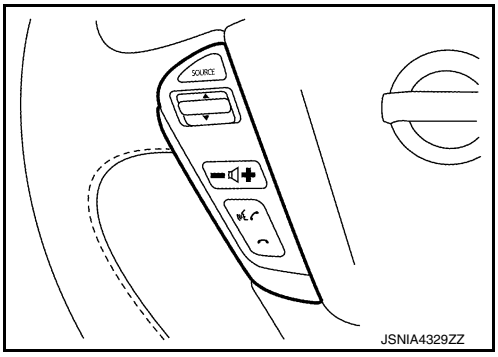
Receives the TEL voice signal from cellular phone and outputs it to the Bluetooth® control unit.



Steering Switch

INFOID:0000000009681854

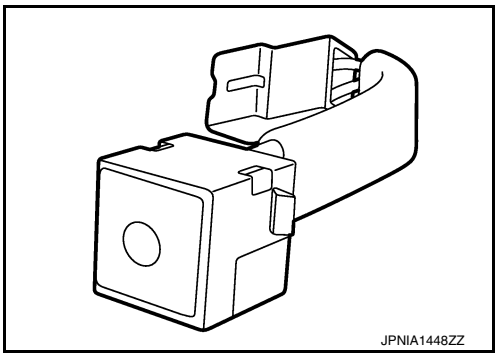
- Operations for audio and hands-free phone are possible.
- Switch is connected to the Bluetooth® control unit.



Microphone

INFOID:0000000009681855

- The microphone is installed in the roof in front of the map lamp assembly.
- Power is supplied from the Bluetooth® control unit.

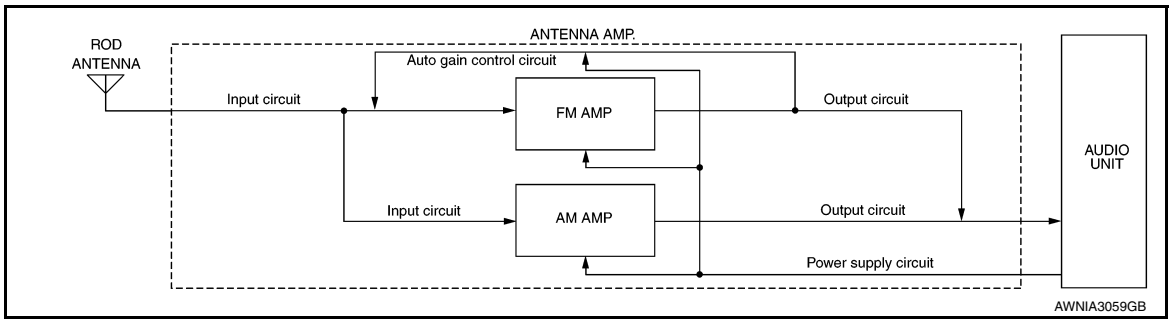


Rod Antenna, Antenna Amp. and Antenna Feeder

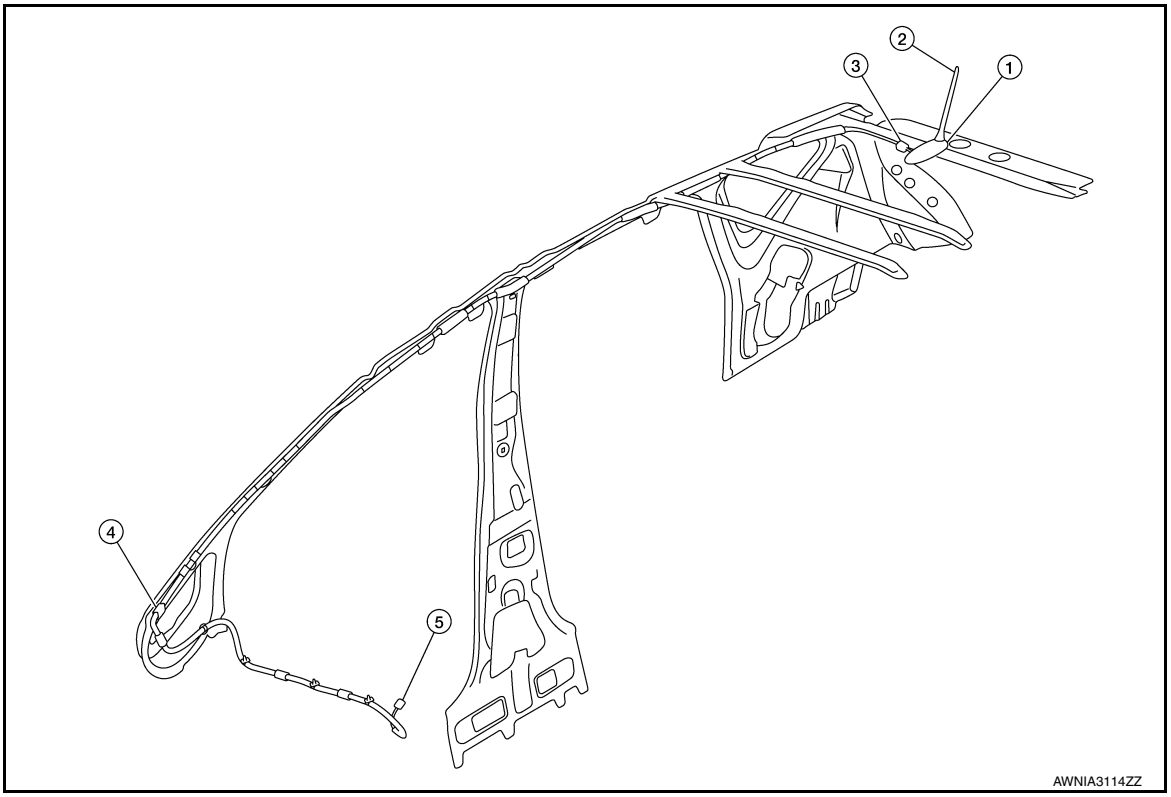
INFOID:0000000009681841

RADIO ANTENNA

AM/FM radio rod antenna and antenna base is located on the rear of the roof. The antenna amp. is built into the antenna base.



ANTENNA FEEDER LAYOUT



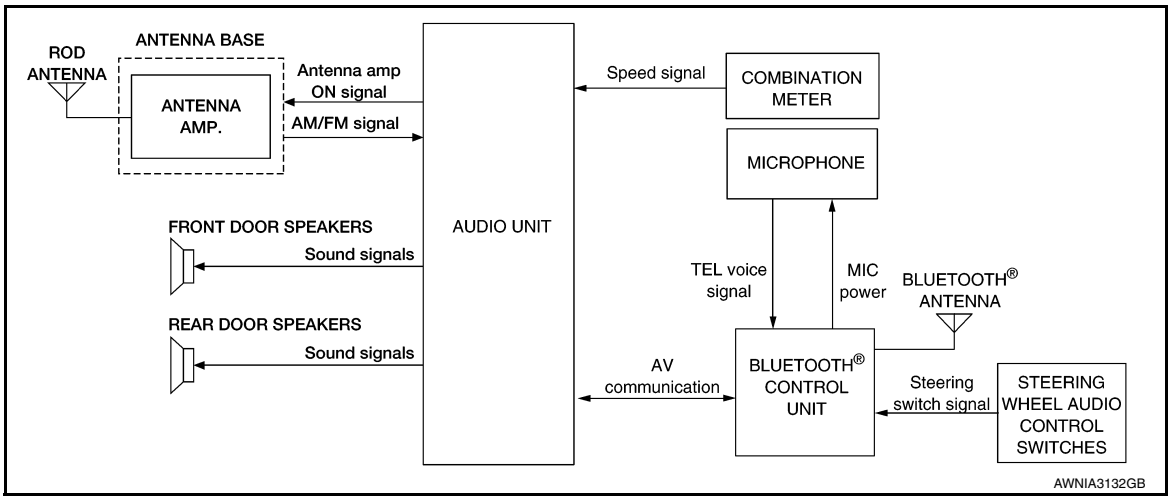
1. Antenna base (antenna amp.)
2. Rod Antenna
3. M351
4. M67, M350
5. M107

SYSTEM

System Description

INFOID:0000000009681842

SYSTEM DIAGRAM



AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Front door speakers
- Rear door speakers
- Steering switches
- Antenna amp.
- Rod antenna

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.

HANDS-FREE PHONE SYSTEM

System Operation

NOTE:

Cellular telephones must have their wireless connection set up (paired) before using the Bluetooth® telephone system.

The Bluetooth® telephone system allows users who have a Bluetooth® cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth® control unit. Hands-free cellular telephone calls can be sent and received. Some Bluetooth® cellular telephones may not be recognized by the Bluetooth® control unit. When a cellular telephone or the Bluetooth® control unit is replaced, the telephone must be paired with the Bluetooth® control unit. Different cellular telephones may have different pairing procedures, refer to the cellular telephone operating manual.

Refer to the Owner's Manual for Bluetooth® telephone system operating instructions.

Bluetooth® Control Unit

When the ignition switch is turned to ACC or ON, the Bluetooth® control unit will power up. During power up, the Bluetooth® control unit is initialized and performs various self-checks. Initialization may take up to 20 seconds. If a phone is present in the vehicle and paired with the Bluetooth® control unit, Nissan Voice Recognition will then become active. Bluetooth® telephone functions can be turned off using the Nissan Voice Recognition system.

Steering Switches

When buttons on the steering switches are pushed, the resistance in steering wheel audio control switch circuit changes, depending on which button is pushed. The Bluetooth® control unit uses this signal to perform various functions while navigating through the voice recognition system.
The following functions can be performed using the steering switches:

- Initiate self-diagnosis of the Bluetooth® telephone system
- Start a voice recognition session
- Answer and end telephone calls
- Adjust the volume of calls

Microphone

The microphone is located in the roof console assembly. The microphone sends a signal to the Bluetooth® control unit. The microphone can be actively tested during self-diagnosis.

Audio Unit

The audio unit receives signals from the Bluetooth® control unit and sends audio signals to the 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.

DIAGNOSIS SYSTEM (AUDIO UNIT)

Diagnosis Description

INFOID:0000000009459911

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

Mode	Description
Hardware/Software Versions	The following information is available for the audio unit: • hardware version. • software version. • EQ pin info.
Speaker Channel Check	The connection of the speakers to the audio unit can be confirmed.
Communication Diagnosis	The AV communication (M-CAN) message history can be monitored.

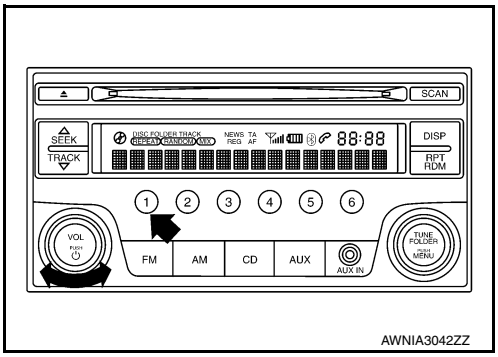
On Board Diagnosis Function

INFOID:0000000009459912

METHOD OF STARTING

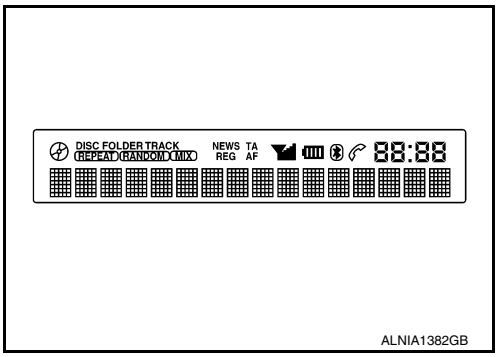
Hardware/Software Versions and Speaker Channel Check

1. Turn the ignition ON.
2. Turn the audio system OFF.
3. While pressing the preset 1 button, turn the volume control dial clockwise or counterclockwise 30 clicks or more.



AWNIA3042ZZ

4. Initially, all display segments will be illuminated.



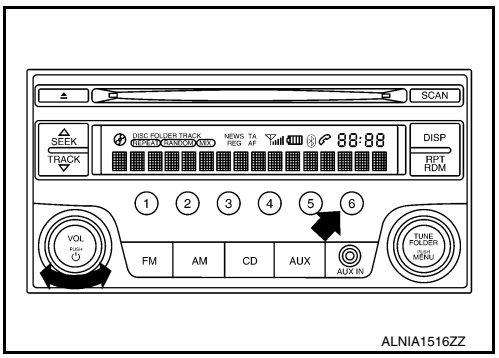
ALNIA1382GB

5. To exit hardware/software versions and speaker channel check, turn the ignition OFF.

Communication Diagnosis

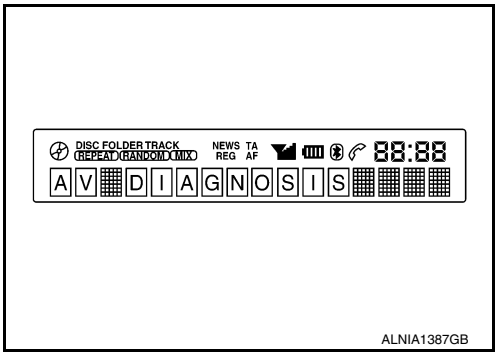
1. Turn the ignition ON.
2. Turn the audio system OFF.

3. While pressing the preset 6 button, turn the volume control dial clockwise or counterclockwise 30 clicks or more.



ALNIA1516ZZ

4. Initially, the communication diagnosis mode is displayed.



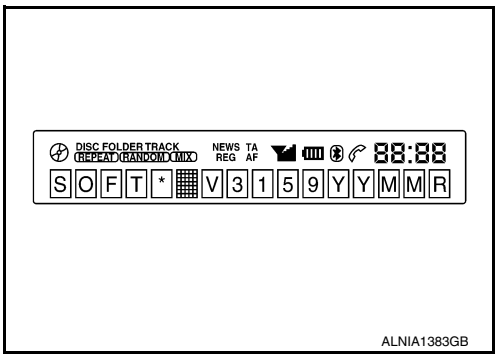
ALNIA1387GB

5. To exit communication diagnosis, turn the ignition OFF.

SELF DIAGNOSIS MODE

Hardware/Software Versions

1. Press the DISP button to enter versions display, and the audio head unit software version is displayed.



ALNIA1383GB

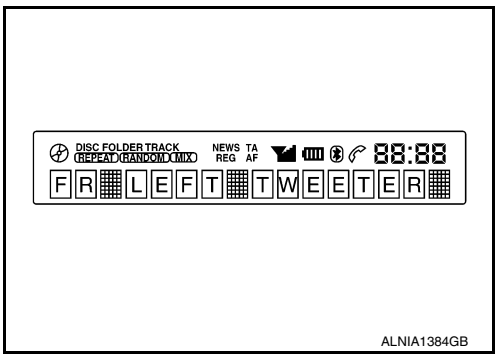
2. With each additional press of the DISP button, the following information is available:
- HARD V###### (hardware version)
- EEP V###### (EEPROM version)
- @@@@ EQ1-4 # (EQ pin info)

If an EQ error is present, INVALID EQ is displayed

3. Hold the DISP button down to return to all display segments screen.

Speaker Channel Check

1. Press the RPT/DRM button to enter speaker channel check, and the front left tweeter (front tweeter LH) is displayed.

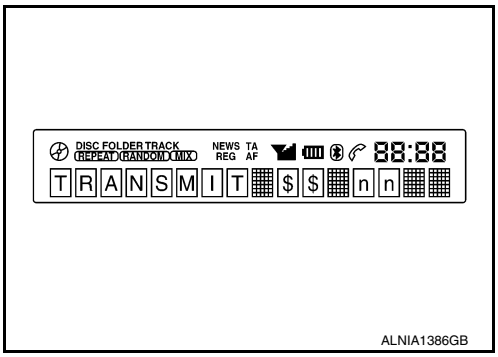


2. With each additional press of the RPT/DRM button, the following information is available:
- FR RIGHT TWEETER (front tweeter RH)
- FR RIGHT (front door speaker RH)
- RR RIGHT (rear speaker RH)
- RR LEFT (rear speaker LH)
- FR LEFT (front door speaker LH)

3. Hold the RPT/DRM button down to return to all display segments screen.

Communication Diagnosis

1. Press the DISP button, and the M-CAN message transmission error history screen is displayed.



2. Press the DISP button again, and the TEL $$ nn (CMF message reception error history from M-CAN TEL) screen is displayed.
3. Press the DISP button again, and the TROUBLE DEL. (deletion of M-CAN message communication history) screen is displayed. To retain the M-CAN message communication history and return to the communication diagnosis mode screen, press the DISP button.
4. To proceed to the M-CAN message communication history deletion screen, press the SEEK/TRACK △ button. The REC DEL-NO? (selection of M-CAN message communication history deletion) screen is displayed. To cancel M-CAN message communication history deletion, wait 6 seconds and you will be returned to the TROUBLE DEL. (deletion of M-CAN message communication history) screen. To proceed with M-CAN message communication history deletion, press the SEEK/TRACK △ button again.
5. The REC DEL-YES?@ (selection of M-CAN message communication history deletion) screen is displayed. To cancel M-CAN message communication history deletion, press the SEEK/TRACK ▽ button and you will be returned to the REC DEL-NO? (selection of M-CAN message communication history deletion) screen. To proceed with M-CAN message communication history deletion, wait 6 seconds and the communication history deletion will be executed. After the communication history deletion has been executed, you will be returned to the TROUBLE DEL. (deletion of M-CAN message communication history) screen. To return to the communication diagnosis mode screen, press the DISP button.

DIAGNOSIS SYSTEM (BLUETOOTH® CONTROL UNIT)

Diagnosis Description

INFOID:0000000009681843

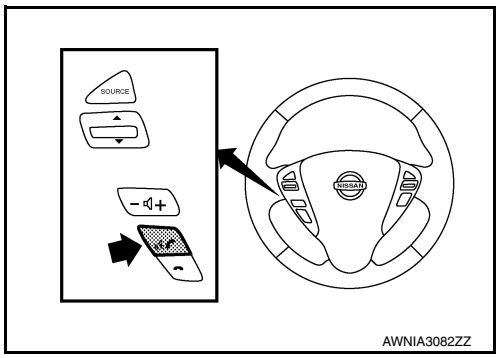
The Bluetooth® control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

Bluetooth® CONTROL UNIT INITIALIZATION CHECKS

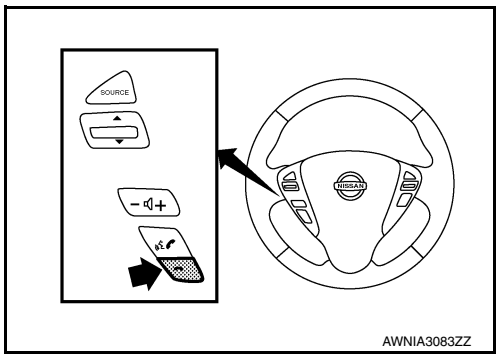
- Internal control unit failure
- Bluetooth® antenna connection open or shorted
- Steering wheel audio control switches [(PHONE/SEND), (PHONE/END)] stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth® inquiry check

OPERATION PROCEDURE

1. Turn ignition switch to ACC or ON.
2. Wait for the Bluetooth® system to complete initialization. This may take up to 20 seconds.
3. Press and hold the steering wheel audio control switch (PHONE/SEND) button for at least 5 seconds. The Bluetooth® system will begin to play a verbal prompt.



4. While the prompt is playing, press and hold the steering wheel audio control switch (PHONE/END) button until you hear the “Diagnostics mode” prompt. The Bluetooth® system will sound a 5-second beep.
5. While the beep is sounding, press and hold the steering wheel audio control switch (PHONE/END) button again until you hear prompts.
6. The Bluetooth® system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician. Refer to AV-17, "Work Flow".
7. After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails, refer to AV-17, "Work Flow".



Work Flow

INFOID:0000000009459914

Failure Message	Action
“Internal failure”	Replace Bluetooth® control unit. Refer to AV-56, "Removal and Installation".
“Bluetooth® antenna open”	1. Inspect harness connection. 2. Replace Bluetooth® antenna. Refer to AV-57, "Removal and Installation".
“Bluetooth® antenna shorted”	
“Phone/Send for Hands Free System is stuck”	Check steering switches. Refer to AV-46, "Diagnosis Procedure".
“Phone/End for the Hands Free System is stuck”	
“Microphone test” (failed interactive test)	1. Inspect harness between Bluetooth® control unit and microphone. 2. Replace microphone. Refer to AV-56, "Removal and Installation" .

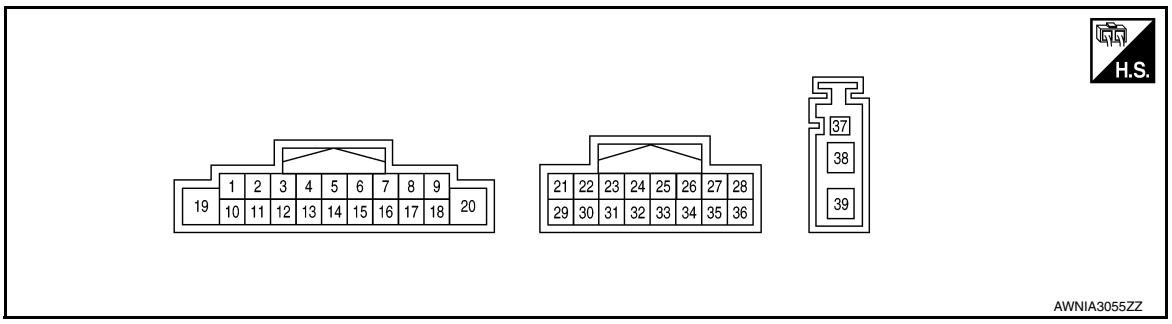
ECU DIAGNOSIS INFORMATION

AUDIO UNIT

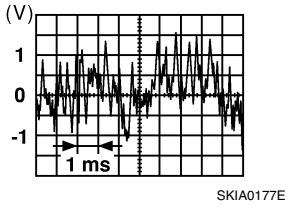
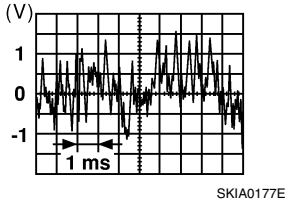
Reference Value

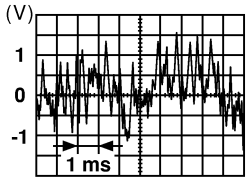
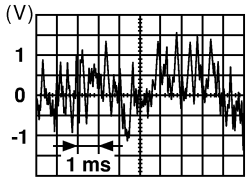
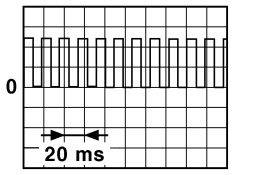
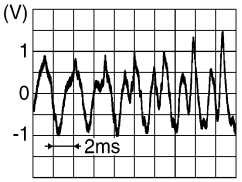
INFOID:0000000009459915

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
2 (GR)	3 (P)	Sound signal front speaker LH	Output	ON	Sound output.	 SKIA0177E
4 (W)	5 (R)	Sound signal rear speaker LH	Output	ON	Sound output.	 SKIA0177E
6 (BR)	15 (GR)	Steering switch signal A	Input	ON	Press SOURCE switch	0V
					Press △ switch	1.0V
					Press ▽ switch	2.0V
					Press switch	3.0V
					Except above	5.0V
7 (W)	Ground	ACC power supply	Input	ACC	—	Battery voltage
9 (LG/R)	8 (B)	Illumination control signal	Input	ON	Headlamps ON.	Battery voltage

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
11 (O)	12 (V)	Sound signal front speaker RH	Output	ON	Sound output.	 SKIA0177E
13 (L)	14 (Y)	Sound signal rear speaker RH	Output	ON	Sound output.	 SKIA0177E
16 (V)	15 (GR)	Steering switch signal B	Input	ON	Press – switch	0V
					Press + switch	1.0V
					Press switch	2.0V
					Except above	5.0V
18 (LG)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH).	 JSNIA0012GB
19 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
22 (B/W)	Ground	EQ2 Ground	—	ON	—	0 V
24 (B)	Ground	EQ4 Ground	—	ON	—	0 V
27 (SB)	—	AV communication (H)	Input/ Output	—	—	—
28 (LG)	—	AV communication (L)	Input/ Output	—	—	—
29 (P)	Ground	TEL ON	Output	ON	—	—
30 (Shield)	—	TEL voice signal shield	—	—	—	—
32 (G)	31 (R)	TEL voice signal	Input	ON	During voice guide output with switch pressed.	 SKIB3609E

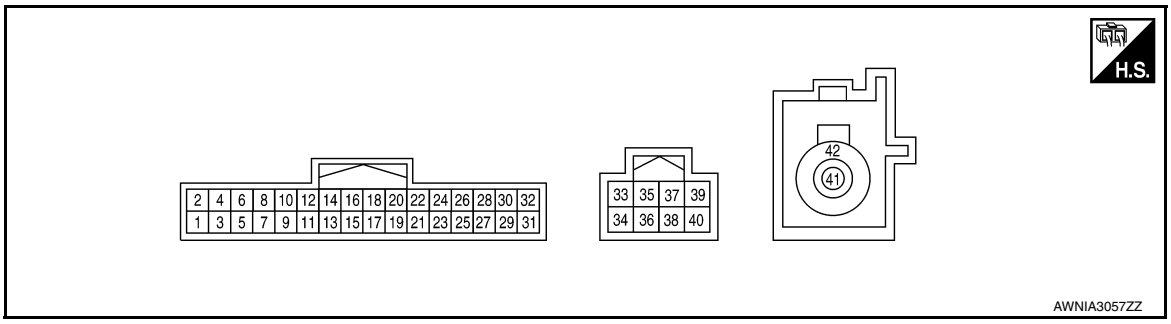
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
37 (B)	Ground	Antenna amp. ON signal	Output	ON	Audio unit ON, AM or FM selected.	Battery voltage
38 (B)	Ground	AM/FM antenna signal	Input	ON	Audio unit ON, AM or FM selected.	5.0 V

BLUETOOTH® CONTROL UNIT

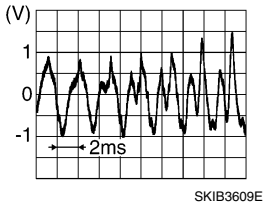
Reference Value

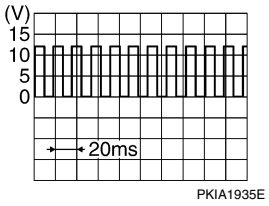
INFOID:0000000009459916

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ output	Ignition switch	Operation	
1 (Y/G)	Ground	Battery power	Input	OFF	–	Battery voltage
2 (L/Y)	Ground	ACC power	Input	ACC	–	Battery voltage
3 (O)	Ground	IGN power	Input	ON	–	Battery voltage
4 (B)	Ground	Ground	–	ON	–	0V
7 (P)	8 (Shield)	MIC in signal	Input	–	–	–
9 (W)	10 (B)	Audio out	Output	ACC or ON	Bluetooth® control unit sends audio signal	 SKIB3609E
11 (SB)	Ground	Tel ON signal	Output	ON	While using hands free phone system	0V
					Except above	5.0V
12 (R)	14 (G)	LAD IN 1	Input	ON	Press SOURCE switch	0V
					Press △ switch	1.0V
					Press ▽ switch	2.0V
					Press switch	3.0V
					Except above	5.0V
13 (P)	14 (G)	LAD IN 2	Input	ON	Press – switch	0V
					Press + switch	1.0V
					Press switch	2.0V
					Except above	5.0V

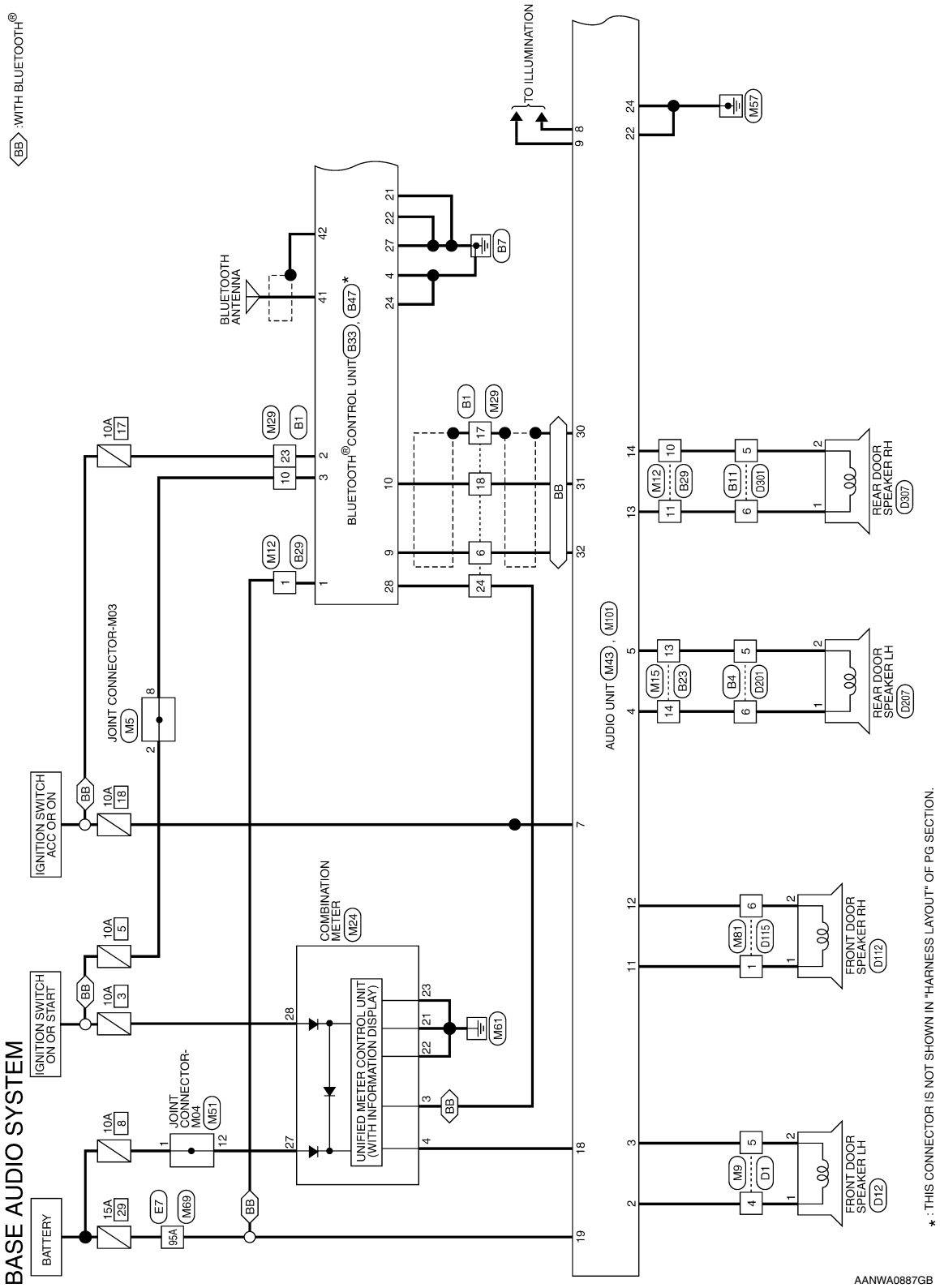
Terminal (wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ output	Ignition switch	Operation	
17 (BR)	19 (GR)	LAD OUT 1	Output	ON	Press SOURCE switch	0V
					Press △ switch	1.0V
					Press ▽ switch	2.0V
					Press switch	3.0V
					Except above	5.0V
18 (V)	19 (GR)	LAD OUT 2	Output	ON	Press switch	0V
					Press switch	1.0V
					Press switch	2.0V
					Except above	5.0V
21 (B)	Ground	CONT2 Ground	–	ON	–	0V
22 (B)	Ground	CONT3 Ground	–	ON	–	0V
24 (B)	Ground	CONT5 Ground	–	ON	–	0V
27 (B)	Ground	CONT6 Ground	–	ON	–	0V
28 (Y)	Ground	Vehicle speed signal (2-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 PKIA1935E
29 (L)	Ground	Microphone power	Output	ON	–	5V
33 (SB)	–	AV communication (H)	–	–	–	—
34 (LG)	–	AV communication (L)	–	–	–	—
37 (LG)	–	AV communication jumper (H)	–	–	–	—
38 (LG)	–	AV communication jumper (H)	–	–	–	—
39 (SB)	–	AV communication jumper (L)	–	–	–	—
40 (SB)	–	AV communication jumper (L)	–	–	–	—
41 (B)	–	Bluetooth® antenna	–	–	–	—
42 (Shield)	–	Bluetooth® antenna shield	–	–	–	—

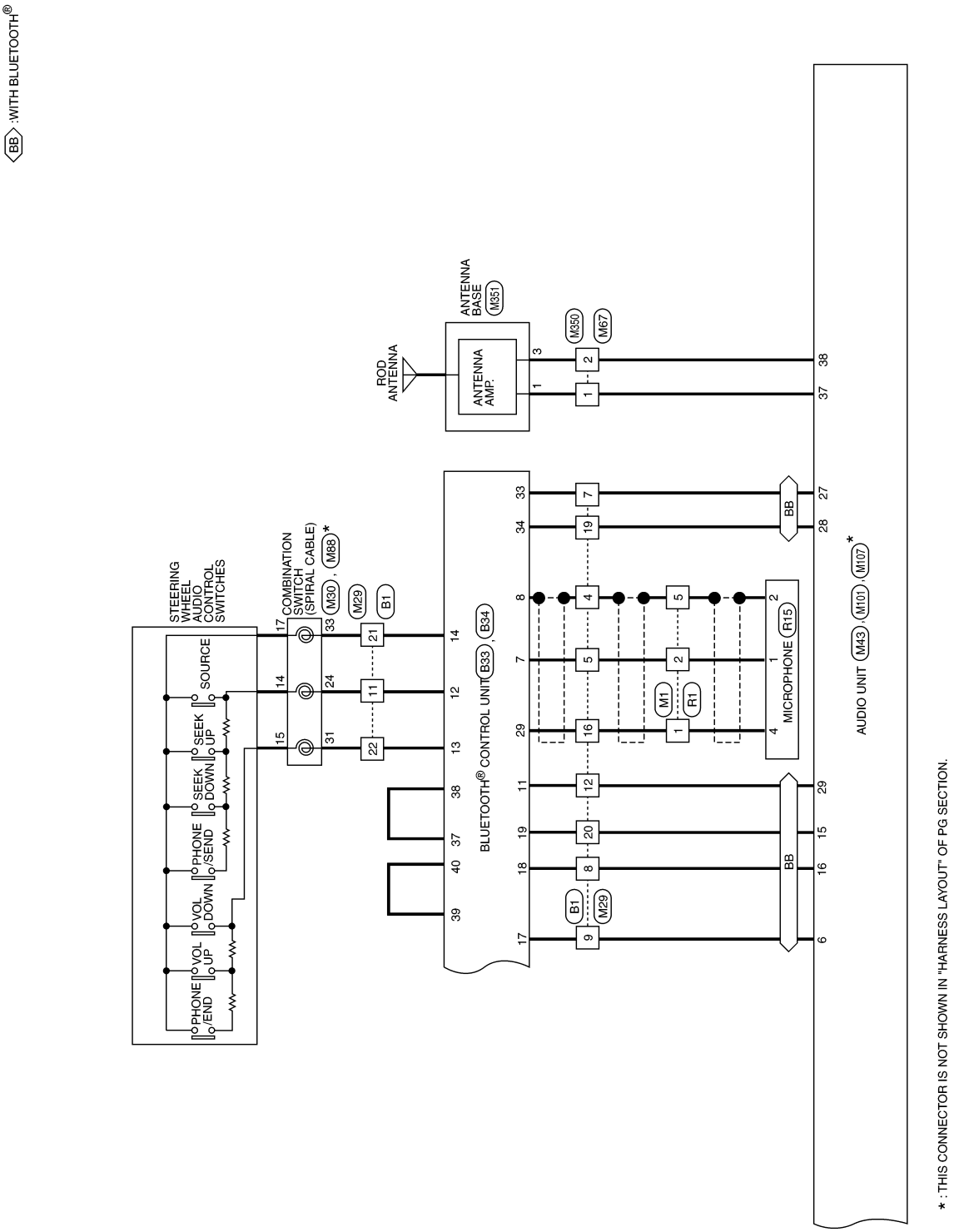
WIRING DIAGRAM

BASE AUDIO

Wiring Diagram

INFOID:0000000009459917





AANWA0888GB

BASE AUDIO SYSTEM CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4
5	6	7	8

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

Connector No.	M5
Connector Name	JOINT CONNECTOR-M03
Connector Color	BROWN

H.S.

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

Terminal No.	Color of Wire	Signal Name
2	O	–
8	O	–

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	GR	–
5	P	–

Connector No.	M12
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	Y	–
10	Y	–
11	L	–

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
13	R	–
14	W	–

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
3	SB	2P/R
4	LG	8P/R
21	B	GND (ILLUMINATION)
22	B	GND (POWER)
23	B	GND (CIRCUIT)
27	R/W	BAT
28	GR	IGN

AANIA1759GB

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

Terminal No.	Color of Wire	Signal Name
24	LG	–
31	R	–
33	L	–

Connector No.	M51
Connector Name	JOINT CONNECTOR-M04
Connector Color	GRAY

Terminal No.	Color of Wire	Signal Name
1	LG	–
12	R/W	–

Terminal No.	Color of Wire	Signal Name
9	BR	–
10	O	–
11	LG	–
12	P	–
16	L	–
17	SHIELD	–
18	R	–
19	LG	–
20	GR	–
21	L	–
22	R	–
23	L	–
24	SB	–

Terminal No.	Color of Wire	Signal Name
8	B	ILL (-)
9	LG/R	ILL (+), LIGHT SW
10	–	–
11	O	FR SP RH (+)
12	V	FR SP RH (-)
13	L	RR SP RH (+)
14	Y	RR SP RH (-)
15	GR	STRG SW GND
16	V	STRG SW B
17	–	–
18	LG	SPEED SIGNAL
19	Y	BAT
20	–	–

Connector No.	M29
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
4	SHIELD	–
5	P	–
6	G	–
7	SB	–
8	V	–

Connector No.	M43
Connector Name	AUDIO UNIT (WITH BASE AUDIO SYSTEM)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	–	–
2	GR	FR SP LH (+)
3	P	FR SP LH (-)
4	W	RR SP LH (+)
5	R	RR SP LH (-)
6	BR	STRG SW A
7	W	ACC

AANIA1760GB

Terminal No.	Color of Wire	Signal Name
95A	Y	–

Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

21A	20A	19A	18A	17A	16A	15A	14A	13A	12A	11A
	30A	29A	28A	27A	26A	25A	24A	23A	22A	
41A	40A	39A	38A	37A	36A	35A	34A	33A	32A	31A
	50A	49A	48A	47A	46A	45A	44A	43A	42A	
61A	60A	59A	58A	57A	56A	55A	54A	53A	52A	51A
	70A	69A	68A	67A	66A	65A	64A	63A	62A	
81A	80A	79A	79A	77A	76A	75A	74A	73A	72A	71A
	90A	89A	88A	87A	86A	85A	84A	83A	82A	

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

Connector No.	M67
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

1	2

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

Connector No.	M88
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
14	W	–
15	L	–
17	BR	–

Connector No.	M81
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

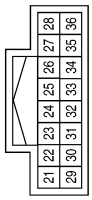
1	2	3		4	5
6	7	8	9	10	11	12

Terminal No.	Color of Wire	Signal Name
1	O	–
6	V	–

AANIA1761GB

Connector No.	M101
Connector Name	AUDIO UNIT (WITH BASE AUDIO SYSTEM)
Connector Color	WHITE

H.S.

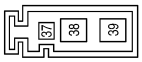


Terminal No.	Color of Wire	Signal Name
21	–	–
22	B/W	EQ2
23	–	–
24	B	EQ4
25	–	–
26	–	–
27	SB	M-CAN +

Terminal No.	Color of Wire	Signal Name
28	LG	M-CAN -
29	P	TEL ON
30	SHIELD	TEL GND
31	R	TEL -
32	G	TEL +
33	–	–
34	–	–
35	–	–
36	–	–

Connector No.	M107
Connector Name	AUDIO UNIT (WITH BASE AUDIO SYSTEM)
Connector Color	GRAY

H.S.



Terminal No.	Color of Wire	Signal Name
37	B	ANT +B
38	B	ANTENNA SIGNAL
39	–	–

Connector No.	M350
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

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

Connector No.	M351
Connector Name	ANTENNA BASE
Connector Color	GRAY

H.S.

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

AANIA1762GB

Terminal No.	Color of Wire	Signal Name
11	R	–
12	SB	–
16	L	–
17	SHIELD	–
18	B	–
19	LG	–
20	GR	–
21	G	–
22	P	–
23	L/Y	–
24	Y	–

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	SHIELD	–
5	P	–
6	W	–
7	SB	–
8	V	–
9	BR	–
10	O	–

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name
5	GR	–
6	LG	–

Connector No.	B23
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
13	R	–
14	W	–

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

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

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

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

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

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

Terminal No.	Color of Wire	Signal Name
95A	LG	–

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

AANIA1763GB

Connector No.	B29
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	Y/G	–
10	GR	–
11	LG	–

Connector No.	B33
Connector Name	BLUETOOTH® CONTROL UNIT
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	Y/G	+B
2	L/Y	ACC
3	O	IGN
4	B	GND
5	–	–
6	–	–
7	P	MIC IN+
8	SHIELD	MIC IN- (GND)
9	W	AUDIO OUT +
10	B	AUDIO OUT -
11	SB	MUTE CONTROL
12	R	LADDER IN 1
13	P	LADDER IN 2
14	G	LADDER IN 3 (GND)
15	–	–
16	–	–
17	BR	LADDER OUT 1
18	V	LADDER OUT 2
19	GR	LADDER OUT 3 (GND)
20	–	–
21	B	CONT 2
22	B	CONT 3
23	–	–
24	B	CONT 5
25	–	–
26	–	–
27	B	CONT 6
28	Y	SPEED
29	L	MIC POWER
30	–	–
31	–	–
32	–	–

AANIA1764GB

Connector No.	B34
Connector Name	BLUETOOTH® CONTROL UNIT
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
33	SB	CAN H1
34	LG	CAN L1
35	–	–
36	–	–
37	LG	CAN JUMPER 1
38	LG	CAN H2
39	SB	CAN JUMPER 2
40	SB	CAN L2

Connector No.	B47
Connector Name	BLUETOOTH® CONTROL UNIT
Connector Color	GRAY

Terminal No.	Color of Wire	Signal Name
41	B	BT ANTENNA
42	SHIELD	BT SHIELD

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

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

Connector No.	R15
Connector Name	MICROPHONE
Connector Color	WHITE

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

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
4	GR	–
5	P	–

Connector No.	D12
Connector Name	FRONT DOOR SPEAKER LH
Connector Color	WHITE

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

AANIA1765GB

Connector No.	D112
Connector Name	FRONT DOOR SPEAKER RH
Connector Color	WHITE

H.S.

2	1

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

Connector No.	D115
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	GR	–
6	P	–

Connector No.	D201
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

Connector No.	D207
Connector Name	REAR DOOR SPEAKER LH
Connector Color	WHITE

H.S.

2	1

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

Connector No.	D301
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

Connector No.	D307
Connector Name	REAR DOOR SPEAKER RH
Connector Color	WHITE

H.S.

2	1

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

AANIA1766GB

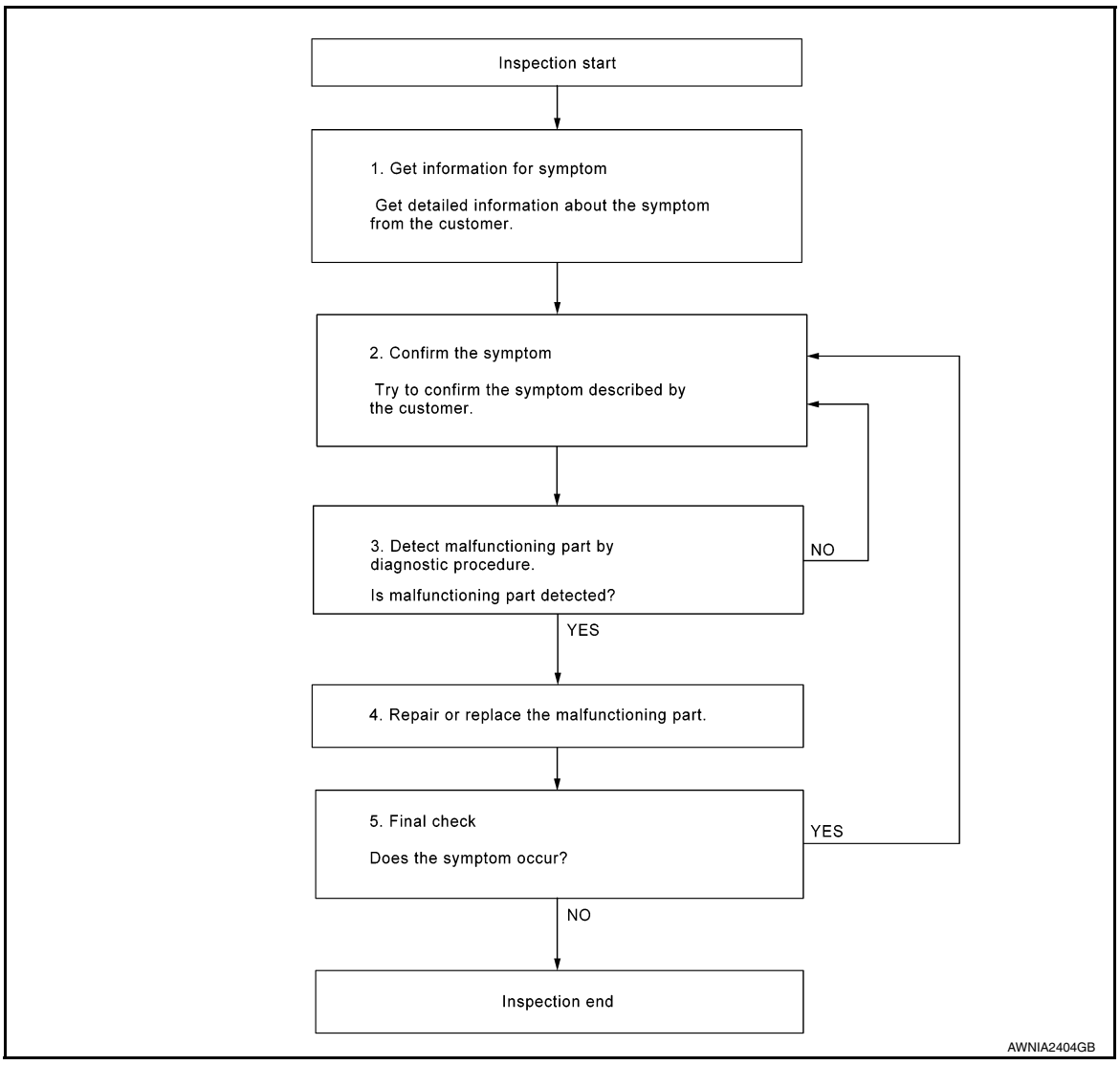
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000009459918

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 AV-48, "Symptom Table".

