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< PRECAUTION > [BASE AUDIO]

PRECAUTION

PRECAUTIONS

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

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least 3 minutes before performing any service.

Precaution for Trouble Diagnosis

INFOID:0000000007985880

AV COMMUNICATION SYSTEM

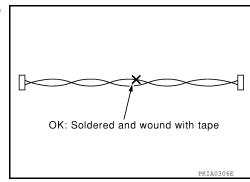
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

INFOID:0000000007985881

AV COMMUNICATION SYSTEM

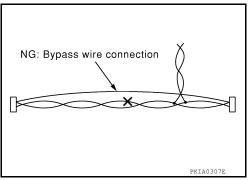
• Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



PRECAUTIONS

< PRECAUTION > [BASE AUDIO]

 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:0000000008527552

• 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.

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PREPARATION

< PREPARATION > [BASE AUDIO]

PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000007985883

Гооl number Kent-Moore No.) Гооl name	Description
— J-46534) rim Tool Set	Removing trim components

Commercial Service Tools

INFOID:0000000007985884

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

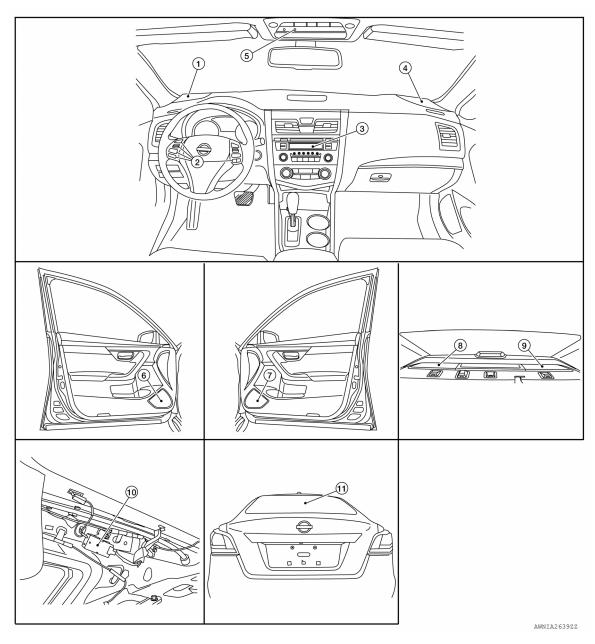
[BASE AUDIO]

INFOID:0000000007985825

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location



- 1. Front speaker LH
- 4. Front speaker RH
- 7. Front door speaker RH
- 10. Antenna amp.

- 2. Steering switches
- 5. Microphone
- 8. Rear speaker RH
- 11. Window antenna

- 3. Audio unit
- 6. Front door speaker LH
- 9. Rear speaker LH

Component Description

INFOID:0000000007985826

Revision: August 2012 AV-11 2013 Altima Sedan

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BASE AUDIO]

Part name	Description
Audio unit	 Controls audio, hands-free phone and AUX IN connection functions. Display unit is built in to audio unit.
Front door speakers	
Front speakers	Outputs high, mid and low range audio signals from audio unit.
Rear speakers	
Steering switches	 Operations for audio, hands-free phone and voice recognition are possible. Steering switch signal is output to combination meter. Combination meter outputs steering switch signal to audio unit.
Microphone	 Used for hands-free phone operations. Microphone signal is transmitted to audio unit. Power is supplied from audio unit.
Antenna amp.	 AM/FM signal received by window antenna is amplified and transmitted to audio unit. Power is supplied from audio unit.
Window antenna	AM/FM signal is received and transmitted to antenna amp.

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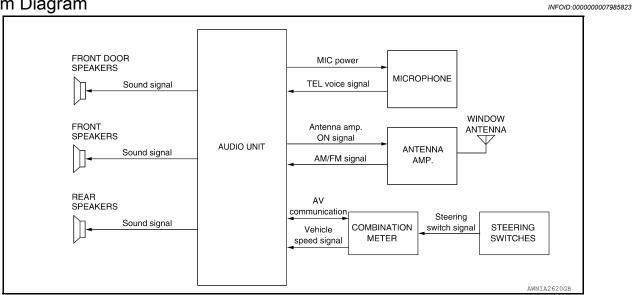
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SYSTEM

System Diagram



System Description

INFOID:0000000007985824

AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Front door speakers
- · Front speakers
- Rear speakers
- · Steering switches
- Microphone
- · Antenna amp.
- · Window antenna

When the audio system is on, AM/FM signals received by the window 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, front speakers and rear speakers.

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

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AV-13 Revision: August 2012 2013 Altima Sedan

DIAGNOSIS SYSTEM (AUDIO UNIT)

Diagnosis Description

INFOID:0000000007985831

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

Mode	Description
Hardware/Software Versions	Hardware and software versions are available for: audio unit. combination meter Bluetooth® control unit. EEPROM version and EQ pin info are also available for the audio unit.
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.

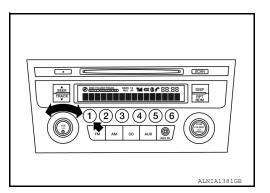
On Board Diagnosis Function

INFOID:0000000008540689

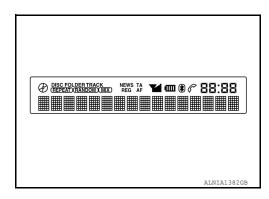
METHOD OF STARTING

Hardware/Software Versions and Speaker Channel Check

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



Initially, all display segments will be illuminated.



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

Communication Diagnosis

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

DIAGNOSIS SYSTEM (AUDIO UNIT)

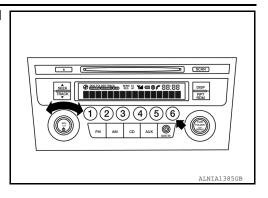
< SYSTEM DESCRIPTION >

[BASE AUDIO]

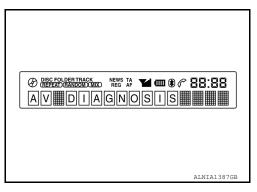
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3. While pressing the preset 6 button, turn the volume control dial clockwise or counterclockwise 30 clicks or more.



Initially, the communication diagnosis mode is displayed.

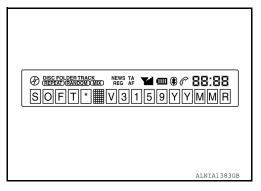


5. To exit communication diagnosis, turn the ignition OFF.

SELF DIAGNOSIS MODE

Hardware/Software Versions

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



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

If an EQ error is present, INVALID EQ is displayed

- BTSOFT ####### (internal Bluetooth® module software version)
- BTHARD ######## (internal Bluetooth® module hardware version)
- BTCONF #####00 (internal Bluetooth[®] module configuration)
- 3. Hold the DISP button down to return to all display segments screen.

Speaker Channel Check

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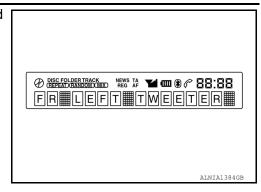
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DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO]

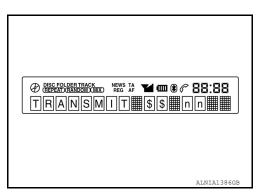
 Press the RPT/DRM button to enter speaker channel check, and the front left tweeter (front speaker LH) is displayed.



- With each additional press of the RPT/DRM button, the following information is available:
- FR RIGHT TWEETER (front speaker 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.



- Press the DISP button again, and the METER \$\$ nn (CMF message reception error history from M-CAN METER) screen is displayed.
- 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.

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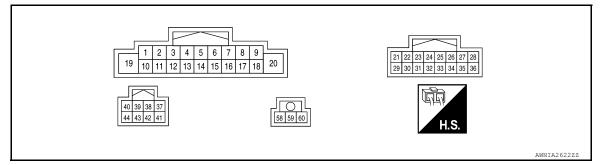
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ECU DIAGNOSIS INFORMATION

AUDIO UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
2 (V)	3 (SB)	Sound signal front speaker LH	Output	ON	Sound output	(V) 1 0 -1 1 ms
4 (BR)	5 (Y)	Sound signal rear speaker LH	Output	ON	Sound output	(V) 1 0 -1 1 ms
7 (P)	Ground	ACC power supply	Input	ACC	Ignition switch ACC or ON	Battery voltage
9 (R)	8 (GR)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
11 (Y)	12 (BR)	Sound signal front speaker RH	Output	ON	Sound output	(V) 1 0 -1 1 ms

< ECU DIAGNOSIS INFORMATION >

	minal e color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
13 (LG)	14 (V)	Sound signal rear speaker RH	Output	ON	Sound output	(V) 1 0 -1 1 ms
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH).	0 20 ms JSNIA0012GB
19 (G)	Ground	Battery power supply	Input	-	_	Battery voltage
27 (SB)	_	M-CAN (H)	Input/ Output	_	_	_
28 (LG)	_	M-CAN (L)	Input/ Output	_	_	_
35 (SB)	_	M-CAN (H)	Input/ Output	_	_	_
36 (LG)	_	M-CAN (L)	Input/ Output	_	_	_
38 (W)	Ground	Microphone power supply	Output	ON	_	5.0 V
40 (B)	39 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	(V) 1 0 -1 • 2ms SKIB3609E
59 (B)	Ground	AM/FM antenna signal	Input	ON	_	5.0 V
60 (B)	Ground	Antenna amp. ON signal	Output	ON	_	Battery voltage

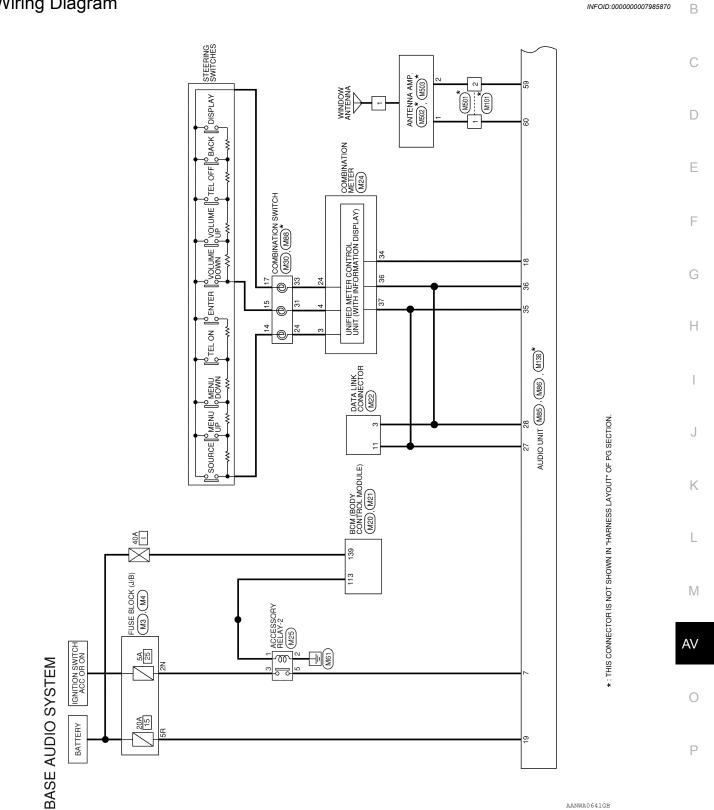
[BASE AUDIO] < WIRING DIAGRAM >

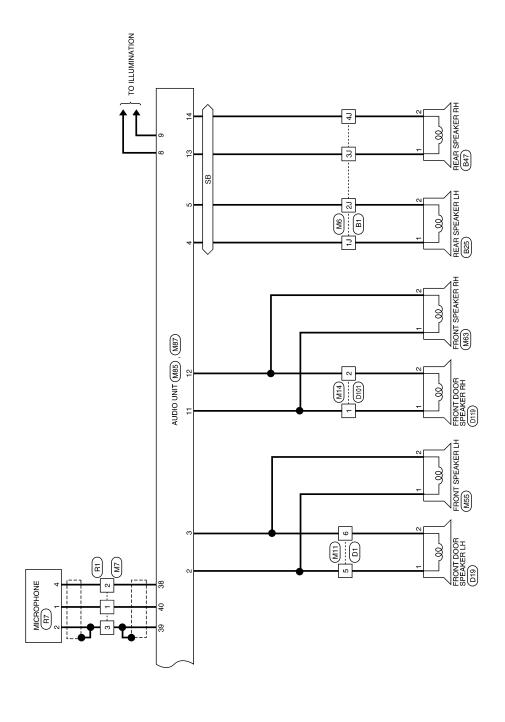
Α

WIRING DIAGRAM

BASE AUDIO

Wiring Diagram





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	Α
Signal Name	В
	С
	D
Connector No. Connector Nam Connector Colo Terminal No. 2 3 3 8	Е
	F
Signal Name Signal Name	G
	Н
No. M4	1
Connector No. Connector Name Connector Color Terminal No. Col Terminal No. Col 3.1 4.1 E E 4.1 LAS	J
SS	K
Connector No. M3 Connector Name FUSE BLOCK (J/B) Terminal No. Color of Signal Name ZN LG Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Color GRAY 11	L
Connector No. M3	M
No. M3 Name FUSE B Color of WHITE No. M6 Name WIRE T Color GRAY 111 [22] [23] 114 [43] 114 [43] 115 [23] [33] 115 [23] [33] 115 [23] [33] 116 [24] [33] 117 [23] [33] [33] 117 [23] [33] [33] 117 [23] [33] [33] [33] 117 [23] [33] [33] [33] [33] 117 [23] [33] [33] [33] [33] [33] [33] [33]	AV
Connector No. Connector Name Connector Name ZN L Connector Name Connector Name Connector Name Connector Name Connector Name Connector Color MA.S.	0
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STRG SW GND SPEED 8P/R M-CAN-L M-CAN-H

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Connector No.	M 11		Connector No.	. M14		Connector No.			
Connector Name WIRE TO WIRE	WIRE T	TO WIRE	Connector Name WIRE TO WIRE	me WIRE T	E TO WIRE	Connector Name		BCM (BODY CONTROL MODULE)	
					1	Connector Color	lor BLACK	CK	
H.S.	8 9 10 1	10 11 12 13 14 15 16	E Y	2 3 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	© ® □ 1.	H.S.	16 115 114 113 28 127 126 122	116 15 14 13 12 11 10 106 106 106 106 106 106 106 106	
Terminal No. Wire 5 V	Solor of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name ACC RELAY OUT	
9	SB	ı	2	BB	1				
	FCM						KOM		
Connector Nam	e BCM	Connector Name BCM (BODY CONTROL	Connector Name		MAZA DATA LINK CONNECTOR	Connector Name		COMBINATION METER	
Connector Color	or WHITE	VOLE)	Connector Color	or WHITE	Ш	Connector Color WHITE	lor WHI	TE	
师 H.S.	143 1	142 141 140 138 138 145	H.S.	9 10	11 12 13 14 15 16 3 4 5 6 7 8	H.S. 20 19 18 17 16 15 14 13 12 11 10 9 40 39 38 37 38 38 34 33 32 31 30 29	15 14 13 13 33 33 33 33 33 33 33 33 33 33 33	8 7 6 5 4 3 28 27 26 25 24 23	22 21
Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	
139	M	BAT POWER F/L	3	LG	ı	3	Д	STRG SW INPUT1	
			11	SB	ı	4	~	STRG SW INPUT2	

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Connector No. M30	M30	Connector No. M55	M55
onnector Name	COMBINATION SWITCH	Connector Name	Connector Name FRONT SPEAKER LH
	(SPINAL CABLE)	Connector Color	MANOGO
	2400		NAOCIO
Corrector Color GRAY	GRAY		

Connector No. M25
Connector Name ACCESSORY RELAY-2

[N	Signal Name	1	_
	Color of Wire	>	SB
H.S.	Terminal No. Wire	1	2

Signal Name	I	-	ı	
Color of Wire	۵	В	8	
Terminal No. Wire	24	31	33	

ш	- X	Signal Name	-	1	1	1
lor BLU		Color of Wire	Ν	В	LG	Ь
Connector Color BLUE	H.S.	Terminal No. Wire	1	2	က	5

Signal Name	ILL(+), LIGHT SW	ı	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)	RR SP RH (-)	-	I	ı	SPEED SIGNAL	BAT	1
Color of Wire	æ	-	>	BR	LG	^	_	_	1	В	g	ı
Terminal No.	6	10	11	12	13	14	15	16	17	18	19	20

.[월] 5	M85	Name AUDIO UNIT	WHITE	1 2 3 4 5 6 7 8 9 9 10 11 12 13 14 15 16 17 18 20
G 25	No.	ame Al	Color W	1 0 1

FINE OF	WHITE	2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 2	Signal Name	1	FR SP LH (+)	FR SP LH (-)
		19 10 11	Color of Wire	1	>	SB
Connector No.	Connector Name Connector Color	高 H.S.	Terminal No.	1	2	3

AUDIO UNIT	11		2 3 4 5 6 7 8 9	Signal Name	ı	FR SP LH (+)	FR SP LH (-)	RR SP (+)	RR SP (-)	ı	ACC	ILLUMINATION GND
me AUI	lor WHITE		101	Color of Wire	1	>	SB	BB	>	1	Ъ	GR
Connector Name	Connector Color		H.S.	Terminal No.	-	2	ဇ	4	5	9	7	8
		_										

	FRONT SPEAKER RH	BROWN		Signal Name
M63	FRC	BH		Color of Wire
١.	me	ō		Co No
Connector No.	Connector Name	Connector Color	崎南 H.S.	Terminal No.



Signal N	ı	ı	
Color of Wire	>	BR	
Terminal No.	-	2	

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	t	
Connector No.	o. M87	
Connector Name		AUDIO UNIT
Connector Color	olor WHITE	TE
EE SH	4 :	
	44	43 42 41
Terminal No.	Color of Wire	Signal Name
38	Μ	MIC VCC
68	SHIELD	MIC GND
40	В	MIC SIG

Signal Name	M-CAN-L	ı	ı	1	ı	-	1	M-CAN-H	M-CAN-L
Color of Wire	ГG	ı	ı	ı	ı	_	-	SB	ГG
Terminal No. Wire	28	29	30	31	32	33	34	32	98

	NUIT	111	2 33 34 35 38	Signal Name	ı	ı	ı	1	ı	ı	M-CAN-H
. M86	me AUDIO UNIT	lor WHITI	21 22 23 24 29 30 31 32	Color of Wire	ı	ı	1	1	ı	1	SB
Connector No.	Connector Name	Connector Color WHITE	原 H.S.	Terminal No.	21	22	23	24	25	56	27

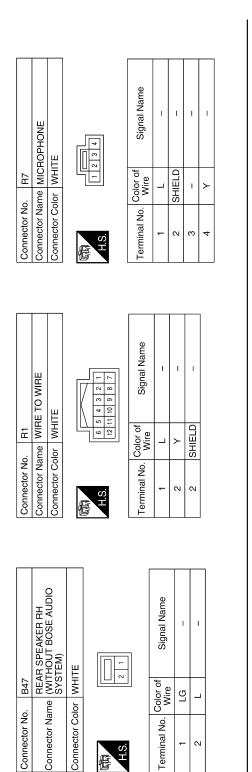
Connector No.	M138	8	
Connector Name		AUDIO UNIT	
Connector Color	lor GRAY	\ <u>\</u>	
所 H.S.	00 83 88		
Terminal No.	Color of Wire	Signal Name	
58	1	1	
59	В	MAIN ANT	
09	В	ANT ON	

	E TO WIRE	.γ		Signal Name	1	ı
). M101	me WIR	lor GRA		Color of Wire	В	В
Connector No.	Connector Name WIRE TO WIRE	Connector Color GRAY	是 H.S.	Terminal No.	-	2

m	COMBINATION SWITCH (SPIRAL CABLE)	AY	B 17 16 15 14 13	Signal Name	-	ı	_
. M88	_	lor GRAY	20 19 18	Color of Wire	×	_	BR
Connector No.	Connector Name	Connector Color	明 H.S.	Terminal No.	14	15	17

AANIA0944GB

Connector No. M503 Connector Name ANTENNA AMP.	Connector Color BLACK	H.S.	Terminal No. Color of Wire Signal Name	Connector No. B25 Connector Name (WITHOUT BOSE AUDIO SYSTEM) Connector Color WHITE Terminal No. Wire Signal Name 1	A B C D
1P.			Signal Name -	Signal Name	G
M502 ANTENNA AN	GRAY		Color of Wire B B	Color of Wire Sign Wire LG LG LG LG	Н
Connector No. M502 Connector Name ANTENNA AMP.	Connector Color	H.S.	Terminal No. Col	20 Color W W W W W W W W W W W W W W W W W W W	J
00					K
VIRE			Signal Name -	NY 100 91 81 72 11 101 91 81 72 16 102 92 82 72 82 82 82 82 82 82 82 82 82 82 82 82 82	L
Connector No. M501 Connector Name WIRE TO WIRE	lor GRAY		Color of Wire B	WIR WIR WIR WIR WIR WIR WIR WIR WIR WIR	AV
Connector No.	Connector Color GRAY	H.S.	Terminal No.	Connector No. Connector Color List	0
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Connector No.	D101	-
Connector Name WIRE TO WIRE	me WIR	E TO WIRE
Connector Color	lor WHITE	TE
H.S.	(N) (W)	7 6 5 4 1
Terminal No. Wire	Color of Wire	Signal Name
1	9	-
2	Μ	ı

	FRONT DOOR SPEAKER LH (WITHOUT BOSE AUDIO SYSTEM)	<u>=</u>	2	Signal Name	_	ı
). D19		lor WHITE		Color of Wire	9	>
Connector No.	Connector Name	Connector Color	南 H.S.	Terminal No.	1	2

	RE TO WIRE	ПЕ	7 6 5 4 3 2 1 1 16 15 14 15 12 11 10 9 8	Signal Name	_	-
D	me WIF	lor WH	7 6 15 15	Color of Wire	g	W
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	原 H.S.	Terminal No. Wire	9	9

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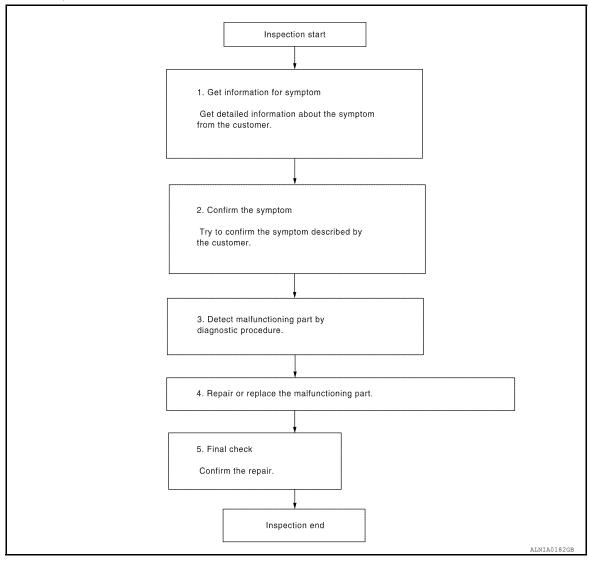
[BASE AUDIO] < BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow INFOID:0000000007985818

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.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

AV-27 Revision: August 2012 2013 Altima Sedan ΑV

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION > [BASE AUDIO]

Is malfunctioning part detected?

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

4. REPAIR OR REPLACE THE MALFUNCTIONING PART

- 1. Repair or replace the malfunctioning part.
- 2. Reconnect parts or connectors disconnected during Diagnostic Procedure.

>> GO TO 5

5. FINAL CHECK

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

Has the symptom been repaired?

YES >> Inspection End.

NO >> GO TO 2

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000007985836

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Regarding Wiring Diagram information, refer to AV-19, "Wiring Diagram".

1. CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	25 (5A)
19	Battery power supply	15 (20A)

Are the fuses blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

Turn ignition switch OFF.

2. Disconnect audio unit connector M85.

3. Check voltage between audio unit connector M85 and ground.

Audi	o unit	Ground Condition Voltage		
Connector	Terminal	Glound	Condition	(Approx.)
M85	7		Ignition switch: ON	Battery voltage
WOS	19	_	Ignition switch: OFF	Dattery voltage

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

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[BASE AUDIO]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000007985843

Regarding Wiring Diagram information, refer to AV-19, "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 M85 and suspect front door speaker connector.
- 2. Check continuity between audio unit connector M85 and suspect front door speaker connector.

Aud	io unit	Front door speaker		Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
	2	D19 (LH)	D10 (LH)	D10 (LH)	1	
M85	3		2	Yes		
ROOM	11	D119 (RH)	1	165		
	12		2			

3. Check continuity between audio unit connector M85 and ground.

Audio unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M85	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 M85 and suspect front door speaker connector.
- Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M85 and ground.

Audio unit connector M85			
(+)	(–)	Condition	Reference value
Terminal	Terminal		

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

2	3		(V)
11	12	Audio signal output	1 0 -1 * 2ms SKIB3609E

Is the inspection result normal?

>> Replace front door speaker. Refer to <u>AV-47, "Removal and Installation"</u>. >> Replace audio unit. Refer to <u>AV-45, "Removal and Installation"</u>. YES

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FRONT SPEAKER

Diagnosis Procedure

INFOID:0000000007985847

Regarding Wiring Diagram information, refer to AV-19, "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 SPEAKER SIGNAL CIRCUIT CONTINUITY

- 1. Disconnect audio unit connector M85 and suspect front speaker connector.
- 2. Check continuity between audio unit connector M85 and suspect front speaker connector.

Aud	io unit	Front speaker		Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
	2	M55 (LH)	MEE (LLI)	MEE (LLI)	1	
M85	3		2	Yes		
ROOM	11	M63 (RH)	1	165		
	12		2			

3. Check continuity between audio unit connector M85 and ground.

Audio unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M85	2		No	
	3			
	11	_		
	12			

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK FRONT SPEAKER SIGNAL

- 1. Connect audio unit connector M85 and suspect front speaker connector.
- Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M85 and ground.

Audio unit connector M85			
(+)	(–)	Condition	Reference value
Terminal	Terminal		

FRONT SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

2	3		0.0
11	12	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E

Is the inspection result normal?

YES >> Replace front speaker. Refer to AV-46, "Removal and Installation".

NO >> Replace audio unit. Refer to AV-45, "Removal and Installation".

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REAR SPEAKER

Diagnosis Procedure

INFOID:0000000007985849

Regarding Wiring Diagram information, refer to AV-19, "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 M85 and suspect rear speaker connector.
- 2. Check continuity between audio unit connector M85 and suspect rear speaker connector.

Aud	io unit	Rear speaker		Continuity					
Connector	Terminal	Connector	Terminal	Continuity					
	4	B25 (LH)	D25 (LLI)	DOF (LLI)	DOE (LLI)	DOF (LLI)	D25 (LLI)	1	
M85	5		2	Yes					
COIVI	13	D47 (DLI)	1	tes					
	14	B47 (RH)	2						

3. Check continuity between audio unit connector M85 and ground.

Audio unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M85	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 M85 and suspect rear speaker connector.
- Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M85 and ground.

Audio unit connector M85			
(+)	(-)	Condition	Reference value
Terminal	Terminal		

REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

2	3		(V)
11	12	Audio signal output	1 0 -1 +2ms SKIB3609E

Is the inspection result normal?

>> Replace rear speaker. Refer to <u>AV-48, "Removal and Installation"</u>. >> Replace audio unit. Refer to <u>AV-45, "Removal and Installation"</u>. YES

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MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007985863

Regarding Wiring Diagram information, refer to AV-19, "Wiring Diagram".

1. CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect audio unit connector M87 and microphone connector R7.
- Check continuity between audio unit connector M87 and microphone connector R7.

Audio unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	39		2	
M87	38	R7	4	Yes
	40		1	

4. Check continuity between audio unit connector M87 and ground.

Audio unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
	39	_	No
M87	38		
	40		

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2.CHECK MICROPHONE VCC VOLTAGE

- Connect audio unit connector M87.
- 2. Turn ignition switch ON.
- 3. Check voltage between terminals of audio unit connector M87.

Audio unit connector M87		
(+)	(-)	Voltage (Approx.)
Terminal	Terminal	(, , , , , , , , , , , , , , , , , , ,
38	39	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace audio unit. Refer to AV-45, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

- Connect microphone connector.
- Check signal between terminals of audio unit connector M87.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

Audio unit connector M87				Α
(+)	(–)	Condition	Reference value	
Terminal	Terminal			В
40	39	Speak into microphone.	(V) 2. 5 2. 0 1. 5 1. 0 0. 5 0 - 2ms	C

Is the inspection result normal?

>> Replace audio unit. Refer to <u>AV-45, "Removal and Installation"</u>. >> Replace microphone. Refer to <u>AV-54, "Removal and Installation"</u>. YES

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[BASE AUDIO]

STEERING SWITCH

Diagnosis Procedure

INFOID:0000000007985853

Regarding Wiring Diagram information, refer to AV-19, "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 combination switch connector terminals.

Combination swi	Combination switch connector M88		Resistance Ω
Terminal	Terminal	Condition	(Approx.)
		Depress SOURCE switch.	1
		Depress △ switch.	121
14		Depress ∇ switch.	321
		Depress w≤ switch.	723
		Depress ENTER switch.	2023
	17	Depress ♥ - switch.	1
		Depress ♥ + switch.	121
15		Depress ♠ switch.	321
		Depress 5 switch.	723
		Depress DISP switch.	2023

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to AV-49, "Removal and Installation".

2.CHECK HARNESS BETWEEN COMBINATION SWITCH AND COMBINATION METER

- 1. Disconnect combination meter connector M24 and combination switch connector M30.
- 2. Check continuity between combination meter connector M24 and combination switch connector M30.

Combinat	Combination meter		Combination switch	
Connector	Terminal	Connector	Terminal	Continuity
	3		24	
M24	24	M30	33	Yes
	4		31	

3. Check continuity between combination meter connector M24 and ground.

Combination meter		- Ground	Continuity
Connector	Terminal	Giodila	Continuity
	3		
M24	24	_	No
	4		

Is the inspection result normal?

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

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YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M30 and M88.

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS BETWEEN COMBINATION METER AND AUDIO UNIT

- 1. Disconnect audio unit connector M86.
- Check continuity between combination meter connector M24 and audio unit connector M86.

Combination meter		Aud	io unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M24	37	M86	35	Yes
IVI24	36	IVIOO	36	165

3. Check continuity between combination meter connector M24 and ground.

Combination meter		Ground	Continuity
Connector	Terminal	Ground	Continuity
M24	37		No
IVIZ 4	36	_	NO

Is the inspection result normal?

YES >> Replace audio unit. Refer to AV-45, "Removal and Installation".

NO >> Repair or replace harness or connectors.

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Revision: August 2012 AV-39 2013 Altima Sedan

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:0000000008656040

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 from all speakers.	Speaker circuit shorted to ground. Refer to AV-19, "Wiring Diagram". Audio unit power supply and ground circuits malfunction. Refer to AV-29, "AUDIO UNIT: Diagnosis Procedure".
No sound comes out or the level of the sound is low.	Only a certain speaker (front door speaker LH, front door speaker RH, front speaker LH, front speaker RH, rear speaker LH, rear speaker RH) does not output sound.	 Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Refer to: AV-30, "Diagnosis Procedure" (front door speaker). AV-32, "Diagnosis Procedure" (front speaker). AV-34, "Diagnosis Procedure" (rear speaker). Malfunction in speaker. Refer to: AV-47, "Removal and Installation" (front door speaker). AV-46, "Removal and Installation" (front speaker). AV-48, "Removal and Installation" (rear speaker). Malfunction in audio unit. Refer to AV-14, "On Board Diagnosis Function".

Symptoms	Check items	Probable malfunction location
	Noise comes out from all speakers.	Malfunction in audio unit. Refer to AV-14, "On Board Diagnosis Function".
Noise is mixed with audio.	Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, front speaker RH, rear speaker LH, rear speaker RH).	 Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Refer to: - AV-30, "Diagnosis Procedure" (front door speaker). - AV-32, "Diagnosis Procedure" (front speaker). - AV-34, "Diagnosis Procedure" (rear speaker). Malfunction in speaker. Poor Installation of speaker (e.g. backlash and looseness). Refer to: - AV-47, "Removal and Installation" (front door speaker). AV-46, "Removal and Installation" (front speaker). AV-48, "Removal and Installation" (rear 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-51, "Location of Antenna".
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 <u>AV-17</u>, "<u>Reference Value</u>". Poor connector connection of antenna or antenna feeder. Refer to <u>AV-51</u>, "<u>Location of Antenna</u>".
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 <u>AV-51</u>, "<u>Location of Antenna</u>".
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 TROU-BLE 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

- Make sure the customer's Bluetooth[®] related concern is understood.
- Verify the customer's concern.

NOTE:

The customer's phone may be required, depending upon their concern.

Write down the customer's phone brand, model and service provider. NOTE:

Revision: August 2012 AV-41

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2013 Altima Sedan

AUDIO SYSTEM

[BASE AUDIO]

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.	
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. 	Malfunction in audio unit. Replace audio unit. Refer to AV-45, "Removal and Installation".
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	Sound operation function is normal.	
party with hands-free phone communication.	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-36, "Diagnosis Procedure".
	 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-49. "Removal and Installation".
The system cannot be operated.	Steering switch's √∠, √()+ , √()− , and ⇒ switches do not work.	Steering switch signal circuit malfunction. Refer to AV-38, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-38, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

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NORMAL OPERATING CONDITION

Description

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

C	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.	Iduition components	
The occurrence of the noise is lin	ked 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-40. "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.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

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.

[BASE AUDIO]

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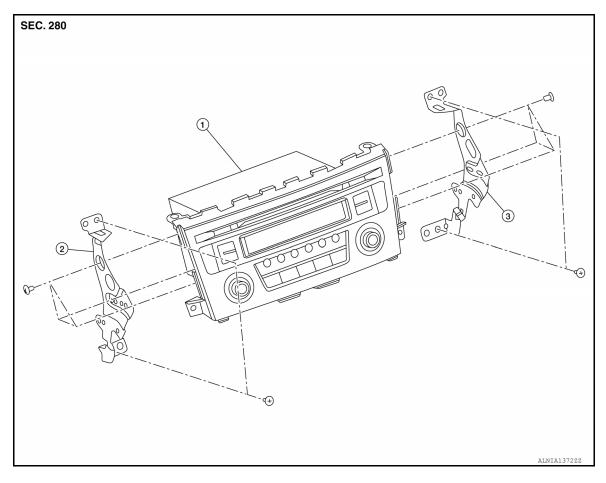
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REMOVAL AND INSTALLATION

AUDIO UNIT

Exploded View



1. Audio unit

2. Audio unit bracket LH

3. Audio unit bracket RH

Removal and Installation

REMOVAL

1. Disconnect the negative battery terminal. Refer to PG-72, "Removal and Installation (Battery)".

- 2. Remove cluster lid C. Refer to IP-20, "Cluster Lid C".
- Remove the front air control. Refer to <u>HAC-162</u>, "Removal and Installation".
- 4. Remove the audio unit screws, then pull out the audio unit.
- 5. Disconnect the harness connectors from the audio unit and remove.

INSTALLATION

Installation is in the reverse order of removal.

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[BASE AUDIO]

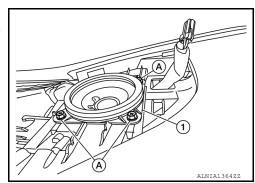
FRONT SPEAKER

Removal and Installation

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REMOVAL

- 1. Remove the front pillar finisher. Refer to INT-21, "FRONT PILLAR FINISHER: Removal and Installation".
- 2. Remove the front speaker grille using a suitable tool.
- 3. Remove the front speaker screws (A).
- 4. Pull out the front speaker (1), disconnect the harness connector from front speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[BASE AUDIO]

FRONT DOOR SPEAKER

Removal and Installation

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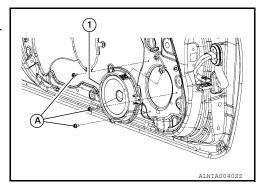
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REMOVAL

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



INSTALLATION

Installation is in the reverse order of removal.

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[BASE AUDIO]

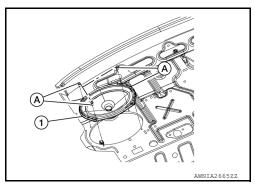
REAR SPEAKER

Removal and Installation

INFOID:0000000008659214

REMOVAL

- 1. Remove the rear parcel shelf finisher. Refer to INT-26, "Removal and Installation".
- 2. Remove the rear speaker screws (A).
- 3. Disconnect the harness connector from the rear speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

[BASE AUDIO]

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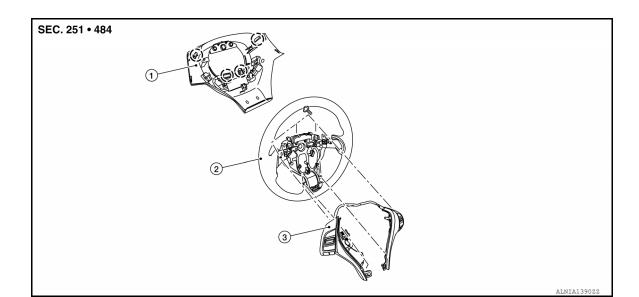
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STEERING SWITCH

Exploded View



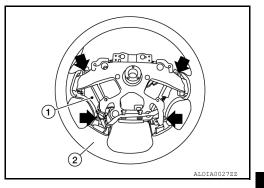
- 1. Steering wheel rear finisher
- 2. Steering wheel
- 3. Steering switches

(Pawl

Removal and Installation

REMOVAL

- Remove the steering wheel. Refer to <u>ST-31, "Removal and Installation"</u>
- 2. Release the pawls on the steering wheel rear finisher and remove.
- 3. Remove the steering switches screws (←).
- 4. Remove the steering switches (1) from steering wheel (2).



INSTALLATION

Installation is in the reverse order of removal.

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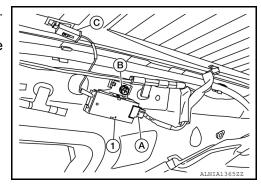
ANTENNA AMP.

Removal and Installation

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REMOVAL

- 1. Remove the rear pillar finisher RH. Refer to INT-25, "REAR PILLAR FINISHER: Removal and Installation".
- 2. Disconnect the harness connector (A) from the antenna amp. (1).
- 3. Disconnect the antenna amp. harness connector (C) from the rear window glass.
- 4. Remove the antenna amp. screw (B) and the antenna amp. (1).

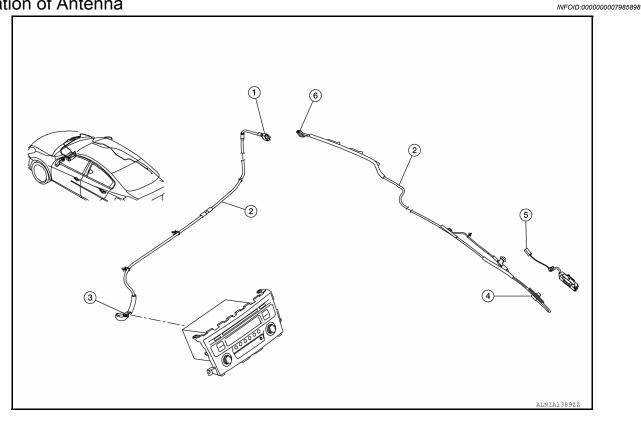


INSTALLATION

Installation is in the reverse order of removal.

ANTENNA FEEDER

Location of Antenna



- 1. M101
- 4. M502

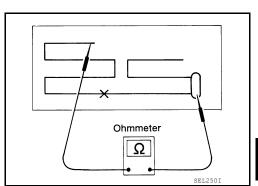
- Antenna feeder
- 5. M503

- 3. M138
- 6. M501

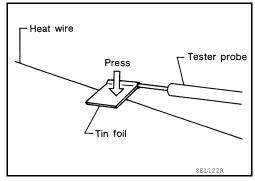
Window Antenna Repair

ELEMENT CHECK

1. Attach probe circuit tester (ohm setting) to antenna terminal on each side.



 When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



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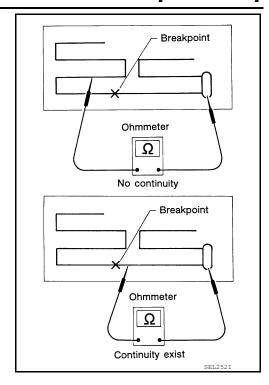
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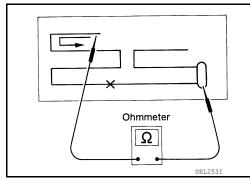
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If an element is broken, no continuity will exist.



3. To locate a break, move probe along element. Tester indication will change abruptly when probe passes the broken point.

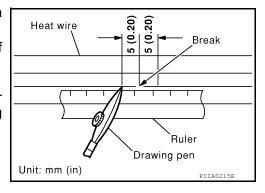


REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

- 1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
- Apply a small amount of conductive silver composition to tip of drawing pen.
 Shake silver composition container before use.
- 3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



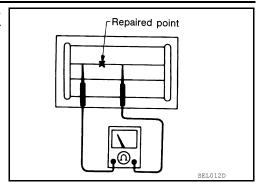
ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

[BASE AUDIO]

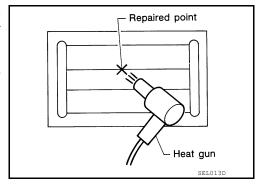
After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet.

If a heat gun is not available, let the repaired area dry for 24 hours.



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[BASE AUDIO]

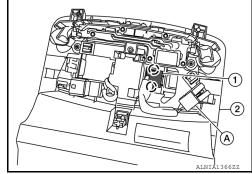
MICROPHONE

Removal and Installation

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REMOVAL

- 1. Remove the front room/map lamp assembly. Refer to INL-63, "Removal and Installation".
- 2. Disconnect the microphone connector (A) from the front room/ map lamp assembly (2).
- 3. Release the microphone pawls, then remove the microphone (1).
 - (): Pawl



INSTALLATION

Installation is in the reverse order of removal.

PRECAUTION

PRECAUTIONS

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

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least 3 minutes before performing any service.

Precaution for Trouble Diagnosis

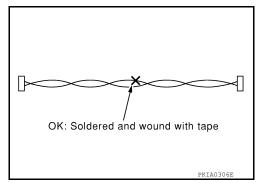
AV COMMUNICATION SYSTEM

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

Precaution for Harness Repair

AV COMMUNICATION SYSTEM

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



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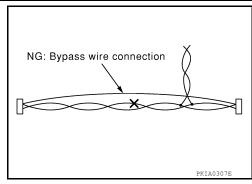
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PRECAUTIONS

< PRECAUTION >

[DISPLAY AUDIO WITHOUT BOSE]

 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

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- 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 >

[DISPLAY AUDIO WITHOUT BOSE]

PREPARATION

PREPARATION

Special Service Tools

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The actual shapes of Kent-Moore tools ma	ay differ from those of special service tools illustrated h	nere.

