SECTION AVIGATION SYSTEM C

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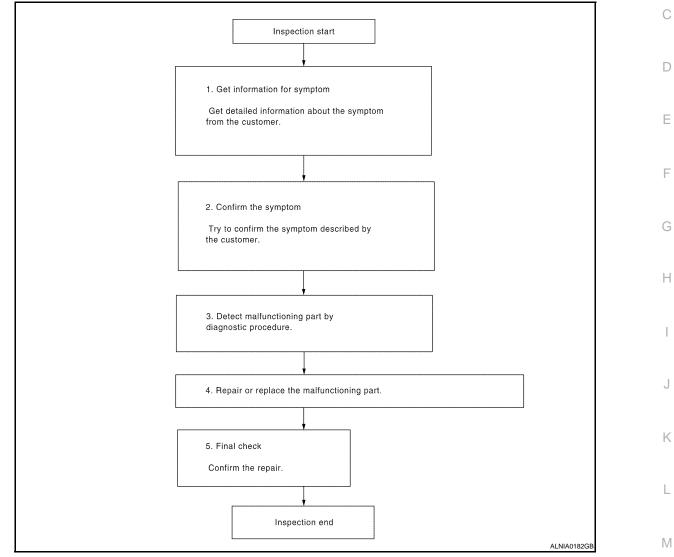
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BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

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.

>> 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 >

[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

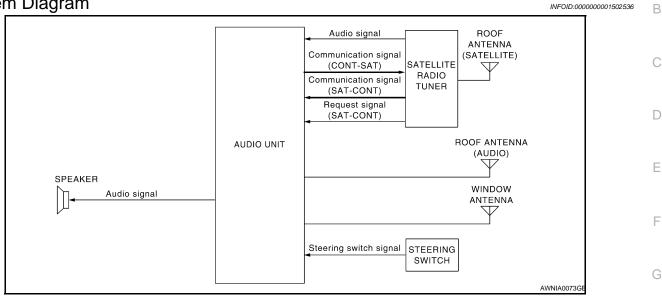
Refer to confirmed symptom in step 2, and make sure that the symptom is not detected. <u>Has the symptom been repaired?</u>

YES >> Inspection End.

NO >> GO TO 2

FUNCTION DIAGNOSIS AUDIO SYSTEM

System Diagram



System Description

AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Window antenna
- Roof antenna (audio)
- Steering switches
- Front door speakers
- Tweeters
- Rear speakers

When the audio system is on, radio signals are received by the window antenna and roof antenna. The audio unit then sends audio signals to the front door speakers, front tweeters and rear speakers. Refer to Owner's Manual for audio system operating instructions.

SATELLITE RADIO SYSTEM

The satellite radio system consists of the following components

- Roof antenna (satellite)
- Satellite radio tuner

When the satellite radio system is on, radio signals are supplied to the satellite radio tuner from the satellite antenna. The satellite radio tuner then sends audio signals to the audio unit. Refer to Owner's Manual for satellite radio system operating instructions.

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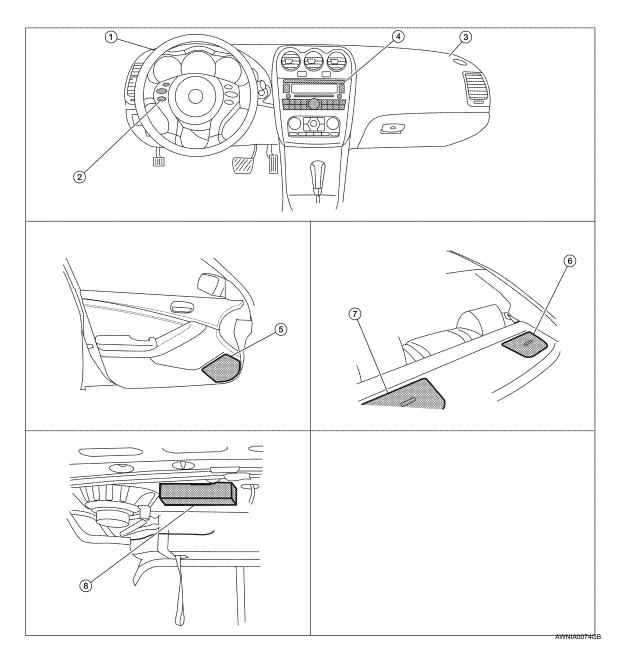
AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

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[BASE AUDIO]



- 1. Tweeter LH M51
- 4. Audio unit M43, M45, M81
- 7. Rear speaker LH B26
- 2. Steering wheel audio control switches 3.
- 5. Front door speaker LH D3

RH D103

- 6. I
- Tweeter RH M52
- 6. Rear speaker RH B44
- 8. Satellite radio tuner B123, B129 (with satellite radio tuner)

Component Description

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Part name	Description
Audio unit	Controls audio system and satellite radio system functions
Steering switches	Each audio operation can be operatedSteering switch signal (operation signal) is output to AV control unit

AV-10

AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

[BASE AUDIO]

Part name	Description	
Front door speakers	Outputs audio signal from audio unitOutputs high, mid and low range sounds	
Tweeters	Outputs audio signal from audio unitOutputs high range sounds	
Rear speakers	Outputs audio signal from audio unitOutputs high, mid and low range sounds	
Satellite radio tuner	 Receives radio signals from satellite antenna Sends audio signals to audio unit 	
Satellite antenna	Audio signal (satellite radio) is received and output to audio unit.	

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< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (AUDIO UNIT)

Diagnosis Description

Self-diagnosis mode can check the following items.

- Audio unit hardware/software versions
- Continuity of each speaker channel
- · Continuity of each audio unit switch

OPERATION PROCEDURE

- 1. Turn ignition switch to the ACC position.
- Turn the audio unit off. 2.
- While pressing the "AUDIO" button, turn the volume control dial 3. clockwise or counterclockwise 30 clicks or more. When the selfdiagnosis mode is started, a short beep will be heard.

4. Initially, all display segments will be illuminated.

Version Check

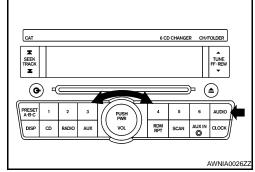
Press the "AUDIO" switch to enter version diagnostics. "Soft-1. ware" (audio software version) is displayed.

•) =(
PRESET	1	2	3	PUSH	1	5	6
DISP	CD	RADIO	AUX	VOL	RDM	SCAN	

	RANDOM ALL DI	003	496	18:88

Software	√0000
	ALNIA0020Z2





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DIAGNOSIS SYSTEM (AUDIO UNIT)

< FUNCTION DIAGNOSIS >

2. Press the "AUDIO" switch again to display the "Hardware" (audio hardware version).

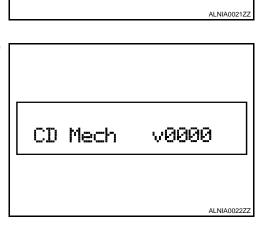
3. Press the "AUDIO" switch again to display the "CD Mech" (CD mechanism version).

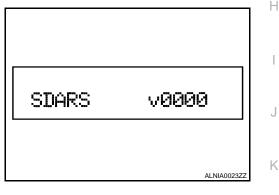
4. Press the "AUDIO" switch again to display the "SDARS" (satellite radio version).

Channel Check Diagnostics When all segments are illuminated, press the "TUNE" up switch to enter channel check diagnostics. The self-diagnostic function will then send a tone to each channel (FL, RL, RR, FR) for 1 second.

Button Check Diagnostics

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Channel check FL	AV





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DIAGNOSIS SYSTEM (AUDIO UNIT)

< FUNCTION DIAGNOSIS >

When all segments are illuminated, press the "TUNE" down switch to enter button check diagnostics. When each audio unit switch is pressed, a tone will sound and the switch name will be displayed.

[BASE AUDIO]

BUTTON CHECK	
	ALNIA0025

COMPONENT DIAGNOSIS > COMPONENT DIAGNOSIS POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

1.CHECK FUSES

Check that the following fuses are not blown.

Unit	Terminals	Signal name	Fuse No.	D
Audio unit	19	Battery power	24	
	7	Ignition switch ACC or ON	19	E

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Are the fuses OK?

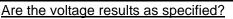
YES >> GO TO 2

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. POWER SUPPLY CIRCUIT CHECK

- 1. Disconnect audio unit connector M43.
- Check voltage between the audio unit connector M43 and ground.

	Terminal No.					
Unit	(+)		(-)	OFF	ACC	ON
	Connector	Terminal	(-) II			
Audio unit	M43	19	Ground	Battery voltage	Battery voltage	Battery voltage
	10143	7	Ground	0V	Battery voltage	Battery voltage



YES >> GO TO 3

NO >> • Check connector housings for disconnected or loose terminals.
 • Repair harness or connector.

3.GROUND CIRCUIT CHECK

Inspect audio unit case ground.

Does case ground pass inspection?

YES >> Inspection End.

NO >> Repair audio unit case ground.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

1.CHECK FUSES

Check that the following fuses are not blown.

Unit	Terminals	Signal name	Fuse No.	Ρ
Satellite radio tuner (factory in-	32	Battery power	24	
stalled)	36	Ignition switch ACC or ON	19	

Are the fuses OK?

YES >> GO TO 2

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

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[BASE AUDIO]

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POWER SUPPLY AND GROUND CIRCUIT

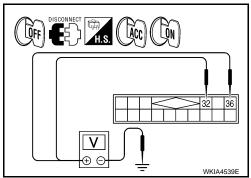
< COMPONENT DIAGNOSIS >

[BASE AUDIO]

2. POWER SUPPLY CIRCUIT CHECK

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector B123.
- 3. Check voltage between the satellite radio tuner (factory installed) and ground.

	Terminal No.						
Unit	(+)		(-)	OFF	ACC	ON	
	Connector	Terminal	(-)				
Satellite radio tuner	B123	32	Ground	Battery voltage	Battery voltage	Battery voltage	
(factory in- stalled)	0123	36	Ground	0V	Battery voltage	Battery voltage	



Are the voltage results as specified?

YES >> GO TO 3

- NO >>• Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

3.GROUND CIRCUIT CHECK

Inspect satellite radio tuner (factory installed) case ground.

Does case ground pass inspection?

- YES >> Inspection End.
- NO >> Repair satellite radio tuner (factory installed) case ground.

FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

FRONT DOOR SPEAKER

Description

The audio unit sends audio signals to the front door speakers using the front door speaker circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect audio unit connector M43 (A) and suspect speaker connector (B).
- 2. Check continuity between audio unit harness connector M43 (A) terminal and suspect speaker harness connector (B) terminal.

	Term			
Audi	Audio unit		aker	Continuity
Connector	Terminal	Connector Terminal		
	2	B: D3	1	
A: M43	3	D. D5	2	Yes
	11	B: D103	1	165
	12	D. D103	2	1

 Check continuity between audio unit harness connector M43 (A) terminal and ground.

	Terminals		
	Audio unit		Continuity
Connector	Terminal		
	2		
A: M43	3	Ground	No
A. 10143	11	Giouna	NO
	12		

Are continuity results as specified?

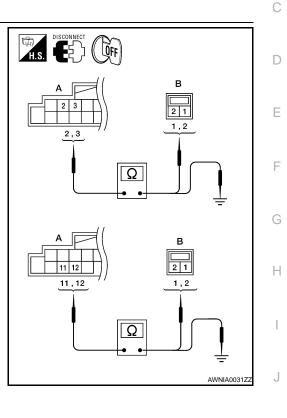
YES >> GO TO 2 NO >> • Check c

>> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

2.FRONT SPEAKER SIGNAL CHECK

- 1. Connect audio unit connector and front speaker connector.
- 2. Turn ignition switch to ACC.

3. Push "POWER" switch.



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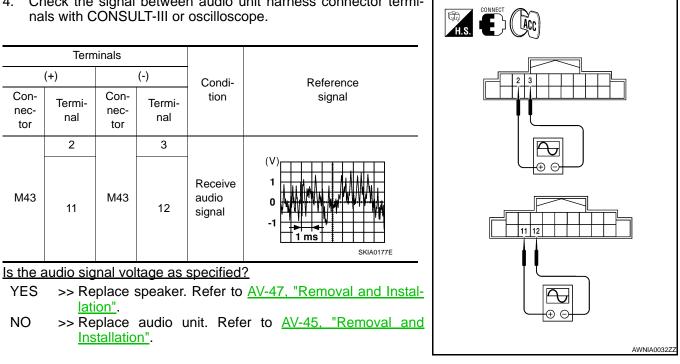
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FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

[BASE AUDIO]



TWEETER

< COMPONENT DIAGNOSIS >

TWEETER

Description

The audio unit sends audio signals to the tweeters using the tweeter circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect audio unit connector M43 (A) and suspect tweeter connector (B).
- 2. Check continuity between audio unit harness connector M43 (A) and suspect tweeter harness connector (B).

	Term	ninals		
Audi	o unit	Twe	eter	Continuity
Connector	Terminal	Connector	Terminal	
	2	B: M51	1	
A: M43	3	D. 1010 1	2	Yes
A. 101 4 5	11	B: M52	1	163
	12	D. MOZ	2	†

 Check continuity between audio unit harness connector M43 (A) and ground.

	Terminals		
	Audio unit		Continuity
Connector	Terminal		
	2		
A: M43	3	Ground	No
A. M43	11	Giouna	INO
	12		

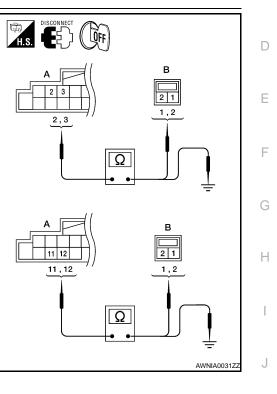
Are the continuity results as specified?

YES >> GO TO 2

NO

- >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

2.TWEETER SIGNAL CHECK



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[BASE AUDIO]

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TWEETER

< COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.

Terminals

Con-

nec-

tor

M43

(-)

Termi-

nal

3

12

(+)

Termi-

nal

2

11

Con-

nec-

tor

M43

4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

Condi-

tion

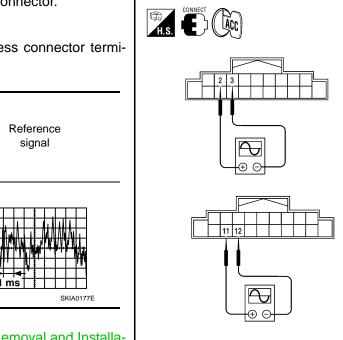
Receive

audio

signal

(V

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Is the audio signal voltage as specified?

- YES >> Replace tweeter. Refer to <u>AV-47, "Removal and Installa-</u> tion".
- NO >> Replace audio unit. Refer to <u>AV-45, "Removal and</u> <u>Installation"</u>.



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REAR SPEAKER

< COMPONENT DIAGNOSIS >

REAR SPEAKER

Description

The audio unit sends audio signals to the rear speakers using the rear speaker circuits.

Diagnosis Procedure

1.HARNESS CHECK

- Disconnect audio unit connector M43 (A) and suspect speaker 1. connector.
- 2. Check continuity between audio unit harness connector M43 (A) and suspect speaker harness connector (B).

	Term	ninals		
Audi	o unit	Spe	aker	Continuity
Connector	Terminal	Connector	Terminal	
	4	B: B26	1	
A: M43	5	D. D20	2	Yes
A. 10140	13	B: B44	1	165
	14	D. D44	2	†

3. Check continuity between audio unit harness connector M43 (A) and ground.

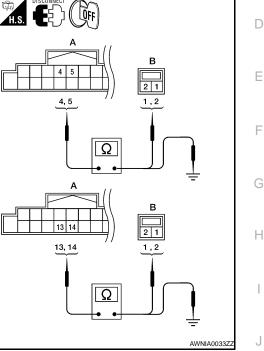
	Terminals		
	Audio unit		Continuity
Connector	Terminal		
	4		
A: M43	5	Ground	No
A. 10143	13	Giouna	INO
	14	1	

Are the continuity results as specified?

YES >> GO TO 2 NO

- >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

2.REAR SPEAKER SIGNAL CHECK



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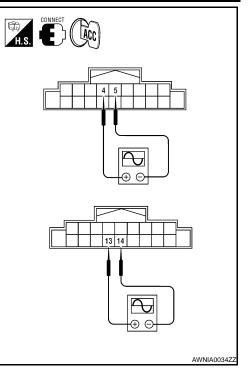
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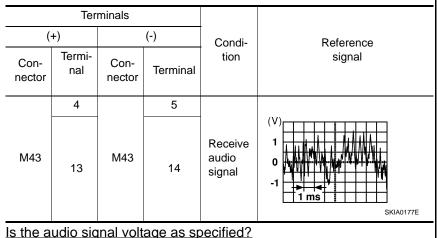
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REAR SPEAKER

< COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and rear speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between audio unit harness connector termi-4. nals with CONSULT-III or oscilloscope.





YES >> Replace rear speaker. Refer to AV-48, "Removal and

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

STEERING SWITCH

< COMPONENT DIAGNOSIS >

STEERING SWITCH

Description

When one of the steering wheel audio control switches is pushed, the resistance in steering switch circuit В changes depending on which button is pushed.

Diagnosis Procedure

1. CHECK STEERING SWITCH RESISTANCE

- 1. Disconnect steering switch connector M88.
- 2. Check resistance between steering switch connector terminals.

Teri	minal	Signal name	Condition	Resistance (Ω) (Approx.)
15	17	Seek (down)	Depress (station) down switch.	165
15	17	Volume (down)	Depress volume down switch.	487
		Seek (up)	Depress (station) up switch.	165
14	17	Source	Depress source switch.	0
		Volume (up)	Depress volume up switch.	487

15 14 Ω AWNIA00357

Do the steering switches check OK?

YES >> GO TO 2

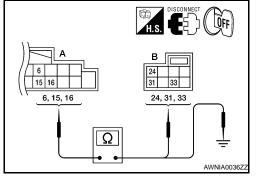
NO >> Replace steering switch. Refer to AV-53, "Removal and Installation".

2. CHECK HARNESS

1. Turn ignition switch OFF.

- 2. Disconnect audio unit connector M43 (A) and spiral cable connector M30 (B).
- Check continuity between spiral cable harness connector M30 3. (B) and audio unit harness connector M43 (A).

		Terminals		
Spiral	cable		Audio Unit	Continuity
Connector	Terminal	Connector	Terminal	
	24		6	
B: M30	31	A: M43	16	Yes
	33		15	



Check continuity between audio unit connector M43 (A) and ground. 4.

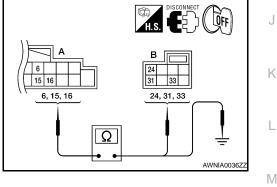
	Terminals		
	Audio unit		Continuity
Connector	Terminal		
	6		
A: M43	15	Ground	No
	16	1	

Are the continuity results as specified?

YES >> GO TO 3

NO >> Repair harness.

3.SPIRAL CABLE CHECK



AV-23

[BASE AUDIO]

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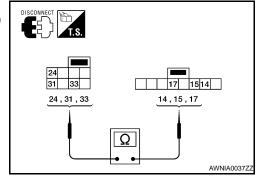
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STEERING SWITCH

< COMPONENT DIAGNOSIS >

- 1. Disconnect spiral cable connector M88 (B).
- Check continuity between spiral cable harness connector M30 (A) and M88 (B).

	Term	ninals		
	Spira	cable		Continuity
Connector	Terminal	Connector	Terminal	*
	24		14	
A: M30	31	B: M88	15	Yes
	33		17	



Does the spiral cable check OK?

YES >> Inspection End.

NO >> Replace spiral cable. Refer to <u>SRS-6. "Removal and Installation"</u>.

[BASE AUDIO]

2. CHECK HARNESS - 2

1. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 29 and audio unit harness connector M45 (B) terminal 39.

Continuity should exist.

Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 29 and ground.

Continuity should not exist.

Are continuity results as specified?

- YES >> GO TO 3
- NO >> Repair harness or connector.
- 3.CHECK HARNESS 3
- 1. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 30 and audio unit harness connector M45 (B) terminal 40.

Continuity should exist.

2. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 30 and ground.

Continuity should not exist.

Are continuity results as specified?

- YES >> GO TO 4
- NO >> Repair harness or connector.

4.CHECK REQ1 SIGNAL

< COMPONENT DIAGNOSIS >

COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Description

Communication signals are exchanged between the audio unit and satellite radio tuner using the communication circuits.

SATELLITE RADIO TUNER : Diagnosis Procedure

1.CHECK HARNESS - 1

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector B123 and audio unit connector M45.
- 3. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 28 and audio unit harness connector M45 (B) terminal 38.

Continuity should exist.

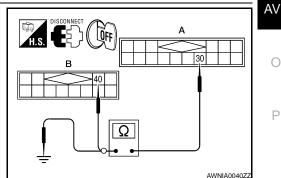
4. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 28 and ground.

Continuity should not exist.

Are continuity results as specified?

- YES >> GO TO 2
- NO >> Repair harness or connector.

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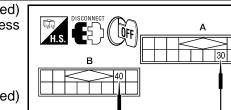
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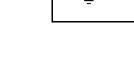
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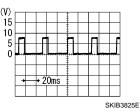


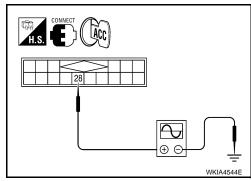
COMMUNICATION SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

- 1. Connect satellite radio tuner (factory installed) connector and audio unit connector.
- 2. Turn ignition switch to ACC
- 3. Check signal between satellite radio tuner (factory installed) harness connector B123 terminal 28 and ground with CONSULT-III or oscilloscope.

28 - Ground





Are voltage readings as specified?