>> GO TO 3.

3.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

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.

Was the repair confirmed?

YES >> Inspection End.
NO >> GO TO 2.

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000009681844

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	18 (10A)
19	Battery power supply	29 (15A)

Are the fuses blown?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M43.
3. Check voltage between audio unit connector M43 and ground.

Audio unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M43	7	—	Ignition switch: ON	Battery voltage
	19		Ignition switch: OFF	

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M101.
3. Check continuity between audio unit connector M101 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M101	22	—	Yes
	24		

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace harness or connectors.

BLUETOOTH® CONTROL UNIT

BLUETOOTH® CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009693774

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
1	Battery power supply	29 (15A)
2	ACC power supply	17 (10A)
3	Ignition signal	5 (10A)

Are the fuses blown?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33.
3. Check voltage between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B33	1	—	Ignition switch: OFF	Battery voltage
	2		Ignition switch: ACC	
	3		Ignition switch: ON	

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	4	—	Yes
	21		
	22		
	24		
	27		

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace harness or connectors.

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000009681845

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:
- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminals or connectors.

2.CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M43 and suspect front door speaker connector.
2. Check continuity between audio unit connector M43 and suspect front door speaker connector.

Audio unit		Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M43	2	D12 (LH)	1	Yes
	3		2	
	11	D112 (RH)	1	
	12		2	

3. Check continuity between audio unit connector M43 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M43	2	—	No
	3		
	11		
	12		

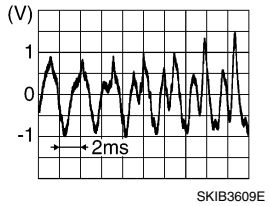
Is the inspection result normal?

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

3.CHECK FRONT DOOR SPEAKER SIGNAL

1. Connect audio unit connector M43 and suspect front door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M43.

Audio unit connector M43		Condition	Reference value
(+)	(−)		
Terminal	Terminal		

2	3		
11	12	Audio signal output	 SKIB3609E

Is the inspection result normal?

YES >> Replace front door speaker. Refer to AV-54, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-53, "Removal and Installation".

REAR DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000009681846

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:
- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminals or connectors.

2.CHECK REAR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M43 and suspect rear door speaker connector.
2. Check continuity between audio unit connector M43 and suspect rear door speaker connector.

Audio unit		Rear door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M43	4	D207 (LH)	1	Yes
	5		2	
	13	D307 (RH)	1	
	14		2	

3. Check continuity between audio unit connector M43 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M43	4	—	No
	5		
	13		
	14		

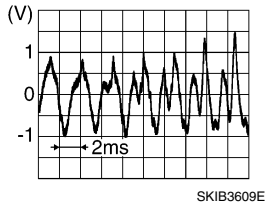
Is the inspection result normal?

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

3.CHECK REAR SPEAKER SIGNAL

1. Connect audio unit connector M43 and suspect rear door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M43.

Audio unit connector M43		Condition	Reference value
(+)	(−)		
Terminal	Terminal		

4	5		
13	14	Audio signal output	 SKIB3609E

Is the inspection result normal?

YES >> Replace rear door speaker. Refer to AV-55, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-53, "Removal and Installation".

BLUETOOTH® VOICE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681847

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CHECK BLUETOOTH® VOICE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M101 and Bluetooth® control unit connector B33.
3. Check continuity between audio unit connector M101 and Bluetooth® control unit connector B33.

Audio unit		Bluetooth® control unit		Continuity
Connector	Terminal	Connector	Terminal	
M101	32	B33	9	Yes

4. Check continuity between audio unit connector M101 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M101	32	—	No

Is inspection result normal?

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

2.CHECK BLUETOOTH® VOICE SIGNAL GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M101 and Bluetooth® control unit connector B33.

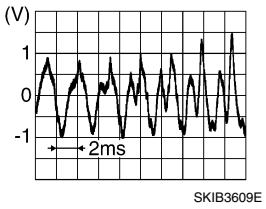
Audio unit		Bluetooth® control unit		Continuity
Connector	Terminal	Connector	Terminal	
M101	31	B33	10	Yes

Is inspection result normal?

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

3.CHECK BLUETOOTH® VOICE SIGNAL

1. Connect audio unit connector M101 and Bluetooth® control unit connector B33.
2. Turn ignition switch to ACC.
3. Press switch.
4. Check signal between the terminals of audio unit connector M101.

Audio unit connector M101		Condition	Reference value
(+)	(−)		
Terminal	Terminal		
32	31	During voice guide output with switch pressed.	

SKIB3609E

Is the inspection result normal?

YES >> Replace Bluetooth® control unit. Refer to AV-56, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-53, "Removal and Installation".

BLUETOOTH® CONTROL SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681848

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CHECK CONTROL SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33.
3. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminals		
B33	21	—	Yes
	22		
	24		
	27		

Is the inspection result normal?

YES >> Replace Bluetooth® control unit. Refer to AV-56, "Removal and Installation".
NO >> Repair or replace harness or connectors.

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681850

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND MICROPHONE

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33 and microphone connector R15.
3. Check continuity between Bluetooth® control unit connector B33 and microphone connector R15.

Bluetooth® control unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
B33	7	R15	1	Yes
	8		2	
	29		4	

4. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	7	—	No
	29		

Are continuity results as specified?

YES >> GO TO 2.
NO >> Repair harness or connectors.

2.CHECK MICROPHONE POWER SUPPLY

1. Connect Bluetooth® control unit connector B33 and microphone connector R15.
2. Turn ignition switch ON.
3. Check voltage between microphone connector R15 and ground.

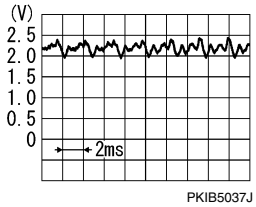
Microphone		Ground	Voltage (Approx.)
(+)		(-)	
Connector	Terminal		
R15	4	—	5V

Is the voltage reading as specified?

YES >> GO TO 3.
NO >> Replace Bluetooth® control unit. Refer to AV-56, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

Check signal between terminals of Bluetooth® control unit connector B33.

Bluetooth® control unit connector B33		Condition	Reference value
(+)	(-)		
Terminal	Terminal		
7	8	Speak into microphone.	

PKIB5037J

Were voltage readings as specified?

YES >> Replace Bluetooth® control unit. Refer to AV-56, "Removal and Installation".
NO >> Replace microphone. Refer to AV-59, "Removal and Installation".

STEERING SWITCH

Diagnosis Procedure

INFOID:0000000009681851

Regarding Wiring Diagram information, refer to AV-23, "Wiring Diagram".

1.CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M88.
3. Check resistance between the terminals of combination switch connector M88.

Combination switch connector M88		Condition	Resistance Ω (Approx.)
Terminal	Terminal		
14	17	Depress SOURCE switch.	1
		Depress △ switch.	121
		Depress ▽ switch.	321
		Depress switch.	723
15		Depress − switch.	1
		Depress + switch.	121
		Depress switch.	321

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace steering switches. Refer to AV-58, "Removal and Installation".

2.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND COMBINATION SWITCH

1. Disconnect Bluetooth® control unit connector B33 and combination switch connector M30.
2. Check continuity between Bluetooth® control unit connector B33 and combination switch connector M30.

Bluetooth® control unit		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	
B33	12	M30	24	Yes
	13		31	
	14		33	

3. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	12	—	No
	13		
	14		

Is the inspection result normal?

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

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M88 and M30.

Combination switch				Continuity
Connector	Terminal	Connector	Terminal	
M88	14	M30	24	Yes
	15		31	
	17		33	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace spiral cable. Refer to SR-15, "Removal and Installation".

4.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND AUDIO UNIT

1. Disconnect audio unit connector M43.
2. Check continuity between Bluetooth® control unit connector B33 and audio unit connector M43.

Bluetooth® control unit		Audio unit		Continuity
Connector	Terminal	Connector	Terminal	
B33	17	M43	6	Yes
	18		16	
	19		15	

3. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	17	—	No
	18		
	19		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness or connectors.

5.CHECK AUDIO UNIT VOLTAGE

1. Connect Bluetooth® control unit connector B33 and audio unit connector M43.
2. Turn ignition switch ON.
3. Check voltage between the terminals of audio unit connector M43.

Audio unit connector M43		Voltage (Approx.)
Terminal	Terminal	
6	15	5.0 V
16		

Is the inspection result normal?

YES >> Replace Bluetooth® control unit. Refer to AV-56, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-53, "Removal and Installation".

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:0000000009459928

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	Audio unit	Malfunction in audio unit. Refer to AV-14, "On Board Diagnosis Function".
No sound comes out or the level of the sound is low.	No sound from all speakers.	• Speaker circuit shorted to ground. Refer to AV-23, "Wiring Diagram". • Audio unit power supply and ground circuits malfunction. Refer to AV-35, "AUDIO UNIT : Diagnosis Procedure".
	Only a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. Refer to: - AV-37, "Diagnosis Procedure" (front door speaker). - AV-39, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. Refer to: - AV-54, "Removal and Installation" (front door speaker). - AV-55, "Removal and Installation" (rear door speaker). • Malfunction in audio unit. Refer to AV-14, "On Board Diagnosis Function".
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in audio unit. Refer to AV-14, "On Board Diagnosis Function".
	Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).	• Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. Refer to: - AV-37, "Diagnosis Procedure" (front door speaker). - AV-39, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. • Poor Installation of speaker (e.g. backlash and looseness). Refer to: - AV-54, "Removal and Installation" (front door speaker). - AV-55, "Removal and Installation" (rear door speaker). • Malfunction in audio unit. Refer to AV-14, "On Board Diagnosis Function".
	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. Refer to AV-61, "Feeder Layout".

Symptoms	Check items	Probable malfunction location
No radio reception or poor reception.	• Other audio sounds are normal. • Any radio station 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 obstacles generating external noises).	• Antenna amp. ON signal circuit malfunction. Refer to AV-18, "Reference Value". • Poor connector connection of antenna or antenna feeder. Refer to AV-61, "Feeder Layout".
Buzz/rattle sound from speaker	The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.	Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.

RELATED TO HANDS-FREE PHONE

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and check that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
   NOTE:
   The customer's phone may be required, depending upon their concern.
3. Write down the customer's phone brand, model and service provider.
   NOTE:
   It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
4. Go to "www.nissanusa.com/bluetooth/".

a. Using the website's search engine, find out if the customer's phone is on the approved list.

b. If the customer's phone is NOT on the approved list:
   Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.

c. If the feature related to the customer's concern shows as "N" (not compatible):
   Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features".

d. If the feature related to the customer's concern shows as "Y" (compatible):
   Perform diagnosis as per the following table.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection (no connection is displayed on the display at the guide).	Repeat the registration of cellular phone.	Malfunction in audio unit. Replace audio unit. Refer to AV-53, "Removal and Installation".
Hands-free phone cannot be established.	• 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.	
The other party's voice cannot be heard by hands-free phone.	Check the "microphone speaker" in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-44, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
The system cannot be operated.	• The voice recognition can be controlled. • Steering switch's −, +, and switch works, but does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-58, "Removal and Installation".
	Steering switch's , −, +, and switches do not work.	Steering switch signal circuit malfunction. Refer to AV-46, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-46, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009459929

RELATED TO NOISE

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).
The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- 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 the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

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 determine the cause.

NOTE:
The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	• Ignition components
The occurrence of the noise is linked with the operation of the fuel pump.		• Fuel pump condenser
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	• Relay malfunction, audio unit malfunction
	The noise occurs when various motors are operating.	• Motor case ground • Motor
The noise occurs constantly, not just under certain conditions.		• Rear defogger coil malfunction • Open circuit in printed heater • Poor ground of antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		• Ground wire of body parts • Ground due to improper part installation • Wiring connections or a short circuit

RELATED TO HANDS-FREE PHONE

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 Compatibility)” in AV-48, "Symptom Table".
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.

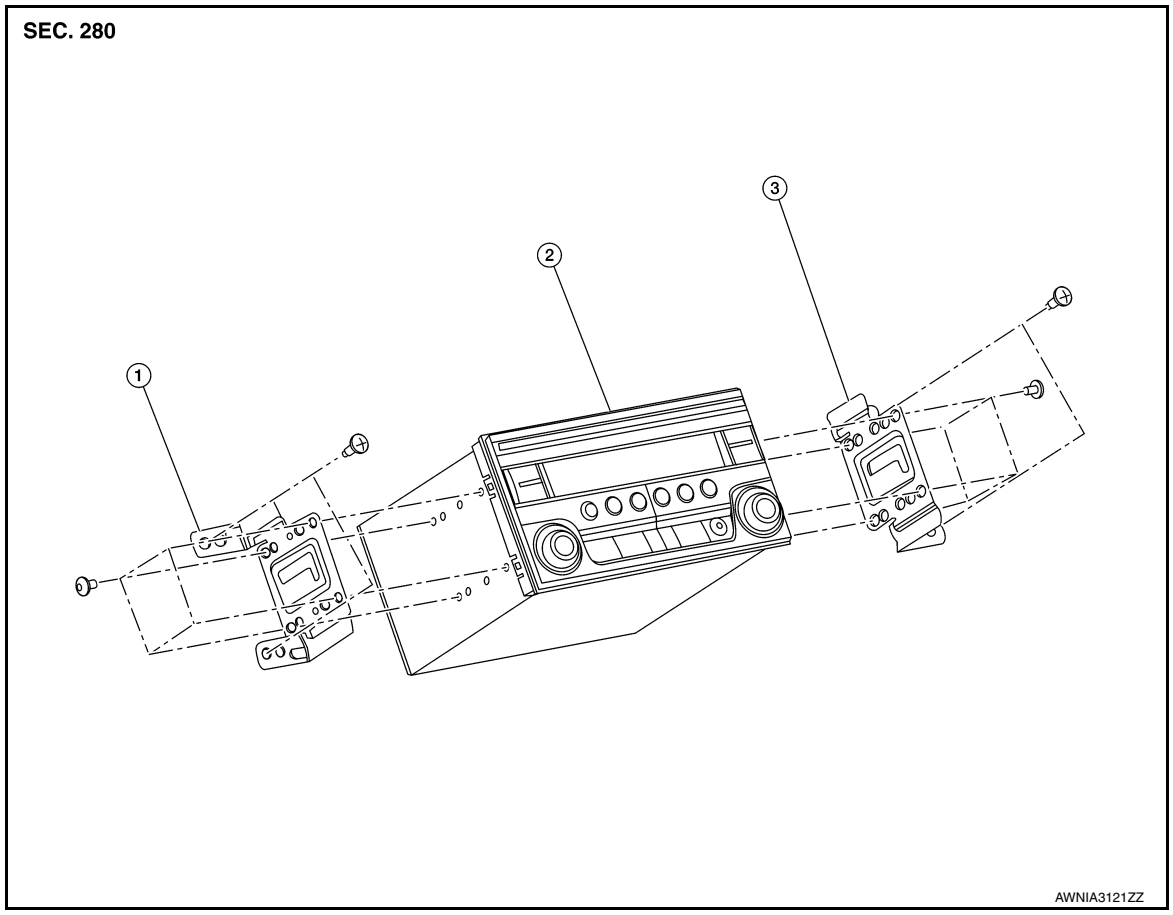
Symptom	Cause and Counter measure
The other party’s voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person’s voice during a call.
Poor sound quality.	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

REMOVAL AND INSTALLATION

AUDIO UNIT

Exploded View

INFOID:0000000009541372



1. Audio unit bracket (LH)
2. Audio unit
3. Audio unit bracket (RH)

Removal and Installation

INFOID:0000000009459930

REMOVAL

1. Remove the negative battery cable. Refer to PG-67, "Removal and Installation (Battery)".
2. Remove cluster lid C. Refer to IP-22, "Removal and Installation".
3. Remove the audio unit screws.
4. Partially remove the audio unit to gain access to the harness connectors.
5. Disconnect the harness connectors from the audio unit and remove.
6. Remove the audio unit bracket screws from each side of the audio unit (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

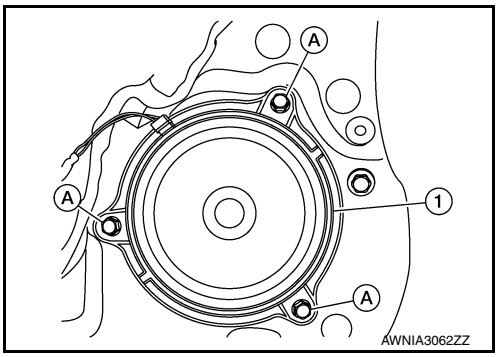
FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000009459933

REMOVAL

1. Remove the front door finisher. Refer to INT-15, "Removal and Installation".
2. Disconnect the harness connector from front door speaker.
3. Remove the front door speaker screws (A).
4. Remove the front door speaker (1).



INSTALLATION

Installation is in the reverse order of removal.

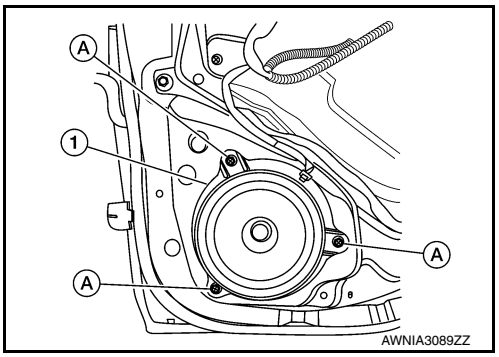
REAR DOOR SPEAKER

Removal and Installation

INFOID:0000000009459934

REMOVAL

1. Remove the rear door finisher. Refer to INT-18, "Removal and Installation".
2. Disconnect the harness connector from the rear door speaker.
3. Remove the rear door speaker screws (A).
4. Remove the rear door speaker (1).



INSTALLATION

Installation is in the reverse order of removal.

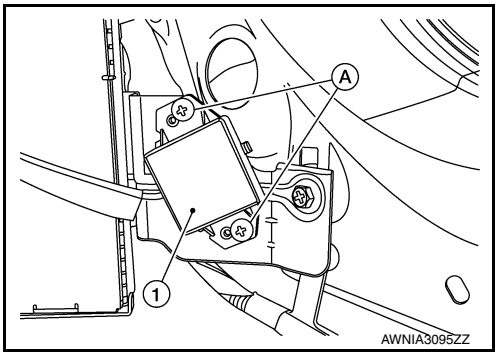
BLUETOOTH® CONTROL UNIT

Removal and Installation

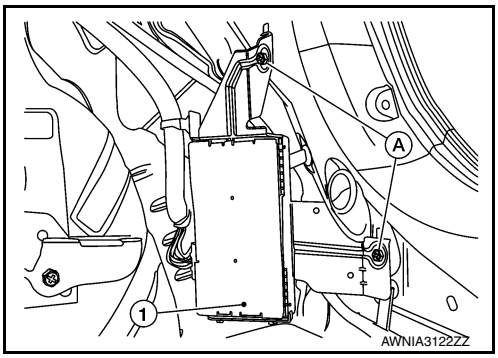
INFOID:0000000009459939

REMOVAL

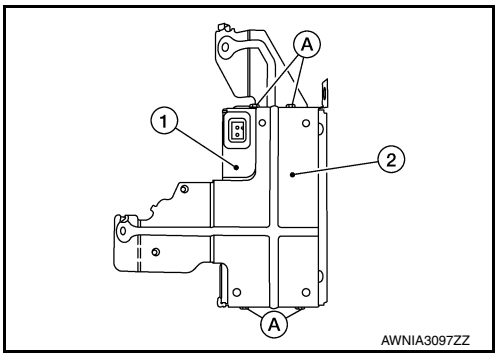
1. Remove the luggage side lower finisher (RH). Refer to INT-34, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Disconnect the harness connectors from the Bluetooth® control unit.
3. Remove the Bluetooth® antenna screws (A) and the Bluetooth® antenna (1).



4. Remove the Bluetooth® control unit bracket screws (A) and the Bluetooth® control unit (1).



5. Remove the Bluetooth® control unit screws (A) and separate the Bluetooth® control unit (1) from the bracket (2).



INSTALLATION

Installation is in the reverse order of removal.

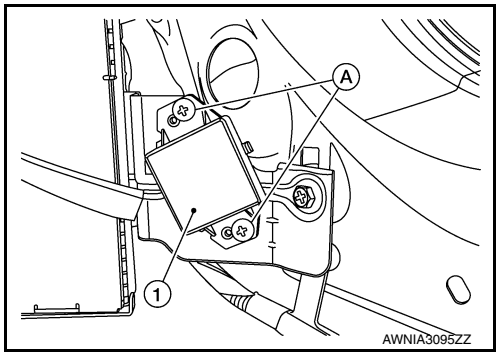
BLUETOOTH® ANTENNA

Removal and Installation

INFOID:0000000009459938

REMOVAL

1. Remove the luggage side lower finisher (RH). Refer to INT-34, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Disconnect the Bluetooth® antenna harness connector from the Bluetooth® control unit.
3. Remove the Bluetooth® antenna screws (A) and the Bluetooth® antenna (1).



INSTALLATION

Installation is in the reverse order of removal.

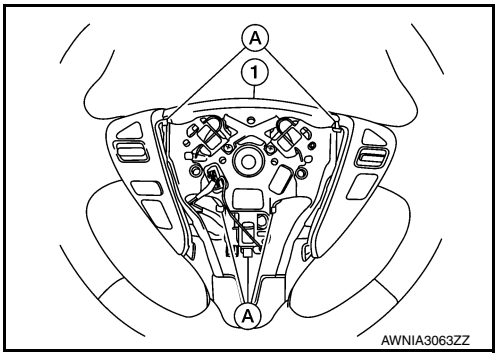
STEERING SWITCH

Removal and Installation

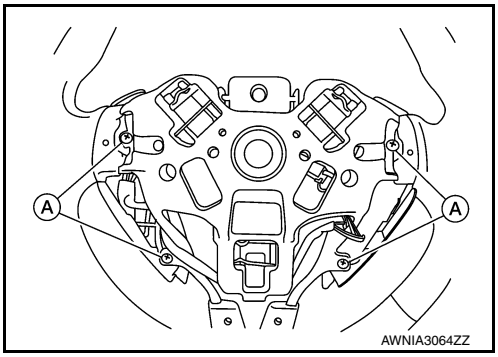
INFOID:0000000009459937

REMOVAL

1. Remove the steering wheel. Refer to ST-8, "Removal and Installation".
2. Remove the steering wheel rear finisher (1) by releasing pawls (A).



3. Remove the steering wheel audio control switch screws (A) from the back of the steering wheel.



4. Remove the steering wheel audio control switches from the steering wheel.

INSTALLATION

Installation is in the reverse order of removal.

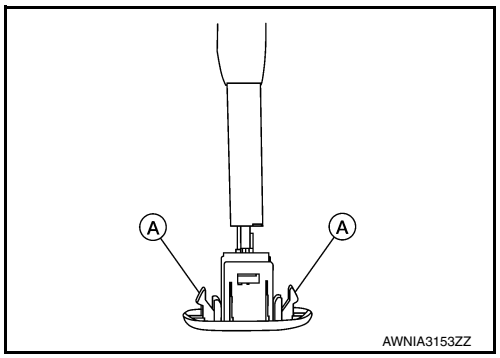
MICROPHONE

Removal and Installation

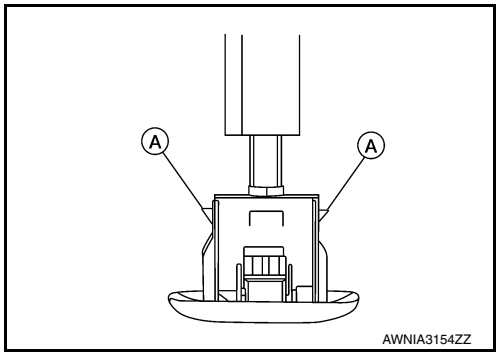
INFOID:0000000009459940

REMOVAL

1. Remove the microphone finisher from the headlining by releasing pawls (A) using a suitable tool.



2. Disconnect the harness connector from microphone and remove.
3. Separate the microphone from the finisher by releasing pawls (A) using a suitable tool.



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

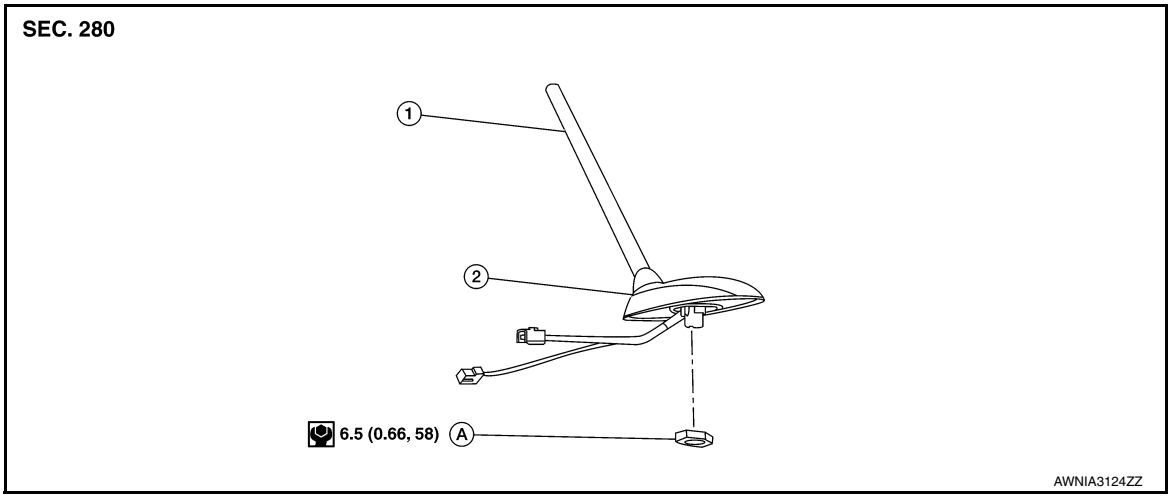
Make sure to align the rib on the finisher with the slot in the microphone.

Make sure to install the microphone with the arrows pointing toward the RH side of the vehicle.

ROD ANTENNA

Exploded View

INFOID:0000000008969561



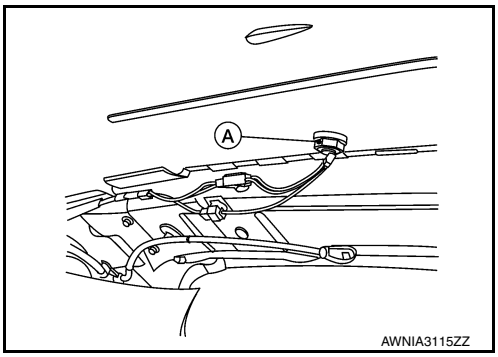
1. Antenna rod
2. Antenna base
A. Antenna nut

Removal and Installation

INFOID:0000000008969562

REMOVAL

1. Lower the rear portion of the headlining. Refer to INT-31, "Removal and Installation".
2. Disconnect the harness connectors from the antenna (satellite radio model shown).
3. Remove the antenna nut (A) and remove the antenna.



INSTALLATION

Installation is in the reverse order of removal.

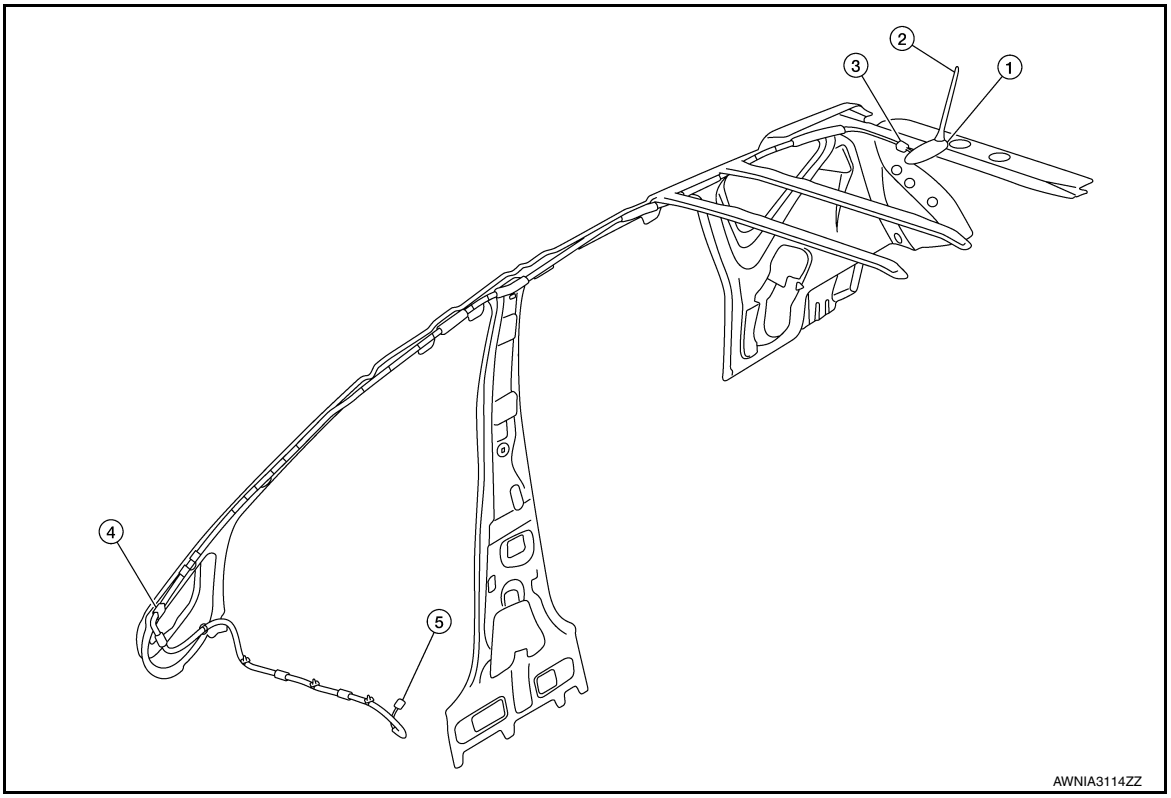
CAUTION:

If the antenna nut is tightened less than the specified torque this will lower the sensitivity of the antenna. If the antenna nut is tightened more than the specified torque this will deform the roof panel.

ANTENNA FEEDER

Feeder Layout

INFOID:0000000009459941



1. Antenna base (antenna amp.)
2. Rod Antenna
3. M351
4. M67, M350
5. M107

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009541237

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

Precaution for Trouble Diagnosis

INFOID:0000000009541239

AV COMMUNICATION SYSTEM

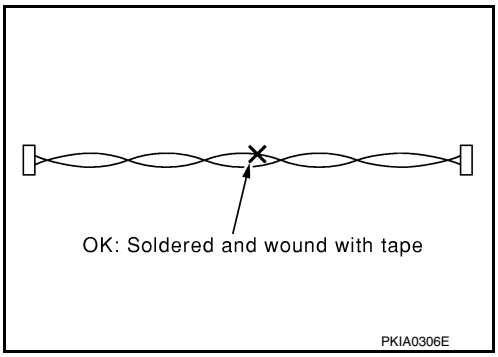
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

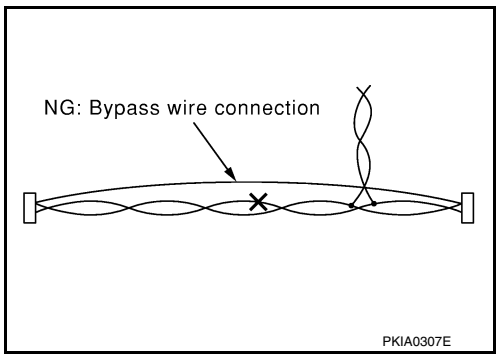
INFOID:0000000009541240

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.)



Precaution for Work

INFOID:0000000009541241

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:
- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:
- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

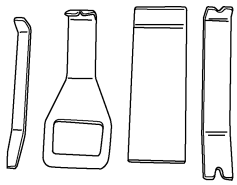
PREPARATION

PREPARATION

Special Service Tools

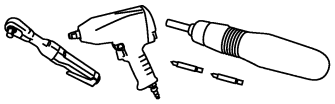
INFOID:0000000009541242

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:0000000009541243

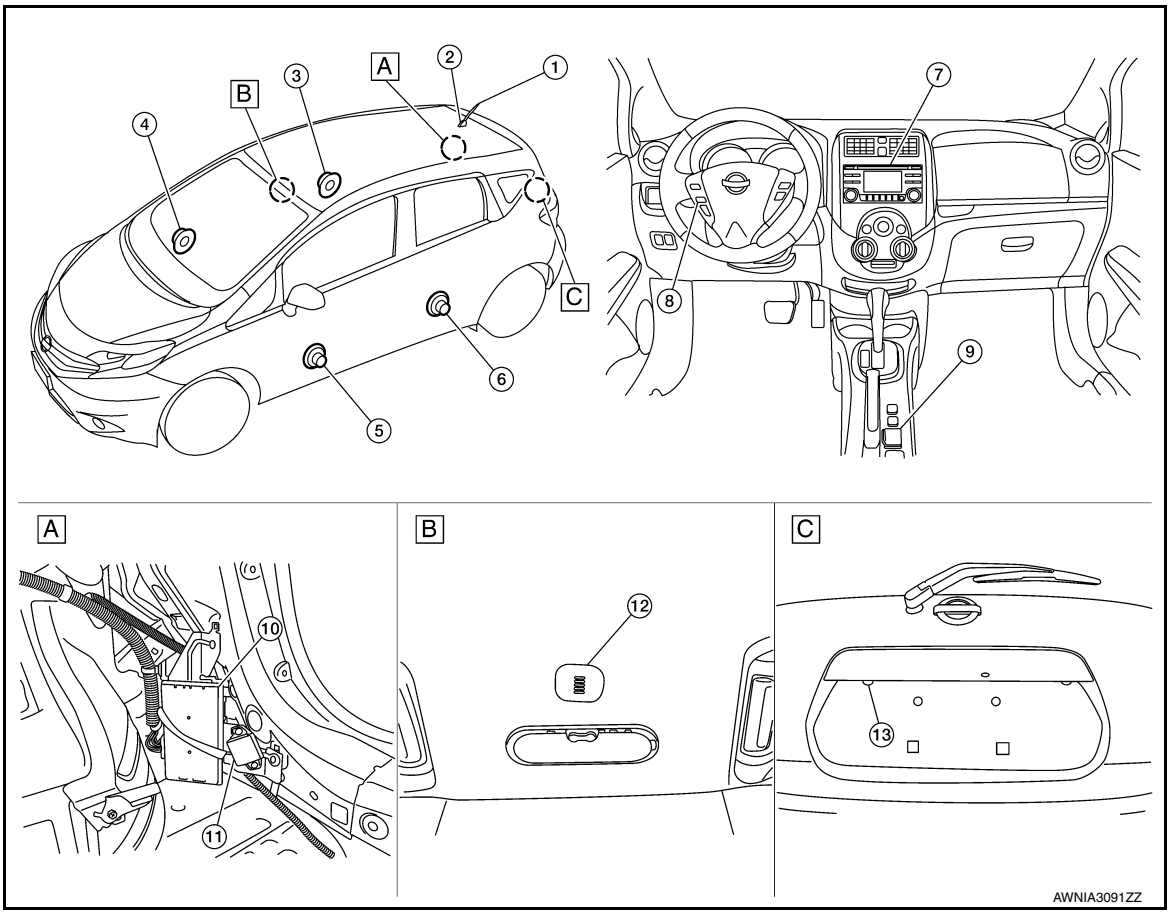
Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000009681856



A. Luggage side lower finisher (RH) removed
B. Front of headliner
C. Center of back door

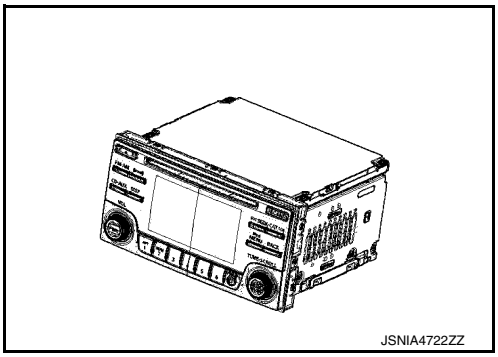
No.	Component	Function
1.	Rod antenna	Refer to AV-68, "Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder".
2.	Antenna base (antenna amp. and satellite antenna)	
3.	Rear door speaker RH	Refer to AV-66, "Speaker".
4.	Front door speaker RH	
5.	Front door speaker LH	
6.	Rear door speaker LH	
7.	Audio unit	Refer to AV-66, "Audio Unit".
8.	Steering wheel audio control switches	Refer to AV-67, "Steering Switch".
9.	USB interface	Refer to AV-66, "USB Interface".
10.	Bluetooth® control unit	Refer to AV-67, "Bluetooth Control Unit".
11.	Bluetooth® antenna	Refer to AV-67, "Bluetooth Antenna".
12.	Microphone	Refer to AV-67, "Microphone".
13.	Rear view camera	Refer to AV-68, "Rear View Camera".

Audio Unit

INFOID:0000000009681857

Description

- AM/FM electronic tuner radio, CD drive, auxiliary input jack, and camera controller are integrated into the audio unit.
- The display can show audio status and rear view monitor images.
- Music files stored in iPod®*/USB memory can be played using the separate USB connector.

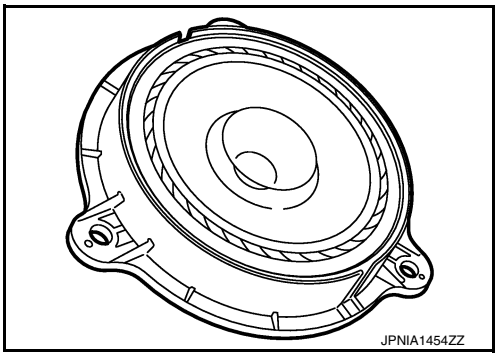

JSNIA4722ZZ

Speaker

INFOID:0000000009681858

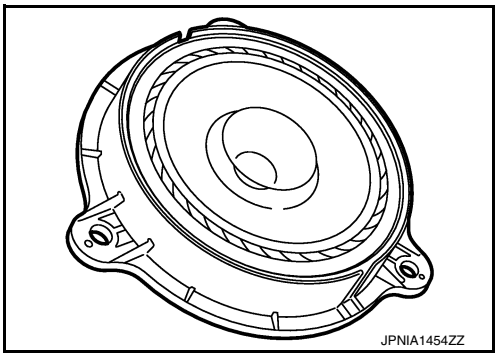
FRONT DOOR SPEAKER

- 16.5 cm (6.5 in) speakers are installed in the bottom of the front doors.
- Sound signals are input from the audio unit to output high, mid and low range sounds.


JPNIA1454ZZ

REAR DOOR SPEAKER

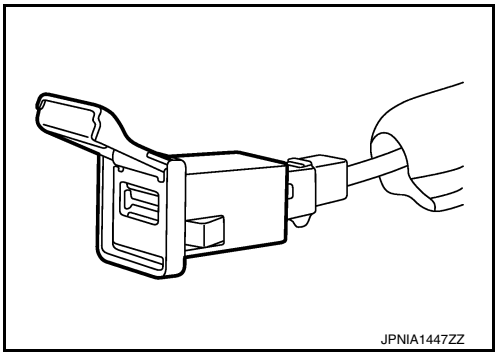
- 16.5 cm (6.5 in) speakers are installed in the bottom of the rear doors.
- Sound signals are input from the audio unit to output high, mid and low range sounds.


JPNIA1454ZZ

USB Interface

INFOID:0000000009681859

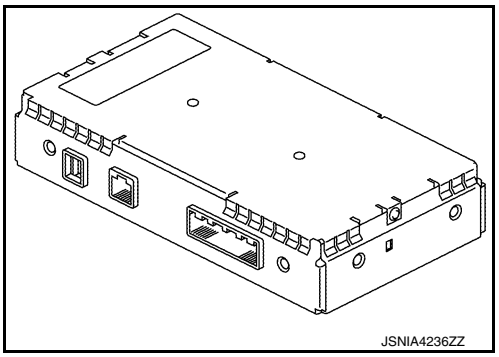
- USB Interface is installed in the console.
- iPod® and USB memory can be connected to the audio unit.


JPNIA1447ZZ

Bluetooth Control Unit

INFOID:0000000009681860

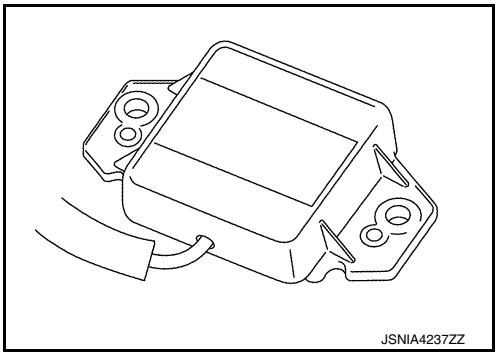
- Inputs the TEL voice signal from Bluetooth® antenna and outputs it to the audio unit
- Connected to the audio unit via AV communication.


JSNIA4236ZZ

Bluetooth Antenna

INFOID:0000000009681861

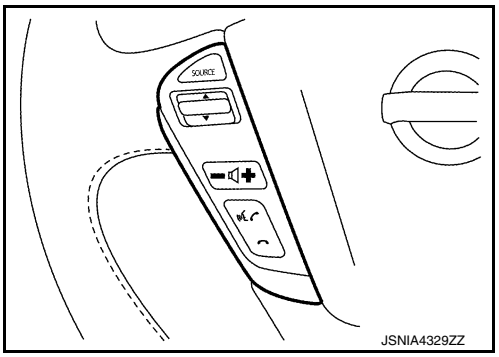
Receives the TEL voice signal from cellular phone and outputs it to the Bluetooth® control unit.


JSNIA4237ZZ

Steering Switch

INFOID:0000000009681862

- Operations for audio and hands-free phone are possible.
- Switch is connected to the Bluetooth® control unit.

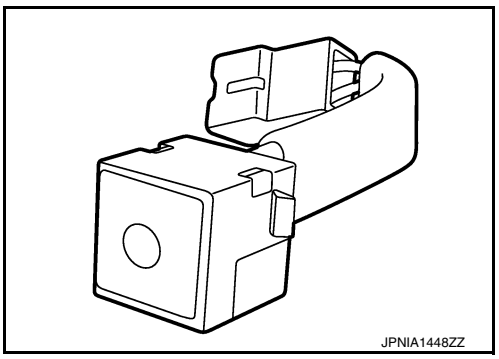


JSNIA4329ZZ

Microphone

INFOID:0000000009681863

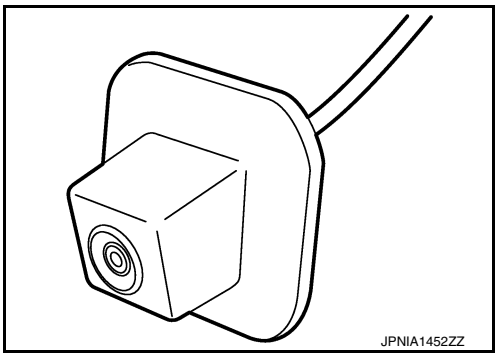
- The microphone is installed in the roof in front of the map lamp assembly.
- Power is supplied from the Bluetooth® control unit.


JPNIA1448ZZ

Rear View Camera

INFOID:0000000009681864

- The rear view camera is installed to the back door finisher.
- Power is supplied from the audio unit.