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

Commercial Service Tools

INFOID:0000000007986003

Tool name		Description	
Power tool		Loosening nuts, screws and bolts	
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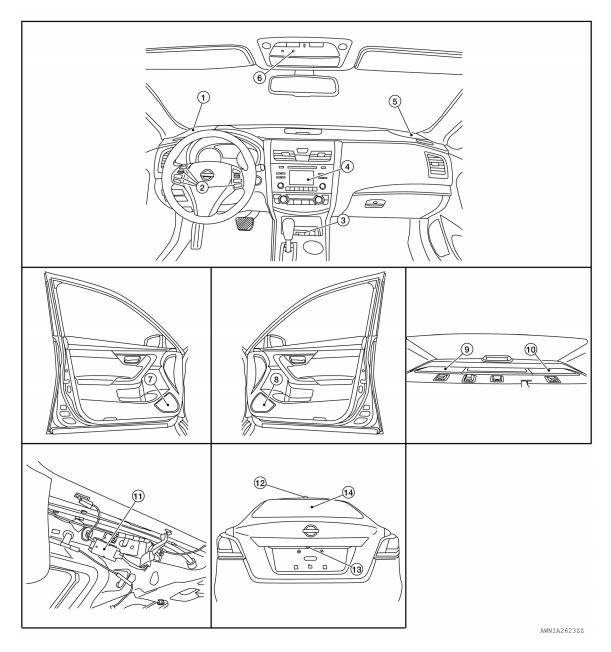
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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- 1. Front speaker LH
- 4. Audio unit
- 7. Front door speaker LH
- 10. Rear speaker LH
- 13. Rear view camera

- 2. Steering switches
- 5. Front speaker RH
- 8. Front door speaker RH
- 11. Antenna amp.
- 14. Window antenna

- 3. USB interface
- 6. Microphone
- 9. Rear speaker RH
- 12. Satellite antenna

Component Description

INFOID:0000000008541238

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITHOUT BOSE]

Part name	Description	
Audio unit	 Controls audio, hands-free phone, USB connection, AUX IN connection, satellite radio and rear view camera functions. Display unit is built in to audio unit. 	
Front door speakers		
Front speakers	Outputs high, mid and low range audio signals from audio unit.	
Rear speakers		
Steering switches	 Operations for audio, hands-free phone and voice recognition are possible. Steering switch signal is output to combination meter. Combination meter outputs steering switch signal to audio unit. 	
Microphone	 Used for hands-free phone operations. Microphone signal is transmitted to audio unit. Power is supplied from audio unit. 	
USB interface	USB sound and data input signals are transmitted to audio unit.	
Rear view camera	Outputs image of vehicle rear to audio unit.Power is supplied from audio unit.	
Satellite antenna	Satellite radio signal is received and transmitted to audio unit.	
Antenna amp.	 AM/FM signal received by window antenna is amplified and transmitted to audio unit. Power is supplied from audio unit. 	
Window antenna	AM/FM signal is received and transmitted to antenna amp.	

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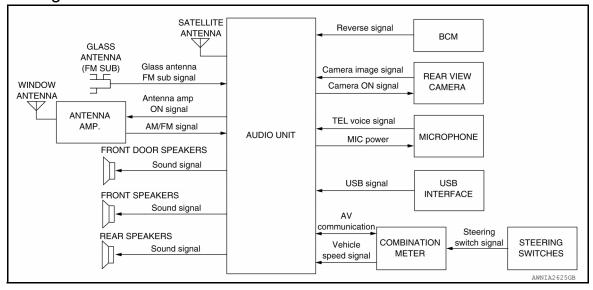
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SYSTEM

System Diagram

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System Description

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AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Front door speakers
- Front speakers
- Rear speakers
- Steering switches
- Microphone
- USB interface
- Rear view camera
- · satellite antenna
- Antenna amp.
- · Window antenna

When the audio system is on, AM/FM signals received by the window 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, front speakers and rear 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 audio unit. Hands-free cellular telephone calls can be sent and received. Some Bluetooth[®] cellular telephones may not be recognized by the audio unit. When a cellular telephone or the audio unit is replaced, the telephone must be paired with the audio 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.

AV Control Unit

When the ignition switch is turned to ACC or ON, the audio unit will power up. During power up, the audio unit is initialized and performs various self-checks. Initialization may take up to 20 seconds.

Steering Switches

SYSTEM

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITHOUT BOSE]

When buttons on the steering switches are pushed, the resistance in steering switches circuits change, depending on which button is pushed.

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
- Record memos

Microphone

The microphone is located in the roof console assembly. The microphone sends a signal to the audio unit.

REAR VIEW CAMERA SYSTEM

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

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DIAGNOSIS SYSTEM (AUDIO UNIT)

Description INFOID:000000008541241

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

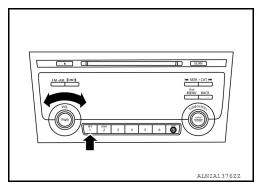
	Mode	Description
	Self Diagnosis	Audio unit diagnosis.Diagnoses the connections across system components.
	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.
	Vehicle Signals	Diagnosis of 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.
Confirmation/ Adjustment	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	Guiding line position that overlaps rear view camera image can be adjusted.
	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

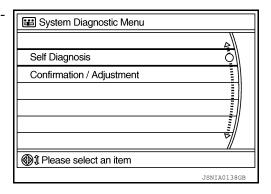
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METHOD OF STARTING

- 1. Turn the ignition ON.
- 2. Turn the audio system OFF.
- While pressing the preset 1 button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. When selfdiagnosis mode begins, a short beep will be heard. Shifting from current screen to previous screen is performed by pressing BACK button.



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



SELF DIAGNOSIS MODE

Audio Unit Self Diagnosis

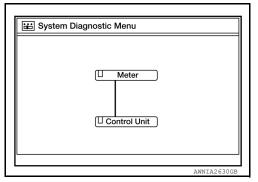
1. Select Self Diagnosis.

DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

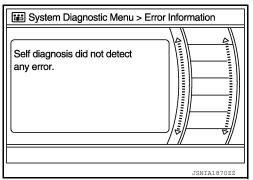
[DISPLAY AUDIO WITHOUT BOSE]

- 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 <u>AV-104</u>, "<u>Removal and Installation</u>".
- 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.
- Comments of self diagnosis results can be viewed in the diagnosis result screen.



Audio Unit Self Diagnosis Results

Only Unit Part Is Displayed In Red		
Screen switch	Description	Possible cause
Control unit	Malfunction is detected in audio unit power supply and ground circuits.	 Audio unit power supply or ground circuits. Refer to <u>AV-85</u>, "<u>AUDIO UNIT</u>: <u>Diagnosis Procedure</u>". If no malfunction is detected in audio uni power supply and ground circuits, replace audio unit. Refer to <u>AV-104</u>, "<u>Removal and Installation</u>".

A Connecting Cable Between Units Is Displayed In Yellow			
Area with yellow connection lines	Description	Possible cause	
Control unit ⇔ Meter	When one of the following is detected: malfunction is detected in combination meter power supply and ground circuits. malfunction is detected in AV communication circuits between audio unit and combination meter.	Combination meter power supply or ground circuits. Refer to MWI-57 , "COMBINATION METER: Diagnosis Procedure". AV communication circuits between audio unit and combination meter.	

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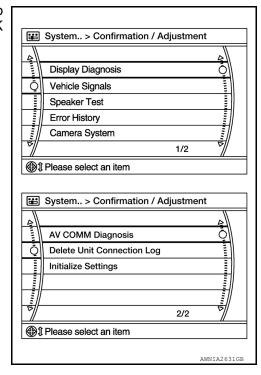
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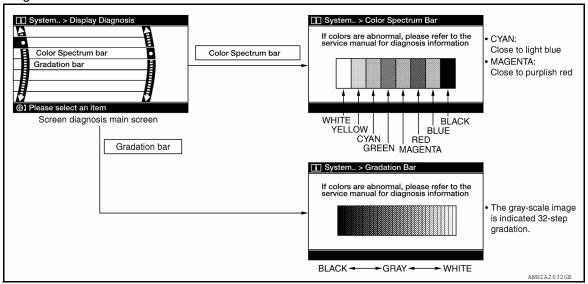
< SYSTEM DESCRIPTION >

Audio Unit Confirmation/Adjustment

- 1. Select Confirmation/Adjustment.
- 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.

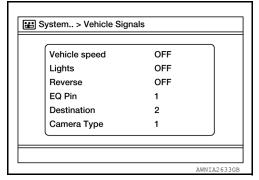


Display Diagnosis



Vehicle Signals

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



Speaker Test

DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITHOUT BOSE]

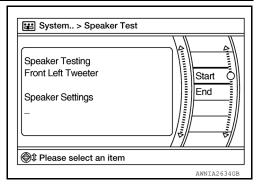
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Select Speaker Test to display the Speaker Diagnosis screen. Press Start to generate a test tone in a speaker. Press Start again to generate a test tone in the next speaker. Press End to stop the test tones.



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.

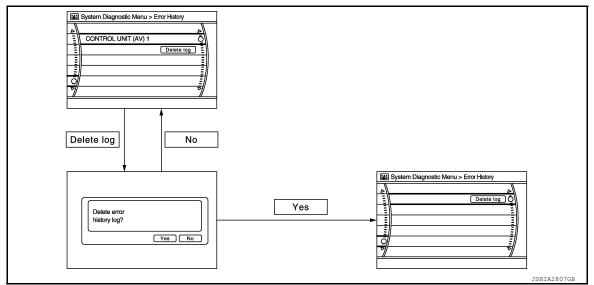
Count up method A

- 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

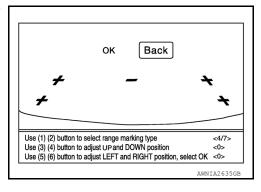
Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

[DISPLAY AUDIO WITHOUT BOSE]

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-104, "Removal and Installation"
AV COMM CIRCUIT	When one of the following is detected: malfunction is detected in combination meter power supply and ground circuits. malfunction is detected in AV communication circuits between audio unit and combination meter.	Combination meter power supply or ground circuits. Refer to MWI-57 , "COMBINATION METER: Diagnosis Procedure". AV communication circuits between audio unit and combination meter.

Camera System

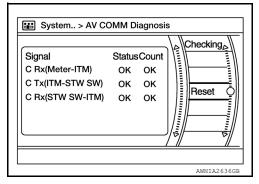
This mode is used to adjust the guide line display position of the rear view camera.



AV COMM Diagnosis

- Displays the communication status between audio unit (master unit) and each 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)	
C Rx(Meter-ITM)	OK / ???	OK / 0 – 39	
C Tx(ITM-TW SW)	OK / ???	OK / 0 – 39	
C Rx(STW SW-ITM)	OK / ???	OK / 0 – 39	

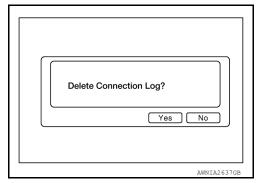


NOTE:

"???" 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

DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITHOUT BOSE]

Deletes data stored from the audio unit.

The memory of a system is eliminated. Are you sure?
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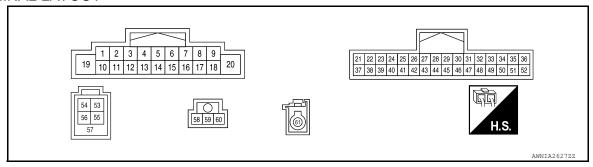
0

ECU DIAGNOSIS INFORMATION

AUDIO UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
2 (V)	3 (SB)	Sound signal front speaker LH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
4 (BR)	5 (Y)	Sound signal rear speaker LH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
7 (P)	Ground	ACC power supply	Input	ACC	_	Battery voltage
9 (R)	8 (GR)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
11 (Y)	12 (BR)	Sound signal front speaker RH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E

AUDIO UNIT

[DISPLAY AUDIO WITHOUT BOSE]

Terminal Descri		Description	ı		Condition	Reference value	
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	
13 (LG)	14 (V)	Sound signal rear speaker RH	Output	ON	Sound output	(V) 1 0 -1 2ms SKIB3609E	
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	0 20 ms JSNIA0012GB	
19 (G)	Ground	Battery power supply	Input	OFF	_	Battery voltage	
20 (GR)	Ground	Ground	_	ON	_	0 V	
21	_	Shield		_	_	_	
22 (B)	Ground	Camera image signal	Input	ON	When camera image is displayed	(V) 0. 4 0 -0. 4 -0. 4 -0. 4 -0. 4	
23 (W)	Ground	Camera power supply	Output	ON	When camera image is displayed	6.0 V	
					Except for above	0 V	
24 (R)	Ground	Camera ground	_	ON	_	0 V	
25 (LG)	_	M-CAN (L)	Input/ Output	_	_	_	
26 (SB)	_	M-CAN (H)	Input/ Output		_		
28 (LG)	_	M-CAN (L)	Input/ Output	_	_	_	
29 (SB)	_	M-CAN (H)	Input/ Output	_	_	_	
39 (G)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse) Selector lever in any position other than R (reverse)	Battery voltage	
45 (B)	Ground	Camera ground	_	ON	_	0 V	
51 (W)	Ground	Microphone power supply	Output	ON	_	5.0 V	

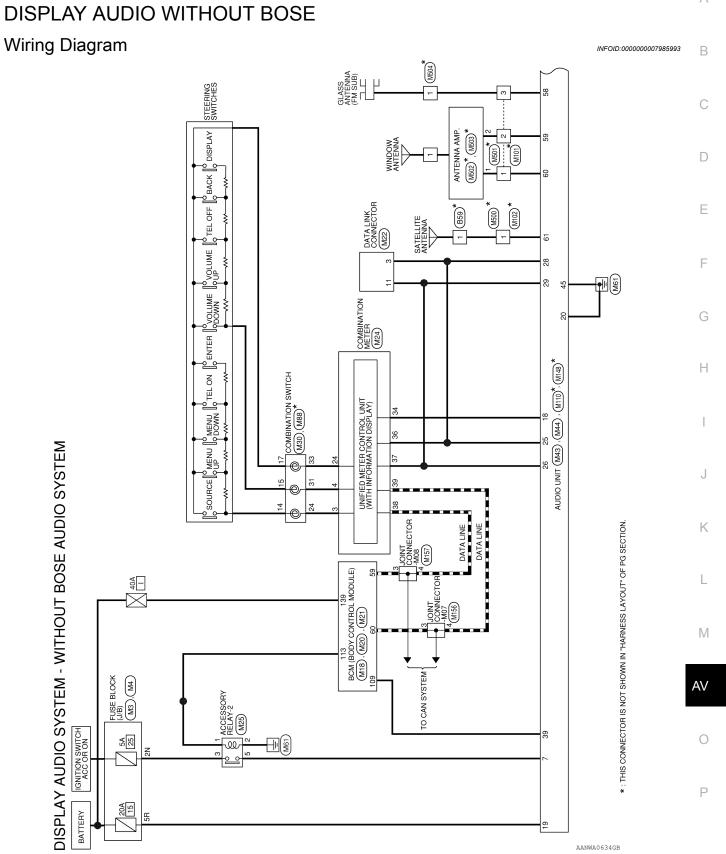
AUDIO UNIT

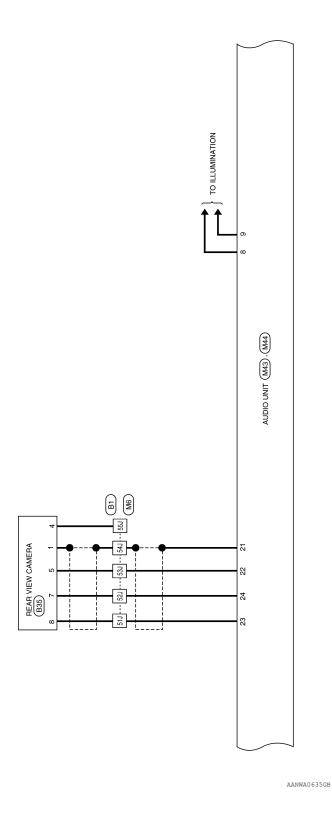
[DISPLAY AUDIO WITHOUT BOSE]

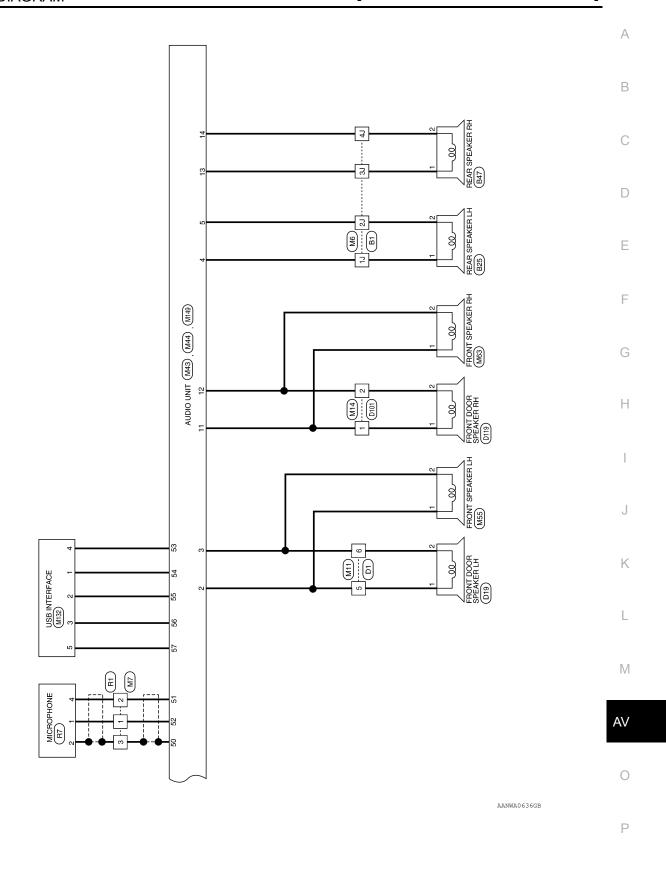
Terminal (Wire color)		Description		Condition		Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
52 (B)	50 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	(V) 1 0 -1 2ms SKIB3609E
53 (W)	_	USB ground	_	_	_	_
54 (G)	_	V BUS signal	_	_	_	_
55 (L)	_	USB D– signal	_	_	_	_
56 (R)	_	USB D+ signal	_	_	_	_
57	_	Shield	_	_	_	_
58 (B)	Ground	Glass antenna (FM sub) signal	Input	ON	_	5.0 V
59 (B)	Ground	AM/FM antenna signal	Input	ON	_	5.0 V
60 (B)	Ground	Antenna amp. ON signal	Output	ON	_	Battery voltage
61 (B)	Ground	Satellite antenna signal	Input	ON	_	5.0 V

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WIRING DIAGRAM





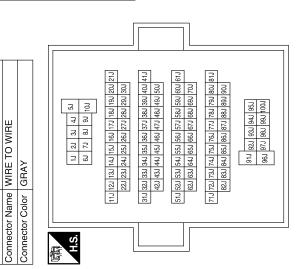


DISPLAY AUDIO SYSTEM CONNECTORS - WITHOUT BOSE AUDIO SYSTEM

	Connector Name FUSE BLOCK (J/B)	NMC	77 (28) (28) (28) (28) (29) (39) (28) (38) (28) (38) (38) (38) (38) (38) (38) (38) (3	Signal Na	-
Z	me FU	lor BR(7R 6R 5R 4R 16R 15R 14R 13R	Color of Wire	g
Connector No.	Connector Na	Connector Color BROWN	H.S.	Terminal No. Wire	5R
	Connector Name FUSE BLOCK (J/B)	TE	3N	Signal Name	_
M3	me FUS	or WHI	NS NS NS NS NS NS NS NS	Color of Wire	ГВ
Connector No. M3	Connector Na	Connector Color WHITE	原 H.S.	Terminal No. Color of Wire	2N

]				
	IE TO WIRE	ITE	0 0 4 5 6 0 11 12	Signal Name	_	ı	-
. M7	me WIR	lor WH	7 1 2 8 2 5	Color of Wire	В	×	SHIELD
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S.	Terminal No.	ŀ	2	ε

Signal Name	ı	ı	1	ı	-	ı	ı	1
Color of Wire	BR	>	FG	>	M	Ж	В	SHIELD
Terminal No. Wire	1.1	2J	3.1	4J	51J	£23	£3J	54J



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Connector No.

DISPLAY AUDIO WITHOUT BOSE

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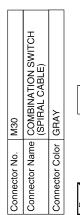
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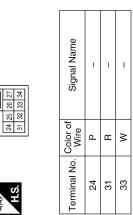
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< WIRING DIAGRAM >

Connector No. M20 Connector Name BCM (BODY CONTROL MODULE) Connector Color BLACK Connector Color BLACK Tights[114]113[111]1109[109[109[119]119]11] Tights[114]113[111]1109[109[109[119]119]11] Tights[114]113[111]1109[109[109[119]11]11]	ODY CONTROL (E) (3) (38) (38) (38) (40) (39) (38) (38) (38) (38) (38) (38) (38) (38	Connector No. M22 Connector Name DATA LINK CONNECTOR Connector Color WHITE H.S.
Terminal No. Color of Signal Name Terminal No. Color of Wire Wire	Signal Name	Terminal No. Color of Signal Name
G KEVEKSE SIGNAL 139		

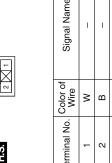
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Signa					
Color of Wire	>	В	ГG	Ь	
Terminal No.	-	7	3	5	

	ON METER		
M24	COMBINATION	WHITE	
Connector No.	Connector Name COMBINATION METER	Connector Color WHITE	



Signal Name	STRG SW INPUT1	STRG SW INPUT2	STRG SW GND	SPEED 8P/R	M-CAN-L	M-CAN-H	CAN-L	CAN-H
Color of Wire	۵	Œ	8	ŋ	ГG	SB	Ь	٦
Terminal No.	3	4	24	34	98	28	38	68

Signal Name	ACC	CAN-H	ILL (+), LIGHT SW	-	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)	RR SP RH (-)	-	I	I	SPEED SIGNAL	BAT	GND
Color of Wire	۵	GR	Ж	_	>	BR	LG	>	_	1	1	G	g	GR
Terminal No. Color of Wire	7	∞	6	10	#	12	13	14	15	16	17	18	19	20

Connector No.		M43
Connector N	Vame	Connector Name AUDIO UNIT
Connector Color WHITE	Color	WHITE
明.S.	19	1 2 3 4 5 6 7 8 9 0 11 12 13 14 15 16 17 18 20

	Signal Name	ı	FR SP LH (+)	FR SP LH (-)	RR SP (+)	RR SP (-)	ı
	Color of Wire	1	^	SB	BR	Y	-
기	Terminal No. Wire	-	2	3	4	2	9

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DISPLAY AUDIO WITHOUT BOSE

[DISPLAY AUDIO WITHOUT BOSE]

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Signal Name	I	CAMERA GND	I	-	ı	I	MIC GND	MIC VCC	MIC SIG
Color of Wire	ı	В	ı	-	ı	ı	SHIELD	>	В
Terminal No. Wire	44	45	46	47	48	65	50	51	25

Signal Name	1	1	ı	1	1	ı	1	1	ı	REVERSE	1	1	ı	ı
Color of Wire	ı	ı	ı	ı	ı	ı	ı	ı	ı	ŋ	1	ı	ı	-
Terminal No. Color of Wire	30	31	32	33	34	35	36	37	38	39	40	41	42	43

					51 52										
	AUDIO UNIT	ITE		26 27 28 29 30 31 32 33 34	41 42 43 44 45 46 47 48 49 50 5	Signal Name	COMPOSITE -	COMPOSITE +	CAMERA 6.2V	CAMERA GND	M-CAN1-L	M-CAN1-H	ı	M-CAN2-L	M-CAN2-H
. M44	-	lor WHITE		23 24	38 39 40	Color of Wire	SHIELD	В	Ν	ص	LG	SB	ı	LG	SB
Connector No.	Connector Name	Connector Color	僵		37	Terminal No.	21	22	23	24	25	56	27	28	59

Oppositor No	SOM	
Connector Nar	ame COI	Connector Name COMBINATION SWITCH
	(SP	(SPIRAL CABLE)
Connector Color	olor GRAY	٩٧
S.H	20 19 18	20 19 18 17 16 15 14 13
Terminal No.	Color of Wire	Signal Name
14	Μ	_
15	_	-
17	BB	ı

Connector No.		M63
Connector Name		FRONT SPEAKER RH
Connector Color		BROWN
咸南 H.S.		2 1
Terminal No.	Color of Wire	of Signal Name
-	\	ı
2	BR	1

Connector No.). M55	
Connector Name		FRONT SPEAKER LH
Connector Color		BROWN
同 H.S.		
Terminal No. Color of Wire	Color of Wire	Signal Name
-	>	ı
0	S.	-

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M110 AUDIO UNIT PURPLE		Color of Signal Name Wire B		M149	AUDIO UNIT BLUE	15 55 75 15 15 15 15 15 15 15 15 15 15 15 15 15	Color of Signal Name	W VCC	G GND	L D+	R O	SHIFLD
Connector No. Connector Name Connector Color	(明) H.S.	Terminal No. %		Connector No.	Connector Name Connector Color	(成) H.S.	Terminal No. Mo.	53	54	55	56	57 SH
ro wire		Signal Name			UNIT		Signal Name	ANT SUB	MAIN ANT	ANT ON		
Connector No. M102 Connector Name WIRE TO WIRE Connector Color GREEN	HS.	Terminal No. Color of Wire 1 B		Connector No. M148	Connector Name AUDIO UNIT	(18) (18) (18) (19) (19) (19) (19) (19) (19) (19) (19	Terminal No. Color of Wire	58 B	29 B	9 09		
		nal Name			\CE		nal Name	1	1	ı	1	
Connector No. M101 Connector Name WIRE TO WIRE Connector Color GRAY	3 2 3		Δ Θ	or No.	or Color BLUE	2 2 6 8	No. Color of Signal	9	l l	æ	×	SHIFLD
Connector No. Connector Name Connector Color	局 H.S.	Terminal No.	N M	Connector No.	Connector Name	H.S.	Terminal No.	1	2	က	_	+

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DISPLAY AUDIO WITHOUT BOSE

[DISPLAY AUDIO WITHOUT BOSE]

< WIRING DIAGRAM >

TO WIRE		Signal Name	INNA AMP.		Signal Name	
Connector Name WIRE TO WIRE Connector Color GREEN	H.S.	Terminal No. Color of Wire	Connector No. M503 Connector Name ANTENNA AMP Connector Color BLACK	H.S.	Terminal No. Color of Wire 1 B	
				1		
Connector Color WHITE	2	Signal Name	INA AMP.		Signal Name	
ame JOINT	0 4 3 2 1	Color of Wire P P	Connector No. M502 Connector Name ANTENNA AMP. Connector Color GRAY		Color of Wire B B B B B B B B B B B B B B B B B B B	
Connector Color WHITE	原动 H.S.	Terminal No.	Connector No. M502 Connector Name ANTEl	哥 H.S.	Terminal No.	
Connector Name JOINT CONNECTOR-M07 Connector Color WHITE	[] [] [] [] [] [] [] [] [] []	Signal Name	ro wire		Signal Name	
me JOINT	<u>4</u>	Color of Wifee	. M501 me WIRET lor GRAY		Color of Wire of B B B B B B B B B B B B B B B B B B	,
Connector Name JOINT Connector Color WHITE	H.S.	Terminal No.	Connector No. M501 Connector Name WIRE TO WIRE Connector Color GRAY	原 H.S.	Terminal No.	
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Signal Name	1	1	1	1	1	1	1	1	1							Signal Name	COMP +	ı	GND	CAMERA ON					
																	ŏ			CAN					
Color of Wire	>	ГG	ГG	٦	>	В	æ	SHIELD	g							Color of Wire	æ	-	В	X					
Terminal No.	1	27	33	4	51J	527	537	54J	55J							Terminal No.	2	9	7	80					
		7												7	Г			7							
TO WIRE					20 20 10 10 10 10 10 10 10 10 10 10 10 10 10		21.] 20.] 19.] 18.] 17.] 16.] 15.] 14.] 13.] 12.] 11.]	30J 29J 28J 27J 26J 25J 24J 23J 22J	41.1 40.1 39.1 39.1 37.1 38.1 35.1 34.1 33.1 32.1 31.1 50.1 49.1 48.1 45.1 46.1 45.1 44.1 43.1 42.1	614 604 594 584 574 564 554 544 534 524 514 704 694 684 677 664 654 644 634 624	81.1 80.1 79.1 78.1 77.1 76.1 75.1 74.1 73.1 72.1 77.1 77.1 90.1 89.1 88.1 87.1 86.1 88.5 84.1 83.1 82.1	95J 94J 93J 92J 91J	1001 99J 98J 96J			Connector No. B35				2 W	<u>.</u>	Signal Name	COMP	ı	I
o. B1 ame WIRE	olor GRAY	_		_ u) ÷	=	21J 20J 19J	307 290	41J 40J 39J 50J 49J	61J 60J 59J 70J 69J	81.3 80.3 79.3 89.3	86	10		Ī	o. B35	olor WHITE			4 %	⊣ ।	Color of Wire	SHIELD	ı	ı
Connector No. B1 Connector Name WIRE TO WIRE	Connector Color				Š.											Connector No.	Connector Color			H.S.		Terminal No.	-	2	က
															[T	7						
O WIRE			F		ก			signai Name	1							SPEAKERIH	(WITHOUT BOSE AUDIO	(NI)				Signal Name	ı	1	
M504	BI ACK	_	L	-			Solor of	Wire	В В							B25 BEAR	ne (WITHC		_		2	Color of Wire	>	LG	
Connector No. M504 Connector Name WIBE TO WIBE	Connector Color		€	ATT.	S			l erminai No.	-							Connector No.	Connector Name	Connector Color		優	H.S.	Terminal No.	-	2	
																								AAM	IIA0

DISPLAY AUDIO WITHOUT BOSE

[DISPLAY AUDIO WITHOUT BOSE]

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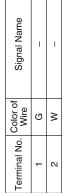
< WIRING DIAGRAM >

Connector No. R1 Connector Name WIRE TO WIRE Connector Color WHITE	Connector No. D19 Connector Name (WITHOUT BOSE AUDIO SYSTEM) Connector Color WHITE	Terminal No. Color of Signal Name	2 W -
Connector No. B59 Connector Name SATELLITE RADIO ANTENNA Connector Color GREEN Terminal No. Wire 1 B	Connector No. D1 Connector Name WIRE TO WIRE Connector Color WHITE T 6 5 4	Terminal No. Volor of Signal Name 5 G –	- M 9
Connector No. B47 REAR SPEAKER RH (WITHOUT BOSE AUDIO SYSTEM) Connector Color WHITE H.S. Terminal No. Color of Signal Name 1 LG - 2 L - 2 L -	Connector No. R7 Connector Color WHITE MARKET STATE LEST STATE	Terminal No. Color of Wire Signal Name	2 SHIELD 3

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D119	Connector Name FRONT DOOR SPEAKER RI- (WITHOUT BOSE AUDIO SYSTEM)	WHITE
Connector No.	Connector Name	Connector Color WHITE







Connector No.	D101
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE





Signal Name	_	_
Color of Wire	9	M
Terminal No.	1	2

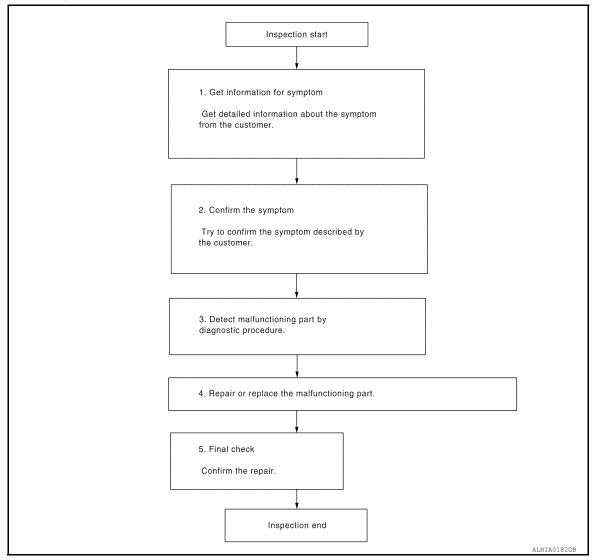
AANIA0981GB

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow INFOID:0000000007985904

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.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

AV-83 Revision: August 2012 2013 Altima Sedan ΑV

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[DISPLAY AUDIO WITHOUT BOSE]

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.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000007985937

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Regarding Wiring Diagram information, refer to AV-71, "Wiring Diagram".

1. CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	25 (5A)
19	Battery power supply	15 (20A)

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
Connector	Terminal	Glound	Condition	(Approx.)
M43	7		Ignition switch: ON	Battery voltage
IVI 4 3	19	_	Ignition switch: OFF	Dattery Voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

Turn ignition switch OFF.

2. Disconnect audio unit connector M44.

3. Check continuity between audio unit connectors and ground.

Audio unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M43	20		Yes
M44	45	_	Tes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

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FRONT DOOR SPEAKER

[DISPLAY AUDIO WITHOUT BOSE]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000007985946

Regarding Wiring Diagram information, refer to AV-71, "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.

Aud	io unit	Front door speaker		Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
	2	D19 (LH)	D40 (LLI)	D40 (LLI)	1	
M43	3		2	Yes		
IVI 4 0	11	D119 (RH)	1	165		
	12		2			

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

Aud	Audio unit		Continuity	
Connector	Terminal	Ground	Continuity	
	2		No	
M43	3			
IVI 4 3	11	_	INO	
	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 audio unit connector M43 and ground.

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

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

2	3	Audio signal output	(V) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
11	12	Audio Signai output	0 -1 → + 2ms SKIB3609E

Is the inspection result normal?

YES >> Replace front door speaker. Refer to AV-107, "Removal and Installation".

NO >> Replace audio unit. Refer to AV-104, "Removal and Installation".

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FRONT SPEAKER

Diagnosis Procedure

INFOID:0000000007985950

Regarding Wiring Diagram information, refer to AV-71, "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 SPEAKER SIGNAL CIRCUIT CONTINUITY

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

Aud	io unit	Front speaker		Continuity			
Connector	Terminal	Connector	Terminal	Continuity			
	2	M55 (LH)	MEE (LLI)	MEE (LLI)	MEE (LLI)	1	
M43	3		2	Yes			
IVI 4 0	11	M63 (RH)	1	162			
	12		2				

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

Aud	Audio unit		Continuity	
Connector	Terminal	Ground	Continuity	
	2		No	
M43	3			
IVI 4 3	11	_	INO	
	12			

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK FRONT SPEAKER SIGNAL

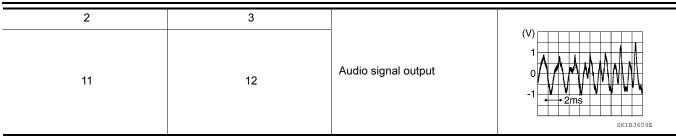
- 1. Connect audio unit connector M43 and suspect front speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M43 and ground.

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

FRONT SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]



Is the inspection result normal?

YES >> Replace front speaker. Refer to AV-106, "Removal and Installation".

NO >> Replace audio unit. Refer to <u>AV-104</u>, "<u>Removal and Installation</u>".

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[DISPLAY AUDIO WITHOUT BOSE]

REAR SPEAKER

Diagnosis Procedure

INFOID:0000000007985956

Regarding Wiring Diagram information, refer to AV-71, "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 speaker connector.
- 2. Check continuity between audio unit connector M43 and suspect rear speaker connector.

Audi	io unit	Rear speaker		Continuity			
Connector	Terminal	Connector	Terminal	Continuity			
	4	B25 (LH)	DOF (LLI)	DOF (LLI)	DOE (LLI)	1	
M43	5		2	Yes			
10143	13	B47 (RH)	1	res			
	14		2				

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

Au	Audio unit		Continuity
Connector	Terminal	- Ground	Continuity
	4		No
M43	5		
IVI43	13	_	INO
	14		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK REAR SPEAKER SIGNAL

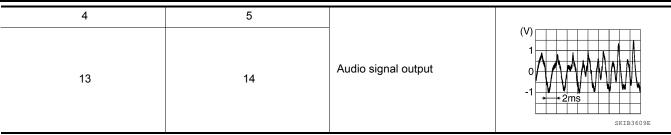
- 1. Connect audio unit connector M43 and suspect rear speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M43 and ground.

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

REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]



Is the inspection result normal?

>> Replace rear speaker. Refer to <u>AV-108, "Removal and Installation"</u>. >> Replace audio unit. Refer to <u>AV-104, "Removal and Installation"</u>. YES

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REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007985983

Regarding Wiring Diagram information, refer to AV-71, "Wiring Diagram".

1. CHECK REVERSE INPUT SIGNAL

- Turn ignition switch ON.
- Shift the selector lever to R (reverse).
- Check voltage between audio unit connector M44 and ground.

Audio unit		Ground		V 11
(+)	Condition		Voltage (Approx.)
Connector	Terminal	(-)		()
M44	39	_	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

- Turn ignition switch OFF.
- Disconnect audio unit connector M44 and rear view camera connector.
- Check continuity between audio unit connector M44 and rear view camera connector B35.

Audi	Audio unit		Rear view camera	
Connector	Terminal	Connector	Terminal	Continuity
M44	23	B35	8	Yes

Check continuity between audio unit connector M44 and ground.

Audio unit			Continuity
Connector	Terminal	Ground	Continuity
M44	23		No

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK CAMERA POWER SUPPLY VOLTAGE

- Connect audio unit connector M44 and rear view camera connector.
- Turn ignition switch ON.
- Shift the selector lever to R (reverse).
- 4. Check voltage between audio unit connector M44 and ground.

Audio unit (+)		Ground		Voltage (Approx.)
		(-)	Condition	
Connector	Terminal	(-)		
M44	23	_	Selector lever is in "R".	6.0 V

Is inspection result normal?

YES >> GO TO 4.

>> Replace audio unit. Refer to AV-104, "Removal and Installation". NO

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

4. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector M44 and rear view camera connector.
- 3. Check continuity between audio unit connector M44 and rear view camera connector B35.

Audi	Audio unit		Rear view camera		
Connector	Terminal	Connector Terminal		- Continuity	
M44	22	B35	5	Yes	

4. Check continuity between audio unit connector M44 terminal 82 and ground.

Audio unit			Continuity
Connector	Terminal	Ground	Continuity
M44	22		No

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness or connectors.

CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M44 and rear view camera connector B35.

Audi	o unit	Rear view camera Connector Terminal		Continuity
Connector	Terminal			Continuity
M44	24	B35	7	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 M44 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 M44 and ground.

Audi	o unit	Ground		
(+)	()	Condition	Reference value
Connector	Terminal	(–)		
M44	22	_	Camera image dis- played.	0. 4 0 -0. 4 -0. 4 -0. 4 -0. 4

Is inspection result normal?

YES >> Replace audio unit. Refer to AV-104, "Removal and Installation".

NO >> Replace rear view camera. Refer to AV-117, "Removal and Installation".

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MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007985980

Regarding Wiring Diagram information, refer to AV-71, "Wiring Diagram".

1. CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector M44 and microphone connector R7.
- 3. Check continuity between audio unit connector M44 and microphone connector R7.

Aud	io unit	Microphone		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	50		2	
M44	51	R7	4	Yes
	52		1	

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

Audio unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M44	50		No	
	51	_		
	52			

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2.check microphone vcc voltage

- Connect audio unit connector M44.
- 2. Turn ignition switch ON.
- 3. Check voltage between terminals of audio unit connector M44.

Audio unit connector M44		
(+) (–)		Voltage (Approx.)
Terminal	Terminal	()
51	50	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace audio unit. Refer to AV-104, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

- Connect microphone connector.
- 2. Check signal between terminals of audio unit connector M44.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

Audio unit connector M44				Α
(+)	(-)	Condition	Reference value	
Terminal	Terminal	_		В
52	50	Speak into microphone.	(V) 2. 5 2. 0 1. 5 1. 0 0. 5 0	С
			PKIB5037J	D

Is the inspection result normal?

>> Replace audio unit. Refer to <u>AV-104, "Removal and Installation"</u>. >> Replace microphone. Refer to <u>AV-116, "Removal and Installation"</u>. YES

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STEERING SWITCH

Diagnosis Procedure

INFOID:0000000007985967

Regarding Wiring Diagram information, refer to AV-71, "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 combination switch connector terminals.

Combination switch connector M88		Condition	Resistance Ω	
Terminal	Terminal	Condition	(Approx.)	
		Depress SOURCE switch.	1	
		Depress △ switch.	121	
14		Depress ∇ switch.	321	
		Depress w≤ switch.	723	
		Depress ENTER switch.	2023	
	17	Depress - ☐ switch.	1	
		Depress ♥ + switch.	121	
15		Depress A switch.	321	
		Depress 5 switch.	723	
		Depress DISP switch.	2023	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to AV-111, "Removal and Installation".

2.CHECK HARNESS BETWEEN COMBINATION SWITCH AND COMBINATION METER

- 1. Disconnect combination meter connector M24 and combination switch connector M30.
- 2. Check continuity between combination meter connector M24 and combination switch connector M30.

Combinat	tion meter	Combination switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	3		24	
M24	24	M30	33	Yes
	4		31	

3. Check continuity between combination meter connector M24 and ground.

Combination meter		- Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
	3			
M24	24	_	No	
	4			

Is the inspection result normal?

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M30 and M88.

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

Is the inspection result normal?

YES >> GO TO 4.

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

f 4.CHECK HARNESS BETWEEN COMBINATION METER AND AUDIO UNIT

- Disconnect audio unit connector M44.
- Check continuity between combination meter connector M24 and audio unit connector M44.

Combina	nation meter Audio unit		Audio unit	
Connector	Terminal	Connector	Terminal	Continuity
M24	37	Maa	26	Yes
IVI24	36	M44	25	ies

3. Check continuity between combination meter connector M24 and ground.

Combina	ation meter	Ground	Continuity
Connector	Terminal	Ground	Continuity
M24	37		No
IVIZ4	36	_	NO

Is the inspection result normal?

YES >> Replace audio unit. Refer to AV-104, "Removal and Installation".

NO >> Repair or replace harness or connectors.

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Revision: August 2012 AV-97 2013 Altima Sedan

USB CONNECTOR

[DISPLAY AUDIO WITHOUT BOSE]

USB CONNECTOR

Diagnosis Procedure

INFOID:0000000008542211

Regarding Wiring Diagram information, refer to AV-71, "Wiring Diagram".

1. CHECK USB INTERFACE HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector M149 and USB interface connector M132.
- 3. Check continuity between audio unit connector M149 and USB interface connector M132.

Audio	o unit	USB interface		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	53	M132	4	
M149	54		1	
	55		2	Yes
	56		3	
	57		5	

4. Check continuity between audio unit connector M149 and ground.

Aud	dio unit		Audio unit		Continuity
Connector	Terminal	_	Continuity		
M149	54 49 Ground		No		
	57	- Ground	NO		

Is the inspection result normal?

YES >> Replace the USB interface. Refer to AV-105, "Removal and Installation".

NO >> Repair or replace harness or connectors.

AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:0000000008659216

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RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	Audio unit	Malfunction in audio unit. Refer to AV-62, "On Board Diagnosis Function".
	No sound from all speakers.	Speaker circuit shorted to ground. Refer to AV-71, "Wiring Diagram". Audio unit power supply and ground circuits malfunction. Refer to AV-85, "AUDIO UNIT: Diagnosis Procedure".
No sound comes out or the level of the sound is low.	Only a certain speaker (front door speaker LH, front door speaker RH, front speaker LH, front speaker RH, rear speaker LH, rear speaker RH) does not output sound.	 Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Refer to: AV-86, "Diagnosis Procedure" (front door speaker). AV-88, "Diagnosis Procedure" (front speaker). AV-90, "Diagnosis Procedure" (rear speaker). Malfunction in speaker. Refer to: AV-107, "Removal and Installation" (front door speaker). AV-107, "Removal and Installation" (front speaker). AV-108, "Removal and Installation" (rear speaker). Malfunction in audio unit. Refer to AV-62, "On Board Diagnosis Function".

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[DISPLAY AUDIO WITHOUT BOSE]

Symptoms	Check items	Probable malfunction location
	Noise comes out from all speakers.	Malfunction in audio unit. Refer to AV-62, "On Board Diagnosis Function".
Noise is mixed with audio.	Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, front speaker RH, rear speaker LH, rear speaker RH).	 Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Refer to: - AV-86, "Diagnosis Procedure" (front door speaker). - AV-88, "Diagnosis Procedure" (front speaker). - AV-90, "Diagnosis Procedure" (rear speaker). Malfunction in speaker. Poor Installation of speaker (e.g. backlash and looseness). Refer to: - AV-107, "Removal and Installation" (front door speaker). AV-108, "Removal and Installation" (rear speaker). Malfunction in audio unit. Refer to AV-62, "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-112, "Location of Antenna".
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 <u>AV-68</u>, "<u>Reference Value</u>". Poor connector connection of antenna or antenna feeder. Refer to <u>AV-112</u>, "<u>Location of Antenna</u>".
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 <u>AV-112</u>, "<u>Location of Antenna</u>".
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 TROU- BLE DIAGNOSIS" in the appropriate interi- or 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.