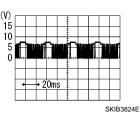
YES >> GO TO 5

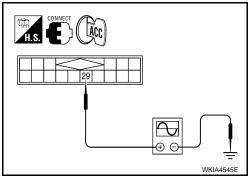
NO >> Replace audio unit. Refer to <u>AV-45, "Removal and Installation"</u>.

5.CHECK TXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector B123 terminal 29 and ground with CONSULT-III or oscillo-scope.

29 - Ground





Are the voltage readings as specified?

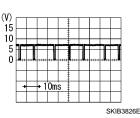
YES >> GO TO 6

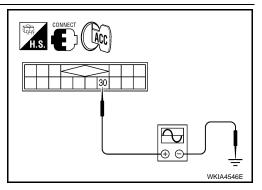
NO >> Replace satellite radio tuner.

6.CHECK RXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector B123 terminal 30 and ground with CONSULT-III or oscillo-scope.

30 - Ground





Are the voltage readings as specified?

- YES >> Replace satellite radio tuner.
- NO >> Replace audio unit. Refer to <u>AV-45</u>, "<u>Removal and Installation</u>".

[BASE AUDIO] < COMPONENT DIAGNOSIS > SOUND SIGNAL CIRCUIT А SATELLITE RADIO TUNER SATELLITE RADIO TUNER : Description INFOID:000000001502553 В Left and right channel audio signals are supplied from the satellite radio tuner to the audio unit through the sound signal circuits. SATELLITE RADIO TUNER : Diagnosis Procedure INFOID:000000001502554 LEFT CHANNEL D **1.**CHECK HARNESS Turn ignition switch OFF. 1. Disconnect satellite radio tuner (factory installed) connector 2. Ε B123 (A) and audio unit connector M45 (B). 3. Check continuity between satellite radio tuner (factory installed) and audio unit. F B 32 Terminals 31 Satellite radio tuner Audio unit Continuity Ω Connector Terminal Connector Terminal 21 31 AWNIA0041ZZ A: B123 B: M45 Yes Н 22 32 Check continuity between satellite radio tuner (factory installed) and ground. 4. Terminals Satellite radio tuner Continuity Terminal Connector 21 A: B123 Ground No 22 Κ Are continuity results as specified? YES >> GO TO 2 NO >> Repair harness or connector. L 2. CHECK LEFT CHANNEL AUDIO SIGNAL 1. Connect satellite radio tuner (factory installed) and audio unit. Μ Turn ignition switch ON. 2. Check signal between satellite radio tuner (factory installed) 3. connector B123 terminals 21 and 22 with CONSULT-III or oscil-H.S. CONNECT loscope. AV 21 - 22 (V Ð⊕ WKIA4548E SKIB3609E Are voltage readings as specified? YES >> Replace audio unit. Refer to AV-45, "Removal and Installation". >> Replace satellite radio tuner. Refer to AV-133, "Removal and Installation". NO

AV-27

RIGHT CHANNEL

SOUND SIGNAL CIRCUIT

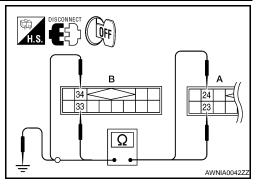
SOUND SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector B123 (A) and audio unit connector M45 (B).
- 3. Check continuity between satellite radio tuner (factory installed) and audio unit.

-		Tern	ninals		
_	Satellite ra	adio tuner	Audio	o unit	Continuity
_	Connector	Terminal	Connector	Terminal	
_	A: B123	23	B: M45	33	Yes
	A. D125	24	D. 10145	34	165



4. Check continuity between satellite radio tuner (factory installed) and ground.

	Terminals		
Sate	llite radio tuner		Continuity
Connector	Terminal		
A: B123	23	Ground	No
A. 0125	24	Giounu	NO

Are continuity results as specified?

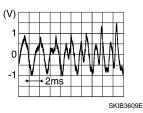
YES >> GO TO 2

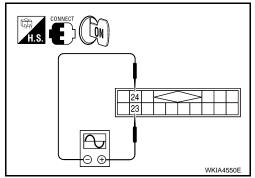
NO >> Repair harness or connector.

2. CHECK RIGHT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- Check signal between satellite radio tuner (factory installed) connector B123 terminals 23 and 24 with CONSULT-III or oscilloscope.

23 - 24





Are voltage readings as specified?

- YES >> Replace audio unit. Refer to AV-45, "Removal and Installation".
- NO >> Replace satellite radio tuner. Refer to <u>AV-133, "Removal and Installation"</u>.

[BASE AUDIO]

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	UNIT						
eferen	ice Valu	IE					INFOID:00000000150255
	AL LAYO	UT					
[2 3 4 5 11 12 13 14 1		9 18 20	32 34 31 33 35 36 3	40 42 37 38 39 41	H.S.
IYSIC/	AL VALU	ES					AWNIA0043ZZ
	ninal color)	1	Signal	(Condition		Example of symp-
+	_	Item	input/ output	Ignition switch	Operation	Reference value	tom
2 (W)	3 (B)	Audio sound signal front LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	No sound from front door speaker LH or tweeter LH.
4 (O/B)	5 (W/R)	Audio sound signal rear LH	Output	ON	Receive audio signal	(V) 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	No sound from rear speaker LH.
6 (W/G)	Ground	Remote control A	Input	ON	Press SOURCE switch Press SEEK UP switch Press VOL UP switch Except for above	Approx. 0.0V Approx. 0.75V Approx. 2.0V Approx. 5.0V	Steering wheel au- dio controls do not function
7 (V/Y)	Ground	ACC signal	Input	ON	Ignition switch ACC or ON	Battery voltage	System does not work properly.
11 (G/W)	12 (BR)	Audio sound signal front RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	No sound from front door speaker RH or tweeter RH.

< ECU DIAGNOSIS >

	Terminal (Wire color)		Signal	(Condition	Beference velue	Example of symp-			
+	_	ltem	input/ output	Ignition switch	Operation	Reference value	tom			
13 (L)	14 (B/W)	Audio sound signal rear RH	Output	ON	Receive audio signal (V) 1 0 -1 1 1 ms 1 5KIA0177E		No sound from rear speaker RH.			
15 (L/B)	_	Remote control ground	Input	_	-	-	Steering wheel au- dio controls do not function			
					Press SEEK DOWN switch	Approx. 0.75V				
16 (GR/L)	Ground	Remote control B	Input	ON	Press VOL DOWN switch	Approx. 2.0V	Steering wheel au- dio controls do not function			
					Except for above	Approx. 5.0V				
19 (Y/R)	Ground	Battery pow- er	Input	_	_	 Battery voltage Battery voltage 				
32 (Y/L)	31 (W/L)	Audio left channel sound signal from satel- lite radio tuner	Input	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from sat- ellite radio tuner left channel.			
34 (BR/L)	33 (Y/G)	Audio right channel sound signal from satel- lite radio tuner	Input	ON	Receive audio signal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from sat- ellite radio tuner right channel.			
35	_	Shield ground (au- dio signal)	_	_	_	٥V	_			
36	_	Shield ground (da- ta)	_	_	_	٥V	_			

< ECU DIAGNOSIS >

[BASE AUDIO]

	Terminal (Wire color)		Signal input/	(Condition	Reference value	Example of symp-	A
+	-	Item	output	Ignition switch	Operation		tom	
38 (R)	Ground	Satellite ra- dio tuner re- quest to audio unit	Input		Turn audio unit ON	5V	Satellite radio tun- er does not oper- ate properly.	B
39 (G)	Ground	Audio RX	Input	ON	Operate audio volume	(V) 6 4 2 0 • • • 5ms SKIA4403E	Satellite radio tun- er audio informa- tion does not display properly.	D
40 (B)	Ground	Audio TX	Output		Operate audio volume	(V) 6 4 2 0 • • • 2ms SKIA4402E	Satellite radio tun- er audio informa- tion does not display properly.	F
75 (B)	Ground	Amp power supply	Output	ON	Turn audio unit ON	Battery voltage	-	Н
76 (B)	Ground	Main anten- na	Input	ON	Turn audio unit ON	-	_	

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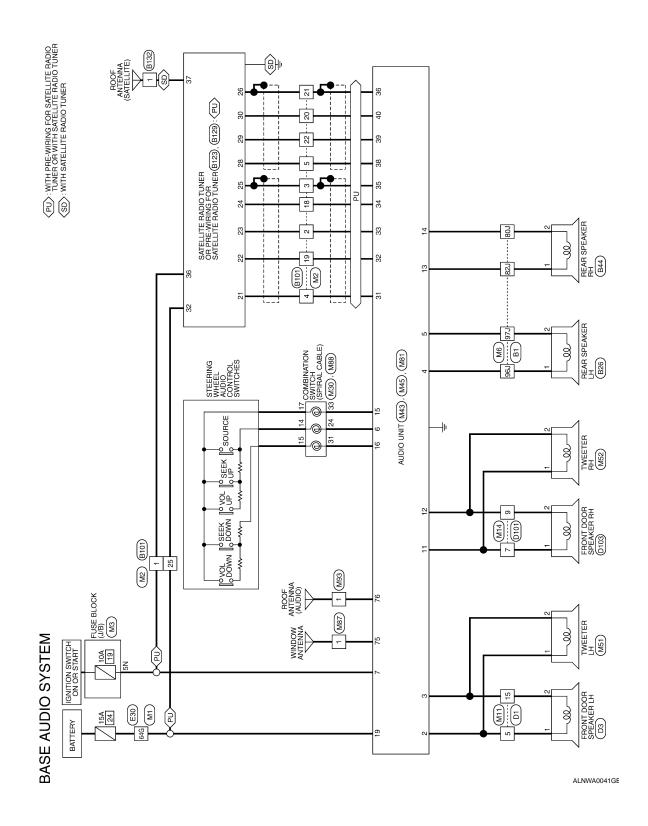
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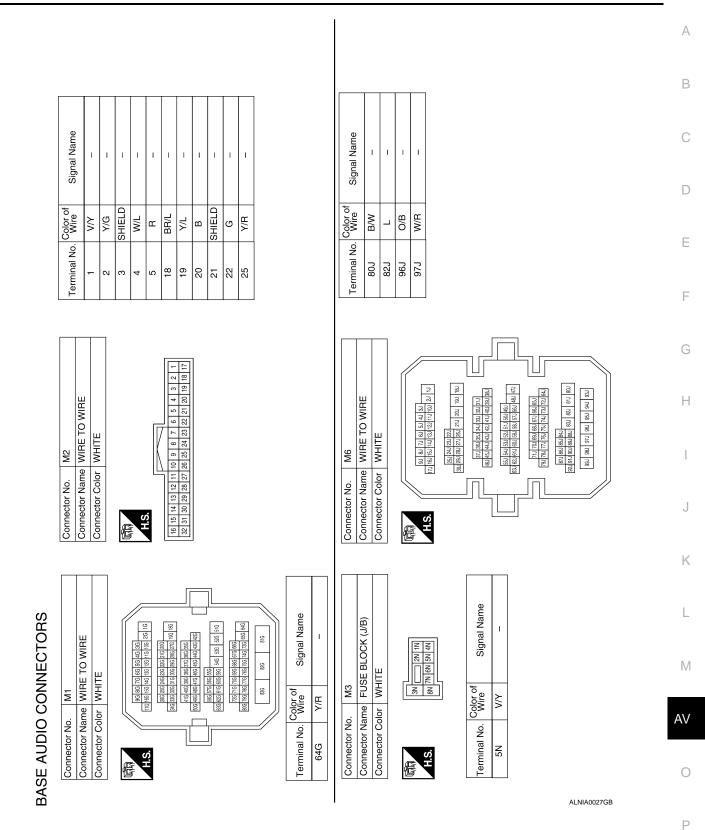
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Wiring Diagram

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[BASE AUDIO]





Connector No. M30 Connector Name COMBINATION SWITCH (SPIRAL CABLE)	Connector Color GRAY	al No. Color of Wire	4 W/G AUDIO_STRG_SW_ REMOTE_A 1 GR/L AUDIO_STRG_SW_	33 L/B AUDIO_STRG_SW_GND	Connector No. M45		_	32 34 40 42	31 33 35 36 37 38			Calar of	Terminal No. Wire Signal Name	31 W/L SAT LH INPUT (-)	32 Y/L SAT LH INPUT (+)	33 Y/G SAT RH INPUT (-)	34 BR/L SAT RH INPUT (+)	35 SHIELD EARTH	36 SHIELD DAT EARTH	37 – – –	38 R RFQ1 (SAT TO COMBI)	39 G RX (SAT TO COMBI)	40 B TX (COMBI TO SAT)	41 – – – –	
Conne	Conne		31 24	e E	Conne																		7	7	
Connector No. M14 Connector Name WIRE TO WIRE Connector Color MHITE	2 a 3 4	of Signal Name	1 1		of Signal Name	STRG_SW_A	ACC	ILL_CONT_OUT	TAIL/ILL_RLY	I		FR SP RH (-)			ŝ	STRG_SW_B	I	I	BAT	I					
o. ame W		0	BR BR		Color of Wire	W/G	۲V	RУ	R/L	I	G/W	Ш	-	BV	Ц	GR/L	Т	Т	Y/R	I					
Connector No. Connector Name	HS	Terminal No.	6		Terminal No.	g	2	ω	6	10	11	12	13	14	15	16	17	18	19	20					
E TO WIRE	■ 11 12 13 14 15 16 7 17 14 15 16 17 17 14 15 16 17 17 17 17 17 17 17 16 16 16 16 16 16 16 16 16 16	Signal Name	1 1		M43	TE			5 6 7 8 9	13 14 15 16 17 18 20			Signal Name	I	FR SP LH (+)	FR SP LH (-)	RR SP LH (+)	RR SP LH (-)							
M11 e WIRE	r WHI	Color of Wire	≥ m				_			10 11 12 13		color of	Wire	I	≥	m	O/B	W/R							
Connector No. M11 Connector Name WIRE TO WIRE	Connector Color WHILE 机S	al No.	5 15		Connector No.	Connector Color		E	بًال ر	19			Terminal No.	-	5	e	4	5							

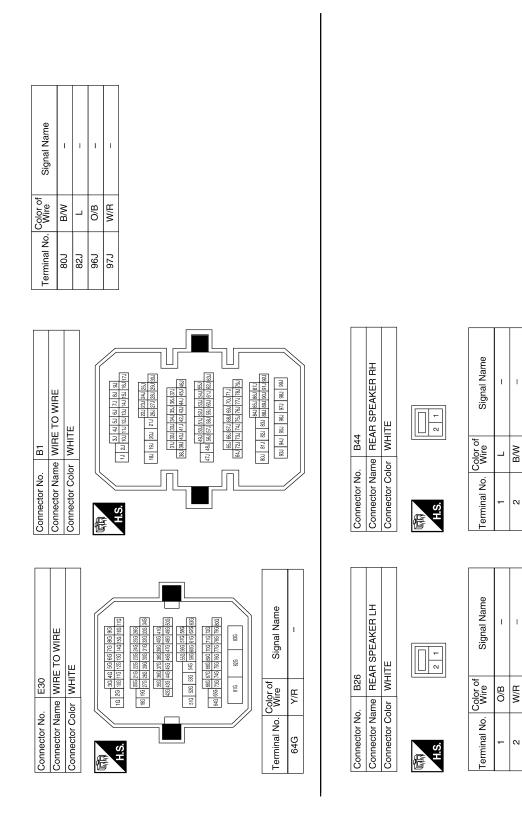
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< ECU DIAGNOSIS >	[BASE AUDIO]
	А
	В
181 181 181 181 10 10 10 10 10 10 10 10 10 10 10 10 10	С
M81 M81 M81 M81 M81 M81 M81 M81 M81 M81	D
nector No. 75 77 ninal No. 70 77 77 77 77 10 00 00 00 10 10 00 00 00 10 1	E
	F
	G
M52 TWEETER RH BROWN Image: signal Name Signal Name Signal Name Signal Name M88 M88 M88 M88 M88 M88 Signal Name	Н
M52 M62 M7 M8 M7 M8 M7 M8 M7 M8 <th< td=""><td>I</td></th<>	I
Connector No. M52 Connector Name TWEETER RH Connector Name TWEETER RH Connector Signal 1 Terminal No. Color Signal 1 G/W Signal 2 BR/W Signal 1 G/W Signal Connector No. M88 Terminal No. Color GRAY Terminal No. Color GRAY Terminal No. Color GRAY Terminal No. Color GRAY 17 BR	J
	К
Signal Name Signal Name Signal Name	L
	Μ
No. M51 Name TWEI Name TWEI Name TWEI No. M87 Name WIN No. M87 No. M87 No. M87	AV
Connector No. M51 Connector Name TWEETER LH Connector Name TWEETER LH Connector No. BROWN Terminal No. Offer 1 W 2 B 1 W 2 B 1 W 2 B 1 W 2 B 1 W 2 B 1 W Connector No. M87 Connector No. BLACK Terminal No. Offer 1 B	0
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< ECU DIAGNOSIS >

[BASE AUDIO]

AV-35



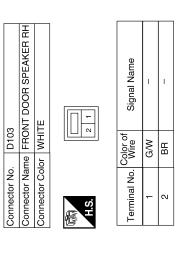
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AUDIO UNIT

Signal Name	SAT_LCH (-)	SAT_LCH (+)	SAT_RCH (-)	SAT_RCH (+)	EARTH (SIG)	DATA	I	EC1 (SAT-COMBI) TXD (SAT COMBI)	RXD (COMBLSAT)	I	BAT	I	I	I	ACC					WIRE TO WIRE	Ð	0 0	13 12 11 10 9 8			Signal Name	I	I	
Color of Wire	W/L	۸/L	λ/G	BR/L	SHIELD	SHIELD	1	R/L R/W	<u>8</u>	1	Y/R	I	1	1	GR/W				5		olor WHITE	ч ч	16 15 14 1		Color of	Wire	≥	B	
Terminal No.	21	22	23	24	25	26	27	28	30	31	32	33	34	35	36				Connector No.	Connector Name	Connector Color		H.S.			Terminal No.	5	15	
	R			٦		ī															S	RADIO)	E RADIO)			me			
Connector No. B123 Connector Name SATELLITE RADIO TUN	OR PRE-WIRING FOR SATELLITE BADIO TLINED		Connector Color WHITE		[전다] 22 24 26 - 32 34 36 21 23 25 27 28 29 30 31 33 35														Connector No. B132	Connector Name ROOF ANTENNA	(SATELLITE) Connector Color GRAY (WITH SIRILS			Ś		Terminal No. Wire Signal Name	- B I		
Connector No.			_			8 7 6 5 4 3 2 1 24 23 22 21 20 19 18 17	61 02 12 22 02 42	Signal Name		1	1	1	1	1	1	1	1 1	1	Connector No.	JNER Connector Name	JNER Connector Color	S ADIO)		H.S.		Wire			
			_			7 6 5 4 3 2 1 23 22 21 20 19 18 17	61 02 12 22 02 42	Terminal No. Wire Signal Name	GR/W		SHIELD – –						SHIELU – SHI	Y/R – –		JNER Connector Name	Connector Color	S ADIO)		Ś		Terminal No. Wire	ANTENNA SIGNAL	-	

AV-37

[BASE AUDIO]



Connector No.	D101	
Connector Name WIRE TO WIRE	ne WIR	E TO WIRE
Connector Color WHITE	or WHI	ΠΕ
बित्र H.S.	4 3 10 9 8	2 1
Terminal No. Color of	Color of Wire	Signal Name
1		

Signal Name	Ι	Ι
Color of Wire	G/W	BR
Terminal No.	7	6

Connector No.	D3
Connector Name	Connector Name FRONT DOOR SPEAKER LH
Connector Color WHITE	WHITE
品. H.S.	5
Col	Color of

Signal Name	I	-
Color of Wire	N	в
Terminal No.	+	2

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SATELLITE RADIO TUNER

Reference Value

LKIA0735E

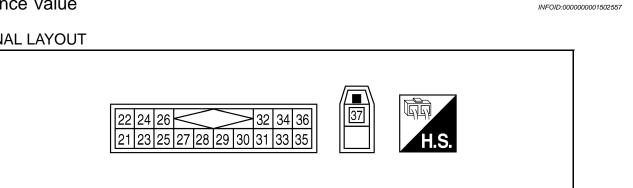
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PHYSICAL VALUES

Term (Wire		ltem	Signal input/		Condition	Voltage
+	_	item	output	Ignition switch	Operation	(approx.)
22 (Y/L)	21 (W/L)	Audio signal LH	Output	ON	Receive audio signal.	(V) 1 0 -1 ••2ms SKIB3609E
24 (BR/L)	23 (Y/G)	Audio signal RH	Output	ON	Receive audio signal.	(V) 1 0 -1 * * 2ms SKIB3609E
25	-	Shield	-	-	-	-
26	-	Data ground	-	ON	-	Approx. 0 V
28 (R/L)	Ground	REQ1 (SAT-AUDIO)	Output	ON	Set to the satellite radio mode	(V) 15 10 5 0 • • • 20ms SKIB3825E
29 (R/W)	Ground	Communication signal (SAT-AUDIO)	Output	ON	Set to the satellite radio mode	(V) 15 10 5 0 • • • 20ms SKIB3824E

SATELLITE RADIO TUNER

< ECU DIAGNOSIS >

[BASE AUDIO]

Term (Wire)		ltem	Signal input/		Condition	Voltage
+	_	. nem	output	Ignition switch	Operation	(approx.)
30 (B)	Ground	Communication signal (AUDIO-SAT)	Input	ON	Set to the satellite radio mode	(V) 15 0 5 0 • • • • • • • • • • • • •
32 (Y/R)	Ground	Battery power supply		OFF		Battery voltage
36 (GR/W)	Gibunu	ACC power supply	Input	ACC	_	Dallery Vollage
37 (B)	-	Antenna signal		-	_	-

Wiring Diagram

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Refer to AV-32, "Wiring Diagram".