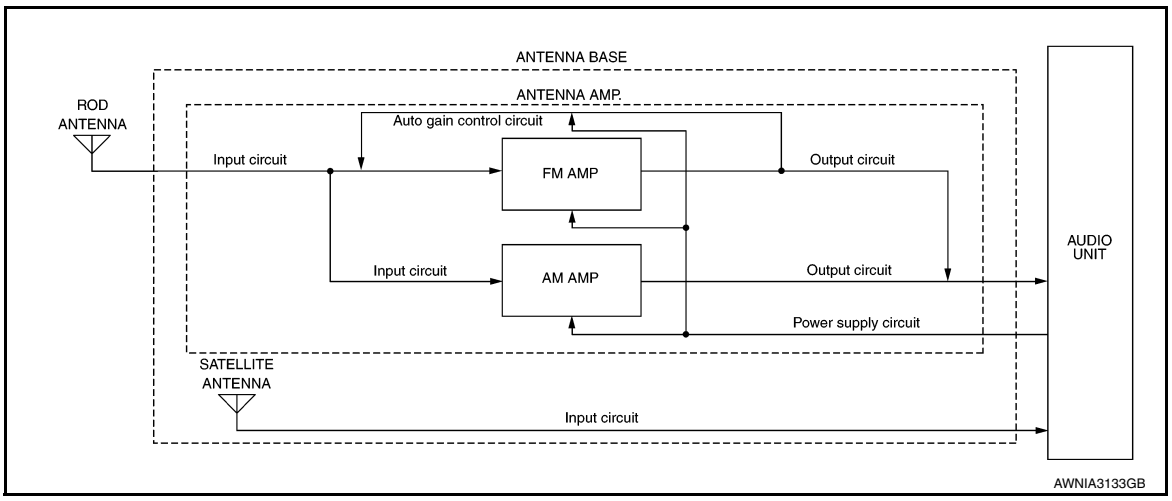


Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder

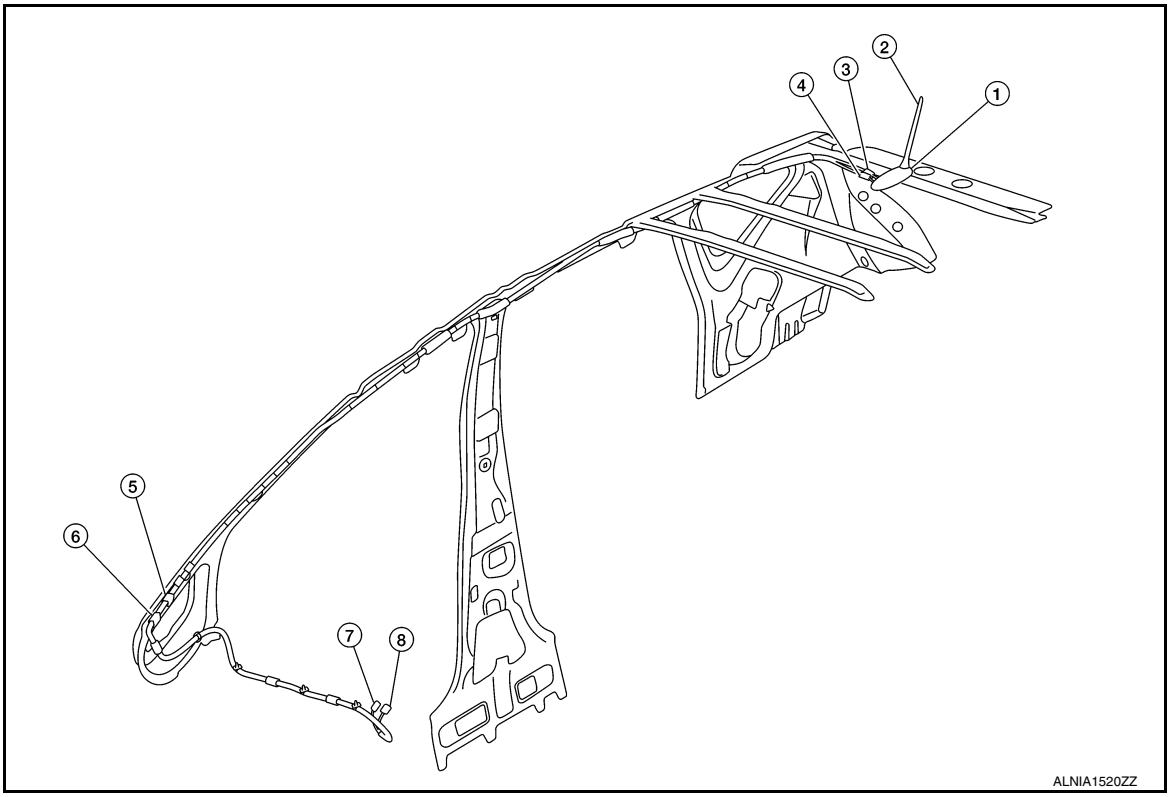
INFOID:0000000009681865

RADIO ANTENNA AND SATELLITE ANTENNA

AM/FM radio rod antenna, antenna base and satellite antenna are located on the rear of the roof. The antenna amp. and satellite antenna are built into the antenna base.



ANTENNA FEEDER LAYOUT



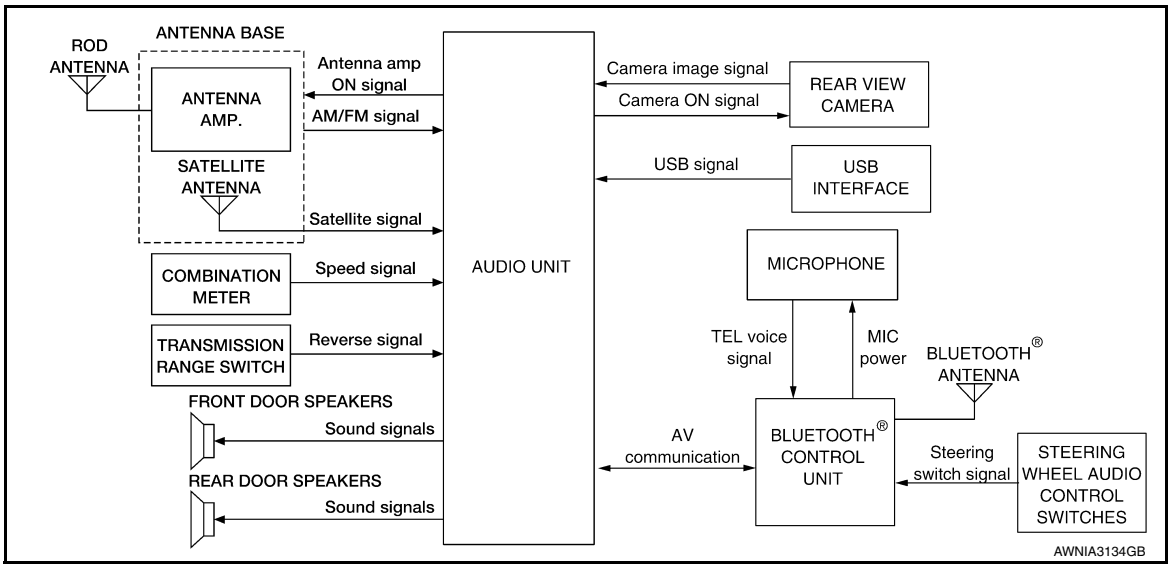
1. Antenna base (antenna amp. and satellite antenna)
2. Rod Antenna
3. M351
4. M352
5. M110, M353
6. M67, M350
7. M106
8. M105

SYSTEM

System Description

INFOID:0000000009681866

SYSTEM DIAGRAM



AUDIO SYSTEM

The audio system consists of the following components

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

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.

HANDS-FREE PHONE SYSTEM

System Operation

NOTE:

Cellular telephones must have their wireless connection set up (paired) before using the Bluetooth® telephone system.

The Bluetooth® telephone system allows users who have a Bluetooth® cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth® control unit. Hands-free cellular telephone calls can be sent and received. Some Bluetooth® cellular telephones may not be recognized by the Bluetooth® control unit. When a cellular telephone or the Bluetooth® control unit is replaced, the telephone must be paired with the Bluetooth® control unit. Different cellular telephones may have different pairing procedures, refer to the cellular telephone operating manual.

Refer to the Owner's Manual for Bluetooth® telephone system operating instructions.

Bluetooth® Control Unit

When the ignition switch is turned to ACC or ON, the Bluetooth® control unit will power up. During power up, the Bluetooth® control unit is initialized and performs various self-checks. Initialization may take up to 20 seconds. If a phone is present in the vehicle and paired with the Bluetooth® control unit, Nissan Voice Recognition will then become active. Bluetooth® telephone functions can be turned off using the Nissan Voice Recognition system.

Steering Switches

When buttons on the steering switches are pushed, the resistance in steering wheel audio control switch circuit changes, depending on which button is pushed. The Bluetooth® control unit uses this signal to perform various functions while navigating through the voice recognition system.

The following functions can be performed using the steering switches:

- Initiate self-diagnosis of the Bluetooth® telephone system
- Start a voice recognition session
- Answer and end telephone calls
- Adjust the volume of calls

Microphone

The microphone is located in the roof in front of the map lamp. The microphone sends a signal to the Bluetooth® control unit. The microphone can be actively tested during self-diagnosis.

Audio Unit

The audio unit receives signals from the Bluetooth® control unit and sends audio signals to the 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.

DIAGNOSIS SYSTEM (AUDIO UNIT)

Description

INFOID:0000000009459952

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

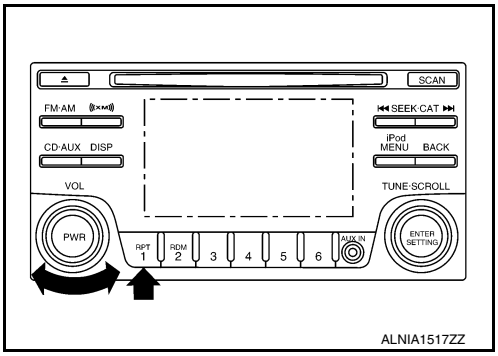
Mode		Description
Self Diagnosis		• Audio unit diagnosis. • Diagnoses the connections across system components.
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, lights, reverse, EQ pin, destination and camera type.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Error History	The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Camera System	Displayed but not used.
	AV COMM Diagnosis	The communication condition of each unit of display audio system can be monitored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Setting	Initializes the audio unit memory.

On Board Diagnosis Function

INFOID:0000000009459953

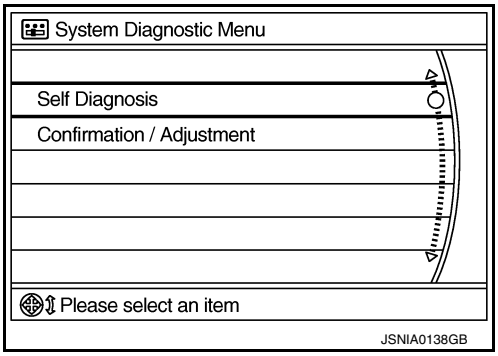
METHOD OF STARTING

1. Turn the ignition ON.
2. Turn the audio system OFF.
3. While pressing the preset 1 button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. Shifting from current screen to previous screen is performed by pressing BACK button.



ALNIA1517ZZ

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



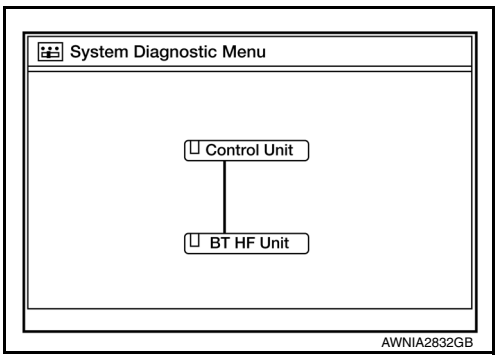
JSNIA0138GB

SELF DIAGNOSIS MODE

Audio Unit Self Diagnosis

1. Select Self Diagnosis.

2. Self diagnosis screen is displayed. The bar graph visible in center of screen indicates progress of self diagnosis.
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.

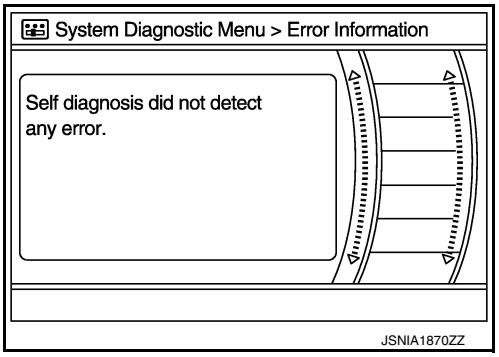


Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction [1]	Red	Green

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-118, "Removal and Installation".
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.

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



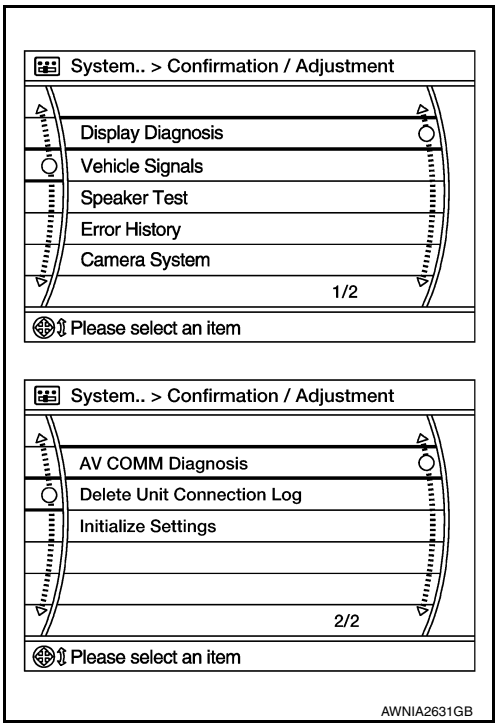
Audio Unit Self Diagnosis Results

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 AV-97, "AUDIO UNIT : Diagnosis Procedure". • If no malfunction is detected in audio unit power supply and ground circuits, replace audio unit. Refer to AV-118, "Removal and Installation".

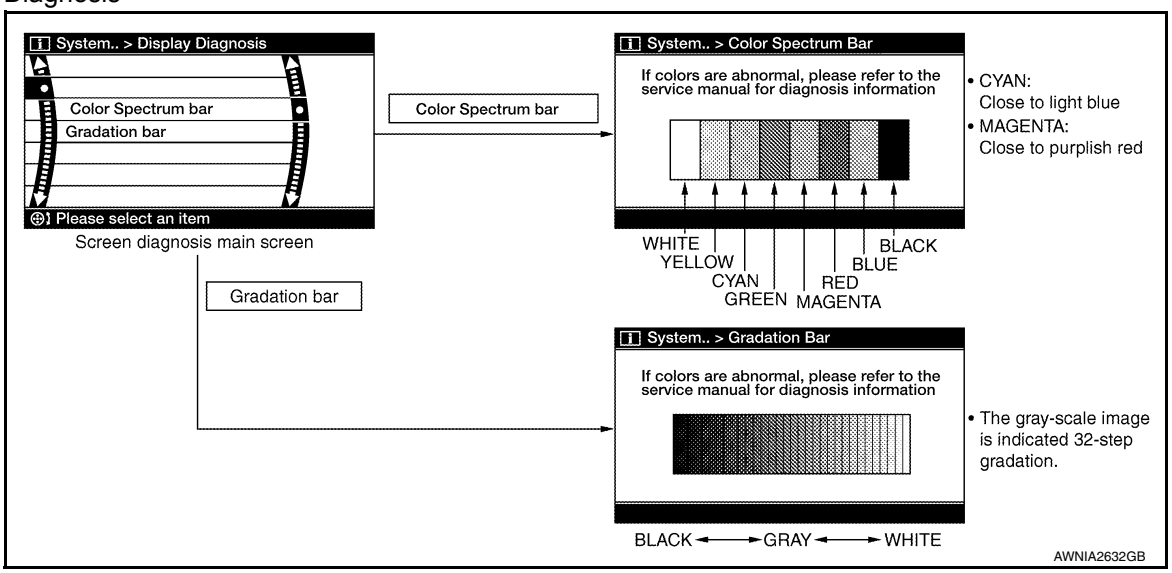
A Connecting Cable Between Units Is Displayed In Yellow		
Area with yellow connection lines	Description	Possible cause
Control unit ⇔ BT HF Unit	When one of the following is detected: • malfunction is detected in Bluetooth® control unit power supply and ground circuits. • malfunction is detected in AV communication circuits between audio unit and Bluetooth® control unit.	• Bluetooth® control unit power supply or ground circuits. Refer to AV-97, "BLUETOOTH® CONTROL UNIT : Diagnosis Procedure". • AV communication circuits between audio unit and Bluetooth® control unit.

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.

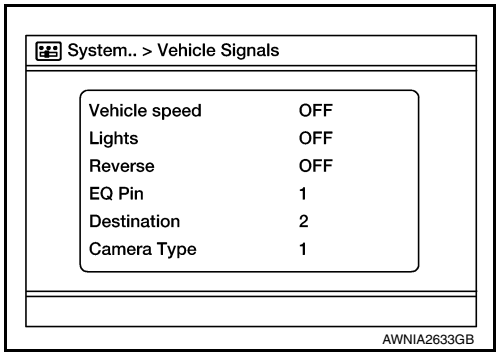


Display Diagnosis



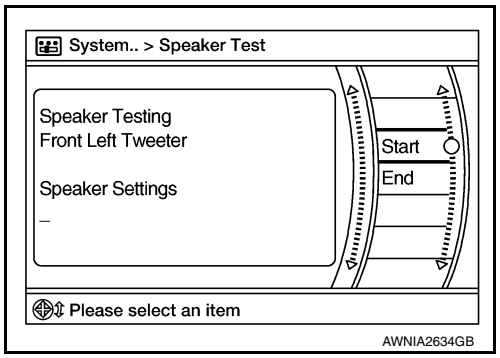
Vehicle Signals

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



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.



Error History

The self diagnosis results are judged depending on whether any error occurs from when Self Diagnosis is selected until the self diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self diagnosis start. Check the Error Record to detect any error that may have occurred before the self diagnosis start because of this situation.

The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

Count up method A

- The counter is set to 40 if an error occurs. 1 is subtracted from the counter if the condition is normal at a next ignition ON cycle.
- The counter lower limit is 1. The counter can be reset (no error record display) with the Delete log switch.

Count up method B

- The counter increases by 1 if an error occurs when ignition switch is ON. The counter will not decrease even if the condition is normal at the next ignition ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. The counter can be reset (no error record display) with the Delete log switch.

Display type of occurrence frequency	Error history display item
Count up method A	AV communication line, control unit (AV)
Count up method B	Other than the above

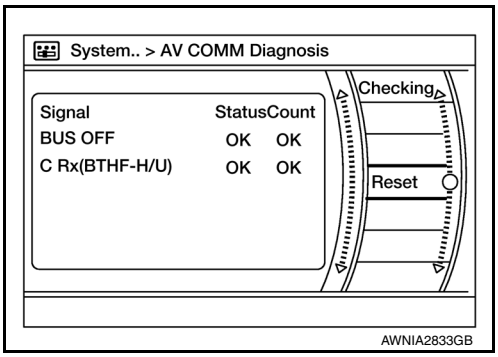
Error item

Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Description	Possible cause
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	Replace the audio unit if the malfunction occurs constantly. Refer to AV-118, "Removal and Installation"
AV COMM CIRCUIT	When one of the following is detected: • malfunction is detected in Bluetooth® control unit power supply and ground circuits. • malfunction is detected in AV communication circuits between audio unit and Bluetooth® control unit.	• Bluetooth® control unit power supply or ground circuits. Refer to AV-97, "BLUETOOTH® CONTROL UNIT : Diagnosis Procedure". • AV communication circuits between audio unit and Bluetooth® control unit.

AV COMM Diagnosis

- Displays the communication status between audio unit (master unit) and Bluetooth® control unit.
- The error counter displays OK if any malfunction was not detected in the past and displays 0 if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if Reset is pressed.

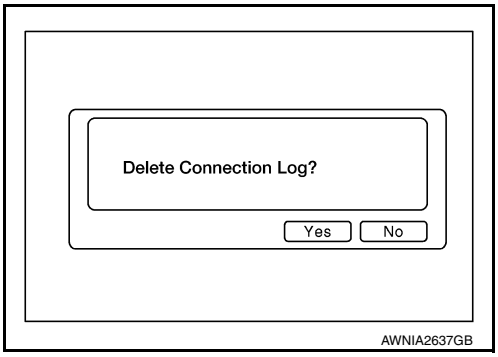


Items	Status (Current)	Counter (Past)
BUS OFF	OK / ???	OK / 0 – 39
C Rx(BTHF-H/U)	OK / ???	OK / 0 – 39

NOTE:
"???" indicates UNKWN.

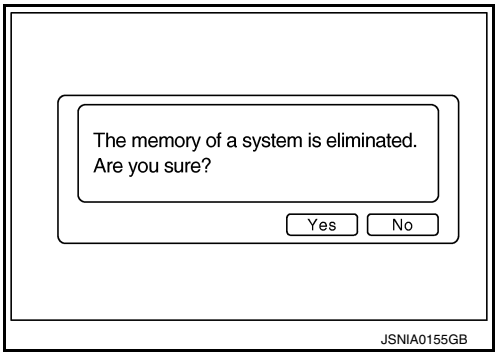
Delete Unit Connection Log

Deletes any unit connection records and error records from the audio unit memory (clears the records of the unit that has been removed).



Initialize Settings

Deletes data stored from the audio unit.



DIAGNOSIS SYSTEM (BLUETOOTH® CONTROL UNIT)

Diagnosis Description

INFOID:0000000009681867

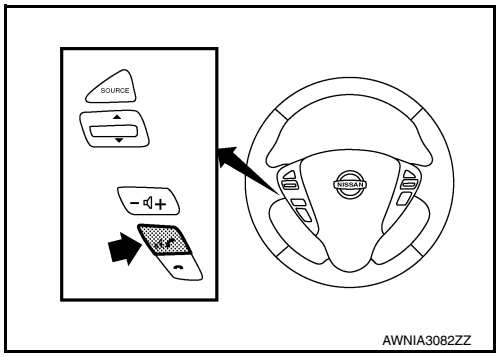
The Bluetooth® control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

Bluetooth® CONTROL UNIT INITIALIZATION CHECKS

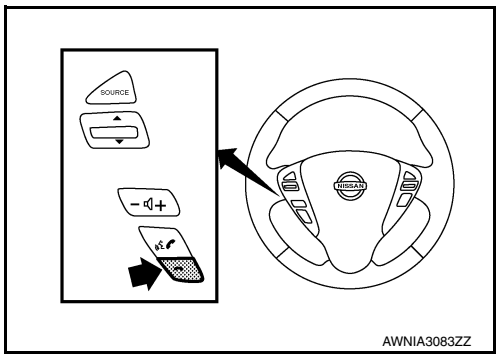
- Internal control unit failure
- Bluetooth® antenna connection open or shorted
- Steering wheel audio control switches [(PHONE/SEND), (PHONE/END)] stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth® inquiry check

OPERATION PROCEDURE

1. Turn ignition switch to ACC or ON.
2. Wait for the Bluetooth® system to complete initialization. This may take up to 20 seconds.
3. Press and hold the steering wheel audio control switch (PHONE/SEND) button for at least 5 seconds. The Bluetooth® system will begin to play a verbal prompt.



4. While the prompt is playing, press and hold the steering wheel audio control switch (PHONE/END) button until you hear the “Diagnostics mode” prompt. The Bluetooth® system will sound a 5-second beep.
5. While the beep is sounding, press and hold the steering wheel audio control switch (PHONE/END) button again until you hear prompts.
6. The Bluetooth® system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician. Refer to AV-77, "Work Flow".
7. After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails, refer to AV-77, "Work Flow".



Work Flow

INFOID:0000000009459955

Failure Message	Action
“Internal failure”	Replace Bluetooth® control unit. Refer to AV-123, "Removal and Installation".
“Bluetooth® antenna open”	1. Inspect harness connection. 2. Replace Bluetooth® antenna. Refer to AV-124, "Removal and Installation".
“Bluetooth® antenna shorted”	
“Phone/Send for Hands Free System is stuck”	Check steering wheel audio control switches. Refer to AV-110, "Diagnosis Procedure".
“Phone/End for the Hands Free System is stuck”	
“Microphone test” (failed interactive test)	1. Inspect harness between Bluetooth® control unit and microphone. 2. Replace microphone. Refer to AV-126, "Removal and Installation" .

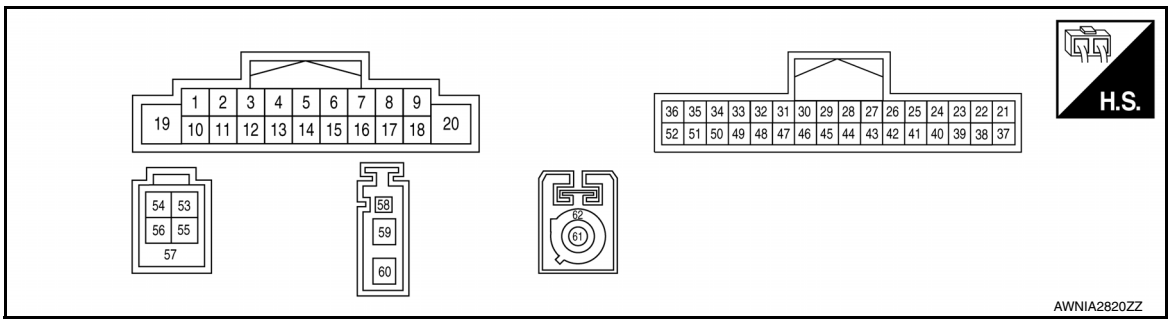
ECU DIAGNOSIS INFORMATION

AUDIO UNIT

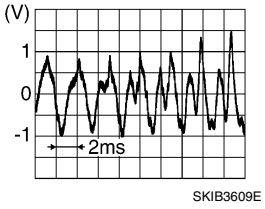
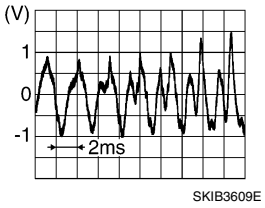
Reference Value

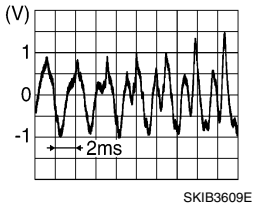
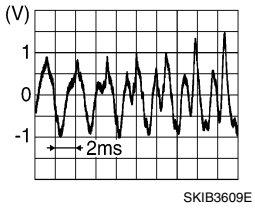
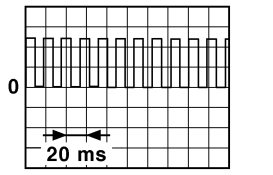
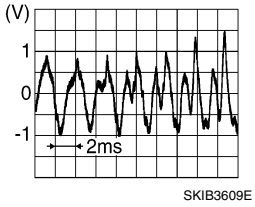
INFOID:0000000009459956

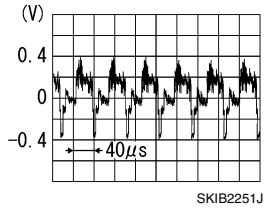
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
2 (GR)	3 (P)	Sound signal front door speaker LH	Output	ON	Sound output	
4 (W)	5 (R)	Sound signal rear door speaker LH	Output	ON	Sound output	
6 (BR)	15 (GR)	Steering switch signal A	Input	ON	Press SOURCE switch	0V
					Press △ switch	1.0V
					Press ▽ switch	2.0V
					Press switch	3.0V
					Except above	5.0V
7 (W)	Ground	ACC power supply	Input	ACC	—	Battery voltage
9 (LG/R)	8 (B)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
11 (O)	12 (V)	Sound signal front door speaker RH	Output	ON	Sound output	 SKIB3609E
13 (L)	14 (Y)	Sound signal rear door speaker RH	Output	ON	Sound output	 SKIB3609E
16 (V)	15 (GR)	Steering switch signal B	Input	ON	Press – switch	0V
					Press + switch	1.0V
					Press switch	2.0V
					Except above	5.0V
18 (LG)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 JSNIA0012GB
19 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
20 (B/W)	Ground	Ground	—	ON	—	0 V
25 (G)	24 (R)	TEL voice signal	Input	ON	During voice guide output with switch pressed.	 SKIB3609E
26 (Shield)	—	TEL voice signal shield	—	—	—	—
31 (SB)	—	AV communication (H)	Input/ Output	—	—	—
32 (LG)	—	AV communication (L)	Input/ Output	—	—	—
33 (B)	Ground	Camera ground	—	ON	—	0 V
34 (L)	Ground	Camera power supply	Output	ON	Camera image displayed	6.0 V
					Except for above	0 V

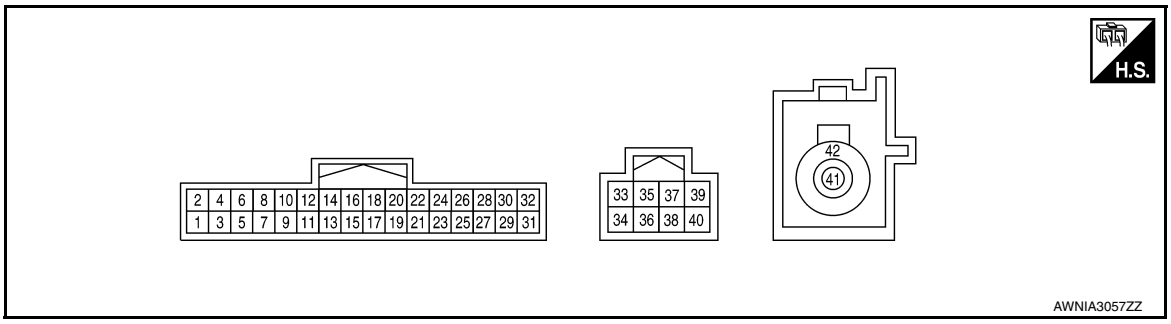
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
35 (Y)	36 (Shield)	Camera image signal	Input	ON	Camera image displayed	 SKIB2251J
44 (B)	Ground	Camera detection	—	ON	—	0 V
46 (B)	Ground	EQ02 Ground	—	ON	—	0 V
48 (B/W)	Ground	EQ04 Ground	—	ON	—	0 V
50 (Y)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse)	Battery voltage
					Selector lever in any position other than R (reverse)	0 V
53 (W)	—	V BUS signal	—	—	—	—
54 (G)	—	USB ground	—	—	—	—
55 (L)	—	USB D+ signal	—	—	—	—
56 (R)	—	USB D− signal	—	—	—	—
57 (Shield)	—	USB shield	—	—	—	—
58 (B)	Ground	Antenna amp. ON signal	Output	ON	Audio unit ON, FM-AM selected.	Battery voltage
59 (B)	Ground	AM/FM antenna signal	Input	ON	Audio unit ON, FM-AM selected.	5.0 V
61 (B)	Ground	Satellite antenna signal	Input	ON	Audio unit ON, XM selected.	5.0 V
62 (Shield)	—	Satellite antenna shield	—	—	—	—

BLUETOOTH® CONTROL UNIT

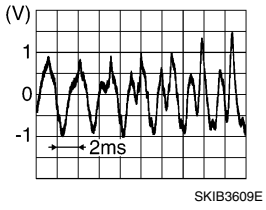
Reference Value

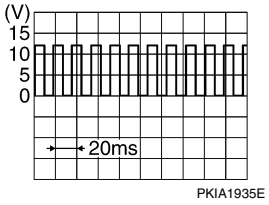
INFOID:0000000009459957

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ output	Ignition switch	Operation	
1 (Y/G)	Ground	Battery power	Input	OFF	–	Battery voltage
2 (L/Y)	Ground	ACC power	Input	ACC	–	Battery voltage
3 (O)	Ground	IGN power	Input	ON	–	Battery voltage
4 (B)	Ground	Ground	–	ON	–	0V
7 (P)	8 (Shield)	MIC in signal	Input	–	–	–
9 (W)	10 (B)	Audio out	Output	ACC or ON	Bluetooth® control unit sends audio signal	
12 (R)	14 (G)	LAD IN 1	Input	ON	Press SOURCE switch	0V
					Press △ switch	1.0V
					Press ▽ switch	2.0V
					Press switch	3.0V
					Except above	5.0V
13 (P)	14 (G)	LAD IN 2	Input	ON	Press – switch	0V
					Press + switch	1.0V
					Press switch	2.0V
					Except above	5.0V

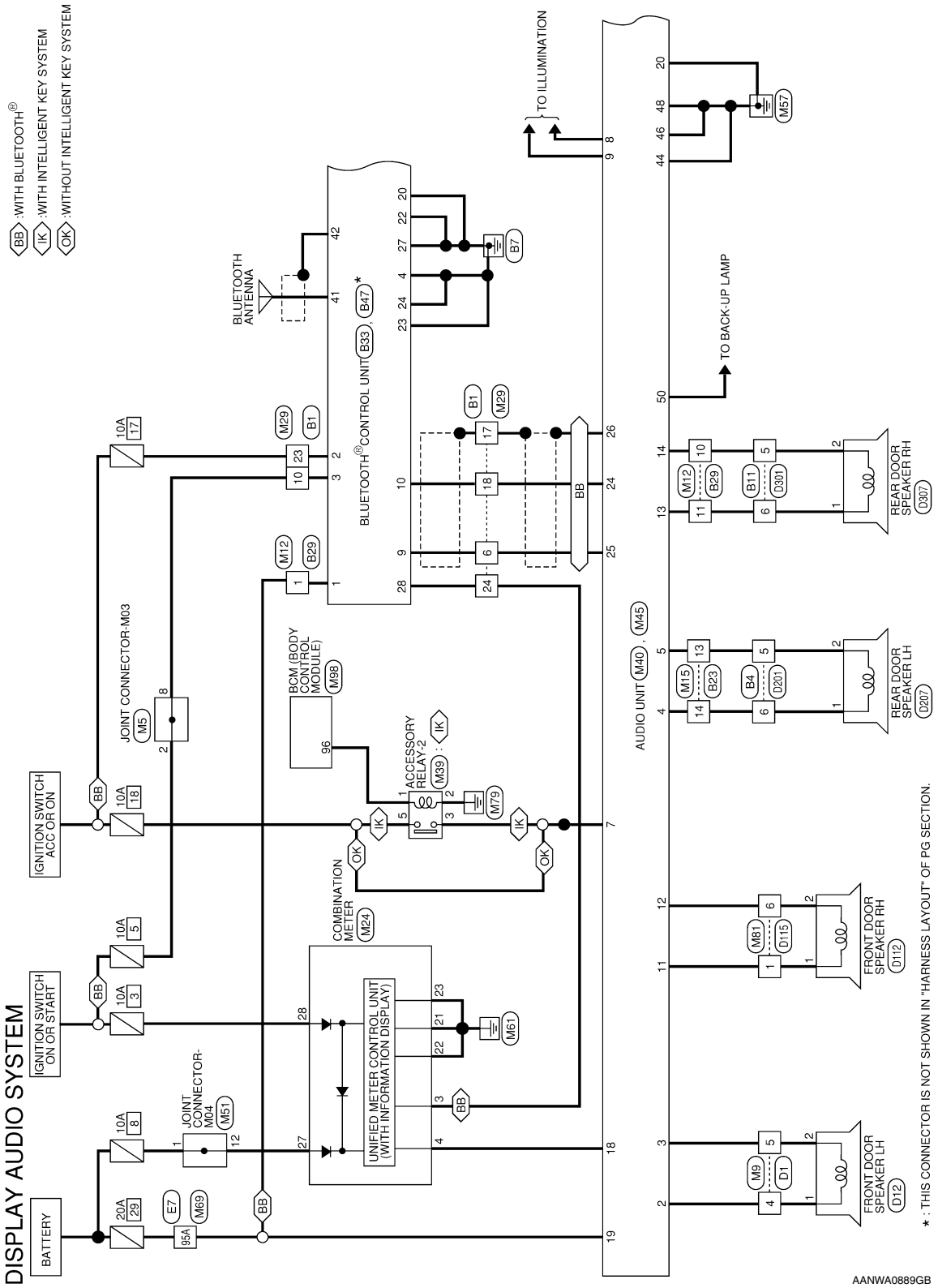
Terminal (wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ output	Ignition switch	Operation	
17 (BR)	19 (GR)	LAD OUT 1	Output	ON	Press SOURCE switch	0V
					Press △ switch	1.0V
					Press ▽ switch	2.0V
					Press switch	3.0V
					Except above	5.0V
18 (V)	19 (GR)	LAD OUT 2	Output	ON	Press – switch	0V
					Press + switch	1.0V
					Press switch	2.0V
					Except above	5.0V
20 (B)	Ground	CONT1 Ground	–	ON	–	0V
22 (B)	Ground	CONT3 Ground	–	ON	–	0V
23 (B)	Ground	CONT4 Ground	–	ON	–	0V
24 (B)	Ground	CONT5 Ground	–	ON	–	0V
27 (B)	Ground	CONT6 Ground	–	ON	–	0V
28 (Y)	Ground	Vehicle speed signal (2-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 PKIA1935E
29 (L)	Ground	Microphone power	Output	ON	–	5V
33 (SB)	–	AV communication (H)	–	–	–	—
34 (LG)	–	AV communication (L)	–	–	–	—
37 (LG)	–	AV communication jumper (H)	–	–	–	—
38 (LG)	–	AV communication jumper (H)	–	–	–	—
39 (SB)	–	AV communication jumper (L)	–	–	–	—
40 (SB)	–	AV communication jumper (L)	–	–	–	—
41 (B)	–	Bluetooth® antenna	–	–	–	—
42 (Shield)	–	Shield	–	–	–	—

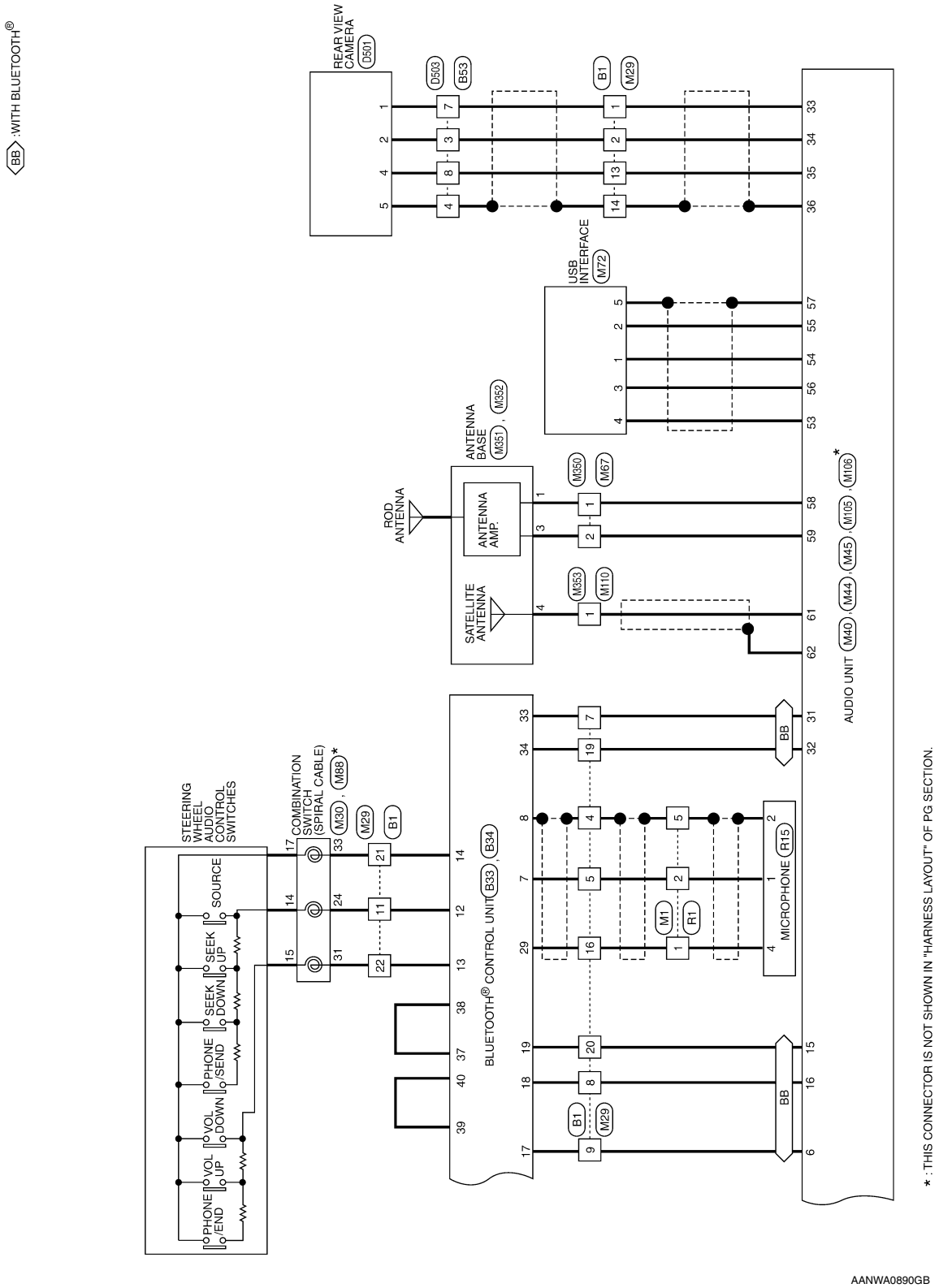
WIRING DIAGRAM

DISPLAY AUDIO

Wiring Diagram

INFOID:0000000009459958





AANWA0890GB

DISPLAY AUDIO SYSTEM CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4
5	6	7	8

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

Connector No.	M5
Connector Name	JOINT CONNECTOR-M03
Connector Color	BROWN

H.S.

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

Terminal No.	Color of Wire	Signal Name
2	O	–
8	O	–

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	GR	–
5	P	–

Connector No.	M12
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	Y	–
10	Y	–
11	L	–

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
13	R	–
14	W	–

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
3	SB	2P/R
4	LG	8P/R
21	B	GND (ILLUMINATION)
22	B	GND (POWER)
23	B	GND (CIRCUIT)
27	R/W	BAT
28	GR	IGN

AANIA1767GB

Connector No.	M29
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	–
2	L	–
4	SHIELD	–
5	P	–
6	G	–
7	SB	–
8	V	–

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

H.S.

25	24	31	32
27	21	22	33

Terminal No.	Color of Wire	Signal Name
24	LG	–
31	R	–
33	L	–

Terminal No.	Color of Wire	Signal Name
9	BR	–
10	O	–
11	LG	–
13	Y	–
14	SHIELD	–
16	L	–
17	SHIELD	–
18	R	–
19	LG	–
20	GR	–
21	L	–
22	R	–
23	L	–
24	SB	–

Connector No.	M39
Connector Name	ACCESSORY RELAY-2
Connector Color	BLUE

H.S.

3		
2	5	1

Terminal No.	Color of Wire	Signal Name
1	SB	–
2	B	–
3	L	–
5	O	–

AANIA1768GB

Connector No.	M40
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM)
Connector Color	WHITE

H.S.

36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21
52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37

Terminal No.	Color of Wire	Signal Name
21	–	–
22	–	–
23	–	–
24	R	TEL VOICE -
25	G	TEL VOICE +
26	SHIELD	TEL VOICE GND
27	–	–
28	–	–
29	–	–
30	–	–
31	SB	MCAN1 H
32	LG	MCAN1 L
33	B	CAM GND
34	L	CAM 6.2V
35	Y	CAM VIDEO
36	SHIELD	VIDEO GND
37	–	–
38	–	–
39	–	–
40	–	–
41	–	–
42	–	–
43	–	–
44	B	CAM DET
45	–	–
46	B	EQ2
47	–	–
48	B/W	EQ4
49	–	–
50	Y	REVERSE
51	–	–
52	–	–

Connector No.	M44
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM)
Connector Color	GRAY

H.S.

54	53
56	55
57	

Terminal No.	Color of Wire	Signal Name
53	W	V BUS
54	G	USB GND
55	L	USB D+
56	R	USB D-
57	SHIELD	SHIELD

Connector No.	M45
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	–	–
2	GR	FR LH SP +
3	P	FR LH SP -
4	W	RR LH SP +
5	R	RR LH SP -
6	BR	STRG SW A
7	W	ACC
8	B	ILL (-)
9	LG/R	ILL (+)
10	–	–
11	O	FR RH SP +
12	V	FR RH SP -
13	L	RR RH SP +
14	Y	RR RH SP -
15	GR	STRG SW GND
16	V	STRG SW B
17	–	–
18	LG	SPD
19	Y	+B
20	B/W	GND

AANIA1769GB

Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
95A	Y	–

Connector No.	M67
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

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

Connector No.	M51
Connector Name	JOINT CONNECTOR-M04
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	LG	–
12	R/W	–

Connector No.	M88
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
14	W	–
15	L	–
17	BR	–

Connector No.	M81
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	O	–
6	V	–

Connector No.	M72
Connector Name	USB INTERFACE
Connector Color	GRAY

H.S.

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

AANIA1770GB

Connector No.	M98
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	WHITE

H.S.

71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110

Terminal No.	Color of Wire	Signal Name
96	SB	ACC RELAY OUTPUT

Connector No.	M105
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM)
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
58	B	ANT +B
59	B	ANTENNA SIGNAL
60	–	–

Connector No.	M106
Connector Name	AUDIO UNIT (WITH DISPLAY AUDIO UNIT)
Connector Color	PINK

H.S.

Terminal No.	Color of Wire	Signal Name
61	B	ANT IN
62	B	ANT GND

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–

Connector No.	M350
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

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

Connector No.	M351
Connector Name	ANTENNA BASE
Connector Color	GRAY

H.S.