Write down the customer's phone brand, model and service provider.
 NOTE:

AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

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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.	
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. 	Malfunction in audio unit. Replace audio unit. Refer to AV-104, "Removal and Installation".
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	Sound operation function is normal.	
party with hands-free phone communication.	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-94, "Diagnosis Procedure".
	 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-111. "Removal and Installation".
The system cannot be operated.	Steering switch's √∠, √()+ , √()− , and ⇒ switches do not work.	Steering switch signal circuit malfunction. Refer to AV-96, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-96, "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-92. "Diagnosis Procedure".
	Camera image signal circuit malfunction.	Camera image signal circuit malfunction between rear view camera and audio unit. Refer to AV-92. "Diagnosis Procedure".
	Rear view camera malfunction.	Replace rear view camera. Refer to AV-117. "Removal and Installation".

NORMAL OPERATING CONDITION

[DISPLAY AUDIO WITHOUT BOSE]

NORMAL OPERATING CONDITION

Description INFOID:000000008659217

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 <u>AV-99</u> . "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.	

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO WITHOUT BOSE]

< SYMPTOM DIAGNOSIS >	[DISPLAT AUDIO WITHOUT BOSE]	
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.	

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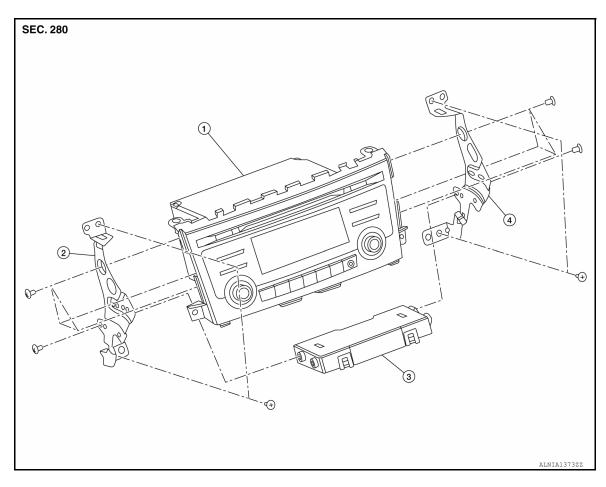
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REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View



1. AV control unit

- 2. AV control unit bracket LH
- 3. A/C auto amp.

INFOID:0000000008542366

4. AV control unit bracket RH

Removal and Installation

REMOVAL

- 1. Disconnect the negative battery terminal. Refer to PG-72, "Removal and Installation (Battery)".
- 2. Remove cluster lid C. Refer to IP-20, "Cluster Lid C".
- 3. Remove the A/C switch assembly. Refer to HAC-101, "Removal and Installation".
- 4. Remove the AV control unit screws, then pull out the AV control unit.
- 5. Disconnect the harness connectors from the AV control unit and remove.

INSTALLATION

Installation is in the reverse order of removal.

USB CONNECTOR

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITHOUT BOSE]

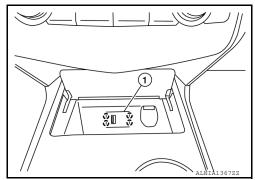
USB CONNECTOR

Removal and Installation

INFOID:0000000007986007

Removal

- 1. Remove the CVT finisher. Refer to IP-23, "Exploded View".
- 2. Release the pawls and remove the USB interface (1) from the back of the CVT finisher.
 - (): Pawl



Installation

Installation is in the reverse order of removal.

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FRONT SPEAKER

[DISPLAY AUDIO WITHOUT BOSE]

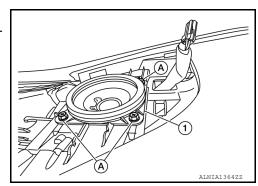
FRONT SPEAKER

Removal and Installation

INFOID:0000000008666209

REMOVAL

- 1. Remove the front pillar finisher. Refer to INT-21, "FRONT PILLAR FINISHER: Removal and Installation".
- 2. Remove the front speaker grille using a suitable tool.
- 3. Remove the front speaker screws (A).
- 4. Pull out the front speaker (1), disconnect the harness connector from front speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITHOUT BOSE]

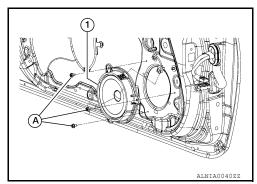
FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000008527556

REMOVAL

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



INSTALLATION

Installation is in the reverse order of removal.

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REAR SPEAKER

[DISPLAY AUDIO WITHOUT BOSE]

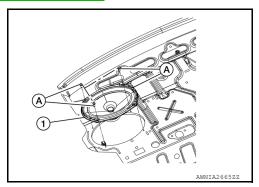
REAR SPEAKER

Removal and Installation

INFOID:0000000008746523

REMOVAL

- 1. Remove the rear parcel shelf finisher. Refer to INT-26, "Removal and Installation".
- 2. Remove the rear speaker screws (A).
- 3. Disconnect the harness connector from the rear speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

SATELLITE RADIO ANTENNA

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITHOUT BOSE]

SATELLITE RADIO ANTENNA

Removal and Installation

INFOID:0000000007986017

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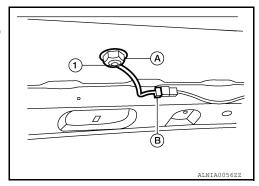
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REMOVAL

- 1. Lower the headlining at the rear. Refer to INT-30, "Removal and Installation".
- 2. Remove the satellite radio antenna nut (A).
- 3. Disconnect the harness connector (B) from the satellite radio antenna (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

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GPS ANTENNA

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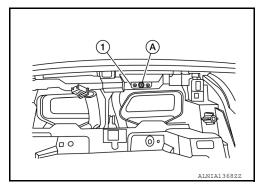
GPS ANTENNA

Removal and Installation

INFOID:0000000008527542

REMOVAL

- 1. Remove the AV control unit. Refer to AV-104, "Removal and Installation".
- 2. Remove the GPS antenna screw (A) and the GPS antenna (1).

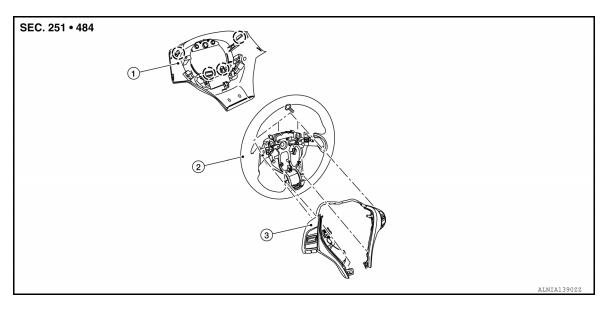


INSTALLATION

Installation is in the reverse order of removal.

STEERING SWITCH

Exploded View



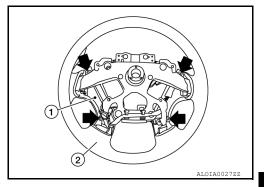
- 1. Steering wheel rear finisher
- 2. Steering wheel
- 3. Steering switches

(Pawl

Removal and Installation

REMOVAL

- 1. Remove the steering wheel. Refer to ST-31, "Removal and Installation"
- 2. Release the pawls on the steering wheel rear finisher and remove.
- 3. Remove the steering switches screws (←).
- 4. Remove the steering switches (1) from steering wheel (2).



INSTALLATION

Installation is in the reverse order of removal.

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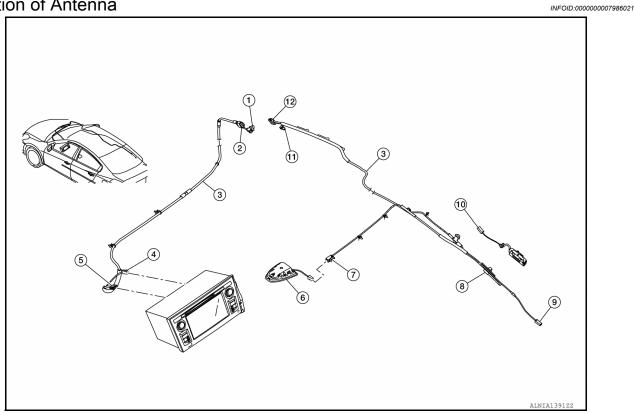
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ANTENNA FEEDER

Location of Antenna



- 1. M102
- 4. M110
- 7. B59
- 10. M503

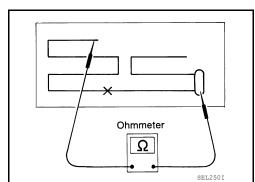
- 2. M101
- 5. M148
- 8. M502
- 11. M500

- 3. Antenna feeder
- 6. Satellite antenna
- 9. M504
- 12. M501

Window Antenna Repair

ELEMENT CHECK

 Attach probe circuit tester (ohm setting) to antenna terminal on each side.



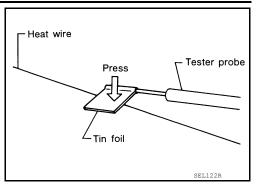
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ANTENNA FEEDER

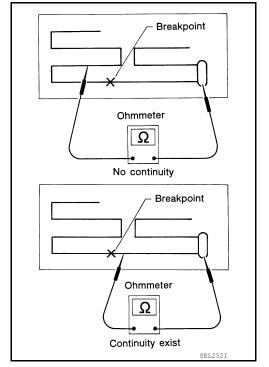
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITHOUT BOSE]

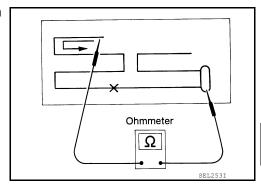
 When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



2. If an element is broken, no continuity will exist.



3. To locate a break, move probe along element. Tester indication will change abruptly when probe passes the broken point.



REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

Revision: August 2012 AV-113 2013 Altima Sedan

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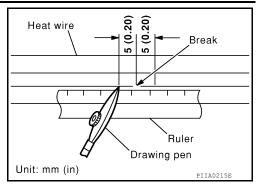
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ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

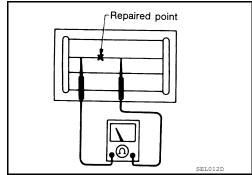
[DISPLAY AUDIO WITHOUT BOSE]

- 1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
- Apply a small amount of conductive silver composition to tip of drawing pen.
 - Shake silver composition container before use.
- Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



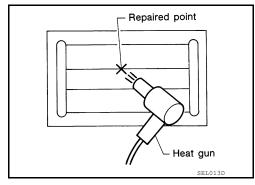
After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet.

If a heat gun is not available, let the repaired area dry for 24 hours.



ANTENNA AMP.

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITHOUT BOSE]

ANTENNA AMP.

Removal and Installation

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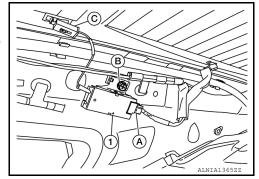
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REMOVAL

- Remove the rear pillar finisher RH. Refer to <u>INT-25</u>, "<u>REAR PILLAR FINISHER</u>: <u>Removal and Installation</u>".
- 2. Disconnect the harness connector (A) from the antenna amp. (1).
- 3. Disconnect the antenna amp. harness connector (C) from the rear window glass.
- 4. Remove the antenna amp. screw (B) and the antenna amp. (1).



INSTALLATION

Installation is in the reverse order of removal.

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MICROPHONE

[DISPLAY AUDIO WITHOUT BOSE]

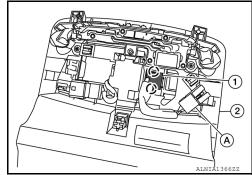
MICROPHONE

Removal and Installation

INFOID:0000000008671069

REMOVAL

- 1. Remove the front room/map lamp assembly. Refer to INL-63, "Removal and Installation".
- 2. Disconnect the microphone connector (A) from the front room/ map lamp assembly (2).
- 3. Release the microphone pawls, then remove the microphone (1).
 - (): Pawl



INSTALLATION

Installation is in the reverse order of removal.

REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITHOUT BOSE]

REAR VIEW CAMERA

Removal and Installation

INFOID:0000000007986030

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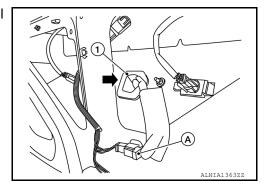
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REMOVAL

- 1. Remove trunk lid finisher. Refer to INT-34, "TRUNK SIDE FINISHER: Removal and Installation".
- 2. Disconnect the harness connector (A) from rear view camera.
- 3. Push the rear view camera (1) in direction shown (←) and pull out to remove.



INSTALLATION

Installation is in the reverse order of removal.

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PRECAUTION

PRECAUTIONS

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

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least 3 minutes before performing any service.

Precaution for Trouble Diagnosis

INFOID:0000000007986127

AV COMMUNICATION SYSTEM

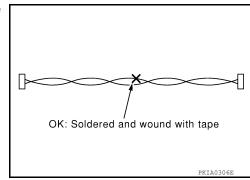
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

INFOID:0000000007986128

AV COMMUNICATION SYSTEM

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

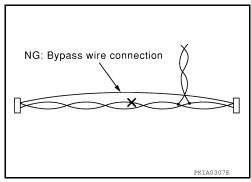


PRECAUTIONS

< PRECAUTION >

[DISPLAY AUDIO WITH BOSE]

 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:0000000008527561

- 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.

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PREPARATION

< PREPARATION >

[DISPLAY AUDIO WITH BOSE]

PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000008527562

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

Commercial Service Tools

INFOID:0000000008527563

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

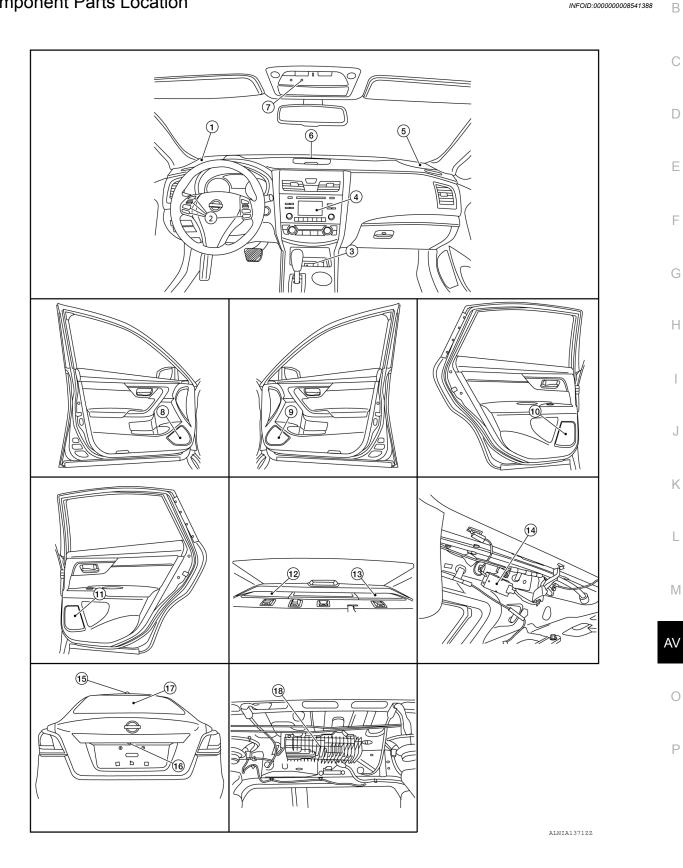
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location



COMPONENT PARTS

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITH BOSE]

1.	Front speaker LH	2.	Steering switches		USB interface
4.	Audio unit	5.	Front speaker RH	6.	Center speaker
7.	Microphone	8.	Front door speaker LH	9.	Front door speaker RH
10.	Rear door speaker LH	11.	Rear door speaker RH	12.	Rear speaker RH
13.	Rear speaker LH	14.	Antenna amp.	15.	Satellite antenna
16.	Rear view camera	17.	Window antenna	18.	Bose speaker amp.

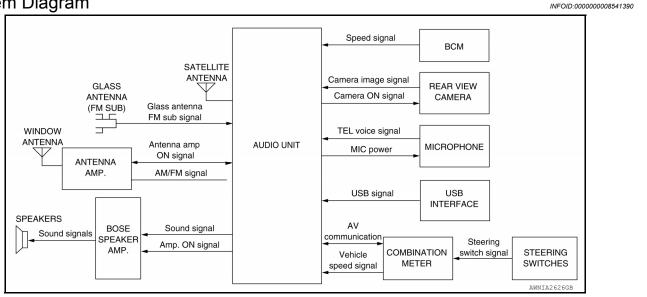
Component Description

INFOID:0000000008541389

Part name	Description		
Audio unit	 Controls audio, hands-free phone, USB connection, AUX IN connection, satellite radio and rear view camera functions. Display unit is built in to audio unit. 		
Bose speaker amp.	Receives audio signals from audio unit and outputs audio signals to each speaker.		
Front speakers			
Center speaker			
Front door speakers	Outputs high, mid and low range audio signals from Bose speaker amp.		
Rear door speakers			
Rear speakers			
Steering switches	 Operations for audio, hands-free phone and voice recognition are possible. Steering switch signal is output to combination meter. Combination meter outputs steering switch signal to audio unit. 		
Microphone	 Used for hands-free phone operations. Microphone signal is transmitted to audio unit. Power is supplied from audio unit. 		
USB interface	USB sound and data input signals are transmitted to audio unit.		
Rear view camera	Outputs image of vehicle rear to audio unit.Power is supplied from audio unit.		
Satellite antenna	Satellite radio signal is received and transmitted to audio unit.		
Antenna amp.	 AM/FM signal received by window antenna is amplified and transmitted to audio unit Power is supplied from audio unit. 		
Window antenna	AM/FM signal is received and transmitted to antenna amp.		

SYSTEM

System Diagram



System Description

INFOID:0000000008541391

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AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Bose speaker amp.
- Front speakers
- Center speaker
- · Front door speakers
- Rear door speakers
- Rear speakers
- · Steering switches
- Microphone
- USB interface
- Rear view camera
- · satellite antenna
- Antenna amp.
- Window antenna

When the audio system is on, AM/FM signals received by the window antenna are amplified by the antenna amp. and sent to the audio unit. The audio unit then sends audio signals to the Bose speaker amp. The Bose speaker amp. then sends audio signals to the front speakers, center speaker, front door speakers, rear door speakers and rear 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 audio unit. Hands-free cellular telephone calls can be sent and received. Some Bluetooth[®] cellular telephones may not be recognized by the audio unit. When a cellular telephone or the audio unit is replaced, the telephone must be paired with the audio 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.

AV Control Unit

SYSTEM

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITH BOSE]

When the ignition switch is turned to ACC or ON, the audio unit will power up. During power up, the audio unit is initialized and performs various self-checks. Initialization may take up to 20 seconds.

Steering Switches

When buttons on the steering switches are pushed, the resistance in steering switches circuits change, depending on which button is pushed.

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
- Record memos

Microphone

The microphone is located in the roof console assembly. The microphone sends a signal to the audio unit.

REAR VIEW CAMERA SYSTEM

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

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DIAGNOSIS SYSTEM (AUDIO UNIT)

Description INFOID:0000000008541392

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

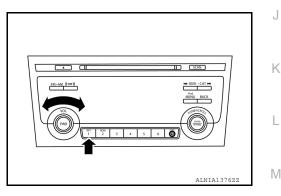
Mode		Description		
	Self Diagnosis	Audio unit diagnosis.Diagnoses the connections across system components.		
	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.		
	Vehicle Signals	Diagnosis 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.		
Confirmation/ Adjustment	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	Guiding line position that overlaps rear view camera image can be adjusted.		
	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

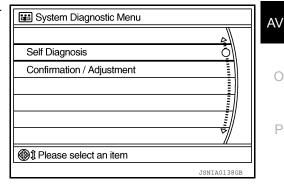
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METHOD OF STARTING

- 1. Turn the ignition ON.
- 2. Turn the audio system OFF.
- While pressing the preset 1 button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. When selfdiagnosis mode begins, a short beep will be heard. Shifting from current screen to previous screen is performed by pressing BACK button.



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



SELF DIAGNOSIS MODE

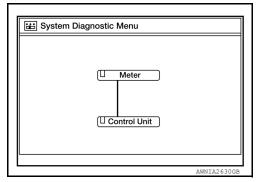
Audio Unit Self Diagnosis

1. Select Self Diagnosis.

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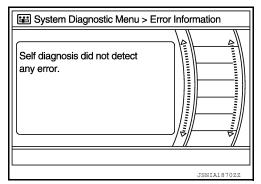
[DISPLAY AUDIO WITH BOSE]

- 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 <u>AV-186, "Removal and Installation"</u>.
- 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 <u>AV-155</u>, "<u>AUDIO UNIT</u>: <u>Diagnosis Procedure</u>". If no malfunction is detected in audio unit power supply and ground circuits, replace audio unit. Refer to <u>AV-186</u>, "<u>Removal and Installation</u>". 		
A Cor	nnecting Cable Between Units Is Displayed In	Yellow		
Area with yellow connection lines	Description	Possible cause		
Control unit ⇔ Meter	When one of the following is detected: malfunction is detected in combination meter power supply and ground circuits. malfunction is detected in AV communication circuits between audio unit and combination meter.	Combination meter power supply or ground circuits. Refer to MWI-57 , "COMBINATION METER: Diagnosis Procedure". AV communication circuits between audio unit and combination meter.		

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITH BOSE]

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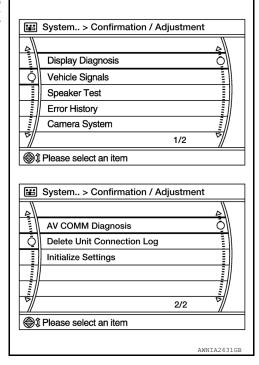
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ΑV

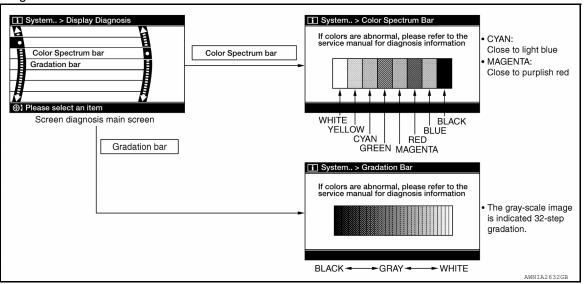
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Audio Unit Confirmation/Adjustment

- Select Confirmation/Adjustment.
- 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.

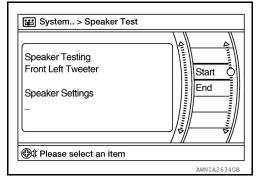
Vehicle speed	d OFF	
Lights	OFF	
Reverse	OFF	
EQ Pin	1	
Destination	2	
Camera Type	1	

Speaker Test

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITH BOSE]

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.

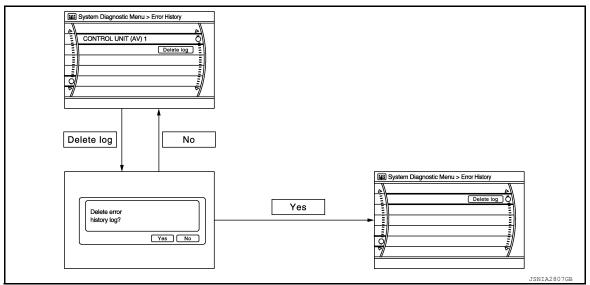
Count up method A

- 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

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITH BOSE]

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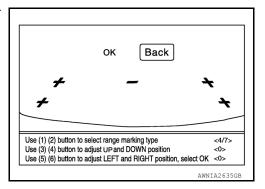
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Error item	Description	Possible cause	
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	Replace the audio unit if the malfunction occurs constantly. Refer to AV-186, "Removal and Installation".	
AV COMM CIRCUIT	 When one of the following is detected: malfunction is detected in combination meter power supply and ground circuits. malfunction is detected in AV communication circuits between audio unit and combination meter. 	Combination meter power supply or ground circuits. Refer to MWI-57, "COMBINATION METER: Diagnosis Procedure". AV communication circuits between audio unit and combination meter.	

Camera System

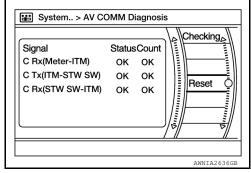
This mode is used to adjust the guide line display position of the rear view camera.



AV COMM Diagnosis

- Displays the communication status between audio unit (master unit) and each 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)
C Rx(Meter-ITM)	OK / ???	OK / 0 – 39
C Tx(ITM-TW SW)	OK / ???	OK / 0 – 39
C Rx(STW SW-ITM)	OK / ???	OK / 0 – 39

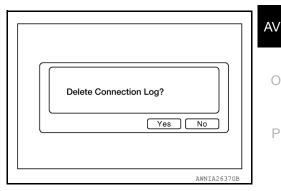


NOTE:

"???" 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).

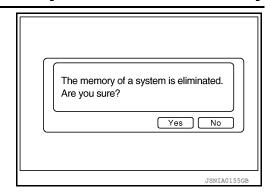


Initialize Settings

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO WITH BOSE]

Deletes data stored from the audio unit.



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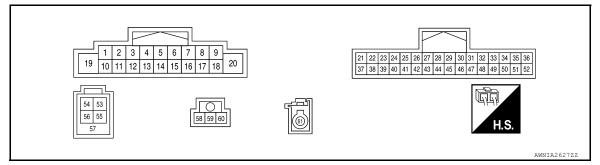
SKIB3609E

ECU DIAGNOSIS INFORMATION

AUDIO UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
1 (W)	Ground	BOSE amp. ON signal	Output	ACC	_	Battery voltage
2 (B)	3 (W)	Sound signal front speaker LH	Output	ON	Sound output	(V) 1 0 -1 2ms SKIB3609E
4 (G)	5 (R)	Sound signal rear speaker LH	Output	ON	Sound output	(V) 1 0 -1 2ms SKIB3609E
7 (P)	Ground	ACC power supply	Input	ACC	_	Battery voltage
9 (R)	8 (GR)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
10	_	Shield	_	_	_	_
11 (B)	12 (W)	Sound signal front speaker RH	Output	ON	Sound output	(V) 1 0 -1 +2ms

[DISPLAY AUDIO WITH BOSE]

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
13 (G)	14 (R)	Sound signal rear speaker RH	Output	ON	Sound output	(V) 1 0 -1 2ms SKIB3609E
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	0 20 ms JSNIA0012GB
19 (G)	Ground	Battery power supply	Input	OFF	_	Battery voltage
20 (GR)	Ground	Ground	_	ON	_	0 V
21	_	Shield	_	_	_	
22 (B)	Ground	Camera image signal	Input	ON	When camera image is displayed	0.4 0 -0.4 -0.4 -0.8
23 (W)	Ground	Camera power supply	Output	ON	When camera image is displayed Except for above	6.0 V 0 V
24 (R)	Ground	Camera ground	_	ON	—	0 V
25 (LG)	_	M-CAN (L)	Input/ Output	_	_	-
26 (SB)	_	M-CAN (H)	Input/ Output	_	_	_
28 (LG)	_	M-CAN (L)	Input/ Output	_	_	_
29 (SB)	_	M-CAN (H)	Input/ Output	_	_	_
39 (G)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse) Selector lever in any position other than R (reverse)	Battery voltage
44 (B)	Ground	Ground	_	ON	_	0 V
51 (W)	Ground	Microphone power supply	Output	ON	_	5.0 V

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO WITH BOSE]

	minal e color)	Description			Condition	Reference value	А
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	
52 (B)	50 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	(V) 1 0 -1 +2ms SKIB3609E	B C
53 (W)	_	USB ground	_	_	_	_	
54 (G)	_	V BUS signal	_	_	_	_	Е
55 (L)	_	USB D- signal	_	_	_	_	F
56 (R)	_	USB D+ signal	_	_	_	_	
57	_	Shield	_	_	_	_	G
58 (B)	Ground	Glass antenna (FM sub) signal	Input	ON	_	5.0 V	
59 (B)	Ground	AM/FM antenna signal	Input	ON	_	5.0 V	Н
60 (B)	Ground	Antenna amp. ON signal	Output	ON	_	Battery voltage	I
61 (B)	Ground	Satellite antenna signal	Input	ON		5.0 V	

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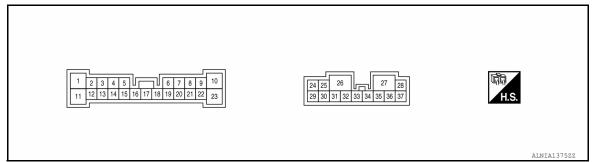
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BOSE SPEAKER AMP

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal color)	Description			Condition	Reference value
+	-	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
3 (G)	2 (R)	Sound signal front speaker LH	Input	ON	Sound output	(V) 1 0 -1 1 ms skia0177E
5 (G)	4 (R)	Sound signal front speaker RH	Input	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E
7 (P)	6 (BG)	Front door speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms skia0177E
9 (G)	8 (R)	Center speaker signal	Output	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E

BOSE SPEAKER AMP

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO WITH BOSE]

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
10 (G)	23 (W)	Rear door speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms
12 (B)	13 (W)	Sound signal rear speaker RH	Input	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E
14 (B)	15 (W)	Sound signal rear speaker LH	Input	ON	Sound output	(V) 1 0 -1 1 ms
18 (G)	Ground	Amp. ON signal	Input	ON	_	Greater than 6.5V
20 (P)	19 (R)	Front door speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms
24 (G)	29 (W)	Rear door speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms
25 (W)	30 (G)	Rear speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms
26 GR)	Ground	Ground	_	ON	_	0V

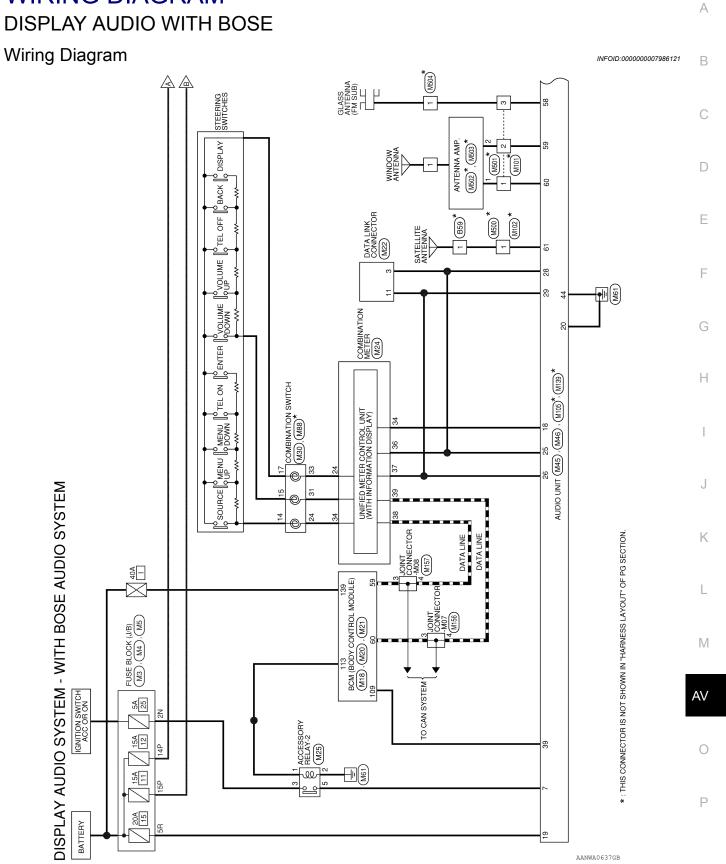
BOSE SPEAKER AMP

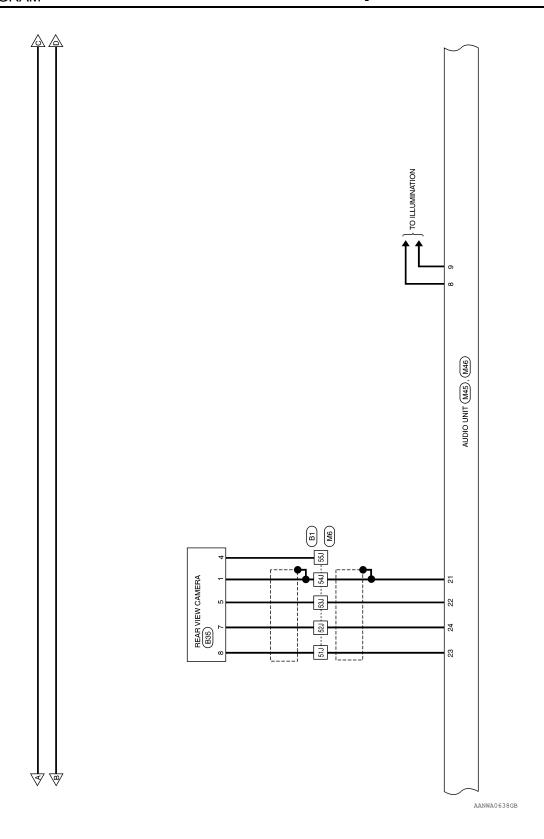
< ECU DIAGNOSIS INFORMATION >

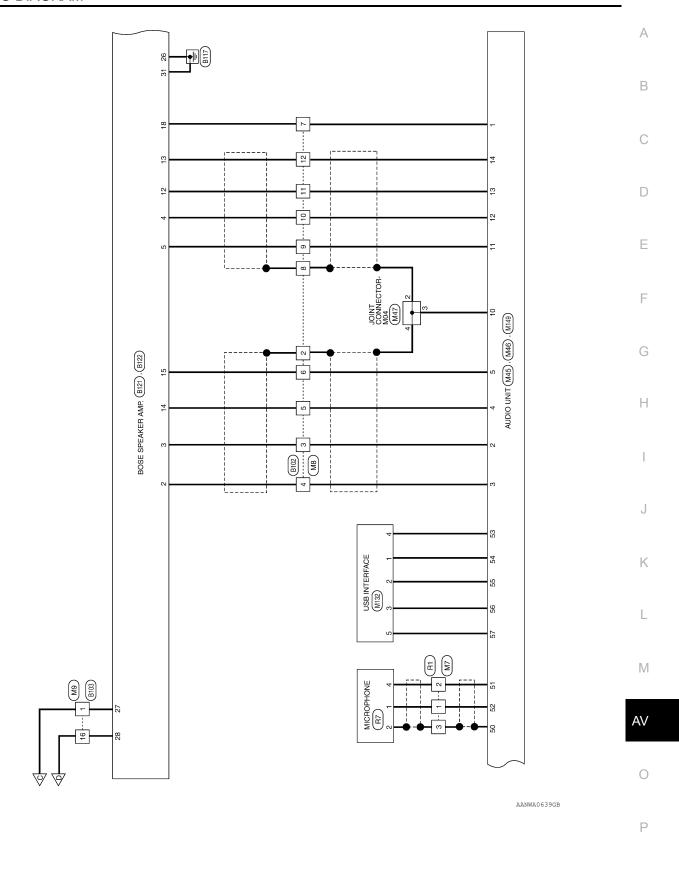
[DISPLAY AUDIO WITH BOSE]

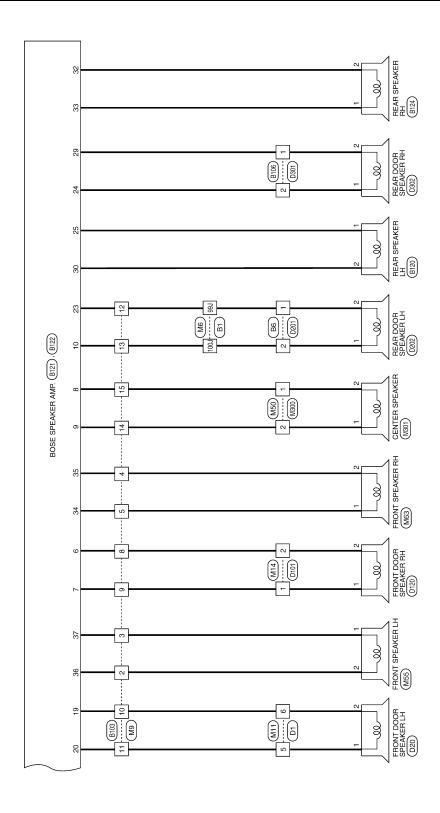
	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
27 (G)	Ground	Battery power supply	Input			Battery voltage
28 (SB)	Glound	battery power supply	Прис	_	_	Battery Voltage
31 (GR)	Ground	Ground	_	ON	_	0V
33 (W)	32 (G)	Rear speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E
34 (P)	35 (W)	Front speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E
37 (G)	36 (R)	Front speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E

WIRING DIAGRAM









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	FUSE BLOCK (J/B) WHITE	7P 6P 5P 4P 3P 2P 1P 16P 15P 14P 13P 12P 11P 10P 9P 8P P P P P P P P P	Signal Name -	MY WIRE TO WIRE WHITE Signal Name	
		7P 6P 5P 4P	Color of Wire G	N N N N N N N N N N	
Connector No.	Connector Name	原则 H.S.	Terminal No. 14P 15P	Connector No. M7 Connector Name WIRE TO WIRE Connector Color WHITE 2 4 5 6 6 6 6 6 6 6 6 6	
DISPLAY AUDIO SYSTEM CONNECTORS - WITH BOSE AUDIO SYSTEM Connector No. M3 Connector No. M4 Connector No. M5 Connector No. M6 Connector No. M7 Connector No. Connector No. Connector No. M7 Connector No. Connector N	((7/B)	OR 9R 8R	Signal Name -	Signal Name	
AUDIO	FUSE BLOCK	78 68 58 48 38 28 18 16 16 16 16 16 16 1			
BOSE /	Name FU Color BR	7R 6R 5F	o. Color of Wire	Color of Wire W Wire B B B B B B B B B B B B B B B B B B B	
- WITH BC	Connector Name FUSE BLOCK (J/B) Connector Color BROWN	H.S.	Terminal No. 5R	Terminal No. 51J 51J 53J 53J 99J 100J	
CTORS					
A CONNE	J/B)		Signal Name	44 53 14 14 53 14 15 14 15 15 15 15 15	
SYSTEN	FUSE BLOCK (J/B) WHITE	3N	Signs	M6 WIRE TO WIRE	
AUDIO S	r Name FUSE E	8 8 1	No. Color of LG	Connector No. M6 Connector Name WIRE TO WIRE Connector Color GRAY 10 20 30 40 170 170 170 170 170 170 170 170 170 17	ĺ
Connector No.	Connector Name Connector Color	H.S.	Terminal No. 2N	Connector No. Connector Color H.S. 1131	•
DIS				AANIA0931GB	

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Connector No	M8		Connector No	No Ma			Connector No	M11	
Connector N	lame WIR	Connector Name WIRE TO WIRE	Connector Name	_	WIRE TO WIRE		Connector Name		WIRE TO WIRE
Connector Color	color WHITE	ITE	Connector Color	-	WHITE		Connector Color	olor WHITE	Щ
画 H.S.	6 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 0 8 0 1 2 0 1 7	南 H.S.	7 6 5 14 15 14	4 13 14 17 19 10 10 10 10 10 10 10 10 10 10 10 10 10		on H.S.	8 10 3	2 3
Terminal No.	Color of Wire	Signal Name	Terminal No.	No. Color of Wire	f Signal Name		Terminal No.	Color of Wire	Signal Name
0	SHIELD	1	-	σ	ı		5	ŋ	ı
က	В	ı	2	<u>а</u>	ı		9	œ	I
4	8	ı	က	Œ	ı				
5	ŋ	1	4	>	ı				
9	۳	ı	S	σ	ı				
7	8	ı	∞	BG	ı				
8	SHIELD	1	o	>	ı				
6	В	ı	10	Œ	ı				
10	8	1	+	G	ı				
=	ŋ	1	12	œ	1				
12	æ	ı	13	σ	ı				
			14	۵	ı				
			15	œ	ı				
			16	SB	1				
-	ΙГ		(ΙГ				ΙГ	
Connector No.	lo. M14	4	Connector No.	r No. M18	ω		Connector No.	o. M20	
Connector N	lame WIF	Connector Name WIRE TO WIRE	Connector Name		BCM (BODY CONTROL		Connector Name		BCM (BODY CONTROL
Connector Color	olor WHIIE		Connector Color	_	BLACK		Connector Color		X
				-					
H.S.	4	8 / 9 9	H.S.	60 59 58 57 5 80 79 78 77 7	56 55 54 53 52 51 50 49 48 47 46 47 76 75 74 73 72 71 70 69 68 67 66 6	46 45 44 43 42 41 66 65 64 63 62 61	H.S.	116 115 114 113 128 127 126 125	116 115 114 113 112 111 110 109 108 107 106 105 128 127 126 125 124 123 122 121 120 119 118 117
Terminal No.	Color of Wire	Signal Name	Terminal No.	No. Color of Wire	f Signal Name		Terminal No.	Color of Wire	Signal Name
-	W	1	59	۵	CAN-L		109	ŋ	REVERSE SIGNAL
2	BG	I	09	_	CAN-H		113	А	ACC RELAY OUT

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S S 1		А
7 L L L L L L L L L L L L L L L L L L L		В
M24 COMBINATION WHITE 133 22 31 30 30 20 20 20 20 20 20 20 20 20 20 20 20 20		С
or No. M24 or Name CON/ or Color WHI 17 16 15 14 13 13 13 13 13 13 13 13 13 13 13 13 13		D
Connector No. M24 Connector Name COMBINATION METER Connector Color WHITE Connector Color WHITE Connector Color WHITE Connector Color WHITE Constant Color		E
		F
M22 Connector No. M22 Connector Name DATA LINK CONNECTOR Connector Color WHITE	M30 Connector Name COMBINATION SWITCH (SPIRAL CABLE) Connector Color GRAY	G
M22 DATA LIN WHITE Or of ire G G G G	M30 COMBINATI (SPIRAL CAG GRAY GRAY IN 12 28 28 21 ST 28 28 24 ST 28 28 28 28 24 ST 28 28 28 28 28 28 ST 28 28 28 28 28 28 28 ST 28 28 28 28 28 28 28 28 28 ST 28 28 28 28 28 28 28 28 28 28 28 28 28	- 11
No. Maze DAT Color of UMire LG SB	r No. M30 Color of Write P P P P R R R R R R R R R R R R R R R	
Connector Nome Connector Name Connector Color Terminal No. Co	Connector Name Connector Name Connector Color Terminal No. W 24 31 33	J
		K
Connector No. M21 Connector Name BCM (BODY CONTROL MODULE) Connector Color WHITE Terminal No. Color of Signal Name 139 W BAT POWER F/L	M25 M25 Connector No. M25 Connector Name ACCESSORY RELAY-2 Connector Color BLUE	L
MP21 MP21 MPDULL MODULL MODULL MUTTE	Same ACCESS Solor of BLUE Wire Wire B B Color of B Color of B B B B Color of	
No. Color	No.	AV
Connector No. M21 Connector Name BCM (B MODDUL Connector Color WHITE H.S. Color of Mire 139 Wire	Connector No. Connector Name Connector Color H.S. Terminal No. W 3 1	0

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Signal Name	REVERSE	ı	ı	1	1	GND	CAMERA GND	ı	ı	ı	ı	MIC GND	MIC VCC	MIC SIG
Color of Wire	G	I	ı	ı	1	В	В	1	-	I	ı	SHIELD	8	В
Terminal No.	39	40	41	42	43	44	45	46	47	48	49	50	51	52

Signal Name	ILLUMINATION GND	ILL (+),LIGHT SW	PREAMP SHIELD	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)	RR SP RH (-)	1	1	ı	SPEED SIGNAL	BAT	GND
Color of Wire	GR	æ	В	В	Μ	В	œ	_	-	ı	В	G	GR
Terminal No.	8	6	10	11	12	13	14	15	16	17	18	19	20

	Signal Name	M-CAN1-H	1	M-CAN2-L	M-CAN2-H	-	ı	-	ı	ı	ı	ı	I	ı
Color of	Wire	SB	_	LG	SB	_	ı	_	1	ı	-	ı	ı	ı
	Terminal No.	26	27	28	29	30	31	32	33	34	35	36	37	38