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS AUDIO SYSTEM

AUDIO UNIT

AUDIO UNIT : Symptom Table

Symptom	Possible cause	Reference page
Inoperative	Audio unit power circuitAudio unit	• <u>AV-15</u> • <u>AV-45</u>
Steering switch does not operate	Steering switchAudio unit	• <u>AV-23</u> • <u>AV-45</u>
All speakers do not sound	Audio unit power circuitAudio unit	• <u>AV-15</u> • <u>AV-45</u>
One or several speakers do not sound	Front door speakerTweeterRear speaker	• <u>AV-17</u> • <u>AV-19</u> • <u>AV-21</u>

CD

CD : Symptom Table

Symptom	Possible cause	Reference page	Н
CD cannot be inserted.			
CD cannot be ejected.	- Audio unit	A)/ 45	1
The CD cannot be played.		<u>AV-45</u>	1
The sound skips, stops suddenly, or is distorted.			

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Symptom Table

Symptom	Possible cause	Reference page	
Inoperative	 Satellite radio tuner power or ground circuit Satellite radio tuner communication circuit Satellite radio tuner 	 <u>AV-15</u> <u>AV-25</u> <u>AV-133</u> 	L
Right or left channel does not sound	 Satellite radio tuner right channel audio signal circuit Satellite radio tuner left channel audio signal circuit Satellite radio tuner 	• <u>AV-27</u> • <u>AV-27</u> • <u>AV-133</u>	M

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

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[BASE AUDIO]

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

NOISE

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.	Ignition components
The occurrence of the noise is lin	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 oper- ating.	The noise occurs when various motors are operat- ing.	Motor case groundMotor
The noise occurs constantly, not	ust under certain conditions.	Rear defogger coil malfunctionOpen circuit in printed heaterPoor ground of antenna feeder line
A cracking or snapping sound occ it is vibrating excessively.	urs while the vehicle is being driven, especially when	Ground wire of body partsGround due to improper part installationWiring connections or a short circuit

< PRECAUTION > PRECAUTION PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-ER"

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

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< PREPARATION > PREPARATION

PREPARATION

Commercial Service Tools

Tool name		Description
		Loosening bolts and nuts
Power tool		
	PBIC0191E	

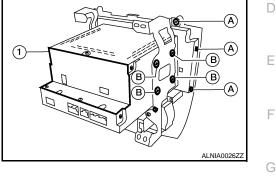
AUDIO UNIT

< ON-VEHICLE REPAIR > **ON-VEHICLE REPAIR AUDIO UNIT**

Removal and Installation

REMOVAL

- 1. Disconnect the 12-volt battery negative terminal.
- 2. Remove the cluster lid D. Refer to IP-11, "Removal and Installation".
- 3. Remove the cluster lid D screws (A), then remove the audio unit screws (B) and the audio unit (1).



INSTALLATION Installation is in the reverse order of removal.



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TWEETER

< ON-VEHICLE REPAIR >

TWEETER

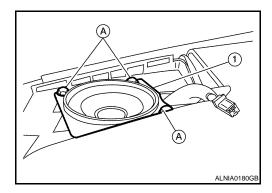
Removal and Installation

INFOID:000000001502566

[BASE AUDIO]

REMOVAL

- 1. Remove the front pillar finisher. Refer to INT-18, "Removal and Installation".
- 2. Remove tweeter speaker grille. Refer to IP-11, "Removal and Installation".
- 3. Remove the tweeter speaker screws (A), disconnect the tweeter speaker connector and remove the tweeter speaker (1).



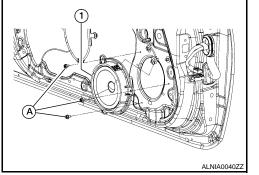
INSTALLATION Installation is in the reverse order of removal.

FRONT DOOR SPEAKER

Removal and Installation

REMOVAL

- 1. Remove the front door finisher. Refer to INT-11, "Removal and Installation".
- Remove the front door speaker screws (A), then disconnect the front door speaker connector and remove the front door speaker (1).



INSTALLATION Installation is in the reverse order of removal.

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[BASE AUDIO]

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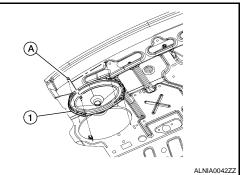
< ON-VEHICLE REPAIR >

REAR SPEAKER

Removal and Installation

REMOVAL

- 1. Remove the rear parcel shelf finisher. Refer to INT-15, "Removal and Installation".
- 2. Remove the rear speaker screws (A), then disconnect the rear speaker connector and remove the rear speaker (1).



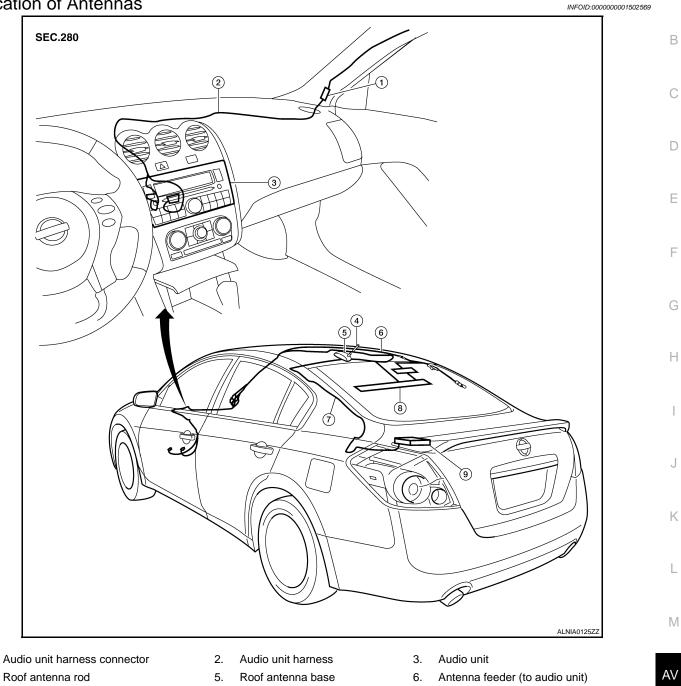
INSTALLATION Installation is in the reverse order of removal.

< ON-VEHICLE REPAIR > **AUDIO ANTENNA**

Location of Antennas

[BASE AUDIO]

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- 7. Satellite feeder
- Roof Antenna

- 8. Window antenna
- 9. Satellite radio tuner

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REMOVAL AND INSTALLATION

Removal

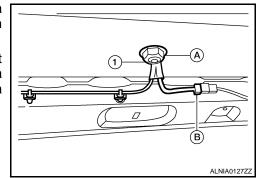
1.

4.

- 1. Remove the rear parcel shelf finisher. Refer to INT-15, "Removal and Installation".
- 2. Remove the rear assist grips. Refer to INT-18, "Removal and Installation".
- Pull down headlining (rear) and obtain space work between roof and headlining. 3.

< ON-VEHICLE REPAIR >

- Remove the roof antenna nut (A), then disconnect the antenna feeder connector (B) and remove the antenna feeder (1) from the roof.
- 5. Detach the antenna feeder harness wire clips, then disconnect the antenna feeder harness wire end and feed the antenna feeder harness through the roof to remove the roof antenna base.

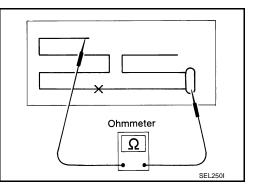


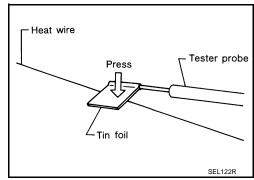
Installation Installation is in the reverse order of removal.

Window Antenna Repair

ELEMENT CHECK

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





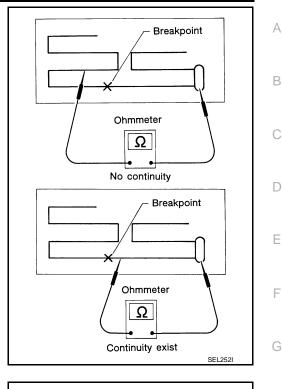
• When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.

[BASE AUDIO]

< ON-VEHICLE REPAIR >

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

[BASE AUDIO]



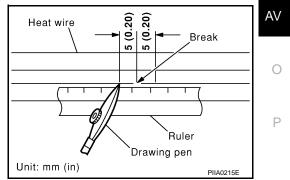
3. To locate a break, move probe along element. Tester indication will change abruptly when probe passes the broken point.



- · 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.
- 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.



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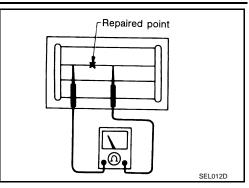
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< ON-VEHICLE REPAIR >

[BASE AUDIO]

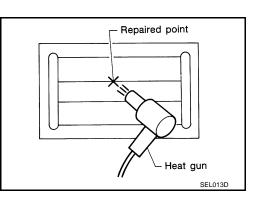
4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

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.



STEERING SWITCH

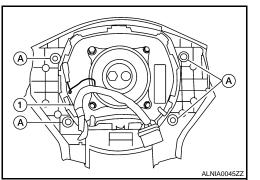
< ON-VEHICLE REPAIR >

STEERING SWITCH

Removal and Installation

REMOVAL

- 1. Remove the driver airbag module. Refer to <u>SRS-4. "Removal and Installation"</u>.
- 2. Remove the steering wheel switch assembly screws (A), then remove the steering wheel switches (1).



INSTALLATION Installation is in the reverse order of removal.

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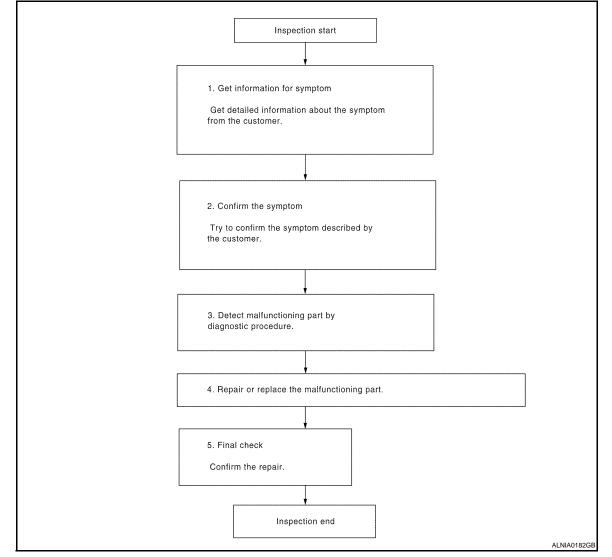
[BOSE AUDIO WITHOUT NAVIGATION]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

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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-54

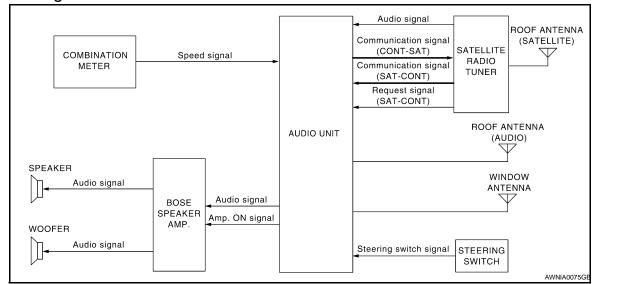
DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

Is malfunctioning part detected?	
YES >> GO TO 4 NO >> GO TO 2	A
4. REPAIR OR REPLACE THE MALFUNCTIONING PART	
1. Repair or replace the malfunctioning part.	— В
 Reconnect parts or connectors disconnected during Diagnostic Procedure. 	
>> GO TO 5	С
5.FINAL CHECK	
Refer to confirmed symptom in step 2, and make sure that the symptom is not detected.	D
Was the repair confirmed?	
YES >> Inspection End. NO >> GO TO 2	E
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FUNCTION DIAGNOSIS AUDIO SYSTEM

System Diagram



System Description

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AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- BOSE speaker amp.
- Window antenna
- Roof antenna (audio)
- Steering switches
- Front door speakers
- Tweeters
- Center speaker
- Rear door speakers
- Woofers

When the audio system is on, radio signals are received by the roof antenna (audio) and the window antenna. The audio unit then sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the front door speakers, tweeters, center speaker, rear door speakers and woofers.

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

SATELLITE RADIO SYSTEM

The satellite radio system consists of the following components

- Roof antenna (satellite)
- Satellite radio tuner

When the satellite radio system is on, radio signals are supplied to the satellite radio tuner from the satellite antenna. The satellite radio tuner then sends audio signals to the audio unit. Refer to Owner's Manual for satellite radio system operating instructions.

SPEED SENSITIVE VOLUME SYSTEM

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

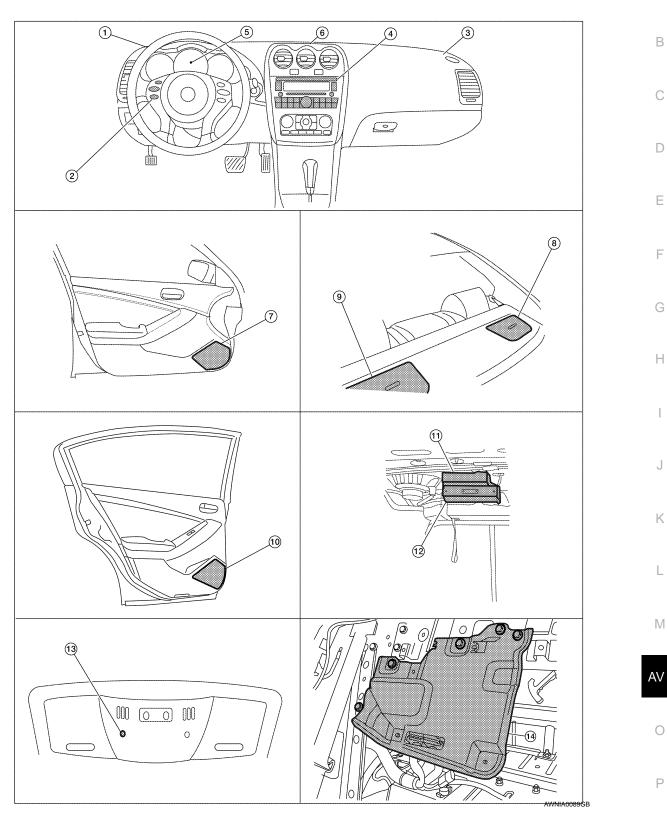
AUDIO SYSTEM

[BOSE AUDIO WITHOUT NAVIGATION]

< FUNCTION DIAGNOSIS > Component Parts Location

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1. Tweeter LH M51

- 2. Steering wheel audio control switch- 3. es
- Tweeter RH M52

- 4. Audio unit M43, M44, M45, M81
- 5. Combination meter M24
- 6. Center speaker M151

AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

- 7. Front door speaker LH D3 RH D103
- 10. Rear door speaker LH D202 RH D302
- 13. Microphone R7

Component Description

- 8. Rear subwoofer RH B124
- 11. Satellite radio tuner B123, B129 (viewed under parcel shelf near rear speaker LH)
- 14. BOSE speaker amp B121, B122 (view with rear seat back removed)

[BOSE AUDIO WITHOUT NAVIGATION]

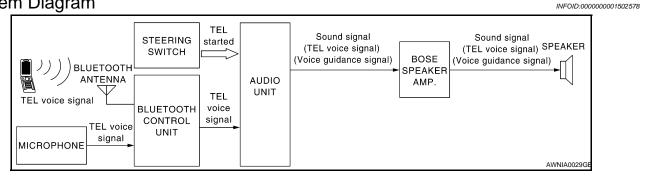
9. Rear subwoofer LH B120

12. Bluetooth control unit B125, B126 (viewed under parcel shelf near rear speaker LH)

Part name	Description
Audio unit	Controls audio system and satellite radio system functions
BOSE speaker amp.	Receives power (amp ON) and audio signals from audio unit, and outputs audio signals to each speaker.
Steering switches	Each audio operation can be operatedSteering switch signal (operation signal) is output to audio unit
Front door speakers	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Tweeters	Outputs audio signal from BOSE speaker amp.Outputs high range sounds
Center speaker	Outputs audio signal from BOSE speaker amp.Outputs high range sounds
Rear door speakers	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Woofers	Outputs audio signal from BOSE speaker amp.Outputs low range sounds
Satellite radio tuner	Receives radio signals from satellite antennaSends audio signals to audio unit
Satellite antenna	Audio signal (satellite radio) is received and output to audio unit.

HANDS-FREE PHONE SYSTEM

System Diagram



System Description

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Refer to the owner's manual for Bluetooth telephone system operating instructions. **NOTE:**

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

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

BLUETOOTH CONTROL UNIT

When the ignition switch is turned to ACC or ON, the Bluetooth control unit will power up. During power up, the Bluetooth control unit is initialized and performs various self checks. Initialization may take up to 10 seconds. If a phone is present in the vehicle and paired with the Bluetooth control unit, Nissan Voice Recognition will then become active. Bluetooth telephone functions can be turned off using the Nissan Voice Recognition system.

STEERING WHEEL AUDIO CONTROL SWITCHES

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

The following functions can be performed using the steering wheel audio control switch:

- 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 Bluetooth control unit. The microphone can be actively tested during self-diagnosis.

AUDIO UNIT

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

Component Parts Location

Refer to AV-57, "Component Parts Location".

< FUNCTION DIAGNOSIS >

HANDS-FREE PHONE SYSTEM

[BOSE AUDIO WITHOUT NAVIGATION]

Component Description

Part name	Description
Audio unit	 Receives telephone voice signal from Bluetooth control unit Sends telephone voice and voice guidance signals to BOSE speaker amp.
BOSE speaker amp.	Inputs power (amp ON) and sound signal from audio unit, and outputs sound signal to each speaker.
Front door speaker	
Tweeter	Receives telephone voice and voice guidance signals from BOSE speaker amp.
Center speaker	
Steering switches	 Start a voice recognition session Answer and end telephone calls Adjust the volume level
Microphone	Sends voice signals to Bluetooth control unit
Bluetooth control unit	Controls hands-free phone functions
Bluetooth antenna	Sends telephone voice signal to bluetooth control unit

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (AUDIO UNIT)

Diagnosis Description

Self-diagnosis mode can check the following items.

- Audio unit hardware/software versions
- Continuity of each speaker channel
- · Continuity of each audio unit switch

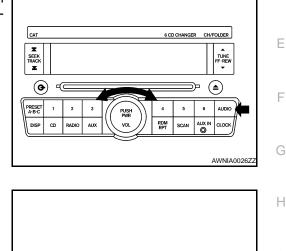
OPERATION PROCEDURE

- Turn ignition switch to the ACC position. 1.
- Turn the audio unit off. 2.
- While pressing the "AUDIO" button, turn the volume control dial 3. clockwise or counterclockwise 30 clicks or more. When the selfdiagnosis mode is started, a short beep will be heard.

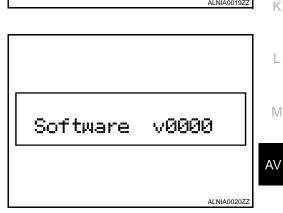
4. Initially, all display segments will be illuminated.

Version Check

Press the "AUDIO" switch to enter version diagnostics. "Soft-1. ware" (audio software version) is displayed.



REPEAT RANDOM ALL DISCTRACK ①23456
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DIAGNOSIS SYSTEM (AUDIO UNIT)

< FUNCTION DIAGNOSIS >

2. Press the "AUDIO" switch again to display the "Hardware" (audio hardware version).

Hardware	√0000
	ALNIA0021Z

3. Press the "AUDIO" switch again to display the "CD Mech" (CD mechanism version).



4. Press the "AUDIO" switch again to display the "SDARS" (satellite radio version).

SDARS	v0000
	ALNIA0023ZZ

Channel Check Diagnostics

When all segments are illuminated, press the "TUNE" up switch to enter channel check diagnostics. The self-diagnostic function will then send a tone to each channel (FL, RL, RR, FR) for 1 second.

Channel	check	FL
		ALNIA0024ZZ

Button Check Diagnostics

DIAGNOSIS SYSTEM (AUDIO UNIT)

< FUNCTION DIAGNOSIS >

When all segments are illuminated, press the "TUNE" down switch to enter button check diagnostics. When each audio unit switch is pressed, a tone will sound and the switch name will be displayed.

[BOSE AUDIO WITHOUT NAVIGATION]

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BUTTON CHECK		В
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DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT) [BOSE AUDIO WITHOUT NAVIGATION]

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

Diagnosis Description

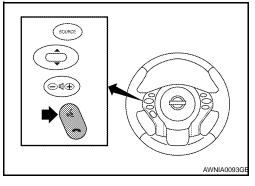
The Bluetooth control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

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

OPERATION PROCEDURE

- Turn ignition switch to ACC or ON. 1.
- 2. Wait for the Bluetooth system to complete initialization. This may take up to 10 seconds.
- 3. Press and hold the steering wheel audio control switch SEND button for at least 5 seconds. The Bluetooth system will begin to play a verbal prompt.



)at

- While the prompt is playing, press and hold the steering wheel 4. audio control switch END button until you hear the "Diagnostics mode" prompt. The Bluetooth system will sound a 5 second beep.
- While the beep is sounding, press and hold the steering wheel 5. audio control switch END button again until you hear prompts.
- The Bluetooth system has now entered into the diagnostic 6. mode. Results of the diagnostic checks will be verbalized to the technician. Refer to AV-64, "Work Flow".
- After the failure records are reported, an interactive microphone 7. test will be performed. Follow the voice prompt. If the microphone test fails refer to AV-64, "Work Flow".
- Self-diagnosis mode is complete when the voice prompt says "All diagnostic functions completed". 8.

Work Flow

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Failure Message	Action			
"Internal failure"	Replace Bluetooth control unit. Refer to AV-138, "Removal and Installation".			
"Bluetooth antenna open"	1. Inspect harness connection.			
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-137, "Removal and Installation"</u> .			
"Phone/Send for Hands Free System is stuck"	Check steering wheel audio control switches. Refer to AV-85. "Diagnosis F			
"Phone/End for the Hands Free System is stuck"	dure".			
"Microphone test" (failed interactive test)	 Inspect harness between Bluetooth control unit and microphone. Replace microphone. Refer to <u>AV-136</u>, "<u>Removal and Installation</u>". 			