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

AANIA1771GB

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
95A	LG	–

Terminal No.	Color of Wire	Signal Name
18	B	–
19	LG	–
20	GR	–
21	G	–
22	P	–
23	L/Y	–
24	Y	–

Connector No.	M353
Connector Name	WIRE TO WIRE
Connector Color	BROWN

Terminal No.	Color of Wire	Signal Name
1	B	–

Terminal No.	Color of Wire	Signal Name
6	W	–
7	SB	–
8	V	–
9	BR	–
10	O	–
11	R	–
13	Y	–
14	B	–
16	L	–
17	SHIELD	–

Connector No.	M352
Connector Name	ANTENNA BASE
Connector Color	GREEN

Terminal No.	Color of Wire	Signal Name
4	B	–

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	L	–
2	G	–
4	SHIELD	–
5	P	–

AANIA1772GB

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name
5	GR	–
6	LG	–

Connector No.	B23
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
13	R	–
14	W	–

Connector No.	B29
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	Y/G	–
10	GR	–
11	LG	–

AANIA1773GB

Connector No.	B33
Connector Name	BLUETOOTH® CONTROL UNIT
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	Y/G	+B
2	L/Y	ACC
3	O	IGN
4	B	GND
5	–	–
6	–	–

Terminal No.	Color of Wire	Signal Name
7	P	MIC IN+
8	SHIELD	MIC IN- (GND)
9	W	AUDIO OUT +
10	B	AUDIO OUT -
11	–	–
12	R	LADDER IN 1
13	P	LADDER IN 2
14	G	LADDER IN 3 (GND)
15	–	–
16	–	–
17	BR	LADDER OUT 1
18	V	LADDER OUT 2
19	GR	LADDER OUT 3 (GND)
20	B	CONT 1

Terminal No.	Color of Wire	Signal Name
21	–	–
22	B	CONT 3
23	B	CONT 4
24	B	CONT 5
25	–	–
26	–	–
27	B	CONT 6
28	Y	SPEED
29	L	MIC POWER
30	–	–
31	–	–
32	–	–

Connector No.	B34
Connector Name	BLUETOOTH® CONTROL UNIT
Connector Color	WHITE

H.S.

33	35	37	39
34	36	38	40

Terminal No.	Color of Wire	Signal Name
33	SB	CAN H1
34	LG	CAN L1
35	–	–
36	–	–
37	LG	CAN JUMPER 1
38	LG	CAN H2
39	SB	CAN JUMPER 2
40	SB	CAN L2

Connector No.	B47
Connector Name	BLUETOOTH® CONTROL UNIT
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
41	B	BT ANTENNA
42	SHIELD	BT SHIELD

Connector No.	B53
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

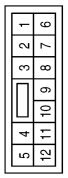
4	3	2	1
8	7	6	5

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

AANIA1774GB

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

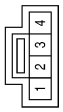
H.S.



Terminal No.	Color of Wire	Signal Name
4	GR	–
5	P	–

Connector No.	R15
Connector Name	MICROPHONE
Connector Color	WHITE

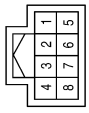
H.S.



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

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

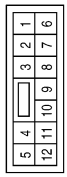
H.S.



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

Connector No.	D115
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	GR	–
6	P	–

Connector No.	D112
Connector Name	FRONT DOOR SPEAKER RH
Connector Color	WHITE

H.S.

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

Connector No.	D12
Connector Name	FRONT DOOR SPEAKER LH
Connector Color	WHITE

H.S.

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

AANIA1775GB

Connector No.	D201
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2		3	4
5	6	7	8	9	10

Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

Connector No.	D207
Connector Name	REAR DOOR SPEAKER LH
Connector Color	WHITE

H.S.

2	1

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

Connector No.	D301
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2		3	4
5	6	7	8	9	10

Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

Connector No.	D307
Connector Name	REAR DOOR SPEAKER RH
Connector Color	WHITE

H.S.

2	1

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

Connector No.	D501
Connector Name	REAR VIEW CAMERA
Connector Color	BLACK

H.S.

1	2	3
4	5	6

Terminal No.	Color of Wire	Signal Name
1	L	–
2	G	–
3	–	–
4	Y	–
5	B	–
6	–	–

Connector No.	D503
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4
5	6	7	8

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

AANIA1776GB

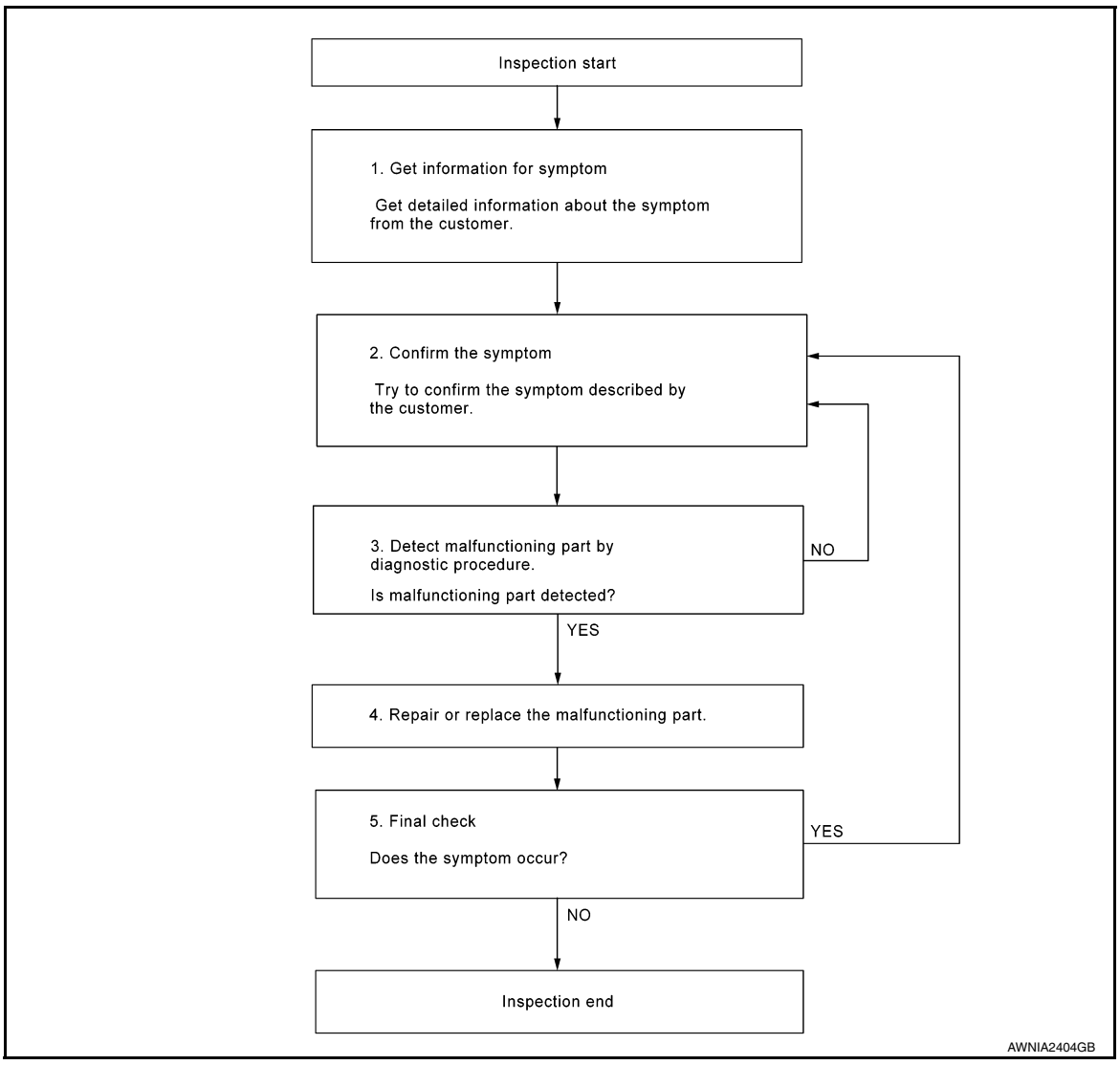
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000009459959

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 AV-113, "Symptom Table".

>> GO TO 3.

3.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

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.

Was the repair confirmed?

YES >> Inspection End.
NO >> GO TO 2.

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000009681868

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	18 (10A)
19	Battery power supply	29 (15A)

Are the fuses blown?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M45.
3. Check voltage between audio unit connector M45 and ground.

Audio unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M45	7	—	Ignition switch: ON	Battery voltage
	19		Ignition switch: OFF	

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40.
3. Check continuity between audio unit connectors and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M45	20	—	Yes
M40	44		
	46		
	48		

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace harness or connectors.

BLUETOOTH® CONTROL UNIT

BLUETOOTH® CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009681869

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
1	Battery power supply	29 (15A)
2	ACC power supply	17 (10A)
3	Ignition signal	5 (10A)

Are the fuses blown?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33.
3. Check voltage between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B33	1	—	Ignition switch: OFF	Battery voltage
	2		Ignition switch: ACC	
	3		Ignition switch: ON	

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	4	—	Yes
	20		
	22		
	23		
	24		
	27		

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace harness or connectors.

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000009681870

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:
- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminals or connectors.

2.CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M45 and suspect front door speaker connector.
2. Check continuity between audio unit connector M45 and suspect front door speaker connector.

Audio unit		Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M45	2	D12 (LH)	1	Yes
	3		2	
	11	D112 (RH)	1	
	12		2	

3. Check continuity between audio unit connector M45 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M45	2	—	No
	3		
	11		
	12		

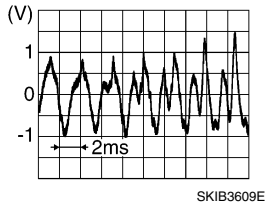
Is the inspection result normal?

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

3.CHECK FRONT DOOR SPEAKER SIGNAL

1. Connect audio unit connector M45 and suspect front door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M45.

Audio unit connector M45		Condition	Reference value
(+)	(–)		
Terminal	Terminal		

2	3		
11	12	Audio signal output	

Is the inspection result normal?

YES >> Replace front door speaker. Refer to AV-119, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-118, "Removal and Installation".

REAR DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000009681871

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:
- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminals or connectors.

2.CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M45 and suspect rear door speaker connector.
2. Check continuity between audio unit connector M45 and suspect rear door speaker connector.

Audio unit		Rear speaker		Continuity
Connector	Terminal	Connector	Terminal	
M45	4	D207 (LH)	1	Yes
	5		2	
	13	D307 (RH)	1	
	14		2	

3. Check continuity between audio unit connector M45 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M45	4	—	No
	5		
	13		
	14		

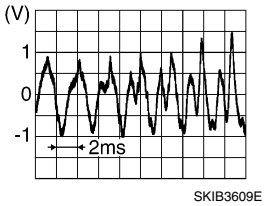
Is the inspection result normal?

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

3.CHECK REAR DOOR SPEAKER SIGNAL

1. Connect audio unit connector M45 and suspect rear door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M45.

Audio unit connector M45		Condition	Reference value
(+)	(−)		
Terminal	Terminal		

4	5		
13	14	Audio signal output	 SKIB3609E

Is the inspection result normal?

YES >> Replace rear door speaker. Refer to AV-120, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-118, "Removal and Installation".

BLUETOOTH® VOICE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681872

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK BLUETOOTH® VOICE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40 and Bluetooth® control unit connector B33.
3. Check continuity between audio unit connector M40 and Bluetooth® control unit connector B33.

Audio unit		Bluetooth® control unit		Continuity
Connector	Terminal	Connector	Terminal	
M40	25	B33	9	Yes

4. Check continuity between audio unit connector M40 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M40	25	—	No

Is inspection result normal?

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

2.CHECK BLUETOOTH® VOICE SIGNAL GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M40 and Bluetooth® control unit connector B33.

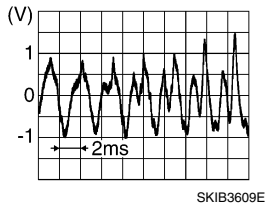
Audio unit		Bluetooth® control unit		Continuity
Connector	Terminal	Connector	Terminal	
M40	24	B33	10	Yes

Is inspection result normal?

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

3.CHECK BLUETOOTH® VOICE SIGNAL

1. Connect audio unit connector M40 and Bluetooth® control unit connector B33.
2. Turn ignition switch to ACC.
3. Press switch.
4. Check signal between the terminals of audio unit connector M40.

Audio unit connector M40		Condition	Reference value
(+)	(−)		
Terminal	Terminal		
25	24	During voice guide output with switch pressed.	

Is the inspection result normal?

YES >> Replace Bluetooth® control unit. Refer to AV-123, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-118, "Removal and Installation".

BLUETOOTH® CONTROL SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681873

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK CONTROL SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33.
3. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminals		
B33	20	—	Yes
	22		
	23		
	24		
	27		

Is the inspection result normal?

YES >> Replace Bluetooth® control unit. Refer to AV-123, "Removal and Installation".
NO >> Repair or replace harness or connectors.

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681874

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK REVERSE INPUT SIGNAL

1. Turn ignition switch ON.
2. Shift the selector lever to R (reverse).
3. Check voltage between audio unit connector M40 and ground.

Audio unit		Ground	Condition	Voltage (Approx.)
(+)		(−)		
Connector	Terminal			
M40	50	—	Selector lever in R (reverse)	Battery Voltage

Is inspection result normal?

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

2.CHECK CAMERA POWER SUPPLY CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40 and rear view camera connector.
3. Check continuity between audio unit connector M40 and rear view camera connector D501.

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M40	34	D501	2	Yes

4. Check continuity between audio unit connector M40 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M40	34		No

Is inspection result normal?

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

3.CHECK CAMERA POWER SUPPLY VOLTAGE

1. Connect audio unit connector M40 and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check voltage between audio unit connector M40 and ground.

Audio unit		Ground	Condition	Voltage (Approx.)
(+)		(−)		
Connector	Terminal			
M40	34	—	Selector lever is in “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 4.
NO >> Replace audio unit. Refer to AV-118, "Removal and Installation".

4. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40 and rear view camera connector.
3. Check continuity between audio unit connector M40 and rear view camera connector D501.

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M40	35	D501	4	Yes

4. Check continuity between audio unit connector M40 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M40	35		No

Is inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness or connectors.

5. CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M40 and rear view camera connector D501.

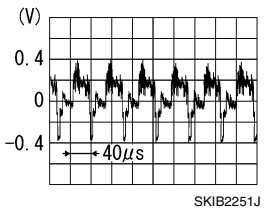
Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M40	33	D501	1	Yes

Is inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness or connectors.

6. CHECK CAMERA IMAGE SIGNAL

1. Connect audio unit connector M40 and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check signal between audio unit connector M40 and ground.

Audio unit (+)		Ground (−)	Condition	Reference value
Connector	Terminal			
M40	35	—	Camera image displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace audio unit. Refer to AV-118, "Removal and Installation".
NO >> Replace rear view camera. Refer to AV-122, "Removal and Installation".

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681875

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND MICROPHONE

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33 and microphone connector R15.
3. Check continuity between Bluetooth® control unit connector B33 and microphone connector R15.

Bluetooth® control unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
B33	7	R15	1	Yes
	8		2	
	29		4	

4. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	7	—	No
	29		

Are continuity results as specified?

YES >> GO TO 2.
NO >> Repair harness or connectors.

2.CHECK MICROPHONE POWER SUPPLY

1. Connect Bluetooth® control unit connector B33 and microphone connector R15.
2. Turn ignition switch ON.
3. Check voltage between microphone connector R15 and ground.

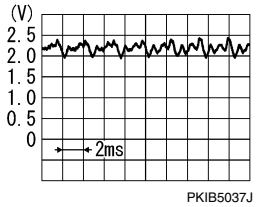
Microphone		Ground	Voltage (Approx.)
(+)		(-)	
Connector	Terminal		
R15	4	—	5V

Is the voltage reading as specified?

YES >> GO TO 3.
NO >> Replace Bluetooth® control unit. Refer to AV-123, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

Check signal between terminals of Bluetooth® control unit connector B33.

Bluetooth® control unit connector B33		Condition	Reference value
(+)	(-)		
Terminal	Terminal		
7	8	Speak into microphone.	

PKIB5037J

Were voltage readings as specified?

YES >> Replace Bluetooth® control unit. Refer to AV-123, "Removal and Installation".
NO >> Replace microphone. Refer to AV-126, "Removal and Installation".

STEERING SWITCH

Diagnosis Procedure

INFOID:0000000009681876

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M88.
3. Check resistance between the terminals of combination switch connector M88.

Combination switch connector M88		Condition	Resistance Ω (Approx.)
Terminal	Terminal		
14	17	Depress SOURCE switch.	1
		Depress △ switch.	121
		Depress ▽ switch.	321
		Depress switch.	723
15		Depress − switch.	1
		Depress + switch.	121
		Depress switch.	321

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace steering switches. Refer to AV-125, "Removal and Installation".

2.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND COMBINATION SWITCH

1. Disconnect Bluetooth® control unit connector B33 and combination switch connector M30.
2. Check continuity between Bluetooth® control unit connector B33 and combination switch connector M30.

Bluetooth® control unit		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	
B33	12	M30	24	Yes
	13		31	
	14		33	

3. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	12	—	No
	13		
	14		

Is the inspection result normal?

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

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M88 and M30.

Combination switch				Continuity
Connector	Terminal	Connector	Terminal	
M88	14	M30	24	Yes
	15		31	
	17		33	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace spiral cable. Refer to SR-15, "Removal and Installation".

4.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND AUDIO UNIT

1. Disconnect audio unit connector M45.
2. Check continuity between Bluetooth® control unit connector B33 and audio unit connector M45.

Bluetooth® control unit		Audio unit		Continuity
Connector	Terminal	Connector	Terminal	
B33	17	M45	6	Yes
	18		16	
	19		15	

3. Check continuity between Bluetooth® control unit connector B33 and ground.

Bluetooth® control unit		Ground	Continuity
Connector	Terminal		
B33	17	—	No
	18		
	19		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness or connectors.

5.CHECK AUDIO UNIT VOLTAGE

1. Connect Bluetooth® control unit connector B33 and audio unit connector M45.
2. Turn ignition switch ON.
3. Check voltage between the terminals of audio unit connector M45.

Audio unit connector M45		Voltage (Approx.)
Terminal	Terminal	
6	15	5.0 V
16		

Is the inspection result normal?

YES >> Replace Bluetooth® control unit. Refer to AV-123, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-118, "Removal and Installation".

USB CONNECTOR

Diagnosis Procedure

INFOID:0000000009681877

Regarding Wiring Diagram information, refer to AV-83, "Wiring Diagram".

1.CHECK USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M44 and USB interface connector M72.
3. Check continuity between audio unit connector M44 and USB interface connector M72.

Audio unit		USB interface		Continuity
Connector	Terminal	Connector	Terminal	
M44	53	M72	4	Yes
	54		1	
	55		2	
	56		3	
	57		5	

4. Check continuity between audio unit connector M44 and ground.

Audio unit		—	Continuity
Connector	Terminal		
M44	53	Ground	No
	55		

Is the inspection result normal?

YES >> Replace the USB interface. Refer to AV-121, "Removal and Installation".
NO >> Repair or replace harness or connectors.

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:0000000009459970

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	Audio unit	Malfunction in audio unit. Refer to AV-72, "On Board Diagnosis Function".
No sound comes out or the level of the sound is low.	No sound from all speakers.	• Speaker circuit shorted to ground. Refer to AV-83, "Wiring Diagram". • Audio unit power supply and ground circuits malfunction. Refer to AV-97, "AUDIO UNIT : Diagnosis Procedure".
	Only a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. Refer to: - AV-99, "Diagnosis Procedure" (front door speaker). - AV-101, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. Refer to: - AV-119, "Removal and Installation" (front door speaker). - AV-120, "Removal and Installation" (rear door speaker). • Malfunction in audio unit. Refer to AV-72, "On Board Diagnosis Function".
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in audio unit. Refer to AV-72, "On Board Diagnosis Function".
	Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).	• Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. Refer to: - AV-99, "Diagnosis Procedure" (front door speaker). - AV-101, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. • Poor Installation of speaker (e.g. backlash and looseness). Refer to: - AV-119, "Removal and Installation" (front door speaker). - AV-120, "Removal and Installation" (rear door speaker). • Malfunction in audio unit. Refer to AV-72, "On Board Diagnosis Function".
	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. Refer to AV-128, "Feeder Layout".

Symptoms	Check items	Probable malfunction location
No radio reception or poor reception.	• Other audio sounds are normal. • Any radio station 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 obstacles generating external noises).	• Antenna amp. ON signal circuit malfunction. Refer to AV-78, "Reference Value". • Poor connector connection of antenna or antenna feeder. Refer to AV-128, "Feeder Layout".
No satellite radio reception.	Satellite radio antenna malfunction.	• Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-128, "Feeder Layout".
Buzz/rattle sound from speaker	The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.	Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.

RELATED TO HANDS-FREE PHONE

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and check that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
   NOTE:
   The customer's phone may be required, depending upon their concern.
3. Write down the customer's phone brand, model and service provider.
   NOTE:
   It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
4. Go to "www.nissanusa.com/bluetooth/".

a. Using the website's search engine, find out if the customer's phone is on the approved list.

b. If the customer's phone is NOT on the approved list:

   Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.

c. If the feature related to the customer's concern shows as "N" (not compatible):
   Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features".

d. If the feature related to the customer's concern shows as "Y" (compatible):
   Perform diagnosis as per the following table.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection (no connection is displayed on the display at the guide).	Repeat the registration of cellular phone.	Malfunction in audio unit. Replace audio unit. Refer to AV-118, "Removal and Installation".
Hands-free phone cannot be established.	• 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.	
The other party's voice cannot be heard by hands-free phone.	Check the "microphone speaker" in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-108, "Diagnosis Procedure".
The system cannot be operated.	• The voice recognition can be controlled. • Steering switch's −, +, and switch works, but does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-125, "Removal and Installation".
	Steering switch's , −, +, and switches do not work.	Steering switch signal circuit malfunction. Refer to AV-110, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-110, "Diagnosis Procedure".

RELATED TO REAR VIEW CAMERA

Symptoms	Check items	Probable malfunction location
Rear view camera is inoperative.	Reverse signal circuit malfunction.	Reverse signal circuit malfunction between BCM and audio unit. Refer to AV-106, "Diagnosis Procedure".
	Camera image signal circuit malfunction.	Camera image signal circuit malfunction between rear view camera and audio unit. Refer to AV-106, "Diagnosis Procedure".
	Rear view camera malfunction.	Replace rear view camera. Refer to AV-122, "Removal and Installation".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009459971

RELATED TO NOISE

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).
The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- 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 the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

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 determine the cause.

NOTE:
The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	• Ignition components
The occurrence of the noise is linked with the operation of the fuel pump.		• Fuel pump condenser
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	• Relay malfunction, audio unit malfunction
	The noise occurs when various motors are operating.	• Motor case ground • Motor
The noise occurs constantly, not just under certain conditions.		• Rear defogger coil malfunction • Open circuit in printed heater • Poor ground of antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		• Ground wire of body parts • Ground due to improper part installation • Wiring connections or a short circuit

RELATED TO HANDS-FREE PHONE

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 Compatibility)” in AV-113, "Symptom Table".
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.

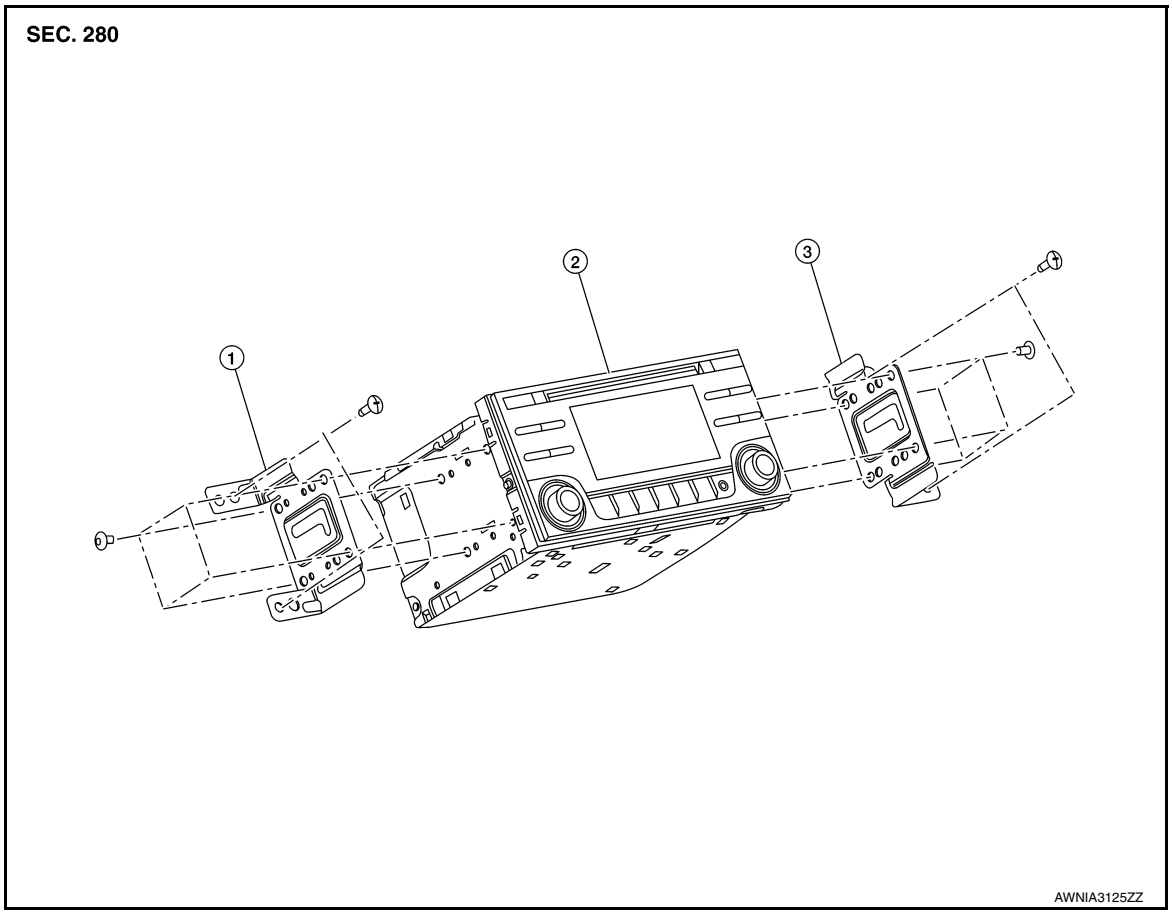
Symptom	Cause and Counter measure
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality.	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

REMOVAL AND INSTALLATION

AUDIO UNIT

Exploded View

INFOID:0000000009459972



1. Audio unit bracket (LH)
2. Audio unit
3. Audio unit bracket (RH)

Removal and Installation

INFOID:0000000009459973

REMOVAL

1. Remove the battery negative terminal. Refer to PG-67, "Removal and Installation (Battery)".
2. Remove cluster lid C. Refer to IP-22, "Removal and Installation".
3. Remove the audio unit screws.
4. Partially remove the audio unit to gain access to the harness connectors.
5. Disconnect the harness connectors from the audio unit and remove.
6. Remove the audio unit bracket screws from each side of the audio unit (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

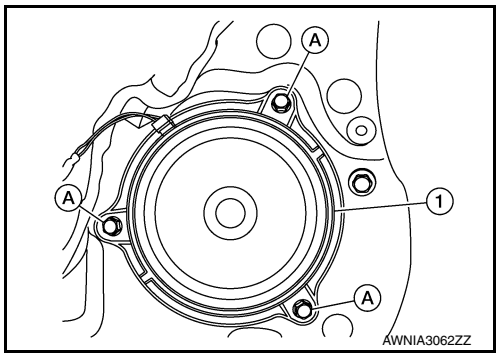
FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000009541250

REMOVAL

1. Remove the front door finisher. Refer to INT-15, "Removal and Installation".
2. Disconnect the harness connector from front door speaker.
3. Remove the front door speaker screws (A).
4. Remove the front door speaker (1).



INSTALLATION

Installation is in the reverse order of removal.

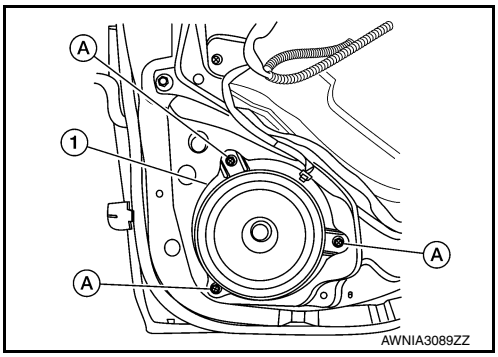
REAR DOOR SPEAKER

Removal and Installation

INFOID:0000000009541251

REMOVAL

1. Remove the rear door finisher. Refer to INT-18, "Removal and Installation".
2. Disconnect the harness connector from the rear door speaker.
3. Remove the rear door speaker screws (A).
4. Remove the rear door speaker (1).



INSTALLATION

Installation is in the reverse order of removal.

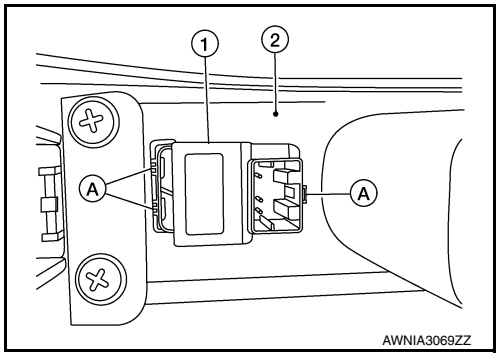
USB INTERFACE

Removal and Installation

INFOID:0000000009459976

REMOVAL

1. Remove the center console assembly. Refer to IP-18, "Removal and Installation".
2. Release the pawls (A) from the back of the center console assembly (2) using a suitable tool and remove the USB interface (1).



INSTALLATION

Installation is in the reverse order of removal.

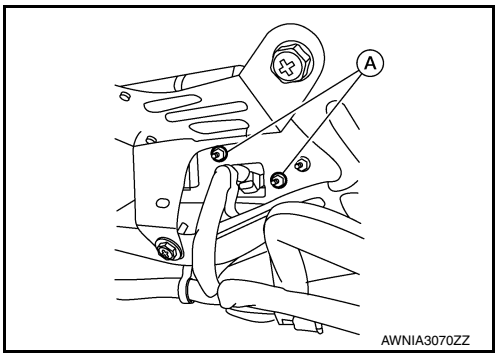
REAR VIEW CAMERA

Removal and Installation

INFOID:0000000009460058

REMOVAL

1. Remove the back door outer finisher. Refer to EXT-46, "Removal and Installation".
2. Disconnect the harness connector from rear view camera.
3. Remove the nuts (A) from the rear view camera and remove.



INSTALLATION

Installation is in the reverse order of removal.

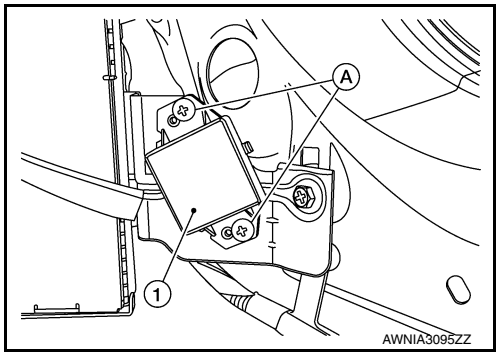
BLUETOOTH® CONTROL UNIT

Removal and Installation

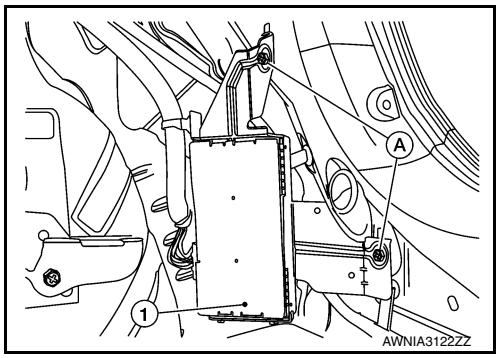
INFOID:0000000009541253

REMOVAL

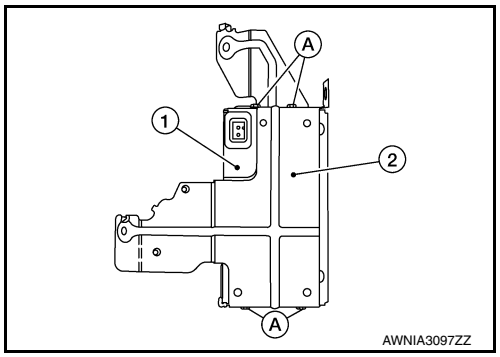
1. Remove the luggage side lower finisher (RH). Refer to INT-34, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Disconnect the harness connectors from the Bluetooth® control unit.
3. Remove the Bluetooth® antenna screws (A) and the Bluetooth® antenna (1).



4. Remove the Bluetooth® control unit bracket screws (A) and the Bluetooth® control unit (1).



5. Remove the Bluetooth® control unit screws (A) and separate the Bluetooth® control unit (1) from the bracket (2).



INSTALLATION

Installation is in the reverse order of removal.

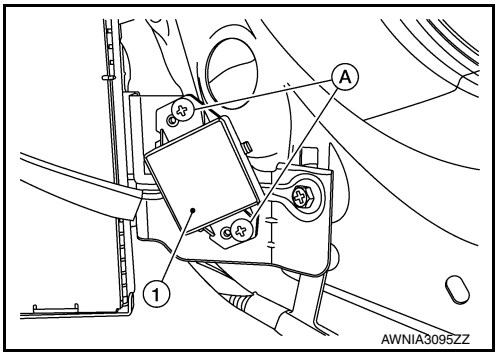
BLUETOOTH® ANTENNA

Removal and Installation

INFOID:0000000009541254

REMOVAL

1. Remove the luggage side lower finisher (RH). Refer to INT-34, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Disconnect the Bluetooth® antenna harness connector from the Bluetooth® control unit.
3. Remove the Bluetooth® antenna screws (A) and the Bluetooth® antenna (1).



INSTALLATION

Installation is in the reverse order of removal.

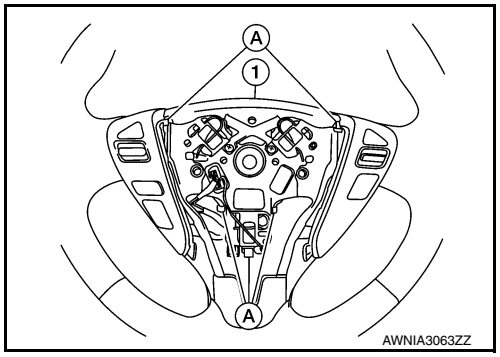
STEERING SWITCH

Removal and Installation

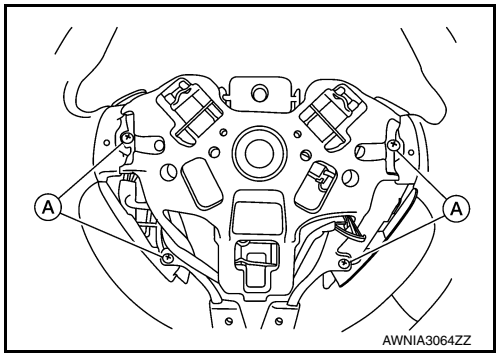
INFOID:0000000009541280

REMOVAL

1. Remove the steering wheel. Refer to ST-8, "Removal and Installation".
2. Remove the steering wheel rear finisher (1) by releasing pawls (A).



3. Remove the steering wheel audio control switch screws (A) from the back of the steering wheel.



4. Remove the steering wheel audio control switches from the steering wheel.

INSTALLATION

Installation is in the reverse order of removal.

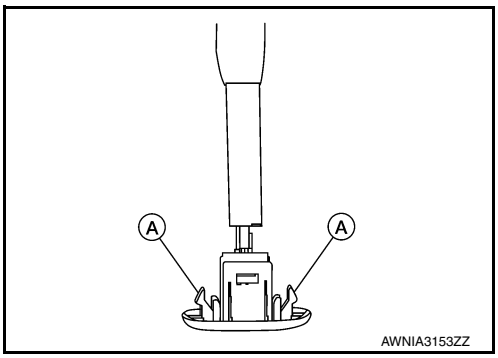
MICROPHONE

Removal and Installation

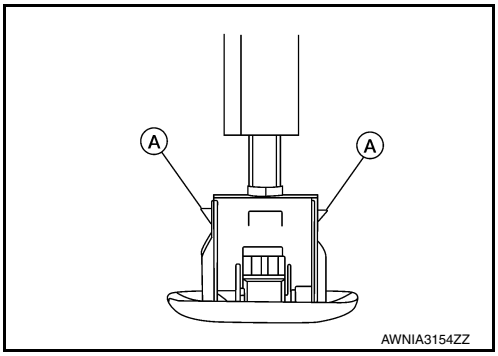
INFOID:0000000009541281

REMOVAL

1. Remove the microphone finisher from the headlining by releasing pawls (A) using a suitable tool.



2. Disconnect the harness connector from microphone and remove.
3. Separate the microphone from the finisher by releasing pawls (A) using a suitable tool.



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

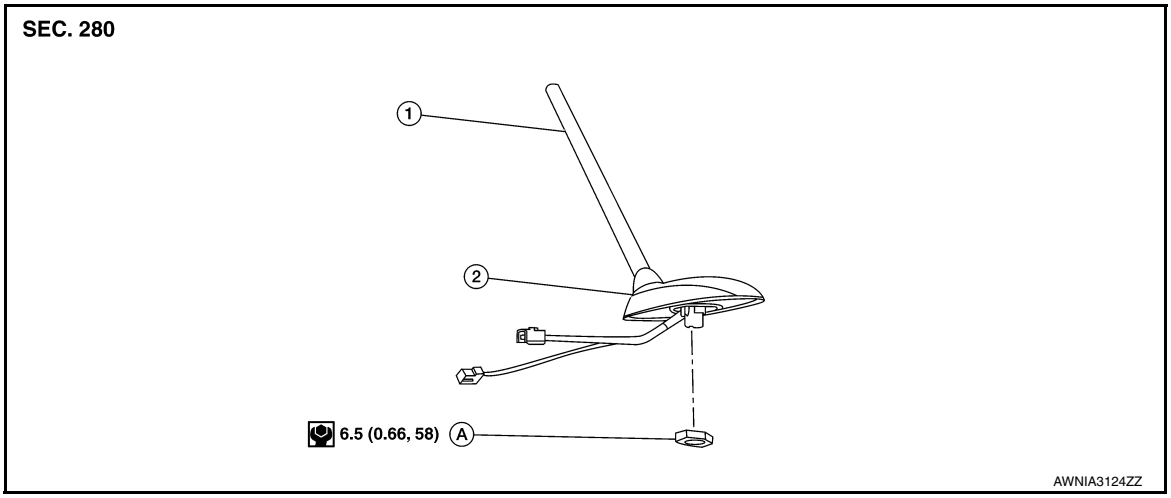
Make sure to align the rib on the finisher with the slot in the microphone.

Make sure to install the microphone with the arrows pointing toward the RH side of the vehicle.

ROD ANTENNA

Exploded View

INFOID:0000000009541282



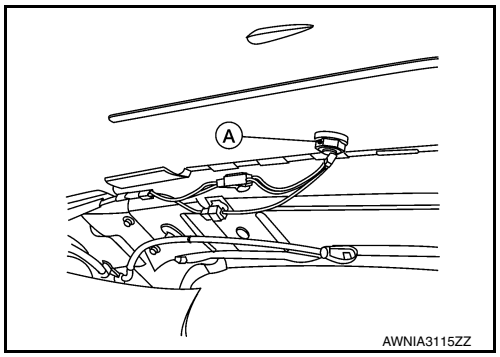
1. Antenna rod
2. Antenna base
A. Antenna nut

Removal and Installation

INFOID:0000000009541283

REMOVAL

1. Lower the rear portion of the headlining. Refer to INT-31, "Removal and Installation".
2. Disconnect the harness connectors from the antenna (satellite radio model shown).
3. Remove the antenna nut (A) and remove the antenna.



INSTALLATION

Installation is in the reverse order of removal.

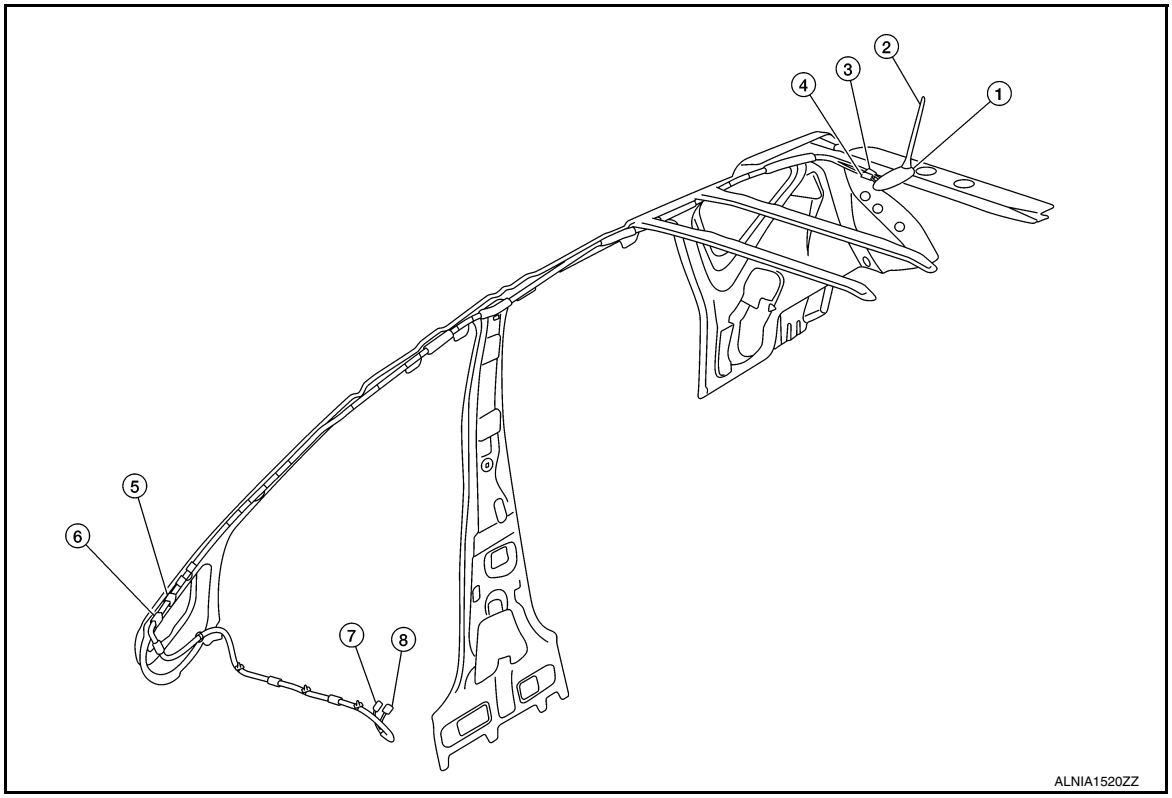
CAUTION:

If the antenna nut is tightened less than the specified torque this will lower the sensitivity of the antenna. If the antenna nut is tightened more than the specified torque this will deform the roof panel.

ANTENNA FEEDER

Feeder Layout

INFOID:0000000009541284



1. Antenna base (antenna amp. and satellite antenna)	2. Rod Antenna	3. M351
4. M352	5. M110, M353	6. M67, M350
7. M106	8. M105	

SATELLITE RADIO ANTENNA

Removal and Installation

INFOID:0000000009541285

The satellite radio antenna is part of the rod antenna. Refer to AV-127, "Removal and Installation".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009521170

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

INFOID:0000000009780555

CAUTION:

Remove battery terminal and AV control unit 30 seconds or more after turning the ignition switch OFF.

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

Precaution for Trouble Diagnosis

INFOID:0000000009459984

AV COMMUNICATION SYSTEM

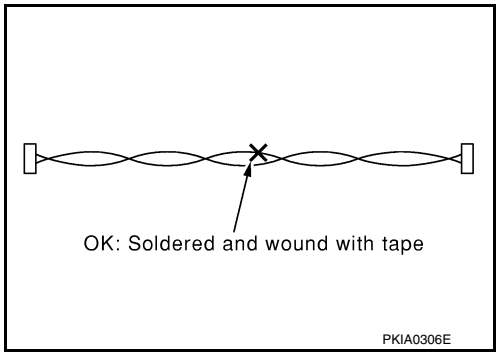
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

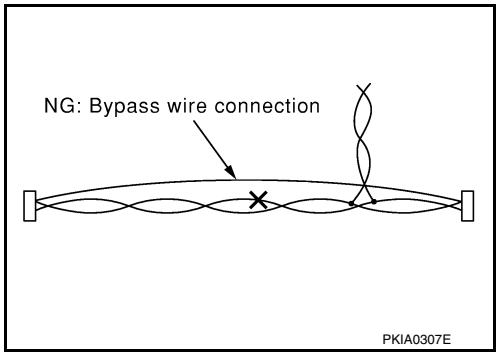
INFOID:0000000009459985

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.)