	UNIT		13 14 15 16 17 18 20	Signal Name	AMP ON	FR SP LH (+)	FR SP LH (-)	RR SP (+)	RR SP (-)	1	ACC
M45	ne AUDIO UNIT	or WHITE	1 1 2 3 4 10 11 12 1	Color of Wire	×	В	>	ŋ	æ	1	Ь
Connector No.	Connector Name	Connector Color WHITE	H.S.	Terminal No.	1	2	ဇ	4	2	9	

M46	AUDIO UNIT	WHITE	22 23 24 25 26 27 28 29 30 31 32 33 34 35 38 38 38 38 38 38 38 38 38 38 38 38 38	of Signal Name	D COMPOSITE -	COMPOSITE +	CAMERA 6.2V	CAMERA GND	M-CAN1-L
	me Al		22 23 24 38 39 40	Color of Wire	SHIELD	В	≥	Œ	ГG
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	21	22	23	24	25

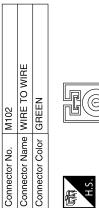
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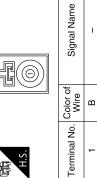
Connector Name JOINT C	JOINT CONNECTOR-M04 WHITE		Connector Name WIRE TO WIRE Connector Color WHITE	Vame WIRE T	E TO WIRE		Connector Name		FRONT SPEAKER LH BROWN	
H.S.	4 3 2 1		H.S.	-	1		明.S.		2	
Terminal No. Wire	Signal Name		Terminal No.	Color of Wire	Signal Name		Terminal No.	Color of Wire	Signal Name	ame
2 SHIELD	1		-	æ	1		-	Œ	1	
3 B	ı		2	Ф	1		2	۵	I	
		1								
Connector No. M63			Connector No.	No. M88			Connector No.	Jo. M101	_	
Connector Name FRC	Connector Name FRONT SPEAKER RH Connector Color BROWN		Connector Name	Name COMB (SPIRA	Connector Name COMBINATION SWITCH (SPIRAL CABLE) Connector Color GRAY		Connector Name WIRE TO WIRE	lame WIRE	E TO WIRE	
H.S.	2 1		(京) H.S.	20 19 18 1	20 19 18 17 16 15 14 13	7	H.S.			
Terminal No. Color of Wire	Signal Name		Terminal No.	Color of Wire	Signal Name		Terminal No.	Color of Wire	Signal Name	ame
0	1		14	8	ı		-	В	ı	
2 W	ı		15	_	1		2	В	1	
		1	17	BB	1		м	Δ.		
AV	L	К	J	1	G H	F	Е	D	С	В

Revision: August 2012 AV-145 2013 Altima Sedan

Connector No. M132 Connector Name USB INTERFACE Connector Color BLUE	H.S.	Terminal No. Color of Signal Name	1 G	2 L	3 В	- M 4	5 SHIELD –
M132 ame USB IN blor BLUE		Color of Wire	G		œ	8	SHIELD
Sonnector No Sonnector No Sonnector Co	南 H.S.	Terminal No.	-	2	8	4	5
Connector No. M105 Connector Name AUDIO UNIT Connector Color PURPLE	H.S.	Terminal No. Color of Signal Name	61 B –				

	Connector No.	M149	6	Connector No. M156	آه.	1156
	Connector Name AUDIO UNIT	me AUE	NO UNIT	Connector N	Jame J	Connector Name JOINT CONNECTOR-M
<u> </u>	Connector Color BLUE	lor BLU	Ш	Connector Color WHITE	Color	VHITE
]						
	晋		24	6		4 3 2 1
	H.S.			H.S.		
	Terminal No. Color of Wire	Color of Wire	Signal Name	Terminal No. Wire	Color Wir	of Signal Name
I	53	8	VCC	က	_	1
	54	ŋ	GND	4	7	1
	55	٦	D+			
	99	Я	D-			
	57	SHIELD	ı			





89 DIO UNIT	٨t	09 88 88	Signal Name
. M139 me AUDIO	lor GRAY	88	Color of Wire
Connector No. M139 Connector Name AUDIO UNIT	Connector Color	H.S.	Terminal No. Color of Wire

Signal Name
ANT SUB
MAIN ANT
ANT ON

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	olor of Signal Name W -		M502 ANTENNA AMP.		Nire Signal Name B – B – B	
哥 H.S.	Terminal No. Co		Connector No. Connector Name	H.S.	Terminal No. Co	
	Signal Name		TO WIRE		Signal Name	
	Color of Wire W		o. M501 ame WIRE		Color of Wire B B B B	
原 H.S.	Terminal No		Connector N Connector N Connector C	南南 H.S.	Terminal No	
	Signal Name) WIRE		Signal Name	
4 3 2	Nor of Wire P		M500 WIRE TC		Mire B	
H.S.	Terminal No. Co		Connector No. Connector Name Connector Color	Ξ. S.	No. No.	
	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Color of Signal Name	Color of Signal Name		Name Terminal No. Color of Signal Name Terminal No. Color of Termina	Name Terminal No. Color of Signal Name Terminal No. Wire Connector No. Misor Connector No. Misor Connector Name Wire Signal Name Terminal No. Color of Connector Name Terminal No. Color of Signal Name Signal Name

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	Connector No. B6 Connector Name WIRE TO WIRE Connector Color WHITE Terminal No. Color of Signal Name 1 R - 2 2 P
Connector No. M504 Connector Name WIRE TO WIRE Connector Color BLACK Terminal No. Color of Signal Name 1 B	Terminal No. Color of Wire Signal Name 51J W - 62J B - 63J R - 65J G - 69J R - 610J P - 610J
Connector No. M503 Connector Name ANTENNA AMP. Connector Color BLACK Terminal No. Color of Signal Name 1 B	Connector No. B1 Connector Name WIRE TO WIRE Connector Color GRAY Su Au Su Lu tu 100 Su Su Su Lu tu 110 Su Su Su Lu tu 110 Su

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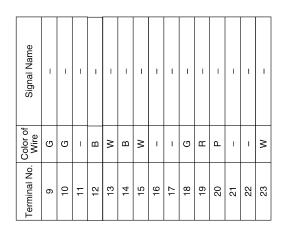
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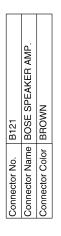
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	0.		Connector No.	1		Connector No.	o. B102	
Connector N. Connector Co	Connector Name REAR \	Connector Name REAR VIEW CAMERA Connector Color WHITE	Connector Name		SATELLITE RADIO ANTENNA	Connector Name WIRE TO WIRE Connector Color WHITE	ame WIRE	TO WIRE
			Connector Color	-	GREEN			
H.S.	4 8	5 1	高 A.S.H	<u> </u>	1 0	E.S.	2 8 8	3 4 5 6 9 10 11 12
Terminal No.	Color of Wire	Signal Name	Terminal No.	No. Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name
-	SHIELD	COMP	-	В	1	2	SHIELD	1
2	1	1		-		ဧ	ŋ	1
က	1	1				4	Œ	1
4	ŋ	CONT				2	В	1
2	Œ	COMP +				9	8	1
9	1	1				7	ŋ	ı
7	В	GND				8	SHIELD	ı
8	M	CAMERA ON				6	ŋ	ı
						10	œ	ı
						11	В	1
						12	M	1
Connector No.	o. B103		- National Control	Color of		Connector No.	o. B106	
Connector Na	Connector Name WIRE TO WIRE	TO WIRE	ם		Olyman Ivaline	Connector Name WIRE TO WIRE	ame WIRE	TO WIRE
Connector Color	olor WHITE		2	<u>_</u>	I	Connector Color	olor WHITE	ш
			ω	BG	ı		-	
喧	1 2 3	4 5 6 7	6	Д.	ı	E	1	6
V I	8 9 10 11 12	14 15	10	œ	ı		-	6 7 8
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Terminal No	Color of	Signal Name	12	*	1	Terminal	Color of	Signal Name
	Wire		13	G	1			
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3	ŋ	1	16	SB	ı			
_	>	-						

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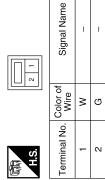
Connector No.). B124	24
Connector Na	ame (W	Connector Name (WITH BOSE AUDIO SYSTEM)
Connector Color WHITE	lor WH	IITE
原 H.S.		2 1
Terminal No. Color of Wire	Color o Wire	f Signal Name
1	Μ	-
2	g	1



	Signal Name	I	_	_	ı	_	-	ı	_
-	Color of Wire	_	В	В	В	В	BG	Ь	В
	Terminal No. Wire	-	2	3	4	5	9	7	8

Signal Name	ı	-	ı	-	ı	-	_	1
Color of Wire	G	GR	g	Μ	Д	Μ	В	g
Terminal No. Wire	30	31	32	33	34	35	36	37

Connector No.	B120
Connector Name	Connector Name (WITH BOSE AUDIO SYSTEM)
Connector Color WHITE	WHITE



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22	ဗြ	ည		7	31
B122	<u>M</u>	崗	٦	24 25	30
	ē	_		24	59
tor No.	tor Name BOSE SPEAKER AMP	tor Color BROWN	_		



Signal Name	ı	1	_	ı	1	ı
Color of Wire	В	8	GR	ŋ	SB	Μ
Terminal No. Wire	24	25	26	27	28	29

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Connector No. D1 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE
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Connector No. Connector Name MICROPHONE Connector Color WHITE Terminal No. Wire Signs 1 L 1 L 2 SHIELD
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Name WIRE Name WIRE Name
Connector No. Connector Color WHITE Connector Color WHITE H.S. Terminal No. Color of Signa 1

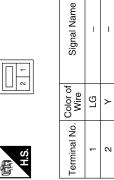
	FRONT DOOR SPEAKER LH (WITH BOSE AUDIO SYSTEM)	NMC	<u> </u>	Signal Name	1	-
. D20		lor BROWN		Color of Wire	ŋ	Ν
Connector No.	Connector Name	Connector Color	H.S.	Terminal No. Wire	-	2

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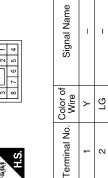
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Connector No.). D301	
Connector Name	ıme WIF	WIRE TO WIRE
Connector Color WHITE	lor WH	TE
H.S.	0 80	7 6 5 4
Terminal No.	Color of Wire	Signal Name
-	>	1
2	Ы	-

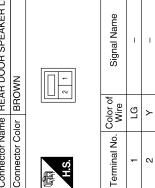
Connector No.	D202
Connector Name	Connector Name REAR DOOR SPEAKER LH
Connector Color BROWN	BROWN



Γ	
Connector No.	D201
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE
顾 H.S.	3 7 6 5 4



Connector No.	D302
Connector Name	Connector Name REAR DOOR SPEAKER LH
Connector Color BROWN	BROWN



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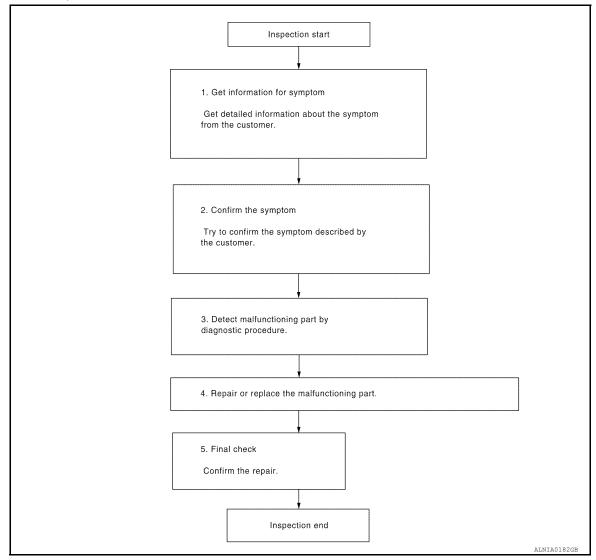
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow INFOID:0000000007986032 В

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.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[DISPLAY AUDIO WITH BOSE]

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

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000007986065

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	25 (5A)
19	Battery power supply	15 (20A)

Are the fuses blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Aud	Audio unit		Condition	Voltage	
Connector	Terminal	Ground	Condition	(Approx.)	
M45	7		Ignition switch: ON	Battery voltage	
IVI45	19	_	Ignition switch: OFF	Dallery Vollage	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect audio unit connector M46.
- Check continuity between audio unit connectors and ground.

Audio unit		Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
M45	20		Yes	
M46	45	_	res	
I - 41 !	10		•	

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

BOSE SPEAKER AMP

BOSE SPEAKER AMP: Diagnosis Procedure

INFOID:0000000007986066

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
27	Rattory power supply	12 (15A)
28	Battery power supply	11 (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 Bose speaker amp. connector B122.
- 3. Check voltage between Bose speaker amp. connector B122 and ground.

Bose spe	Bose speaker amp.		Condition	Voltage
Connector	Terminal	Ground	Condition	(Approx.)
B122	27		Ignition switch: OFF	Battery voltage
D122	28	_	Ignition switch. OFF	Dattery voltage

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 Bose speaker amp. connector B122.
- 3. Check continuity between Bose speaker amp. connector B122 and ground.

Bose speaker amp.		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
B122	26	_	Yes	
DIZZ	31	<u>—</u>	163	

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000007986074

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Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1.CONNECTOR CHECK

Check the audio unit, Bose speaker amp. 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 (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B121 and suspect front door speaker connector.
- 2. Check continuity between Bose speaker amp. connector B121 and suspect front door speaker connector.

Bose speaker amp. Front door speaker		Continuity			
Connector	Terminal	Connector	Terminal	Continuity	
	20	- D20 (LH)	D00 (LLI)	1	
B121	19		2	Yes	
DIZI	7	D120 (RH)	1	165	
	6		2		

3. Check continuity between Bose speaker amp. connector B121 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Ground	Continuity
	20		
B121	19		No
	7	_	NO
	6		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK FRONT DOOR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B121 and suspect front door speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- Check signal between Bose speaker amp. connector B121 and ground.

Bose speaker amp. connector B121			
(+)	(-)	Condition	Reference value
Terminal	Terminal		

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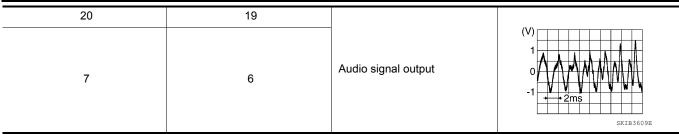
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FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]



Is the inspection result normal?

YES >> Replace front door speaker. Refer to AV-190, "Removal and Installation".

NO >> GO TO 4

4. CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (AUDIO UNIT)

- Turn ignition switch to OFF.
- 2. Disconnect Bose speaker amp. connector B121 and audio unit connector M45.
- 3. Check continuity between Bose speaker amp. connector B121 and audio unit connector M45.

Bose spe	Bose speaker amp.		Audio unit	
Connector	Terminal	Connector	Terminal	Continuity
	2	3		
B121	3	M45	2	Yes
DIZI	4		12	165
	5		11	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose spe	Bose speaker amp.		Continuity	
Connector	Terminal	- Ground	Continuity	
	2			
D404	3		Na	
B121	4	_	No	
	5			

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK FRONT DOOR SPEAKER SIGNAL (AUDIO UNIT)

- Connect Bose speaker amp. connector B121 and audio unit connector M45.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M45 and ground.

Audio unit co	onnector M45		
(+)	(-)	Condition	Reference value
Terminal	Terminal		
2	3		
11	12	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E

FRONT DOOR SPEAKER

[DISPLAY AUDIO WITH BOSE] < DTC/CIRCUIT DIAGNOSIS > >> Replace Bose speaker amp. Refer to AV-193, "Removal and Installation". YES NO >> Replace audio unit. Refer to AV-186, "Removal and Installation". Α В C D Е F G Н J

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FRONT SPEAKER

Diagnosis Procedure

INFOID:0000000007986078

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CONNECTOR CHECK

Check the audio unit, Bose speaker amp. 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 SPEAKER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B122 and suspect front speaker connector.
- 2. Check continuity between Bose speaker amp. connector B122 and suspect front speaker connector.

Bose spe	Bose speaker amp.		Front speaker			
Connector	Terminal	Connector	Terminal	Continuity		
	37	M55 (LH)	NACE (LLI)	MEE (LLI)	1	
B122	36		2	Yes		
B122	34	M63 (RH)	1	res		
	35		2			

3. Check continuity between Bose speaker amp. connector B122 and ground.

Bose sp	Bose speaker amp.		Continuity	
Connector	Terminal	- Ground	Continuity	
	36			
B122	37		No	
DIZZ	34	_	INO	
	35			

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

$3. {\sf CHECK}$ FRONT SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B122 and suspect front speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between Bose speaker amp. connector B122 and ground.

Bose speaker amp	connector B122		
(+)	(–)	Condition	Reference value
Terminal	Terminal		

FRONT SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

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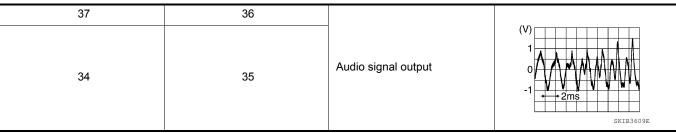
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Is the inspection result normal?

YES >> Replace front speaker. Refer to AV-188, "Removal and Installation".

NO >> GO TO 4

4. CHECK FRONT SPEAKER SIGNAL CIRCUIT CONTINUITY (AUDIO UNIT)

1. Turn ignition switch to OFF.

- 2. Disconnect Bose speaker amp. connector B121 and audio unit connector M45.
- 3. Check continuity between Bose speaker amp. connector B121 and audio unit connector M45.

Bose speaker amp.		Audi	Audio unit	
Connector	Terminal	Connector	Terminal	Continuity
B121	2	M45	3	
	3		2	Yes
	4		12	res
	5		11	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Ground	Continuity
	2		
B121	3		No
	4	_	INO
	5		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK FRONT SPEAKER SIGNAL (AUDIO UNIT)

- Connect Bose speaker amp. connector B121 and audio unit connector M45.
- Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M45 and ground.

Audio unit co	onnector M45		
(+)	(-)	Condition	Reference value
Terminal	Terminal		
2	3		
11	12	Audio signal output	(V) 1 0 -1 2ms SKIB3609E

Is the inspection result normal?

FRONT SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

>> Replace Bose speaker amp. Refer to <u>AV-193, "Removal and Installation"</u>. >> Replace audio unit. Refer to <u>AV-186, "Removal and Installation"</u>. YES

NO

CENTER SPEAKER

Diagnosis Procedure

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Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CONNECTOR CHECK

Check the audio unit, Bose speaker amp. 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 CENTER SPEAKER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B121 and center speaker connector M301.
- 2. Check continuity between Bose speaker amp. connector B121 and center speaker connector M301.

Bose spe	eaker amp.	Center speaker		Continuity
Connector	Terminal	Connector Terminal		Continuity
B121	9	M301	1	Yes
DIZI	8	IVISOT	2	165

3. Check continuity between Bose speaker amp. connector B121 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Ground	Continuity
B121	9	_	No
DIZI	8	_	NO

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

${\it 3.}$ CHECK CENTER SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B121 and center speaker connector M301.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between Bose speaker amp. connector B121 and ground.

Bose speaker amp. connector B121				
(+)	(–)	Condition	Reference value	
Terminal	Terminal			
9	8	Audio signal output	(V) 1 0 -1 2ms SKIB3609E	

Is the inspection result normal?

CENTER SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

YES >> Replace center speaker. Refer to AV-189, "Removal and Installation".

NO >> GO TO 4

4. CHECK CENTER SPEAKER SIGNAL CIRCUIT CONTINUITY (AUDIO UNIT)

- Turn ignition switch to OFF.
- 2. Disconnect Bose speaker amp. connector B121 and audio unit connector M45.
- 3. Check continuity between Bose speaker amp. connector B121 and audio unit connector M45.

Bose spe	eaker amp.	Audio unit		Continuity
Connector	Terminal	Connector Terminal		Continuity
	2		3	
B121	3	M45	2	Yes
	4		12	165
	5		11	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose s	Bose speaker amp.		Continuity
Connector	Terminal	- Ground	Continuity
	2		
B121	3		No
	4	_	INO
	5		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK CENTER SPEAKER SIGNAL (AUDIO UNIT)

- 1. Connect Bose speaker amp. connector B121 and audio unit connector M45.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M45 and ground.

Audio unit connector M45			
(+)	(-)	Condition	Reference value
Terminal	Terminal		
2	3		
11	12	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E

Is the inspection result normal?

YES >> Replace Bose speaker amp. Refer to <u>AV-193, "Removal and Installation"</u>.

NO >> Replace audio unit. Refer to AV-186, "Removal and Installation".

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

REAR DOOR SPEAKER

Diagnosis Procedure

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Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1.CONNECTOR CHECK

Check the audio unit, Bose speaker amp, 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 (BOSE SPEAKER AMP.)

- Disconnect Bose speaker amp. connectors and suspect rear door speaker connector.
- Check continuity between Bose speaker amp. connectors and suspect rear door speaker connector.

Bose spe	eaker amp.	Rear door speaker		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B121	10	D202 (LH)	1	
DIZI	23		2	Yes
B122	24	D302 (RH)	1	res
B122	29		2	

Check continuity between Bose speaker amp. connectors and ground.

Bose speaker amp.		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
B121	10		No	
ВІЗІ	23			
B122	24	_		
B122	29	-		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

$3. {\sf CHECK}$ REAR DOOR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- Connect Bose speaker amp. connectors and suspect rear door speaker connector.
- Turn ignition switch to ACC. 2.
- Push audio unit POWER switch.
- Check signal between Bose speaker amp. connectors and ground.

Bose speaker amp.				
Connector	(+)	(-)	Condition	Reference value
Connector	Terminal	Terminal		

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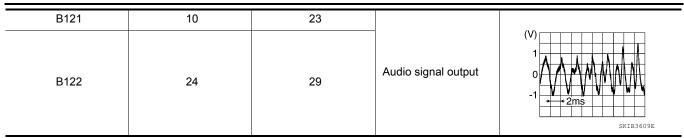
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REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]



Is the inspection result normal?

YES >> Replace rear door speaker. Refer to AV-191, "Removal and Installation".

NO >> GO TO 4

4. CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (AUDIO UNIT)

- 1. Turn ignition switch to OFF.
- 2. Disconnect Bose speaker amp. connector B121 and audio unit connector M45.
- 3. Check continuity between Bose speaker amp. connector B121 and audio unit connector M45.

Bose spe	Bose speaker amp.		o unit	Continuity
Connector	Terminal	Connector Terminal		Continuity
	14		4	
B121	15	M45	5	Yes
	12		13	res
	13		14	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose spe	Bose speaker amp.		Continuity	
Connector	Terminal	- Ground	Continuity	
	14		Ne	
D404	15			
B121	12	_	No	
	13	-		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK REAR DOOR SPEAKER SIGNAL (AUDIO UNIT)

- Connect Bose speaker amp. connector B121 and audio unit connector M45.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M45 and ground.

Audio unit co	onnector M45		
(+)	(-)	Condition	Reference value
Terminal	Terminal		
4	5		
13	14	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E

REAR DOOR SPEAKER

[DISPLAY AUDIO WITH BOSE] < DTC/CIRCUIT DIAGNOSIS > >> Replace Bose speaker amp. Refer to AV-193, "Removal and Installation". YES NO >> Replace audio unit. Refer to AV-186, "Removal and Installation". Α В С D Е F G Н J K L M

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REAR SPEAKER

Diagnosis Procedure

INFOID:0000000007986088

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CONNECTOR CHECK

Check the audio unit, Bose speaker amp. 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 (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B122 and suspect rear speaker connector.
- 2. Check continuity between Bose speaker amp. connector B122 and suspect rear speaker connector.

Bose spe	eaker amp.	Rear speaker		Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
	25	B120 (LH)	D420 /LLI)	D400 (LLI)	1	
B122	30		2	Yes		
	33	B124 (RH)	1	165		
	32		2			

3. Check continuity between Bose speaker amp. connector B122 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Ground	Continuity
	30		
B122	25		No
	33	_	INO
	32		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

${f 3.}$ CHECK REAR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B122 and suspect rear door speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between Bose speaker amp. connector B122 and ground.

Bose speaker amp. connector B122			
(+)	(–)	Condition	Reference value
Terminal	Terminal		

REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

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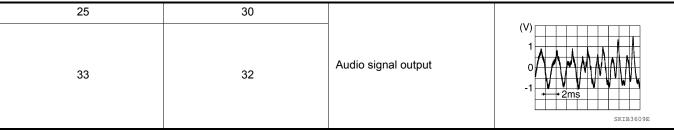
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Is the inspection result normal?

YES >> Replace rear speaker. Refer to AV-192, "Removal and Installation".

NO >> GO TO 4

4. CHECK REAR SPEAKER SIGNAL CIRCUIT CONTINUITY (AUDIO UNIT)

1. Turn ignition switch to OFF.

- 2. Disconnect Bose speaker amp. connector B121 and audio unit connector M45.
- 3. Check continuity between Bose speaker amp. connector B121 and audio unit connector M45.

Bose spe	eaker amp.	Audio unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	14		4	
B121	15	M45	5	Yes
	12		13	res
	13		14	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose spe	Bose speaker amp.		Continuity
Connector	Terminal	— Ground	Continuity
	14		No
B121	15		
БІΖІ	12	_	NO
	13		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

CHECK REAR SPEAKER SIGNAL (AUDIO UNIT)

- 1. Connect Bose speaker amp. connector B121 and audio unit connector M45.
- Turn ignition switch to ACC.
- 3. Push audio unit POWER switch.
- 4. Check signal between audio unit connector M45 and ground.

Audio unit co	onnector M45			
(+)	(-)	Condition	Reference value	C
Terminal	Terminal			
4	5			
13	14	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E	F

Is the inspection result normal?

REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

>> Replace Bose speaker amp. Refer to <u>AV-193, "Removal and Installation"</u>. >> Replace audio unit. Refer to <u>AV-186, "Removal and Installation"</u>. YES

NO

AMP ON SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

AMP ON SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007986090

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Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CHECK CONTINUITY BETWEEN AUDIO UNIT AND BOSE SPEAKER AMP.

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector M45 and Bose speaker amp. connector B121.
- 3. Check continuity between audio unit connector M45 and Bose speaker amp. connector M121.

Audi	Audio unit		Bose speaker amp.		
Connector	Terminal	Connector Terminal		Continuity	
M45	1	B121	18	Yes	

Check continuity between audio unit connector M45 and ground.

Audio unit		Ground	Continuity	
Connector	Terminal	Ordana	Continuity	
M45	1	_	No	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2.CHECK AUDIO UNIT VOLTAGE

- 1. Connect audio unit connector M45.
- 2. Turn ignition switch ON.
- 3. Check voltage between audio unit connector M45 and ground.

Audio unit (+)		Ground	V 16
		()	Voltage (Approx.)
Connector	Terminal	(-)	(44.5)
M45	1	_	Battery voltage

Is the inspection result normal?

YES >> Replace Bose speaker amp. Refer to AV-193, "Removal and Installation".

NO >> Replace audio unit. Refer to <u>AV-186, "Removal and Installation"</u>.

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REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007986111

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CHECK REVERSE INPUT SIGNAL

- 1. Turn ignition switch ON.
- Shift the selector lever to R (reverse).
- 3. Check voltage between audio unit connector M46 and ground.

Audio unit		Ground		
((+)		Condition	Voltage (Approx.)
Connector	Terminal	(-)		, , ,
M46	39	_	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.
- Disconnect audio unit connector M46 and rear view camera connector.
- 3. Check continuity between audio unit connector M46 and rear view camera connector B35.

Audi	Audio unit		Rear view camera		Rear view camera	
Connector	Terminal	Connector	Terminal	Continuity		
M46	23	B35	8	Yes		

4. Check continuity between audio unit connector M46 and ground.

Audio unit			Continuity
Connector	Terminal	Ground	Continuity
M46	23		No

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK CAMERA POWER SUPPLY VOLTAGE

- Connect audio unit connector M46 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 M46 and ground.

Audio unit		Ground		
((+)		Condition	Voltage (Approx.)
Connector	Terminal	(-)		(FF - /
M46	23	_	Selector lever is in "R".	6.0 V

Is inspection result normal?

YES >> GO TO 4.

NO >> Replace audio unit. Refer to AV-186, "Removal and Installation".

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

4. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector M46 and rear view camera connector.
- 3. Check continuity between audio unit connector M46 and rear view camera connector B35.

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M46	22	B35	5	Yes

4. Check continuity between audio unit connector M44 terminal 82 and ground.

Audio unit			Continuity
Connector	Terminal	Ground	Continuity
M44	22		No

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness or connectors.

CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M46 and rear view camera connector B35.

Audi	o unit	Rear vie	w camera	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M46	24	B35	7	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 M46 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 M46 and ground.

Audi	Audio unit				
(+)	()	Condition	Reference value	
Connector	Terminal	(-)			
M46	22	_	Camera image dis- played.	(V) 0. 4 0 -0. 4 → 40µs SKIB2251J	

Is inspection result normal?

YES >> Replace audio unit. Refer to AV-186. "Removal and Installation".

NO >> Replace rear view camera. Refer to AV-202, "Removal and Installation".

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MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007986108

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector M46 and microphone connector R7.
- 3. Check continuity between audio unit connector M46 and microphone connector R7.

Aud	Audio unit		Microphone	
Connector	Terminal	Connector	Terminal	Continuity
	50		2	
M46	51	R7	4	Yes
	52		1	

4. Check continuity between audio unit connector M46 and ground.

Audio unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
	50		
M46	51	_	No
	52		

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2.check microphone vcc voltage

- 1. Connect audio unit connector M46.
- 2. Turn ignition switch ON.
- 3. Check voltage between terminals of audio unit connector M46.

Audio unit c		
(+) (-)		Voltage (Approx.)
Terminal	Terminal	()
51	50	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace audio unit. Refer to AV-186. "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

- Connect microphone connector.
- Check signal between terminals of audio unit connector M46.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

Audio unit connector M46				Α
(+)	(-)	Condition	Reference value	
Terminal	Terminal			В
52	50	Speak into microphone.	(V) 2. 5 2. 0 1. 5 1. 0 0. 5 0 + 2ms	C

Is the inspection result normal?

>> Replace audio unit. Refer to <u>AV-186, "Removal and Installation"</u>. >> Replace microphone. Refer to <u>AV-201, "Removal and Installation"</u>. YES

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STEERING SWITCH

Diagnosis Procedure

INFOID:0000000007986095

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

- Turn ignition switch OFF.
- 2. Disconnect combination switch connector M88.
- 3. Check resistance between combination switch connector terminals.

Combination swi	Combination switch connector M88		Resistance Ω	
Terminal	Terminal	Condition	(Approx.)	
		Depress SOURCE switch.	1	
		Depress △ switch.	121	
14		Depress ∇ switch.	321	
		Depress √ switch.	723	
		Depress ENTER switch.	2023	
	17	Depress - 🗘 switch.	1	
		Depress 4+ switch.	121	
15		Depress A switch.	321	
		Depress 5 switch.	723	
		Depress DISP switch.	2023	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to AV-196, "Removal and Installation".

2.CHECK HARNESS BETWEEN COMBINATION SWITCH AND COMBINATION METER

- 1. Disconnect combination meter connector M24 and combination switch connector M30.
- 2. Check continuity between combination meter connector M24 and combination switch connector M30.

Combination meter		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	3		24	
M24	24	M30	33	Yes
	4		31	

3. Check continuity between combination meter connector M24 and ground.

Combination meter		Ground	Continuity
Connector	Terminal	Giodila	Continuity
	3		
M24	24	_	No
	4		

Is the inspection result normal?

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M30 and M88.

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

Is the inspection result normal?

YES >> GO TO 4.

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

f 4.CHECK HARNESS BETWEEN COMBINATION METER AND AUDIO UNIT

- 1. Disconnect audio unit connector M46.
- Check continuity between combination meter connector M24 and audio unit connector M46.

Combination meter		Audio unit		Continuity
Connector	Terminal	Connector Terminal		Continuity
M24	37	M46	26	Yes
IVI24	36	10140	25	165

3. Check continuity between combination meter connector M24 and ground.

Combination meter		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M24	37		No	
IVIZ 4	36	_	INO	

Is the inspection result normal?

YES >> Replace audio unit. Refer to AV-186, "Removal and Installation".

NO >> Repair or replace harness or connectors.

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USB CONNECTOR

[DISPLAY AUDIO WITH BOSE]

USB CONNECTOR

Diagnosis Procedure

INFOID:0000000008542212

Regarding Wiring Diagram information, refer to AV-137, "Wiring Diagram".

1. CHECK USB INTERFACE HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect audio unit connector M147 and USB interface connector M132.
- 3. Check continuity between audio unit connector M147 and USB interface connector M132.

Audio unit		USB interface		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	53		4	
	54		1	
M147	55	M132	2	Yes
	56		3	
	57		5	

4. Check continuity between audio unit connector M147 and ground.

Audio unit			Continuity
Connector	Terminal	<u> </u>	Continuity
M147	54	Ground No	
101147	57	- Ground	INU

Is the inspection result normal?

YES >> Replace the USB interface. Refer to AV-187, "Removal and Installation".

NO >> Repair or replace harness or connectors.

AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:0000000008659219

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location	
The disk cannot be removed.	Audio unit	Malfunction in audio unit. Refer to AV-125, "On Board Diagnosis Function".	

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AUDIO SYSTEM

[DISPLAY AUDIO WITH BOSE]

Symptoms	Check items	Probable malfunction location
	No sound from all speakers.	Speaker circuit shorted to ground. Refer to AV-137, "Wiring Diagram". Bose amp. ON signal circuit malfunction. Refer to AV-171, "Diagnosis Procedure". Bose speaker amp. power supply and ground circuits malfunction. Refer to AV-155, "BOSE SPEAKER AMP: Diagnosis Procedure".
No sound comes out or the level of the sound is low.	Only a certain speaker (front door speaker LH, front door speaker RH, front speaker LH, front speaker RH, center speaker, rear door speaker LH, rear door speaker RH, rear speaker RH) does not output sound.	 Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and Bose speaker amp. Refer to: AV-157. "Diagnosis Procedure" (front door speaker). AV-160. "Diagnosis Procedure" (front speaker). AV-163. "Diagnosis Procedure" (center speaker). AV-165. "Diagnosis Procedure" (rear door speaker). AV-168, "Diagnosis Procedure" (rear speaker). Sound signal circuit malfunction between Bose speaker amp. and speaker. Refer to: AV-157, "Diagnosis Procedure" (front door speaker). AV-160, "Diagnosis Procedure" (front speaker). AV-163, "Diagnosis Procedure" (center speaker). AV-165, "Diagnosis Procedure" (rear door speaker). AV-168, "Diagnosis Procedure" (rear speaker). AV-168, "Diagnosis Procedure" (front door speaker). AV-189, "Removal and Installation" (front speaker). AV-189, "Removal and Installation" (front speaker). AV-189, "Removal and Installation" (rear door speaker). AV-191, "Removal and Installation" (rear speaker). AV-192, "Removal and Installation" (Rear speaker). AV-193, "Removal and Installation" (Rear speaker). Malfunction in Bose speaker amp. Refer to AV-193, "Removal and Installation".

AUDIO SYSTEM

[DISPLAY AUDIO WITH BOSE]

Symptoms	Check items	Probable malfunction location
	Noise comes out from all speakers.	Malfunction in audio unit. Refer to AV-125, "On Board Diagnosis Function". Malfunction in Bose speaker amp. Replace Bose speaker amp. Refer to AV-193. "Removal and Installation".
		Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and Bose speaker amp. Refer to:
		AV-157, "Diagnosis Procedure" (front door speaker). AV-160, "Diagnosis Procedure" (front speaker).
		 AV-163, "Diagnosis Procedure" (center speaker). AV-165, "Diagnosis Procedure" (rear door speaker).
		 AV-168, "Diagnosis Procedure" (rear speaker). Sound signal circuit malfunction between
		Bose speaker amp. and speaker. Refer to: - AV-157, "Diagnosis Procedure" (front door speaker).
Noise is mixed with audio.	Noise comes out only from a certain speaker (front door speaker LH, front door speaker LH)	AV-160, "Diagnosis Procedure" (front speaker). AV-163, "Diagnosis Procedure" (center speaker).
	er RH, front speaker LH, front speaker RH, center speaker, rear speaker door LH, rear door speaker RH, rear speaker LH, rear speaker RH).	 AV-165, "Diagnosis Procedure" (rear door speaker). AV-168, "Diagnosis Procedure" (rear speaker).
		Malfunction in speaker. Poor Installation of speaker (e.g. backlash and looseness).
		Refer to: - AV-190, "Removal and Installation" (front door speaker). - AV-188, "Removal and Installation" (front
		speaker). - AV-189, "Removal and Installation" (center speaker). - AV-191, "Removal and Installation" (rear
		door speaker). - AV-192, "Removal and Installation" (rear speaker). • Malfunction in audio unit.
		Refer to <u>AV-125, "On Board Diagnosis Function"</u> . • Malfunction in Bose speaker amp.
		Replace Bose speaker amp. Refer to AV- 193. "Removal and Installation".
	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-197, "Location of Antenna".
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 <u>AV-131</u>, "<u>Reference Value</u>". Poor connector connection of antenna or antenna feeder. Refer to <u>AV-197</u>, "<u>Location of Antenna</u>".

AUDIO SYSTEM

[DISPLAY AUDIO WITH BOSE]

Symptoms	Check items	Probable malfunction location
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 <u>AV-197</u>, "<u>Location of Antenna</u>".
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/".
- 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.	
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. 	Malfunction in audio unit. Replace audio unit. Refer to AV-186, "Removal and Installation".
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	Sound operation function is normal.	
party with hands-free phone communication.	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-174, "Diagnosis Procedure".

AUDIO SYSTEM

Check items

< SYMPTOM DIAGNOSIS >

Symptoms

[DISPLAY AUDIO WITH BOSE]

Probable malfunction location

Replace rear view camera. Refer to AV-

202, "Removal and Installation".

	 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-196. "Removal and Installation".
The system cannot be operated.	Steering switch's w∑, ♥ + , ♥ - , and switches do not work.	Steering switch signal circuit malfunction. Refer to AV-176, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-176, "Diagnosis Procedure".
RELATED TO REAR VIEW C	AMERA	
Symptoms	Check items	Probable malfunction location
	Reverse signal circuit malfunction.	Reverse signal circuit malfunction between BCM and audio unit. Refer to AV-172, "Diagnosis Procedure".
Rear view camera is inoperative.	Camera image signal circuit malfunction.	Camera image signal circuit malfunction between rear view camera and audio unit. Refer to AV-172, "Diagnosis Procedure".

Rear view camera malfunction.

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NORMAL OPERATING CONDITION

Description INFOID:000000008659220

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 lin	ked with the operation of the fuel pump.	Fuel pump condenser
Noise only occurs when various A cracking or snapping sound occurs with the operation of various switches.		Relay malfunction, audio unit malfunction
electrical components are operating.	The noise occurs when various motors are operating.	Motor case ground Motor
The noise occurs constantly, not just under certain conditions.		Rear defogger coil malfunctionOpen circuit in printed heaterPoor 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-179, "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.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO WITH BOSE]

STIME TOWN DIAGNOSIS >	
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.

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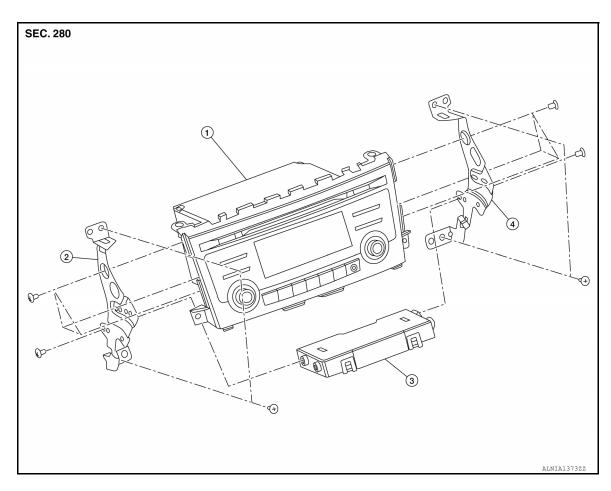
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REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View



1. AV control unit

- 2. AV control unit bracket LH
- 3. A/C auto amp.

INFOID:0000000008571560

4. AV control unit bracket RH

Removal and Installation

REMOVAL

- 1. Disconnect the negative battery terminal. Refer to PG-72, "Removal and Installation (Battery)".
- 2. Remove cluster lid C. Refer to IP-20, "Cluster Lid C".
- 3. Remove the A/C switch assembly. Refer to HAC-101, "Removal and Installation".
- 4. Remove the AV control unit screws, then pull out the AV control unit.
- 5. Disconnect the harness connectors from the AV control unit and remove.

INSTALLATION

USB CONNECTOR

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITH BOSE]

USB CONNECTOR

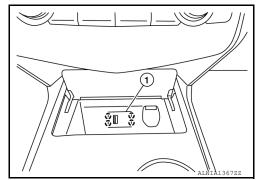
Removal and Installation

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Removal

- 1. Remove the CVT finisher. Refer to IP-14, "Exploded View".
- 2. Release the pawls and remove the USB interface (1) from the back of the CVT finisher.

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Installation

Installation is in the reverse order of removal.

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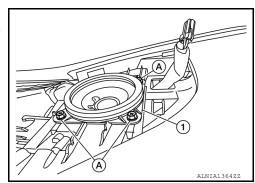
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FRONT SPEAKER

Removal and Installation

REMOVAL

- 1. Remove the front pillar finisher. Refer to INT-21, "FRONT PILLAR FINISHER: Removal and Installation".
- 2. Remove the front speaker grille using a suitable tool.
- 3. Remove the front speaker screws (A).
- 4. Pull out the front speaker (1), disconnect the harness connector from front speaker (1) and remove.



INSTALLATION

CENTER SPEAKER

< REMOVAL AND INSTALLATION >

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CENTER SPEAKER

Removal and Installation

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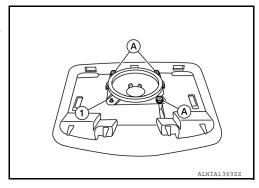
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REMOVAL

- 1. Remove the center speaker grille using a suitable tool.
- 2. Remove the center speaker screws (A).
- 3. Pull out the center speaker (1), disconnect the harness connector from the center speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

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FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

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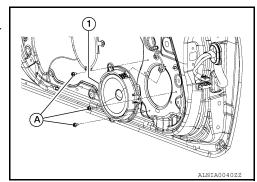
FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000008527602

REMOVAL

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



INSTALLATION

REAR DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITH BOSE]

REAR DOOR SPEAKER

Removal and Installation

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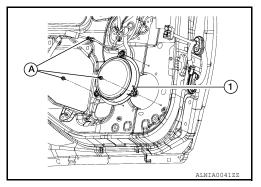
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REMOVAL

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



INSTALLATION

Installation is in the reverse order of removal.

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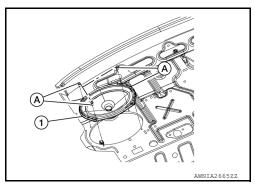
REAR SPEAKER

Removal and Installation

INFOID:0000000008746526

REMOVAL

- 1. Remove the rear parcel shelf finisher. Refer to INT-26, "Removal and Installation".
- 2. Remove the rear speaker screws (A).
- 3. Disconnect the harness connector from the rear speaker (1) and remove.



INSTALLATION

BOSE SPEAKER AMP

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITH BOSE]

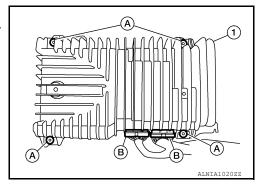
BOSE SPEAKER AMP

Removal and Installation

INFOID:0000000007986134

REMOVAL

- 1. Open the trunk lid.
- 2. Remove the Bose speaker amp. screws (A).
- 3. Disconnect the harness connectors (B) from the Bose speaker amp. (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

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SATELLITE RADIO ANTENNA

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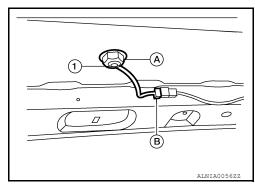
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SATELLITE RADIO ANTENNA

Removal and Installation

REMOVAL

- 1. Lower the headlining at the rear. Refer to INT-30, "Removal and Installation".
- 2. Remove the satellite radio antenna nut (A).
- 3. Disconnect the harness connector (B) from the satellite radio antenna (1) and remove.