< COMPONENT DIAGNOSIS > **COMPONENT DIAGNOSIS** POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

1.CHECK FUSE

Check that the following fuses of the audio unit are not blown.

Unit	Terminals	Signal name	Fuse No.	D
Audio unit	19	Battery power	24	
	7	Ignition switch ACC or ON	19	Е

POWER SUPPLY AND GROUND CIRCUIT

Are the fuses OK?

YES >> GO TO 2

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. AUDIO UNIT POWER SUPPLY CIRCUIT CHECK

- Disconnect audio unit connector. 1
- 2. Check voltage between the audio unit and ground.

2. Check voltage between the audio unit and ground.							H.S.
	-	Ferminal No.					
Unit	Unit (+)		()	OFF	ACC	ON	
	Connector	Terminal	(-)				
Audio unit	M43	19	Ground	Battery voltage	Battery voltage	Battery voltage	
	10143	7	Ground	0V	Battery voltage	Battery voltage	



YES >> GO TO 3

NO

>> • Check connector housings for disconnected or loose terminals.

· Repair harness or connector.

3.GROUND CIRCUIT CHECK

Inspect audio unit case ground.

Does case ground pass inspection?

- YES >> Inspection End.
- >> Repair audio unit case ground. NO

BOSE SPEAKER AMP

BOSE SPEAKER AMP : Diagnosis Procedure

1.CHECK FUSE

Check for blown fuses.

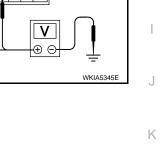
Unit	Terminals	Signal name	Fuse No.	D
BOSE speaker amp.	50	Battery power	25	Γ
	51	Ballery power	26	

Are the fuses OK?

YES >> GO TO 2

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT



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POWER SUPPLY AND GROUND CIRCUIT IBOSE AUDIO WITHOUT NAVIGATION]

Voltage

(approx.)

Battery

voltage

(-)

Ground

< COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. Disconnect BOSE speaker amp connector.

Connector

B122

3. Check voltage between BOSE speaker amp harness connector and ground.

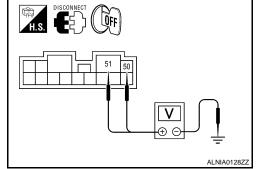
Terminal No.

Terminal

50

51

(+)



amp		
Is battery voltage present?		

YES >> GO TO 3

Unit

BOSE

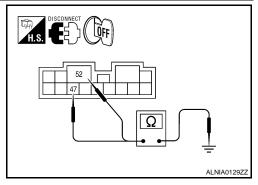
speaker

NO >> Check harness between BOSE speaker amp and fuse.

3. CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect BOSE speaker amp connector.
- 3. Check continuity between BOSE speaker amp harness connector and ground.

	Terminal No.			
Unit	(+)		(-)	Continuity
	Connector	Terminal	(-)	
BOSE	5400	47		
speaker amp	B122	52	Ground	Yes



Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector. SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

1.CHECK FUSES

Check that the following fuses are not blown.

Unit	Terminals	Signal name	Fuse No.
Satellite radio tuner (factory in-	32	Battery power	24
stalled)	36	Ignition switch ACC or ON	19

Are the fuses OK?

YES >> GO TO 2

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. POWER SUPPLY CIRCUIT CHECK

POWER SUPPLY AND GROUND CIRCUIT DSIS > [BOSE AUDIO WITHOUT NAVIGATION]

< COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector B123.
- 3. Check voltage between the satellite radio tuner (factory installed) and ground.

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	-	Terminal No.				
Unit	(+)		(-)	OFF	ACC	ON
	Connector	Terminal	(-)			
Satellite radio tuner	B123	32	Ground	Battery voltage	Battery voltage	Battery voltage
(factory in- stalled)	0120	36	Ground	0V	Battery voltage	Battery voltage

Are the voltage results as specified?

YES >> GO TO 3

NO

- >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

3. GROUND CIRCUIT CHECK

Inspect satellite radio tuner (factory installed) case ground.

Does case ground pass inspection?

YES >> Inspection End.

NO >> Repair satellite radio tuner (factory installed) case ground.

BLUETOOTH CONTROL UNIT

BLUETOOTH CONTROL UNIT : Diagnosis Procedure

1.CHECK FUSE

Check that the following fuses of the Bluetooth control unit are not blown.

		0
Power source	Fuse No.	
Battery	24	IZ.
Ignition switch ACC or ON	19	K
Ignition switch ON or START	3	

Are the fuses OK?

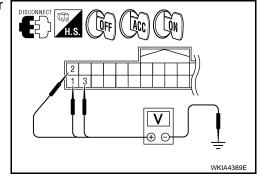
YES >> GO TO 2

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between Bluetooth control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch posi- tion	Value (Ap- prox.)
Battery pow- er supply		1	OFF	
ACC power supply	B126	2	ACC	Battery volt- age
Ignition sig- nal		3	ON	



Are the voltage results as specified?

YES >> GO TO 3

NO >> Check harness between Bluetooth control unit and fuse.

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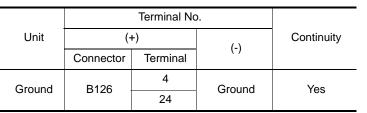
POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

3.CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit connector B126.
- 3. Check continuity between Bluetooth control unit harness connector and ground.



Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector.

MICROPHONE

MICROPHONE : Diagnosis Procedure

1.CHECK POWER SUPPLY CIRCUIT (MICROPHONE SIDE)

Check voltage between microphone harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch posi- tion	Value (Ap- prox.)
Microphone VCC signal	R7	4	ON	5V

Is proper voltage present?

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

2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit and microphone connectors.
- Check continuity between microphone harness connector R7 (A) terminal 4 and Bluetooth control unit harness connector B126 (B) terminal 29.

Signal name	Continuity
Microphone VCC signal	Continuity should exist.

 Check continuity between microphone harness connector R7 (A) terminal 4 and ground.

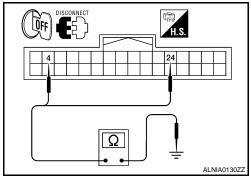
Signal name	Continuity
Microphone VCC signal	Continuity should not exist.

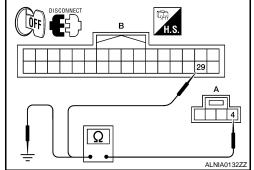
Are continuity results as specified?

YES >> GO TO 3

NO >> Repair harness or connector.

3.CHECK POWER SUPPLY CIRCUIT (BLUETOOTH CONTROL UNIT SIDE)





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POWER SUPPLY AND GROUND CIRCUIT IBOSE AUDIO WITHOUT NAVIGATION]

< COMPONENT DIAGNOSIS >

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

Connector No.	Terminal No.	Ignition switch po- sition	Value (Approx.)
B126	29	ON	5V

Is proper voltage present?

- YES >> Inspection End.
- NO >> Replace Bluetooth control unit. Refer to <u>AV-138</u>, <u>"Removal and Installation"</u>.

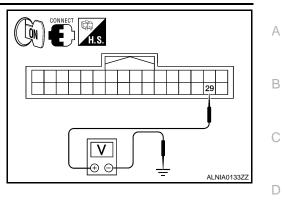
4.CHECK GROUND CIRCUIT

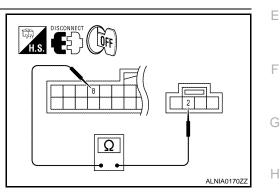
- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit and microphone connectors.
- Check continuity between microphone harness connector R7 terminal 2 and Bluetooth control unit harness connector B126 terminal 8.

Signal name	Continuity
Microphone ground	Continuity should exist.

Is continuity present?

- YES >> Inspection End.
- NO >> Repair harness or connector.







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< COMPONENT DIAGNOSIS >

FRONT DOOR SPEAKER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the front door speakers using the audio signal circuits.

Diagnosis Procedure

INFOID:000000001502591

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1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B121 and suspect speaker connector.
- 2. Check continuity between BOSE speaker amp. harness connector B121 (A) and suspect speaker harness connector (B).

Terminals				
А		В		Continuity
Connector	Terminal	Connector	Terminal	•
B121	58	D3	1	Yes
	59		2	
	71	D103	1	
	72		2	

3. Check continuity between BOSE speaker amp. harness connector B121 (A) and ground.

	А	В	Continuity
Connector	Terminal		
B121	58	Ground	No
	59		
	71		
	72		

Are continuity test results as specified?

YES >> GO TO 2 NO >> • Check co

- >> Check connector housings for disconnected or loose terminals.
- Repair harness or connector.

2.FRONT SPEAKER SIGNAL CHECK

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FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

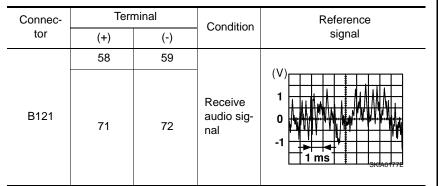
[BOSE AUDIO WITHOUT NAVIGATION]

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ACC

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- 1. Connect BOSE speaker amp. connector B121 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between BOSE speaker amp. harness connector B121 terminals with CONSULT-III or oscilloscope.



Is audio signal voltage as specified?

>> Replace suspect speaker. Refer to AV-130, "Removal YES and Installation".

NO >> GO TO 3

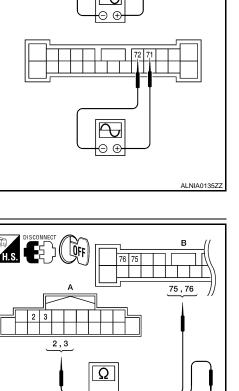
3.HARNESS CHECK

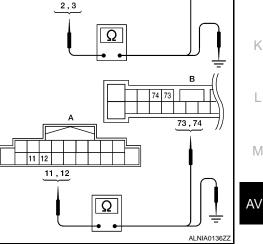
- 1. Disconnect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Check continuity between audio unit harness connector M43 (A) and BOSE speaker amp. harness connector B121 (B).

Terminals				
A		В		Continuity
Connector	Terminal	Connector	Terminal	
M43	2	B121	75	Yes
	3		76	
	11		73	
	12		74	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	А		Continuity
Connector	Terminal	7	
M43	2		No
	3	Ground	
	11		
	12		





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Are continuity test results as specified?

YES >> GO TO 4

- NO >> • Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

4.FRONT SPEAKER SIGNAL CHECK

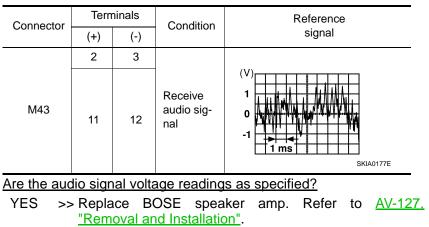
AV-71

FRONT DOOR SPEAKER

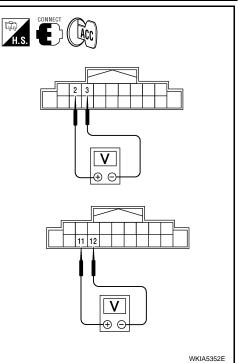
< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 1. Connect audio unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.



NO >> Replace audio unit. Refer to <u>AV-126, "Removal and</u> <u>Installation"</u>.



< COMPONENT DIAGNOSIS >

TWEETER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the tweeters using the audio signal circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B122 and suspect tweeter connector.
- Check continuity between BOSE speaker amp. harness connector B122 (A) and suspect tweeter harness connector (B).

	A B			Continuity	
Connector	Terminal	Connector	Terminal		
B122	41	M51		1	
	42		2	Yes	
	44	1450	1	Tes	
	43	M52	2		

Check continuity between BOSE speaker amp. harness connector B122 (A) and ground.

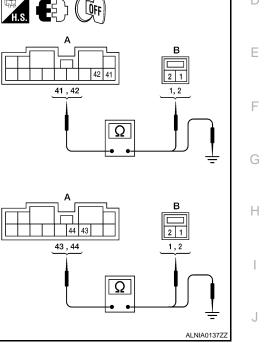
	Terminals		
A			Continuity
Connector	Terminal		
B122	41		No
	42	Ground	
	44	Giodila	NO
	43	-	

Are continuity test results as specified?

>> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.TWEETER SIGNAL CHECK





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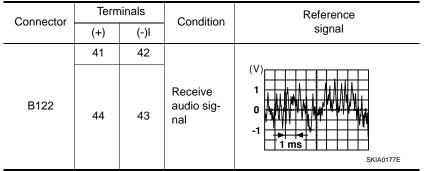
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TWEETER

< COMPONENT DIAGNOSIS >

- 1. Connect BOSE speaker amp. connector B122 and suspect tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between BOSE speaker amp. harness connector B122 terminals with CONSULT-III or oscilloscope.



Are the audio signal voltage readings as specified?

YES >> Replace suspect tweeter. Refer to <u>AV-128</u>, "<u>Removal</u> and Installation".

3.HARNESS CHECK

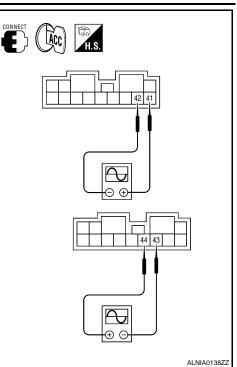
- 1. Disconnect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Check continuity between audio unit harness connector M43 (A) and BOSE speaker amp. harness connector B121 (B).

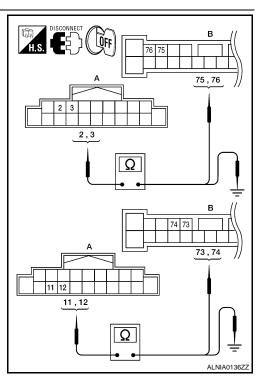
Terminals				
	A	В		Continuity
Connector	Terminal	Connector	Terminal	
M43	2	B121	75	
	3		76	Yes
	11		73	165
	12		74	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	А		Continuity	
Connector	Terminal			
M43	2		No	
	3	Ground		
	11	Ground		
	12	-		

[BOSE AUDIO WITHOUT NAVIGATION]





Are continuity test results as specified?

YES >> GO TO 4

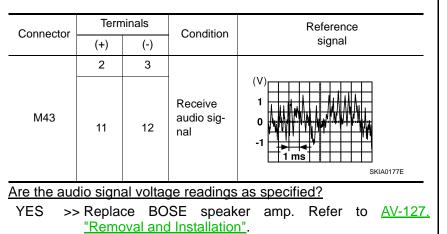
- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.
- **4.**TWEETER SIGNAL CHECK

TWEETER

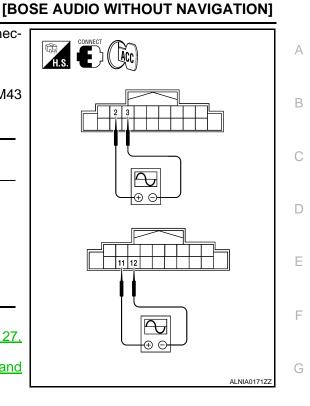
AV-75

< COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.



NO >> Replace audio unit. Refer to <u>AV-126, "Removal and</u> Installation".



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< COMPONENT DIAGNOSIS >

CENTER SPEAKER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the center speaker using the audio signal circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B121 and center speaker connector M151.
- Check continuity between BOSE speaker amp. harness connec-2. tor B121 (A) and center speaker harness connector M151 (B).

Terminals				
	A	В		Continuity
Connector	Terminal	Connector	Terminal	*
B121	69	M151 1	1	Yes
	70		2	165

Check continuity between BOSE speaker amp. harness connector B121 (A) and ground.

	A		Continuity
Connector	Terminal		
B121	69	Ground	No
DIZI	70	Giodila	NO

Are continuity test results as specified?

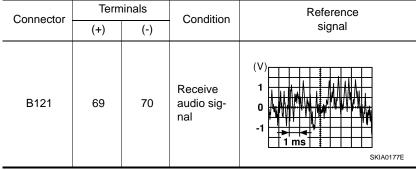
YES >> GO TO 2 NO

3.

- >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

Terminals

- 2.CENTER SPEAKER SIGNAL CHECK
- Connect BOSE speaker amp. connector B121 and center 1. speaker connector.
- 2. Turn ignition switch to ACC.
- Push "POWER" switch. 3.
- Check the signal between BOSE speaker amp. harness connec-4. tor B121 terminals with CONSULT-III or oscilloscope.

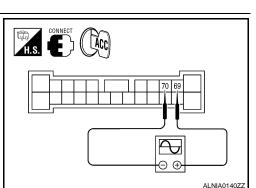


Is the audio signal voltage reading as specified?

YES >> Replace center speaker. Refer to AV-129, "Removal and Installation".

NO >> GO TO 3

AV-76



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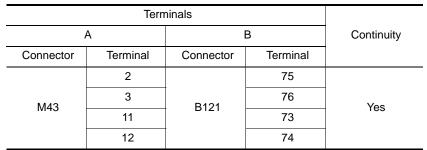
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< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

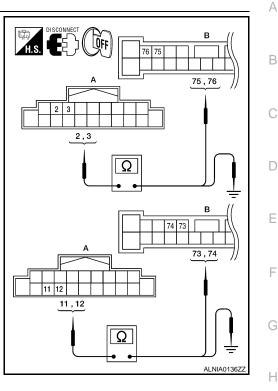
3.HARNESS CHECK

- 1. Disconnect audio unit connector M43 and BOSE speaker amp. connector B121.
- Check continuity between audio unit harness connector M43 (A) and BOSE speaker amp. harness connector B121 (B).



 Check continuity between audio unit harness connector M43 (A) and ground.

	Terminals		
	А		Continuity
Connector	Connector Terminal		
	2		No
M43	3	Ground	
101-3	11	Ground	NO
	12		



Are continuity test results as specified?

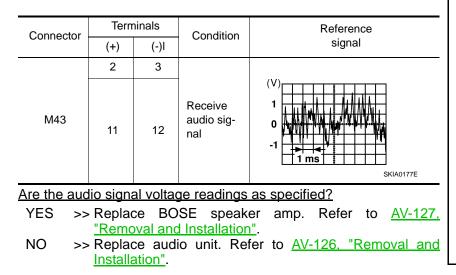
YES >> GO TO 4

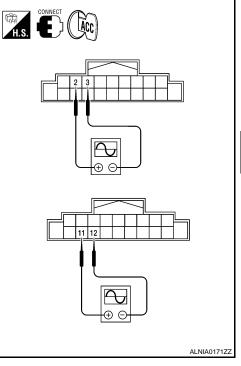
NO

> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

4.CENTER SPEAKER SIGNAL CHECK

- Connect audio unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.





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REAR DOOR SPEAKER

Description

INFOID:000000001502596

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the rear door speakers using the audio signal circuits.

Diagnosis Procedure

INFOID:000000001502597

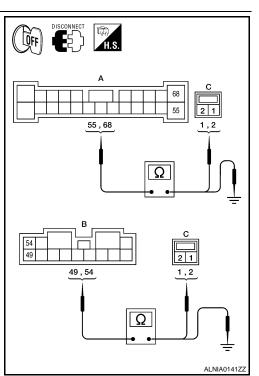
1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connectors B121, B122 and suspect speaker connector.
- Check continuity between BOSE speaker amp. harness connectors B121 (A) and B122 (B) and suspect speaker harness connector (C).

	Terminals				Continuity	
-	Connector	Terminal	Connector	Terminal	Continuity	
-	A: B121	55	C: D202	C: D202	2	
		68		1	Yes	
	B: B122	49	0. 0000	2	165	
		54	C: D302	1		

3. Check continuity between BOSE speaker amp. harness connectors B121 (A) and B122 (B) and ground.

Connector	Terminal	-	Continuity	
A: B121	55			
A. DIZI	68	Ground	No	
B: B122	49	Ground	NO	
	54			



Are the continuity test results as specified?

YES >> GO TO 2 NO >> • Check c

>> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

2.REAR DOOR SPEAKER SIGNAL CHECK

REAR DOOR SPEAKER

Reference

signal

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< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 1. Connect BOSE speaker amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.

Terminals

(-) 55

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Are audio signal voltage readings as specified?

and Installation".

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3. Push "POWER" switch.

Connector

A: B121

B: B122

YES

4. Check the signal between BOSE speaker amp. harness connectors B121 (A) and B122 (B) terminals with CONSULT-III or oscilloscope.

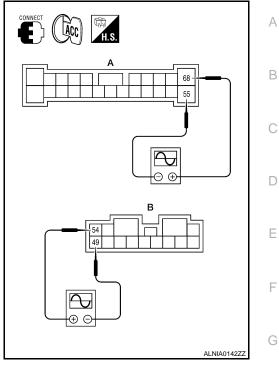
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>> Replace suspect speaker. Refer to AV-131, "Removal

Condition

Receive audio sig-

nal



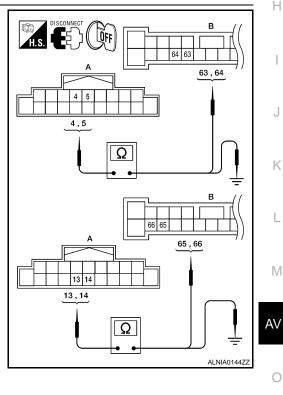
>> GO TO 3 NO 3.HARNESS CHECK

- 1. Disconnect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Check continuity between audio unit harness connector M43 (A) and BOSE speaker amp. harness connector B121 (B).

Terminals				
	A B		Continuity	
Connector	Terminal	Connector	Terminal	
M43	4	B121	64	
	5		63	Yes
	13		66	165
	14	Ť	65	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	Terminals		
	А		Continuity
Connector	Terminal		
M43	4	- Ground	No
	5		
	13		NO
	14		



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Are the continuity test results as specified?