Precaution for Work

INFOID:0000000009459986

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:
- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:
- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

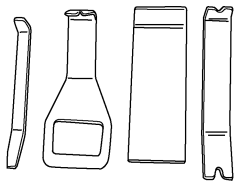
PREPARATION

PREPARATION

Special Service Tools

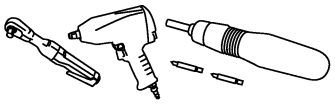
INFOID:0000000009541286

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:0000000009541287

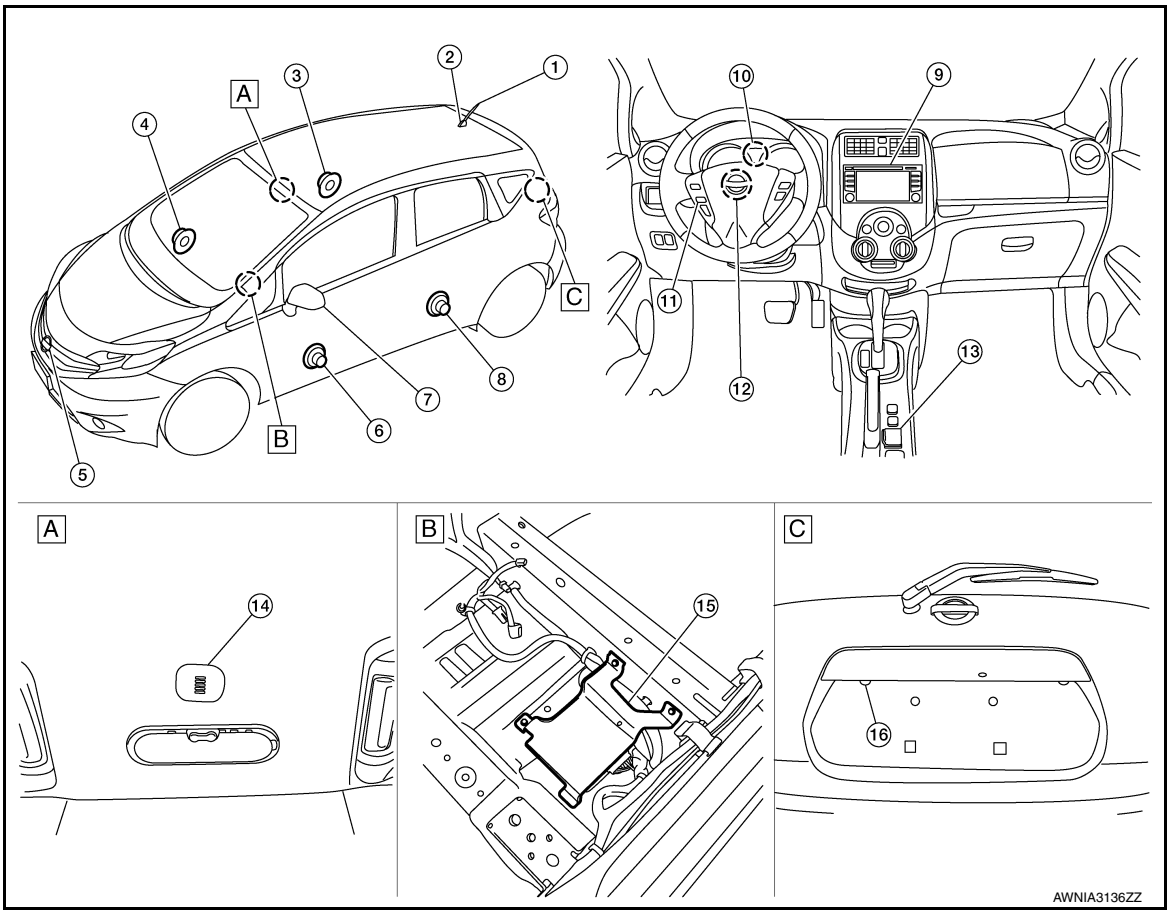
Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000009681879



A. Front of headliner B. View with passenger seat removed C. Center of back door

No.	Component	Function
1.	Rod antenna	Refer to AV-136, "Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder".
2.	Antenna base (antenna amp. and satellite antenna)	
3.	Rear door speaker RH	Refer to AV-134, "Speakers".
4.	Front door speaker RH	
5.	Front camera	Refer to AV-136, "Front Camera".
6.	Front door speaker LH	Refer to AV-134, "Speakers".
7.	Side camera	Refer to AV-136, "Side Cameras".
8.	Rear door speaker LH	Refer to AV-134, "Speakers".
9.	AV control unit	Refer to AV-134, "AV Control Unit".
10.	GPS antenna	Refer to AV-138, "GPS Antenna".
11.	Steering wheel audio control switches	Refer to AV-135, "Steering Wheel Audio Control Switches".
12.	Steering angle sensor	Refer to AV-136, "Steering Angle Sensor".
13.	USB interface and AUX in jack	Refer to AV-135, "USB Interface and AUX In Jack".
14.	Microphone	Refer to AV-135, "Microphone".

No.	Component	Function
15.	Around View®* Monitor control unit	Refer to AV-135, "Around View Monitor Control Unit".
16.	Rear view camera	Refer to AV-136, "Rear View Camera".

*: Around View Monitor is a parking aid/convenience feature. Around View Monitor cannot completely eliminate blind spots. Around View Monitor may not detect every object and does not warn of moving objects. Always check surroundings before moving vehicle. Around View Monitor is not a substitute for proper backing procedures. Always turn to check what is behind you before backing up.

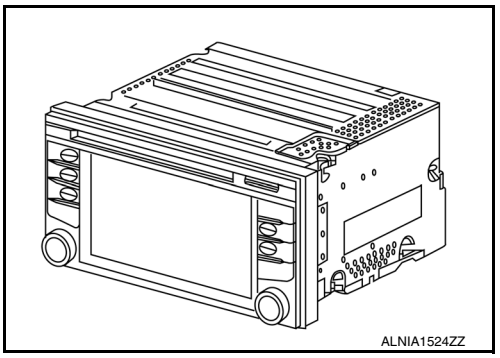
AV Control Unit

INFOID:0000000009681880

Description

- A 5.8-inch QVGA display, an AM/FM electronic tuner radio, CD drive, audio amplifier, Bluetooth® module, USB interface, camera controller and navigation unit are integrated into the AV control unit.
- The 5.8-inch display is a high resolution monitor that includes touch panel functions.
- Music files stored in iPod®*/USB memory can be played using the separate USB interface.

*: iPod® is a registered trademark of Apple, Inc. All rights reserved.

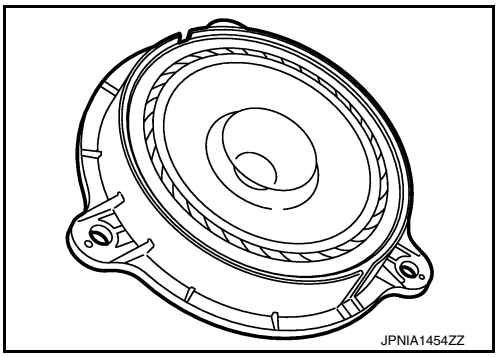


Speakers

INFOID:0000000009681881

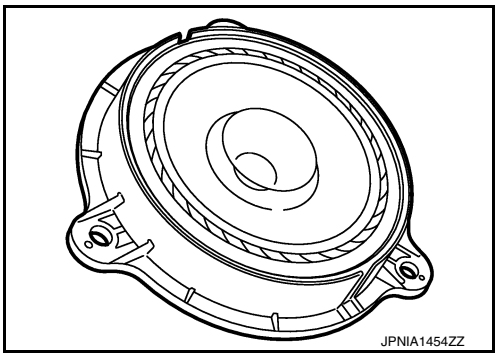
FRONT DOOR SPEAKER

- 16.5 cm (6.5 in) speakers are installed in the bottom of the front doors.
- Sound signals are input from the AV control unit to output high, mid and low range sounds.



REAR DOOR SPEAKER

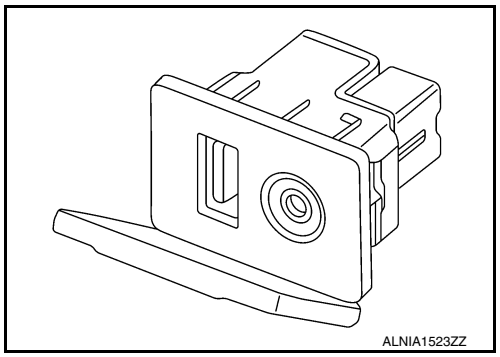
- 16.5 cm (6.5 in) speakers are installed in the bottom of the rear doors.
- Sound signals are input from the AV control unit to output high, mid and low range sounds.



USB Interface and AUX In Jack

INFOID:0000000009681882

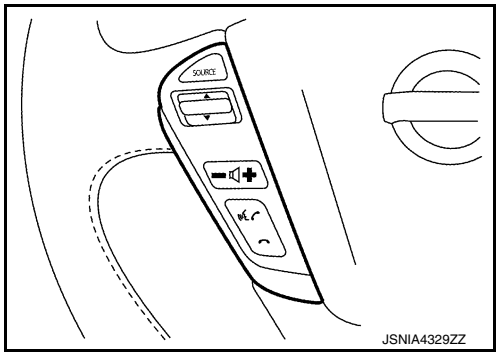
- USB Interface and AUX in jack is installed in the console.
- iPod® and USB memory can be connected to the AV control unit through the USB interface.
- An external audio device can be connected to the AV control unit through the AUX in jack.



Steering Wheel Audio Control Switches

INFOID:0000000009681883

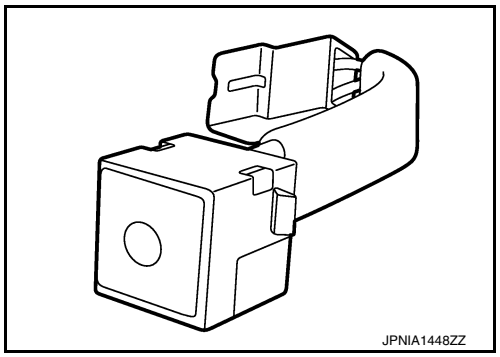
- Steering wheel audio control switches are installed in the steering wheel.
- Operations for audio and hands-free phone are possible.
- Switch is connected to the AV control unit.



Microphone

INFOID:0000000009681884

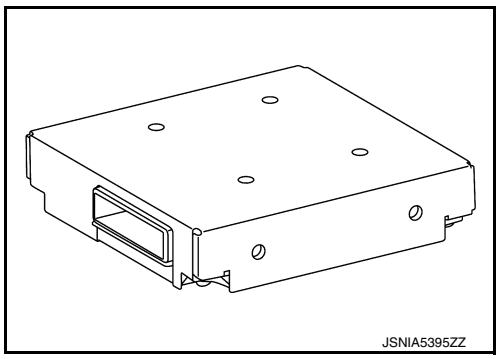
- The microphone is installed in the roof in front of the map lamp assembly.
- Power is supplied from the AV control unit.



Around View Monitor Control Unit

INFOID:0000000009681898

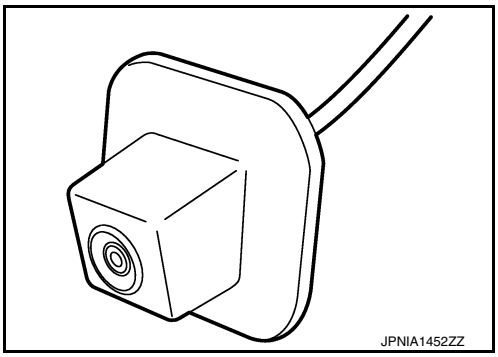
- The around view monitor control unit is installed underneath the passenger seat.
- Vehicle width guide lines, predicted course line, vehicle front guiding line and vehicle side line, and vehicle icon are displayed and combined with camera images.



Rear View Camera

INFOID:0000000009681885

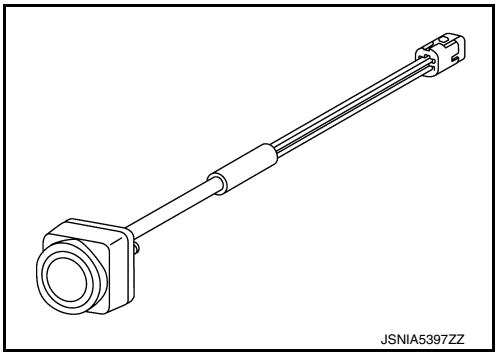
- The rear view camera is installed in the back door finisher.
- Power is supplied from the around view monitor control unit.



Side Cameras

INFOID:0000000009681899

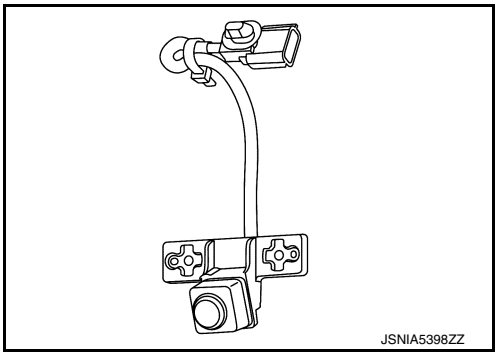
- The side cameras are installed in the door mirrors.
- Power is supplied from the around view monitor control unit.



Front Camera

INFOID:0000000009681900

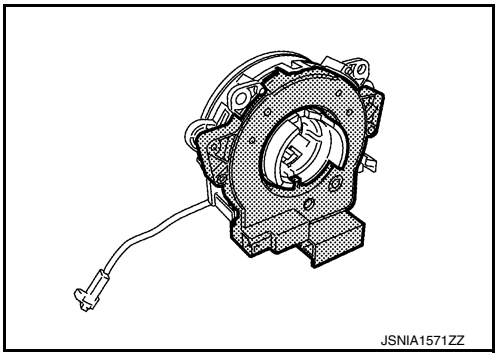
- The front camera is installed in the front grille.
- Power is supplied from the around view monitor control unit.



Steering Angle Sensor

INFOID:0000000009681901

- Steering sensor is installed to the spiral cable.
- Steering angle sends the steering signal necessary for predictive course line via CAN communication.

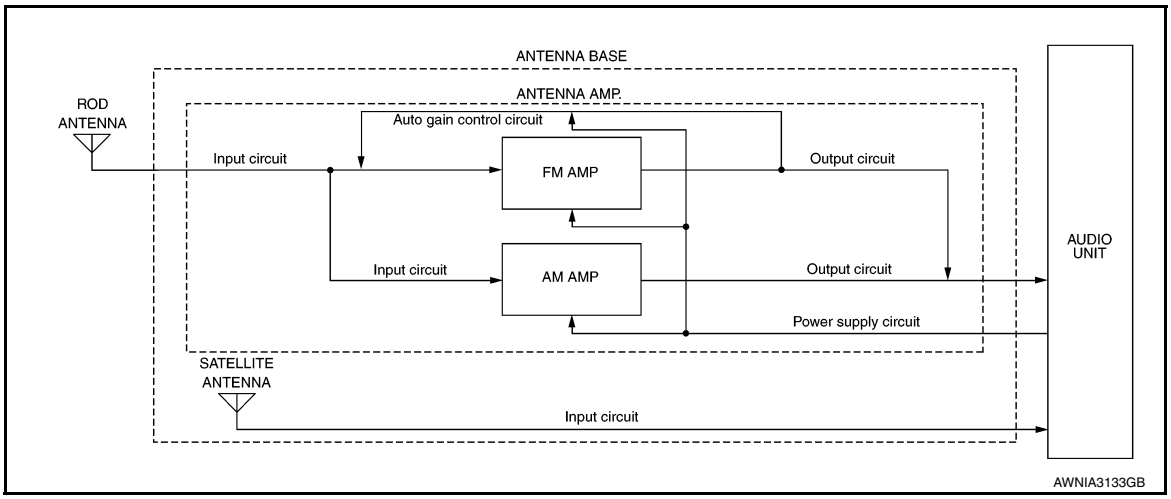


Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder

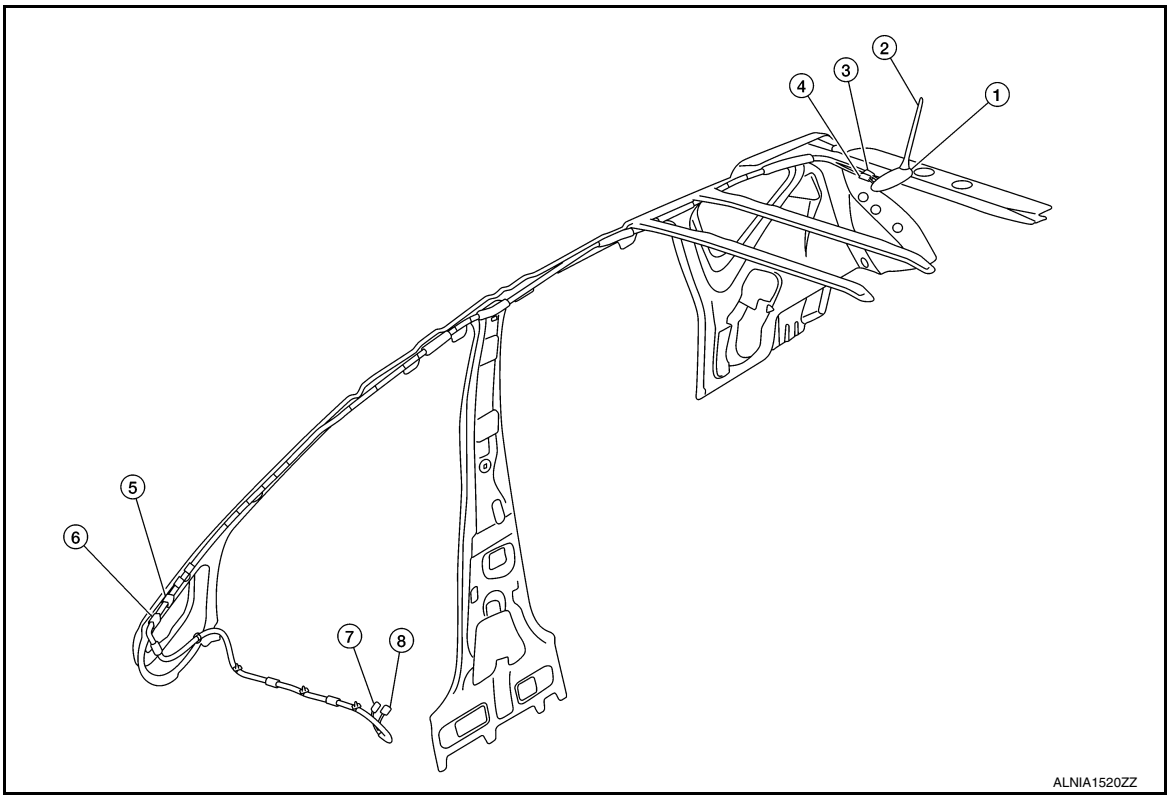
INFOID:0000000009681886

RADIO ANTENNA AND SATELLITE ANTENNA

AM/FM radio rod antenna, antenna base and satellite antenna are located on the rear of the roof. The antenna amp. and satellite antenna are built into the antenna base.



ANTENNA FEEDER LAYOUT

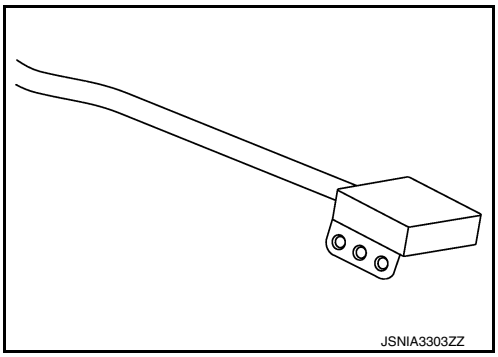


1. Antenna base (antenna amp. and satellite antenna)
2. Rod Antenna
3. M351
4. M352
5. M110, M353
6. M67, M350
7. M109
8. M73

GPS Antenna

INFOID:0000000009681887

- GPS antenna is installed in the instrument panel, behind the combination meter.
- Power is supplied from the AV control unit.



SD Card

INFOID:0000000009681888

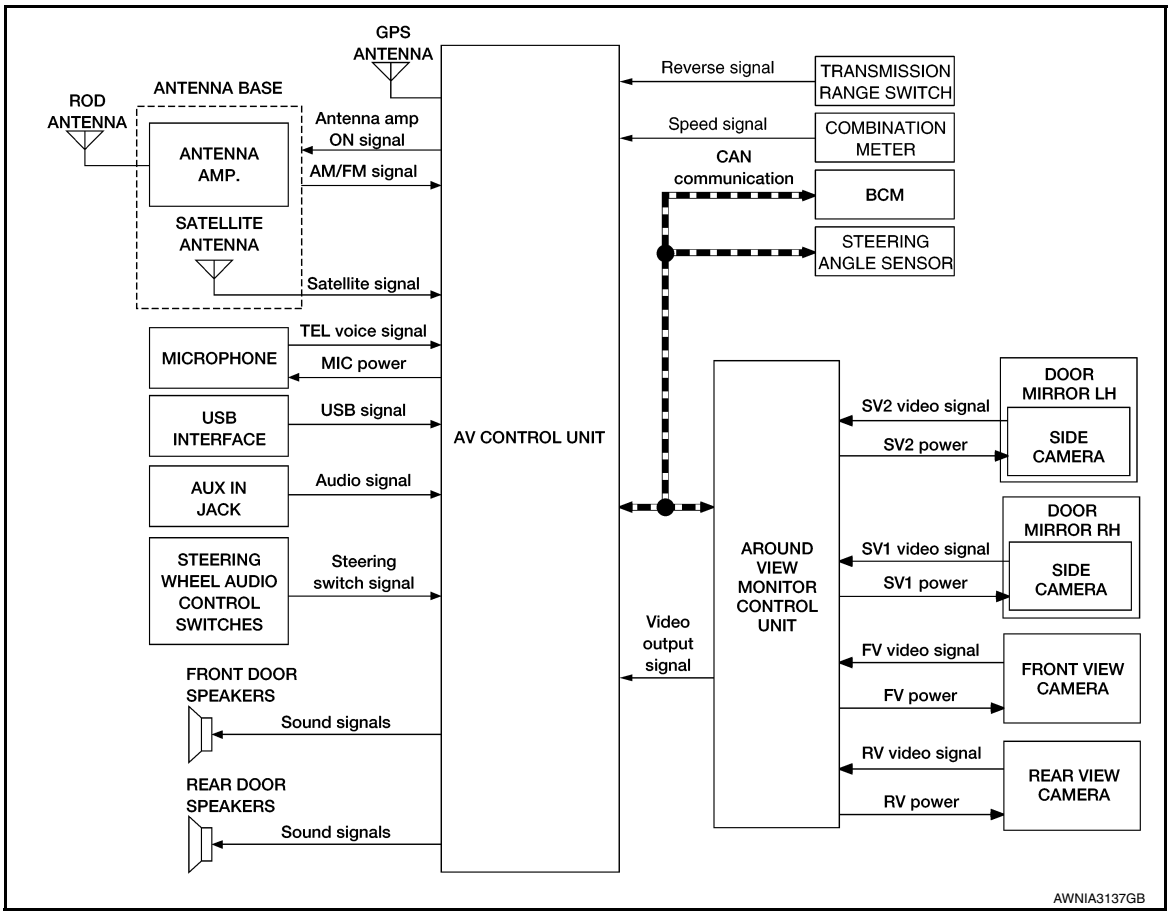
- Map data is memorized in the SD card.
- Map data is sent to the AV control unit from the SD slot.

SYSTEM

System Description

INFOID:0000000009681878

SYSTEM DIAGRAM



AUDIO SYSTEM

The audio system consists of the following component:

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

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

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

NAVIGATION SYSTEM

Description

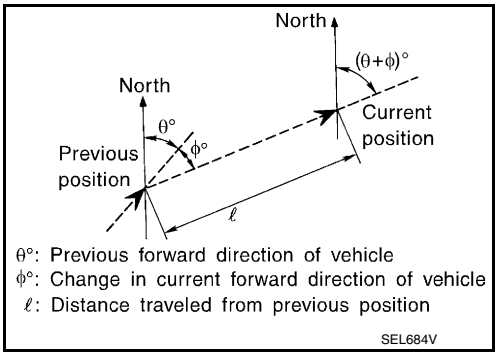
- The navigation system can be operated by control panel of the AV control unit and display (touch panel) of the AV control unit.
- Guide sound during the operation of the navigation system is output from AV control unit to front tweeters.
- AV control unit calculates the vehicle location based on the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



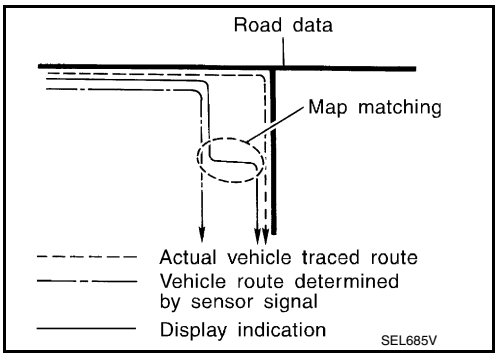
Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).	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.

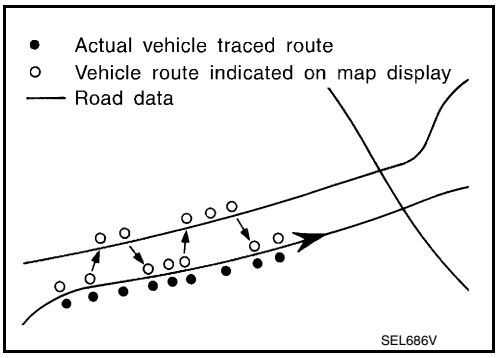
MAP-MATCHING

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

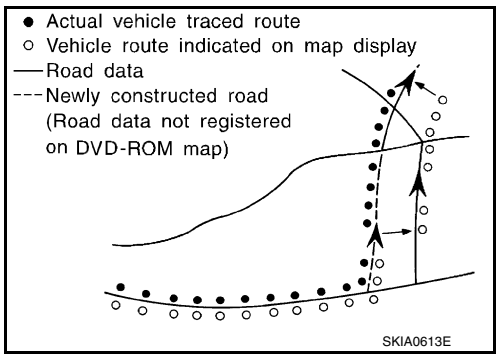
NOTE:
The road map data is based on data stored in the map SD-card.



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. In this case, the vehicle mark on the display must be corrected manually.
- 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.
  Routes 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.

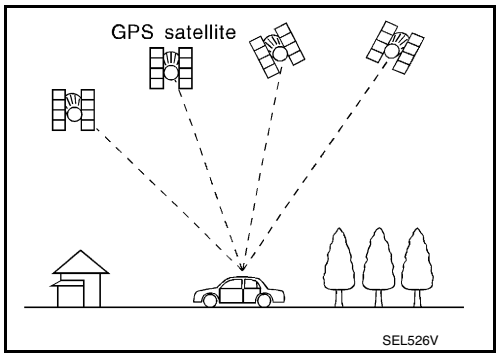


- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD-card, or when road pattern stored in the map data and the actual road pattern are different due to repair.
  The map-matching function may find another road and position the vehicle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

USB INTERFACE

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

AUX IN JACK

- Sound can be output from an external device by connecting a device to the AUX in jack.
- AUX sound signals are transmitted to each speaker via AV control unit.

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.

HANDS-FREE PHONE SYSTEM

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

When A Call Is Originated

- Spoken voice sound output from the microphone (microphone signal) is input to AV control unit.
- AV control 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

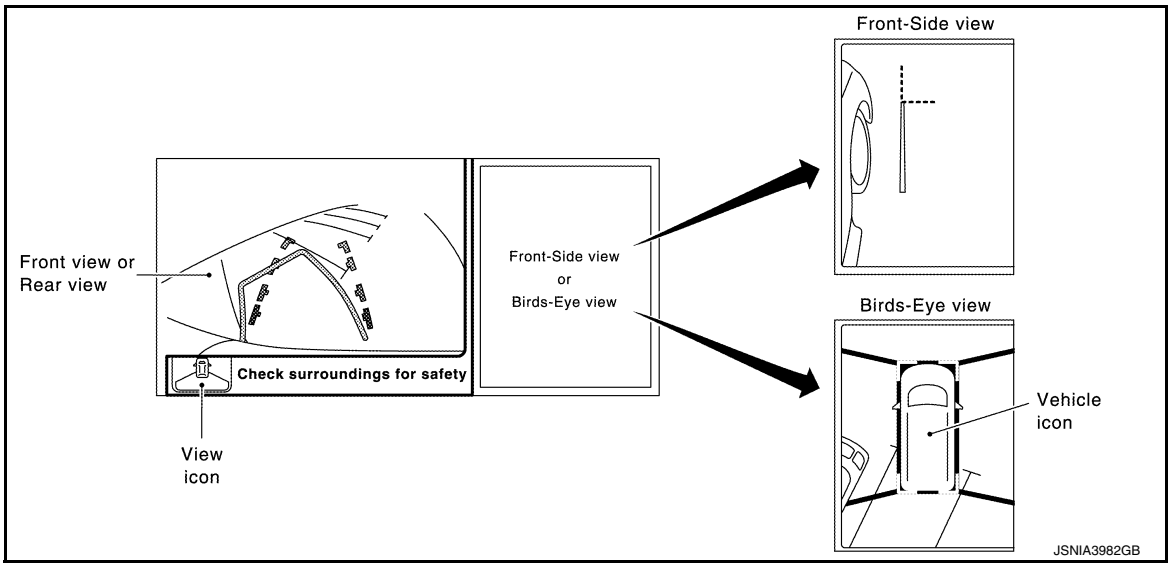
- Voice sound is input to own cellular phone from the other party.
- TEL voice signal is input to AV control unit by establishing Bluetooth® communication from cellular phone, and the signal is output to front speakers.

AROUND VIEW MONITOR FUNCTION

- This system is equipped with wide-angle cameras on the front, rear and right and left door mirrors.
- Images from front view, rear view, front-side view (RH side), and birds-eye view are displayed to monitor the vehicle surroundings.
- Around view monitor control unit expands the image received from each camera to create each view.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are displayed.
- In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- Birds-eye view converts the images from the cameras into an overhead view and displays the status of the vehicle on the display. The vehicle icon that is displayed in the birds-eye view is depicted by the around view monitor control unit.

Display

The around view monitor combines and displays travel direction view (front or rear), front-side view and birds-eye view.

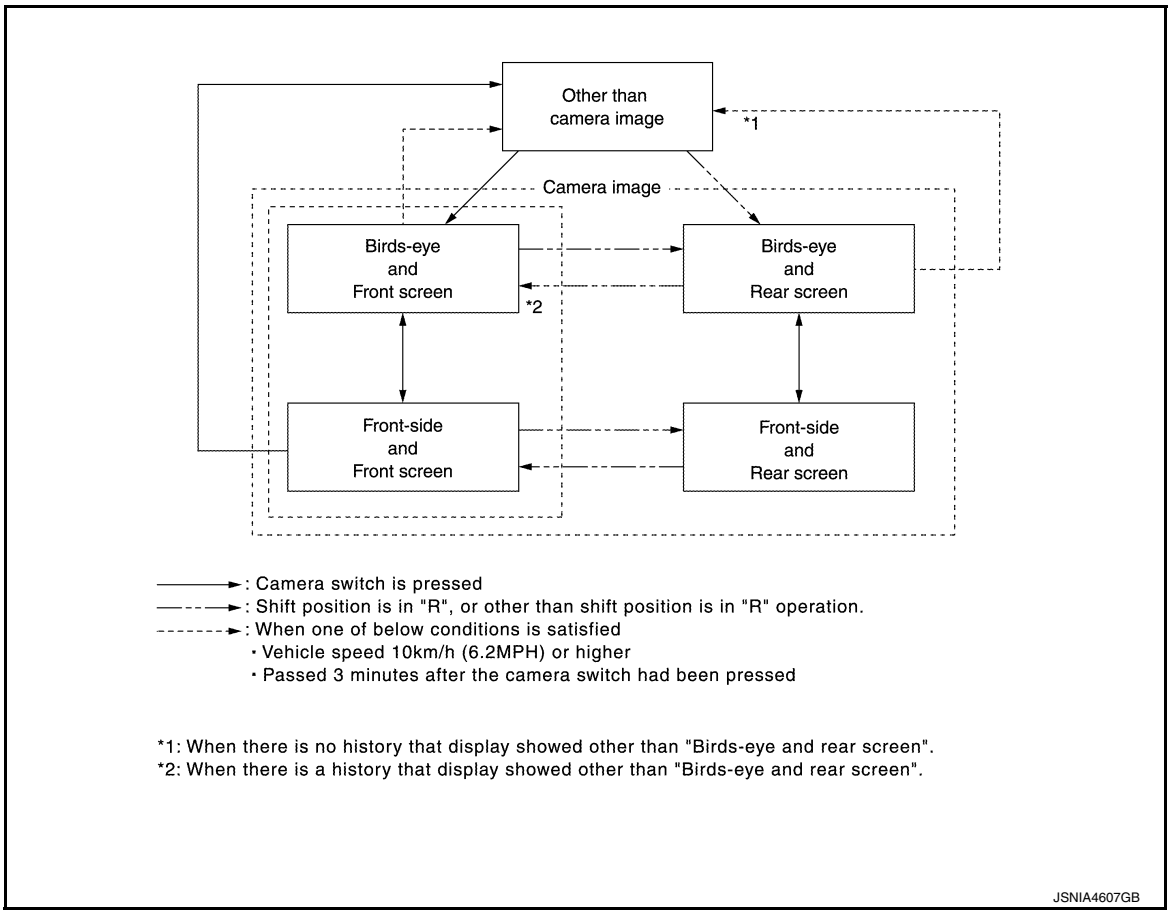


Operation

- The around view monitor operates by pressing the CAMERA switch on the AV control unit or by shifting the selector lever to the R (reverse) position.
- When the selector lever is in any position other than R (reverse) and the CAMERA switch is pressed, the screen displays front travel direction view and birds-eye view. Pressing the CAMERA switch again changes birds-eye view to front-side view
- When the selector lever is placed in R (reverse), the screen displays rear travel direction view and birds-eye view. Pressing the CAMERA switch changes birds-eye view to front-side view
- In birds-eye view, the blind spot area is displayed in black to show the border of the camera images. In addition, red fixed lines are displayed in the 4 corners of the vehicle icon. After pressing the CAMERA switch for the first time or placing the selector lever in R (reverse) for the first time, the blind spot area is highlighted in yellow for 3 seconds and the red fixed lines blink five times.
- With the selector lever in any position other than R (reverse), the around view monitor screen display is cancelled 3 minutes after pressing the CAMERA switch. The screen returns to the AV control unit display.
- With the selector lever in R (reverse) position, the around view monitor screen display remains on constantly. To return to the AV control unit display, place the selector lever is in any position other than R (reverse).
- If camera image calibration is incomplete, the applicable camera position is indicated as an error on the birds-eye view display.

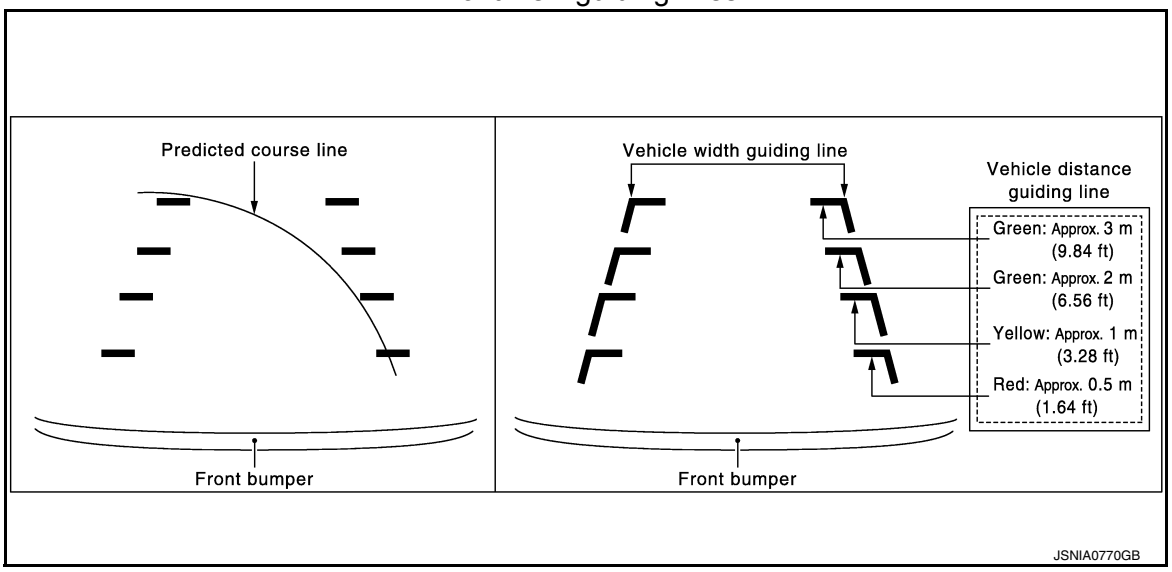
NOTE:
Calibration is necessary when replacing each camera or when replacing around view monitor control unit.

Around view monitor screen transition



Front View
- The front view image improves the visibility of obstacles in front of the vehicle and assists driving by displaying images from birds-eye view and front-side view.
- The front view image displays the vehicle width guiding line and vehicle distance guiding line, in addition to 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 exceeds approximately 90 degrees, only the predictive course line on the outside is displayed (opposite side of steering direction).
- The 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 using CONSULT.

Front view guiding lines



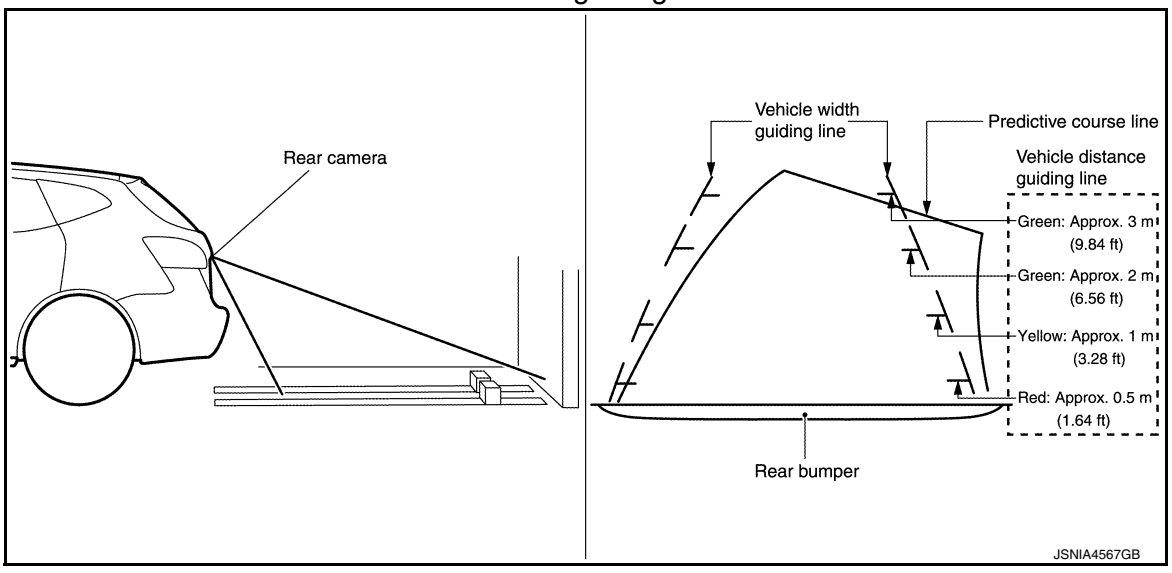
Rear View

- The rear view image improves the visibility of obstacles in the rear of the vehicle and assists backing and parking by displaying images from birds-eye view and front side view.
- The rear view image displays the vehicle width guiding line and vehicle distance guiding line, in addition to the predictive course line according to the steering angle.

  NOTE:

  The predictive course line is not displayed at the steering neutral position.
- The 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 using CONSULT.

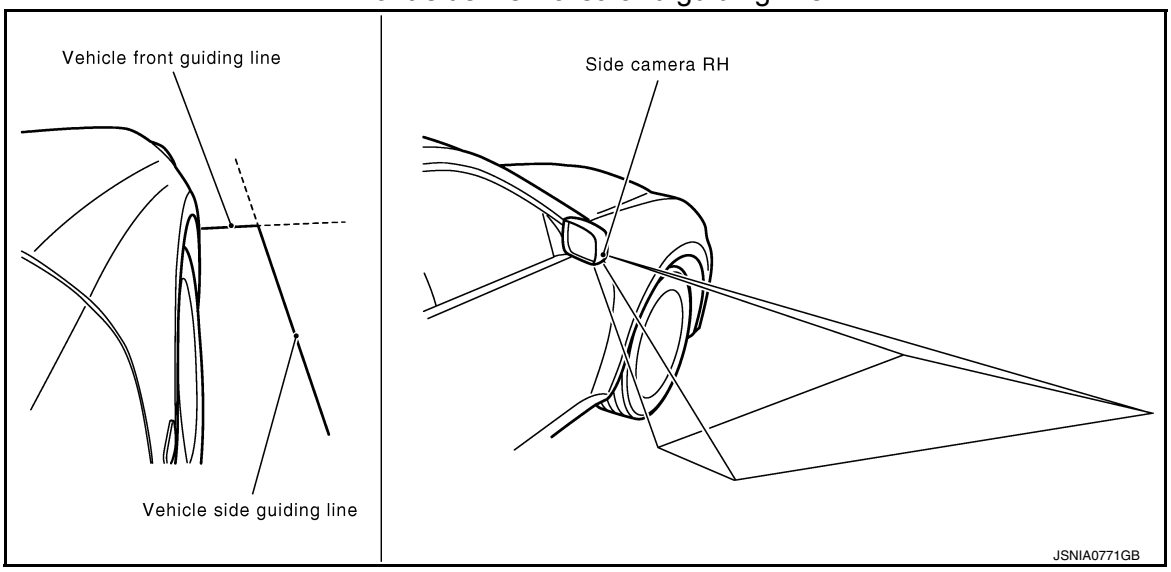
Rear view guiding lines



Front-Side View

- The front-side view image improves the visibility of obstacles in the front RH side of the vehicle and assists backing and parking.
- The front-side view image displays the vehicle distance guiding line and vehicle width guiding line.

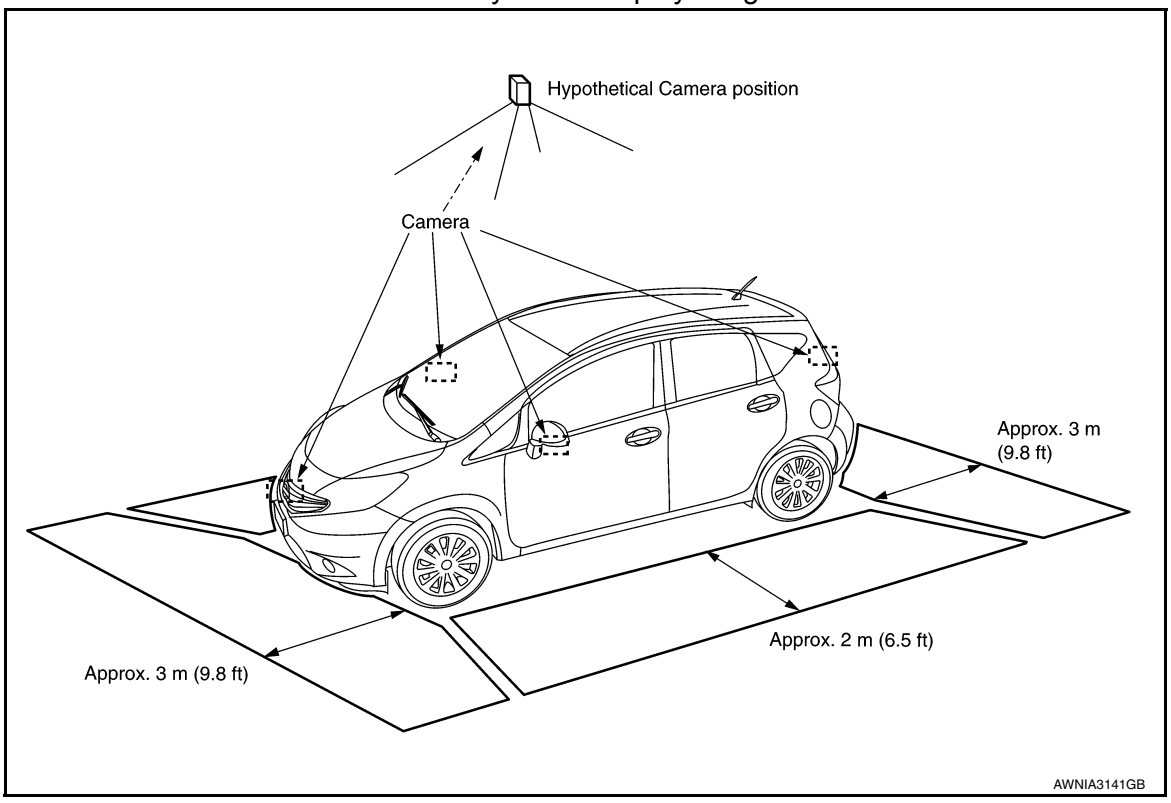
Front-side view area and guiding line



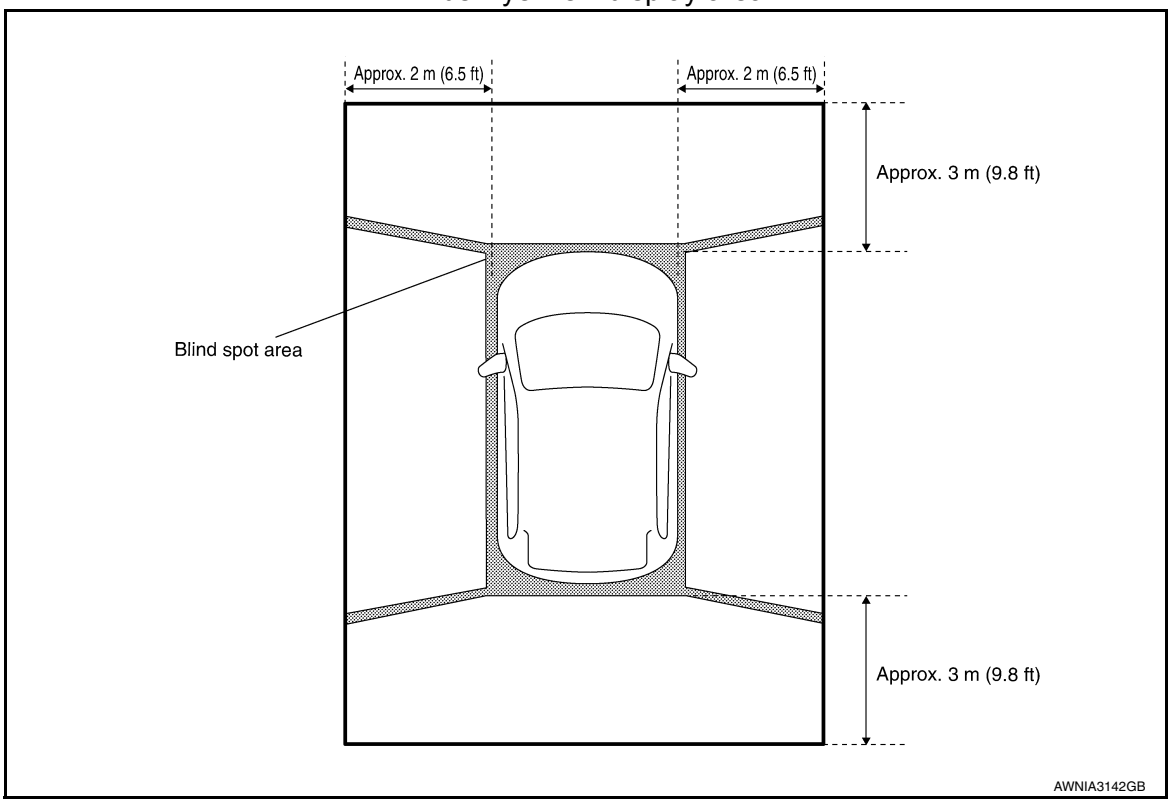
Birds-Eye View

- The birds-eye view image improves the visibility of obstacles all around the vehicle and assists backing and parking.
- The images from the four cameras are converted into an overhead view, and the surroundings of the vehicle are displayed.
- The blind spot area is displayed on the image to specify the boundary of the four cameras.