INSTALLATION

GPS ANTENNA

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITH BOSE]

GPS ANTENNA

Removal and Installation

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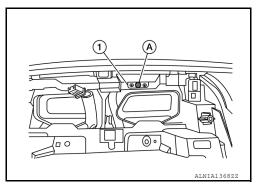
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REMOVAL

- 1. Remove the AV control unit. Refer to AV-104, "Removal and Installation".
- 2. Remove the GPS antenna screw (A) and the GPS antenna (1).



INSTALLATION

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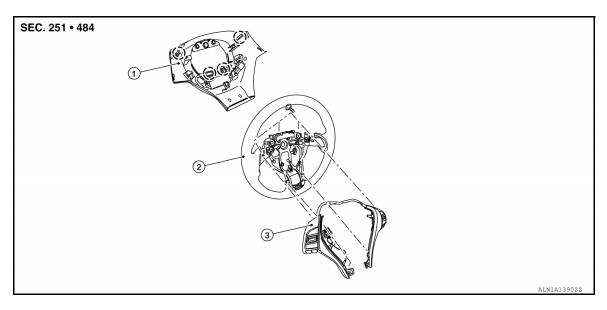
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STEERING SWITCH

Exploded View



- 1. Steering wheel rear finisher
- 2. Steering wheel
- 3. Steering switches

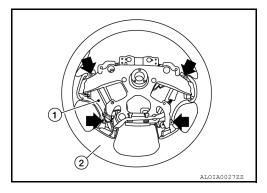
(Pawl

Removal and Installation

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REMOVAL

- Remove the steering wheel. Refer to <u>ST-31, "Removal and Installation"</u>
- 2. Release the pawls on the steering wheel rear finisher and remove.
- 3. Remove the steering switches screws (←).
- 4. Remove the steering switches (1) from steering wheel (2).



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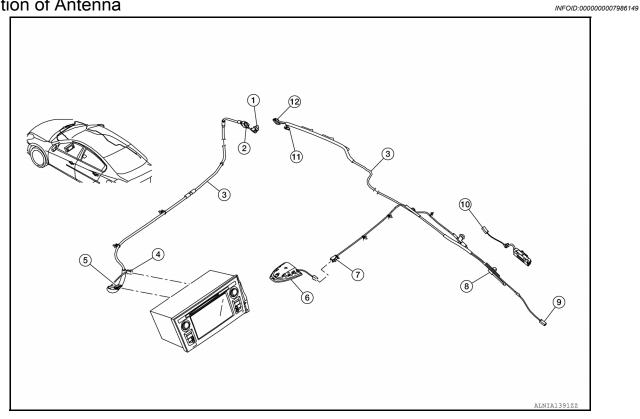
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ANTENNA FEEDER

Location of Antenna



- 1. M102
- 4. M105
- 7. B59
- 10. M503

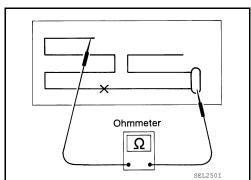
- 2. M101
- 5. M139
- 8. M502
- 11. M500

- 3. Antenna feeder
- 6. Satellite antenna
- 9. M504
- 12. M501

Window Antenna Repair

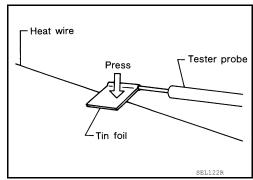
ELEMENT CHECK

 Attach probe circuit tester (ohm setting) to antenna terminal on each side.

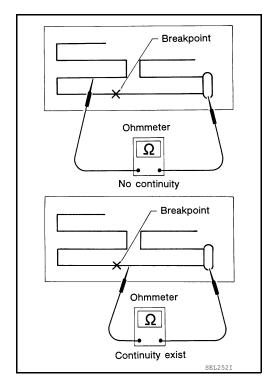


[DISPLAY AUDIO WITH BOSE]

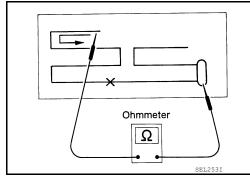
 When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



2. If an element is broken, no continuity will exist.



3. To locate a break, move probe along element. Tester indication will change abruptly when probe passes the broken point.



REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long
- · Drawing pen
- Heat gun
- Alcohol
- Cloth

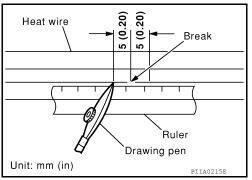
REPAIRING PROCEDURE

ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

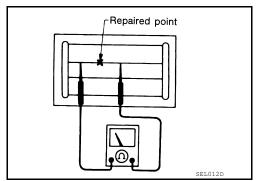
[DISPLAY AUDIO WITH BOSE]

- 1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
- 2. Apply a small amount of conductive silver composition to tip of drawing pen.
 - Shake silver composition container before use.
- Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



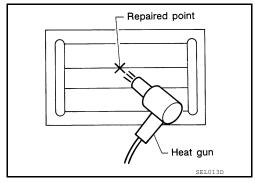
After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.



 Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet.

If a heat gun is not available, let the repaired area dry for 24 hours.



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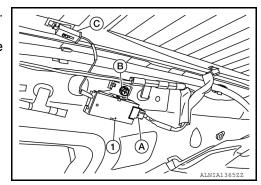
ANTENNA AMP.

Removal and Installation

INFOID:0000000008668919

REMOVAL

- 1. Remove the rear pillar finisher RH. Refer to INT-25, "REAR PILLAR FINISHER: Removal and Installation".
- 2. Disconnect the harness connector (A) from the antenna amp. (1).
- 3. Disconnect the antenna amp. harness connector (C) from the rear window glass.
- 4. Remove the antenna amp. screw (B) and the antenna amp. (1).



INSTALLATION

MICROPHONE

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO WITH BOSE]

MICROPHONE

Removal and Installation

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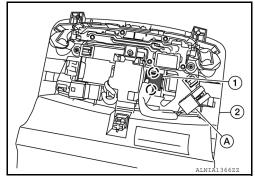
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REMOVAL

- 1. Remove the front room/map lamp assembly. Refer to INL-63, "Removal and Installation".
- 2. Disconnect the microphone connector (A) from the front room/ map lamp assembly (2).
- 3. Release the microphone pawls, then remove the microphone (1).
 - (_): Pawl



INSTALLATION

Installation is in the reverse order of removal.

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REAR VIEW CAMERA

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[DISPLAY AUDIO WITH BOSE]

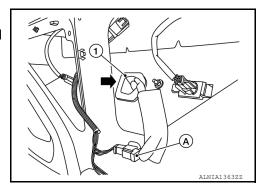
REAR VIEW CAMERA

Removal and Installation

INFOID:0000000008527606

REMOVAL

- 1. Remove trunk lid finisher. Refer to INT-33, "Exploded View".
- 2. Disconnect the harness connector (A) from rear view camera.
- 3. Push the rear view camera (1) in direction shown (←) and pull out to remove.



INSTALLATION

PRECAUTION

PRECAUTIONS

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

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least 3 minutes before performing any service.

Precaution for Trouble Diagnosis

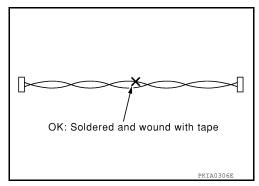
AV COMMUNICATION SYSTEM

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

Precaution for Harness Repair

AV COMMUNICATION SYSTEM

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



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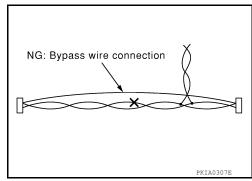
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PRECAUTIONS

< PRECAUTION >

[NAVIGATION WITHOUT BOSE]

 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

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- 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 >

[NAVIGATION WITHOUT BOSE]

PREPARATION

PREPARATION

Special Service Tools

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

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

Commercial Service Tools

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Tool name		Description	
Power tool		Loosening nuts, screws and bolts	
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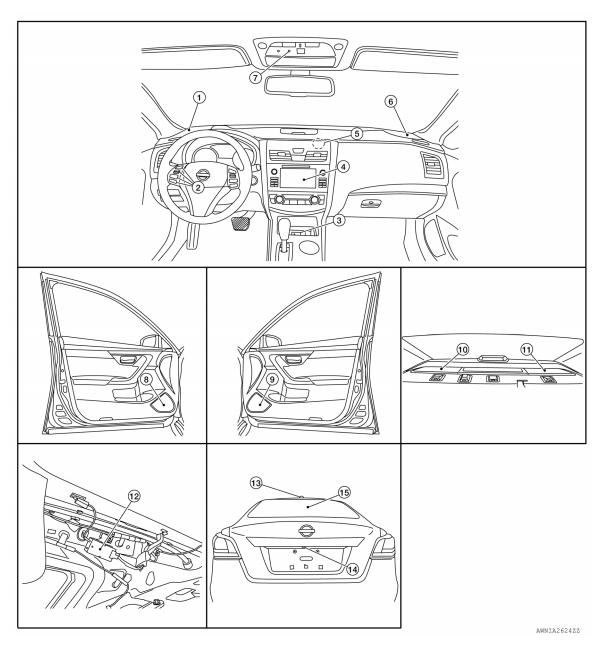
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INFOID:0000000008542255

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location



- 1. Front speaker LH
- 4. AV control unit
- 7. Microphone
- 10. Rear speaker RH
- 13. Satellite antenna

- 2. Steering switches
- 5. GPS antenna
- 8. Front door speaker LH
- 11. Rear speaker LH
- 14. Rear view camera

- 3. USB interface
- 6. Front speaker RH
- 9. Front door speaker RH
- 12. Antenna amp.
- 15. Window antenna

Component Description

INFOID:0000000008542256

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[NAVIGATION WITHOUT BOSE]

Part name Description		
AV control unit	 Operation of navigation and audio systems are integrated. Includes the audio, hands-free phone, navigation, satellite radio, rear view monitor, USB connection and AUX IN connection functions. Map data can be loaded from SD-card inserted in SD-card slot. Audio signals are output to each speaker. Inputs illumination signals required for display dimming control. Inputs signals for driving status recognition (vehicle speed and reverse). Touch panel functions can be operated by touching display directly. 	
Map SD-card	A collection of Map data.	
Front door speakers		
Front speakers	Outputs high, mid and low range audio signals from AV control unit.	
Rear speakers		
Steering switches	 Operations for audio, hands-free phone and voice recognition are possible. Steering switch signal is output to combination meter. Combination meter outputs steering switch signal to AV control unit. 	
Microphone	 Used for hands-free phone operations. Microphone signal is transmitted to AV control unit. Power is supplied from AV control unit. 	
USB interface	USB sound and data input signals are transmitted to AV control unit.	
Rear view camera	 Outputs image of vehicle rear to AV control unit. Power is supplied from AV control unit. 	
Satellite antenna	Satellite radio signal is received and transmitted to AV control unit.	
GPS antenna	GPS signal is received and transmitted to AV control unit.	
Antenna amp.	 AM/FM signal received by window antenna is amplified and transmitted to AV control unit. Power is supplied from AV control unit. 	
Window antenna	AM/FM signal is received and transmitted to antenna amp.	

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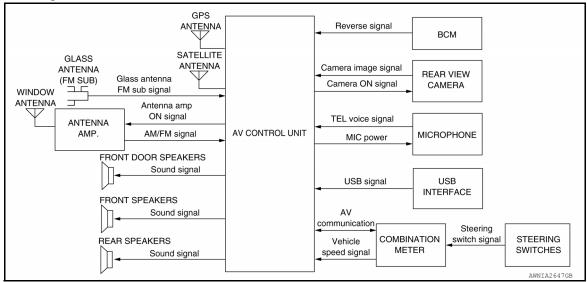
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SYSTEM

System Diagram

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System Description

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

Audio function and display are built into AV control unit.

This navigation has the following functions.

- Map data on SD-card
- Full support for playback of music from iPod® and USB device
- High resolution color 5 inch display with touch panel function
- FM/AM twin digital tuner
- USB mass storage connection
- Satellite radio
- Hands-free phone system

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

NAVIGATION SYSTEM FUNCTION

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 speakers.
- 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.

[NAVIGATION WITHOUT BOSE]

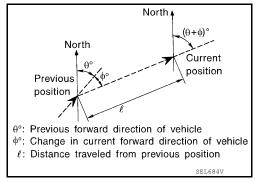
The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

Travel distance

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

Travel direction

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



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

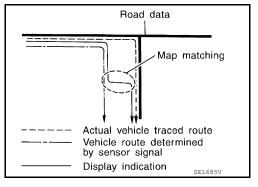
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

MAP-MATCHING

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

NOTE:

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

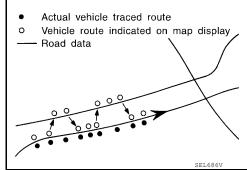


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the vehicle mark on the display must be corrected manually.

 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.



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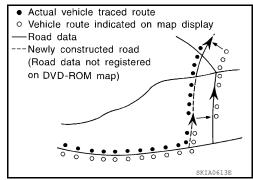
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[NAVIGATION WITHOUT BOSE]

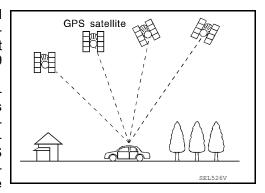
- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD-card, or when road pattern stored in the map data and the actual road pattern are different due to repair.
- The map-matching function may find another road and position the vehicle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

SATELLITE RADIO FUNCTION

- Satellite radio function is built into AV control unit.
- Sound signal (satellite radio) is received by satellite antenna and transmitted to AV control unit. AV control unit outputs sound signal to each speaker.

AUXILIARY INPUT FUNCTION

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

REAR VIEW MONITOR FUNCTION

Camera Image Operation Principle

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

USB CONNECTION FUNCTION

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

SYSTEM

< SYSTEM DESCRIPTION >

NAVIGATION WITHOUT BOSE

< SYSTEM DESCRIPTION >	[NAVIGATION WITHOUT BOSE]	
 Sound signals are transmitted from USB connector and AUX jack to the speaker and tweeter. 	ne AV control unit and output to each	
 iPod[®] is recharged when connected to USB connector and AUX jack. NOTE: 		
Use the enclosed USB harness when connecting iPod® to USB connector iPod® is a trademark of Apple inc., registered in the U.S. and other countries.	•	ı
	ries.	
 SPEED SENSITIVE VOLUME SYSTEM Volume level of this system goes up and down automatically in proport The control level can be selected by the customer. 	on to the vehicle speed.	(
HANDS-FREE PHONE SYSTEM		
Bluetooth [®] control is built into AV control unit.		
 The connection between cellular phone and AV control unit is performe The voice guidance signal is input from the AV control unit and output the cellular phone. 		
When A Call Is Originated		
 Spoken voice sound output from the microphone (microphone signal) is AV control unit outputs to cellular phone with Bluetooth[®] communication 	•	
Voice sound is then heard at the other party.		
When Receiving A CallVoice sound is input to own cellular phone from the other party.		(
 TEL voice signal is input to AV control unit by establishing Bluetooth[®] and the signal is output to front speakers. 	communication from cellular phone,	
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Revision: August 2012 AV-211 2013 Altima Sedan

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description INFOID:000000008628260

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.	
	FM monitor	_	Monitors the dynamic values of the current tuner	
	AM monitor	_		
Radio	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 BTHFU Status Radio Antenna USB Device iPod [®] firmware version Steering wheel key	The current system status is displayed.	
.,	Speaker Test 4kHz Speaker Test 100Hz	_	This activates a sequence of test tone outputs to the audio circuits one after the other for 1 second.	
	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.	
S	Self Test	SD Card 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:0000000008542259

METHOD OF STARTING

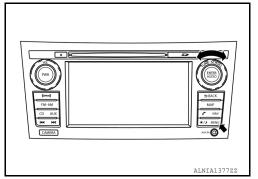
- 1. Turn the ignition ON.
- 2. Turn the audio system OFF.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

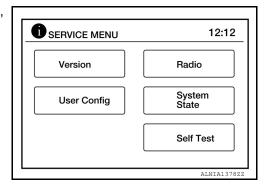
< SYSTEM DESCRIPTION >

[NAVIGATION WITHOUT BOSE]

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. When self diagnosis mode begins, a short beep will be heard. Shifting from current screen to previous screen is performed by pressing BACK button.



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



CONSULT Function

INFOID:0000000008659093

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-216, "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-233, "CONFIGURATION (AV CONTROL UNIT): Description".

CAN DIAG SUPPORT MNTR

Refer to LAN-15, "CAN Diagnostic Support Monitor".

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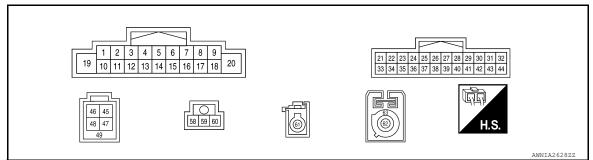
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ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal color)	Description		Condition		Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
2 (B)	3 (W)	Sound signal front speaker LH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
4 (G)	5 (R)	Sound signal rear speaker LH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
7 (P)	Ground	ACC power supply	Input	ACC	_	Battery voltage
8 (L)	_	CAN (H)	Input/ Output	_	_	_
9 (R)	33 (GR)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
11 (B)	12 (W)	Sound signal front speaker RH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION WITHOUT BOSE]

	Terminal Description		Condition		Reference value	
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
13 (G)	14 (R)	Sound signal rear speaker RH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
17 (P)	_	CAN (L)	Input/ Output	_	_	_
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	0 20 ms JSNIA0012GB
19 (G)	Ground	Battery power supply	Input	OFF	_	Battery voltage
20 (GR)	Ground	Ground	_	ON	_	0 V
25 (G)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse) Selector lever in any position other than R (reverse)	Battery voltage
30 (P)	_	MR output	Output	_	_	_
31 (SB)	_	M-CAN (H)	Input/ Output	_	_	-
32 (LG)	_	M-CAN (L)	Input/ Output	_	_	_
34 (B)	36 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	(V) 1 0 -1 + 2ms SKIB3609E
35 (W)	Ground	Microphone power supply	Output	ON	-	5.0 V
38 (SB)	_	M-CAN (H)	Input/ Output	_	_	_
39 (LG)	_	M-CAN (L)	Input/ Output	_	_	_
40 (BG)	Ground	Ignition power supply	Input	ON or START	_	Battery voltage

AV CONTROL UNIT

[NAVIGATION WITHOUT BOSE]

	Terminal Description		Condition		Reference value	
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
41 (B)	Ground	Camera image signal	Input	ON	When camera image is displayed	(V) 0. 4 0 -0. 4 -40μs SKIB2251J
42		Shield	_	_		
43 (W)	Ground	Camera power supply	Output	ON	When camera image is displayed	6.0 V
(۷۷)					Except for above	0 V
44 (R)	Ground	Camera ground	_	ON	_	0 V
45 (W)	_	USB ground	_	_	_	_
46 (G)	_	V BUS signal	_	_	_	_
47 (L)	_	USB D– signal	_	_	_	_
48 (R)	_	USB D+ signal	_	_	_	_
49		Shield	_	_	1	_
58 (B)	Ground	Glass antenna (FM sub) signal	Input	ON	_	5.0 V
59 (B)	Ground	AM/FM antenna signal	Input	ON	_	5.0 V
60 (B)	Ground	Antenna amp. ON signal	Output	ON	_	Battery voltage
61 (B)	Ground	Satellite antenna signal	Input	ON	_	5.0 V
62 (B)	Ground	GPS antenna signal	Input	ON	_	5.0 V
63	_	Shield	_		_	

DTC Index

CONSULT Display	Reference Page
U1000: CAN COMM CIRCUIT	AV-235, "DTC Logic"
U1010: CONTROL UNIT (CAN)	AV-236, "DTC Logic"
U1217: BLUETOOTH MODULE	AV-237, "DTC Logic"
U1229: iPod CERTIFICATION	AV-238, "DTC Logic"
U122F: Digital broadcasting connection error	AV-239, "DTC Logic"
U1244: GPS ANTENNA CONN	AV-240, "DTC Logic"
U1258: XM ANTENNA CONN	AV-241, "DTC Logic"
U1263: USB OVERCURRENT	AV-242, "DTC Logic"
U1264: ANTENNA AMP TERMINAL	AV-243, "DTC Logic"
U12AA: Configuration Error	AV-244, "DTC Logic"

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION WITHOUT BOSE]

CONSULT Display	Reference Page	
U12AB: FM Antenna error	AV-245, "DTC Logic"	
U12AC: Display Temperature too High	AV-246, "DTC Logic"	
U12AD: ECU Temperature too High	AV-247, "DTC Logic"	
U12AE: Internal Amplifier temperature Warning	AV-248, "DTC Logic"	
U12AF: CD Mechanism Temperature Warning	AV-249, "DTC Logic"	
U12B0: Supply Voltage Goes below 9V > 20s	AV-250, "DTC Logic"	
U12B1: Supply Voltage Goes High > 16V for 20s	AV-251, "DTC Logic"	
U1300: AV COMM CIRCUIT	AV-252, "DTC Logic"	
U1310: CONTROL UNIT (AV)	AV-254, "DTC Logic"	

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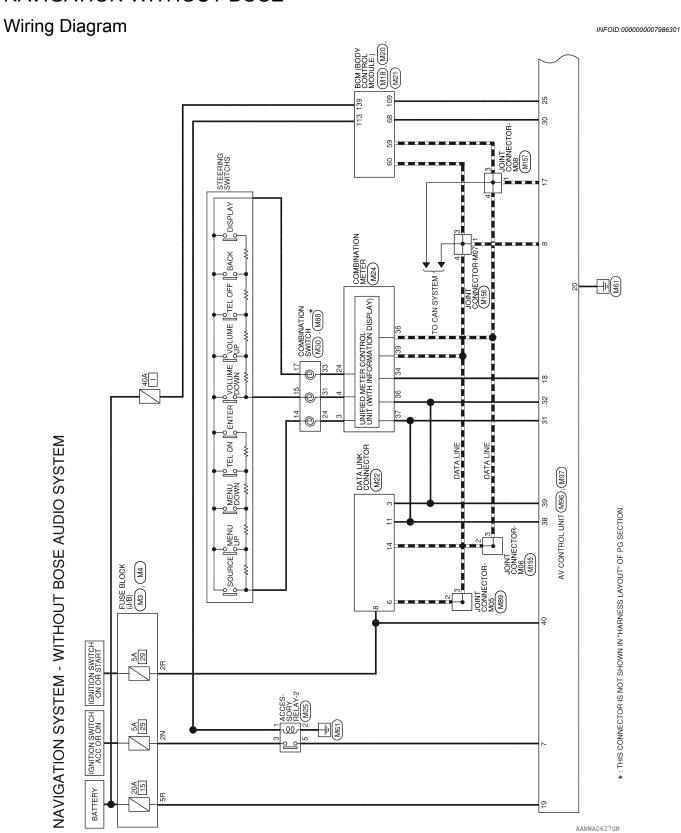
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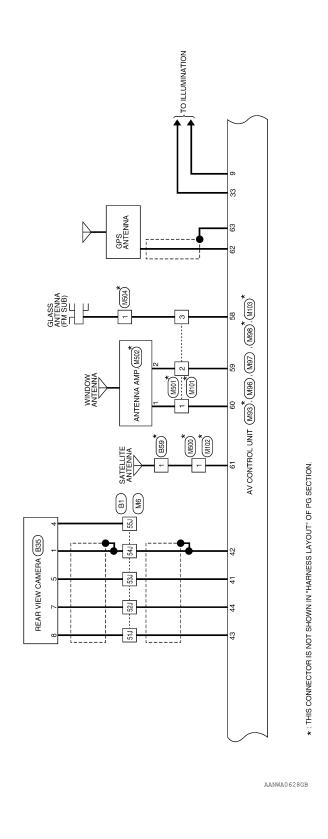
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WIRING DIAGRAM

NAVIGATION WITHOUT BOSE





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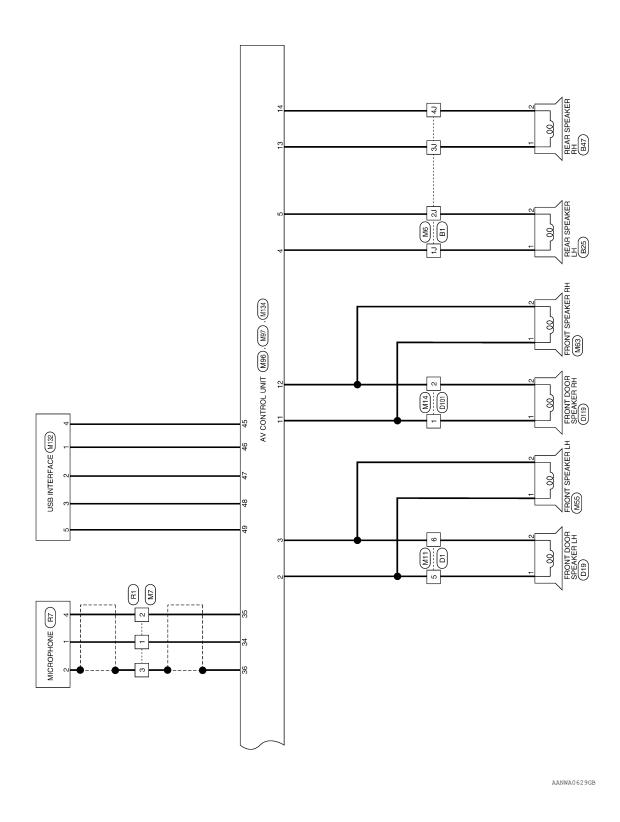
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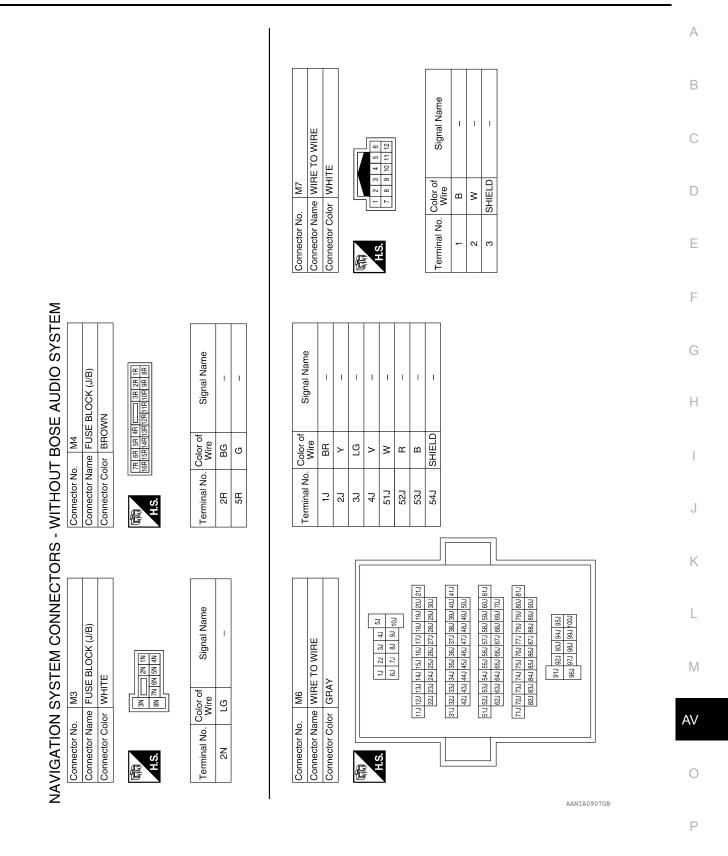
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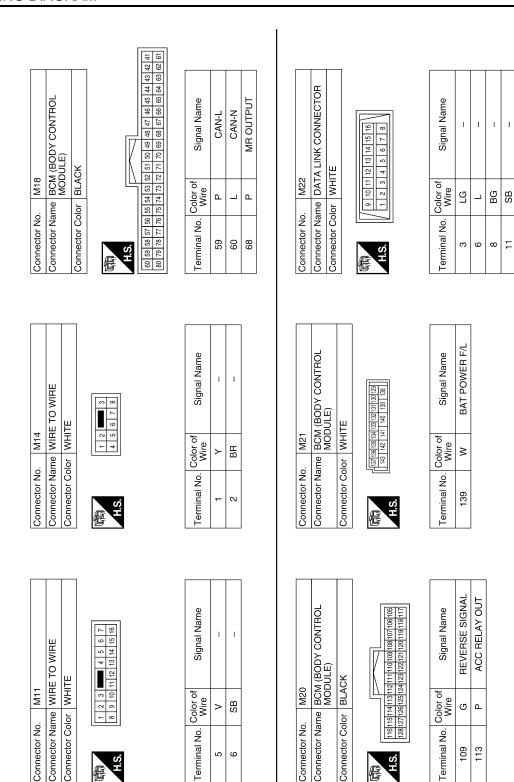
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M30 COMBINATION SWITCH (SPIRAL CABLE) GRAY	28 24 Z	Signal Name	ı	ı	ı							
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Connector No. Connector Name Connector Color	H.S.	Terminal No.	24	31	33							
							7					
Connector No. M25 Connector Name ACCESSORY RELAY-2 Connector Color BLUE		Signal Name	ı	ı	ı	ı						
me ACCE	2	Color of Wire	>	В	LG	۵						
Connector No. Connector Name	H.S.	Terminal No.	-	2	ო	2						
	<u>- 2</u>											
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M24 ne COM or WHI	16 15 14 13 12 11 10 10 10 13 13 13 13 13 13 13 13 13 13 13 13 13	Solor of	Wire	۵	<u>~</u>	≥	g	ГG	SB	۵	٦	
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Connector Name COMBINATION SWITCH (SPIRAL CARLE)	Connector Color GRAY	20 19 18 17 16 15 14 13	Terminal No. Color of Wire Signal Name	14 W –	15 L –	17 BB
Conne	Conne	南 H.S.	Termir			•
Connector No. M63 Connector Name FRONT SPEAKER LH	Z		Signal Name	1	1	
. M63 ime FRON	lor BRO	2	Color of Wire	>	BR	
Connector No. Connector Name	Connector Color BROWN	明.S.	Terminal No. Wire	-	2	
R LH			Name			
SPEAKE	Connector Color BROWN	2 1	Signal	^	SB	
Connector No.	r Color		Terminal No. Wire			

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Connector No. M93
Connector Name AV CONTROL UNIT

Connector Name JOINT CONNECTOR-M05

Connector No. M89

Connector Color WHITE

Connector Color GRAY

Signal Name	CAN-L	SPEED SIGNAL	BAT	GND
Color of Wire	۵	G	В	GR
Terminal No.	17	18	19	20

ILL (+),LIGHT SW PREAMP SHIELD FR SP RH (+)

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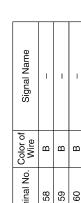
RR SP RH (+) RR SP RH (-)

FR SP RH (-)

BB Ŋ

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Signal Name	ı	ı	I
Color of Wire	В	В	В
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Signal Name	_	I	
Color of Wire	٦	٦	
Terminal No.	2	3	

		Signal Name	ACC	CAN-H
_		Color of Wire	Д	٦
2.2		Terminal No. Wire	7	8

7 0	Connector Name AV CONTROL UNIT	ІТЕ	1 2 3 4 5 6 7 8 9 9 10 11 12 13 14 15 16 17 18 20	Signal Name	NO AMP	FR SP LH (+)	
96W .	me AV	lor WH	1 2 1 1 2 2 1 1 2 3	Color of Wire	Μ	۸	
Connector No.	Connector Na	Connector Color WHITE	H.S.	Terminal No.	1	2	

Connector No. M96 Connector Name AV CONTROL UNIT Connector Color WHITE		
Connector Name AV CONTROL UNIT Connector Color WHITE		M96
Connector Color WHITE	Connector Name	AV CONTROL UNIT
	Connector Color	WHITE

Signal Name	AMP ON	FR SP LH (+)	FR SP LH (-)	RR SP (+)	RR SP (-)	ı
Color of Wire	Μ	>	SB	BR	\	-
Terminal No.	1	2	က	4	5	9

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Signal Name	MR OUTPUT	M-CAN-H	M-CAN-L	ILL(-)	MIC SIGNAL	MIC VCC	MIC GND	I	M-CAN-H	M-CAN-L	IGNITION	CAMERA +	CAMERA - (SHIELD)	CAMERA ON	CAMERA GND
Color of Wire	Ь	SB	ГG	GR	В	>	SHIELD	1	SB	ГG	BG	В	SHIELD	M	В
Terminal No.	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44

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. M97	_	lor WHITE		22 23 24 34 35 36 3	Color of Wire	-	I	1	Ι	മ	ı	1	I	1
Connector No.	Connector Name	Connector Color	暨	H.S.	Terminal No.	21	22	23	24	25	56	27	28	58

Connector No.	. M103	e	
onnector Na	me AV (Connector Name AV CONTROL UNIT	
Connector Color	lor BLUE	Ш	
斯 H.S.			
Terminal No.	Color of Wire	Signal Name	
62	В	ı	
63	SHIELD	I	

2	WIRE TO WIRE	EN		Signal Name	1
. M102		lor GREEN		Color of Wire	В
Connector No.	Connector Name	Connector Color	赋 H.S.	Terminal No.	1

	E TO WIRE	47		Signal Name	ı	-	-
. M101	me WIF	lor GRAY		Color of Wire	В	В	В
Connector No.	Connector Name WIRE TO WIRE	Connector Color	南 H.S.	Terminal No.	Į.	2	8

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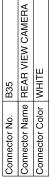
Revision: August 2012 AV-225 2013 Altima Sedan

Connector No. M155 Connector Name JONIT CONNECTOR-M06 Connector Color WHITE		Signal Name	1	1						TO WIRE	Z		Signal Name	ı		
M155 ne JONIT or	2 8 3 2	Color of Wire	۵	۵					M500	e WIRE	gr GREEN		Color of Wire	В		
Connector No. Connector Name Connector Color	赋利 H.S.	Terminal No.	2	က					Connector No.	Connector Name WIRE TO WIRE	Connector Color	files	Terminal No.	٢		
Connector No. M134 Connector Name AV CONTROL UNIT Connector Color BLUE	46 45 49 47	Signal Name	VCC	GND	+ O	-O	ı			Connector Name JOINT CONNECTOR-M08	ш		Signal Name	1	ı	ı
M134 ne AV CC or BLUE		Color of Wire	>	ŋ	_	Œ	SHIELD		M157	ne JOIN	or WHITE	4 3 2	Color of Wire	Д	۵	۵
Connector No. Connector Name	H.S.	Terminal No.	45	46	47	48	49		Connector No.	Connector Nar	Connector Color	明.S.	Terminal No.	1	8	4
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Connector No. M132 Connector Name USB INTERFACE Connector Color BLUE	H.S.	Terminal No.	-	2	က	4	5		Connector No.	Connector Name JOINT CONNEC	Connector Color	fight	Terminal No.	-	က	4

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Connector Name WIRE TO WIRE	Connector Color	H.S.	Terminal No. C	minal No.	A
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Signal Name	COMP +	_	GND	CAMERA ON
Color of Wire	Ж	1	В	Μ
Terminal No. Wire	5	9	7	8















Signal Name	COMP	I	-	CONT	
Color of Wire	SHIELD	1	-	9	
Terminal No. Wire	1	2	3	4	

Signal N	ı	_	
Color of Wire	>	LG	
Terminal No.	-	2	

Connector No. R1 Connector Name WIRE TO WIRE Connector Color WHITE LS. E 5 4 3 2 1 LE 11 10 9 8 7
lor WHITE Main Min Min
/
11 10 9
Terminal No. Color of Signal Name Wire
SHIELD -
SHIELD

	Connector Name SATELLITE RADIO ANTENNA	EEN		Signal Name	ı	
60 -	me SAT	or GREEN	<u> </u>	Color of Wire	В	
Connector No.	Connector Na	Connector Color	南 H.S.	Terminal No.	1	

	Connector Name (WITHOUT BOSE AUDIO SYSTEM)	ITE		Signal Name	ı	-
B47	ne (WI'S	or WH		Color of Wire	ГG	7
Connector No.	Connector Na	Connector Color WHITE	咸南 H.S.	Terminal No. Wire	-	2

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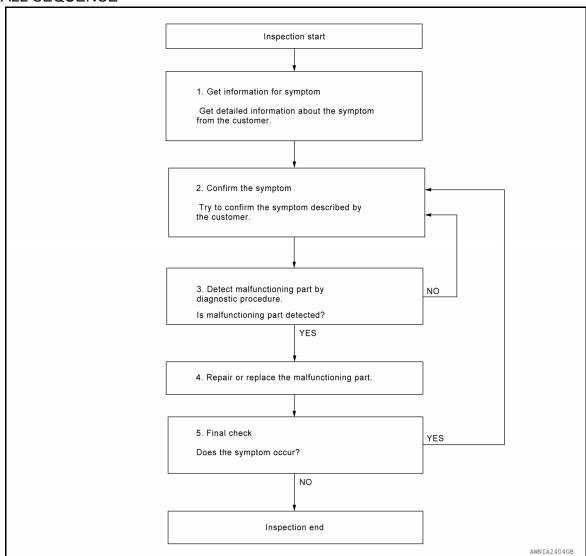
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE



DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2

2.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected. Refer to <u>AV-269</u>, "Symptom Table".

>> GO TO 3

3. DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

DIAGNOSIS AND REPAIR WORKFLOW	0051
< BASIC INSPECTION > [NAVIGATION WITHOUT BO	<u>JSEJ</u>
Is malfunctioning part detected? YES >> GO TO 4	
NO >> GO TO 2	,
4. REPAIR OR REPLACE THE MALFUNCTIONING PART	
 Repair or replace the malfunctioning part. 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	[
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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION WITHOUT BOSE]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT: Description

INFOID:0000000008659094

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

NEOID:000000000865000

1. SAVING VEHICLE SPECIFICATION

P-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-282, "Removal and Installation".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

(P)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-233, "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-233, "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.

CONFIGURATION (AV CONTROL UNIT)

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION WITHOUT BOSE]

CONFIGURATION (AV CONTROL UNIT): Description

INFOID:0000000008659096

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Vehicle specification needs to be written with CONSULT because it is not written after replacing AV control unit.

Configuration has three functions as follows:

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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:0000000008659097

1. WRITING MODE SELECTION

(P)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"

(P)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.

${f 3.}$ PERFORM "AFTER REPLACE ECU" OR "MANUAL CONFIGURATION"

(P)CONSULT

- 1. Select "After Replace ECU" or "Manual Configuration".
- 2. Identify the correct model and configuration list. Refer to <u>AV-234, "CONFIGURATION (AV CONTROL UNIT): Configuration List".</u>
- 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.

AV-233

5. When "Completed", select "End".

>> GO TO 4.

4. OPERATION CHECK

Revision: August 2012

Confirm that each function controlled by AV control unit operates normally.

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION WITHOUT BOSE]

>> Work End.

CONFIGURATION (AV CONTROL UNIT): Configuration List

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			

 $[\]Leftrightarrow:$ Items which confirm vehicle specifications

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DTC Logic

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.

Diagnosis Procedure

INFOID:0000000008707299

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-18, "Trouble Diagnosis Flow Chart".

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

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U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U1010 CONTROL UNIT (CAN)

DTC Logic

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-282, "Removal and Installation".

U1217 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U1217 AV CONTROL UNIT

DTC Logic

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-282, "Removal and Installation".

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U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U1229 AV CONTROL UNIT

DTC Logic

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-282, "Removal and Installation".

U122F AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U122F AV CONTROL UNIT

DTC Logic

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-282, "Removal and Installation".

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U1244 GPS ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U1244 GPS ANTENNA

DTC Logic

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:0000000008707305

Regarding Wiring Diagram information, refer to AV-218, "Wiring Diagram".

1.GPS ANTENNA INSPECTION

Visually inspect the GPS antenna and antenna feeder. Refer to <u>AV-288, "Removal and Installation"</u>. <u>Is inspection result normal?</u>

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2.CHECK AV CONTROL UNIT VOLTAGE

- 1. Disconnect AV control unit connector M103.
- 2. Turn ignition switch ON.
- 3. Check voltage between AV control unit terminal 62 and ground.

AV control unit terminal	Ground	Voltage
(+)	(–)	vollage
62	_	5.0 V

Is inspection result normal?

YES >> Replace GPS antenna. Refer to AV-288, "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U1258 SATELLITE RADIO ANTENNA

DTC Logic INFOID:0000000008707306

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

Regarding Wiring Diagram information, refer to AV-218, "Wiring Diagram".

1. SATELLITE ANTENNA INSPECTION

Visually inspect the satellite antenna and antenna feeder. Refer to AV-290, "Location of Antenna". Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2.CHECK SATELLITE ANTENNA FEEDER CONTINUITY

- Disconnect AV control unit connector M98 and satellite radio antenna connector B59.
- Check continuity between AV control unit connector M98 and satellite radio antenna connector B59.

AV cor	ntrol unit	Satellite ra	dio antenna	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M98	61	B59	1	Yes

Check continuity between AV control unit connector M98 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M98	61	_	No

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK AV CONTROL UNIT VOLTAGE

- Turn ignition switch ON.
- Check voltage between AV control unit terminal 61 and ground.

AV control unit terminal	Ground	Voltage
(+)	(-)	Voltage
61	_	5.0 V

Is inspection result normal?

YES >> Replace satellite radio antenna AV-287, "Removal and Installation".

>> Replace AV control unit. Refer to AV-282, "Removal and Installation". NO

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INFOID:0000000008707307

U1263 USB

DTC Logic

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.
- Perform Self Diagnostic Result for MULTI AV.

Is DTC U1263 displayed?

YES >> Refer to AV-242, "Diagnosis Procedure".

NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000008707309

1. CHECK USB INTERFACE HARNESS

Visually inspect USB interface harness. Refer to AV-283, "Removal and Installation".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace USB interface harness. Refer to AV-283, "Removal and Installation".

2. CHECK USB INTERFACE HARNESS

Check USB interface harness. Refer to AV-268, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

NO >> Replace USB interface harness. Refer to AV-283, "Removal and Installation".

U1264 ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U1264 ANTENNA AMP.

DTC Logic INFOID:0000000008707310

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

Regarding Wiring Diagram information, refer to AV-218, "Wiring Diagram".

1.ANTENNA AMP. INSPECTION

Visually inspect the antenna amp. and antenna feeder. Refer to AV-290, "Location of Antenna". Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA AMP.

Turn ignition switch OFF.

- Disconnect AV control unit connector M93 and antenna amp. connector M502.
- Check continuity between AV control unit connector M93 and antenna amp. connector M502.

AV cor	ntrol unit	Antenr	na amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M93	60	M502	1	Yes

Check continuity between AV control unit connector M93 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M93	60	_	No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

3.CHECK AV CONTROL UNIT VOLTAGE

- Connect AV control unit connector M93.
- Turn ignition switch ON.
- Check voltage between AV control unit connector M93 and ground.

AV control unit		Ground	V 16
(+)		()	Voltage (Approx.)
Connector	Terminal	(-)	,
M93	60	_	Battery voltage

Is the inspection result normal?

>> Replace antenna amp. Refer to AV-293, "Removal and Installation". YES

>> Replace AV control unit. Refer to AV-282, "Removal and Installation". NO

AV-243 Revision: August 2012 2013 Altima Sedan

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INFOID:0000000008707311

U12AA CONFIGURATION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12AA CONFIGURATION ERROR

DTC Logic

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-233, "CONFIGURATION (AV CONTROL UNIT): Work Procedure".

Diagnosis Procedure

INFOID:0000000008707315

1.PERFORM CONFIGURATION

When U12AA is detected, configuration data must be written.

>> Write configuration data with CONSULT. Refer to <u>AV-233, "CONFIGURATION (AV CONTROL UNIT)</u>: Work <u>Procedure"</u>.