- YES >> GO TO 4
- NO >> • Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

4.REAR DOOR SPEAKER SIGNAL CHECK

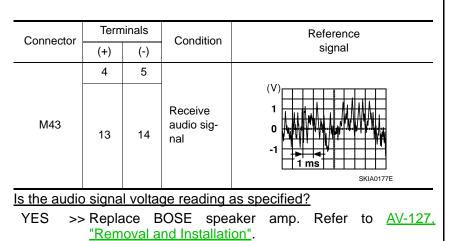
AV-79

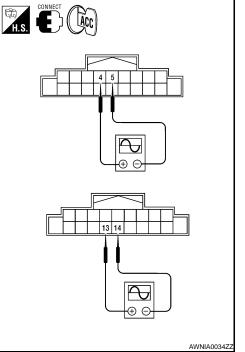
REAR DOOR SPEAKER

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 1. Connect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.





NO >> Replace audio unit. Refer to <u>AV-126, "Removal and</u> <u>Installation"</u>.

< COMPONENT DIAGNOSIS > WOOFER

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The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the woofers using the audio signal circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B122 and suspect rear subwoofer connector.
- Check continuity between BOSE speaker amp. harness connector B122 (A) and suspect rear subwoofer harness connector (B).

Terminals				
A B			Continuity	
Connector	Terminal	Connector	Terminal	
	53	B120	1	
B122	48		2	Yes
	45	B124	1	Tes
	46		2	

 Check continuity between BOSE speaker amp. harness connector B122 (A) and ground.

	Terminals		
	Continuity		
Connector	Terminal		
	53		No
B122	48	Ground	
DIZZ	45	Giodila	
	46		

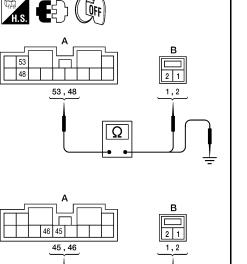


YES >> GO TO 2 NO >> • Check of

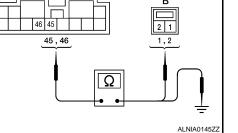
>>• Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.REAR SUBWOOFER SIGNAL CHECK



[BOSE AUDIO WITHOUT NAVIGATION]



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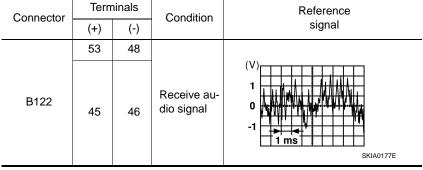
WOOFER

< COMPONENT DIAGNOSIS >

- Connect BOSE speaker amp. connector B122 and suspect rear subwoofer connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.

1.

4. Check the signal between BOSE speaker amp. harness connector B122 terminals with CONSULT-III or oscilloscope.



Is the audio signal voltage as specified?

- YES >> Replace suspect rear subwoofer. Refer to <u>AV-132</u>. "Removal and Installation".
- NO >> GO TO 3

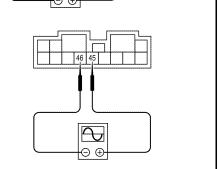
3.HARNESS CHECK

- 1. Disconnect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Check continuity between audio unit harness connector M43 (A) and BOSE speaker amp. harness connector B121 (B).

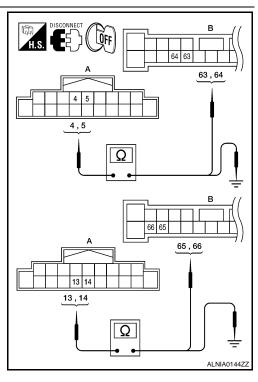
	A B			
Connector	Terminal	Connector	Terminal	
	4	B121	64	
M43	5		63	Yes
	13	DIZI	66	163
	14		65	

3. Check continuity between audio unit harness connector M43 (A) terminal and ground.

	Continuity			
Connector	Terminal			
M43	4		No	
	5	Ground		
	13	Ground	INU	
	14			



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Are continuity test results as specified?

YES >> GO TO 4

- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

4.REAR SUBWOOFER SIGNAL CHECK

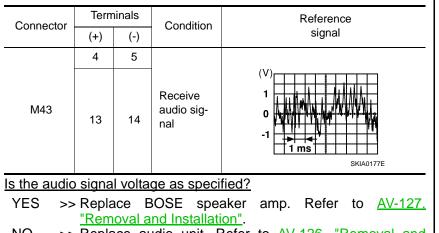
[BOSE AUDIO WITHOUT NAVIGATION]

WOOFER

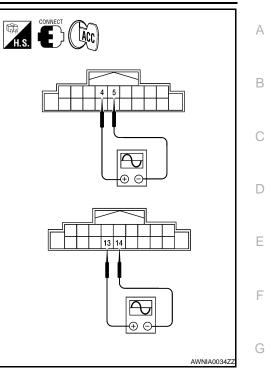
< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 1. Connect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.



NO >> Replace audio unit. Refer to <u>AV-126, "Removal and</u> <u>Installation"</u>.



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< COMPONENT DIAGNOSIS >

AMP ON SIGNAL CIRCUIT

Description

When the audio system is turned on, a voltage signal is supplied from the audio unit to the BOSE speaker amp. When this signal is received, the BOSE speaker amp. will turn on.

Diagnosis Procedure

1.CHECK AMP ON SIGNAL (BOSE SPEAKER AMP)

- 1. Turn audio system ON.
- 2. Check voltage between BOSE speaker amp. harness connector B121 terminal 60 and ground.

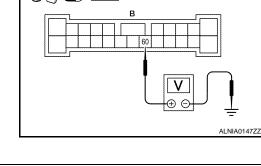
60 - Ground

: More than approx. 6.5V

Is voltage greater than 6.5V?

YES >> Inspection End.

NO >> GO TO 2



2. CHECK AMP ON SIGNAL (AUDIO UNIT)

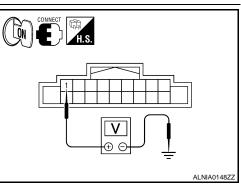
Check voltage between audio unit harness connector M43 terminal 1 and ground.

1 - Ground

: More than approx. 6.5V

Is voltage greater than 6.5V?

- YES >> Repair harness or connector.
- NO >> Replace audio unit. Refer to <u>AV-126, "Removal and</u> <u>Installation"</u>.



[BOSE AUDIO WITHOUT NAVIGATION]

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INFOID:000000001502601

< COMPONENT DIAGNOSIS >

STEERING SWITCH

Description

When one of the steering wheel audio control switches is pushed, the resistance in the steering switch circuit В changes depending on which button is pushed.

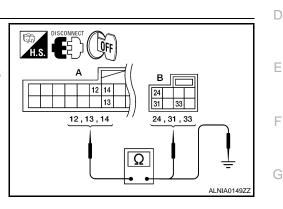
Diagnosis Procedure

WITH BLUETOOTH

1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit connector B126 and spiral cable connector M30.
- 3. Check continuity between Bluetooth control unit connector B126 (A) terminals and spiral cable connector M30 (B) terminals.

Δ	Continuity			
Connector	Terminal	Connector	Terminal	
	12		24	
B126	13	M30	31	Yes
	14		33	



Check continuity between Bluetooth control unit B126 (A) and ground. 4.

	Continuity		
Connector	Terminal	-	
	12		
B126	13	Ground	No
	14		

Are the continuity test results as specified?

YES >> GO TO 2

NO >> Repair harness.

2. CHECK HARNESS

1 Disconnect audio unit connector.

2. Check continuity between audio unit connector M43 (A) terminals and Bluetooth control unit connector B126 (B) terminals.

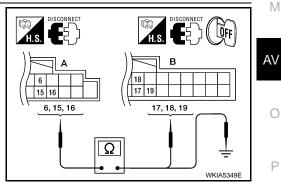
Α	A B			Continuity
Connector	Terminal	Connector		
	6		17	
M43	15	B126	19	Yes
	16		18	

Are the continuity test results as specified?

YES >> GO TO 3

NO >> Repair harness.

3.SPIRAL CABLE CHECK



[BOSE AUDIO WITHOUT NAVIGATION]

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INFOID:000000001502603

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STEERING SWITCH

Continuity

Yes

< COMPONENT DIAGNOSIS >

Terminal

24

31

33

1. Disconnect spiral cable connector M88.

Terminals Spiral cable

Connector

M88

 Check continuity between spiral cable harness connector M30 and M88.

24 31 33	
24,31,33	Ω • • • • • • • • • • • • • • • • • • •

[BOSE AUDIO WITHOUT NAVIGATION]

Are the continuity test results as specified?

YES >> GO TO 4

Connector

M30

NO >> Replace spiral cable. Refer to <u>SRS-6. "Removal and Installation"</u>.

Terminal

14

15

17

4.CHECK STEERING SWITCH

Check steering switch. Refer to AV-87, "Component Inspection".

Does the steering switch pass inspection?

- YES >> Replace Bluetooth control unit. Refer to <u>AV-138. "Removal and Installation"</u>
- NO >> Replace steering switch. Refer to AV-135, "Removal and Installation".

WITHOUT BLUETOOTH

1.CHECK STEERING SWITCH

Check steering switch. Refer to AV-87, "Component Inspection".

Does the steering switch pass inspection?

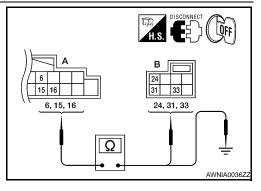
YES >> GO TO 2

NO >> Replace steering switch. Refer to <u>AV-53, "Removal and Installation"</u>.

2.CHECK HARNESS

- 1. Turn ignition switch OFF.
- Disconnect audio unit connector M43 and spiral cable connector M30.
- Check continuity between spiral cable harness connector M30 (B) and audio unit harness connector M43 (A).

В			Continuity	
Connector	Terminal	Connector		
	24		6	
M30	31	M43	16	Yes
	33		15	



4. Check continuity between audio unit connector M43 (A) and ground.

	Terminals		
	А		Continuity
Connector	Terminal		
	6		
M43	15	Ground	No
	16		

Are the continuity test results as specified?

YES >> GO TO 3

STEERING SWITCH

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

					[]
-	Repair hai				٨
3. SPIRAL	CABLE CH	IECK			А
				arness connector N	
	Term	ninals			
		l cable		Continuity	31 33 17 1514 C
Connector	Terminal	Connector	Terminal	,	$\underbrace{\frac{24,31,33}{1}}_{1}$
	24		14		Ω □
M30	31	M88	15	Yes	
	33		17		AWNIA0037ZZ
Are the cor	ntinuity test	results as s	pecified?		—— E
	Inspection		Pofor to SP	S-6, "Removal and	Installation"
	•	•			F
Compon	ent inspe	ection			INF0/D:000000001502604
WITH BLU	JETOOTH				G
Measure th	ne resistanc	e between t	he steering	switch connector te	erminals 14 to 17 and 15 to 17.
Standard					
Bet	ween termi	inals 14 an			
	switch ON			0 Ω	
	EK UP swit			108 – 112 Ω	1
SEE	EK DOWN s	switch ON	:	323 – 337 Ω	
Det			1.47		
	ween termi			•	Ω
	L DOWN sv L UP switcl			ΟΩ 108 112 Ω	
				108 – 112 Ω 323 – 337 Ω	AWNIA0035ZZ
• –	switch ON URCE swite			990 – 1030 Ω	
				990 - 1090 22	L
WITHOUT			he steering	switch connector te	erminals 14 to 17 and 15 to 17.
Standard		e between t	ine steering		·
	ween termi	inals 14 an	d 17		
SO	URCE swite	ch ON	:	0 Ω	
SEE	EK UP swit	ch ON	:	162 – 168 Ω	AV
VOI	LUME UP s	witch ON	:	639 – 665 Ω	
Bet	ween termi	inals 15 an	d 17		
	EK DOWN s			162 – 168 Ω	Ω
VOI	L DOWN sv	vitch ON	:	639 – 665 Ω	AWNIA0035ZZ P

COMMUNICATION SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Description

Communication signals are exchanged between the audio unit and satellite radio tuner using the communication circuits.

SATELLITE RADIO TUNER : Diagnosis Procedure

1.CHECK HARNESS - 1

- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector B123 and audio unit connector M45.
- 3. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 28 and audio unit harness connector M45 (B) terminal 38.

Continuity should exist.

4. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 28 and ground.

Continuity should not exist.

Are continuity test results as specified?

- YES >> GO TO 2
- NO >> Repair harness or connector.

2. CHECK HARNESS - 2

 Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 29 and audio unit harness connector M45 (B) terminal 39.

Continuity should exist.

2. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 29 and ground.

Continuity should not exist.

Are continuity test results as specified?

- YES >> GO TO 3
- NO >> Repair harness or connector.