Birds-Eye view display image



Birds-Eye view display area



DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

INFOID:0000000009459993

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

Mode		Item	Content
Version		—	Version data of the AV control unit is displayed.
User Configuration	Touch Display Calibration	—	Allows correction of the position detection accuracy of the touch panel.
Radio	FM monitor	—	Monitors the dynamic values of the current tuner
	AM monitor	—	
	XM monitor	—	Version data is displayed.
	XM functions	• Clear XM Chipset NVM • Reset All XM Settings • Clear IGS • XM CBM Debug Mode • External Diag Mode	Current status is displayed.
System State	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 • Steering wheel key • Radio Antenna • USB Device • iPod® firmware version	The current system status is displayed.
	Speaker Test 4kHz	—	This activates a sequence of test tone outputs to the audio circuits one after the other for 1 second.
	Speaker Test 100Hz		
	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 respective color is shown for an indicated period 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.
Self Test		• SD Card Access • BT Module Access • Radio Antenna • GPS Antenna • XM Antenna	A system self test is executed and the results are stored into the error memory.

Perform CONSULT diagnosis if the AV control unit on board diagnosis does not start or the screen does not display anything.

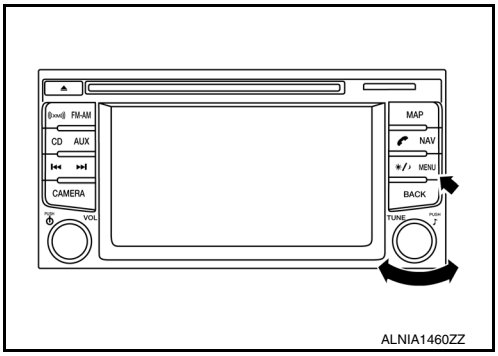
On Board Diagnosis Function

INFOID:0000000009459994

METHOD OF STARTING

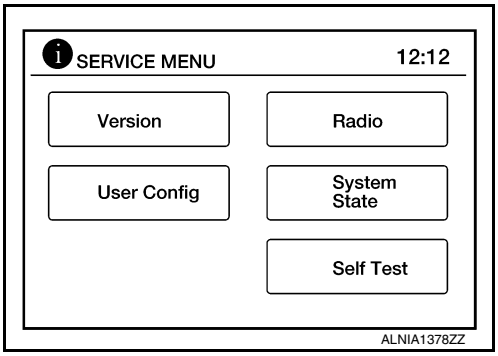
1. Turn the ignition ON.
2. Turn the audio system OFF.

3. While pressing the MENU button, turn the TUNE-SCROLL dial counterclockwise 3 or more clicks, then clockwise 3 or more clicks, then counterclockwise 3 or more clicks. Shifting from current screen to previous screen is performed by pressing BACK button.



ALNIA1460ZZ

4. The trouble diagnosis initial screen is displayed, and Version, User Config, Radio, System State or Self Test can be selected.



ALNIA1378ZZ

CONSULT Function

INFOID:0000000009459995

CONSULT FUNCTIONS

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

Direct Diagnostic Mode	Description
Ecu Identification	The AV control unit part number is displayed.
Self Diagnostic Result	The AV control unit self diagnostic results are displayed.
Data Monitor	The AV 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 AV control unit.
CAN Diag Support Mntr	• The result of transmit/receive diagnosis of AV communication is displayed. • The result of transmit/receive diagnosis of CAN communication is displayed.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSTIC RESULT

Refer to AV-154, "DTC Index".

DATA MONITOR

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

CONFIGURATION

Refer to AV-178, "CONFIGURATION (AV CONTROL UNIT) : Description".

CAN DIAG SUPPORT MNTR

Refer to LAN-12, "CAN Diagnostic Support Monitor".

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

CONSULT Function

INFOID:0000000009681918

CONSULT FUNCTIONS

CONSULT performs the following functions via communication with the around view monitor control unit.

Direct Diagnostic Mode	Description
Ecu Identification	The around view monitor control unit part number is displayed.
Self Diagnostic Result	The around view monitor control unit self diagnostic results are displayed.
Data Monitor	The around view monitor control unit input/output data is displayed in real time.
Work support	The settings for around view monitor control unit functions can be changed.
Configuration	• The vehicle specification can be read and saved. • The vehicle specification can be written when replacing around view monitor control unit.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

ECU IDENTIFICATION

The part number of around view monitor control unit is displayed.

SELF DIAGNOSTIC RESULT

Refer to AV-157, "DTC Index".

DATA MONITOR

Monitor Item	Description
ST ANGLE SENSOR SIGNAL [On/Off]	Indicates condition of steering angle sensor signal.
REVERSE SIGNAL [On/Off]	Indicates selector lever position.
VEHICLE SPEED SIGNAL [mph/km/h]	Indicates condition of vehicle speed signal.
CAMERA SWITCH SIGNAL [On/Off]	Indicates condition of camera switch signal.
CAMERA OFF SIGNAL [On/Off]	Indicates condition of camera OFF signal.
ST ANGLE SENSOR TYPE [Absolute]	Indicates steering angle sensor type.
ST GEAR RATIO TYPE [Type O]	Indicates steering gear ratio type.
STEERING POSITION [LHD/RHD]	Indicates LH or RH drive type.
REAR CAMERA IMAGE SIGNAL [OK/NG]	Indicates condition of camera image signal.
F-CAMERA IMAGE SIGNAL [OK/NG]	Indicates condition of camera image signal.
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Indicates condition of camera image signal.
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Indicates condition of camera image signal.

WORK SUPPORT

Support Item	Setting	Description
NON-VIEWABLE AREA REMINDER	ON	ON/OFF setting of non-viewable area can be performed.
	OFF	
PREDICTIVE COURSE LINE DISPLAY	ON	ON/OFF setting of predictive course line display can be performed.
	OFF	
INITIALIZE CAMERA IMAGE CALIBRATION	—	Factory image calibration restoration can be performed.
STEERING ANGLE SENSOR ADJUSTMENT	—	Steering angle sensor neutral position adjustment can be performed.

Support Item	Setting	Description
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	STATUS	Performs calibration of front camera.
	AXIS X	
	AXIS Y	
	ROTATE	
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	STATUS	Performs calibration of passenger side camera.
	AXIS X	
	AXIS Y	
	ROTATE	
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	STATUS	Performs calibration of driver side camera.
	AXIS X	
	AXIS Y	
	ROTATE	
CALIBRATING CAMERA IMAGE (REAR CAMERA)	STATUS	Performs calibration of rear camera.
	AXIS X	
	AXIS Y	
	ROTATE	
FINE TUNING OF BIRDS-EYE VIEW	STATUS	Confirmation and adjustment of difference between each camera can be performed.
	SELECT	
	AXIS X	
	AXIS Y	
	ROTATE	

CONFIGURATION

Refer to AV-179, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Description".

CAN DIAG SUPPORT MNTR

Refer to LAN-12, "CAN Diagnostic Support Monitor".

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

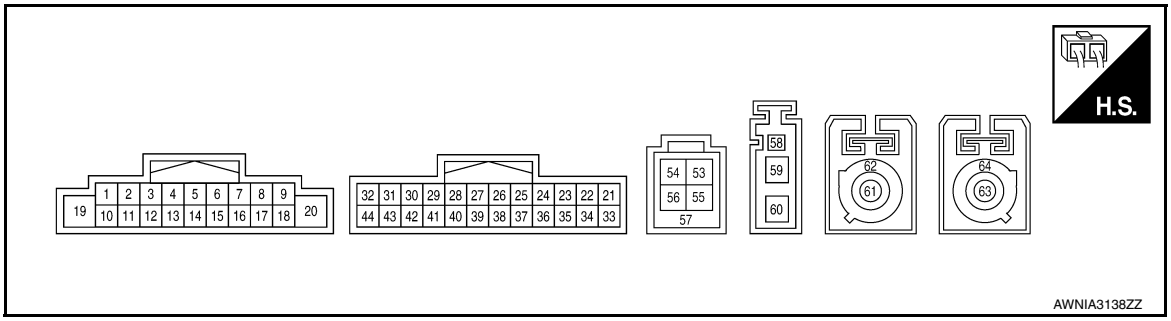
Reference Value

INFOID:0000000009459996

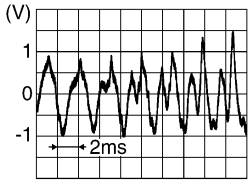
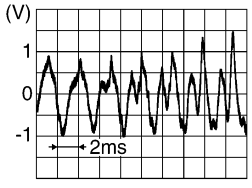
VALUES ON THE DIAGNOSIS TOOL

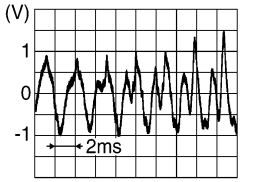
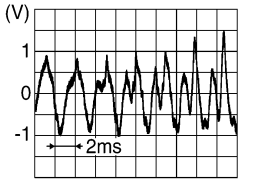
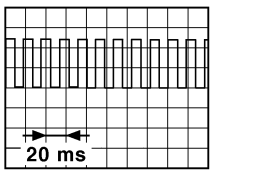
Monitor Item	Condition	Value/Status
VHCL SPD SIG	Vehicle speed = 0 km/h (0 MPH).	Off
	Vehicle speed > 0 km/h (0 MPH).	On
ILLUM SIG	Illumination signal is not received.	Off
	Illumination signal is received.	On
IGN SIG	Ignition switch OFF or ACC.	Off
	Ignition switch ON.	On
REV SIG	Selector lever in any position other than R.	Off
	Selector lever in R position.	On

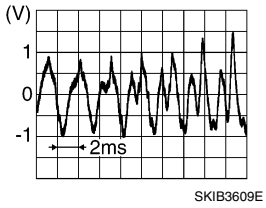
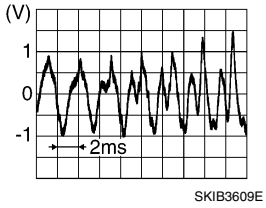
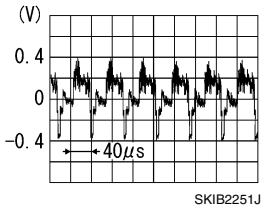
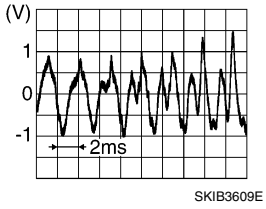
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
2 (GR)	3 (P)	Sound signal front speaker LH	Output	ON	Sound output	 SKIB3609E
4 (W)	5 (R)	Sound signal rear speaker LH	Output	ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
6 (SB)	15 (G)	Steering switch signal A	Input	ON	Press SOURCE switch	0V
					Press △ switch	1.0V
					Press ▽ switch	2.0V
					Press switch	3.0V
					Except above	5.0V
7 (W)	Ground	ACC power supply	Input	ACC	—	Battery voltage
8 (L)	—	CAN (H)	Input/ Output	—	—	—
9 (LG/R)	44 (B)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
11 (O)	12 (V)	Sound signal front speaker RH	Output	ON	Sound output	 SKIB3609E
13 (L)	14 (Y)	Sound signal rear speaker RH	Output	ON	Sound output	 SKIB3609E
16 (V)	15 (G)	Steering switch signal B	Input	ON	Press – switch	0V
					Press + switch	1.0V
					Press switch	2.0V
					Except above	5.0V
17 (P)	—	CAN (L)	Input/ Output	—	—	—
18 (LG)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 JSNIA0012GB
19 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
20 (B/W)	Ground	Ground	—	ON	—	0 V
23 (R)	—	MR output	Output	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
28 (Y)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse)	Battery voltage
					Selector lever in any position other than R (reverse)	0 V
30 (Y)	Ground	AUX jack audio signal LH	Input	ON	Received audio signal (AUX input)	 SKIB3609E
31 (G)	Ground	AUX ground	—	ON	—	0V
32 (L)	Ground	AUX jack audio signal RH	Input	ON	Received audio signal (AUX input)	 SKIB3609E
35 (Shield)	—	Camera image signal shield	—	—	—	—
36 (G)	Ground	Camera image signal	Input	ON	When camera image is displayed	 SKIB2251J
37 (O)	Ground	Ignition power supply	Input	ON	—	Battery voltage
42 (L)	—	MIC VCC	Input	ON	—	—
43 (P)	41 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	 SKIB3609E
53 (W)	—	V BUS signal	—	—	—	—
54 (G)	—	USB ground	—	—	—	—
55 (L)	—	USB D+ signal	—	—	—	—
56 (R)	—	USB D− signal	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
57 (Shield)	—	USB shield	—	—	—	—
58 (B)	Ground	Antenna amp. ON signal	Output	ON	AV control unit ON, FM-AM selected.	Battery voltage
59 (B)	Ground	AM-FM main antenna	Input	ON	AV control unit ON, FM-AM selected.	5.0 V
61 (B)	Ground	GPS antenna signal	Input	ON	AV control unit ON, NAV selected.	5.0 V
62 (Shield)	—	GPS antenna shield	—	—	—	—
63 (B)	Ground	Satellite antenna signal	Input	ON	AV control unit ON, XM selected.	5.0 V
64 (Shield)	—	Satellite antenna shield	—	—	—	—

DTC Index

INFOID:0000000009459997

CONSULT Display	Reference Page
U1000: CAN COMM CIRCUIT	AV-187, "AV CONTROL UNIT : DTC Logic"
U1010: CONTROL UNIT (CAN)	AV-188, "AV CONTROL UNIT : DTC Logic"
U1200: Cont Unit	AV-197, "DTC Logic"
U1217: BLUETOOTH MODULE	AV-198, "DTC Logic"
U1229: iPod CERTIFICATION	AV-199, "DTC Logic"
U122F: Digital broadcasting connection error	AV-200, "DTC Logic"
U1244: GPS ANTENNA CONN	AV-202, "DTC Logic"
U1258: XM ANTENNA CONN	AV-203, "DTC Logic"
U1263: USB OVERCURRENT	AV-204, "DTC Logic"
U1264: ANTENNA AMP TERMINAL	AV-205, "DTC Logic"
U12AA: Configuration Error	AV-206, "DTC Logic"
U12AC: Display Temperature too High	AV-207, "DTC Logic"
U12AD: ECU Temperature too High	AV-208, "DTC Logic"
U12AE: Internal Amplifier temperature Warning	AV-209, "DTC Logic"
U12AF: CD Mechanism Temperature Warning	AV-210, "DTC Logic"
U12B0: Supply Voltage Goes below 9V > 20s	AV-211, "DTC Logic"
U12B1: Supply Voltage Goes High > 16V for 20s	AV-212, "DTC Logic"

AROUND VIEW MONITOR CONTROL UNIT

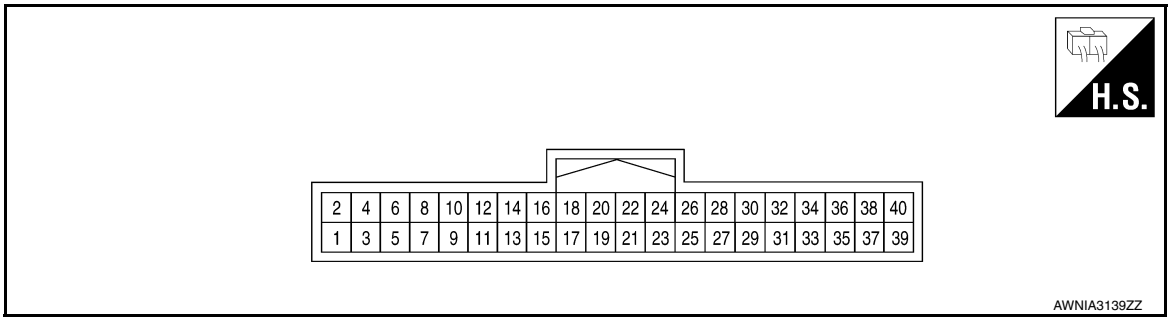
Reference Value

INFOID:0000000009681919

VALUES ON THE DIAGNOSIS TOOL

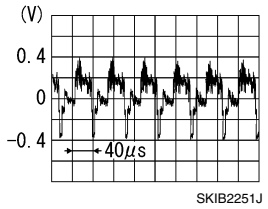
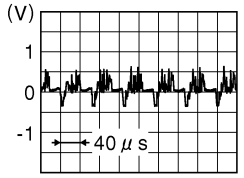
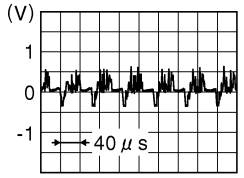
Monitor Item	Condition	Value/Status
CAMERA OFF SIGNAL	CAMERA switch ON.	Off
	CAMERA switch OFF.	On
CAMERA SWITCH SIGNAL	CAMERA switch OFF.	Off
	CAMERA switch ON.	On
DR-SIDE CAMERA IMAGE SIG	Side camera LH inoperative.	NG
	Side camera LH operative.	OK
F-CAMERA IMAGE SIG	Front camera inoperative.	NG
	Front camera operative.	OK
PA-SIDE CAMERA IMAGE SIG	Side camera RH inoperative.	NG
	Side camera RH operative.	OK
REAR CAMERA IMAGE SIGNAL	Rear camera LH inoperative.	NG
	Rear camera LH operative.	OK
REVERSE SIGNAL	When selector lever is in any position other than R (reverse).	Off
	When selector lever in R (reverse).	On
ST ANGLE SENSOR SIGNAL	Around view monitor control unit is not receiving steering angle sensor signal.	Off
	Around view monitor control unit is receiving steering angle sensor signal.	On
ST ANGLE SENSOR TYPE	Steering angle sensor type.	Absolute
ST GEAR RATIO TYPE	Steering gear ratio type.	Type O
STEERING POSITION	Left hand drive vehicle.	LHD
	Right hand drive vehicle.	RHD
VEHICLE SPEED SIGNAL	While driving, equivalent to speedometer reading	mph, km/h

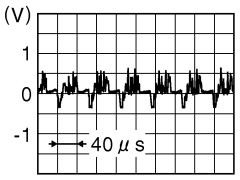
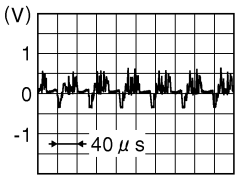
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
1 (B)	Ground	Ground	—	ON	—	0 V
2 (Y/G)	Ground	Battery power supply	Input	OFF	—	Battery voltage

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
4 (BR)	Ground	Ignition signal	Input	ON	—	Battery voltage
8 (Y/L)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse) position	Battery voltage
					Selector lever in other than R (reverse) position	0 V
10 (P)	—	CAN (L)	Input/ Output	—	—	—
12 (L)	—	CAN (H)	Input/ Output	—	—	—
23 (Shield)	—	Camera image signal shield	—	—	—	—
24 (W)	Ground	Camera image signal	Output	ON	When camera image display	 SKIB2251J
25 (L)	Ground	Rear camera ground	—	ON	—	0 V
26 (G)	Ground	Rear camera power supply	Output	ON	CAMERA selected or Shift selector in R (reverse) position.	6.0 V
28 (Y)	27 (B)	Rear camera image signal	Input	ON	CAMERA selected or Shift selector in R (reverse) position.	 JSNIA0834GB
29 (V)	Ground	Side camera LH ground	—	ON	—	0 V
30 (R)	Ground	Side camera LH power supply	Output	ON	CAMERA selected or Shift selector in R (reverse) position.	6.0 V
32 (LG)	31 (Shield)	Side camera LH image signal	Input	ON	CAMERA selected or Shift selector in R (reverse) position.	 JSNIA0834GB
33 (B)	Ground	Side camera RH ground	—	ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output	Ignition switch	Operation	
34 (L)	Ground	Side camera RH power supply	Output	ON	CAMERA selected or Shift selector in R (reverse) position.	6.0 V
36 (Y)	35 (Shield)	Side camera RH image signal	Input	ON	CAMERA selected or Shift selector in R (reverse) position.	 JSNIA0834GB
37 (B)	Ground	Front camera ground	—	ON	—	0 V
38 (W)	Ground	Front camera power supply	Output	ON	CAMERA selected or Shift selector in R (reverse) position.	6.0 V
40 (R)	39 (Shield)	Front camera image signal	Input	ON	CAMERA selected or Shift selector in R (reverse) position.	 JSNIA0834GB

DTC Index

INFOID:0000000009681920

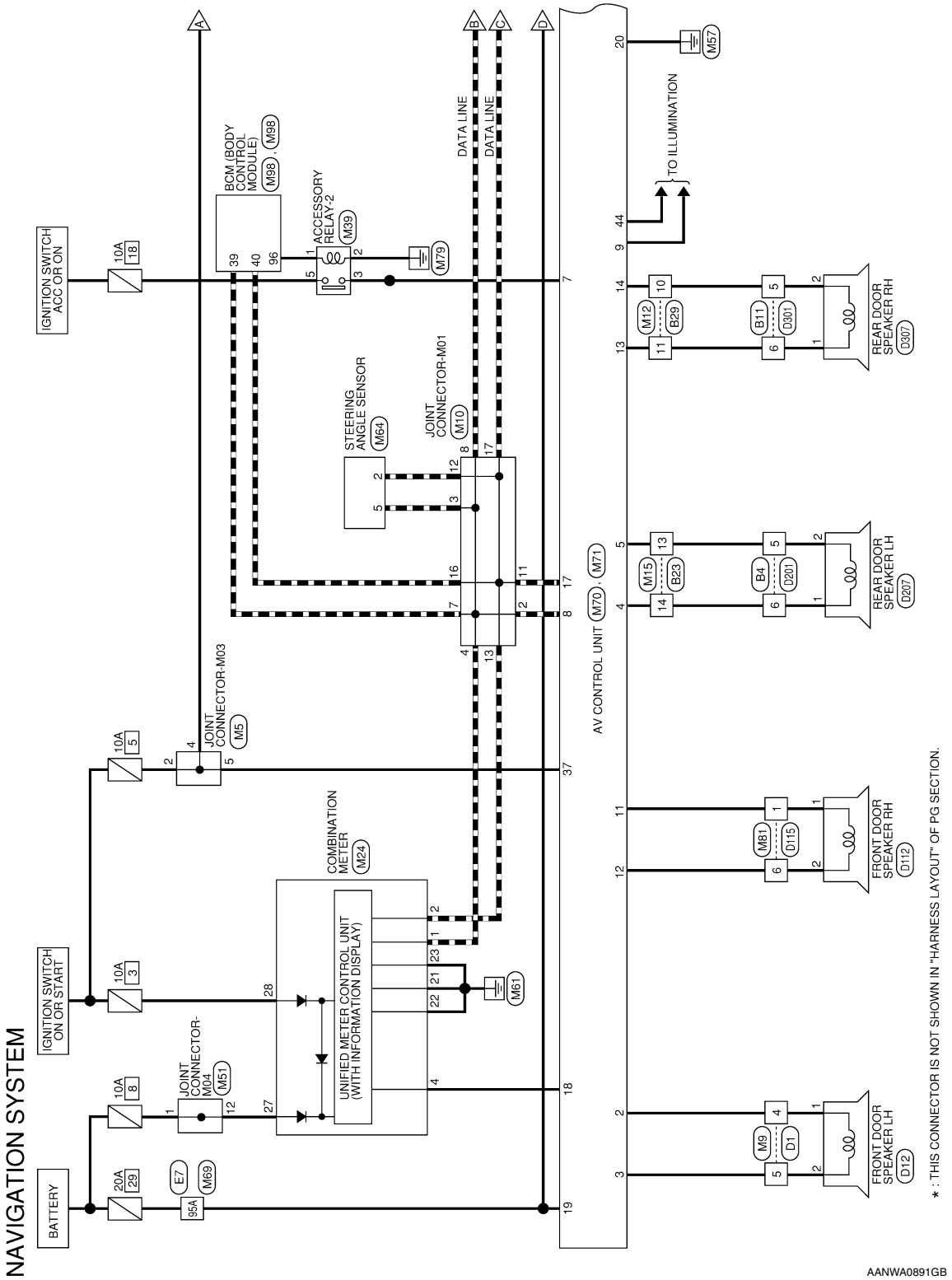
CONSULT Display	Reference Page
U0428: ST ANG SEN CALIB	AV-186, "DTC Logic"
U1000: CAN COMM CIRCUIT	AV-187, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U1010: CONTROL UNIT (CAN)	AV-188, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U111A: Rear display output signal diagnosis (Harness disconnection)	AV-189, "DTC Logic"
U111B: Right side display output signal diagnosis (Harness disconnection)	AV-191, "DTC Logic"
U111C: Front display output signal diagnosis (Harness disconnection)	AV-193, "DTC Logic"
U111D: Left side display output signal diagnosis (Harness disconnection)	AV-195, "DTC Logic"
U1232: ST ANG SEN CALIB	AV-201, "DTC Logic"
U1304: Non-completion of the calibration	AV-213, "DTC Logic"
U1305: Non-completion of the configuration	AV-214, "DTC Logic"

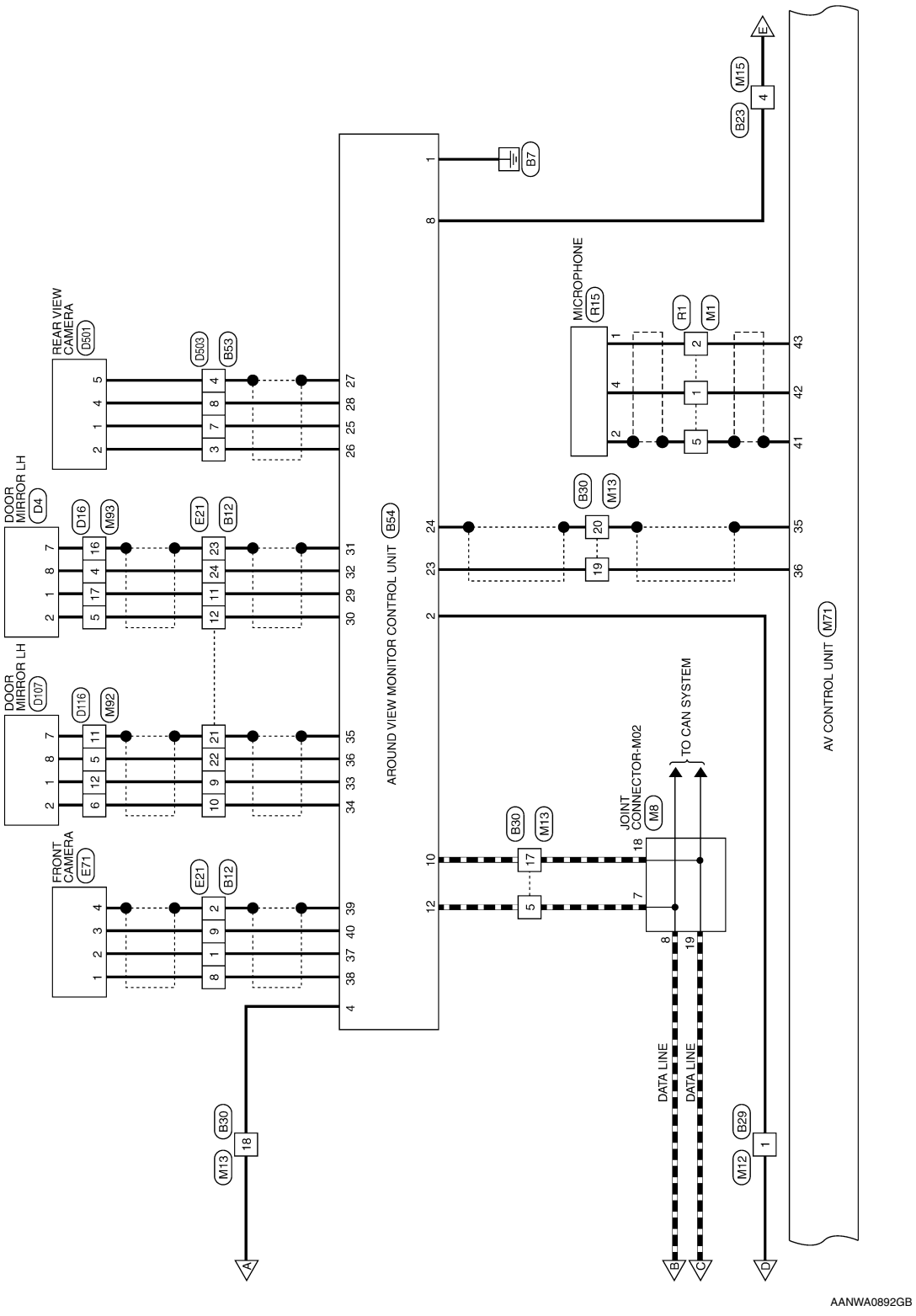
WIRING DIAGRAM

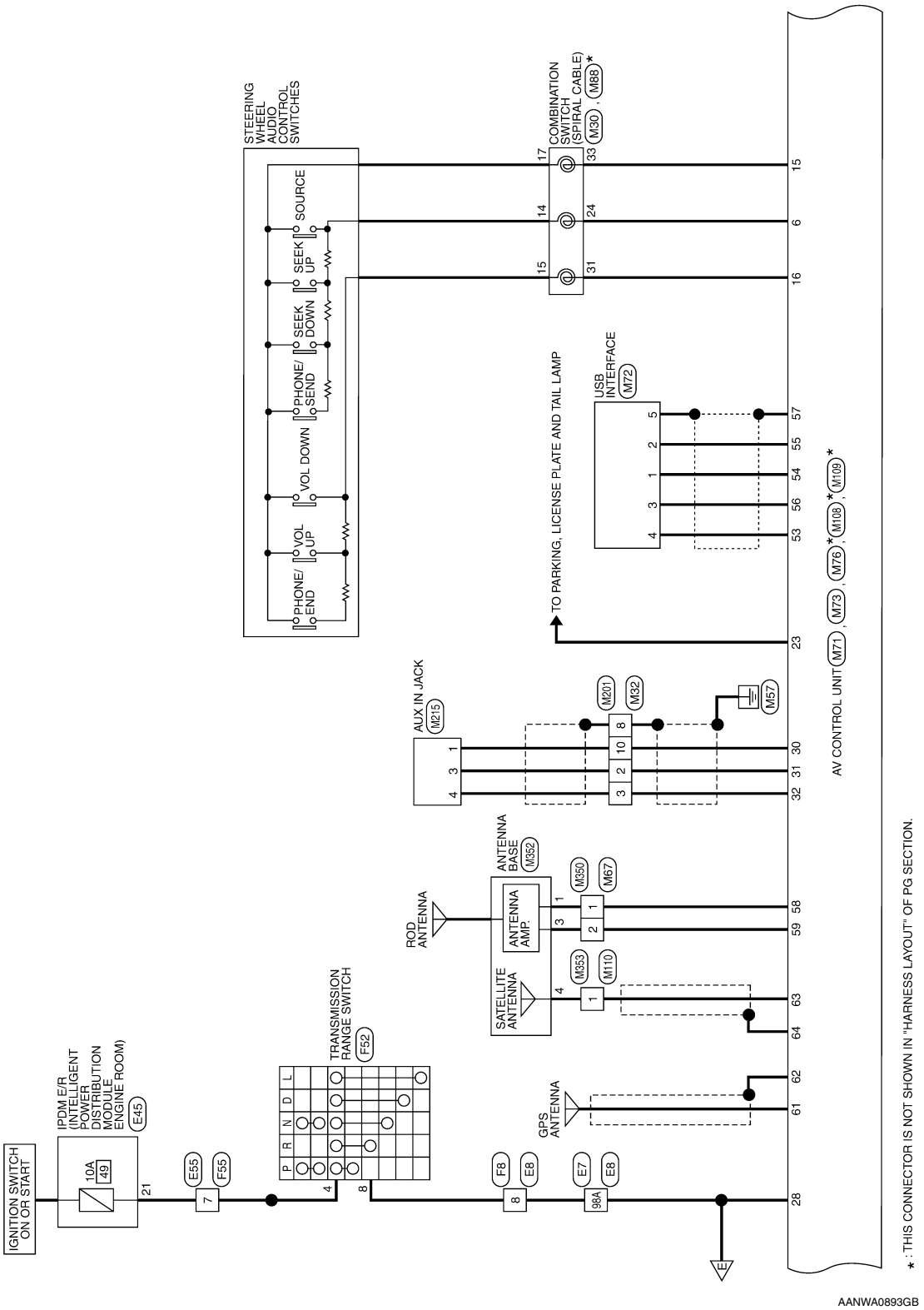
NAVIGATION SYSTEM

Wiring Diagram

INFOID:0000000009459998




AROUND VIEW MONITOR CONTROL UNIT B54
AV CONTROL UNIT M71
REAR VIEW CAMERA D501
DOOR MIRROR LH D4
DOOR MIRROR LH D107
FRONT CAMERA E71
MICROPHONE R15
JOINT CONNECTOR-M02 M8
TO CAN SYSTEM
DATA LINE
DATA LINE
AANWA0892GB



AANWA0893GB

NAVIGATION SYSTEM CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Connector No.	M5
Connector Name	JOINT CONNECTOR-M03
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
2	O	–
4	G	–
5	O	–

Connector No.	M8
Connector Name	JOINT CONNECTOR-M02
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
7	L	–
8	L	–
18	P	–
19	P	–

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4	GR	–
5	P	–

Connector No.	M10
Connector Name	JOINT CONNECTOR-M01
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
2	L	–
3	L	–
4	L	–
7	L	–
8	L	–
11	P	–
12	P	–
13	P	–
16	P	–
17	P	–

Connector No.	M12
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	Y	–
10	Y	–
11	L	–

AANIA1777GB

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	L	–
9	B	–
10	L	–
11	V	–
12	R	–
17	P	–
18	G	–
19	SHIELD	–
20	G	–
21	SHIELD	–
22	Y	–
23	SHIELD	–
24	LG	–

Connector No.	M15
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	SB	–
13	R	–
14	W	–

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	P	CAN-L
4	LG	8P/R
21	B	GND (ILLUMINATION)
22	B	GND (POWER)
23	B	GND (CIRCUIT)
27	R/W	BAT
28	GR	IGN

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

H.S.

25	24	31	32
27	21	22	33

Terminal No.	Color of Wire	Signal Name
24	SB	–
31	V	–
33	G	–

Connector No.	M32
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
2	G	–
3	L	–
8	SHIELD	–
10	Y	–

Connector No.	M39
Connector Name	ACCESSORY RELAY-2
Connector Color	BLUE

H.S.

3	
5	
2	1

Terminal No.	Color of Wire	Signal Name
1	SB	–
2	B	–
3	L	–
5	O	–

AANIA1778GB

Connector No.	M51
Connector Name	JOINT CONNECTOR-M04
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	LG	–
12	R/W	–

Connector No.	M64
Connector Name	STEERING ANGLE SENSOR
Connector Color	WHITE

H.S.

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

Connector No.	M67
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

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

Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
95A	Y	–
98A	SB	–

Connector No.	M70
Connector Name	AV CONTROL UNIT
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	–	–
2	GR	FR SP LH (+)
3	P	FR SP LH (-)
4	W	RR SP LH (+)
5	R	RR SP LH (-)
6	SB	STRG SW A
7	W	ACC
8	L	CAN-H
9	LG/R	ILL (+), LIGHT SW
10	–	–

Terminal No.	Color of Wire	Signal Name
11	O	FR SP RH (+)
12	V	FR SP RH (-)
13	L	RR SP RH (+)
14	Y	RR SP RH (-)
15	G	STRG SW GND
16	V	STRG SW B
17	P	CAN-L
18	LG	SPEED SIGNAL
19	Y	BAT
20	B/W	GND

AANIA1779GB

Connector No.	M71
Connector Name	AV CONTROL UNIT
Connector Color	WHITE

H.S.

32	31	30	29	28	27	26	25	24	23	22	21
44	43	42	41	40	39	38	37	36	35	34	33

Terminal No.	Color of Wire	Signal Name
21	–	–
22	–	–
23	R	MR OUTPUT
24	–	–
25	–	–
26	–	–
27	–	–
28	Y	REVERSE SIG
29	–	–

Terminal No.	Color of Wire	Signal Name
30	Y	AUDIO L
31	G	AUDIO GND
32	L	AUDIO R
33	B	CAMERA GRD
34	L	CAMERA ON
35	SHIELD	CAMERA SHLD
36	Y	CAMERA +
37	O	IGN
38	–	–
39	–	–
40	–	–
41	SHIELD	MIC GND
42	L	MIC VCC
43	P	MIC SIG
44	B	ILL (-)

Connector No.	M72
Connector Name	USB INTERFACE
Connector Color	GRAY

H.S.

5	1	2	3	4

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

Connector No.	M73
Connector Name	AV CONTROL UNIT
Connector Color	GRAY

H.S.

58	59	60

Terminal No.	Color of Wire	Signal Name
58	B	ANT ON
59	B	MAIN ANT
60	–	–

Connector No.	M76
Connector Name	AV CONTROL UNIT
Connector Color	GRAY

H.S.

54	53
56	55
57	

Terminal No.	Color of Wire	Signal Name
53	W	VCC
54	G	GND
55	L	D+
56	R	D-
57	SHIELD	SHIELD

Connector No.	M81
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	O	–
6	V	–

AANIA1780GB

Connector No.	M88
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	GRAY

H.S.

20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
14	W	–
15	L	–
17	BR	–

Connector No.	M92
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	Y	–
6	L	–
11	SHIELD	–
12	B	–

Connector No.	M97
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
39	L	CAN-H
40	P	CAN-L

Connector No.	M98
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	WHITE

H.S.

71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110

Terminal No.	Color of Wire	Signal Name
96	SB	ACC RELAY OUTPUT

Connector No.	M108
Connector Name	AV CONTROL UNIT
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
61	B	GPS ANT
62	B	GPS ANTENNA SHIELD

Connector No.	M109
Connector Name	AV CONTROL UNIT
Connector Color	PINK

H.S.

Terminal No.	Color of Wire	Signal Name
63	B	SAT ANT
64	B	SAT ANTENNA SHIELD

AANIA1781GB

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–

Connector No.	M201
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	G	–
3	L	–
8	SHIELD	–
10	Y	–

Connector No.	M215
Connector Name	AUX IN JACK
Connector Color	WHITE

H.S.

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

Connector No.	M350
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

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

Connector No.	M351
Connector Name	ANTENNA BASE
Connector Color	GRAY

H.S.

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

Connector No.	M352
Connector Name	ANTENNA BASE
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
4	B	–

AANIA1782GB

Terminal No.	Color of Wire	Signal Name
95A	LG	–
98A	SB	–

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Connector No.	E45
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
21	R	AT ECU (WITH CVT)

Connector No.	E21
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	SHIELD	–
8	W	–
9	R	–

Connector No.	M353
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–

Connector No.	E8
Connector Name	WIRE TO WIRE
Connector Color	WHITE

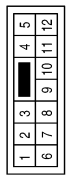
H.S.

Terminal No.	Color of Wire	Signal Name
8	SB	–

AANIA1783GB

Connector No.	E55
Connector Name	WIRE TO WIRE
Connector Color	GRAY

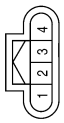
H.S.



Terminal No.	Color of Wire	Signal Name
7	R	–

Connector No.	E71
Connector Name	FRONT CAMERA
Connector Color	BLACK

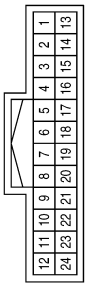
H.S.



Terminal No.	Color of Wire	Signal Name
1	W	–
2	B	–
3	R	–
4	SHIELD	–

Connector No.	F8
Connector Name	WIRE TO WIRE
Connector Color	WHITE

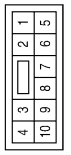
H.S.



Terminal No.	Color of Wire	Signal Name
8	O	–

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Color	WHITE

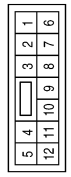
H.S.



Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

Connector No.	F55
Connector Name	WIRE TO WIRE
Connector Color	GRAY

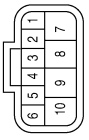
H.S.



Terminal No.	Color of Wire	Signal Name
7	R	–

Connector No.	F52
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK

H.S.



Terminal No.	Color of Wire	Signal Name
4	R/W	–
8	O	–

AANIA1784GB

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name
5	GR	–
6	LG	–

Connector No.	B12
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	–
2	SHIELD	–
8	W	–
9	R	–

Connector No.	B23
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	Y/L	–
13	R	–
14	W	–

Connector No.	B29
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	Y/G	–
10	GR	–
11	LG	–

Connector No.	B30
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	L	–
9	B	–
10	L	–
11	V	–
12	R	–
17	P	–
18	BR	–
19	SHIELD	–
20	W	–
21	SHIELD	–
22	Y	–
23	SHIELD	–
24	LG	–

Connector No.	B53
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5

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

AANIA1785GB

Connector No.	B54
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	GND
2	Y/G	+B
3	L/O	SERIAL GND
4	BR	IGN
5	O	FROM PC TO CU
6	–	–
7	GR	FROM CU TO PC
8	Y/L	REVERSE
9	–	–
10	P	CAN-L
11	–	–
12	L	CAN-H
13	–	–
14	–	–
15	–	–
16	–	–
17	–	–
18	–	–
19	SHIELD	EXTERNAL-VIDEO OUTPUT GND
20	G	EXTERNAL-VIDEO OUTPUT SIGNAL

Terminal No.	Color of Wire	Signal Name
21	–	–
22	–	–
23	SHIELD	VIDEO OUTPUT GND
24	W	VIDEO OUPUT SIGNAL
25	L	RV-POWER GND
26	G	RV-POWER 6.2V
27	B	RV-VIDEO GND
28	Y	RV-VIDEO SIGNAL
29	V	SV2-POWER GND
30	R	SV2-POWER 6.2V
31	SHIELD	SV2-VIDEO GND
32	LG	SV2-VIDEO SIGNAL
33	B	SV1-POWER GND
34	L	SV1-POWER6.2V
35	SHIELD	SV1-VIDEO GND
36	Y	SV1-VIDEO SIGNAL
37	B	FV-POWER GND
38	W	FV-POWER 6.2V
39	SHIELD	FV-VIDEO GND
40	R	FV-VIDEO SIGNAL

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5

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

AANIA1786GB

Connector No.	R15
Connector Name	MICROPHONE
Connector Color	WHITE

H.S.

1	2	3	4

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

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	GR	–
5	P	–

Connector No.	D4
Connector Name	DOOR MIRROR LH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–
7	B	–
8	Y	–

Connector No.	D12
Connector Name	FRONT DOOR SPEAKER LH
Connector Color	WHITE

H.S.

2	1

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

Connector No.	D16
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	Y	–
5	L	–
16	B	–
17	G	–

Connector No.	D107
Connector Name	DOOR MIRROR RH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–
7	B	–
8	Y	–

AANIA1787GB

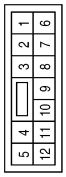
Connector No.	D112
Connector Name	FRONT DOOR SPEAKER RH
Connector Color	WHITE

H.S.

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

Connector No.	D115
Connector Name	WIRE TO WIRE
Connector Color	WHITE

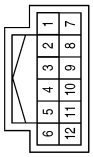
H.S.



Terminal No.	Color of Wire	Signal Name
1	GR	–
6	P	–

Connector No.	D116
Connector Name	WIRE TO WIRE
Connector Color	WHITE

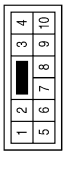
H.S.



Terminal No.	Color of Wire	Signal Name
5	Y	–
6	L	–
11	B	–
12	G	–

Connector No.	D201
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

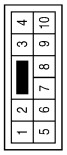
Connector No.	D207
Connector Name	REAR DOOR SPEAKER LH
Connector Color	WHITE

H.S.

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

Connector No.	D301
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
5	R	–
6	W	–

AANIA1788GB

Connector No.	D307
Connector Name	REAR DOOR SPEAKER RH
Connector Color	WHITE

H.S.