U12AB ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12AB ANTENNA

DTC Logic INFOID:0000000008707316

DTC DETECTION LOGIC

CONSULT Display DTC Detection Condition		Possible Cause	
FM Antenna error [U12AB]	Open or short to ground is detected in glass antenna (FM sub) connection.	 Glass antenna (FM sub) disconnection. Open or short to ground in glass antenna (FM sub) signal circuit. 	

Diagnosis Procedure

Regarding Wiring Diagram information, refer to AV-218, "Wiring Diagram".

1. GLASS ANTENNA (FM SUB) INSPECTION

Visually inspect the glass antenna (FM sub) and antenna feeder. Refer to AV-290, "Location of Antenna". Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2.CHECK GLASS ANTENNA (FM SUB) FEEDER CONTINUITY

- Disconnect AV control unit connector M93 and inline connector M504.
- Check continuity between AV control unit connector M93 and inline connector M504.

AV cor	ntrol unit	Inline		Continuity
Connector	Terminal	Connector Terminal		Continuity
M93	58	M504	1	Yes

Check continuity between AV control unit connector M93 and ground.

AV control unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M93 58		_	No	

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.check av control unit voltage

- Disconnect AV control unit connector M93.
- 2. Turn ignition switch ON.
- Check voltage between AV control unit terminal 58 and ground.

AV control unit terminal	Ground	- Voltage	
(+)	(-)		
58	_	5.0 V	

Is inspection result normal?

YES >> Replace glass antenna (FM sub). Refer to GW-25, "Removal and Installation".

>> Replace AV control unit. Refer to AV-282, "Removal and Installation". NO

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INFOID:0000000008707317

U12AC AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12AC AV CONTROL UNIT

DTC Logic

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-282, "Removal and Installation".

U12AD AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12AD AV CONTROL UNIT

DTC Logic

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-282, "Removal and Installation".

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U12AE AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12AE AV CONTROL UNIT

DTC Logic

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-282, "Removal and Installation".

U12AF AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12AF AV CONTROL UNIT

DTC Logic

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-282, "Removal and Installation".

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U12B0 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12B0 POWER SUPPLY VOLTAGE

DTC Logic

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:0000000008707323

1. CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to CHG-17, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-20, "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 <u>AV-255</u>, "AV CONTROL UNIT: Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-282, "Removal and Installation".

NO >> Repair or replace harness or connectors.

U12B1 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U12B1 POWER SUPPLY VOLTAGE

DTC Logic

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:0000000008707325

1. CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to CHG-17, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-20, "Work Flow (Without EXP-800 NI or GR8-1200 NI)".

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-282, "Removal and Installation".

NO >> Repair or replace the malfunctioning components.

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[NAVIGATION WITHOUT BOSE]

U1300 AV COMM CIRCUIT

DTC Logic

DTC DETECTION LOGIC

CONSULT Display DTC Detection Condition		Possible Cause	
AV COMM CIRCUIT [U1300]	AV communication circuit malfunction (MCAN) between AV control unit and combination meter.	AV communication circuits between AV control unit and combination meter.	

Diagnosis Procedure

INFOID:0000000008713805

1. PERFORM SELF DIAGNOSTIC RESULT FOR METER M&A

- 1. Turn ignition switch ON and wait for 2 seconds or more.
- 2. Perform Self Diagnostic Result for METER M&A.

Are any DTCs displayed?

YES >> Refer to MWI-27, "DTC Index".

NO >> GO TO 2.

2.CHECK AV COMMUNICATION CIRCUIT (MCAN L) CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect AV control unit connector M97 and combination meter connector M24.
- 3. Check continuity between AV control unit connector M97 and combination meter connector M24.

AV control unit		Combina	Combination meter		
Connector	Terminal	Connector	Terminal	Continuity	
M97	32	M24 36	36	Yes	
IVI97	39	10124	30	165	

4. Check continuity between AV control unit connector M97 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M97	32		No
	39	_	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.check av communication circuit (mcan H) continuity

1. Check continuity between AV control unit connector M97 and combination meter connector M24.

AV control unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M97	31	M24	37	Yes
	38			

2. Check continuity between AV control unit connector M97 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M97	31	_	No
	38		140

U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-282, "Removal and Installation".

NO >> Repair or replace harness or connectors.

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U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

U1310 AV CONTROL UNIT

DTC Logic

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (AV) [U1310]	Error during CAN controller hardware initialization (MCAN).	Replace AV control unit if malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

POWER SUPPLY AND GROUND CIRCUIT AV CONTROL UNIT

INFOID:0000000007986263

AV CONTROL UNIT : Diagnosis Procedure

Regarding Wiring Diagram information, refer to AV-218. "Wiring Diagram".

1. CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	25 (5A)
19	Battery power supply	15 (20A)
40	Ignition power supply	29 (5A)

Are the fuses blown?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

Turn ignition switch OFF.

2. Disconnect AV control unit connectors M96 and M97.

3. Check voltage between AV control unit connectors M96 and M97 and ground.

AV cor	ntrol unit	Ground	Condition	Voltage (Approx.)
Connector	Terminal	Giodila	Condition	
M96	19		Ignition switch: OFF	
7	7	<u> </u>	Ignition switch: ON	Battery voltage
M97	40			

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 M96 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M96	20	_	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

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FRONT DOOR SPEAKER

[NAVIGATION WITHOUT BOSE]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000007986270

Regarding Wiring Diagram information, refer to AV-218. "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 M96 and suspect front door speaker connector.
- 2. Check continuity between AV control unit connector M96 and suspect front door speaker connector.

AV cor	ntrol unit	Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2	D19 (LH)	D10 (LI)	
M96	3		2	Yes
IVI9O	11	D119 (RH)	1	res
	12		2	

Check continuity between AV control unit connector M96 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M96	2		No
	3		
	11	_	INO
	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 M96 and suspect front door speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- Check signal between AV control unit connector M96 and ground.

AV control unit connector M96			
(+)	(–)	Condition	Reference value
Terminal	Terminal		

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

2	3		(V)
11	12	Audio signal output	0 -1 + 2ms SKIB3609E

Is the inspection result normal?

YES >> Replace front door speaker. Refer to AV-285, "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

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FRONT SPEAKER

Diagnosis Procedure

INFOID:0000000007986274

Regarding Wiring Diagram information, refer to AV-218, "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 SPEAKER SIGNAL CIRCUIT CONTINUITY

- 1. Disconnect AV control unit connector M96 and suspect front speaker connector.
- 2. Check continuity between AV control unit connector M96 and suspect front speaker connector.

AV cor	AV control unit		speaker	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2	M55 (LH)	1	Yes
M96	3		2	
WISO	11	M63 (RH)	1	ies
	12		2	

3. Check continuity between AV control unit connector M96 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M96	2		No
	3		
	11	_	INO
	12		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK FRONT SPEAKER SIGNAL

- 1. Connect AV control unit connector M96 and suspect front speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- 4. Check signal between AV control unit connector M96 and ground.

AV control unit connector M96			
(+)	(-)	Condition	Reference value
Terminal	Terminal		

FRONT SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

2	3	Audio pignal autaut	(V) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
11	12	Audio signal output	0 -1 → + 2ms SKIB3609E

Is the inspection result normal?

>> Replace front speaker. Refer to <u>AV-284, "Removal and Installation"</u>. >> Replace AV control unit. Refer to <u>AV-282, "Removal and Installation"</u>. YES

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REAR SPEAKER

Diagnosis Procedure

INFOID:0000000007986278

Regarding Wiring Diagram information, refer to AV-218. "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 SPEAKER SIGNAL CIRCUIT CONTINUITY

- 1. Disconnect AV control unit connector M96 and suspect rear speaker connector.
- 2. Check continuity between AV control unit connector M96 and suspect rear speaker connector.

AV cor	ntrol unit	Rear speaker		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	4	B25 (LH)	1	Yes
M96	5	B25 (LH)	2	
	13	D47 (DU)	1	165
	14	B47 (RH)	2	

3. Check continuity between AV control unit connector M96 and ground.

AV control unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
	4		No	
M96	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 AV control unit connector M96 and suspect rear speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- 4. Check signal between AV control unit connector M96 and ground.

AV control unit	connector M96		
(+)	(–)	Condition	Reference value
Terminal	Terminal		

REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

2	3		(V)
11	12	Audio signal output	1 0 -1 2ms SKIB3609E

Is the inspection result normal?

YES >> Replace rear speaker. Refer to AV-286. "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

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REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007986294

Regarding Wiring Diagram information, refer to AV-218, "Wiring Diagram".

1. CHECK REVERSE INPUT SIGNAL

- 1. Turn ignition switch ON.
- Shift the selector lever to R (reverse).
- 3. Check voltage between AV control unit connector M97 and ground.

AV cor	AV control unit			
((+)		Condition	Voltage (Approx.)
Connector	Terminal	(-)		, , ,
M97	25	_	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

- Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M97 and rear view camera connector.
- 3. Check continuity between AV control unit connector M97 and rear view camera connector B35.

AV cor	AV control unit		Rear view camera	
Connector	Terminal	Connector	Terminal	Continuity
M97	43	B35	8	Yes

4. Check continuity between AV control unit connector M97 and ground.

AV cor	trol unit		Continuity
Connector	Terminal	Ground	Continuity
M97	43		No

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK CAMERA POWER SUPPLY VOLTAGE

- 1. Connect AV control unit connector M97 and rear view camera connector.
- Turn ignition switch ON.
- Shift the selector lever to R (reverse).
- 4. Check voltage between AV control unit connector M97 and ground.

AV control unit		Ground			
((+)		Condition	Voltage (Approx.)	
Connector	Terminal	(-)		()	
M97	43	_	Selector lever is in "R".	6.0 V	

Is inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

4. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M97 and rear view camera connector.
- 3. Check continuity between AV control unit connector M97 and rear view camera connector B35.

AV cor	trol unit	Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M97	41	B35	5	Yes

4. Check continuity between AV control unit connector M97 terminal 82 and ground.

AV cor	itrol unit		Continuity
Connector	Terminal	Ground	Continuity
M97	41		No

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness or connectors.

CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between AV control unit connector M97 and rear view camera connector B35.

AV cor	AV control unit		w camera	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M97	44	B35	7	Yes

Is inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness or connectors.

6.CHECK CAMERA IMAGE SIGNAL

- Connect AV control unit connector M97 and rear view camera connector.
- 2. Turn ignition switch ON.
- 3. Shift the selector lever to R (reverse).
- 4. Check signal between AV control unit connector M97 and ground.

AV cor	AV control unit (+)				
(Condition	Reference value	
Connector	Terminal	(-)			
M97	41	_	Camera image dis- played.	0. 4 0 -0. 4 -40μs	

Is inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

NO >> Replace rear view camera. Refer to AV-295, "Removal and Installation".

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MICROPHONE SIGNAL CIRCUIT

[NAVIGATION WITHOUT BOSE]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000007986292

Regarding Wiring Diagram information, refer to AV-218. "Wiring Diagram".

1. CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect AV control unit connector M97 and microphone connector R7.
- 3. Check continuity between AV control unit connector M97 and microphone connector R7.

AV co	ntrol unit	Micro	phone	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	36		2	
M97	35	R7	4	Yes
	34		1	

4. Check continuity between AV control unit connector M97 and ground.

AV control unit		Ground	Continuity	
Connector	Connector Terminal			
	36			
M97	35	_	No	
	34			

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 M97.
- 2. Turn ignition switch ON.
- 3. Check voltage between terminals of AV control unit connector M97.

AV control unit		
(+)	Voltage (Approx.)	
Terminal	Terminal	(, , , , , , , , , , , , , , , , , , ,
35	36	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to AV-282. "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

- Connect microphone connector.
- Check signal between terminals of AV control unit connector M97.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

AV control uni	AV control unit connector M97			Α
(+)	(-)	Condition	Reference value	
Terminal	Terminal			В
34	36	Speak into microphone.	(V) 2. 5 2. 0 1. 5 1. 0 0. 5	С
			PKIB5037J	D

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

NO >> Replace microphone. Refer to <u>AV-294, "Removal and Installation"</u>.

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STEERING SWITCH

Diagnosis Procedure

INFOID:0000000007986286

Regarding Wiring Diagram information, refer to AV-218. "Wiring Diagram".

1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

- Turn ignition switch OFF.
- 2. Disconnect combination switch connector M88.
- 3. Check resistance between combination switch connector terminals.

Combination swi	Combination switch connector M88		Resistance Ω
Terminal	Terminal	Condition	(Approx.)
		Depress SOURCE switch.	1
		Depress △ switch.	121
14		Depress ∇ switch.	321
	17	Depress √ switch.	723
		Depress ENTER switch.	2023
		Depress - 🗘 switch.	1
		Depress 4+ switch.	121
15		Depress A switch.	321
		Depress 5 switch.	723
		Depress DISP switch.	2023

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to AV-289, "Removal and Installation".

2.CHECK HARNESS BETWEEN COMBINATION SWITCH AND COMBINATION METER

- 1. Disconnect combination meter connector M24 and combination switch connector M30.
- 2. Check continuity between combination meter connector M24 and combination switch connector M30.

Combinat	tion meter	Combination switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	3		24	
M24	24	M30	33	Yes
	4		31	

3. Check continuity between combination meter connector M24 and ground.

Combination meter		Ground	Continuity	
Connector	Connector Terminal		Continuity	
	3			
M24	24	_	No	
	4			

Is the inspection result normal?

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M30 and M88.

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

Is the inspection result normal?

YES >> GO TO 4.

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

f 4.CHECK HARNESS BETWEEN COMBINATION METER AND AV CONTROL UNIT

- Disconnect AV control unit connector M97.
- 2. Check continuity between combination meter connector M24 and AV control unit connector M97.

Combina	tion meter	AV control unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M24	37	M97	31	Yes
IVIZ4	36	10197	32	ies

3. Check continuity between combination meter connector M24 and ground.

Combination meter		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M24	37		No	
IVIZ 4	36	_	NO	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

NO >> Repair or replace harness or connectors.

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USB CONNECTOR

[NAVIGATION WITHOUT BOSE]

USB CONNECTOR

Diagnosis Procedure

INFOID:0000000008542277

Regarding Wiring Diagram information, refer to AV-218, "Wiring Diagram".

1. CHECK USB INTERFACE HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect AV control unit connector M134 and USB interface connector M132.
- 3. Check continuity between AV control unit connector M134 and USB interface connector M132.

AV cor	ntrol unit	USB interface		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	45	M132	4	
	46		1	
M134	47		2	Yes
	48		3	
	49		5	

4. Check continuity between AV control unit connector M134 and ground.

AV control unit			Continuity
Connector Terminal		_	Continuity
M134	46	Ground	No
IVI 104	49	Ground	NO

Is the inspection result normal?

YES >> Replace the USB interface. Refer to AV-283, "Removal and Installation".

NO >> Repair or replace harness or connectors.

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM

Symptom Table

RELATED TO AUDIO

INFOID:0000000008664271

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Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	AV control unit	Malfunction in AV control unit. Refer to AV-212, "On Board Diagnosis Function".
	No sound from all speakers.	Speaker circuit shorted to ground. Refer to AV-218, "Wiring Diagram". AV control unit power supply and ground circuits malfunction. Refer to AV-255, "AV CONTROL UNIT: Diagnosis Procedure".
No sound comes out or the level of the sound is low.	Only a certain speaker (front door speaker LH, front door speaker RH, front speaker LH, front speaker RH, rear speaker LH, rear speaker RH) does not output sound.	 Poor connector connection of speaker. Sound signal circuit malfunction between AV control unit and speaker. Refer to: AV-256, "Diagnosis Procedure" (front door speaker). AV-258, "Diagnosis Procedure" (front speaker). AV-260, "Diagnosis Procedure" (rear speaker). Malfunction in speaker. Refer to: AV-285, "Removal and Installation" (front door speaker). AV-284, "Removal and Installation" (front speaker). AV-286, "Removal and Installation" (rear speaker). Malfunction in AV control unit. Refer to AV-212, "On Board Diagnosis Function".

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[NAVIGATION WITHOUT BOSE]

Symptoms	Check items	Probable malfunction location
	Noise comes out from all speakers.	Malfunction in AV control unit. Refer to AV-212, "On Board Diagnosis Function".
Noise is mixed with audio.	Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, front speaker RH, rear speaker LH, rear speaker RH).	 Poor connector connection of speaker. Sound signal circuit malfunction between AV control unit and speaker. Refer to: - AV-256, "Diagnosis Procedure" (front door speaker). - AV-258, "Diagnosis Procedure" (front speaker). - AV-260, "Diagnosis Procedure" (rear speaker). Malfunction in speaker. Poor Installation of speaker (e.g. backlash and looseness). Refer to: - AV-285, "Removal and Installation" (front door speaker). AV-286, "Removal and Installation" (front speaker). AV-286, "Removal and Installation" (rear speaker). Malfunction in AV control unit. Refer to AV-212, "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-290, "Location of Antenna".
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 <u>AV-214</u>, "<u>Reference Value</u>". Poor connector connection of antenna or antenna feeder. Refer to <u>AV-290</u>, "<u>Location of Antenna</u>".
No satellite radio reception.	There is malfunction in the CONSULT self diagnosis result. Refer to AV-213, "CONSULT Function".	 Malfunction in antenna, antenna feeder or AV control unit. Perform DTC diagnosis. Refer to <u>AV-241, "Diagnosis Procedure"</u>. Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Refer to <u>AV-290, "Location of Antenna"</u>.
	There is no malfunction in the CONSULT self diagnosis result. Refer to AV-213, "CONSULT Function".	 Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Loose satellite radio antenna mounting nut. Refer to <u>AV-290</u>, "<u>Location of Antenna</u>".
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 TROU- BLE DIAGNOSIS" in the appropriate interi- or 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.

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

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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.	
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. 	Malfunction in AV control unit. Replace AV control unit. Refer to AV-282. "Removal and Installation".
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	Sound operation function is normal.	
party with hands-free phone communication.	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <u>AV-264</u> , " <u>Diagnosis Procedure</u> ".
	 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-289. "Removal and Installation".
The system cannot be operated.	Steering switch's √≤, √(1+ , √(1- , and Steering switches do not work.	Steering switch signal circuit malfunction. Refer to AV-266, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction Refer to AV-266, "Diagnosis Procedure".

RELATED TO NAVIGATION

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

Symptoms	Check items	Probable malfunction location
	Navigation malfunction.	Malfunction in SD card. Malfunction in AV control unit. Refer to AV-212, "On Board Diagnosis Function".
Navigation system is inoperative.	Steering switches malfunction.	Steering switch signal circuit malfunction. Refer to AV-266, "Diagnosis Procedure".
	Voice activated control malfunction.	Microphone signal circuit malfunction. Refer to AV-264, "Diagnosis Procedure". Steering switch signal circuit malfunction. Refer to AV-266, "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 AV control unit. Refer to AV-262. "Diagnosis Procedure".
	Camera image signal circuit malfunction.	Camera image signal circuit malfunction between rear view camera and AV control unit. Refer to AV-262, "Diagnosis Procedure".
	Rear view camera malfunction.	Replace rear view camera. Refer to AV-295, "Removal and Installation".

[NAVIGATION WITHOUT BOSE]

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NORMAL OPERATING CONDITION

Description INFOID:000000008664272

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 lin	ked 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-269, "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 DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

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.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
Audio guide volume is too low or too high.	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.

Cause

< SYMPTOM DIAGNOSIS >

Symptom

[NAVIGATION WITHOUT BOSE]

Remedy

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	d 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.

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[NAVIGATION WITHOUT BOSE]

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 research 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) near- by and reset the destination and passing points onto it. Take care of the traveling direc- tion 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:

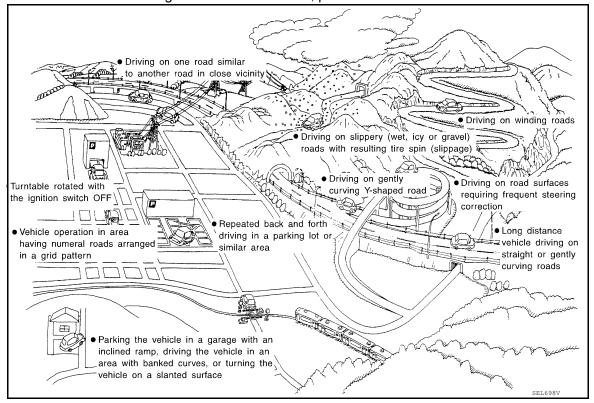
Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

Examples of Current-Location Mark Displacement

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

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.



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[NAVIGATION WITHOUT BOSE]

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	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	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	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	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.	

[NAVIGATION WITHOUT BOSE]

Cause (condition) -	-: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
In a par	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.
Turntab	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.	
Slippen	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.	
	ot displayed on the map screen	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.	
	et road pattern ed due to repair)	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	ire 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.)

[NAVIGATION WITHOUT BOSE]

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 cor- rect location	Position correction accuracy Within 1 mm (0.04 in) SELTOIN	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 correc- tion.
	Direction when location is corrected Direction calibration adjustment	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

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITHOUT BOSE]

- 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.

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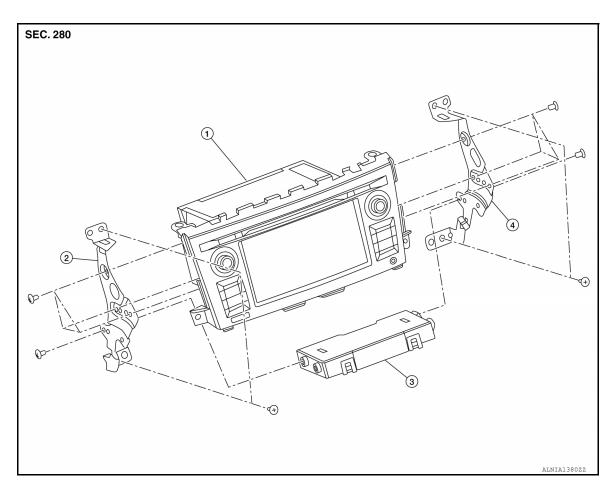
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REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View



1. AV control unit

- 2. AV control unit bracket LH
- 3. A/C auto amp.

INFOID:0000000008668924

4. AV control unit bracket RH

Removal and Installation

REMOVAL

CAUTION:

Before replacing AV control unit, perform "READ CONFIGURATION" to save current vehicle specification. Refer to AV-233, "CONFIGURATION (AV CONTROL UNIT): Description".

- 1. Disconnect the negative battery terminal. Refer to PG-72, "Removal and Installation (Battery)".
- 2. Remove cluster lid C. Refer to IP-20, "Cluster Lid C".
- Remove the A/C switch assembly. Refer to <u>HAC-101</u>, "Removal and Installation".
- 4. Remove the AV control unit screws, then pull out the AV control unit.
- 5. Disconnect the harness connectors from the AV control unit and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

When replacing AV control unit, perform "WRITE CONFIGURATION". Refer to <u>AV-234, "CONFIGURA-TION (AV CONTROL UNIT): Configuration List"</u>.

USB CONNECTOR

< REMOVAL AND INSTALLATION >

[NAVIGATION WITHOUT BOSE]

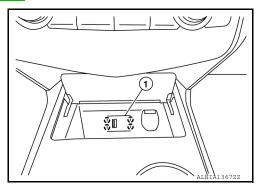
USB CONNECTOR

Removal and Installation

INFOID:0000000008527860

Removal

- 1. Remove the CVT finisher. Refer to IP-18, "Removal and Installation".
- 2. Release the pawls and remove the USB interface (1) from the back of the CVT finisher.
 - (): Pawl



Installation

Installation is in the reverse order of removal.

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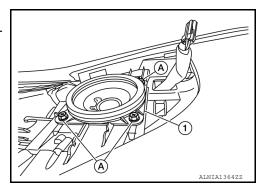
FRONT SPEAKER

Removal and Installation

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REMOVAL

- 1. Remove the front pillar finisher. Refer to INT-21, "FRONT PILLAR FINISHER: Removal and Installation".
- 2. Remove the front speaker grille using a suitable tool.
- 3. Remove the front speaker screws (A).
- 4. Pull out the front speaker (1), disconnect the harness connector from front speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[NAVIGATION WITHOUT BOSE]

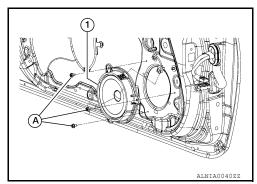
FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000008527862

REMOVAL

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



INSTALLATION

Installation is in the reverse order of removal.

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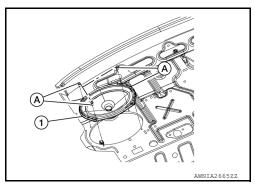
REAR SPEAKER

Removal and Installation

INFOID:0000000008746524

REMOVAL

- 1. Remove the rear parcel shelf finisher. Refer to INT-26, "Removal and Installation".
- 2. Remove the rear speaker screws (A).
- 3. Disconnect the harness connector from the rear speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

SATELLITE RADIO ANTENNA

< REMOVAL AND INSTALLATION >

[NAVIGATION WITHOUT BOSE]

SATELLITE RADIO ANTENNA

Removal and Installation

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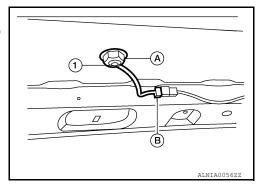
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REMOVAL

- 1. Lower the headlining at the rear. Refer to INT-30, "Removal and Installation".
- 2. Remove the satellite radio antenna nut (A).
- 3. Disconnect the harness connector (B) from the satellite radio antenna (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

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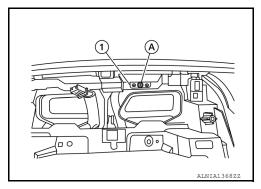
GPS ANTENNA

Removal and Installation

INFOID:0000000008668934

REMOVAL

- 1. Remove the AV control unit. Refer to AV-104, "Removal and Installation".
- 2. Remove the GPS antenna screw (A) and the GPS antenna (1).

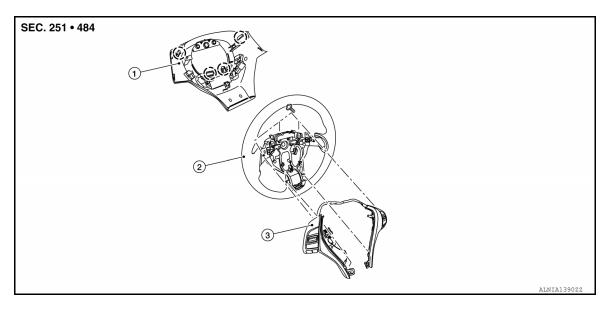


INSTALLATION

Installation is in the reverse order of removal.

STEERING SWITCH

Exploded View



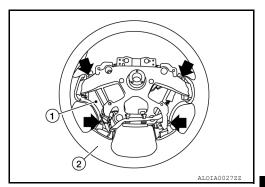
- 1. Steering wheel rear finisher
- 2. Steering wheel
- 3. Steering switches

(Pawl

Removal and Installation

REMOVAL

- 1. Remove the steering wheel. Refer to ST-31, "Removal and Installation"
- 2. Release the pawls on the steering wheel rear finisher and remove.
- 3. Remove the steering switches screws (←).
- 4. Remove the steering switches (1) from steering wheel (2).



INSTALLATION

Installation is in the reverse order of removal.

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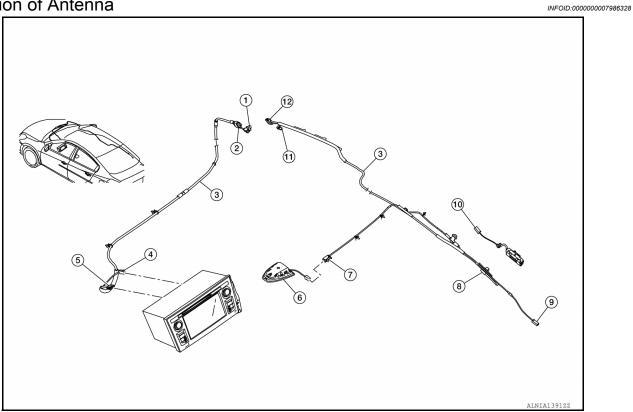
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ANTENNA FEEDER

Location of Antenna



- 1. M102
- 4. M98
- 7. B59
- 10. M503

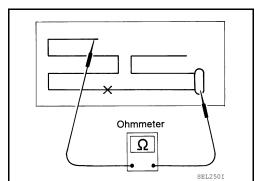
- 2. M101
- 5. M93
- 8. M502
- 11. M500

- 3. Antenna feeder
- 6. Satellite antenna
- 9. M504
- 12. M501

Window Antenna Repair

ELEMENT CHECK

1. Attach probe circuit tester (ohm setting) to antenna terminal on each side.



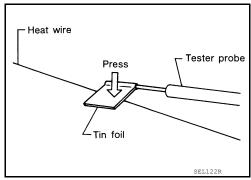
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ANTENNA FEEDER

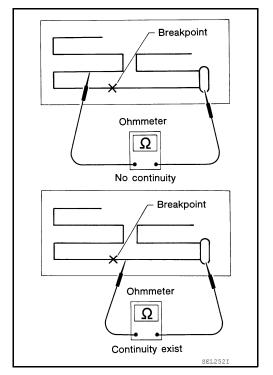
< REMOVAL AND INSTALLATION >

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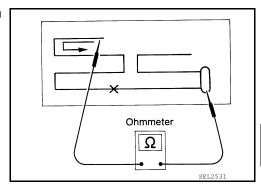
• When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



2. If an element is broken, no continuity will exist.



3. To locate a break, move probe along element. Tester indication will change abruptly when probe passes the broken point.



REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

Revision: August 2012 AV-291 2013 Altima Sedan

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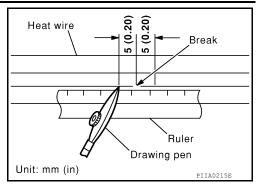
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ANTENNA FEEDER

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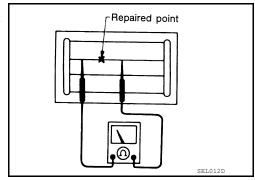
[NAVIGATION WITHOUT BOSE]

- 1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
- 2. Apply a small amount of conductive silver composition to tip of drawing pen.
 - Shake silver composition container before use.
- 3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



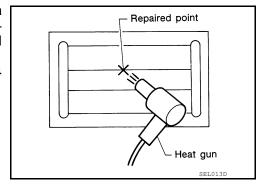
4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet.

If a heat gun is not available, let the repaired area dry for 24 hours.



ANTENNA AMP.

< REMOVAL AND INSTALLATION >

[NAVIGATION WITHOUT BOSE]

ANTENNA AMP.

Removal and Installation

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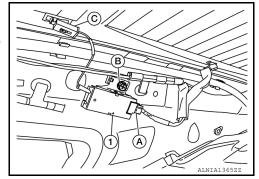
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REMOVAL

- Remove the rear pillar finisher RH. Refer to <u>INT-25</u>, "<u>REAR PILLAR FINISHER</u>: <u>Removal and Installation</u>".
- 2. Disconnect the harness connector (A) from the antenna amp. (1).
- 3. Disconnect the antenna amp. harness connector (C) from the rear window glass.
- 4. Remove the antenna amp. screw (B) and the antenna amp. (1).



INSTALLATION

Installation is in the reverse order of removal.

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[NAVIGATION WITHOUT BOSE]

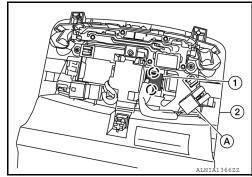
MICROPHONE

Removal and Installation

INFOID:0000000008668935

REMOVAL

- 1. Remove the front room/map lamp assembly. Refer to INL-63, "Removal and Installation".
- 2. Disconnect the microphone connector (A) from the front room/ map lamp assembly (2).
- 3. Release the microphone pawls, then remove the microphone (1).
 - (): Pawl



INSTALLATION

Installation is in the reverse order of removal.

REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[NAVIGATION WITHOUT BOSE]

REAR VIEW CAMERA

Removal and Installation

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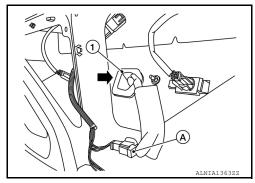
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REMOVAL

- 1. Remove trunk lid finisher. Refer to INT-33, "Exploded View".
- 2. Disconnect the harness connector (A) from rear view camera.
- 3. Push the rear view camera (1) in direction shown (←) and pull out to remove.



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PRECAUTION

PRECAUTIONS

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

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least 3 minutes before performing any service.

Precaution for Trouble Diagnosis

INFOID:0000000008527482

AV COMMUNICATION SYSTEM

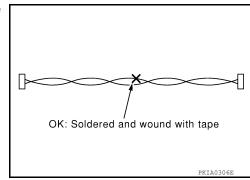
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

INFOID:0000000008527483

AV COMMUNICATION SYSTEM

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

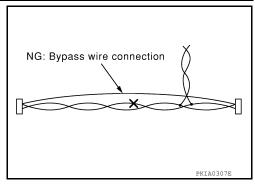


PRECAUTIONS

< PRECAUTION >

[NAVIGATION WITH BOSE]

 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:0000000008528546

- 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.

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PREPARATION

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[NAVIGATION WITH BOSE]

PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000008528648

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

Commercial Service Tools

INFOID:0000000008528649

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

INFOID:0000000008542272

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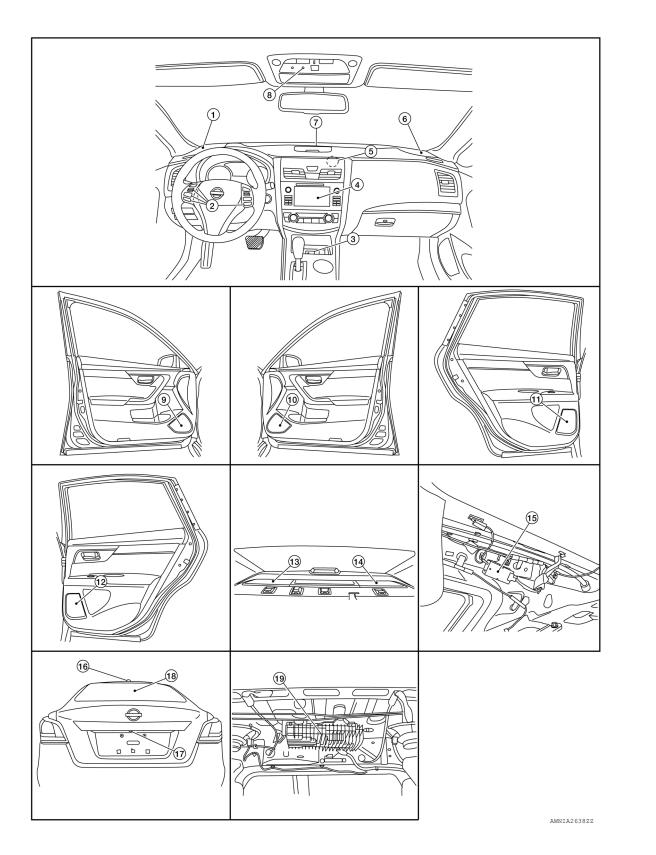
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location



COMPONENT PARTS

< SYSTEM DESCRIPTION >

[NAVIGATION WITH BOSE]

- Front speaker LH
 AV control unit
- 7. Center speaker
- 10. Front door speaker RH
- 13. Rear speaker RH
- 16. Satellite antenna
- 19. Bose speaker amp.

- 2. Steering switches
- 5. GPS antenna
- 8. Microphone
- 11. Rear door speaker LH
- 14. Rear speaker LH
- 17. Rear view camera

- 3. USB interface
- 6. Front speaker RH
- 9. Front door speaker LH
- 12. Rear door speaker RH
- 15. Antenna amp.
- 18. Window antenna

Component Description

INFOID:0000000008542273

Part name	Description
AV control unit	 Operation of navigation and audio systems are integrated. Includes the audio, hands-free phone, navigation, satellite radio, rear view monitor, USB connection and AUX IN connection functions. Map data can be loaded from SD-card inserted in SD-card slot. Audio signals are output to Bose speaker amp. Inputs illumination signals required for display dimming control. Inputs signals for driving status recognition (vehicle speed and reverse). Touch panel functions can be operated by touching display directly.
Map SD-card	A collection of Map data.
Bose speaker amp.	Receives audio signals from AV control unit and outputs audio signals to each speaker.
Front speakers	
Center speaker	
Front door speakers	Outputs high, mid and low range audio signals from Bose speaker amp.
Rear door speakers	
Rear speakers	
Steering switches	 Operations for audio, hands-free phone and voice recognition are possible. Steering switch signal is output to combination meter. Combination meter outputs steering switch signal to AV control unit.
Microphone	 Used for hands-free phone operations. Microphone signal is transmitted to AV control unit. Power is supplied from AV control unit.
USB interface	USB sound and data input signals are transmitted to AV control unit.
Rear view camera	Outputs image of vehicle rear to AV control unit.Power is supplied from AV control unit.
Satellite antenna	Satellite radio signal is received and transmitted to AV control unit.
GPS antenna	GPS signal is received and transmitted to AV control unit.
Antenna amp.	 AM/FM signal received by window antenna is amplified and transmitted to AV control unit. Power is supplied from AV control unit.
Window antenna	AM/FM signal is received and transmitted to antenna amp.

INFOID:0000000008542274

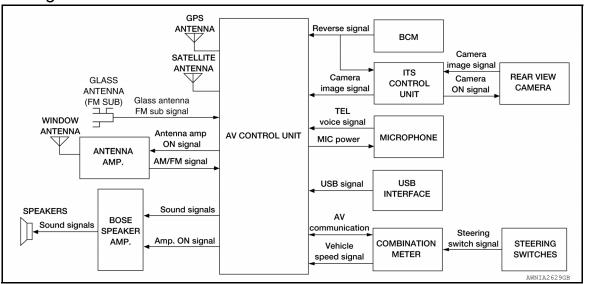
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SYSTEM

System Diagram



System Description

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

Audio function and display are built into AV control unit.

This navigation has the following functions.

- Map data on SD-card
- Full support for playback of music from iPod[®] and USB device
- High resolution color 5 inch display with touch panel function
- FM/AM twin digital tuner
- USB mass storage connection
- Satellite radio
- Hands-free phone system

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

NAVIGATION SYSTEM FUNCTION

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 speakers.
- 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.

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[NAVIGATION WITH BOSE]

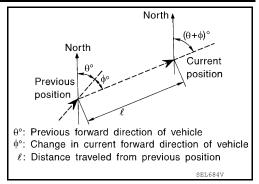
The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

· Travel distance

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

Travel direction

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



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

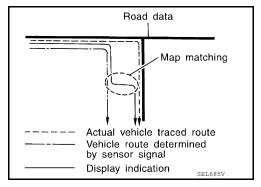
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

MAP-MATCHING

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

NOTE:

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

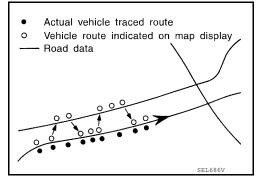


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the vehicle mark on the display must be corrected manually.

 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.



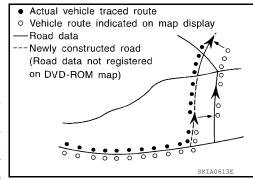
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Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD-card, or when road pattern stored in the map data and the actual road pattern are different due to repair.

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.

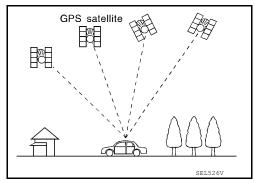
 Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map SD-card is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position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

SATELLITE RADIO FUNCTION

- Satellite radio function is built into AV control unit.
- Sound signal (satellite radio) is received by satellite antenna and transmitted to AV control unit. AV control unit outputs sound signal to each speaker.

AUXILIARY INPUT FUNCTION

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

REAR VIEW MONITOR FUNCTION

Camera Image Operation Principle

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

USB CONNECTION FUNCTION

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

AV-303 Revision: August 2012 2013 Altima Sedan

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SYSTEM

< SYSTEM DESCRIPTION >

[NAVIGATION WITH BOSE]

- Sound signals are transmitted from USB connector and AUX jack to the AV control unit and output to each speaker and tweeter.
- iPod[®] is recharged when connected to USB connector and AUX jack.

NOTE:

Use the enclosed USB harness when connecting iPod® to USB connector and AUX jack.

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

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.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION WITH BOSE]

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DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description INFOID:0000000008659099

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.
	FM monitor	_	Monitors the dynamic values of the cur-
	AM monitor	_	rent tuner
Radio	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 BTHFU Status Radio Antenna USB Device iPod® firmware version Steering wheel key	The current system status is displayed.
	Speaker Test 4kHz Speaker Test 100Hz	_	This activates a sequence of test tone outputs to the audio circuits one after the other for 1 second.
			This provides a test sequence where test displays (plain colored display: e.g. white, black, red, blue, green) are shown one after the other.
Display-	Display-Test	_	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 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:0000000008659100

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METHOD OF STARTING

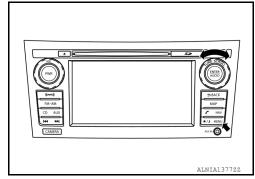
- Turn the ignition ON.
- Turn the audio system OFF.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

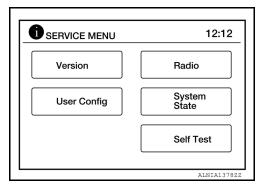
< SYSTEM DESCRIPTION >

[NAVIGATION WITH BOSE]

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. When self diagnosis mode begins, a short beep will be heard. Shifting from current screen to previous screen is performed by pressing BACK button.



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



CONSULT Function

INFOID:0000000008659101

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-309, "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-334, "CONFIGURATION (AV CONTROL UNIT): Description".

CAN DIAG SUPPORT MNTR

Refer to LAN-15, "CAN Diagnostic Support Monitor".