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3.CHECK HARNESS - 3
```

 Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 30 and audio unit harness connector M45 (B) terminal 40.

Continuity should exist.

2. Check continuity between satellite radio tuner (factory installed) harness connector B123 (A) terminal 30 and ground.

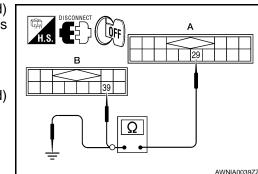
Continuity should not exist.

Are the continuity test results as specified?

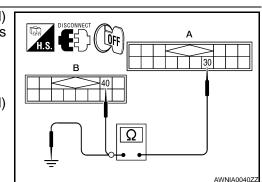
YES >> GO TO 4

NO >> Repair harness or connector.

4.CHECK REQ1 SIGNAL



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[BOSE AUDIO WITHOUT NAVIGATION]



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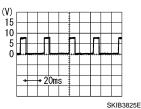
COMMUNICATION SIGNAL CIRCUIT

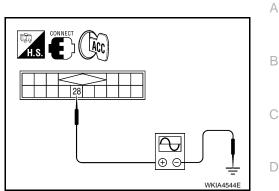
< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 1. Connect satellite radio tuner (factory installed) connector and audio unit connector.
- 2. Turn ignition switch to ACC
- Check signal between satellite radio tuner (factory installed) harness connector B123 terminal 28 and ground with CONSULT-III or oscilloscope.

28 - Ground





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Are the voltage readings as specified?

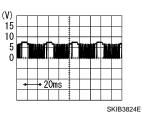
YES >> GO TO 5

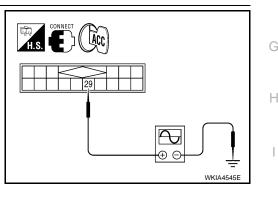
NO >> Replace audio unit. Refer to <u>AV-45, "Removal and Installation"</u>.

5.CHECK TXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector B123 terminal 29 and ground with CONSULT-III or oscillo-scope.

29 - Ground





Are the voltage readings as specified?

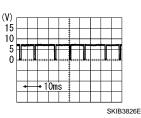
YES >> GO TO 6

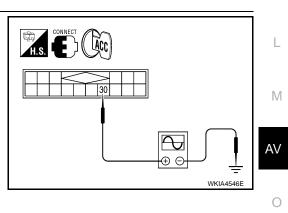
NO >> Replace satellite radio tuner. Refer to <u>AV-133. "Removal and Installation"</u>.

6.CHECK RXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector B123 terminal 30 and ground with CONSULT-III or oscillo-scope.

30 - Ground





Are the voltage readings as specified?

- YES >> Replace satellite radio tuner. Refer to <u>AV-133, "Removal and Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-45, "Removal and Installation"</u>.

< COMPONENT DIAGNOSIS >

SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Description

Left and right channel audio signals are supplied from the satellite radio tuner to the audio unit through the sound signal circuits.

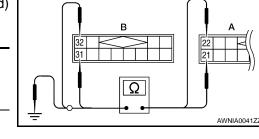
SATELLITE RADIO TUNER : Diagnosis Procedure

LEFT CHANNEL

1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector B123 (A) and audio unit connector M45 (B).
- 3. Check continuity between satellite radio tuner (factory installed) and audio unit.

-					
	Α	Continuity			
	Connector	Terminal	Connector	Terminal	
	B123	21	M45	31	Yes
	B123	22	10145	32	165



4. Check continuity between satellite radio tuner (factory installed)(A) and ground.

	Terminals				
	Α				
Connector	Terminal				
B123	21	Ground	No		
6125	22	Giounu	NO		

Are continuity test results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

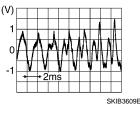
2. CHECK LEFT CHANNEL AUDIO SIGNAL

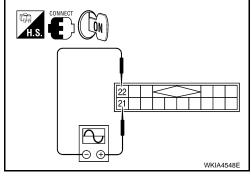
1. Connect satellite radio tuner (factory installed) and audio unit.

2. Turn ignition switch ON.

 Check signal between satellite radio tuner (factory installed) connector B123 terminals 21 and 22 with CONSULT-III or oscilloscope.

21 - 22





Are the voltage readings as specified?

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

NO >> Replace satellite radio tuner. Refer to <u>AV-133, "Removal and Installation"</u>.

RIGHT CHANNEL

[BOSE AUDIO WITHOUT NAVIGATION]

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INFOID:000000001502607

SOUND SIGNAL CIRCUIT

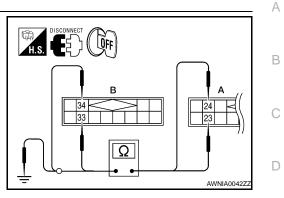
< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector 2. B123 (A) and audio unit connector M45 (B).
- 3. Check continuity between satellite radio tuner (factory installed) and audio unit.

	Tern	ninals		
	ł	E	3	Continuity
Connector	Terminal	Connector	Terminal	
B123	23	M45	33	Yes
D125	24	10145	34	165



Check continuity between satellite radio tuner (factory installed)(A) and ground. 4.

	Terminals		
	A		Continuity
Connector	Terminal		
B123	23	Ground	No
D125	24	Giouna	NO

Are continuity test results as specified?

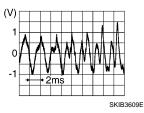
YES >> GO TO 2

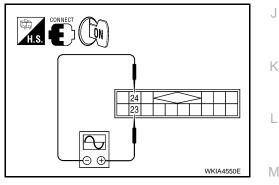
NO >> Repair harness or connector.

2.CHECK RIGHT CHANNEL AUDIO SIGNAL

- Connect satellite radio tuner (factory installed) and audio unit. 1.
- Turn ignition switch ON. 2.
- Check signal between satellite radio tuner (factory installed) 3. connector B123 terminals 23 and 24 with CONSULT-III or oscilloscope.

23 - 24





Are voltage readings as specified?

- >> Replace audio unit. Refer to AV-45, "Removal and Installation". YES
- >> Replace satellite radio tuner. Refer to AV-133, "Removal and Installation". NO

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MICROPHONE SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT

Description

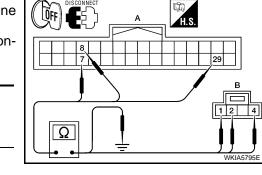
Voice signals are transmitted from the microphone to the Bluetooth control unit using the microphone signal circuits.

Diagnosis Procedure

$1. {\sf check \ harness \ between \ bluetooth \ control \ unit \ and \ microphone}$

- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit connector and microphone connector.
- Check continuity between Bluetooth control unit harness connector B126 (A) and microphone harness connector R7 (B).

	Term	ninals		
	A		В	Continuity
Connector	Terminal	Connector	Terminal	•
	7		1	
B126	8	R7	2	Yes
	29		4	



4. Check continuity between Bluetooth control unit harness connector B126 (A) and ground.

	Terminals		
	А		Continuity
Connector	Terminal		
	7		
B126	8	Ground	No
	29	-	

Are the continuity test results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

2.CHECK MICROPHONE POWER SUPPLY

- 1. Connect Bluetooth control unit connector and microphone connector.
- 2. Turn ignition switch ON.
- Check voltage between microphone harness connector R7 terminal 4 and ground.

4 - Ground

: Approx. 5V

Is voltage reading approx. 5 volts?

YES >> GO TO 3

NO >> Replace Bluetooth control unit. Refer to <u>AV-138</u>, <u>"Removal and Installation"</u>.

 ${\it 3.}$ CHECK MICROPHONE SIGNAL

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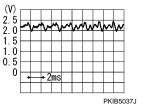
MICROPHONE SIGNAL CIRCUIT _ [BOSE AUDIO WITHOUT NAVIGATION]

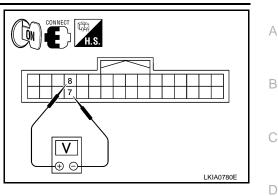
< COMPONENT DIAGNOSIS >

Check signal between Bluetooth control unit harness connector B126 terminals 7 and 8.

7 - 8:

When giving a voice





Are voltage readings as specified?

- YES >> Replace Bluetooth control unit. Refer to <u>AV-138. "Removal and Installation"</u>.
- NO >> Replace microphone. Refer to <u>AV-136</u>, "<u>Removal and Installation</u>".

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[BOSE AUDIO WITHOUT NAVIGATION]

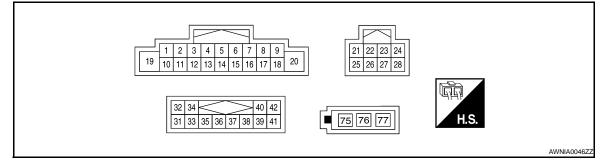
ECU DIAGNOSIS

AUDIO UNIT

Reference Value

INFOID:000000001502611

TERMINAL LAYOUT



PHYSICAL VALUES - WITH BLUETOOTH

	ninal color)	ltom	Signal	(Condition	Reference value	Example of symp-
+	_	Item	input/ output	Ignition switch	Operation	Reference value	tom
1 (B/P)	Ground	Amp. ON signal	Output	ON	_	More than approx. 6.5V	Amp. does not work properly.
2 (G)	3 (R)	Audio sound signal front LH	Output	ON	Receive audio signal	(V) 1 0 -1 SKIA0177E	No sound from front door speaker LH or tweeter LH.
4 (GR/V)	5 (W/L)	Audio sound signal rear LH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from rear door speaker LH or subwoofer LH.
					Press SEEK DOWN switch.	0.7 V	
6 (W/G)	Cround	Remote	lagut		Press SEEK UP switch.	1.3 V	Steering wheel au-
6 (W/G)	Ground	Ground control A	Input	ON	Press A switch.	2.0 V	function
					Except for above.	3.3 V	
7 (V/Y)	Ground	ACC signal	Input	ON	Ignition switch ACC or ON	Battery voltage	System does not work properly.
10	_	Shield	_	_	-	Approx. 0V	Interference and distortion heard from speakers.

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

	ninal color)	Item	Signal input/			Reference value	Example of symp-		
+	_	nem	output	Ignition switch	Operation	Neletence value	tom		
11 (B)	12 (W)	Audio sound signal front RH	Output	ON	Receive audio signal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	No sound from front door speaker RH or tweeter RH.		
13 (V)	14 (LG)	Audio sound signal rear RH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from rear door speaker RH or subwoofer RH.		
15 (L/B)	_	Remote control ground	Input	_	_	_	Steering wheel au- dio controls do not function		
					Press SOURCE switch.	0 V			
					Press 🔬 switch.	0.7 V			
16 (GR/L)	Ground	Remote control B	Input	ON	Press VOL UP switch.	1.3 V	Steering wheel au- dio controls do not function		
							Press VOL DOWN switch	2 V	
					Except for above.	3.3 V	-		
18 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 ++20ms PKIA1935E	Speed sensitive volume inopera- tive.		
19 (Y/R)	Ground	Battery pow- er	Input	_	_	Battery voltage	System will not work properly.		
20	_	Shield	_	_	_	Approx. 0V	Interference and distortion heard from speakers.		
21	_	M-CAN +	-	-	_	-	_		
22	_	M-CAN -	_	_	_	-	-		
23	_	Shield	-	_	_	Approx. 0V	-		
25	_	Tel. Shield	-	_	_	Approx. 0V	-		
26 (BR)	27 (Y)	Telephone audio in	_	_	_	-	-		
28 (R/W)	Ground	Telephone ON signal	Input	ON	_	-	-		

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Tern (Wire	ninal color)	14	Signal	(Condition	Deference unles	Example of symp-
+	_	ltem	input/ output	Ignition switch	Operation	Reference value	tom
32 (Y/L)	31 (W/L)	Audio left channel sound signal from satel- lite radio tuner	Input	ON	Receive audio signal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from sat- ellite radio tuner left channel.
34 (BR/L)	33 (Y/G)	Audio right channel sound signal from satel- lite radio tuner	Input	ON	Receive audio signal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from sat- ellite radio tuner right channel.
35	_	Shield ground (au- dio signal)	_	_	_	٥V	-
36	_	Shield ground (da- ta)	_	_	_	٥V	-
38 (R)	Ground	Satellite ra- dio tuner re- quest to audio unit	Input		Turn audio unit ON	5V	Satellite radio tun- er does not oper- ate properly.
39 (G)	Ground	Audio RX	Input	ON	Operate audio volume	(V) 6 4 2 0 •••• 5ms SKIA4403E	Satellite radio tun- er audio informa- tion does not display properly.
40 (B)	Ground	Audio TX	Output		Operate audio volume	(V) 6 4 0 • • 2ms 5KIA4402E	Satellite radio tun- er audio informa- tion does not display properly.
75 (B)	Ground	Amp power supply	Output	ON	Turn audio unit ON	Battery voltage	-
76 (B)	Ground	Main anten- na	Input	ON	Turn audio unit ON	-	-

PHYSICAL VALUES - WITHOUT BLUETOOTH

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

	ninal color)	lte e	Signal	1	Condition	Deferrers	Example of symp- tom	
+	-	Item	input/ output	Ignition switch	Operation	Reference value		
1 (B/P)	Ground	Amp. ON signal	Output	ON	_	More than approx. 6.5V	Amp. does not work properly.	
2 (G)	3 (R)	Audio sound signal front LH	Output	ON	Receive audio signal	(V) 1 0 -1 SKI40177E	No sound from front door speaker LH or tweeter LH.	
4 (GR/V)	5 (W/L)	Audio sound signal rear LH	Output	ON	Receive audio signal	(V) 1 0 -1 SKIA0177E	No sound from rear door speaker LH or subwoofer LH.	
					Press SOURCE switch.	0.0 V		
	Cround	Remote	lagut	ON	Press SEEK UP switch.	0.75 V	Steering wheel au- dio controls do not	
6 (W/G) Ground	control A	Input		Press VOL UP switch.	2.0 V	function		
					Except for above. 5.0 V			
7 (V/Y)	Ground	ACC signal	Input	ON	Ignition switch ACC or ON	Battery voltage	System does not work properly.	
10	-	Shield	_	_	_	Approx. 0V	Interference and distortion heard from speakers.	
11 (B)	12 (W)	Audio sound signal front RH	Output	ON	Receive audio signal	(V) 1 0 -1 SKIA0177E	No sound from front door speaker RH or tweeter RH.	
13 (V)	14 (LG)	Audio sound signal rear RH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from rear door speaker RH or subwoofer RH.	
15 (L/B)	_	Remote control ground	Input	_	_	_	Steering wheel au- dio controls do not function	

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Tern (Wire	ninal color)	ltem	Signal input/	(Condition	Reference value	Example of symp-
+	_	nem	output	Ignition switch	Operation	Reference value	tom
					Press SEEK DOWN switch.	0.75 V	
16 (GR/L)	Ground	Remote control B	Input	ON	Press VOL DOWN switch.	2.0 V	Steering wheel au- dio controls do not function
					Except for above.	5.0 V	
18 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 ↓ ↓ 20ms ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ►	Speed sensitive volume inopera- tive.
19 (Y/R)	Ground	Battery pow- er	Input	_	_	Battery voltage	System will not work properly.
20	_	Shield	_	_	_	Approx. 0V	Interference and distortion heard from speakers.
21	_	M-CAN +	_	_	_	_	_
22	_	M-CAN -	_	_	_	_	_
23	_	Shield	_	_	_	Approx. 0V	_
25	-	Tel. Shield	_	-	_	Approx. 0V	_
26 (BR)	27 (Y)	Telephone audio in	_	_	_	-	-
28 (R/W)	Ground	Telephone ON signal	Input	ON	_	_	_
32 (Y/L)	31 (W/L)	Audio left channel sound signal from satel- lite radio tuner	Input	ON	Receive audio signal	(V) 1 0 -1 SKIA0177E	No sound from sat- ellite radio tuner left channel.
34 (BR/L)	33 (Y/G)	Audio right channel sound signal from satel- lite radio tuner	Input	ON	Receive audio signal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from sat- ellite radio tuner right channel.
35	_	Shield ground (au- dio signal)	_	_	_	٥V	-
36	_	Shield ground (da- ta)	_	_	_	٥V	-

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

	ninal color)	Item	Signal input/		Condition	Reference value	Example of symp-	А
+	_	licin	output	Ignition switch	Operation		tom	
38 (R)	Ground	Satellite ra- dio tuner re- quest to audio unit	Input		Turn audio unit ON	5V	Satellite radio tun- er does not oper- ate properly.	B
39 (G)	Ground	Audio RX	Input	ON	Operate audio volume	(V) 6 4 2 0 •••• 5 ms SKIA4403E	Satellite radio tun- er audio informa- tion does not display properly.	D
40 (B)	Ground	Audio TX	Output		Operate audio volume	(V) 6 4 2 0 • • • 2ms SKIA4402E	Satellite radio tun- er audio informa- tion does not display properly.	F
75 (B)	Ground	Amp power supply	Output	ON	Turn audio unit ON	Battery voltage	-	Н
76 (B)	Ground	Main anten- na	Input	ON	Turn audio unit ON	-	-	I

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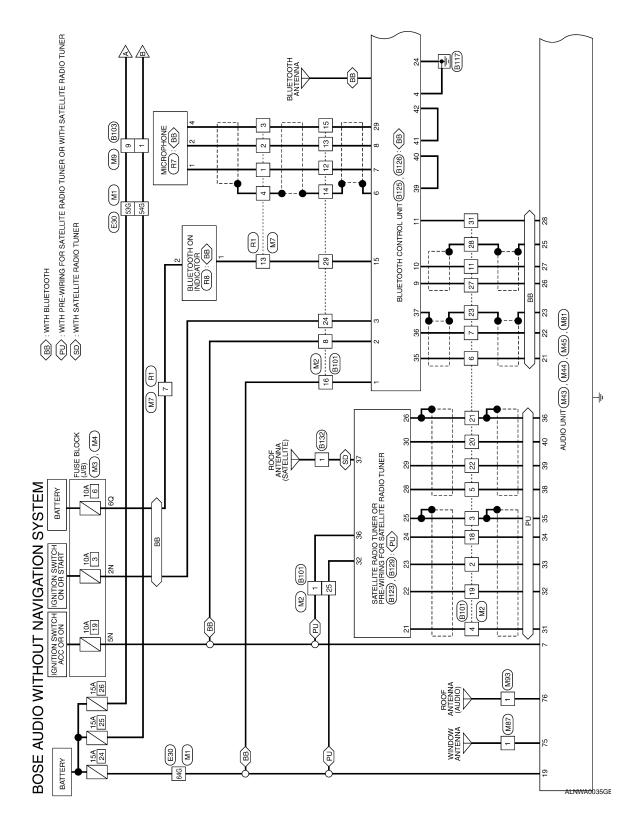
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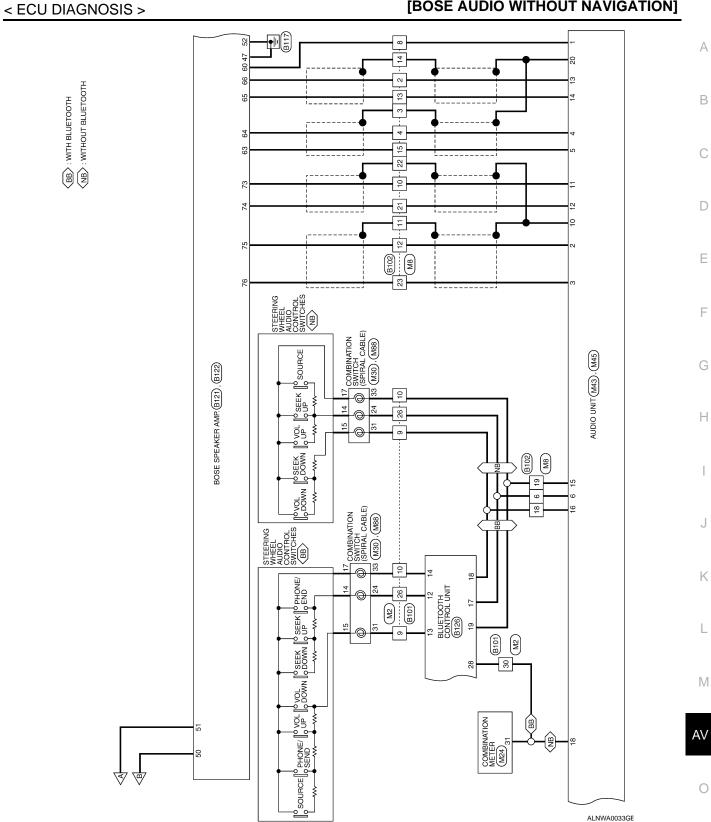
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Wiring Diagram

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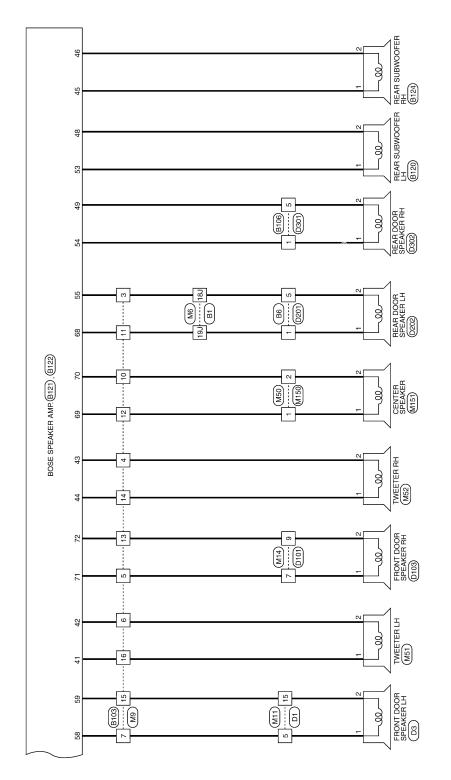
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BOSE AUDIO WITHOUT NAVIGATION CONNECTORS	ON CONNECTORS				
Connector No. M1	Connector No. M2	Terminal No.	Color of Wire	Signal Name	
Connector Name WIRE TO WIRE		+	>	1	
Connector Color WHITE	Connector Color WHITE	12	B/B	I	
The second se	ł	13	R/B	1	
90 80 70 60 50 40 30		14 S	SHIELD	1	
11.0. 1101 Heg 155 156 164 155 156 164 157 157 156 156 166 264 16	CH CH	15	R/L	1	
2016 2016 2016 2016 2016 2016 2016 2016		16	Y/R	I	
410 400 380 310 320 380 320	28 27 26 25 24 23 22 21 20 19	18	BR/L	I	
800 480 480 480 480 480 450 450 450		19	٨/٢	1	
2006 15/10 1500 1500 1500 1500 1500 1500 150	Terminal No. Color of Signal Name		В	I	
726 [716] 6966 [696] 6666		21	SHIELD	I	
800 780 780 76 76 76 76 76 80		22	σ	I	
R06 R20 81G	SHIELD		SHIELD	I	
		24	IJ	I	
Terminal No Color of Signal Name		25	Y/R	I	
		26	M/G	I	
	BW	27	BR	I	
		28	SHIELD	I	
64G Y/R –	GB/I	29	BR/W	I	
	di // I	30	۸/W	1	
	L C C	31	RW	1	
		-	-		
Connector No. M3	Connector No. M4				
Connector Color WHITE	Connector Color WHITE				
URTRY 3N 2N 2N 1N H.S. BN 7N (SN 5N 4N	HAN H.S. H.S.				
Torminal No Color of Signal Name	Torminal No Color of signal Namo				
	ANIE				
۳ ۲	60 Y/R –				
۱ ۸/۸ NG					
в					

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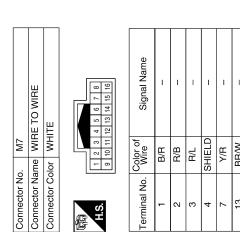
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AV-103

AUDIO UNIT

[BOSE AUDIO WITHOUT NAVIGATION]



5 Connector Color WHITE 0 6 H.S. e

Signal Name	I	I	I	I	I	I
Color of Wire	B/R	R/B	R/L	SHIELD	Y/R	BR/W
Terminal No.	F	2	3	4	7	13

Signal Name	I	I	
Color of Wire	BR/R	R/G	
Terminal No.	18J	19J	

Connector No. M6

Connector No. M7

WIRE TO WIRE WHITE	31 31 31 31 31 31 31 71 16 51 41 51 41 32 12 25 24 52 34 52 34 32
Connector Name Connector Color	

Terminal No	Terminal No. 12		13	14	15	18	19	21
M8	r Name WIRE TO WIRE	r Color WHITE			11 10 9 8 7 6 5 4 3 2 1	24 23 22 21 20 19 18 17 16 15 14 13		Color of
r No.	r Nan	r Colo			12	24		

LG

W/L GR/L ЦB SHIELD

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23 23

≥

Signal Name I. I. T T I I. I. Т Т

Color of Wire

Connector Name Connector No.

Connector Color WHITE

H.S. f

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Signal Name	I	I	I	I	I	I	I
Color of Wire	^	SHIELD	GR/V	W/G	B/P	В	SHIELD
Terminal No. Color of	2	e	4	9	8	10	11