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

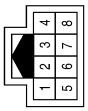
Connector No.	D501
Connector Name	REAR VIEW CAMERA
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
2	G	–
3	–	–
4	Y	–
5	B	–
6	–	–

Connector No.	D503
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



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

AANIA1789GB

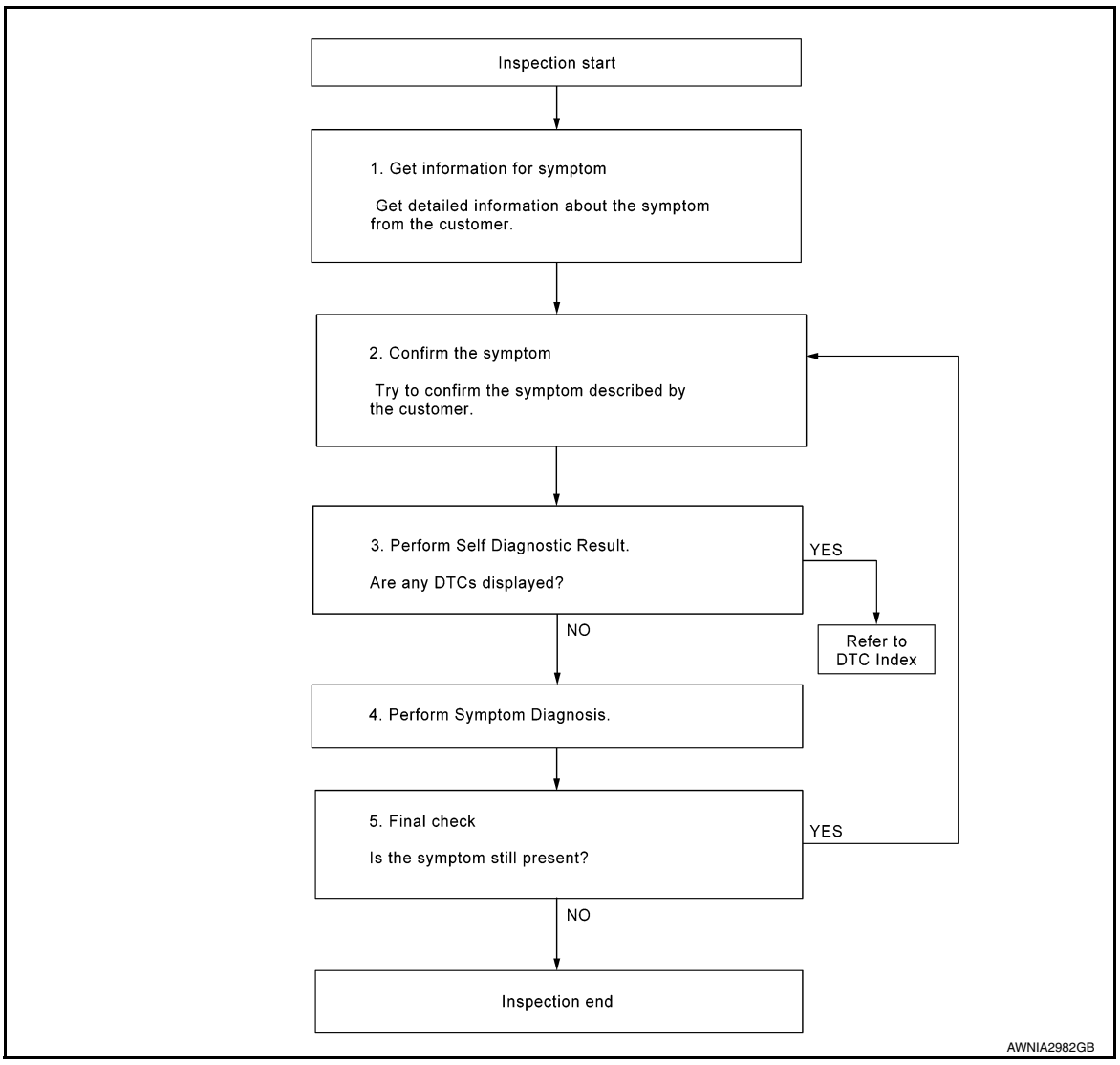
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000009459999

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.

>> GO TO 3.

3.PERFORM SELF DIAGNOSTIC RESULT

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

2. Depending on system being diagnosed, perform Self Diagnostic Result for:
- MULTI AV.
- AVM.

Are any DTCs displayed?

YES >> Refer to AV-154, "DTC Index" (MULTI AV) or AV-157, "DTC Index" (AVM).
NO >> GO TO 4.

4. PERFORM SYMPTOM DIAGNOSIS

Refer to AV-227, "Symptom Table".

>> GO TO 5

5. FINAL CHECK

Refer to symptom described by the customer in step 1.

Is the symptom still present?

YES >> GO TO 2
NO >> Inspection End.

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description

INFOID:0000000009460000

BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT configuration before replacement.

NOTE:

If “Before Replace ECU” cannot be used, use the “After Replace ECU” or “Manual Configuration” after replacing AV control unit.

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “After Replace ECU” with CONSULT.

- **Complete the procedure of “After Replace ECU” in order.**
- **If you set incorrect “After Replace ECU”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure

INFOID:0000000009460001

1. SAVING VEHICLE SPECIFICATION

-CONSULT

Enter “Re/Programming, Configuration” and perform “Before Replace ECU” to save or print current vehicle specification.

NOTE:

If “Before Replace ECU” cannot be used, use the “After Replace ECU” or “Manual Configuration” after replacing AV control unit.

>> GO TO 2.

2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-240, "Removal and Installation".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT

1. Enter "Re/Programming, Configuration".
2. If “Before Replace ECU” operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press “Confirm” to write vehicle specification. Refer to AV-178, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure".
3. If “Before Replace ECU” operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to AV-178, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure".

>> GO TO 4.

4. OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines) are normal.

>> Work End.

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:0000000009697565

BEFORE REPLACEMENT

When replacing around view monitor control unit, save or print current vehicle specification with CONSULT configuration before replacement.

NOTE:

If “Before Replace ECU” cannot be used, use the “After Replace ECU” or “Manual Configuration” after replacing around view monitor control unit.

AFTER REPLACEMENT

CAUTION:

When replacing around view monitor control unit, you must perform “After Replace ECU” with CONSULT.

- **Complete the procedure of “After Replace ECU” in order.**
- **If you set incorrect “After Replace ECU”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure

INFOID:0000000009697566

1.SAVING VEHICLE SPECIFICATION

Ⓜ-CONSULT

Enter “Re/Programming, Configuration” and perform “Before Replace ECU” to save or print current vehicle specification.

NOTE:

If “Before Replace ECU” cannot be used, use the “After Replace ECU” or “Manual Configuration” after replacing around view monitor control unit.

>> GO TO 2.

2.REPLACE AROUND VIEW MONITOR CONTROL UNIT

Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

ⓂCONSULT

1. Enter "Re/Programming, Configuration".
2. If “Before Replace ECU” operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press “Confirm” to write vehicle specification. Refer to AV-179, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure".
3. If “Before Replace ECU” operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to AV-179, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure".

>> GO TO 4.

4.OPERATION CHECK

Check that the operation of the around view monitor control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> Work End.

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:0000000009460002

Vehicle specification needs to be written with CONSULT because it is not written after replacing AV control unit.
Configuration has three functions as follows:

Function	Description
"Before Replace ECU"	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
"After Replace ECU"	Writes the vehicle configuration with manual selection.
"Select Saved Data List"	Writes the vehicle configuration with saved data.

CAUTION:
- **When replacing AV control unit, you must perform “Select Saved Data List” or "After Replace ECU" with CONSULT.**
- **Complete the procedure of “Select Saved Data List” or "After Replace ECU" in order.**
- **If you set incorrect “Select Saved Data List” or "After Replace ECU", incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
- **Never perform “Select Saved Data List” or "After Replace ECU" except for new AV control unit.**

CONFIGURATION (AV CONTROL UNIT) : Work Procedure

INFOID:0000000009460003

1.WRITING MODE SELECTION

CONSULT
Select “Reprogramming, Configuration” of AV control unit.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2.PERFORM “SAVED DATA LIST”

CONSULT
Automatically “Operation Log Selection” window will display if “Before Replace ECU” was performed. Select applicable file from the “Save Data List” and press “Confirm”.

>> Work End.

3.PERFORM “AFTER REPLACE ECU” OR “MANUAL CONFIGURATION”

CONSULT
1. Select “After Replace ECU” or “Manual Configuration”.
2. Identify the correct model and configuration list. Refer to AV-179, "CONFIGURATION (AV CONTROL UNIT) : Configuration List".
3. Confirm and/or change setting value for each item.
   CAUTION:
   Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.
4. Select “Next”.
   CAUTION:
   Make sure to select “Next”, confirm each setting value and press “OK” even if the indicated configuration of brand new AV control unit is same as the desirable configuration. If not, configuration which is set automatically by selecting vehicle model can not be memorized.
5. When "Completed", select "End".

>> GO TO 4.

4.OPERATION CHECK

Confirm that each function controlled by AV control unit operates normally.

>> Work End.

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:0000000009460004

CAUTION:
Thoroughly read and understand the vehicle specification. Incorrect settings may result in abnormal control of ECU.

MANUAL SETTING ITEM	
Items	Setting value
SOUND SYSTEM	BASE ⇔ BOSE
CAMERA SYSTEM	NONE/AVM ⇔ REAR CAMERA

⇔: Items which confirm vehicle specifications

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Description

INFOID:0000000009697567

Vehicle specification needs to be written with CONSULT because it is not written after replacing around view monitor control unit.
Configuration has three functions as follows:

Function	Description
"Before Replace ECU"	• Reads the vehicle configuration of current around view monitor control unit. • Saves the read vehicle configuration.
"After Replace ECU"	Writes the vehicle configuration with manual selection.
"Select Saved Data List"	Writes the vehicle configuration with saved data.

CAUTION:
- **When replacing around view monitor control unit, you must perform “Select Saved Data List” or "After Replace ECU" with CONSULT.**
- **Complete the procedure of “Select Saved Data List” or "After Replace ECU" in order.**
- **If you set incorrect “Select Saved Data List” or "After Replace ECU", incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
- **Never perform “Select Saved Data List” or "After Replace ECU" except for new around view monitor control unit.**

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure

INFOID:0000000009697568

1.WRITING MODE SELECTION

CONSULT
Select “Reprogramming, Configuration” of around view monitor control unit.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2.PERFORM “SAVED DATA LIST”

CONSULT
Automatically “Operation Log Selection” window will display if “Before Replace ECU” was performed. Select applicable file from the “Save Data List” and press “Confirm”.

>> Work End.

3.PERFORM “AFTER REPLACE ECU” OR “MANUAL CONFIGURATION”

CONSULT
1. Select “After Replace ECU” or “Manual Configuration”.

2. Identify the correct model and configuration list. Refer to AV-180, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Configuration List".
3. Confirm and/or change setting value for each item.
   CAUTION:
   Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.
4. Select “Next”.
   CAUTION:
   Make sure to select “Next”, confirm each setting value and press “OK” even if the indicated configuration of brand new around view monitor control unit is same as the desirable configuration. If not, configuration which is set automatically by selecting vehicle model can not be memorized.
5. When "Completed", select "End".

>> GO TO 4.

4. OPERATION CHECK

Confirm that each function controlled by around view monitor control unit operates normally.

>> Work End.

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Configuration List

INFOID:0000000009697569

CAUTION:
Thoroughly read and understand the vehicle specification. Incorrect settings may result in abnormal control of ECU.

MANUAL SETTING ITEM	
Items	Setting value
BCI FUNCTION	WITH ⇔ WITHOUT

⇔: Items which confirm vehicle specifications

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:0000000009697570

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure

INFOID:0000000009697571

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:0000000009697572

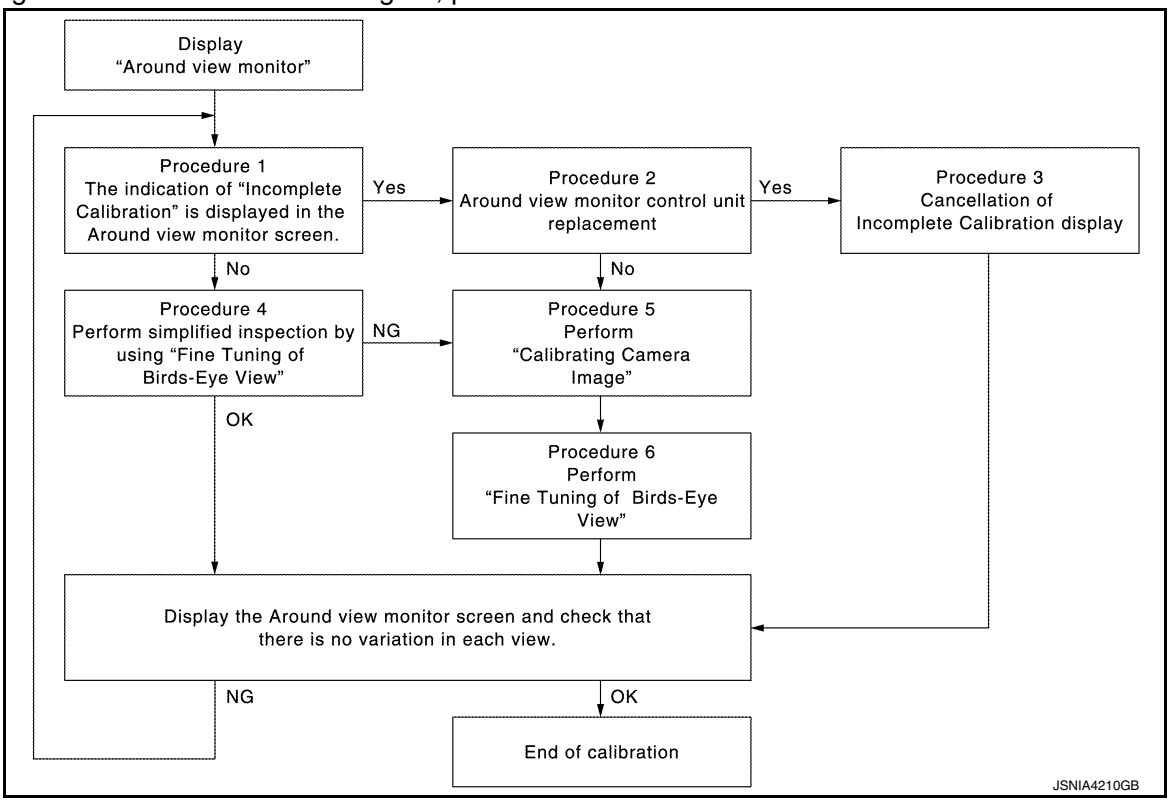
- Calibration must be performed after removing/replacing the cameras, removing parts (e.g. front grille, door mirror, and others) mounted on the cameras, or replacing the Around view monitor control unit.
- The use of CONSULT is required to perform calibration or writing of calibration results to the 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 (AROUND VIEW MONITOR) : Work Procedure

INFOID:0000000009697573

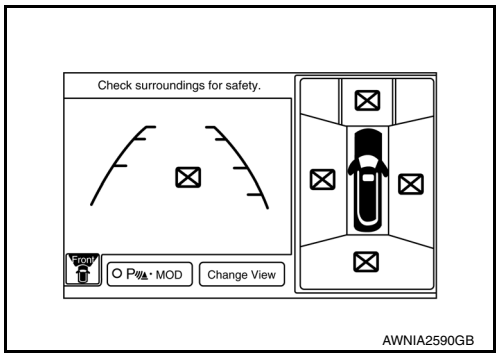
CALIBRATION FLOWCHART

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



NOTE:

View in the incomplete calibration state is indicated by “✉” on the around view monitor.



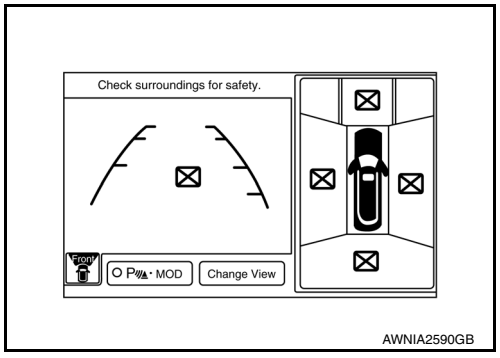
CALIBRATION PROCEDURE

1.AROUND VIEW MONITOR SCREEN CONFIRMATION

Check that there is no indication of “Incomplete calibration”.

Is the “Incomplete calibration” display visible?

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.

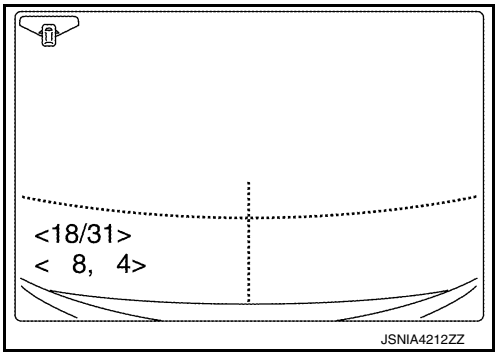
Is the around view monitor control unit replaced?

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

3. CANCEL THE INDICATION OF INCOMPLETE CALIBRATION (PERFORM THIS ONLY AFTER REPLACING AROUND VIEW MONITOR CONTROL UNIT.)

CONSULT work support

1. 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.



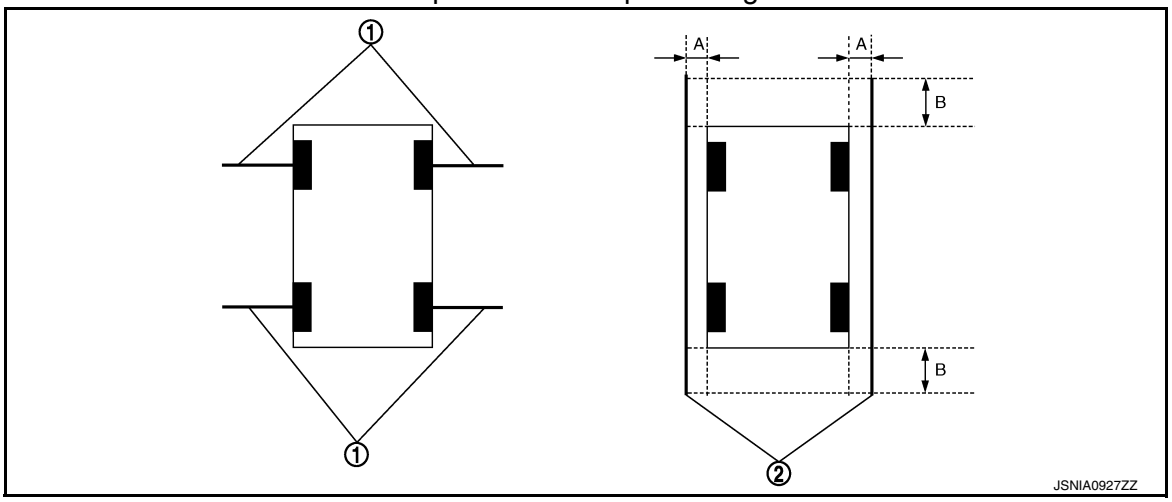
Is there a malfunction?

YES >> Calibration end
NO >> GO TO 1.

4. 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)

Preparation of simplified target line



1. Target lines 1
2. Target lines 2
A. Approx. 30 cm (11.8 in)
B. Approx. 1.0 m (39.3 in)

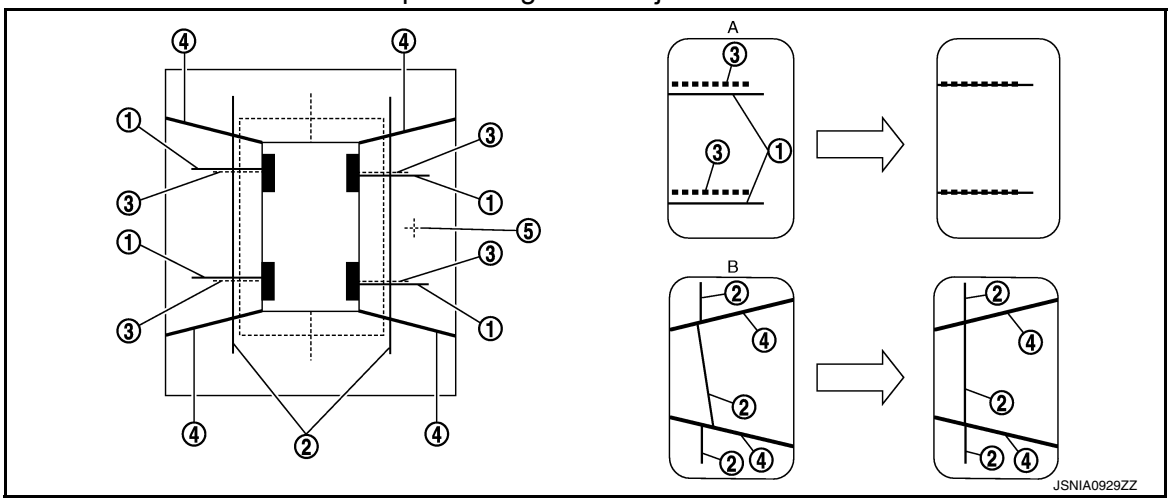
3. CONSULT work support
   Touch “FINE TUNING OF BIRDS-EYE VIEW” on the CONSULT screen.
4. On the CONSULT screen, touch “SELECT” button to select right or left camera and perform camera calibration as instructed below:

- If the marker on the screen deviates from Target line 1, touch “AXIS X” button and “AXIS Y” button to 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.	Target lines 1	2.	Target lines 2	3.	Marker for target line 1
4.	Boundary between cameras	5.	Crosshairs cursor (mark indicated the selected camera)		
A.	Adjustment method for target lines 1 (right)	B.	Adjustment method for target lines 2 (right)		

5. Adjust right and left cameras. Touch "APPLY" on the CONSULT screen to display adjustment results.
6. After adjusting right and left cameras, check that the marker is properly placed on the screen and there is 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”.

Is the difference corrected?

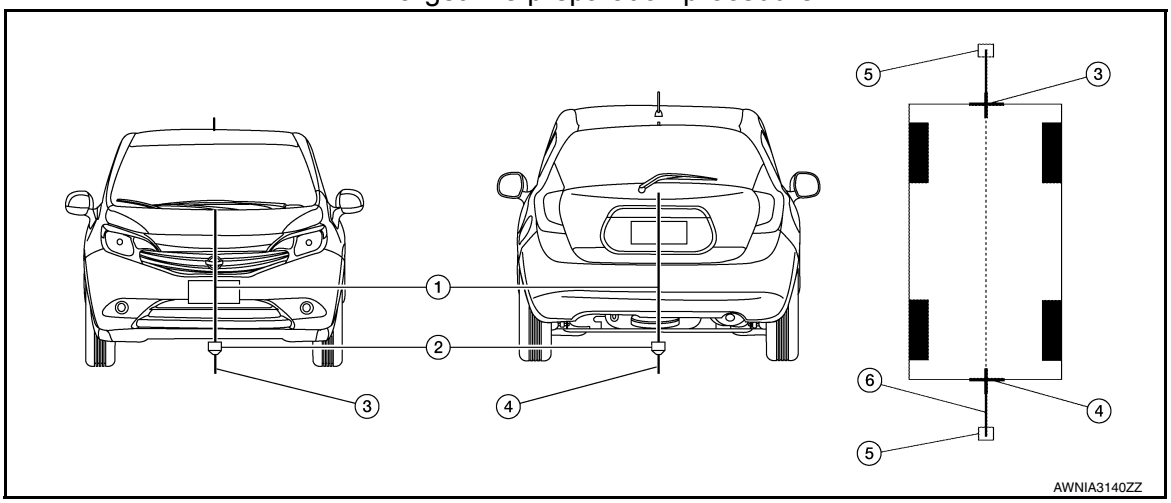
YES >> On the CONSULT screen, touch “OK” button to complete writing to the around view monitor control unit.
NO >> GO TO 5.

5. 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.

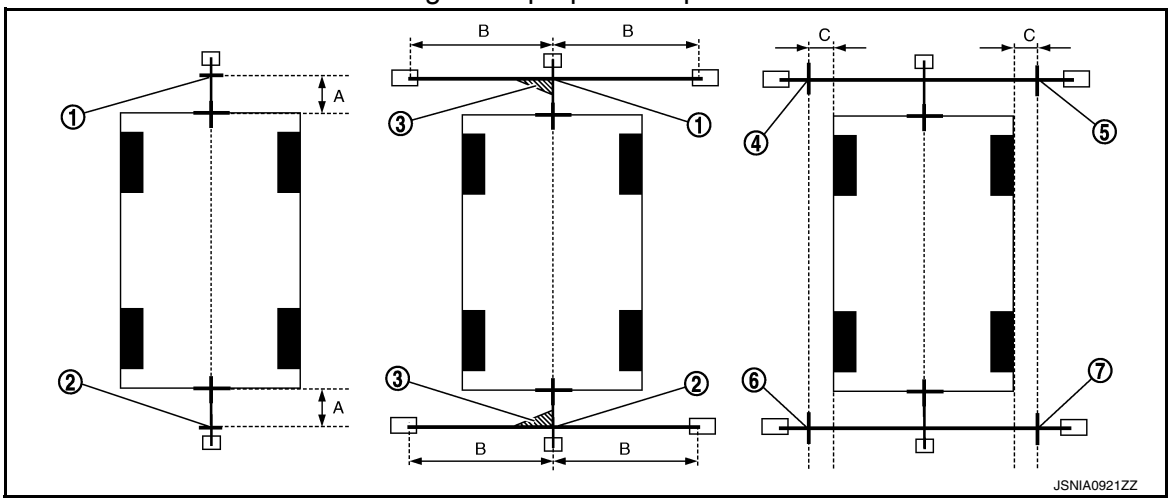
Target line preparation procedure 1



1. Thread
2. Weight
3. Point FM0 (mark)
4. Point RM0 (mark)
5. Packing tape (to fix the vinyl string)
6. Vinyl string

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

Target line preparation procedure 2

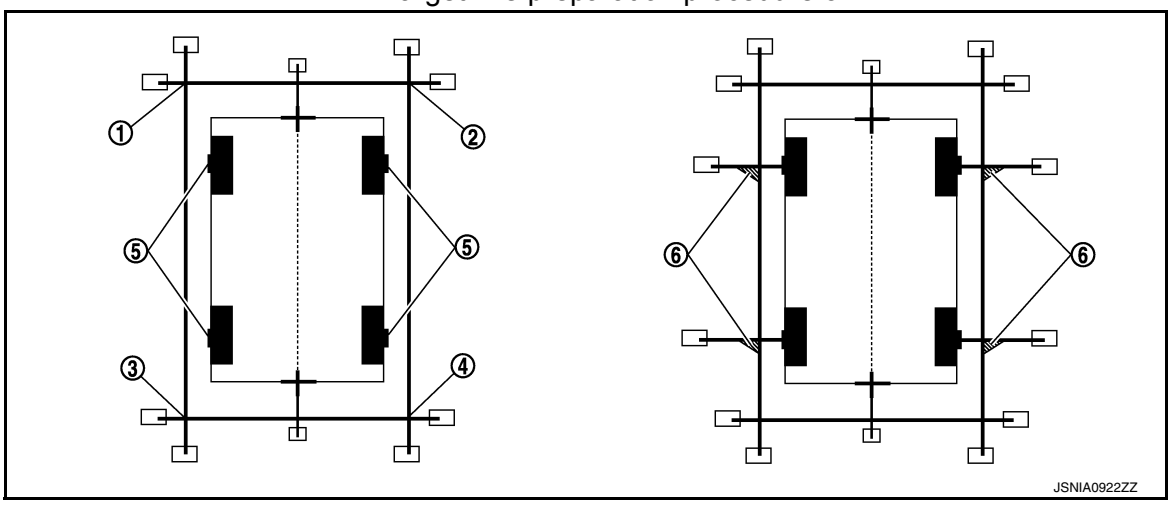


1. Point FM
2. Point RM
3. Triangle scale
4. Point FL (mark)
5. Point FR (mark)
6. Point RL (mark)
7. Point RR (mark)

A. 75 cm (29.5 in)
B. Approx. 1.5 m (59 in)
C. 30 cm (11.8 in) [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.
7. 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.

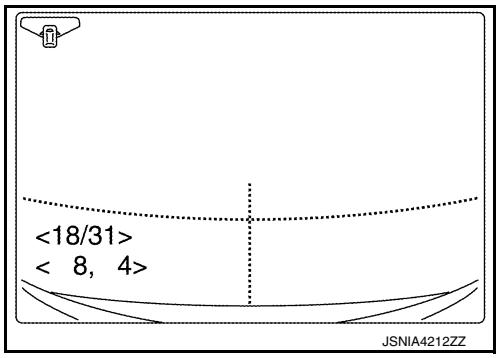
Target line preparation procedure 3



1. Point FL
2. Point FR
3. Point RL
4. Point RR
5. Center position of axle
6. Triangle scale

Perform “Calibrating Camera Image”
CONSULT work support

1. 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, 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.



JSNIA4212ZZ

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

3. 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. 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.

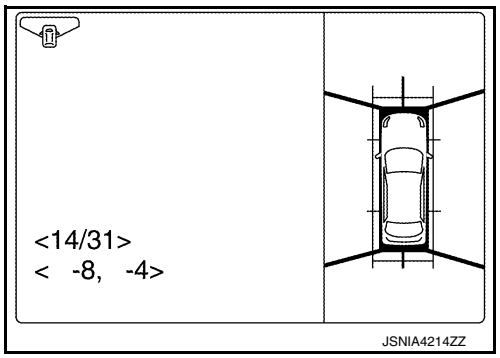
>> GO TO 6.

6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

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.
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.
NOTE:
Touch “SELECT” button on the CONSULT screen to select the target camera.



JSNIA4214ZZ

3. 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. 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

U0428 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000009694236

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ST ANG SEN CALIB [U0428]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000009694237

1.ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U0428 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to AV-149, "CONSULT Function".

U1000 CAN COMM CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000009460005

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009460006

1.PERFORM SELF DIAGNOSTIC RESULT

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform Self Diagnostic Result for MULTI AV.

Is CAN COMM CIRCUIT displayed?

YES >> Refer to LAN-15, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-41, "Intermittent Incident".

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000009694233

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CAN COMM CIRCUIT [U1000]	Around view monitor control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009694234

1.PERFORM SELF DIAGNOSTIC RESULT

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform Self Diagnostic Result for AVM.

Is CAN COMM CIRCUIT displayed?

YES >> Refer to LAN-15, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-41, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000009460007

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	Error during CAN controller hardware initialization (VCAN).	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000009694235

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	Error during CAN controller hardware initialization (VCAN).	Replace the Around view monitor control unit if the malfunction occurs constantly. Refer to AV-248, "Removal and Installation".

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009694238

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Rear display output signal diagnosis (Harness disconnection) [U111A]	Rear view camera image signal circuit open or short.	Check rear view camera image signal circuit.

Diagnosis Procedure

INFOID:0000000009694239

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK REAR VIEW CAMERA POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and rear view camera connectors.
3. Check continuity between around view monitor control unit connector B54 and rear view camera connector D501.

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	26	D501	2	Yes
	25		1	

4. Check continuity between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	26		No

Is the inspection result normal?

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

2.CHECK REAR VIEW CAMERA POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit and rear view camera connectors.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B54	26	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".

3.CHECK REAR VIEW CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and rear view camera connectors.

3. Check continuity between around view monitor control unit connector B54 and rear view camera connector D501.

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	28	D501	4	Yes
	27		5	

4. Check continuity between around view monitor control unit connector B54 and ground.

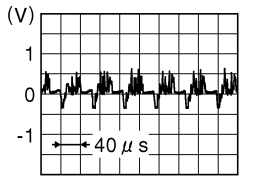
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	28		No

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connectors.

4. CHECK REAR VIEW CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit and rear view camera connectors.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector B54.

Around view monitor control unit connector B54		Condition	Reference value
(+)	(–)		
Terminal	Terminal		
28	27	CAMERA switch is ON or selector lever in R (reverse).	

JSNIA0834GB

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".
NO >> Replace rear view camera. Refer to AV-250, "Removal and Installation".

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009694240

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Right side display output signal diagnosis (Harness disconnection) [U111B]	Right side camera image signal circuit open or short.	Check right side camera image signal circuit.

Diagnosis Procedure

INFOID:0000000009694241

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

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

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and RH side camera connectors.
3. Check continuity between around view monitor control unit connector B54 and RH side camera connector D107.

Around view monitor control unit		RH side camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	34	D107	2	Yes
	33		1	

4. Check continuity between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	34		No

Is the inspection result normal?

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

2.CHECK RH SIDE CAMERA POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit and RH side camera connectors.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B54	34	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".

3.CHECK RH SIDE CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and RH side camera connectors.

3. Check continuity between around view monitor control unit connector B54 and RH side camera connector D107.

Around view monitor control unit		RH side camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	36	D107	8	Yes
	35		7	

4. Check continuity between around view monitor control unit connector B54 and ground.

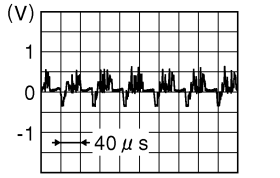
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	36		No

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connectors.

4. CHECK RH SIDE CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit and RH side camera connectors.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector B54.

Around view monitor control unit connector B54		Condition	Reference value
(+)	(–)		
Terminal	Terminal		
36	35	CAMERA switch is ON or selector lever in R (reverse).	

JSNIA0834GB

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".
NO >> Replace RH side camera. Refer to AV-251, "Removal and Installation".

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009694242

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Front display output signal diagnosis (Harness disconnection) [U111C]	Front camera image signal circuit open or short.	Check front camera image signal circuit.

Diagnosis Procedure

INFOID:0000000009694243

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and front camera connectors.
3. Check continuity between around view monitor control unit connector B54 and front camera connector E71.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	38	E71	1	Yes
	37		2	

4. Check continuity between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	38		No

Is the inspection result normal?

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

2.CHECK FRONT CAMERA POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit and front camera connectors.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B54	38	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".

3.CHECK FRONT CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and front camera connectors.

3. Check continuity between around view monitor control unit connector B54 and front camera connector E71.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	40	E71	3	Yes
	39		4	

4. Check continuity between around view monitor control unit connector B54 and ground.

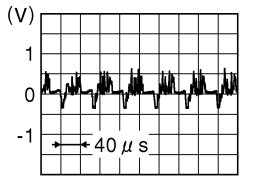
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	40		No

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connectors.

4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit and front camera connectors.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector B54.

Around view monitor control unit connector B54		Condition	Reference value
(+)	(–)		
Terminal	Terminal		
40	39	CAMERA switch is ON or selector lever in R (reverse).	

JSNIA0834GB

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".
NO >> Replace front camera. Refer to AV-249, "Removal and Installation".

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009694244

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Left side display output signal diagnosis (Harness disconnection) [U111D]	Left side camera image signal circuit open or short.	Check left side camera image signal circuit.

Diagnosis Procedure

INFOID:0000000009694245

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

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

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and LH side camera connectors.
3. Check continuity between around view monitor control unit connector B54 and LH side camera connector D4.

Around view monitor control unit		LH side camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	30	D4	2	Yes
	29		1	

4. Check continuity between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	30		No

Is the inspection result normal?

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

2.CHECK LH SIDE CAMERA POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit and LH side camera connectors.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B54	30	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".

3.CHECK LH SIDE CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit and LH side camera connectors.

3. Check continuity between around view monitor control unit connector B54 and LH side camera connector D4.

Around view monitor control unit		LH side camera		Continuity
Connector	Terminals	Connector	Terminals	
B54	32	D4	8	Yes
	31		7	

4. Check continuity between around view monitor control unit connector B54 and ground.

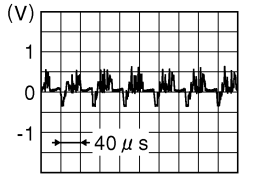
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	32		No

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connectors.

4. CHECK LH SIDE CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit and LH side camera connectors.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector B54.

Around view monitor control unit connector B54		Condition	Reference value
(+)	(–)		
Terminal	Terminal		
32	31	CAMERA switch is ON or selector lever in R (reverse).	

JSNIA0834GB

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-248, "Removal and Installation".
NO >> Replace LH side camera. Refer to AV-251, "Removal and Installation".

U1200 AV CONTROL UNIT

DTC Logic

INFOID:0000000009682015

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Cont Unit [U1200]	Abnormalities are detected in Navigation control unit.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U1217 AV CONTROL UNIT

DTC Logic

INFOID:0000000009460008

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
BLUETOOTH MODULE [U1217]	Connection failure to the internal Blueooth® sub unit is detected.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U1229 AV CONTROL UNIT

DTC Logic

INFOID:0000000009460009

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
iPod CERTIFICATION [U1229]	iPod authentication chip error.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U122F AV CONTROL UNIT

DTC Logic

INFOID:0000000009460010

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Digital broadcasting connection error [U122F]	Communication error with digital audio broadcast module internal to AV control unit.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000009694247

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ST ANG SEN CALIB [U1232]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000009694246

1.ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to AV-149, "CONSULT Function".

U1244 GPS ANTENNA

DTC Logic

INFOID:0000000009460011

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
GPS ANTENNA CONN [U1244]	Open or short to ground is detected in GPS antenna connection.	• GPS antenna disconnection. • Open or short to ground in GPS antenna signal circuit.

Diagnosis Procedure

INFOID:0000000009681889

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.GPS ANTENNA INSPECTION

Visually inspect the GPS antenna and antenna feeder. Refer to AV-252, "Removal and Installation".

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning components.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect AV control unit connector M108.
2. Turn ignition switch ON.
3. Check voltage between AV control unit connector M108 and ground.

AV control unit		Ground	Voltage
Connector	Terminal		
M108	61	—	5.0 V

Is inspection result normal?

YES >> Replace GPS antenna. Refer to AV-252, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-240, "Removal and Installation".

U1258 SATELLITE RADIO ANTENNA

DTC Logic

INFOID:0000000009460013

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
XM 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:0000000009460014

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1. SATELLITE ANTENNA INSPECTION

Visually inspect the satellite antenna and antenna feeder. Refer to AV-255, "Feeder Layout".

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning components.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Turn ignition switch ON.
2. Check voltage between AV control unit connector M109 and ground.

AV control unit		Ground	Voltage
Connector	Terminal		
M109	63	—	5.0 V

Is inspection result normal?

YES >> Replace satellite radio antenna AV-253, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-240, "Removal and Installation".

U1263 USB

DTC Logic

INFOID:0000000009460015

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
USB OVERCURRENT [U1263]	Overcurrent in USB harness is detected.	• Device connected to USB interface. • Harness between the AV control unit and USB interface.

DTC CONFIRMATION PROCEDURE

1.PERFORM SELF DIAGNOSTIC RESULT

1. If there is a device connected to the USB interface, disconnect it.
2. Turn ignition switch ON and wait for 2 seconds or more.
3. Perform Self Diagnostic Result for MULTI AV.

Is DTC U1263 displayed?

YES >> Refer to AV-204, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000009460016

1.CHECK USB INTERFACE HARNESS

Visually inspect USB interface harness. Refer to AV-244, "Removal and Installation".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace USB interface harness. Refer to AV-244, "Removal and Installation".

2.CHECK USB INTERFACE HARNESS

Check USB interface harness. Refer to AV-225, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Replace USB interface harness. Refer to AV-244, "Removal and Installation".

U1264 ANTENNA AMP.

DTC Logic

INFOID:0000000009460017

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ANTENNA AMP TERMINAL [U1264]	Open or short to ground is detected in Antenna amp. connection.	• Antenna amp. disconnection. • Open or short to ground in antenna amp. ON signal circuit.

Diagnosis Procedure

INFOID:0000000009681890

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.ANTENNA AMP. INSPECTION

Visually inspect the antenna base (antenna amp.) and antenna feeder. Refer to AV-255, "Feeder Layout".

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning components.

2.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA BASE

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M73 and antenna base connector M351.
3. Check continuity between AV control unit connector M73 and antenna base connector M351.

AV control unit		Antenna base		Continuity
Connector	Terminal	Connector	Terminal	
M73	58	M351	1	Yes

4. Check continuity between AV control unit connector M73 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M73	58	—	No

Is the inspection result normal?

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

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector M73.
2. Turn ignition switch ON.
3. Check voltage between AV control unit connector M73 and ground.

AV control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M73	58	—	Battery voltage

Is the inspection result normal?

YES >> Replace antenna base. Refer to AV-254, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-240, "Removal and Installation".

U12AA CONFIGURATION ERROR

DTC Logic

INFOID:0000000009460019

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Configuration Error [U12AA]	AV control unit is not properly configured or configuration is corrupt.	Configuration data needs to be written. Refer to AV-178, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure".

Diagnosis Procedure

INFOID:0000000009460020

1.PERFORM CONFIGURATION

When U12AA is detected, configuration data must be written.

>> Write configuration data with CONSULT. Refer to AV-178, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure".

U12AC AV CONTROL UNIT

DTC Logic

INFOID:0000000009460021

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Display Temperature too High [U12AC]	Display temperature has exceeded maximum temperature. Display is switched OFF to avoid irreversible damage.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U12AD AV CONTROL UNIT

DTC Logic

INFOID:0000000009460022

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ECU Temperature too High [U12AD]	AV control unit temperature has exceeded maximum temperature.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U12AE AV CONTROL UNIT

DTC Logic

INFOID:0000000009460023

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Internal Amplifier temperature Warning [U12AE]	Internal amplifier temperature has exceeded maximum temperature.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U12AF AV CONTROL UNIT

DTC Logic

INFOID:0000000009460024

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CD Mechanism Temperature Warning [U12AF]	CD drive temperature has exceeded maximum temperature. CD drive is switched OFF to avoid irreversible damage.	Replace AV control unit if malfunction occurs constantly. Refer to AV-240, "Removal and Installation".

U12B0 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:0000000009460025

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Supply Voltage Goes below 9V > 20s [U12B0]	AV control unit supply voltage exceeds lower limits.	• Charging system malfunction. • AV control unit power supply or ground circuits.

Diagnosis Procedure

INFOID:0000000009460026

1.CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to CHG-14, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-17, "Work Flow (Without EXP-800 NI or GR8-1200 NI)".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning components.

2.CHECK AV CONTROL UNIT POWER SUPPLY AND GROUND CIRCUITS

Perform the AV control unit power supply and ground circuit diagnosis procedure. Refer to AV-215, "AV CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Repair or replace harness or connectors.

U12B1 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:0000000009460027

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Supply Voltage Goes High > 16V for 20s [U12B1]	AV control unit supply voltage exceeds upper limits.	Charging system malfunction.

Diagnosis Procedure

INFOID:0000000009460028

1.CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to CHG-14, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-17, "Work Flow (Without EXP-800 NI or GR8-1200 NI)".

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Repair or replace the malfunctioning components.

U1304 CAMERA IMAGE CALIBRATION

DTC Logic

INFOID:0000000009694248

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Non-completion of the calibration [U1304]	Camera image calibration is incomplete.	Perform calibration of camera image.

Diagnosis Procedure

INFOID:0000000009694249

1.PERFORM CALIBRATION

When U1304 is detected, perform calibration of camera image.

>> Refer to AV-181, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure".

U1305 CONFIG UNFINISH

DTC Logic

INFOID:0000000009694250

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Non-completion of the configuration [U1305]	Configuration of around view monitor control unit is incomplete.	Perform configuration of around view monitor control unit.

Diagnosis Procedure

INFOID:0000000009694251

1.PERFORM CONFIGURATION

When U1305 is detected, perform configration of around view monitor control unit.

>> Refer to AV-179, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure".

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009681891

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	18 (10A)
19	Battery power supply	29 (15A)
37	Ignition power supply	5 (10A)

Are the fuses blown?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors M70 and M71.
3. Check voltage between AV control unit connectors M70 and M71 and ground.

AV control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M70	19	—	Ignition switch: OFF	Battery voltage
	7		Ignition switch: ON	
M71	37			

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between AV control unit connector M70 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M70	20	—	Yes

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace harness or connectors.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009681921

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
4	Ignition signal	5 (10A)
2	Battery power supply	29 (15A)

Are the fuses blown?

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

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector B54.
3. Check voltage between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B54	4	—	Ignition switch: ON	Battery voltage
	2		Ignition switch: OFF	

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between around view monitor control unit connector B54 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B54	1	—	Yes

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace harness or connectors.

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000009681892

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CONNECTOR CHECK

Check the AV control unit and speaker connectors for the following:
- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminals or connectors.

2.CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M70 and suspect front door speaker connector.
2. Check continuity between AV control unit connector M70 and suspect front door speaker connector.

AV control unit		Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M70	2	D12 (LH)	1	Yes
	3		2	
	11	D112 (RH)	1	
	12		2	

3. Check continuity between AV control unit connector M70 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M70	2	—	No
	3		
	11		
	12		

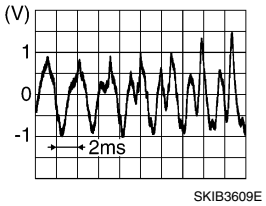
Is the inspection result normal?

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

3.CHECK FRONT DOOR SPEAKER SIGNAL

1. Connect AV control unit connector M70 and suspect front door speaker connector.
2. Turn ignition switch to ACC.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M70.

AV control unit connector M70		Condition	Reference value
(+)	(−)		
Terminal	Terminal		

2	3	Audio signal output	 SKIB3609E
11	12		

Is the inspection result normal?

YES >> Replace front door speaker. Refer to AV-242, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-240, "Removal and Installation".

REAR DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000009681893

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CONNECTOR CHECK

Check the AV control unit and speaker connectors for the following:
- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminals or connectors.

2.CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M70 and suspect rear door speaker connector.
2. Check continuity between AV control unit connector M70 and suspect rear door speaker connector.