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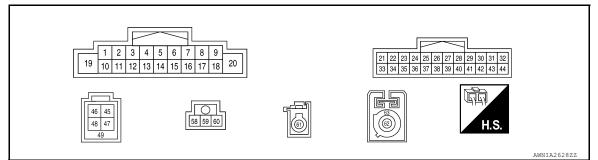
SKIB3609E

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
1 (W)	Ground	BOSE amp. ON signal	Output	ACC	_	Battery voltage
2 (B)	3 (W)	Sound signal front speaker LH	Output	ON	Sound output	(V) 1 0 -1 ** 2ms SKIB3609E
4 (G)	5 (R)	Sound signal rear speaker LH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
7 (P)	Ground	ACC power supply	Input	ACC	-	Battery voltage
8 (L)	_	CAN (H)	Input/ Output	_	_	_
9 (R)	33 (GR)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
10	_	Shield	_	1	_	
11 (B)	12 (W)	Sound signal front speaker RH	Output	ON	Sound output	(V) 1 0 -1 + 2ms

AV CONTROL UNIT

[NAVIGATION WITH BOSE]

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
13 (G)	14 (R)	Sound signal rear speaker RH	Output	ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
17 (P)	_	CAN (L)	Input/ Output	_	_	_
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	O ZO ms JSNIA0012GB
19 (G)	Ground	Battery power supply	Input	OFF	_	Battery voltage
20 (GR)	Ground	Ground	_	ON	_	0 V
25 (G)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse) Selector lever in any posi-	Battery voltage
30 (P)	_	MR output	Output	_	tion other than R (reverse) —	_
31 (SB)	_	M-CAN (H)	Input/ Output	_	_	_
32 (LG)	_	M-CAN (L)	Input/ Output	-	_	_
34 (B)	36 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	(V) 1 0 -1 + 2ms SKIB3609E
35 (W)	Ground	Microphone power supply	Output	ON	_	5.0 V
38 (SB)	_	M-CAN (H)	Input/ Output	_	_	_
39 (LG)	_	M-CAN (L)	Input/ Output			
40 (BG)	Ground	Ignition power supply	Input	ON or START	_	Battery voltage

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION WITH BOSE]

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	minal e color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
41 (B)	42 (Shield)	Camera image signal	Input	ON	When camera image is displayed	(V) 0. 4 0 -0. 4 -40µs skib2251j
45 (W)	_	USB ground	_	_	_	_
46 (G)	_	V BUS signal	_	_	_	_
47 (L)	_	USB D– signal	_	_	_	_
48 (R)	_	USB D+ signal	_	_	_	_
49	_	Shield	_	_	_	_
58 (B)	Ground	Glass antenna (FM sub) signal	Input	ON	_	5.0 V
59 (B)	Ground	AM/FM antenna signal	Input	ON	_	5.0 V
60 (B)	Ground	Antenna amp. ON signal	Output	ON	_	Battery voltage
61 (B)	Ground	Satellite antenna signal	Input	ON	_	5.0 V
62 (B)	Ground	GPS antenna signal	Input	ON	_	5.0 V
63	_	Shield	_	_	_	_

DTC Index

CONSULT Display	Reference Page	_
U1000: CAN COMM CIRCUIT	AV-336, "DTC Logic"	_
U1010: CONTROL UNIT (CAN)	AV-337, "DTC Logic"	_
U1217: BLUETOOTH MODULE	AV-338, "DTC Logic"	_
U1229: iPod CERTIFICATION	AV-339, "DTC Logic"	
U122F: Digital broadcasting connection error	AV-340, "DTC Logic"	
U1244: GPS ANTENNA CONN	AV-341, "DTC Logic"	
U1258: XM ANTENNA CONN	AV-342, "DTC Logic"	_
U1263: USB OVERCURRENT	AV-343, "DTC Logic"	_
U1264: ANTENNA AMP TERMINAL	AV-344, "DTC Logic"	_
U1265: AMP ON TERMINAL	AV-345, "DTC Logic"	_
U12AA: Configuration Error	AV-346, "DTC Logic"	_
U12AB: FM Antenna error	AV-347, "DTC Logic"	_
U12AC: Display Temperature too High	AV-348, "DTC Logic"	_
U12AD: ECU Temperature too High	AV-349, "DTC Logic"	_
U12AE: Internal Amplifier temperature Warning	AV-350, "DTC Logic"	

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION WITH BOSE]

CONSULT Display	Reference Page
U12AF: CD Mechanism Temperature Warning	AV-351, "DTC Logic"
U12B0: Supply Voltage Goes below 9V > 20s	AV-352, "DTC Logic"
U12B1: Supply Voltage Goes High > 16V for 20s	AV-353, "DTC Logic"
U1300: AV COMM CIRCUIT	AV-354, "DTC Logic"
U1310: CONTROL UNIT (AV)	AV-356, "DTC Logic"

BOSE SPEAKER AMP

[NAVIGATION WITH BOSE]

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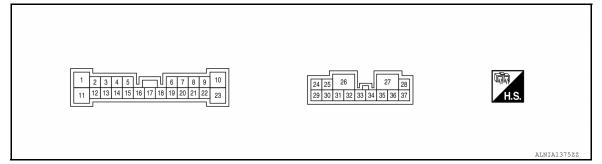
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BOSE SPEAKER AMP

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
3 (G)	2 (R)	Sound signal front speaker LH	Input	ON	Sound output	(V) 1 0 -1 1 ms
5 (G)	4 (R)	Sound signal front speaker RH	Input	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E
7 (P)	6 (BG)	Front door speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E
9 (G)	8 (R)	Center speaker signal	Output	ON	Sound output	(V) 1 0 -1 1 ms

BOSE SPEAKER AMP

[NAVIGATION WITH BOSE]

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
10 (G)	23 (W)	Rear door speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms 3
12 (B)	13 (W)	Sound signal rear speaker RH	Input	ON	Sound output	(V) 1 0 -1 1 ms
14 (B)	15 (W)	Sound signal rear speaker LH	Input	ON	Sound output	(V) 1 0 -1 1 ms
18 (G)	Ground	Amp. ON signal	Input	ON	_	Greater than 6.5V
20 (P)	19 (R)	Front door speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms s
24 (G)	29 (W)	Rear door speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms
25 (W)	30 (G)	Rear speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms
26 (GR)	Ground	Ground	_	ON	_	0V

BOSE SPEAKER AMP

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION WITH BOSE]

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
27 (G)	Ground	Battery power supply	Input			Battery voltage
28 (SB)	Ground	battery power suppry	iliput	_	_	battery voltage
31 (GR)	Ground	Ground	_	ON	_	0V
33 (W)	32 (G)	Rear speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms
34 (P)	35 (W)	Front speaker signal RH	Output	ON	Sound output	(V) 1 0 -1 1 ms SKIA0177E
37 (G)	36 (R)	Front speaker signal LH	Output	ON	Sound output	(V) 1 0 -1 1 ms

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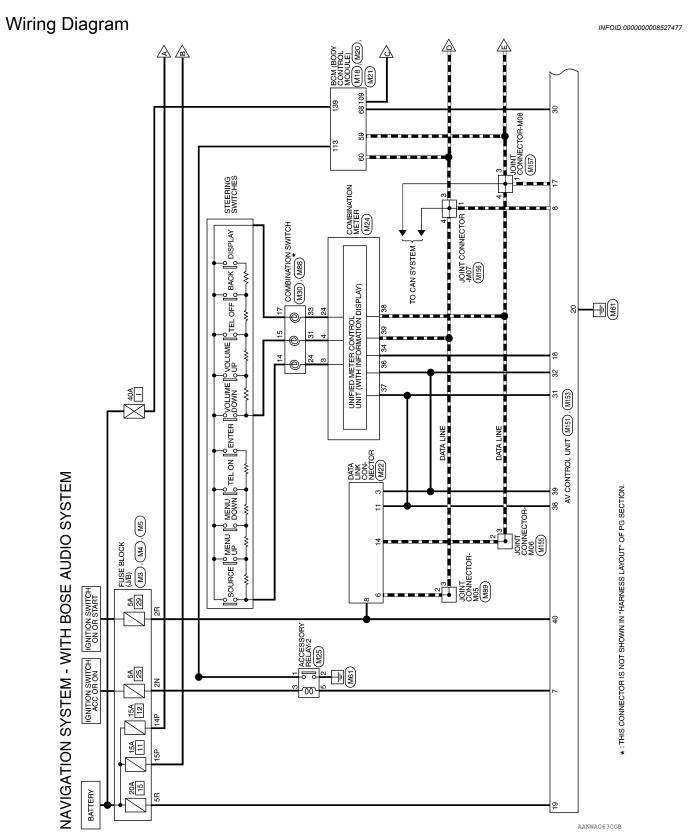
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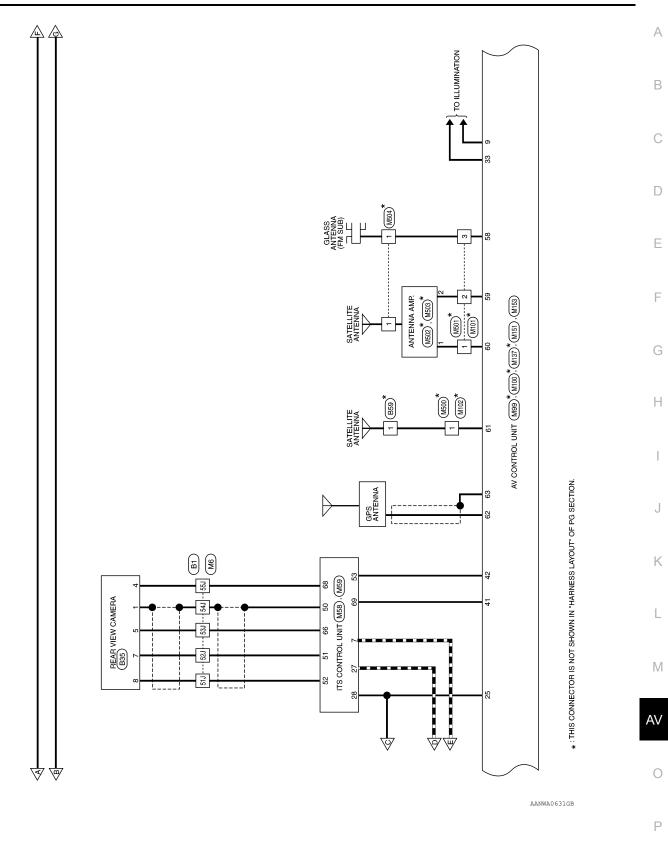
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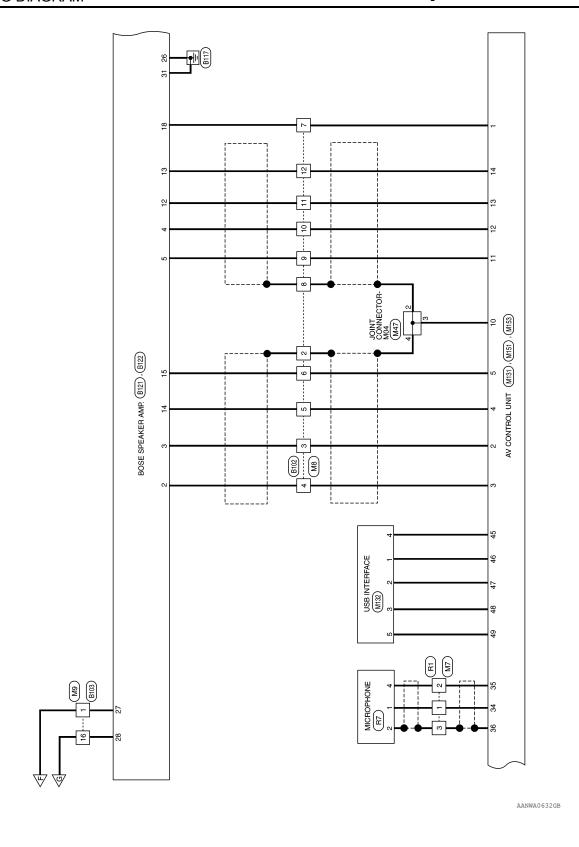
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WIRING DIAGRAM

NAVIGATION WITH BOSE







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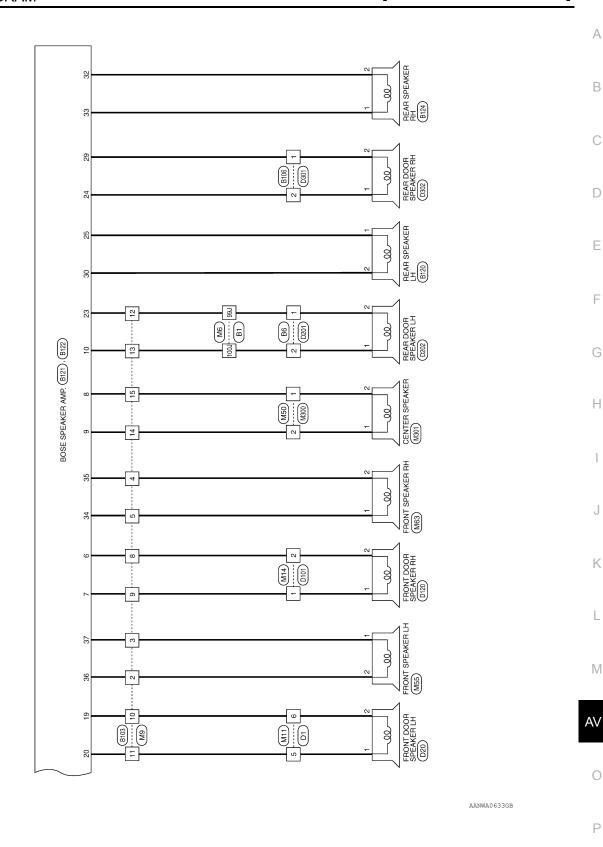
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AV-317 2013 Altima Sedan Revision: August 2012

Connector No. M5
Connector Name FUSE BLOCK (J/B)

WHITE

Connector Color

NAVIGATION SYSTEM CONNECTORS - WITH BOSE AUDIO SYSTEM

M4	onnector Name FUSE BLOCK (J/B)	BROWN
Connector No.	Connector Name	Connector Color
M3	tor Name FUSE BLOCK (J/B)	WHITE
Connector No.	Connector Name	Connector Color

	M3	Conn
ne	ne FUSE BLOCK (J/B)	Conne
o.	or WHITE	Conn
	3N SN SN SN 4N SN 4N SN 5N 4N SN 5N	E H

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麻利 H.S.	Terminal No.	2R	5R
			ı
N EN EN 4N	Signal Name	I	
	No. Color of Wire	ГG	
	Š.		

Terminal I ۲

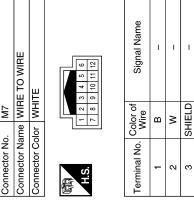
Signal Name	1	1	
Color of Wire	В	SB	
Terminal No.	14P	15P	

Signal Name

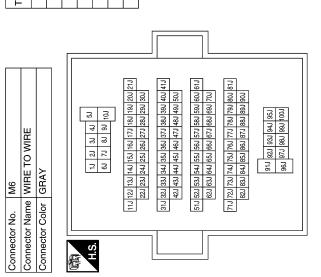
Color of Wire

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Ι			RE TO WIRE
SB		M7	WF
15P		Connector No.	Connector Name WIRE TO WIRE



Signal Name	ı	ı	I	ı	ı	-	ı
Color of Wire	>	œ	В	SHIELD	ŋ	ш	ŋ
erminal No.	51J	52J	53J	54.1	55J	66°	1001



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Connector Name WIRE TO WIRE		Connector	Name WIR	Connector Name WIRE TO WIRE	Connector Name WIRE TO WIRE	ļļį.
Connector Color WHITE		Connector Color	Color WHITE	TE	Connector Color WHITE	
H.S. (12 11 10 9 8 7		原 H.S.	7 6 5 4 16 15 14 13	6 5 4 1 1 10 0 0 8 1 1 1 10 0 0 8 8 1 1 1 1 1	H.S.	14 15 16
Terminal No. Color of Wire Signal	Signal Name	Terminal No.	o. Color of Wire	Signal Name	Terminal No. Color of Sig	Signal Name
2 SHIELD		-	9	ı	2	1
в В		2	۵	ı	9	1
W 4		က	ш	ı		
5		4	×	1		
8 8		5	ŋ	1		
_ M _ Z		80	BG	1		
- SHIELD		o	Ν	1		
- B 6		10	Œ	ı		
10 W		Ξ	ъ	ı		
11 G		12	Œ	1		
12 R -		13	9	ı		
		4	۵	1		
		15	æ	ı		
		16	SB	1		
Connector No. M14		Connector No.	No. M18		Connector No. M20	
Connector Name WIRE TO WIRE		Connector Name		BCM (BODY CONTROL	Connector Name BCM (BODY CONTROL	CONTROL
Connector Color WHITE			-	JÜLE)	-	
		Connector Color	Color BLACK	X	Connector Color BLACK	
1 2 1 3						
		H.S.	59 58 57 56 79 78 77 76	55 54 53 52 51 50 49 48 47 46 45 44 43 75 74 73 72 71 70 69 68 67 66 65 64 63	42 41 62 61	09108107106105 21120119118117
Terminal No. Color of Signal	Signal Name	Terminal No.	o. Wire	Signal Name	Terminal No. Color of Si	Signal Name
		29	Ь	CAN-L		REVERSE SIGNAL
2 BG -		09	_	CAN-H	113 P ACC	ACC RELAY OUT
		00	(!! !! !!		

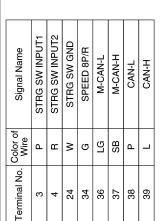
Revision: August 2012 AV-319 2013 Altima Sedan

SHIELD В

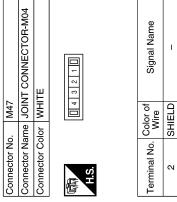
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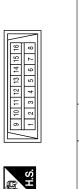
22 21									
13 12 11 10 9 8 7 6 5 4 3 33 22 31 30 29 28 27 28 25 24 23	Signal Name	STRG SW INPUT1	STRG SW INPUT2	STRG SW GND	SPEED 8P/R	M-CAN-L	M-CAN-H	CAN-L	CAN-H
4 4 8	Color of Wire	۵	Œ	>	ၒ	ГG	SB	۵	٦
H.S. 20 19 18 17 16 15 40 39 38 37 36 35	Terminal No.	င	4	24	34	36	37	38	39



	71
onnector No.	M47
onnector Name	onnector Name JOINT CONNECTOR-M
onnector Color WHITE	WHITE

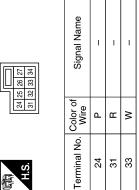


2	Connector Name DATA LINK CONNECTOR	ITE	
Connector No. M22	Connector Name DA	Connector Color WHITE	



Color of Wire S	Signal Name	ı	-	ı	I	-
minal No. 3 6 8 8 11	Color of Wire	LG	٦	BG	SB	Ь
Ter	Terminal No.	ဇ	9	8	11	14

0SM	Connector Name COMBINATION SWITCH (SPIRAL CABLE)	3RAY SRAY	
Connector No.	Connector Name	Connector Color GRAY	



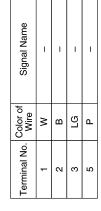






M25	Connector Name ACCESSORY RELAY-2	3LUE	
Connector No.	Connector Name	Connector Color BLUE	





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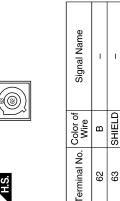
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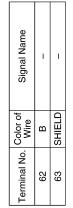
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M58 Connector Name ITS CONTROL UNIT Connector Color WHITE Connector Color WHITE Connector Color WHITE Connector Color WHITE Connector Color Color	Connector No. M88 Connector Name COMBINATION SWITCH (SPIRAL CABLE) Connector Color GRAY	7 IIII	Terminal No. Color of Signal Name		17 BR –			
Connector No. M55 Connector Name FRONT SPEAKER LH Connector Color BROWN Terminal No. Color of Signal Name 1 R 2 P	Connector No. M63 Connector Name FRONT SPEAKER RH Connector Color BROWN	H.S.	Terminal No. Color of Signal Name					
me WIRE TO WIRE or WHITE Mage	M59 ITS CONTROL UNIT WHITE	51 50 49 48 47 46 45 44 43 42 41 67 66 65 64 63 62 61 60 59 58 57	Color of Signal Name Wire SHIFLD -	R RR CAM GND	W RR CAM ON	SHIELD – SHIELD B + BB CAM COMP +		B COMP OUT +
Connector No. Connector Color H.S. Terminal No. Color 2	Connector No. Connector Name	H.S. 66 55 54 53 52 51 5 72 71 70 69 68 67 6	Terminal No. W			53 SHI	89	00 00 1A0917GB

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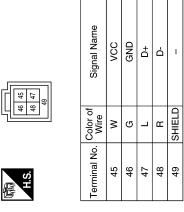
Connector No. M100	Connector Name AV CONTROL UNIT	Connector Color BLUE
M99	nnector Name AV CONTROL UNIT	nnector Color PURPLE
J	nnector Name	Color



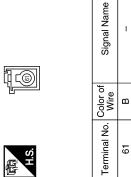














	Signal Name	1
	Color of Wire	В
(可) H.S.	Terminal No. Color of Wire	-

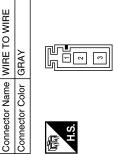




No. M89	Connector Name JOINT CONNECTOR-M05	Connector Color WHITE	0 4 3 2 1 0
Connector No.	Connector	Connector	H.S.

Signal Name	I	1
Color of Wire	٦	_
Terminal No. Wire	7	3

	M101	
	Connector No.	



Signal Nar	-	I	1
Color of Wire	В	В	В
Terminal No.	1	2	3

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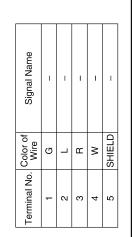
M137	onnector Name AV CONTROL UNIT	GRAY
Connector No.	Connector Name	Connector Color GRAY

Connector Name USB INTERFACE

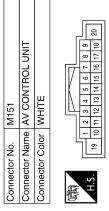
Connector Color BLUE

Connector No. M132

88 89 80	Signal Name	ANT SUB	MAIN ANT	NO TNA
28	Color of Wire	В	В	а
H.S.	Terminal No.	58	59	9



Signal Name	ILL (+), LIGHT SW	PREAMP SHIELD	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)	RR SP RH (-)	ı	-	CAN-L	SPEED SIGNAL	BAT	GND
Color of Wire	۳	В	В	8	Э	Œ	1	-	۵	В	В	GR
Terminal No.	6	10	Ξ	12	13	14	15	16	17	18	19	20



ctor Name AV CONTROL UNIT	WHITE	1 2 3 4 5 6 7 8 9 0 10 11 12 13 14 15 16 17 18 20
ctor Name	ctor Color WHITE	19 10

Signal Name	AMP ON	FR SP LH (+)	FR SP LH (-)	RR SP (+)	RR SP (-)	I	ACC	CAN-H
Color of Wire	Ν	В	>	g	В	ı	Ь	Т
Terminal No.	-	2	က	4	5	9	7	8

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AV-323 2013 Altima Sedan Revision: August 2012

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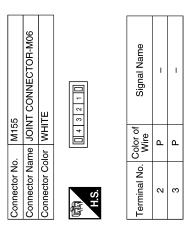
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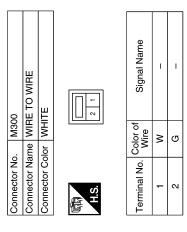
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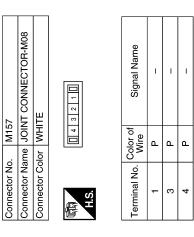
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Signal Name	ı	MR OUTPUT	M-CAN-H	M-CAN-L	ILL(-)	MIC SIGNAL	MIC VCC	MIC GND	-	M-CAN-H	M-CAN-L	IGNITION	CAMERA +	CAMERA - (SHIELD)	ı	ı
Color of Wire	ı	Ъ	SB	ГG	GR	В	>	SHIELD	1	SB	ГG	BG	В	SHIELD	1	1
Terminal No.	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44

			,										
23	AV CONTROL UNIT	<u> </u>		24 25 26 27 28 29 30 31 32 36 37 38 39 40 41 42 43 44	Signal Name	-	-	1	-	REVERSE	1	-	ı
M153		or WHITE		21 22 23 2 33 34 35 3	Color of Wire	ı	ı	ı	ı	9	ı	ı	ı
Connector No.	Connector Name	Connector Color		ν <u>;</u>	Terminal No.	21	22	23	24	25	26	27	28



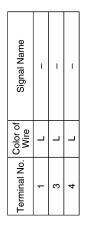


Connector Name JOINT CONNECTOR-M07

M156

Connector No.

Connector Color WHITE



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	E TO WIRE	, At		Signal Name	ı	1	ı
Connector No. M501	Connector Name WIRE TO WIRE	Connector Color GRAY	是 H.S.	Terminal No. Color of Wire	- B	2 B	3 B
	E TO WIRE	EN		Signal Name	ı		
Connector No. M500	Connector Name WIRE TO WIRE	Connector Color GREEN	E H.S.	Terminal No. Color of Wire	т В		
	Connector Name CENTER SPEAKER	WN		Signal Name	ı	ı	
Connector No. M301	Name CENT	Connector Color BROWN	<u> </u>	Terminal No. Color of Wire	g	3	

- `	Connector No. M502 Connector Name ANTENNA AMP.	Connector Name ANTENNA AMP.	o. M503 ame ANTE	3 ENNA AMP.	Connector No. M504 Connector Name WIRE TO WIRE	M504 Mme WIRE	TO WIRE
_	Connector Color GRAY	Connector Color BLACK	olor BLAC	NK N	Connector Color BLACK	olor BLAC	Υ
		原 H.S.			E H.S.		
Terminal No. Color of Wire	r of Signal Name	Terminal No. Color of Wire	Color of Wire	Signal Name	Terminal No. Wire	Color of Wire	Signal Name
В	ı	-	В	ı	-	В	1
В	ı						

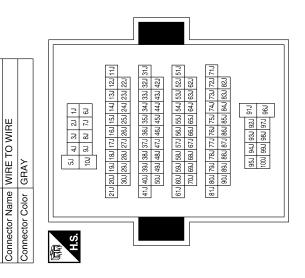
Revision: August 2012 AV-325 2013 Altima Sedan

	-	
Connector No.	. B6	
Connector Name WIRE TO WIRE	me WIR	E TO WIRE
Connector Color WHITE	lor WHI	TE
H.S.	- 4	8
Terminal No. Wire	Color of Wire	Signal Name
-	ш	I
2	Ь	ı

		_	_			_	_
Signal Name	Ι	-	-	-	1	=	_
Color of Wire	>	В	Ж	SHIELD	ŋ	В	Ь
Terminal No. Wire	51J	52J	53J	54J	55J	166	1001

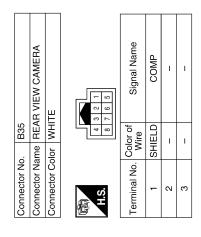
B1

Connector No.



Connector No.	o. B59	6
Connector Name	ame SA.	SATELLITE RADIO ANTENNA
Connector Color	olor GR	GREEN
H.S.	الــــــــــــــــــــــــــــــــــــ	
Terminal No.	Color of Wire	Signal Name
-	В	I

Signal Name	CONT	COMP +	-	GND	CAMERA ON
Color of Wire	В	Œ	-	В	8
Terminal No. Color of Wire	4	5	9	7	8



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Signal Name	1	1	ı	ı	1	ı	ı	ı
Color of Wire	۵	Œ	۵	>	ŋ	ŋ	Œ	SB
Terminal No.	6	10	11	12	13	14	15	16

3	WIRE TO WIRE	TE	3	Signal Name	_	-	ı	ı	
B103		· WHITE	9 10 1	Color of Wire	g	Я	മ	Μ	
9	lame	Solor	- ω						
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2	က	4	

	WIRE TO WIRE	E E	9 3 4 5 6	Signal Name	ı	1	ı	ı	1	ı	-	ı	_	1	1
. B102	_	lor WHITE	7 1 2 8 2	Color of Wire	SHIELD	σ	œ	В	>	ŋ	SHIELD	ŋ	ш	В	*
Connector No.	Connector Name	Connector Color	所 H.S.	Terminal No.	2	က	4	5	9	7	8	6	10	11	12

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	B120	
Connector Name	WITH SYST	REAR SPEAKER LH (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Terminal No. W	Color of Wire	Signal Name
_	×	ı
_	g	1

<u>0</u>	RE TO WIRE	ITE	8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Signal Name	I	-
. B106	me WIF	lor WH	1 4	Color of Wire	×	В
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	所 H.S.	Terminal No. Wire	-	2

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	MP.			- T- S-	<u>.</u>	ame														
2	BOSE SPEAKER AMP.	BROWN]	6	32 33 34 35 36 37	Signal Name	ı	ı	1	_	1	_	ı	_	_	_	ı	ı	ı	ı
. B122	-		L	188	28 30 31	Color of Wire	g	>	GR	G	SB	Μ	g	GR	В	Μ	۵	*	œ	ნ
Connector No.	Connector Name	Connector Color		晋	Ŋ.	Terminal No.	24	25	26	27	28	59	30	31	32	33	34	35	36	37

Signal Name	ı	-	-	
Color of Wire	_	Y	SHIELD	
Terminal No. Wire	-	2	3	

Signal Name	1	1	I	1	1	1	1	1	1	1	ı		I	1	1
Color of Wire	9	9	ı	В	8	В	M	ı	-	В	œ	Ь	ı	_	Μ
Terminal No. Wire	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23

	WIRE TO WIRE				-	7
	3			T	2	8
	12	l	1 IV	/	က	6
	Щ	lΕ	IN	\	4	9
뜐	1	WHITE		\	5	11
ш	>	_	[\exists	9	12
No.	. Name	Color		L		

			_										
-	BOSE SPEAKER AMP.	BROWN		5 6 7 8 9 10 15 16 17 18 19 20 21 22 23	Signal Name	ı	I	1	I	_	ı	ı	ı
. B121	-		-	2 3 4 12 13 14 1	Color of Wire	ı	Œ	ŋ	œ	Э	BG	۵	Œ
Connector No.	Connector Name	Connector Color		11 H.S.	Terminal No.	-	2	က	4	5	9	7	80

No. B124	Connector Name (WITH BOSE AUDIO SYSTEM)	Color WHITE	
Connector No.	Connector Nam	Connector Color WHITE	

	REAR SPEAKER RH (WITH BOSE AUDIO SYSTEM)	<u> </u>	[C]	Signal Name	=	ı
! !	me (WI SYS	lor WHITE		Color of Wire	W	G
	Connector Name	Connector Color	H.S.	Terminal No.	-	2

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<u>₹</u> \$ '	Connector No. R7 Connector Name MICROPHONE Connector Color WHITE	Connector No. D1 Connector Name WIRE TO WIRE Connector Color WHITE	ame WIF	RE TO WIRE	Connector No. D20 Connector Name LH (WITH SYSTEM Connector Color BROWN	D20 Ime LH (\) SYS	Connector No. D20 Connector Name LH (WITH BOSE AUDIO SYSTEM) Connector Color SYSTEM)
	2 3 4	H.S.	16 15 14 1	13 12 11 10 9 8	原 H.S.	2	
Terminal No. Color of Wire	f Signal Name	Terminal No. Color of Wire	Color of Wire	Signal Name			
	ı	ß	U	1	Terminal No. Wire	Color of Wire	Signal Name
SHIELD	-	9	>	ı	-	g	1
,	ı				2	8	1
 >							

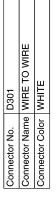
Connector No.). D101		Connector No.	. D120		Connector No. D201). D201	
nnector Na	Connector Name WIRE TO WIRE	O WIRE		FRON	NT DOOR SPEAKER	Connector Name WIRE TO WIRE	ame WIRE	TO WIRE
nnector Co	Connector Color WHITE		Connector Na	me KH (v SYST	Connector Name KH (WITH BOSE AUDIO SYSTEM)	Connector Color WHITE	olor WHIT	E
[Connector Color BROWN	lor BROV	NN			
品.	8 4 6		H.S.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		(A)	8 8	5 2 4 1
Terminal No. Color of	Color of	Signal Name				Terminal No. Color of	Color of	Signal Name
	NA II C			ا من موادن			N I G	
-	g	1	Terminal No. Wire	Wire	Signal Name	-	>	1
2	M	1	-	G	1	2	LG	1
			2	>	1			

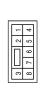
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Connector No. D302 Connector Name REAR DOOR SPEAKER RH Connector Color BROWN
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Signal Nam	_	_
Color of Wire	У	ГG
Terminal No.	1	2



NOW SON		16 REAR DOOR SPEAKER LH	N.	<u> </u>
	חבטב	EAR [BROWN	2

Signal Name	1	1
Color of Wire	ГВ	Υ
Terminal No.	1	2

D202	REAR DOOR	BROWN
Connector No.	Connector Name REAR DOOR	Connector Color BROWN

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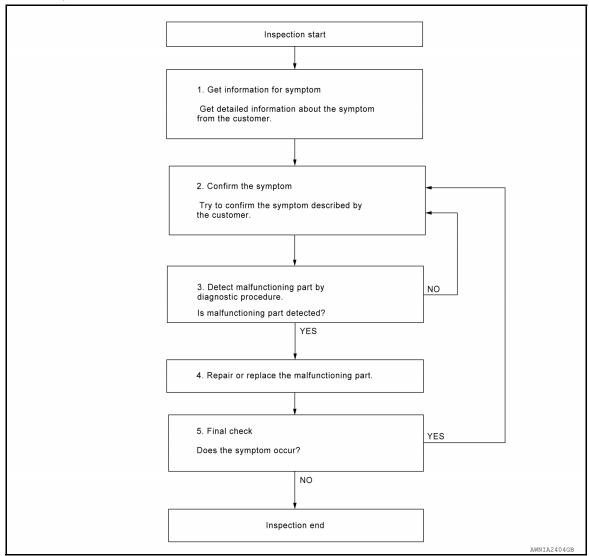
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow INFOID:0000000008542270

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-382, "Symptom Table".

>> GO TO 3

3.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[NAVIGATION WITH BOSE]

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

INSPECTION AND ADJUSTMENT [NAVIGATION WITH BOSE] < BASIC INSPECTION > INSPECTION AND ADJUSTMENT Α ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT: Description INFOID:0000000008659102 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 replac-D ing AV control unit. AFTER REPLACEMENT **CAUTION:** Е 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 1. SAVING VEHICLE SPECIFICATION P-CONSULT Н 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-396, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

(P)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-334, "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-334, "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.

CONFIGURATION (AV CONTROL UNIT)

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION WITH BOSE]

CONFIGURATION (AV CONTROL UNIT): Description

INFOID:0000000008659104

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:0000000008659105

1. WRITING MODE SELECTION

(P)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"

(P)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.

${f 3.}$ PERFORM "AFTER REPLACE ECU" OR "MANUAL CONFIGURATION"

(P)CONSULT

- 1. Select "After Replace ECU" or "Manual Configuration".
- 2. Identify the correct model and configuration list. Refer to <u>AV-335, "CONFIGURATION (AV CONTROL UNIT)</u>: 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.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION WITH BOSE]

>> Work End.

CONFIGURATION (AV CONTROL UNIT): Configuration List

INFOID:0000000008659106

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			

 $[\]Leftrightarrow$: Items which confirm vehicle specifications

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U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DTC Logic

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.	

Diagnosis Procedure

INFOID:0000000008713818

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-18, "Trouble Diagnosis Flow Chart".

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

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U1010 CONTROL UNIT (CAN)

DTC Logic

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-396, "Removal and Installation".	

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U1217 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U1217 AV CONTROL UNIT

DTC Logic

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-396, "Removal and Installation".	

U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U1229 AV CONTROL UNIT

DTC Logic

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-396, "Removal and Installation".	

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U122F AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U122F AV CONTROL UNIT

DTC Logic

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-396, "Removal and Installation".	

U1244 GPS ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

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INFOID:0000000008713824

U1244 GPS ANTENNA

DTC Logic

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

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1.GPS ANTENNA INSPECTION

Visually inspect the GPS antenna and antenna feeder. Refer to <u>AV-405, "Removal and Installation"</u>. <u>Is inspection result normal?</u>

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK AV CONTROL UNIT VOLTAGE

- 1. Disconnect AV control unit connector M100.
- Turn ignition switch ON.
- 3. Check voltage between AV control unit terminal 62 and ground.

AV control unit terminal	Ground	Voltage	
(+)	(-)	voltage	
62	_	5.0 V	

Is inspection result normal?

YES >> Replace GPS antenna. Refer to AV-405, "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

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U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U1258 SATELLITE RADIO ANTENNA

DTC Logic (INFOID:000000008713825

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:0000000008713826

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1. SATELLITE ANTENNA INSPECTION

Visually inspect the satellite antenna and antenna feeder. Refer to <u>AV-407, "Location of Antenna"</u>. <u>Is inspection result normal?</u>

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2.CHECK SATELLITE ANTENNA FEEDER CONTINUITY

- Disconnect AV control unit connector M99 and satellite radio antenna connector B59.
- 2. Check continuity between AV control unit connector M99 and satellite radio antenna connector B59.

AV control unit		Satellite radio antenna		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M99	61	B59	1	Yes	

Check continuity between AV control unit connector M99 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M99	61	_	No

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3. CHECK AV CONTROL UNIT VOLTAGE

- 1. Turn ignition switch ON.
- Check voltage between AV control unit terminal 61 and ground.

AV control unit terminal	Ground	Voltage
(+)	(-)	voltage
61	_	5.0 V

Is inspection result normal?

YES >> Replace satellite radio antenna. Refer to AV-404, "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

U1263 USB

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

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INFOID:0000000008713828

U1263 USB

DTC Logic

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.
- Perform Self Diagnostic Result for MULTI AV.

Is DTC U1263 displayed?

YES >> Refer to AV-343, "Diagnosis Procedure".

NO >> Inspection End.

Diagnosis Procedure

1. CHECK USB INTERFACE HARNESS

Visually inspect USB interface harness. Refer to AV-397, "Removal and Installation".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace USB interface harness. Refer to AV-397, "Removal and Installation".

2. CHECK USB INTERFACE HARNESS

Check USB interface harness. Refer to AV-381, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

NO >> Replace USB interface harness. Refer to AV-397, "Removal and Installation".

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< DTC/CIRCUIT DIAGNOSIS >

U1264 ANTENNA AMP.

DTC Logic

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:0000000008713830

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1. ANTENNA AMP. INSPECTION

Visually inspect the antenna amp. and antenna feeder. Refer to <u>AV-407, "Location of Antenna"</u>. <u>Is inspection result normal?</u>

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA AMP.

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M137 and antenna amp. connector M502.
- 3. Check continuity between AV control unit connector M137 and antenna amp. connector M502.

AV cor	AV control unit		Antenna amp.	
Connector	Terminal	Connector	Terminal	Continuity
M137	60	M502	1	Yes

4. Check continuity between AV control unit connector M137 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Orodila	Continuity
M137	60	_	No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

3.CHECK AV CONTROL UNIT VOLTAGE

- Connect AV control unit connector M137.
- Turn ignition switch ON.
- Check voltage between AV control unit connector M137 and ground.

AV control unit		Ground	
(+)		()	Voltage (Approx.)
Connector	Terminal	(-)	(FF -)
M137	60	_	Battery voltage

Is the inspection result normal?

YES >> Replace antenna amp. Refer to AV-410, "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

U1265 BOSE AMP.

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U1265 BOSE AMP.

DTC Logic INFOID:0000000008707342

CONSULT Display	DTC Detection Condition	Possible Cause
AMP ON TERMINAL [U1265]	Open or short to ground is detected in BOSE amp. ON signal circuit.	Open or short to ground in BOSE amp. ON signal circuit.

Diagnosis Procedure

INFOID:0000000008707343

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE SPEAKER AMP.

- Turn ignition switch OFF.
- Disconnect AV control unit connector M151 and Bose speaker amp. connector B121.
- 3. Check continuity between AV control unit connector M151 and Bose speaker amp. connector B121.

AV control unit		Bose spe	aker amp.	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M151	1	B121	18	Yes

Check continuity between AV control unit connector M151 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Orodila	Continuity
M151	1	_	No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2.CHECK AV CONTROL UNIT VOLTAGE

- Connect AV control unit connector M151.
- Turn ignition switch ON. 2.
- Check voltage between AV control unit connector M151 and ground.

AV control unit		Ground	
(+)		()	Voltage (Approx.)
Connector	Terminal	(-)	()
M151	1	_	Battery voltage

Is the inspection result normal?

>> Replace Bose speaker amp. Refer to AV-403, "Removal and Installation".

>> Replace AV control unit. Refer to AV-396, "Removal and Installation". NO

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U12AA CONFIGURATION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U12AA CONFIGURATION ERROR

DTC Logic

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-334, "CONFIGURATION (AV CONTROL UNIT): Work Procedure".

Diagnosis Procedure

INFOID:0000000008713834

1.PERFORM CONFIGURATION

When U12AA is detected, configuration data must be written.

>> Write configuration data with CONSULT. Refer to <u>AV-334, "CONFIGURATION (AV CONTROL UNIT)</u>: Work <u>Procedure"</u>.

U12AB ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

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INFOID:0000000008713836

U12AB ANTENNA

DTC Logic INFOID:0000000008713835

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause	
FM Antenna error [U12AB]	Open or short to ground is detected in glass antenna (FM sub) connection.	 Glass antenna (FM sub) disconnection. Open or short to ground in glass antenna (FM sub) signal circuit. 	

Diagnosis Procedure

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1. GLASS ANTENNA (FM SUB) INSPECTION

Visually inspect the glass antenna (FM sub) and antenna feeder. Refer to AV-407, "Location of Antenna". Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2.CHECK GLASS ANTENNA (FM SUB) FEEDER CONTINUITY

- Disconnect AV control unit connector M1317 and inline connector M504.
- Check continuity between AV control unit connector M137 and inline connector M504.

AV cor	ntrol unit	Inline		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M137	58	M504	1	Yes	

Check continuity between AV control unit connector M137 and ground.

AV control unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M137	58	_	No	

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.check av control unit voltage

- Disconnect AV control unit connector M137.
- 2. Turn ignition switch ON.
- Check voltage between AV control unit terminal 58 and ground.

AV control unit terminal	Ground	Voltage	
(+)	(-)		
58	_	5.0 V	

Is inspection result normal?

YES >> Replace glass antenna (FM sub). Refer to GW-25, "Removal and Installation".

>> Replace AV control unit. Refer to AV-396, "Removal and Installation". NO

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U12AC AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U12AC AV CONTROL UNIT

DTC Logic

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-396, "Removal and Installation".

U12AD AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U12AD AV CONTROL UNIT

DTC Logic

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-396, "Removal and Installation".

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U12AE AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U12AE AV CONTROL UNIT

DTC Logic

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-396, "Removal and Installation".

U12AF AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U12AF AV CONTROL UNIT

DTC Logic

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-396, "Removal and Installation".

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U12B0 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U12B0 POWER SUPPLY VOLTAGE

DTC Logic

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:0000000008713842

1. CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to CHG-17, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-20, "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 <u>AV-357</u>, "AV CONTROL UNIT: Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-396, "Removal and Installation".

NO >> Repair or replace harness or connectors.

U12B1 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U12B1 POWER SUPPLY VOLTAGE

DTC Logic

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:0000000008713844

1. CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to CHG-17, "Work Flow (With EXP-800 NI or GR8-1200 NI)" or CHG-20, "Work Flow (Without EXP-800 NI or GR8-1200 NI)".

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-396, "Removal and Installation".

NO >> Repair or replace the malfunctioning components.

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U1300 AV COMM CIRCUIT

DTC Logic

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
AV COMM CIRCUIT [U1300]	AV communication circuit malfunction (MCAN) between AV control unit and combination meter.	AV communication circuits between AV control unit and combination meter.

Diagnosis Procedure

INFOID:0000000008713846

1. PERFORM SELF DIAGNOSTIC RESULT FOR METER M&A

- 1. Turn ignition switch ON and wait for 2 seconds or more.
- 2. Perform Self Diagnostic Result for METER M&A.

Are any DTCs displayed?

YES >> Refer to MWI-27, "DTC Index".

NO >> GO TO 2.

2.CHECK AV COMMUNICATION CIRCUIT (MCAN L) CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect AV control unit connector M153 and combination meter connector M24.
- 3. Check continuity between AV control unit connector M153 and combination meter connector M24.

AV cor	ntrol unit	Combination meter		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M153	32	M24 36	36	Yes	
W1133	39	IVIZ4	30	165	

4. Check continuity between AV control unit connector M153 and ground.

AV control unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M153	32		No	
IVI 133	39	_	INO	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.check av communication circuit (mcan h) continuity

1. Check continuity between AV control unit connector M153 and combination meter connector M24.

AV cor	trol unit	Combina	tion meter	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M153	M153 31 M24		37	Yes
IVI 133	38	10124	31	ies

2. Check continuity between AV control unit connector M153 and ground.

AV control unit		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M153	31		No	
WITSS	38	_	INO	

U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to AV-396, "Removal and Installation".

NO >> Repair or replace harness or connectors.

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U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

U1310 AV CONTROL UNIT

DTC Logic

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (AV) [U1310]	Error during CAN controller hardware initialization (MCAN).	Replace AV control unit if malfunction occurs constantly. Refer to AV-396, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000008654286

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

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1.CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
7	ACC power supply	25 (5A)
19	Battery power supply	15 (20A)
40	Ignition power supply	29 (5A)

Are the fuses blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

Turn ignition switch OFF.

Disconnect AV control unit connectors M151 and M153.

Check voltage between AV control unit connectors M151 and M153 and ground.

AV control unit		Ground	Condition	Voltage
Connector	Terminal	Cidana	Condition	(Approx.)
M151	19		Ignition switch: OFF	
WITOT	7	<u> </u>	Ignition switch: ON	Battery voltage
M153	40		ignition switch. ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK GROUND CIRCUIT

Turn ignition switch OFF.

Check continuity between AV control unit connector M151 and ground.