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Connector No. M11 Connector Name WIRE TO WIRE Connector Color WHITE Mine 4 5 6 7 Mine 3 9 10 11 12 13 14 15 16 Terminal No. Wire Signal Name	Connector No. M30 Connector Name COMBINATION SWITCH (SPIRAL CABLE) Connector Color GRAX		
		16 17 18 19 20 36 37 38 39 40	
Signal Name	N METER		
	12 B/P - 13 BR - 13 BR - 14 L/O - 15 B - 16 LG - Connector Nome COMBINATION METER Connector Color WHITE	3 7	
Vo. Color of Wire BR BR BR/R BR/R BR/R B/R B/R O/B	BR/P BR/BR BR/P BR/BR/BR/ BR/BR/BR/BR/BR/BR/BR/BR/BR/BR/BR/BR/BR/B		
Terminal No. 1 3 5 6 7 7 10	12 B/P 13 BR 13 BR 14 L/O 15 B 16 LG Connector No. M24 Connector No. M24 Connector Color WHTE	福祉 21 22 23 24 5 21 22 23 24 5 31 31 NO.	
VIRE	//RE	Signal Name	
me WIRE TO WIRE me 7 6 5 4 1 3 2 1 1 10 9 9	M14 WIRE TO W		
@ ~"	No. M14 Name WIRE Color WHI	0. Color BR BR	
Connector No. Connector Name Connector Color H.S.	Connector No. M14 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No.	
			ALNIA0114GB

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		AUDIO UNIT	LE L	!	R	22 23 24	26 27 28			Signa		Ч-О-Ш	Ξ-Ψ					
	. M44		lor WHITE			21	25		-	Color of Wire		_	٩	SHIELD	1	SHIELD	BR	7
	Connector No.	Connector Name	Connector Color				Ņ.			Terminal No.		21	22	23	24	25	26	27
	Signal Name		STRG_SW_A	ACC	ILL-	ILL+	I	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)		RR SP RH (-)	STRG_SW_GND	STRG_SW_B	I	SPEED SIGNAL	BAT	I
31	Wire		M/G	۲۷	RY	R/L	SHIELD	в	×	>		Ъ	L/B	GR/L	I	۸/۷	Y/R	SHIELD
	Terminal No.		9	7	œ	6	10	÷	12	13		14	15	16	17	18	19	20
_			_	_	•			•			_		1			1		
		AUDIO UNIT	LE			4 5 6 7 8 9	12 13 14 15 16 17 18 20			Signal Name	1	AMP_ON	FR SP LH (+)	FR SP LH (-)	RR SP LH (+)	RR SP LH (-)		
1	o. M43	ame AUD	olor WHITE				19 10 11 12			Color of Wire		B/P	σ	œ	GR/V	W/L		
	Connector No.	Connector Name	Connector Color		f		ņ.			Terminal No.		-	2	e	4	5		

Signal Name M-CAN +

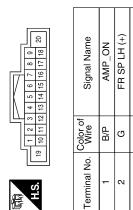
M-CAN -

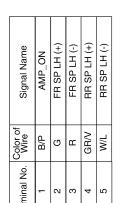
T L T TEL I/F +

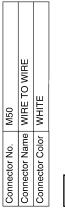
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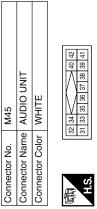




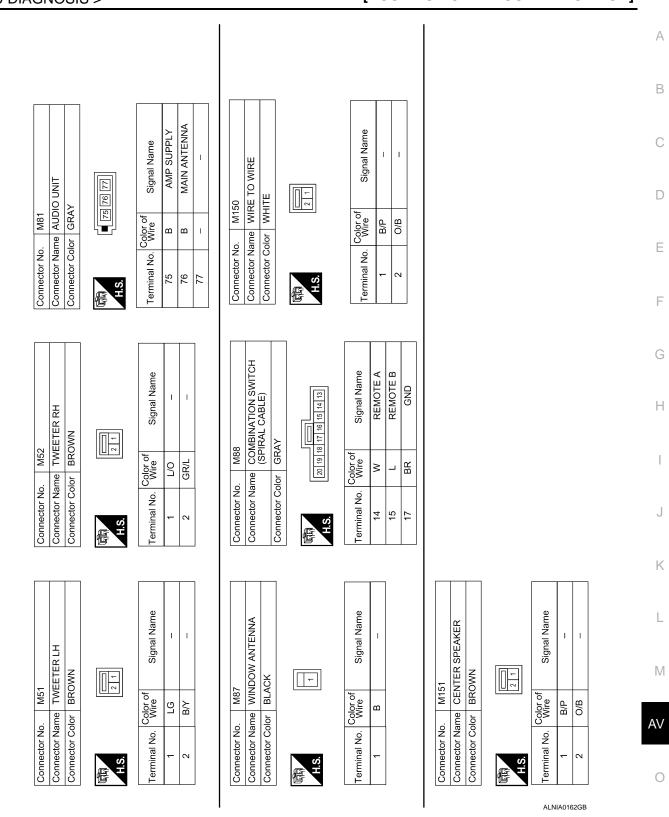


Signal Name	I	I
Color of Wire	B/P	O/B
Terminal No.	-	2

Signal Name	SAT LH INPUT (-)	SAT LH INPUT (+)	SAT RH INPUT (-)	SAT RH INPUT (+)	EARTH	DAT EARTH	I	RFQ1 (SAT TO COMBI)	RX (SAT TO COMBI)	TX (COMBI TO SAT)	I	I
Color of Wire	W/L	٨١L	Y/G	BR/L	SHIELD	SHIELD	I	щ	J	в	I	I
Terminal No.	31	32	33	34	35	36	37	38	39	40	41	42



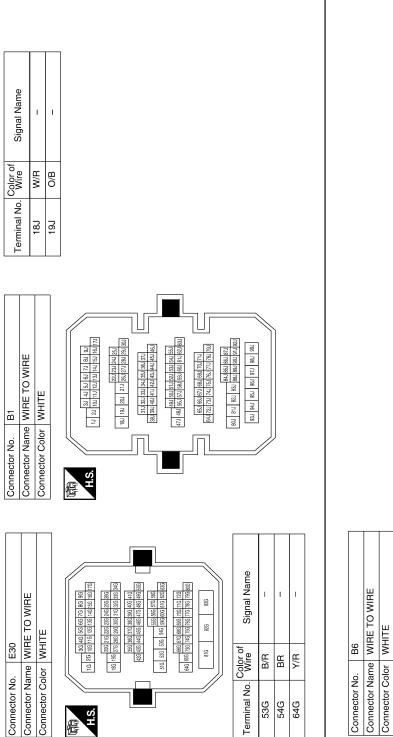
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2 0 4 8 2 0 4 8 2 0 4 8	Signal Name	I
1 4	Color of Wire	O/B
围 H.S.	Terminal No.	-

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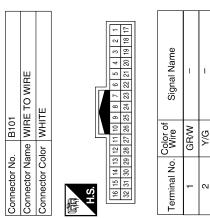
W/R

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Signal Name	1	1	1	1	1	1	I	I	1	I	I	I
Color of Wire	ш	SHIELD	R/W	SHIELD	G/W	Y/R	W/G	BR	SHIELD	BR/W	W/N	R/W
Terminal No. Color of	20	21	22	23	24	25	26	27	28	29	30	31
ω												

Signal Name	1	1	I	1	1	1	I	I	I	I	I	I
Color of Wire	٩	٨Ŋ	GR/L	L/B	≻	B/R	R/B	SHIELD	R/L	Y/B	BR/L	۲/۲
Terminal No.	7	8	6	10	11	12	13	14	15	16	18	19



Signal Name	I	I	I	I	I	I	
Color of Wire	GR/W	Y/G	SHIELD	M/L	R/L	L	
Terminal No. Wire	Ļ	2	с	4	5	9	

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Signal Name	I	I	I	I	I	I	I	I
Color of Wire	>	SHIELD	Y	GR/L	L/B	GR/V	SHIELD	B/R
Terminal No. Color of Wire	13	14	15	18	19	21	22	23
Signal Name	I	I	I	I	I	I	I	I
Color of Wire	ГG	SHIELD	BR	W/G	B/G	W/L	SHIELD	W/R
Terminal No. Color of	5	З	4	9	œ	10	1	12
Connector No. B102					24 23 22 21 20 19 18 17 16 15 14 13			

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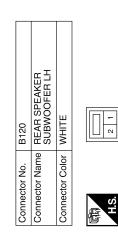
Connector No. B106	Connector Name WIRE TO WIRE	Connector Color WHITE			- 4		Torminal No Color of Signal No		1 L –	5 B/W –		
Conn	Conn	Conn					E E E E E E E E E E E E E E E E E E E					
Signal Name		I	I	I	1	1	1	I	1	1		
Color of		≥	B/B	O/B	R/G	B/P	BR	L/O	B	Ъ		
Terminal No Color of	2	7	6	10	1	12	13	14	15	16		
			7									
33	RE TO WIRE	NWO		3 4 5 6 7	-				I	I	1	1
. B103	me WIF	or BR(1 2 3			Color of	wire	BR	BR/B	GR/L	G/W
Connector No.	Connector Name WIRE TO WIRE	Connector Color BROWN			SH	b.	Torminal No. Color of		1	ę	4	£

678	Signal Name	I	I	
1 2 4 5	Color of Wire		B/W	
侣. H.S.	Terminal No. Color of	F	5	
				I

Signal Name	I	I	I	I	1	I	Ι	I	I	
Color of Wire	M	B/B	O/B	R/G	B/P	ВВ	Г/О	В	ГG	
Terminal No. Color of Wire	7	6	10	11	12	13	14	15	16	

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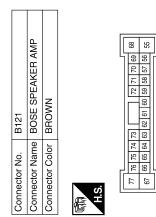
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Signal Name	I	I	1	I	I
Color of Wire	BR	BR/B	GR/L	G/W	В/Υ
Terminal No. Wire	-	£	4	5	9



]	Signal Name	-	-
	Color of Wire	W/B	G/B
	Terminal No.	F	N

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	-											-			-		
Signal Name	RR DOOR LH - OUT	FR DOOR LH + OUT	FR DOOR LH - OUT	AMP ON	RR LH - IN	RR LH + IN	RR RH - IN	RR RH + IN	RR DOOR LH + OUT	INST CTR TWDR +	INST CTR TWDR - OUT	FR DOOR RH + OUT	FR DOOR RH - OUT	FR RH + IN	FR RH - IN	FR LH + IN	FR LH - IN
Color of Wire	BR/B	×	в	B/G	Y	BR	>	ГG	R/G	B/P	O/B	G/W	ВВ	W/L	GR/V	W/R	B/R
Terminal No.	55	58	59	60	63	64	65	66	68	69	70	71	72	73	74	75	76



[BOSE AUDIO WITHOUT NAVIGATION]

Connector No. B123	Connector Name SATELLITE RADIO TUNER		Connector Color WHITE	22 24 28 29 33 34 36 24 28 26 27 28 34 36 29 30 30 35 57 28 30 30 30 31 30 35	H.S.										
5	BOSE SPEAKER AMP	BROWN	[2 51 50 46 45 44 43 42 41	Signal Name	FR TWDR LH + OUT	FR TWDR LH - OUT	FR TWDR RH - OUT	FR TWDR RH + OUT	RH WOOFER + OUT	RH WOOFER - OUT	GND	LH WOOFER - OUT	RR DOOR RH - OUT	1
B122	Connector Name BOS	Connector Color BRC	l	54 53 52 49 48 47 4	Color of Wire	LG	B/Υ	GR/L	9	BR/W	ВВ	B/W	G/B	B/W	0
Connector No.		0			Terminal No.										F

Connector Color	-	BROWN
	54 53 5 49 48 47	52 51 51 50 47 46 45 44 43 42 41
<u>o</u>	2	<u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u>
Terminal No.	Color of Wire	Signal Name
41	ГG	FR TWDR LH + OUT
42	B/Y	FR TWDR LH - OUT
43	GR/L	FR TWDR RH - OUT
44	20	FR TWDR RH + OUT
45	BR/W	RH WOOFER + OUT
46	ВВ	RH WOOFER - OUT
47	B/W	GND
48	G/B	LH WOOFER - OUT
49	B/W	RR DOOR RH - OUT
50	BR	BAT
51	B/B	BAT
52	B/W	GND
53	W/B	LH WOOFER + OUT
54	L	RR DOOR RH + OUT

				B125	BLUETOOTH		WHITE	36 37 39 41 36 38 40 42
				Connector No.	Connector Name BLUETOOTH		Connector Color WHITE	国 H.S.
GND	LH WOOFER + OUT	RR DOOR RH + OUT		B124	Connector Name REAR SUBWOOFER RH	HTE		
B/W	W/B	-			meRE	lor V		
52	53	54		Connector No.	Connector Na	Connector Color WHITE		EEE H.S.
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Signal Name	Н	-	
Color of Wire	BR/W	BR	
Terminal No. Color of	-	2	



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[BOSE AUDIO WITHOUT NAVIGATION]

M-CAN_JUMPER

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M-CAN+_2

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M-CAN_SHIELD_

SHIELD

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M-CAN -_2

M-CAN +_1

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35 36

Signal Name

Color of Wire

Terminal No.

CONTROL

M-CAN_JUMPER

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M-CAN - 2

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REQ1 (SAT - COMBI) RXD (COMBI_SAT) TXD (SAT_COMBI) SAT_RCH (+) EARTH (SIG) DATA ACC BAT L I L I. L SHIELD SHIELD GR/W BR/L B/L МN ш Y/R T L I I. L

33 32 31 30 33 32 31 30 34

36 35

Connector No.	B123
Connector Name	Connector Name SATELLITE RADIO TUNER OR PRE-WIRING FOR SATELLITE RADIO TUNER
Connector Color WHITE	WHITE
H.S.	22 24 26 29 20 31 32 34 36 21 23 25 27 28 29 30 31 33 35

SAT_LCH (+)

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53

SAT_LCH (-) Signal Name

W/L

Color of Wire

Terminal No.

SAT_RCH (-)

Y/G

23 25 25 27 27

28 29

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WHIE MIC_IN_+ MIC_IN_+ Connector Color WHIE 8 R/B MUDIO_OUT(-) Connector Color Image: Signal Name 10 Y AUDIO_OUT(-) Connector Color Image: Signal Name 13 GR/L LAD_INI Connector Color Image: Signal Name 13 GR/L LAD_OUT_2 Image: Signal Name Image: Signal Name 13 GR/L LAD_OUT_2 Image: Signal Name Image: Signal Name 13 GR/L LAD_OUT_2 Image: Signal Name Image: Signal Name 18 GR/L LAD_OUT_2 Image: Signal Name Image: Signal Name 18 GR/L LAD_OUT_2 Image: Signal Name Image: Signal Name 18 V/W SPEED SIGNAL Image: Signal Name Image: Signal Name 18 Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name	MUITE MUC_IN + WHTE P WHTE B WHTE B Image: Signal Name Image: Signal Name Image: Signal Name Image: Signal Name Mic of Signal Name	Multi Multicity WHIE P WHIE P WHIE P WHIE P WHIE P WHIE P Michol OUT(-) P P P P Michol P <t< td=""><td>Multi Multicity WHIE P WHIE</td><td>UNIT MULL WHTE BH MIC_IN_+ WHTE BH MIC_IN_+ UNIT BH MIC_IN_+ UNIT CONTROL UNIT UNIT CONTROL UNIT UNIT CONTROL UNIT UNIT CONTROL UNIT UNIT UNIT UNIT UNIT UNIT</td><td>BLUETHOOTH CONTROL</td><td></td><td></td><td>Connector Name SA</td><td></td></t<>	Multi Multicity WHIE P WHIE	UNIT MULL WHTE BH MIC_IN_+ WHTE BH MIC_IN_+ UNIT BH MIC_IN_+ UNIT CONTROL UNIT UNIT CONTROL UNIT UNIT CONTROL UNIT UNIT CONTROL UNIT UNIT UNIT	BLUETHOOTH CONTROL			Connector Name SA	
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AUDIO UNIT [BOSE AUDIO WITHOUT NAVIGATION]

AV-112

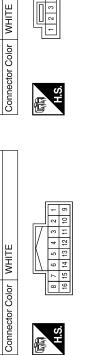
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AUDIO UNIT

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[BOSE AUDIO WITHOUT NAVIGATION]

AV-113



H.S. E

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Connector No.	D302
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Connector Color BROWN	BROWN

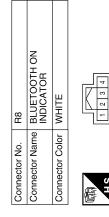
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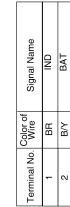
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Connector No.



Signal Name	-	I
Color of Wire	Γ	B/W
Terminal No.	1	2





H.S.H.

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Connector Name MICROPHONE

R7

Connector No.

BOSE SPEAKER AMP

[BOSE AUDIO WITHOUT NAVIGATION]

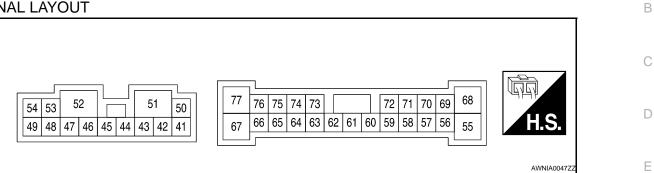
BOSE SPEAKER AMP

Reference Value

INFOID:000000001502613

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PHYSICAL VALUES

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+	_	Item	input/ output	Ignition switch	Operation	Relefence value	symptom	G
41 (LG)	42 (B/Y)	Tweeter LH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from tweeter LH.	H
44 (L/O)	43 (GR/L)	Tweeter RH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from tweeter RH.	J K
45 (BR/W)	46 (BR)	Woofer RH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from woofer RH.	M
47 (B/W)	Ground	Ground	_	ON	_	_	_	
50 (BR)							System does not	0
51(B/R)	Ground	Battery	Input	_	_	Battery voltage	work properly.	-
52 (B/W)	Ground	Ground	-	ON	_	_	-	
53 (W/B)	48 (G/B)	Woofer LH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from woofer LH.	Ρ

BOSE SPEAKER AMP

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

	ninal color)	Item	Signal input/	(Condition	Reference value	Example of
+	_	nem	output	Ignition switch	Operation		symptom
54 (L)	49 (B/W)	Rear door speaker RH	Output	ON	Receive audio signal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	No sound from rear speaker RH.
58 (W)	59 (B)	Front door speaker LH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from front door speak- er LH.
60 (B/G)	Ground	Amp. ON sig- nal	Input	ON	_	More than approx. 6.5V	System does not work properly.
64 (BR)	63 (Y)	Audio sound signal rear LH	Input	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from rear door speak- er LH.
66 (LG)	65 (V)	Audio sound signal rear RH	Input	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from rear door speak- er RH.
68 (R/G)	55 (BR/B)	Rear door speaker LH	Output	ON	Receive audio signal	(V) 1 0 -1 SKIA0177E	No sound from rear speaker LH.
69 (B/P)	70 (O/B)	Center speak- er	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	No sound from center speaker.

BOSE SPEAKER AMP

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

	ninal color)	Item	Signal input/		Condition	Reference value	Example of	А
+	_	nem	output	Ignition switch	Operation		symptom	
71 (G/W)	72 (BR)	Front door speaker RH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 1 ms	No sound from front door speak- er RH.	B
						SKIA0177E		D
73 (W/L)	74 (GR/V)	Audio sound signal front RH	Input	ON	Receive audio signal		No sound from front door speak- er RH or tweeter RH.	E
						SKIA0177E		F
75 (W/R)	76 (B/R)	Audio sound signal front LH	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms 5 KIA0177E	No sound from front door speak- er LH or tweeter LH.	G

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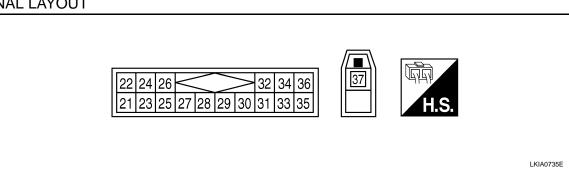
SATELLITE RADIO TUNER

SATELLITE RADIO TUNER

Reference Value

TERMINAL LAYOUT

INFOID:000000001502614



PHYSICAL VALUES

Term (Wire		ltem	Signal input/	Condition		Voltage	
+	_	llem	output lg		Operation	(approx.)	
22 (Y/L)	21 (W/L)	Audio signal LH	Output	ON	Receive audio signal.	(V) 1 0 -1 • 2ms SKIB3609E	
24 (BR/L)	23 (Y/G)	Audio signal RH	Output	ON	Receive audio signal.	(V) 1 0 -1 + 2ms SKIB3609E	
25	_	Shield	-	-	_	-	
26	_	Data ground	-	ON	_	Approx. 0 V	
28 (R/L)	Ground	REQ1 (SAT-AUDIO)	Output	ON	Set to the satellite radio mode	(V) 15 10 5 0 + 20ms SKIB3825E	
29 (R/W)	Ground	Communication signal (SAT-AUDIO)	Output	ON	Set to the satellite radio mode	(V) 15 10 5 0 10 15 10 10 10 10 10 10 10 10 10 10	

SATELLITE RADIO TUNER

< ECU DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Term (Wire		ltem	Signal Condition		Voltage		
+	_	nem	output	Ignition switch	Operation	(approx.)	
30 (B)	Ground	Communication signal (AUDIO-SAT)	Input	ON	Set to the satellite radio mode	(V) 15 0 5 0 + 10ms SKIB3826E	B C D
32 (Y/R)	Ground	Battery power supply		OFF		Battery voltage	
36 (GR/W)	Gibunu	ACC power supply	Input	ACC		Datiery Voltage	Е
37	_	Antenna signal		_	_	-	

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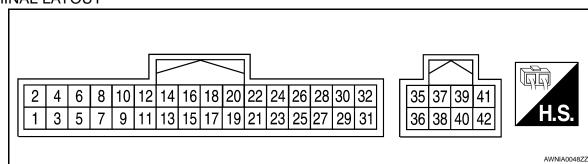
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BLUETOOTH CONTROL UNIT

Reference Value

TERMINAL LAYOUT

INFOID:000000001502615



PHYSICAL VALUES

Terminal (Wire color)		14	Signal		Condition	Reference value	Example of symp-
+	_	Item	input/ output	Ignition switch	Operation	(Approx.)	tom
1 (Y/B)	Ground	Battery pow- er	Input	_	-	Battery voltage	System does not work properly.
2 (V/Y)	Ground	ACC power	Input	ACC/ ON	-	Battery voltage	System does not work properly.
3 (G/W)	Ground	IGN power	Input	ON/ START	-	Battery voltage	System does not work properly.
4 (B/W)	_	Ground	-	-	_	-	-
6	-	Shield	-	-	_	-	-
7 (B/R)	8 (R/B)	Mic-in signal	Input	_	_	_	Microphone inoper- ative.
9 (BR)	10 (Y)	Audio out	Output	ACC/ ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	Audio can not be heard.
11 (G/O)	-	Mute	Output	-	-	-	Mute inoperative.
					Press SEEK DOWN switch.	0.7 V	
12 (W/G)	Ground	Remote Ground control	Input	ACC/ ON	Press SEEK UP switch.	1.3 V	Steering wheel au- dio control switches
		switch 1			Pressing A switch.	2.0 V	do not function.
					Except for above.	3.3 V	

< ECU DIAGNOSIS >

BLUETOOTH CONTROL UNIT

[BOSE AUDIO WITHOUT NAVIGATION]

Term (Wire	ninal color)		Signal		Condition	Reference value	Example of symp-	A
+	_	Item	input/ output	Ignition switch	Operation	(Approx.)	tom	
					Press SOURCE switch.	0 V		E
					Press 🏑 switch.	0.7 V	-	
13 (GR/L)	Ground	Remote control switch 2	Input	ACC/ ON	Press VOL UP switch.	1.3 V	- Steering wheel au- dio control switches do not function.	(
					Press VOL DOWN switch	2 V		[
					Except for above.	3.3 V		
14 (L/B)	-	Remote control ground	Input	-	-	-	Steering wheel au- dio control switches do not function.	[
					Press SEEK DOWN switch.	0.7 V		
17 (W/G)	Ground	Steering	Output	ACC/	Press SEEK UP switch.	1.3 V	Steering wheel au- dio controls do not	
		switch 1		ON	Pressing A switch.	2.0 V	function.	(
					Except for above.	3.3 V	-	
					Press SOURCE switch.	0 V		
					Press 🔬 switch.	0.7 V		
18 (GR/L)	Ground	Steering switch 2	Output	ACC/ ON	Press VOL UP switch.	1.3 V	Steering wheel au- dio controls do not function.	
					Press VOL DOWN switch	2 V		
					Except for above.	3.3 V	_	
19 (L/B)	Ground	Steering switch ground	Output	_	-	-	Steering wheel au- dio controls do not function.	
24 (B/W)	_	Ground	_	_	_	_	_	
28 (V/W)	_	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 + 20ms PKIA1935E	_	A
29 (R/L)	Ground	Microphone power	Output	_	-	-	Microphone inoper- ative.	(
35 (L)	_	M-CAN (+)	_	-		_	_	
36 (P)	_	M-CAN (-)	_	-		-	-	
37	_	Shield ground	-	_			_	

[BOSE AUDIO WITHOUT NAVIGATION]

SYMPTOM DIAGNOSIS AUDIO SYSTEM

Symptom Table

INFOID:000000001502616

AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	Audio unit power circuit Audio unit	• <u>AV-65</u> • <u>AV-126</u>
Steering switch does not operate	Steering switch Audio unit	• <u>AV-85</u> • <u>AV-126</u>
All speakers do not sound	 Audio unit Audio unit power circuit BOSE speaker amp. ON signal BOSE speaker amp. ground circuit BOSE speaker amp. 	 <u>AV-126</u> <u>AV-65</u> <u>AV-84</u> <u>AV-65</u> <u>AV-127</u>