AV control unit		Rear door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M70	4	D207 (LH)	1	Yes
	5		2	
	13	D307 (RH)	1	
	14		2	

3. Check continuity between AV control unit connector M70 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M70	4	—	No
	5		
	13		
	14		

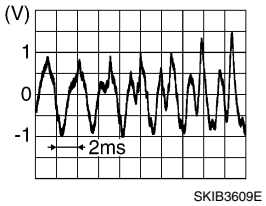
Is the inspection result normal?

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

3.CHECK REAR DOOR SPEAKER SIGNAL

1. Connect AV control unit connector M70 and suspect rear door speaker connector.
2. Turn ignition switch to ACC.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M70.

AV control unit connector M70		Condition	Reference value
(+)	(−)		
Terminal	Terminal		

4	5	Audio signal output	
13	14		

Is the inspection result normal?

YES >> Replace rear door speaker. Refer to AV-243, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-240, "Removal and Installation".

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009681894

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M71 and microphone connector R15.
3. Check continuity between AV control unit connector M71 and microphone connector R15.

AV control unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M71	41	R15	2	Yes
	42		4	
	43		1	

4. Check continuity between AV control unit connector M71 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M71	42	—	No
	43		

Is inspection result normal?

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

2.CHECK MICROPHONE VCC VOLTAGE

1. Connect AV control unit connector M71.
2. Turn ignition switch ON.
3. Check voltage between terminals of AV control unit connector M71.

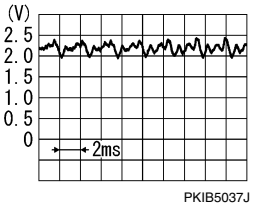
AV control unit connector M71		Voltage (Approx.)
(+)	(−)	
Terminal	Terminal	
42	41	5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-240, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between terminals of AV control unit connector M71.

AV control unit connector M71		Condition	Reference value
(+)	(−)		
Terminal	Terminal		
43	41	Speak into microphone.	

PKIB5037J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Replace microphone. Refer to AV-247, "Removal and Installation".

STEERING SWITCH

Diagnosis Procedure

INFOID:0000000009681895

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M88.
3. Check resistance between the terminals of combination switch connector M88.

Combination switch connector M88		Condition	Resistance Ω (Approx.)
Terminal	Terminal		
14	17	Depress SOURCE switch.	1
		Depress △ switch.	121
		Depress ▽ switch.	321
		Depress switch.	723
15		Depress − switch.	1
		Depress + switch.	121
		Depress switch.	321

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to AV-246, "Removal and Installation".

2.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M88 and M30.

Combination switch				Continuity
Connector	Terminal	Connector	Terminal	
M88	14	M30	24	Yes
	15		31	
	17		33	

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK HARNESS BETWEEN COMBINATION SWITCH AND AV CONTROL UNIT

1. Disconnect AV control unit connector M70.
2. Check continuity between combination switch connector M30 and AV control unit connector M70.

Combination switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M30	24	M70	6	Yes
	31		16	
	33		15	

3. Check continuity between combination switch connector M30 and ground.

Combination switch		Ground	Continuity
Connector	Terminal		
M30	24	—	No
	31		
	33		

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Repair or replace harness or connectors.

USB CONNECTOR

Diagnosis Procedure

INFOID:0000000009681896

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M76 and USB interface connector M72.
3. Check continuity between AV control unit connector M76 and USB interface connector M72.

AV control unit		USB interface		Continuity
Connector	Terminal	Connector	Terminal	
M76	53	M72	4	Yes
	54		1	
	55		2	
	56		3	
	57		5	

4. Check continuity between AV control unit connector M76 and ground.

AV control unit		—	Continuity
Connector	Terminal		
M76	53	Ground	No
	55		

Is the inspection result normal?

YES >> Replace the USB interface. Refer to AV-244, "Removal and Installation".
NO >> Repair or replace harness or connectors.

AUXILIARY INPUT JACK

Diagnosis Procedure

INFOID:0000000009681897

Regarding Wiring Diagram information, refer to AV-158, "Wiring Diagram".

1.CHECK AUX JACK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M71 and AUX jack connector M215.
3. Check continuity between AV control unit connector M71 and AUX jack connector M215.

AV control unit		AUX jack		Continuity
Connector	Terminal	Connector	Terminal	
M71	30	M215	1	Yes
	31		3	
	32		4	

4. Check continuity between AV control unit connector M71 and ground.

AV control unit		—	Continuity
Connector	Terminal		
M71	30	Ground	No
	32		

Is the inspection result normal?

YES >> Replace the AUX jack. Refer to AV-245, "Removal and Installation".
NO >> Repair or replace harness or connectors.

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM

Symptom Table

INFOID:0000000009460039

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	AV control unit	Malfunction in AV control unit. Refer to AV-147, "On Board Diagnosis Function".
No sound comes out or the level of the sound is low.	No sound from all speakers.	• Speaker circuit shorted to ground. Refer to AV-158, "Wiring Diagram". • AV control unit power supply and ground circuits malfunction. Refer to AV-215, "AV CONTROL UNIT : Diagnosis Procedure".
	Only a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and speaker. Refer to: - AV-217, "Diagnosis Procedure" (front door speaker). - AV-219, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. Refer to: - AV-242, "Removal and Installation" (front door speaker). - AV-243, "Removal and Installation" (rear door speaker). • Malfunction in AV control unit. Refer to AV-147, "On Board Diagnosis Function".
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in AV control unit. Refer to AV-147, "On Board Diagnosis Function".
	Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and speaker. Refer to: - AV-217, "Diagnosis Procedure" (front door speaker). - AV-219, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. • Poor Installation of speaker (e.g. backlash and looseness). Refer to: - AV-242, "Removal and Installation" (front door speaker). - AV-243, "Removal and Installation" (rear door speaker). • Malfunction in AV control unit. Refer to AV-147, "On Board Diagnosis Function".
	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. Refer to AV-255, "Feeder Layout".

Symptoms	Check items	Probable malfunction location
No radio reception or poor reception.	• Other audio sounds are normal. • Any radio station 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 obstacles generating external noises).	• Antenna amp. ON signal circuit malfunction. Refer to AV-205, "Diagnosis Procedure". • Poor connector connection of antenna or antenna feeder. Refer to AV-255, "Feeder Layout".
No satellite radio reception.	There is malfunction in the CONSULT self diagnosis result. Refer to AV-148, "CONSULT Function".	• Malfunction in antenna, antenna feeder or AV control unit. Perform DTC diagnosis. Refer to AV-203, "Diagnosis Procedure". • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. Refer to AV-255, "Feeder Layout".
	There is no malfunction in the CONSULT self diagnosis result. Refer to AV-148, "CONSULT Function".	• Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-255, "Feeder Layout".
Buzz/rattle sound from speaker	The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.	Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.

RELATED TO HANDS-FREE PHONE

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and check that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
   NOTE:
   The customer's phone may be required, depending upon their concern.
3. Write down the customer's phone brand, model and service provider.
   NOTE:
   It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
4. Go to "www.nissanusa.com/bluetooth/".

a. Using the website's search engine, find out if the customer's phone is on the approved list.

b. If the customer's phone is NOT on the approved list:

   Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.

c. If the feature related to the customer's concern shows as "N" (not compatible):
   Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features".

d. If the feature related to the customer's concern shows as "Y" (compatible):
   Perform diagnosis as per the following table.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection (no connection is displayed on the display at the guide).	Repeat the registration of cellular phone.	Malfunction in AV control unit. Replace AV control unit. Refer to AV-240, "Removal and Installation".
Hands-free phone cannot be established.	• 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.	
The other party's voice cannot be heard by hands-free phone.	Check the "microphone speaker" in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-221, "Diagnosis Procedure".
The system cannot be operated.	• The voice recognition can be controlled. • Steering switch's − , + , and switch works, but does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-246, "Removal and Installation".
	Steering switch's , − , + , and switches do not work.	Steering switch signal circuit malfunction. Refer to AV-223, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-223, "Diagnosis Procedure".

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Navigation system is inoperative.	Navigation malfunction.	• Malfunction in SD card. • Malfunction in AV control unit. Refer to AV-147, "On Board Diagnosis Function".
	Steering switches malfunction.	Steering switch signal circuit malfunction. Refer to AV-223, "Diagnosis Procedure".
	Voice activated control malfunction.	Microphone signal circuit malfunction. Refer to AV-221, "Diagnosis Procedure". Steering switch signal circuit malfunction. Refer to AV-223, "Diagnosis Procedure".

RELATED TO AROUND VIEW MONITOR

Symptoms	Check items	Probable malfunction location
Display does not switch to camera image when CAMERA switch is pressed or selector lever is in R (reverse).	Around view monitor control unit malfunction.	Around view monitor control unit power supply and ground circuits malfunction. Refer to AV-215, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".
	Camera image signal circuit (output) malfunction.	Camera image signal circuit (output) malfunction between around view monitor control unit and display unit. Refer to AV-155, "Reference Value".
Display switches to camera image when CAMERA switch is pressed or selector lever is in R (reverse), but all views are not displayed.	Camera image signal circuit (input) malfunction.	Camera image signal circuit (input) malfunction between camera and around view monitor control unit. Refer to: • AV-193, "Diagnosis Procedure" (front camera). • AV-189, "Diagnosis Procedure" (rear camera). • AV-195, "Diagnosis Procedure" (side camera LH). • AV-191, "Diagnosis Procedure" (side camera RH).

Symptoms	Check items	Probable malfunction location
Camera image is rolling.	Camera image signal circuit (output) malfunction.	Camera image signal circuit (output) malfunction between around view monitor control unit and display unit. Refer to AV-155, "Reference Value".
Display does not switch to rear view monitor even when selector lever is in R (reverse).	Reverse signal circuit malfunction.	Reverse signal circuit between BCM and around view monitor control unit. Refer to AV-155, "Reference Value".
Predicted course line display in front view and rear view is malfunctioning.	Steering angle sensor malfunction.	Predicted course line center position is malfunctioning. Refer to AV-180, "PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure".
Front view and front of birds-eye view is not displayed.	• Front camera malfunction. • Front camera image signal circuit malfunction.	• Front camera power supply and ground circuits malfunction. • Front camera image signal circuit malfunction between front camera and around view monitor control unit. Refer to AV-193, "Diagnosis Procedure".
Rear view and rear of birds-eye view is not displayed.	• Rear view camera malfunction. • Rear view camera image signal circuit malfunction.	• Rear view camera power supply and ground circuits malfunction. • Rear view camera image signal circuit malfunction between rear view camera and around view monitor control unit. Refer to AV-189, "Diagnosis Procedure".
Driver side of birds-eye view is not displayed.	• Side camera LH malfunction. • Side camera LH image signal circuit malfunction.	• Side camera LH power supply and ground circuits malfunction. • Side camera LH image signal circuit malfunction between side camera LH and around view monitor control unit. Refer to AV-195, "Diagnosis Procedure".
Front-side and passenger side of birds-eye view is not displayed.	• Side camera RH malfunction. • Side camera RH image signal circuit malfunction.	• Side camera RH power supply and ground circuits malfunction. • Side camera RH image signal circuit malfunction between side camera RH and around view monitor control unit. Refer to AV-191, "Diagnosis Procedure".
Selector lever is in a position other than R (reverse) and front, rear, front-side and Birds-Eye views are displayed even as vehicle speed increases.	Vehicle speed signal malfunction.	Vehicle speed signal malfunction between ABS actuator and electric unit (control unit) and around view monitor control unit. Refer to AV-155, "Reference Value".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009460040

RELATED TO NOISE

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).
The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- 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 the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

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 determine the cause.

NOTE:
The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	• Ignition components
The occurrence of the noise is linked with the operation of the fuel pump.		• Fuel pump condenser
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	• Relay malfunction, AV control unit malfunction
	The noise occurs when various motors are operating.	• Motor case ground • Motor
The noise occurs constantly, not just under certain conditions.		• Rear defogger coil malfunction • Open circuit in printed heater • Poor ground of antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		• Ground wire of body parts • Ground due to improper part installation • Wiring connections or a short circuit

RELATED TO HANDS-FREE PHONE

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 Compatibility)” in AV-227, "Symptom Table".
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.

Symptom	Cause and Counter measure
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 NAVIGATION

Basic Operation

Symptom	Cause	Remedy
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.
No guide sound is heard. Audio guide volume is too low or too high.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunctioning.
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display (display unit).	System is not malfunction.

Vehicle Mark

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunctioning.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the "SWITCH SCREENS" when the last time the screen dimming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.	Perform screen dimming and select the nighttime screen by "SWITCH SCREENS".
Map screen will not scroll in accordance with the vehicle travel.	Current location is not displayed.	Press "MAP" button to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Press "MAP" button to display the current location.
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS satellite signal cannot be received because an obstacle is placed on top of the instrument panel.	Do not place anything on top of the meter display (instrument panel).
	GPS satellites are not visible from current location.	Wait until GPS satellites are visible by moving the vehicle.

Symptom	Cause	Remedy
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD–ROM will be released once a year.

Destination, Passing Points and Menu Items Cannot be Selected/Set

Symptom	Cause	Remedy
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn route guide ON.
	Route information is not available on the dark pink route.	System is not malfunctioning.
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.)	Drive on the recommended route.
Automatic route searching is not possible.	Vehicle is driving on a highway (gray route), or no recommended route is available.	Drive on a road to be searched. Or re–search the route manually. In this case, however, the whole route will be searched.
Performed automatic detour search (or detour search). However, the result is the same as that of the previous search.	Performed search with every conditions considered. However, the result is the same as that of the previous search.	System is not malfunctioning.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunctioning.
Some menu items cannot be selected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

Voice Guide

Symptom	Cause	Remedy
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunctioning.
	The vehicle is not on the recommended route.	Return to the recommended route or re-search the route.
	Voice guide is turned OFF.	Turn voice guide ON.
	Route guide is turned OFF.	Turn route guide ON.
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.

Route Search

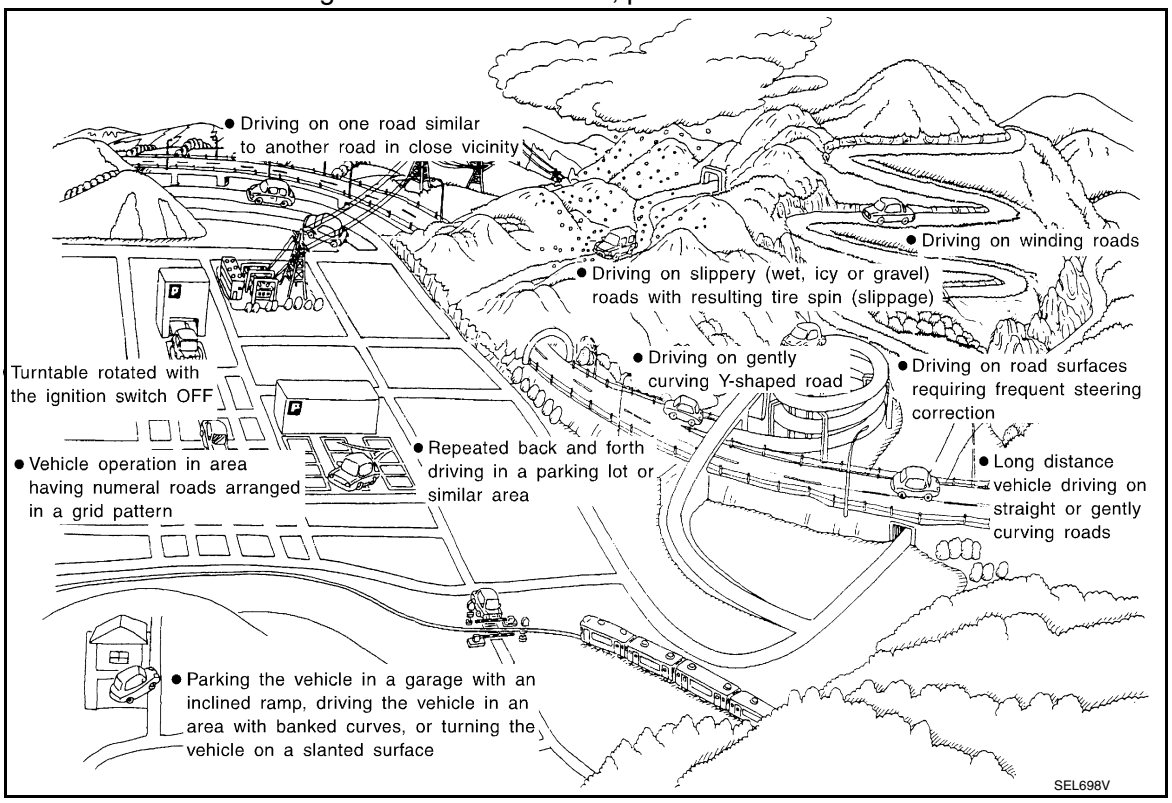
Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.
	Starting point and the destination are too close.	Set the destination at more distant point.
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current location or the destination.	Turn the time-regulating search conditions OFF. Turn “Avoid regulation time” in the search conditions OFF.
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search(Note)Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunctioning.
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunctioning.
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destination, or set the passing point on the route of your choice.
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunctioning.
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.

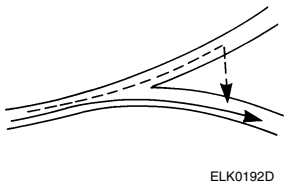
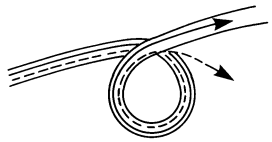
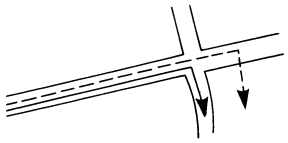
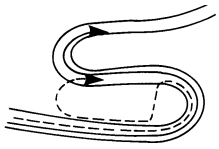
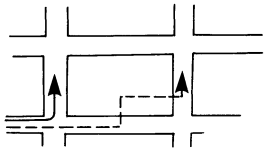
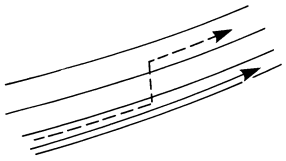
NOTE:

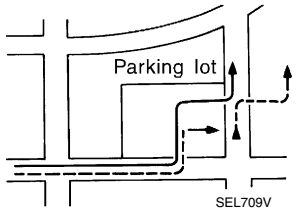
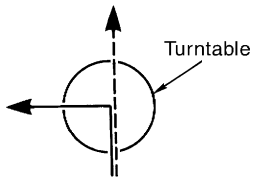
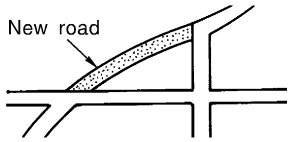
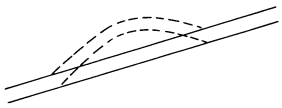
Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

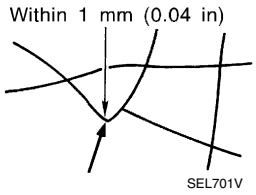
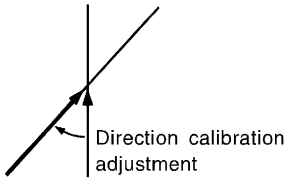
Examples of Current-Location Mark Displacement

Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.



Cause (condition) –: While driving ooo: Display		Driving condition	Remarks (correction, etc.)
Road configuration	Y–intersections  ELK0192D	At a Y intersection or similar gradual division of roads, an error in the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Spiral roads  ELK0193D	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
	Straight roads  ELK0194D	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle is turned at a corner.	
	Zigzag roads  ELK0195D	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	
	Roads laid out in a grid pattern  ELK0196D	When driving where roads are laid out in a grid pattern, or where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
	Parallel roads  ELK0197D	When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	

Cause (condition) –: While driving ooo: Display		Driving condition	Remarks (correction, etc.)
Place	In a parking lot  SEL709V	When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location. When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Turntable  SEL710V	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turntable with the ignition OFF.	
	Slippery roads	On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.	
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	
Map data	Road not displayed on the map screen  SEL699V	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.	
	Different road pattern (Changed due to repair)  ELK0201D	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly and matches the location to a nearby road. The vehicle mark may deviate from the correct road.	
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance still deviates, adjust it by using the distance adjustment function. (If the tire chain is removed, recover the original value.)

Cause (condition) –: While driving ooo: Display		Driving condition	Remarks (correction, etc.)
Precautions for driving	Just after the engine is started	If the vehicle is driven just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location.	Wait for a short while before driving after starting the engine.
	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road.	Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
How to correct location	Position correction accuracy  SEL701V	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads.	Enter in the road displayed on the screen with an accuracy of approx. 1mm. Caution: Whenever possible, use detailed map for the correction.
	Direction when location is corrected  SEL702V	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards.	Perform direction correction.

Location Correction by Map-Matching is Slow

- The map-matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map-matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

Name of Road is Not Displayed

The current road name may not be displayed if there are no road names displayed on the map screen.

Contents of Display Differ for Birdview™ and the (Flat) Map Screen

Difference of the BIRDVIEW™ screen from the flat map screen are as follows.

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming too complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

Vehicle Mark Shows a Position Which is Completely Wrong

In the following cases, the vehicle mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction.

- When location correction has not been done
  - If the receiving conditions of the GPS satellite signal is poor, if the vehicle mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed

- Because calculation of the current location cannot be done when traveling with the ignition off, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location can be detected with GPS, the location will be corrected.

Vehicle Mark Jumps

In the following cases, the vehicle mark may appear to jump as a result of automatic correction of the current location.

- When map matching has been done
- If the current location and the vehicle mark are different when map matching is done, the vehicle mark may seem to jump. At this time, the location may be “corrected” to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
- If the current location and the vehicle mark are different when the location is corrected using GPS measurements, the vehicle mark may seem to jump. At this time, the location may be “corrected” to a location which is not on a road.

Vehicle Mark is in a River or Sea

The navigation system moves the vehicle mark with no distinction between land and rivers or sea. If the vehicle mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

Vehicle Mark Automatically Rotates

The system wrongly memorizes the rotating status as stopping when the ignition switch is turned ON with the turntable rotating. That causes the vehicle mark to rotate when the vehicle is stopped.

When Driving on Same Road, Sometimes Vehicle Mark is in Right Place and Sometimes it is in Wrong Place

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

REMOVAL AND INSTALLATION

AV CONTROL UNIT

Removal and Installation

INFOID:0000000009460041

REMOVAL

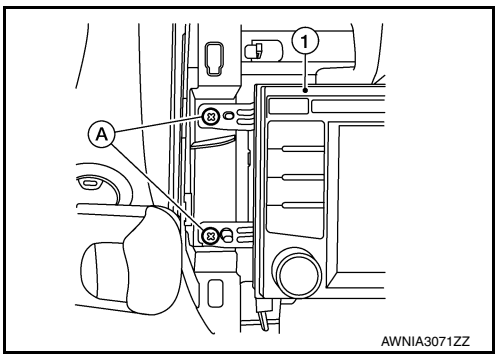
CAUTION:

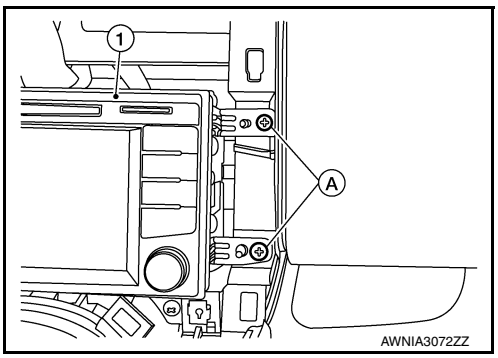
- **Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.**
- **Before replacing AV control unit, perform "READ CONFIGURATION" to save current vehicle specification. Refer to AV-178, "CONFIGURATION (AV CONTROL UNIT) : Description".**

NOTE:

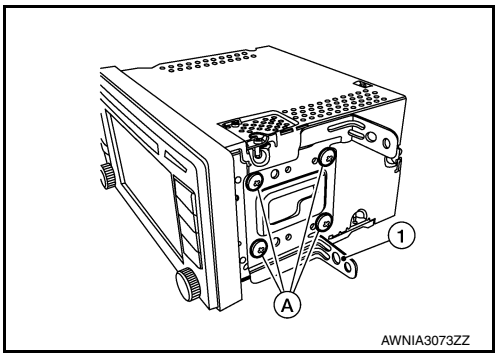
After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

1. Remove the battery negative terminal. Refer to PG-67, "Removal and Installation (Battery)".
2. Remove cluster lid C. Refer to IP-22, "Removal and Installation".
3. Remove the AV control unit screws (A) and partially remove the AV control unit (1).





4. Disconnect the harness connectors from the AV control unit and remove.
5. Remove the AV control unit bracket screws (A) and the AV control unit bracket (1) from each side of the AV control unit (if necessary).



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- **When replacing AV control unit, perform "WRITE CONFIGURATION". Refer to AV-178, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure".**

- **Perform camera image calibration. Refer to AV-181, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure".**

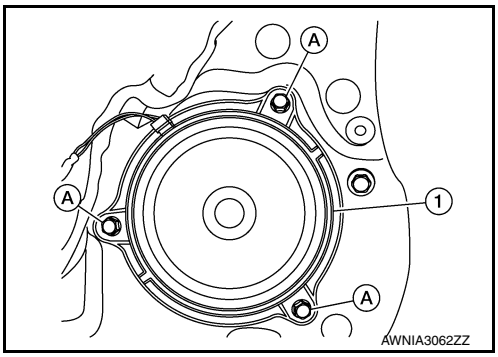
FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000009541288

REMOVAL

1. Remove the front door finisher. Refer to INT-15, "Removal and Installation".
2. Disconnect the harness connector from front door speaker.
3. Remove the front door speaker screws (A).
4. Remove the front door speaker (1).



INSTALLATION

Installation is in the reverse order of removal.

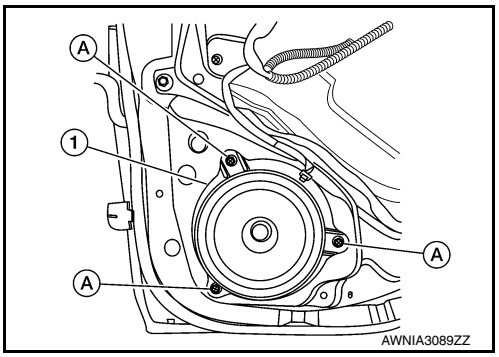
REAR DOOR SPEAKER

Removal and Installation

INFOID:0000000009541289

REMOVAL

1. Remove the rear door finisher. Refer to INT-18, "Removal and Installation".
2. Disconnect the harness connector from the rear door speaker.
3. Remove the rear door speaker screws (A).
4. Remove the rear door speaker (1).



INSTALLATION

Installation is in the reverse order of removal.

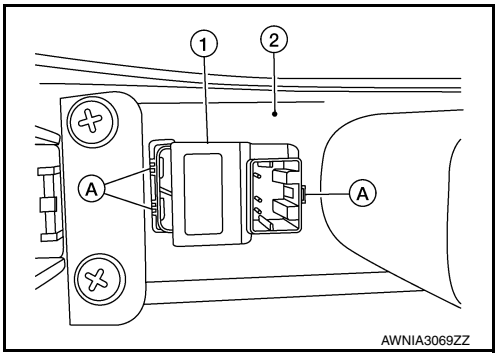
USB INTERFACE

Removal and Installation

INFOID:0000000009541290

REMOVAL

1. Remove the center console assembly. Refer to IP-18, "Removal and Installation".
2. Release the pawls (A) from the back of the center console assembly (2) using a suitable tool and remove the USB interface (1).



INSTALLATION

Installation is in the reverse order of removal.

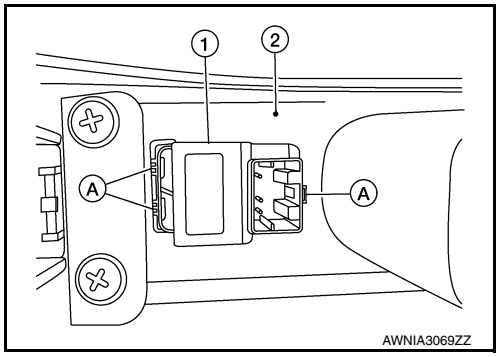
AUXILIARY INPUT JACK

Removal and Installation

INFOID:0000000009647056

REMOVAL

1. Remove the center console assembly. Refer to IP-18, "Removal and Installation".
2. Release the pawls (A) from the back of the center console assembly (2) using a suitable tool and remove the auxiliary input jack (1).



INSTALLATION

Installation is in the reverse order of removal.

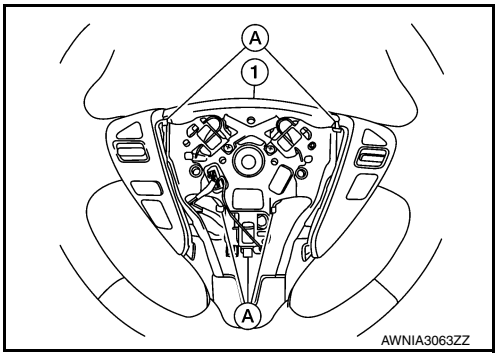
STEERING SWITCH

Removal and Installation

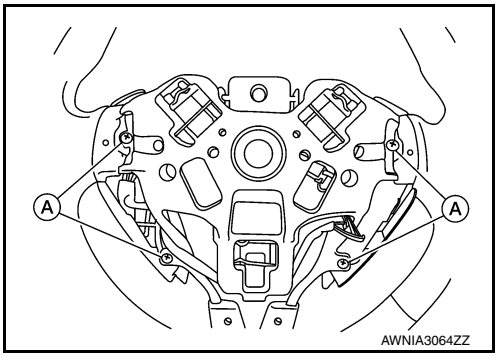
INFOID:0000000009541291

REMOVAL

1. Remove the steering wheel. Refer to ST-8, "Removal and Installation".
2. Remove the steering wheel rear finisher (1) by releasing pawls (A).



3. Remove the steering wheel audio control switch screws (A) from the back of the steering wheel.



4. Remove the steering wheel audio control switches from the steering wheel.

INSTALLATION

Installation is in the reverse order of removal.

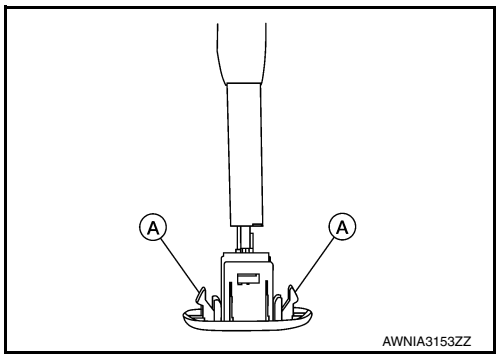
MICROPHONE

Removal and Installation

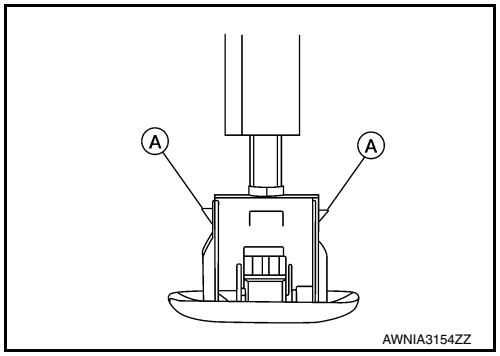
INFOID:0000000009541292

REMOVAL

1. Remove the microphone finisher from the headlining by releasing pawls (A) using a suitable tool.



2. Disconnect the harness connector from microphone and remove.
3. Separate the microphone from the finisher by releasing pawls (A) using a suitable tool.



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Make sure to align the rib on the finisher with the slot in the microphone.

Make sure to install the microphone with the arrows pointing toward the RH side of the vehicle.

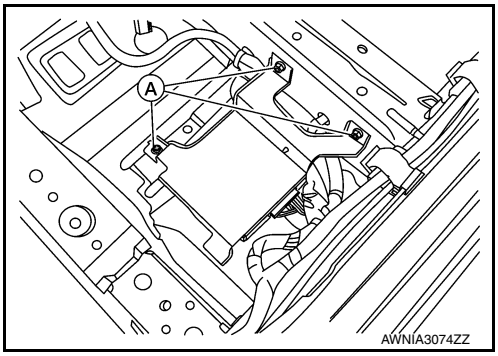
AROUND VIEW MONITOR CONTROL UNIT

Removal and Installation

INFOID:0000000009460077

REMOVAL

1. Remove the front passenger seat. Refer to SE-22, "PASSENGER SIDE : Removal and Installation".
2. Remove the floor trim. Refer to INT-27, "Removal and Installation".
3. Disconnect the harness connector from the around view monitor control unit.
4. Remove the screws (A) from the around view monitor control unit bracket and remove.



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Perform camera image calibration. Refer to AV-181, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure".

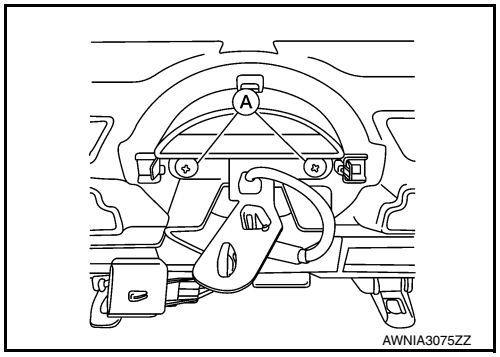
FRONT CAMERA

Removal and Installation

INFOID:0000000009460078

REMOVAL

1. Remove the front grille. Refer to EXT-29, "Removal and Installation".
2. Remove the front camera screws (A) and remove.



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Perform camera image calibration. Refer to AV-181, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure".

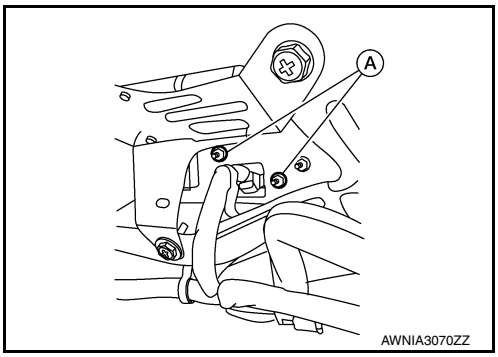
REAR VIEW CAMERA

Removal and Installation

INFOID:0000000009541293

REMOVAL

1. Remove the back door outer finisher. Refer to EXT-46, "Removal and Installation".
2. Disconnect the harness connector from rear view camera.
3. Remove the nuts (A) from the rear view camera and remove.



INSTALLATION

Installation is in the reverse order of removal.

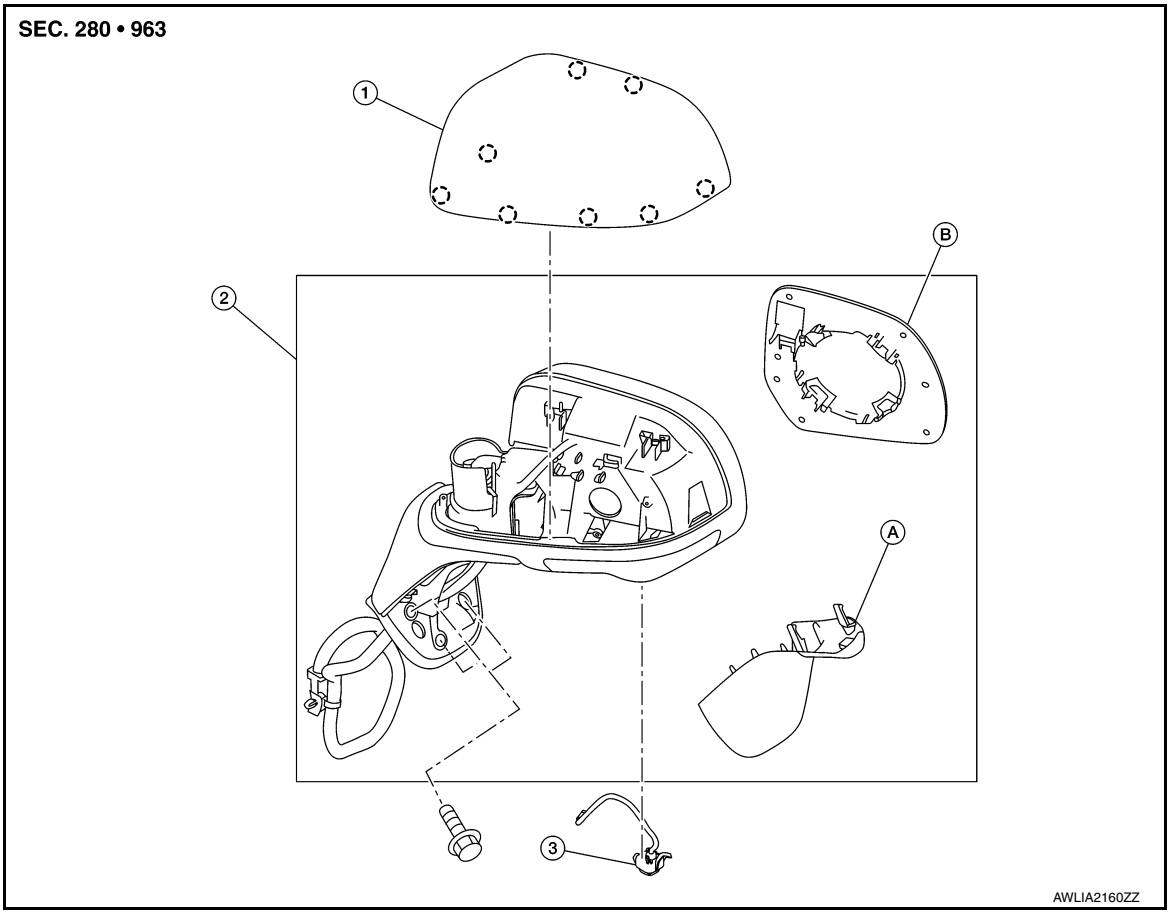
NOTE:

Perform camera image calibration. Refer to AV-181, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure".

SIDE CAMERA

Exploded View

INFOID:0000000009681835



1.	Door mirror rear finisher	2.	Door mirror	3.	Side camera
A.	Door mirror base finisher	B.	Door mirror glass		Pawl

Removal and Installation

INFOID:0000000009654080

REMOVAL

1. Remove the door mirror. Refer to MIR-15, "Removal and Installation".
2. Remove the door mirror glass.
3. Remove the door mirror actuator.
4. Disconnect the harness connector from the side camera.
5. Remove the side camera screws and remove.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Perform camera image calibration. Refer to AV-181, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure".

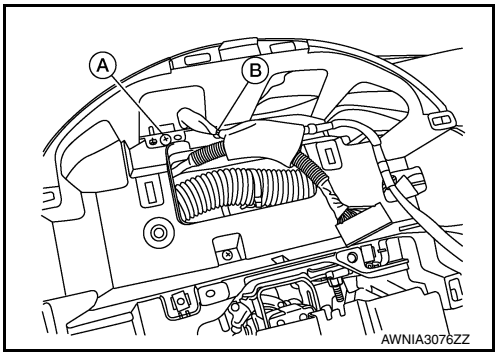
GPS ANTENNA

Removal and Installation

INFOID:0000000009460051

REMOVAL

1. Remove the combination meter. Refer to MWI-54, "Removal and Installation".
2. Remove the AV control unit in order to disconnect the GPS antenna harness connector. Refer to AV-240, "Removal and Installation".
3. Remove the GPS antenna screw (A) from the GPS antenna.
4. Disconnect the harness clip (B) and remove the GPS antenna.



INSTALLATION

Installation is in the reverse order of removal.

SATELLITE RADIO ANTENNA

Removal and Installation

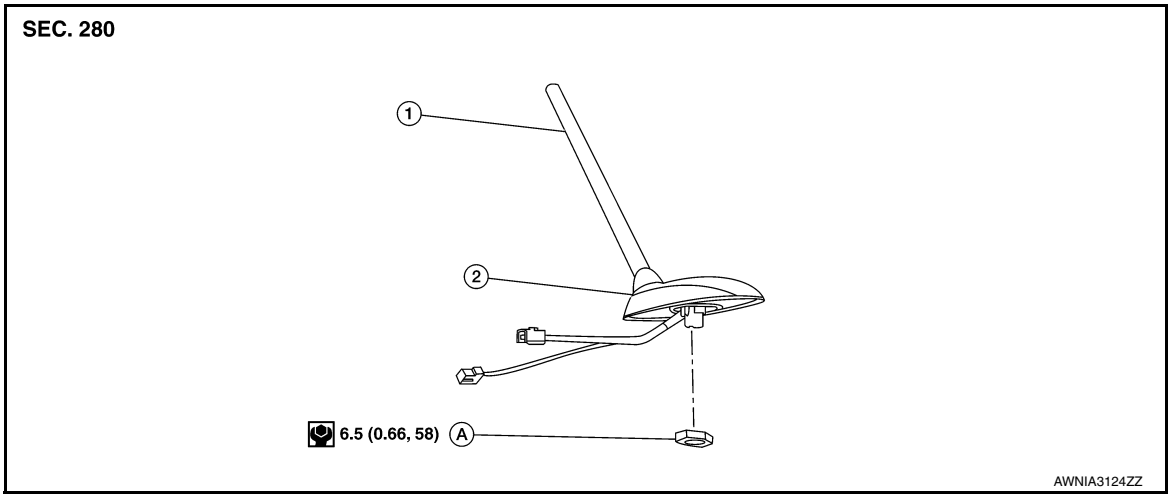
INFOID:0000000009460046

The satellite radio antenna is part of the rod antenna. Refer to AV-254, "Removal and Installation".

ROD ANTENNA

Exploded View

INFOID:0000000009541294



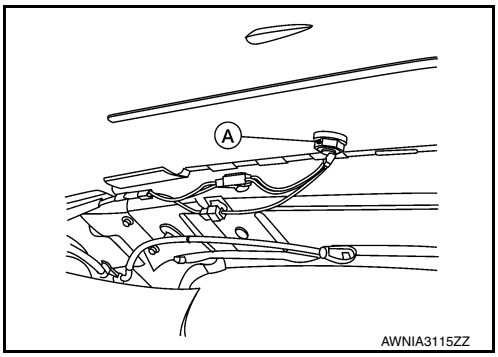
1. Antenna rod
2. Antenna base
A. Antenna nut

Removal and Installation

INFOID:0000000009541295

REMOVAL

1. Lower the rear portion of the headlining. Refer to INT-31, "Removal and Installation".
2. Disconnect the harness connectors from the antenna (satellite radio model shown).
3. Remove the antenna nut (A) and remove the antenna.



INSTALLATION

Installation is in the reverse order of removal.

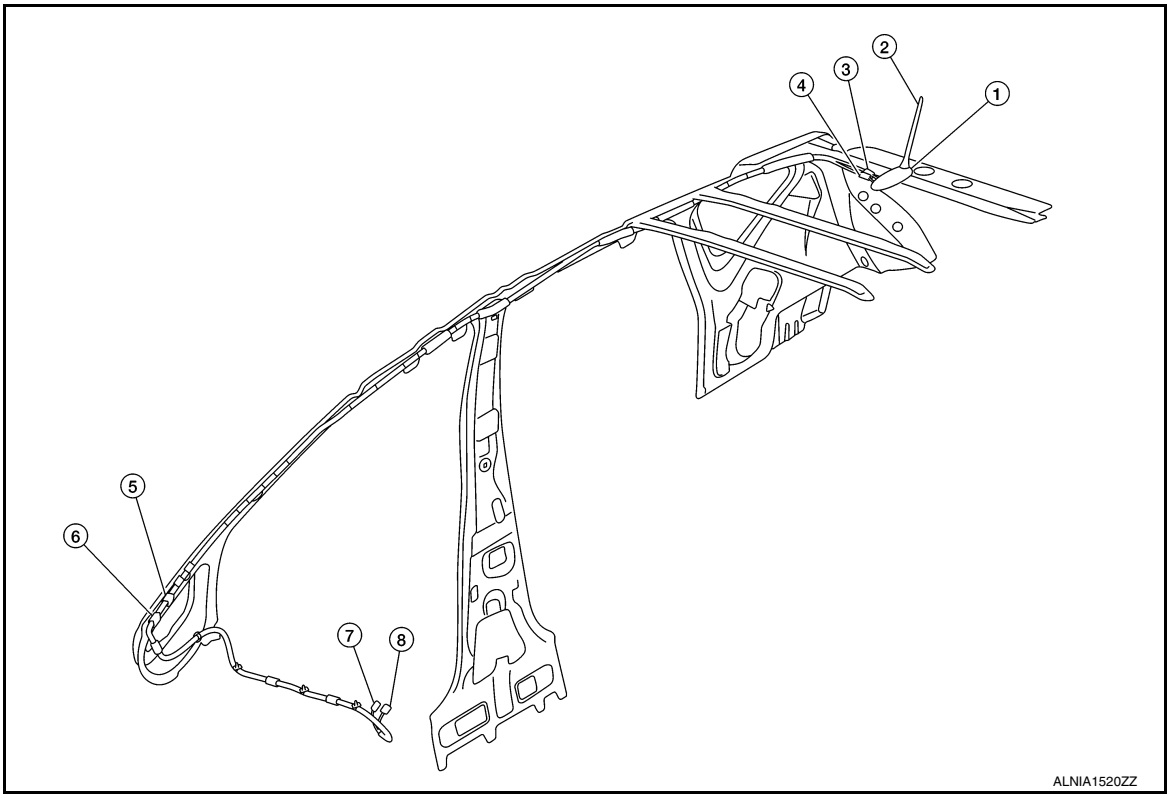
CAUTION:

If the antenna nut is tightened less than the specified torque this will lower the sensitivity of the antenna. If the antenna nut is tightened more than the specified torque this will deform the roof panel.

ANTENNA FEEDER

Feeder Layout

INFOID:0000000009541296



1. Antenna base (antenna amp. and satellite antenna)	2. Rod Antenna	3. M351
4. M352	5. M110, M353	6. M67, M350
7. M109	8. M73	