AV control unit		Ground	Continuity
Connector	Terminal	Ground	Continuity
M151	20	_	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

BOSE SPEAKER AMP

BOSE SPEAKER AMP : Diagnosis Procedure

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

CHECK FUSE

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INFOID:0000000008654287

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
27	Ratton, nower supply	12 (15A)
28	Battery power supply	11 (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 Bose speaker amp. connector B122.
- 3. Check voltage between Bose speaker amp. connector B122 and ground.

Bose spe	Bose speaker amp.		Condition	Voltage
Connector	Terminal	Ground	Condition	(Approx.)
D122	B122 27		Ignition switch: OFF	Battery voltage
D122	28	_	ignition switch. OFF	Ballery Vollage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect Bose speaker amp. connector B122.
- 3. Check continuity between Bose speaker amp. connector B122 and ground.

Bose speaker amp.		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
B122	26		Yes	
B122	31	_	res	

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000008654288

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Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1.CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. 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 (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B121 and suspect front door speaker connector.
- 2. Check continuity between Bose speaker amp. connector B121 and suspect front door speaker connector.

Bose spe	Bose speaker amp.		Front door speaker	
Connector	Terminal	Connector	Terminal	Continuity
	20	D20 (LH)	1	Yes
B121	19		2	
	7	D400 (DU)	1	165
	6	D120 (RH)	2	

3. Check continuity between Bose speaker amp. connector B121 and ground.

Bose speaker amp.		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
B121	20	_	No	
	19			
	7			
	6			

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK FRONT DOOR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B121 and suspect front door speaker connector.
- 2. Turn ignition switch to ACC.
- Push AV control unit POWER switch.
- Check signal between Bose speaker amp. connector B121 and ground.

Bose speaker amp. connector B121			
(+)	(-)	Condition	Reference value
Terminal	Terminal		

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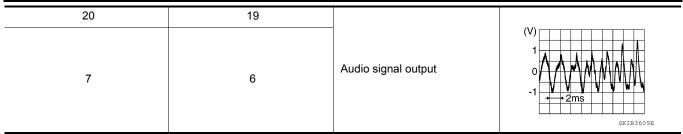
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FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]



Is the inspection result normal?

YES >> Replace front door speaker. Refer to AV-400, "Removal and Installation".

NO >> GO TO 4

4. CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

- 1. Turn ignition switch to OFF.
- 2. Disconnect Bose speaker amp. connector B121 and AV control unit connector M151.
- 3. Check continuity between Bose speaker amp. connector B121 and AV control unit connector M151.

Bose speaker amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B121	2	M151	3	Yes
	3		2	
	4		12	
	5		11	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose speaker amp.		Cround	Continuity
Connector	Terminal	- Ground	Continuity
B121	2	_	No
	3		
	4		
	5		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

CHECK FRONT DOOR SPEAKER SIGNAL (AV CONTROL UNIT)

- Connect Bose speaker amp. connector B121 and AV control unit connector M151.
- 2. Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- 4. Check signal between AV control unit connector M151 and ground.

AV control unit connector M151			
(+)	(–)	Condition	Reference value
Terminal	Terminal		
2	3		
11	12	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

YES >> Replace Bose speaker amp. Refer to <u>AV-403, "Removal and Installation"</u>.

NO >> Replace AV control unit. Refer to <u>AV-396, "Removal and Installation"</u>.

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FRONT SPEAKER

Diagnosis Procedure

INFOID:0000000008654289

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1.CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. 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 SPEAKER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B122 and suspect front speaker connector.
- 2. Check continuity between Bose speaker amp. connector B122 and suspect front speaker connector.

Bose spe	eaker amp.	Front speaker		Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
	37	M55 (LH)	MEE (LLI)	MEE (LLI)	1	
B122	36		2	Yes		
D122	34	M63 (RH)	1	165		
	35		2			

3. Check continuity between Bose speaker amp. connector B122 and ground.

Bose sp	Bose speaker amp.		Continuity
Connector	Terminal	Ground	Continuity
	36		No
B122	37		
	34	_	
	35		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

$3. {\sf CHECK}$ FRONT SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B122 and suspect front speaker connector.
- 2. Turn ignition switch to ACC
- 3. Push AV control unit POWER switch.
- 4. Check signal between Bose speaker amp. connector B122 and ground.

Bose speaker amp. connector B122			
(+)	(–)	Condition	Reference value
Terminal	Terminal		

FRONT SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

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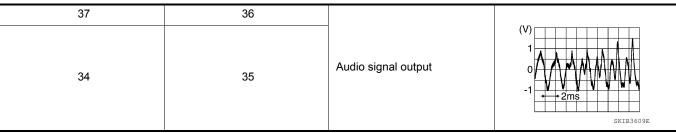
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Is the inspection result normal?

YES >> Replace front speaker. Refer to AV-398, "Removal and Installation".

NO >> GO TO 4

4. CHECK FRONT SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

1. Turn ignition switch to OFF.

- 2. Disconnect Bose speaker amp. connector B121 and AV control unit connector M151.
- 3. Check continuity between Bose speaker amp. connector B121 and AV control unit connector M151.

Bose spe	eaker amp.	AV cor	ntrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2	M151	3	
B121	3		2	Yes
	4		12	res
	5		11	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose spe	Bose speaker amp.		Continuity
Connector	Terminal	Ground	Continuity
	2		
B121	3		No
DIZI	4	_	INU
	5		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK FRONT SPEAKER SIGNAL (AV CONTROL UNIT)

- Connect Bose speaker amp. connector B121 and AV control unit connector M151.
- Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- 4. Check signal between AV control unit connector M151 and ground.

AV control unit	connector M151			
(+)	(-)	Condition	Reference value	0
Terminal	Terminal			
2	3			
11	12	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E	Р

Is the inspection result normal?

FRONT SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

>> Replace Bose speaker amp. Refer to <u>AV-403, "Removal and Installation"</u>. >> Replace AV control unit. Refer to <u>AV-396, "Removal and Installation"</u>. YES

NO

CENTER SPEAKER

Diagnosis Procedure

INFOID:0000000008654290

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Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1.CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. 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 CENTER SPEAKER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B121 and center speaker connector M301.
- 2. Check continuity between Bose speaker amp. connector B121 and center speaker connector M301.

Bose spe	eaker amp.	Center speaker		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B121	9	M301	1	Yes
DIZI	8	IVISO I	2	165

3. Check continuity between Bose speaker amp. connector B121 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Ground	Continuity
B121	9	_	No
DIZI	8	_	NO

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

${\it 3.}$ CHECK CENTER SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B121 and center speaker connector M301.
- 2. Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- 4. Check signal between Bose speaker amp. connector B121 and ground.

Bose speaker amp. connector B121				
(+)	(–)	Condition	Reference value	
Terminal	Terminal			
9	8	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E	

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace center speaker. Refer to AV-399. "Removal and Installation".

NO >> GO TO 4

4. CHECK CENTER SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

- Turn ignition switch to OFF.
- 2. Disconnect Bose speaker amp. connector B121 and AV control unit connector M151.
- 3. Check continuity between Bose speaker amp. connector B121 and AV control unit connector M151.

Bose spe	eaker amp.	AV control unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2		3	
B121	3	M151	2	Yes
DIZI	4		12	165
	5		11	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose s	Bose speaker amp.		Combination
Connector	Terminal	- Ground	Continuity
	2		
B121	3		No
BIZI	4	_	INO
	5		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK CENTER SPEAKER SIGNAL (AV CONTROL UNIT)

- 1. Connect Bose speaker amp. connector B121 and AV control unit connector M151.
- Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- 4. Check signal between AV control unit connector M151 and ground.

AV control unit connector M151			
(+)	(-)	Condition	Reference value
Terminal	Terminal		
2	3		
11	12	Audio signal output	(V) 1 0 -1 -2ms SKIB3609E

Is the inspection result normal?

YES >> Replace Bose speaker amp. Refer to AV-403, "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

REAR DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000008654291

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Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1.CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. 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 (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connectors and suspect rear door speaker connector.
- 2. Check continuity between Bose speaker amp. connectors and suspect rear door speaker connector.

Bose spe	eaker amp.	Rear door speaker		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
B121	10	D202 (LH)	D202 (LLI)	1	
	23		2	Yes	
B122	24	D302 (RH)	1	165	
	29		2		

3. Check continuity between Bose speaker amp. connectors and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Giodila	Continuity
B121	10		
	23		No
B122	24	_	INO
	29	-	

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

$3. {\sf CHECK}$ REAR DOOR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- Connect Bose speaker amp. connectors and suspect rear door speaker connector.
- 2. Turn ignition switch to ACC.
- Push AV control unit POWER switch.
- 4. Check signal between Bose speaker amp. connectors and ground.

Bose speaker amp.				
Connector	(+)	(-)	Condition	Reference value
	Terminal	Terminal		

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REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]



Is the inspection result normal?

YES >> Replace rear door speaker. Refer to AV-401, "Removal and Installation".

NO >> GO TO 4

4. CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

- 1. Turn ignition switch to OFF.
- 2. Disconnect Bose speaker amp. connector B121 and AV control unit connector M151.
- 3. Check continuity between Bose speaker amp. connector B121 and AV control unit connector M151.

Bose speaker amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	14	M151	4	
B121	15		5	Yes
DIZI	12		13	les
	13		14	

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Ground	Continuity
B121	14	. No	
	15		No
	12	_	
	13		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK REAR DOOR SPEAKER SIGNAL (AV CONTROL UNIT)

- Connect Bose speaker amp. connector B121 and AV control unit connector M151.
- Turn ignition switch to ACC.
- 3. Push AV control unit POWER switch.
- 4. Check signal between AV control unit connector M151 and ground.

AV control unit	connector M151		
(+)	(-)	Condition	Reference value
Terminal	Terminal		
4	5		
13	14	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

YES >> Replace Bose speaker amp. Refer to <u>AV-403, "Removal and Installation"</u>.

NO >> Replace AV control unit. Refer to <u>AV-396, "Removal and Installation"</u>.

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REAR SPEAKER

Diagnosis Procedure

INFOID:0000000008654292

Regarding Wiring Diagram information, refer to AV-314. "Wiring Diagram".

1.CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. 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 (BOSE SPEAKER AMP.)

- 1. Disconnect Bose speaker amp. connector B122 and suspect rear speaker connector.
- 2. Check continuity between Bose speaker amp. connector B122 and suspect rear speaker connector.

Bose spe	eaker amp.	Rear speaker		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	25	B120 (LH)	D400 (LLI)	1	
B122	30		2	Yes	
DIZZ	33	B124 (RH)	1	res	
	32		2		

3. Check continuity between Bose speaker amp. connector B122 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal	Ground	Continuity
	30		No
B122	25		
	33	_	
	32		

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness or connectors.

3.CHECK REAR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

- 1. Connect Bose speaker amp. connector B122 and suspect rear door speaker connector.
- 2. Turn ignition switch to ACC
- 3. Push AV control unit POWER switch.
- 4. Check signal between Bose speaker amp. connector B122 and ground.

Bose speaker amp. connector B122			
(+)	(–)	Condition	Reference value
Terminal	Terminal		

REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

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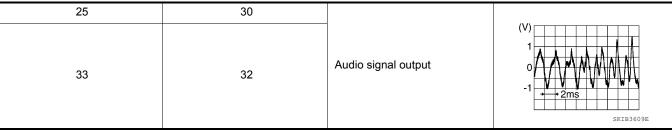
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Is the inspection result normal?

YES >> Replace rear speaker. Refer to AV-402, "Removal and Installation".

NO >> GO TO 4

4. CHECK REAR SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

1. Turn ignition switch to OFF.

- 2. Disconnect Bose speaker amp. connector B121 and AV control unit connector M151.
- 3. Check continuity between Bose speaker amp. connector B121 and AV control unit connector M151.

Bose speaker amp.		AV control unit		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
B121	14	M45		4	
	15		5	Yes	
	12		13	res	
	13		14		

4. Check continuity between Bose speaker amp. connector B121 and ground.

Bose spe	Bose speaker amp.		Continuity
Connector	Terminal	- Ground	Continuity
	14		
B121	15		No
	12	_	No
	13		

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness or connectors.

5. CHECK REAR SPEAKER SIGNAL (AV CONTROL UNIT)

- Connect Bose speaker amp. connector B121 and AV control unit connector M151.
- Turn ignition switch to ACC.
- Push AV control unit POWER switch.
- 4. Check signal between AV control unit connector M151 and ground.

AV control unit connector M151				
(+)	(–)	Condition	Reference value	
Terminal	Terminal			
4	5			
13	14	Audio signal output	(V) 1 0 -1 + 2ms SKIB3609E	F

Is the inspection result normal?

REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

>> Replace Bose speaker amp. Refer to <u>AV-403, "Removal and Installation"</u>. >> Replace AV control unit. Refer to <u>AV-396, "Removal and Installation"</u>. YES

NO

AMP ON SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

AMP ON SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000008654293

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Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE SPEAKER AMP.

- Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M151 and Bose speaker amp. connector B121.
- 3. Check continuity between audio unit connector M151 and Bose speaker amp. connector M121.

AV cor	AV control unit		Bose speaker amp.	
Connector	Terminal	Connector Terminal		Continuity
M151	1	B121	18	Yes

4. Check continuity between AV control unit connector M151 and ground.

AV cor	ntrol unit	Ground	Continuity	
Connector	Terminal	Ground	Continuity	
M151	1	_	No	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2.CHECK AV CONTROL UNIT VOLTAGE

- 1. Connect AV control unit connector M151.
- 2. Turn ignition switch ON.
- 3. Check voltage between AV control unit connector M151 and ground.

AV control unit		Ground	
(+)		(-)	Voltage (Approx.)
Connector	Terminal	(-)	()
M151	1	_	Battery voltage

Is the inspection result normal?

YES >> Replace Bose speaker amp. Refer to AV-403, "Removal and Installation".

NO >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

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REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000008654294

Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1. CHECK REVERSE INPUT SIGNAL

- Turn ignition switch ON.
- Shift the selector lever to R (reverse).
- 3. Check voltage between ITS control unit connector M58 and ground.

ITS cor	ITS control unit Ground			
(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal	(-)		
M58	28	_	Selector lever in R (reverse)	Battery Voltage

4. Check voltage between AV control unit connector M153 and ground.

AV control unit Gre		Ground		V 16
((+)		Condition	Voltage (Approx.)
Connector	Terminal	(-)		() ,
M153	25	_	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 ITS control unit connector M59 and rear view camera connector.
- 3. Check continuity between ITS control unit connector M59 and rear view camera connector B35.

ITS cor	ITS control unit		Rear view camera	
Connector	Terminal	Connector Terminal		Continuity
M59	52	B35	8	Yes

4. Check continuity between ITS control unit connector M59 and ground.

ITS cor	ntrol unit		Continuity	
Connector	Terminal	Ground	Continuity	
M59	52		No	

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK CAMERA POWER SUPPLY VOLTAGE

- 1. Connect ITS control unit connector M59 and rear view camera connector.
- Turn ignition switch ON.
- 3. Shift the selector lever to R (reverse).
- Check voltage between ITS control unit connector M59 and ground.

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

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ITS co	ITS control unit			V 11
(+)		(_)	Condition	Voltage (Approx.)
Connector	Terminal	(-)		, , ,
M59	52	_	Selector lever in R (reverse)	6.0 V

Is inspection result normal?

YES >> GO TO 4.

NO >> Replace ITS control unit. Refer to AV-413, "Removal and Installation".

4. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY (ITS CONTROL UNIT)

- 1. Turn ignition switch OFF.
- 2. Disconnect ITS control unit connector M59 and rear view camera connector.
- 3. Check continuity between ITS control unit connector M59 and rear view camera connector B35.

ITS control unit		Rear view camera		Continuity
Connector	Terminal	Connector Terminal		Continuity
M59	66	B35	5	Yes

4. Check continuity between ITS control unit connector M59 and ground.

ITS control unit			Continuity
Connector	Terminal	Ground	Continuity
M59	66		No

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness or connectors.

${f 5}$.CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between ITS control unit connector M59 and rear view camera connector B35.

ITS control unit		Rear view camera		Continuity
Connector	Terminal	Connector Terminal		Continuity
M59	51	B35	7	Yes

Is inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness or connectors.

$oldsymbol{6}.$ CHECK CAMERA IMAGE SIGNAL (ITS CONTROL UNIT)

- 1. Connect ITS control unit connector M59 and rear view camera connector.
- 2. Turn ignition switch ON.
- 3. Shift the selector lever to R (reverse).
- 4. Check signal between ITS control unit connector M59 and ground.

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REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

ITS cor	ITS control unit Ground (+) (-)			
(Condition	Reference value
Connector	Terminal	(-)		
M59	66	_	Camera image dis- played.	(V) 0. 4 0 -0. 4 → 40µs SKIB2251J

Is inspection result normal?

YES >> GO TO 7.

NO >> Replace ITS control unit. Refer to AV-413, "Removal and Installation".

7.CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

- Turn ignition switch OFF.
- 2. Disconnect ITS control unit connector M59 and AV control unit connector M153.
- Check continuity between ITS control unit connector M59 and AV control unit connector M153.

ITS cor	ntrol unit	AV control unit		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M59	69	M153	41	Yes	

4. Check continuity between ITS control unit connector M59 and ground.

ITS control unit			Continuity
Connector	Terminal	Ground	Continuity
M59	69		No

Is inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace harness or connectors.

8.CHECK CAMERA IMAGE SIGNAL (AV CONTROL UNIT)

- 1. Connect ITS control unit connector M59 and AV control unit connector M153.
- 2. Turn ignition switch ON.
- Shift the selector lever to R (reverse).
- 4. Check signal between AV control unit connector M153 and ground.

AV cor	ntrol unit	Ground		
((+)		Condition	Reference value
Connector	Terminal	(–)		
M153	41	_	Camera image dis- played.	(V) 0. 4 0 -0. 4 → 40µs SKIB2251J

Is inspection result normal?

YES >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

NO >> Replace rear view camera. Refer to AV-412, "Removal and Installation".

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000008654295

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Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1. CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M153 and microphone connector R7.
- 3. Check continuity between AV control unit connector M153 and microphone connector R7.

AV cor	ntrol unit	Microphone		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	36		2	
M153	35	R7	4	Yes
	34		1	

4. Check continuity between AV control unit connector M153 and ground.

AV control unit		Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
	36			
M153	35	_	No	
	34			

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 M153.
- 2. Turn ignition switch ON.
- 3. Check voltage between terminals of AV control unit connector M153.

AV control unit		
(+) (-)		Voltage (Approx.)
Terminal	Terminal	(
35	36	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

- Connect microphone connector.
- 2. Check signal between terminals of AV control unit connector M153.

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Revision: August 2012 AV-377 2013 Altima Sedan

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

AV control unit of	AV control unit connector M153			
(+)	(-)	Condition	Reference value	
Terminal	Terminal			
34	36	Speak into microphone.	(V) 2.5 2.0 1.5 1.0 0.5 0	

Is the inspection result normal?

>> Replace AV control unit. Refer to <u>AV-396, "Removal and Installation"</u>. >> Replace microphone. Refer to <u>AV-411, "Removal and Installation"</u>. YES

NO

[NAVIGATION WITH BOSE]

STEERING SWITCH

Diagnosis Procedure

INFOID:0000000008654296

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Regarding Wiring Diagram information, refer to AV-314, "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 combination switch connector terminals.

Combination swit	tch connector M88	Condition	Resistance Ω
Terminal	Terminal	Condition	(Approx.)
		Depress SOURCE switch.	1
		Depress △ switch.	121
14		Depress ∇ switch.	321
		Depress (√∑ switch.	723
		Depress ENTER switch.	2023
	17	Depress - ☐ switch.	1
		Depress ₵+ switch.	121
15		Depress 🗪 switch.	321
		Depress 5 switch.	723
		Depress DISP switch.	2023

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to AV-406, "Removal and Installation".

2.check harness between combination switch and combination meter

- 1. Disconnect combination meter connector M24 and combination switch connector M30.
- Check continuity between combination meter connector M24 and combination switch connector M30.

Combinat	tion meter	Combination switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	3		24	
M24	24	M30	33	Yes
	4	-	31	

3. Check continuity between combination meter connector M24 and ground.

Combination meter		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
	3			
M24	24	<u> </u>	No	
	4			

Is the inspection result normal?

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M30 and M88.

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

Is the inspection result normal?

YES >> GO TO 4.

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

4. CHECK HARNESS BETWEEN COMBINATION METER AND AV CONTROL UNIT

- Disconnect AV control unit connector M97.
- 2. Check continuity between combination meter connector M24 and AV control unit connector M153.

Combina	tion meter	AV control unit		Continuity
Connector	Terminal	Connector Terminal		Continuity
M24	37	M153	31	Yes
IVIZ4	36	WITOS	32	165

3. Check continuity between combination meter connector M24 and ground.

Combina	Combination meter		Continuity
Connector	Terminal	Ground	Continuity
M24	37		No
IVIZ4	36	_	INO

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-396, "Removal and Installation".

NO >> Repair or replace harness or connectors.

USB CONNECTOR

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION WITH BOSE]

USB CONNECTOR

Diagnosis Procedure

INFOID:0000000008654297

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Regarding Wiring Diagram information, refer to AV-314, "Wiring Diagram".

1. CHECK USB INTERFACE HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M131 and USB interface connector M132.
- 3. Check continuity between AV control unit connector M131 and USB interface connector M132.

AV cont	rol unit	USB into	erface	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	45		4	
	46		1	
M131	47	M132	2	Yes
	48		3	
	49		5	

4. Check continuity between AV control unit connector M131 and ground.

AV control unit			Continuity
Connector	Terminal	_	Continuity
M131	46	Ground	No
	49	Ground	NO

Is the inspection result normal?

YES >> Replace the USB interface. Refer to AV-397, "Removal and Installation".

NO >> Repair or replace harness or connectors.

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MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITH BOSE]

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM

Symptom Table

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-305, "On Board Diagnosis Function".

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITH BOSE]

Symptoms	Check items	Probable malfunction location
	No sound from all speakers.	 Speaker circuit shorted to ground. Refer to AV-314, "Wiring Diagram". Bose amp. ON signal circuit malfunction. Refer to AV-373, "Diagnosis Procedure". Bose speaker amp. power supply and ground circuits malfunction. Refer to AV-357, "BOSE SPEAKER AMP: Diagnosis Procedure".
No sound comes out or the level of the sound is low.	Only a certain speaker (front door speaker LH, front door speaker RH, front speaker LH, front speaker RH, center speaker, rear door speaker LH, rear door speaker RH, rear speaker LH, rear speaker RH) does not output sound.	 Poor connector connection of speaker. Sound signal circuit malfunction between AV control unit and Bose speaker amp. Refer to: AV-359, "Diagnosis Procedure" (front door speaker). AV-362, "Diagnosis Procedure" (center speaker). AV-365, "Diagnosis Procedure" (rear door speaker). AV-370, "Diagnosis Procedure" (rear speaker). Sound signal circuit malfunction between Bose speaker amp. and speaker. Refer to: AV-359, "Diagnosis Procedure" (front door speaker). AV-362, "Diagnosis Procedure" (front speaker). AV-365, "Diagnosis Procedure" (center speaker). AV-367, "Diagnosis Procedure" (rear door speaker). AV-370, "Diagnosis Procedure" (rear speaker). AV-370, "Diagnosis Procedure" (rear speaker). AV-370, "Diagnosis Procedure" (rear speaker). AV-398, "Removal and Installation" (front door speaker). AV-399, "Removal and Installation" (center speaker). AV-399, "Removal and Installation" (rear door speaker). AV-401, "Removal and Installation" (rear speaker). AV-402, "Removal and Installation" (rear speaker). AV-401, "Removal and Installation" (rear speaker). AV-402, "Removal and Installation" (rear speaker). Malfunction in Bose speaker amp. Refer to AV-403, "Removal and Installation".

[NAVIGATION WITH BOSE]

Symptoms	Check items	Probable malfunction location
	Noise comes out from all speakers.	 Malfunction in AV control unit. Refer to <u>AV-305</u>, "On <u>Board Diagnosis</u> <u>Function"</u>. Malfunction in Bose speaker amp. Replace Bose speaker amp. Refer to <u>AV-403</u>, "Removal and Installation".
Noise is mixed with audio.	Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, front speaker RH, center speaker, rear door speaker LH, rear door speaker RH, rear speaker RH).	 Poor connector connection of speaker. Sound signal circuit malfunction between AV control unit and Bose speaker amp. Refer to: AV-359, "Diagnosis Procedure" (front door speaker). AV-362, "Diagnosis Procedure" (front speaker). AV-365, "Diagnosis Procedure" (center speaker). AV-367, "Diagnosis Procedure" (rear door speaker). AV-370, "Diagnosis Procedure" (rear speaker). Sound signal circuit malfunction between Bose speaker amp. and speaker. Refer to: AV-359, "Diagnosis Procedure" (front door speaker). AV-362, "Diagnosis Procedure" (front speaker). AV-365, "Diagnosis Procedure" (rear door speaker). AV-367, "Diagnosis Procedure" (rear speaker). AV-370, "Diagnosis Procedure" (rear speaker). Malfunction in speaker. Poor Installation of speaker (e.g. backlash and looseness). Refer to: AV-400, "Removal and Installation" (front door speaker). AV-398, "Removal and Installation" (front speaker). AV-399, "Removal and Installation" (rear speaker). AV-401, "Removal and Installation" (rear speaker). AV-401, "Removal and Installation" (rear speaker). AV-402, "Removal and Installation" (rear speaker). AV-403, "Removal and Installation" (rear speaker). AV-401, "Removal and Installation" (rear speaker). AV-402, "Removal and Installation" (rear speaker). AV-403, "Removal and Installation". Malfunction in Bose speaker amp. Refer to AV-403, "Removal and Installation".
	hicle hits a bump or while driving over bad roads)	antenna feeder. Refer to <u>AV-407, "Location of Antenna"</u> .
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 <u>AV-307</u>, "<u>Reference Value</u>". Poor connector connection of antenna or antenna feeder. Refer to <u>AV-407</u>, "<u>Location of Antenna</u>".

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITH BOSE]

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Symptoms	Check items	Probable malfunction location
No satellite radio reception.	There is malfunction in the CONSULT self diagnosis result. Refer to AV-306, "CONSULT Function".	 Malfunction in antenna, antenna feeder or AV control unit. Perform DTC diagnosis. Refer to <u>AV-342</u>, "<u>Diagnosis Procedure</u>". Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Refer to <u>AV-407</u>, "<u>Location of Antenna</u>".
	There is no malfunction in the CONSULT self diagnosis result. Refer to AV-306, "CONSULT Function".	 Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Loose satellite radio antenna mounting nut. Refer to <u>AV-407</u>. "<u>Location of Antenna</u>".
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 TROU- BLE DIAGNOSIS" in the appropriate interi- or 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.

- 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.

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[NAVIGATION WITH BOSE]

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.	
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. 	Malfunction in AV control unit. Replace AV control unit. Refer to AV-406, "Removal and Installation".
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	Sound operation function is normal.	
party with hands-free phone communication.	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-377, "Diagnosis Procedure".
	 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-406, "Removal and Installation".
The system cannot be operated.	Steering switch's √∠, √()+ , √()− , and ⇒ switches do not work.	Steering switch signal circuit malfunction. Refer to AV-379, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-379, "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-305, "On Board Diagnosis Function".
	Steering switches malfunction.	Steering switch signal circuit malfunction. Refer to AV-379, "Diagnosis Procedure".
	Voice activated control malfunction.	Microphone signal circuit malfunction. Refer to AV-377, "Diagnosis Procedure". Steering switch signal circuit malfunction. Refer to AV-379, "Diagnosis Procedure".

RELATED TO REAR VIEW CAMERA

Symptoms	Check items	Probable malfunction location
	Reverse signal circuit malfunction.	Reverse signal circuit malfunction between BCM and AV control unit. Refer to AV-374, "Diagnosis Procedure".
Rear view camera is inoperative.	Camera image signal circuit malfunction.	Camera image signal circuit malfunction between rear view camera and AV control unit. Refer to AV-374, "Diagnosis Procedure".
	Rear view camera malfunction.	Replace rear view camera. Refer to AV-412, "Removal and Installation".

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITH BOSE]

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NORMAL OPERATING CONDITION

Description INFOID:000000008664274

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 lin	ked with the operation of the fuel pump.	Fuel pump condenser
Noise only occurs when various	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, AV control unit malfunction
electrical components are operating.	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-382, "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 DIAGNOSIS >

[NAVIGATION WITH BOSE]

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.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.	
Audio guide volume is too low or too high.	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	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
gray.	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.

Cause

< SYMPTOM DIAGNOSIS >

Symptom

[NAVIGATION WITH BOSE]

Remedy

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	d 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.	

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[NAVIGATION WITH BOSE]

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 research 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) near- by and reset the destination and passing points onto it. Take care of the traveling direc- tion 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 cur- rent 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.	
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:

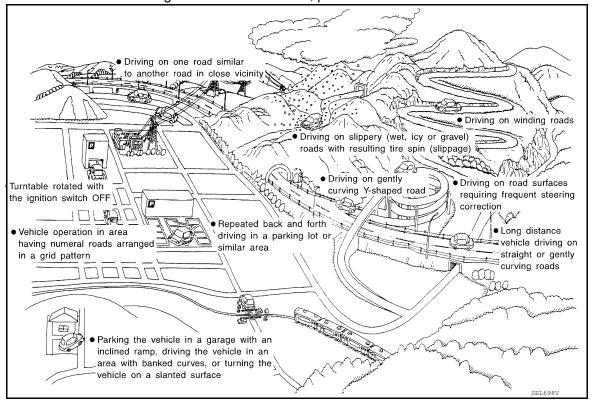
Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

Examples of Current-Location Mark Displacement

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITH BOSE]

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.



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Cause (con	dition) -: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
	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.	
	Spiral roads		
Road configuration	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.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Zigzag roads	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	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		
	*	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.	
	ELK0197D		

[NAVIGATION WITH BOSE]

Cause (co	ndition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
	In a parking lot Parking lot SELTO9V	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.	
	Turntable	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor).	
Place	SEL710V	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.	If after travelling about 10 km (6 miles) the correct location has
\$	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.	not been restored, perform lo- cation correction and, if neces- sary, direction correction.
Map data D	Road not displayed on the map screen New road	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	
	SEL699V	on the map, the vehicle mark may deviate from the correct road.	
	Different road pattern (Changed due to repair)	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly	
	ELKO201D	and matches the location to a nearby road. The vehicle mark may deviate from the correct road.	
/abiala		When tire chains are used, the mileage is	Drive the vehicle for a while. If the distance still deviates, ad- just it by using the distance ad-
Vehicle	Use of tire chains	not correctly detected, and the vehicle mark may deviate from the correct road.	justment 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 cor-	Position correction accuracy Within 1 mm (0.04 in) SELTOIN	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 correc- tion.
rect location	Direction when location is corrected Direction calibration adjustment	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

< SYMPTOM DIAGNOSIS >

[NAVIGATION WITH BOSE]

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.

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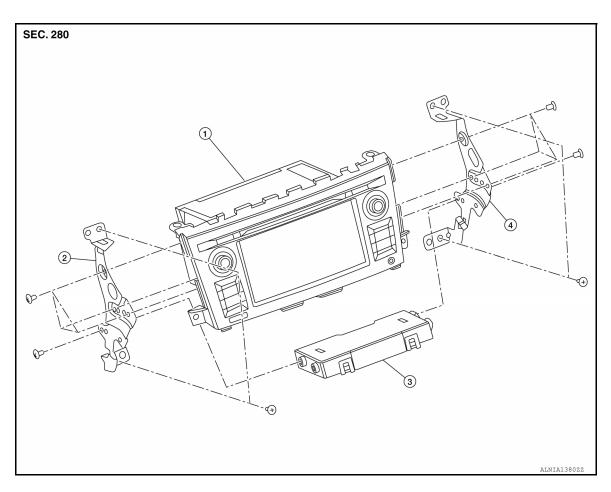
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REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View



1. AV control unit

- AV control unit bracket LH
- 3. A/C auto amp.

INFOID:0000000008668936

4. AV control unit bracket RH

Removal and Installation

REMOVAL

CAUTION:

Before replacing AV control unit, perform "READ CONFIGURATION" to save current vehicle specification. Refer to AV-233, "CONFIGURATION (AV CONTROL UNIT): Description".

- 1. Disconnect the negative battery terminal. Refer to PG-72, "Removal and Installation (Battery)".
- 2. Remove cluster lid C. Refer to IP-20, "Cluster Lid C".
- Remove the A/C switch assembly. Refer to <u>HAC-101</u>, "Removal and Installation".
- 4. Remove the AV control unit screws, then pull out the AV control unit.
- 5. Disconnect the harness connectors from the AV control unit and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

When replacing AV control unit, perform "WRITE CONFIGURATION". Refer to <u>AV-234, "CONFIGURA-TION (AV CONTROL UNIT)</u>: Configuration List".

USB CONNECTOR

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

USB CONNECTOR

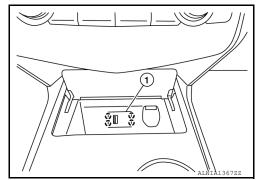
Removal and Installation

INFOID:0000000008528811

Removal

- 1. Remove the CVT finisher. Refer to IP-23, "Exploded View".
- 2. Release the pawls and remove the USB interface (1) from the back of the CVT finisher.

(): Pawl



Installation

Installation is in the reverse order of removal.

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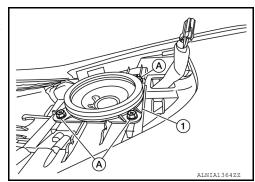
FRONT SPEAKER

Removal and Installation

INFOID:0000000008528815

REMOVAL

- 1. Remove the front pillar finisher. Refer to INT-21, "FRONT PILLAR FINISHER: Removal and Installation".
- 2. Remove the front speaker grille using a suitable tool.
- 3. Remove the front speaker screws (A).
- 4. Pull out the front speaker (1), disconnect the harness connector from front speaker (1) and remove.



INSTALLATION

CENTER SPEAKER

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

CENTER SPEAKER

Removal and Installation

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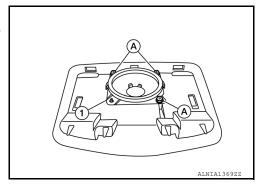
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REMOVAL

- 1. Remove the center speaker grille using a suitable tool.
- 2. Remove the center speaker screws (A).
- 3. Pull out the center speaker (1), disconnect the harness connector from the center speaker (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

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FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

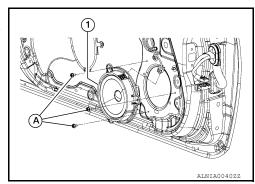
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FRONT DOOR SPEAKER

Removal and Installation

REMOVAL

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



INSTALLATION

REAR DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

REAR DOOR SPEAKER

Removal and Installation

INFOID:0000000008529158

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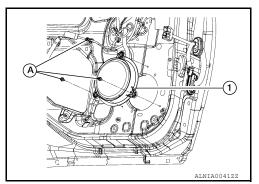
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REMOVAL

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



INSTALLATION

Installation is in the reverse order of removal.

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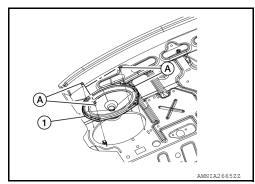
REAR SPEAKER

Removal and Installation

INFOID:0000000008746525

REMOVAL

- 1. Remove the rear parcel shelf finisher. Refer to INT-26, "Removal and Installation".
- 2. Remove the rear speaker screws (A).
- 3. Disconnect the harness connector from the rear speaker (1) and remove.



INSTALLATION

BOSE SPEAKER AMP

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

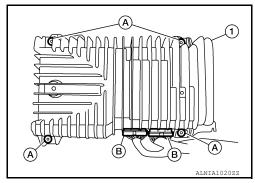
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BOSE SPEAKER AMP

Removal and Installation

REMOVAL

- 1. Open the trunk lid.
- 2. Remove the Bose speaker amp. screws (A).
- 3. Disconnect the harness connectors (B) from the Bose speaker amp. (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

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SATELLITE RADIO ANTENNA

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[NAVIGATION WITH BOSE]

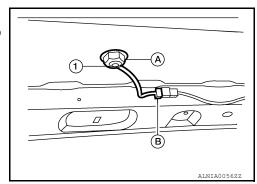
SATELLITE RADIO ANTENNA

Removal and Installation

INFOID:0000000008668938

REMOVAL

- 1. Lower the headlining at the rear. Refer to INT-30, "Removal and Installation".
- 2. Remove the satellite radio antenna nut (A).
- 3. Disconnect the harness connector (B) from the satellite radio antenna (1) and remove.



INSTALLATION

GPS ANTENNA

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

GPS ANTENNA

Removal and Installation

INFOID:0000000008668944

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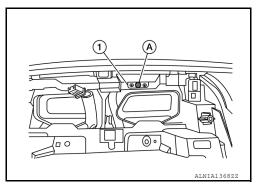
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REMOVAL

- 1. Remove the AV control unit. Refer to AV-104, "Removal and Installation".
- 2. Remove the GPS antenna screw (A) and the GPS antenna (1).



INSTALLATION

Installation is in the reverse order of removal.

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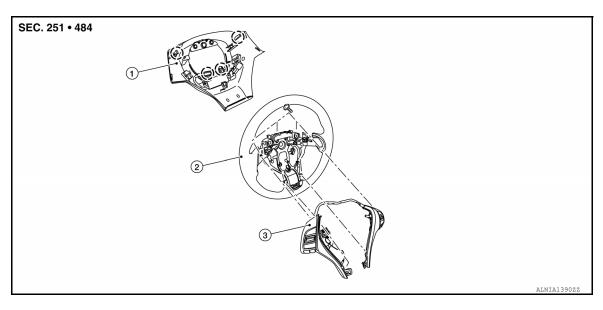
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STEERING SWITCH

Exploded View



- 1. Steering wheel rear finisher
- 2. Steering wheel
- 3. Steering switches

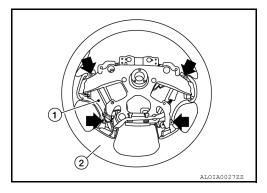
(Pawl

Removal and Installation

INFOID:0000000008542325

REMOVAL

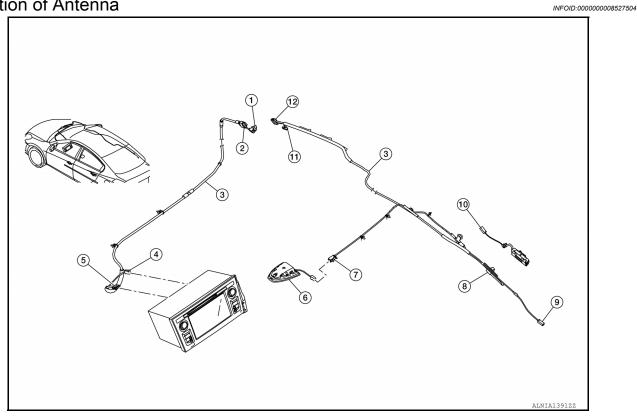
- Remove the steering wheel. Refer to <u>ST-31, "Removal and Installation"</u>
- 2. Release the pawls on the steering wheel rear finisher and remove.
- 3. Remove the steering switches screws (←).
- 4. Remove the steering switches (1) from steering wheel (2).



INSTALLATION

ANTENNA FEEDER

Location of Antenna



- 1. M102
- 4. M99
- 7. B59
- 10. M503

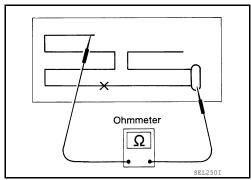
- 2. M101
- 5. M137
- 8. M502
- 11. M500

- 3. Antenna feeder
- 6. Satellite antenna
- 9. M504
- 12. M501

Window Antenna Repair

ELEMENT CHECK

 Attach probe circuit tester (ohm setting) to antenna terminal on each side.



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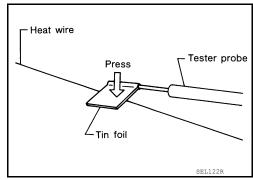
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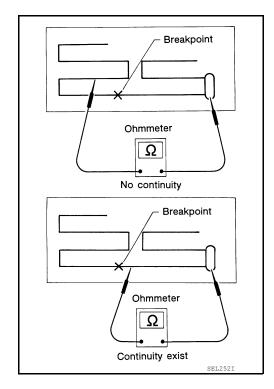
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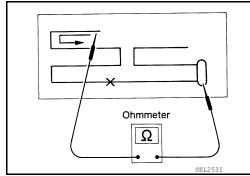
 When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



2. If an element is broken, no continuity will exist.



3. To locate a break, move probe along element. Tester indication will change abruptly when probe passes the broken point.



REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long
- · Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

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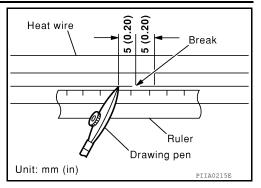
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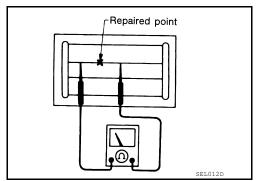
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- 1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
- 2. Apply a small amount of conductive silver composition to tip of drawing pen.
 - Shake silver composition container before use.
- Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



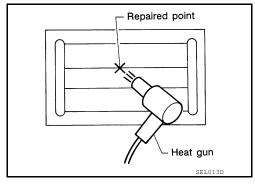
After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.



 Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet.

If a heat gun is not available, let the repaired area dry for 24 hours.



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Revision: August 2012 AV-409 2013 Altima Sedan

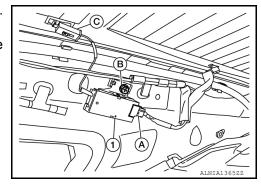
ANTENNA AMP.

Removal and Installation

INFOID:0000000008668946

REMOVAL

- 1. Remove the rear pillar finisher RH. Refer to INT-25, "REAR PILLAR FINISHER: Removal and Installation".
- 2. Disconnect the harness connector (A) from the antenna amp. (1).
- 3. Disconnect the antenna amp. harness connector (C) from the rear window glass.
- 4. Remove the antenna amp. screw (B) and the antenna amp. (1).



INSTALLATION

MICROPHONE

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

MICROPHONE

Removal and Installation

INFOID:0000000008668949

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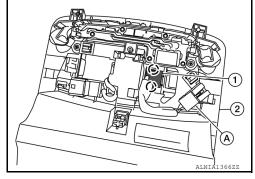
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REMOVAL

- 1. Remove the front room/map lamp assembly. Refer to INL-63, "Removal and Installation".
- 2. Disconnect the microphone connector (A) from the front room/ map lamp assembly (2).
- 3. Release the microphone pawls, then remove the microphone (1).
 - (): Pawl



INSTALLATION

Installation is in the reverse order of removal.

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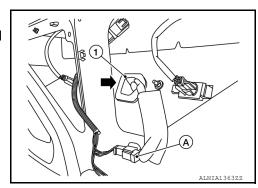
REAR VIEW CAMERA

Removal and Installation

INFOID:0000000008529425

REMOVAL

- 1. Remove trunk lid finisher. Refer to INT-33, "Exploded View".
- 2. Disconnect the harness connector (A) from rear view camera.
- 3. Push the rear view camera (1) in direction shown (←) and pull out to remove.



INSTALLATION

ITS CONTROL UNIT

< REMOVAL AND INSTALLATION >

[NAVIGATION WITH BOSE]

ITS CONTROL UNIT

Removal and Installation

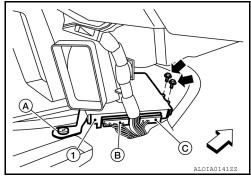
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1. Disconnect the battery negative terminal. Refer to PG-72, "Removal and Installation (Battery)".

- 2. Remove the center console assembly. Refer to IP-18, "Removal and Installation".
- 3. Disconnect the harness connectors (B,C) from the ITS control unit (1).
 - <: Front

REMOVAL

4. Remove bolts (and plastic screw (A) that retain the ITS control unit (1) and remove.



INSTALLATION

Installation is in the reverse order of removal.

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