One or several speakers do not sound	 Front door speaker Tweeter Center speaker Rear door speaker Woofer 	 <u>AV-70</u> <u>AV-73</u> <u>AV-76</u> <u>AV-78</u> <u>AV-81</u>

 $\mathsf{C}\mathsf{D}$

Symptom	Possible cause	Reference page
CD cannot be inserted.		
CD cannot be ejected.	- Audio unit	AV-126
The CD cannot be played.		<u>AV-120</u>
The sound skips, stops suddenly, or is distorted.		

SATELLITE RADIO

Symptom	Possible cause	Reference page
Inoperative	 Satellite radio tuner power or ground circuit Satellite radio tuner communication circuit Satellite radio tuner 	 <u>AV-66</u> <u>AV-88</u> <u>AV-133</u>
Right or left channel does not sound	 Satellite radio tuner right channel audio signal circuit Satellite radio tuner left channel audio signal circuit Satellite radio tuner 	 <u>AV-90</u> <u>AV-90</u> <u>AV-133</u>

HANDS-FREE PHONE

Symptom	Possible cause	Reference page
Inoperative	Bluetooth control unit power and ground circuitBluetooth control unit	• <u>AV-67</u> • <u>AV-138</u>
Steering switch does not operate	Steering switchBluetooth control unit	• <u>AV-85</u> • <u>AV-138</u>
Voice activated control does not operate	MicrophoneSteering switchBluetooth control unit	 <u>AV-92</u> <u>AV-85</u> <u>AV-138</u>

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

NOISE

The following noise results from variations in field strength, such as fading noise and multi-path noise, or c 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.	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 oper- ating.	The noise occurs when various motors are operat- ing.	Motor case groundMotor
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 occ it is vibrating excessively.	urs while the vehicle is being driven, especially when	 Ground wire of body parts Ground due to improper part installation Wiring connections or a short circuit

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[BOSE AUDIO WITHOUT NAVIGATION]

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PRECAUTION PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-ER"

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

< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

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ON-VEHICLE REPAIR

AUDIO UNIT

Removal and Installation

For removal and installation, refer to AV-45, "Removal and Installation".

BOSE AMP.

Removal and Installation

REMOVAL

INSTALLATION

1. Disconnect the 12-volt battery negative terminal.

Installation is in the reverse order of removal.

- 2. Remove the rear seat back. Refer to SE-20, "Removal and Installation".
- 3. Remove the bose speaker amp. screws (A), then disconnect the bose speaker amp. connectors (B), and remove the bose speaker amplifier (1).

[BOSE AUDIO WITHOUT NAVIGATION]

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[BOSE AUDIO WITHOUT NAVIGATION]

TWEETER

Removal and Installation

For removal and installation, refer to AV-46. "Removal and Installation".

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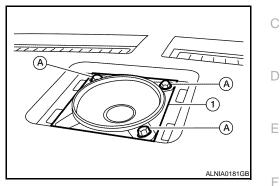
[BOSE AUDIO WITHOUT NAVIGATION]

CENTER SPEAKER

Removal and Installation

REMOVAL

- 1. Remove the center speaker grille. Refer to <u>IP-11, "Removal and Installation"</u>.
- 2. Remove the center speaker screws (A), then pull out the center speaker (1), disconnect the connector and remove the center speaker (1).



INSTALLATION Installation is in the reverse order of removal.

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[BOSE AUDIO WITHOUT NAVIGATION]

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FRONT DOOR SPEAKER

Removal and Installation

For removal and installation, refer to <u>AV-47, "Removal and Installation"</u>.

REAR DOOR SPEAKER

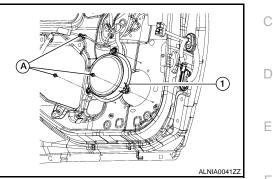
[BOSE AUDIO WITHOUT NAVIGATION]

REAR DOOR SPEAKER

Removal and Installation

REMOVAL

- 1. Remove the rear door finisher. Refer to INT-11, "Removal and Installation".
- 2. Remove the rear door speaker screws (A), then disconnect the rear door speaker connector and remove the rear door speaker (1).



INSTALLATION Installation is in the reverse order of removal.

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[BOSE AUDIO WITHOUT NAVIGATION]

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REAR SPEAKER

Removal and Installation

For removal and installation, refer to AV-48. "Removal and Installation".

SATELLITE RADIO TUNER

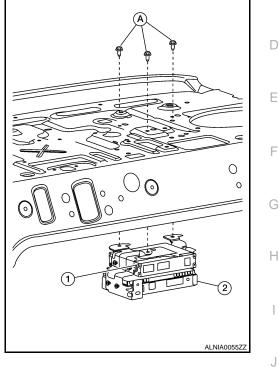
Removal and Installation

REMOVAL

- 1. Disconnect the 12-volt battery negative terminal.
- 2. Remove the rear parcel shelf finisher. Refer to INT-15, "Removal and Installation".
- 3. Remove the satellite radio tuner unit screws (A), disconnect the satellite tuner harness connectors and remove the satellite radio tuner (1).

NOTE:

Bluetooth control unit (2) is removed with the satellite radio tuner unit (if equipped).



INSTALLATION Installation is in the reverse order of removal.

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SATELLITE RADIO TUNER

[BOSE AUDIO WITHOUT NAVIGATION]

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[BOSE AUDIO WITHOUT NAVIGATION]

AUDIO ANTENNA Roof Antenna

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REMOVAL and INSTALLATION For removal and installation, refer to <u>AV-49, "Roof Antenna"</u>.

STEERING SWITCH

[BOSE AUDIO WITHOUT NAVIGATION] < ON-VEHICLE REPAIR > **STEERING SWITCH** А Removal and Installation INFOID:000000001502629 For removal and installation, refer to AV-53. "Removal and Installation". В С D Е F G Н J Κ L Μ AV

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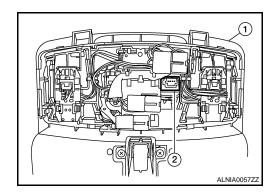
MICROPHONE

Removal and Installation

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REMOVAL

- 1. Remove the map lamp. Refer to INL-50, "Removal and Installation".
- 2. Remove the Bluetooth microphone (2).
 - Map lamp (1)



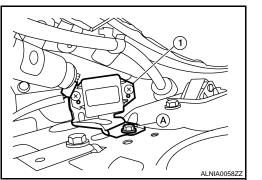
INSTALLATION Installation is in the reverse order of removal.

TEL ANTENNA

Removal and Installation

REMOVAL

- 1. Remove the rear parcel shelf finisher. Refer to INT-15, "Removal and Installation".
- 2. Remove the Bluetooth antenna screw (A), fold down the rear seat, disconnect the Bluetooth antenna connector and remove the Bluetooth antenna (1).



INSTALLATION Installation is in the reverse order of removal.

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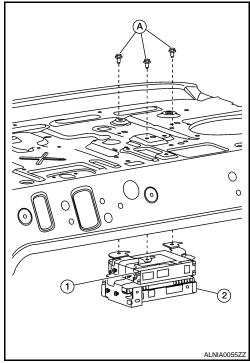
TEL ADAPTER UNIT

Removal and Installation

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REMOVAL

- 1. Disconnect the 12-volt battery negative terminal.
- 2. Remove the rear parcel shelf finisher. Refer to INT-15, "Removal and Installation".
- 3. Remove the Bluetooth control (tel adaptor) unit screws (A), disconnect the Bluetooth control (tel adapter) unit connectors and remove the Bluetooth control (tel adapter) unit (2).
 - Satellite radio tuner (1)



[BOSE AUDIO WITHOUT NAVIGATION]

INSTALLATION Installation is in the reverse order of removal.

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

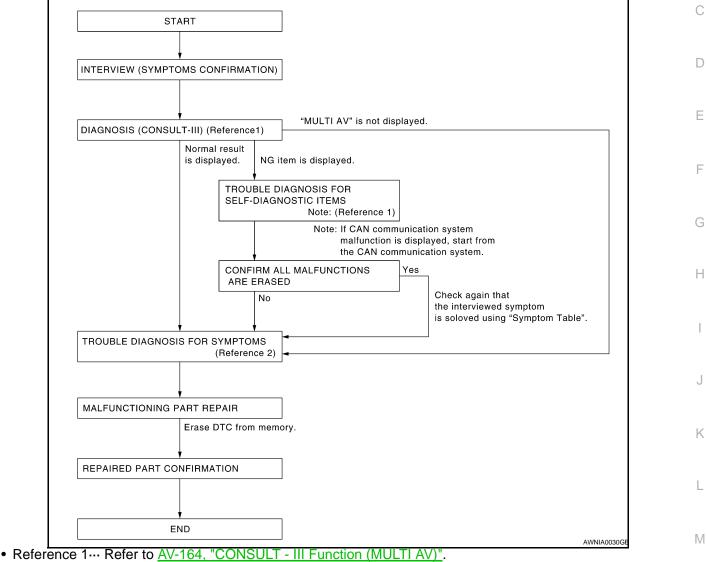
Work Flow

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[BOSE AUDIO WITH NAVIGATION]





Reference 2... Refer to <u>AV-104</u>, <u>CONSOLT - III + unclue</u>

DETAILED FLOW

1.CHECK SYMPTOM

Check the malfunction symptoms by performing the following items.

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

>> GO TO 2

2. SELF-DIAGNOSIS (CONSULT-III)

- Connect CONSULT-III and perform "SELF-DIAGNOSIS" for "MULTI AV". NOTE:
 Skip to stop 4 of the diagnosis precedure if "MULTI AV" is not diagnosis.
 - Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed.
- Check if any DTC No. is displayed in the self-diagnosis results.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

Is any DTC No. displayed?

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

3.CHECK SELF-DIAGNOSIS RESULTS (CONSULT-III)

1. Check the DTC No. indicated in the self-diagnosis results.

Perform the relevant diagnosis referring to the DTC No. list. Refer to AV-241, "DTC Index". 2. NOTE:

Start with the diagnosis for the CAN communication system if "CAN COMM CIRCUIT [U1000] or CONTROL UNIT (CAN) [U1010]" is displayed.

>> GO TO 5

4.PERFORM DIAGNOSIS BY SYMPTOM

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-249, "Symptom Table".

>> GO TO 5

5.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the identified malfunctioning parts.

NOTE:

Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC No. has been indicated in the self-diagnosis results.

>> GO TO 6

6.CHECK AFTER REPAIR

- Perform self-diagnosis for "MULTI AV" with CONSULT-III after repairing or replacing the malfunctioning 1. parts.
- 2. Check if any DTC No. is displayed in the self-diagnosis results.

Is any DTC No. displayed?

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

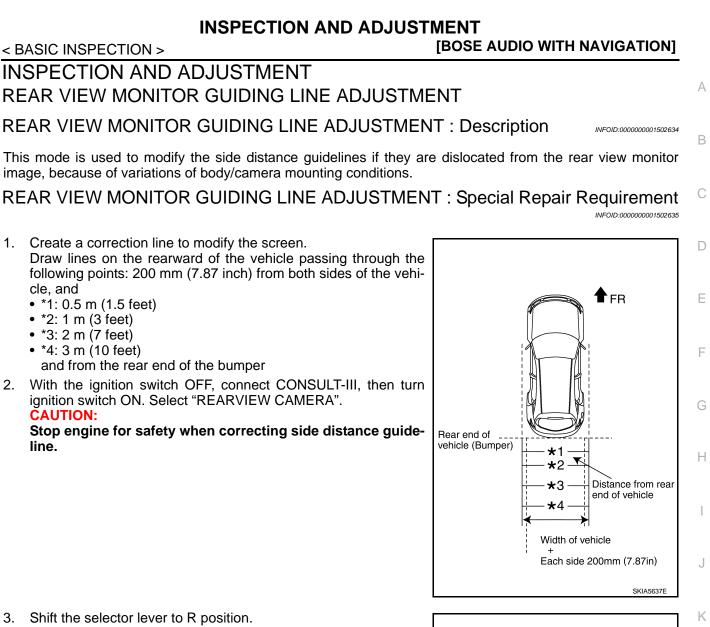
7.FINAL CHECK

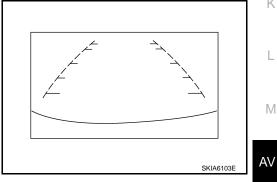
Perform the operation check to confirm that the malfunction symptom is solved or that any other symptoms are present.

Are any symptoms present?

YES >> GO TO 4

NO >> Inspection End.





- 4. Touch "SELCT GUIDELINE PATTERN" under "WORK SUPPORT" menu.
- Touch "UP" or "DOWN", and select the guide line, "PATTERN NO. 0" or "PATTERN NO. 1", which is the closest to the corrected line.
- 6. Touch "SAVE", and confirm the guide line.
- 7. Touch "END".
- 8. Touch "ADJ GUIDELINE POSITION" under the "WORK SUPPORT" menu.
- Adjust the guide line touching "X UP", "X DOWN", "Y UP" or "Y DOWN" so that the corrected line can fit the guide line.
- 10. Touch "SAVE", and confirm the guide line.

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

11. Touch "END" to finish correcting.

[BOSE AUDIO WITH NAVIGATION]

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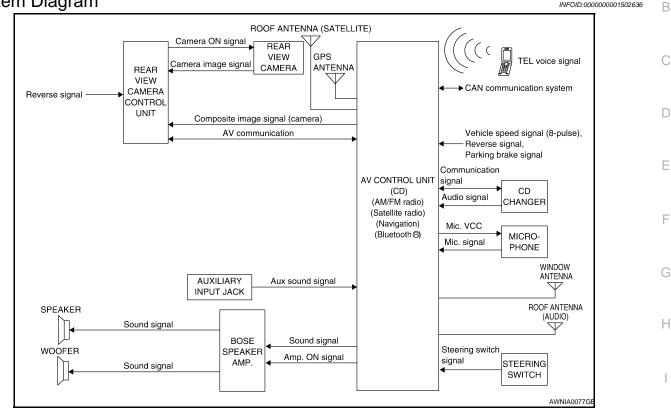
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< FUNCTION DIAGNOSIS > **FUNCTION DIAGNOSIS MULTI AV SYSTEM**

System Diagram



System Description

The multi AV system consists of the following systems.

- Navigation system
- Audio system
- Rear view monitor
- Hands-free phone system

Refer to the following table for multi AV system descriptions.

System	Reference page	B. /
Navigation system	<u>AV-149</u>	IVI
Audio system	<u>AV-153</u>	-
Rear view monitor system	<u>AV-152</u>	AV
Hands-free phone system	<u>AV-155</u>	

VOICE RECOGNITION

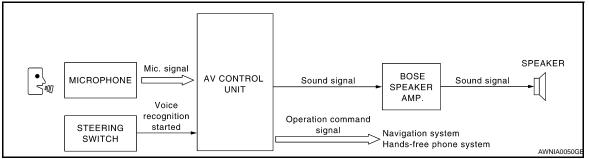
The multi AV system uses voice recognition to control functions of the following systems:

Navigation system

MULTI AV SYSTEM

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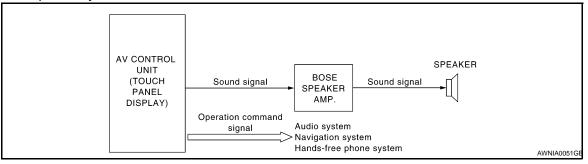
Hands-free phone system



TOUCH PANEL

The multi AV system uses a touch panel display to control functions of the following systems:

- Audio system
- Navigation system
- Hands-free phone system



< FUNCTION DIAGNOSIS >

Component Parts Location

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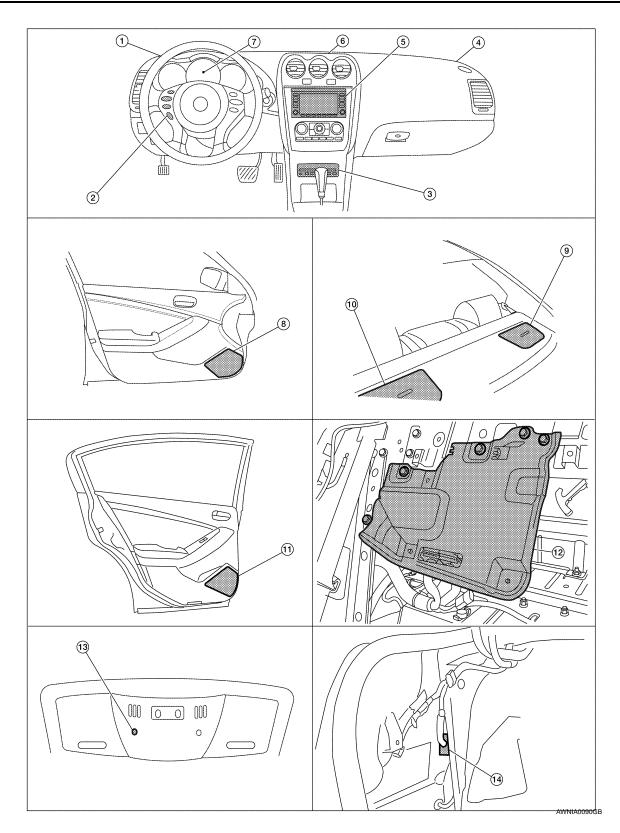
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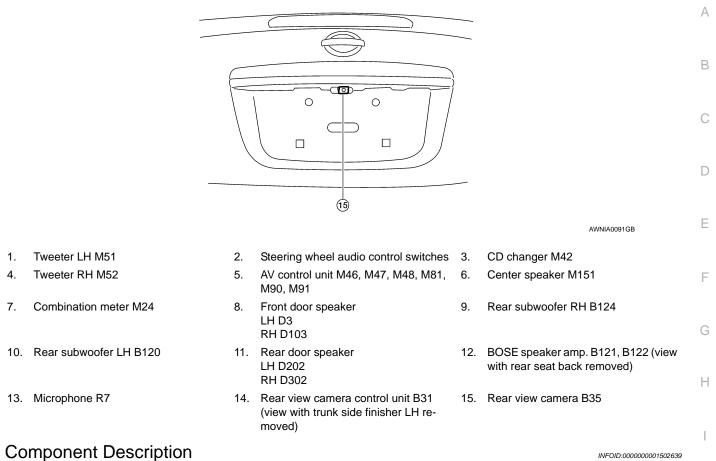
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< FUNCTION DIAGNOSIS >



< FUNCTION DIAGNOSIS >



Part name	Description
AV control unit	 Integrates DVD-ROM drive allowing map data to be stored The AV control unit includes the navigation, audio, hands-free phone, satellite radio and display functions
BOSE speaker amp.	Receives power (amp ON) and audio signals from AV control unit, and outputs audio signals to each speaker.
CD changer	Outputs audio signals to AV control unit.
Front door speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Tweeter	Outputs audio signal from BOSE speaker amp.Outputs high range sound
Center speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Rear door speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Woofer	Outputs audio signal from BOSE speaker amp.Outputs low range sound
Rear view camera control unit	 Camera image signal is input from rear view camera, and camera image is indicated on the display Power (camera ON signal) is sent to rear view camera Controlled by AV communication sent from AV control unit AV control unit recognizes the presence of camera system with camera connection recognition signal
Rear view camera	 Receives camera ON signal from rear view camera control unit Sends image signal to rear view camera control unit

AV-147

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Part name	Description	
Steering switches	 Operations for audio, hands-free phone and navigation are possible Steering switch signal (operation signal) is output to AV control unit 	
Microphone	Voice signals are received and sent to AV control unit.	
GPS antenna	GPS signal is received and sent to AV control unit.	
Satellite radio antenna	Satellite radio signal is received and sent to AV control unit.	

NAVIGATION SYSTEM

< FUNCTION DIAGNOSIS >

NAVIGATION SYSTEM

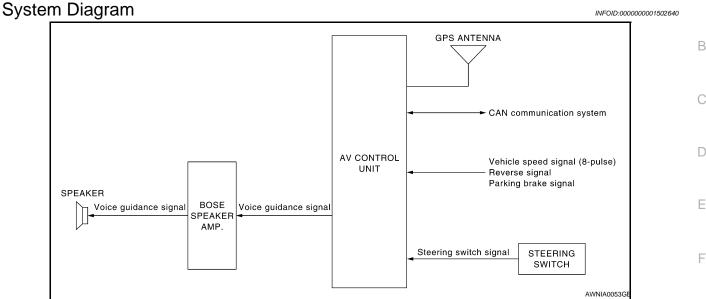


TRAVEL DISTANCE

Travel distance calculations are based on the vehicle speed input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance fine adjustment 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). As the gyroscope and GPS antenna have both merit and demerit, input signals



System Description

NOTE:

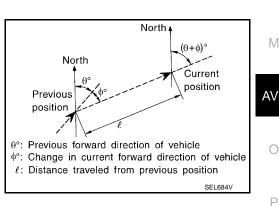
Refer to NAVI System Owner's Manual for system operation.

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), and the 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 DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen with a current-location mark.

By comparing the vehicle position detection results found by the GPS and by map-matching, more accurate vehicle position data can be used.

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



Vehicle speed signal

GPS antenna

AV CONTROL UNIT (DVD-ROM driver with internal vibrating gyroscope)

[BOSE AUDIO WITH NAVIGATION]

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NAVIGATION SYSTEM

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

from them are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

Туре	Advantage	Disadvantage	
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	• Direction errors may accumulate when the 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 the vehicle speed is low.	

MAP-MATCHING

Map-matching is a function that repositions the vehicle on the road map when a new location is judged to be the most accurate. This is done by comparing the current vehicle position, calculated by the method described in the position detection principle, with the road map data around the vehicle, read from the map DVD-ROM stored in the DVD-ROM drive.

Therefore, the vehicle position may not be corrected after the vehicle is driven over a certain distance or time in which GPS information is hard to receive. In this case, the current-location mark on the display must be corrected manually.

CAUTION:

The road map data is based on data stored in the map DVD-ROM.

• 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 current-location mark has been repositioned.

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

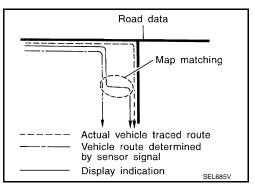
If two roads are running in parallel, they are of the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

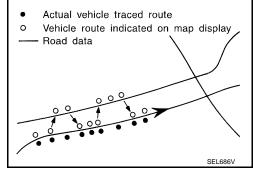
 Map-matching does not function correctly when the road on which the vehicle is driving is new and not recorded in the map DVD-ROM, or when the road pattern stored in the map data and the actual road pattern are different due to repair.

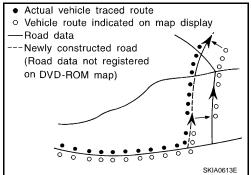
When driving on a road not present in the map, the map-matching function may find another road and position the current-location mark on it. Then, when the correct road is detected, the current-location mark may leap to it.

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

GPS (GLOBAL POSITIONING SYSTEM)



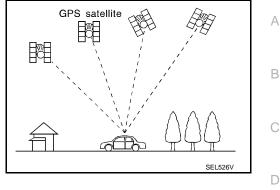




NAVIGATION SYSTEM

< FUNCTION DIAGNOSIS >

GPS (Global Positioning System) has been developed and controlled by the US Department of Defense. The system utilizes GPS satellite (NAVSTAR), sending out radio waves while flying on an orbit around the earth at the height of approx. 21,000 km (13,000 miles). The GPS receiver calculates the vehicle's position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves received from four or more GPS satellites (three-dimensional positioning). If radio waves were received only from three GPS satellites, the GPS receiver calculates the vehicle's position in two dimensions (latitude/longitude), utilizing the altitude data calculated previously by using radio waves from four or more GPS satellites (two-dimensional positioning).



Accuracy of the GPS will deteriorate under the following conditions.

- In two-dimensional positioning, the GPS accuracy will deteriorate when the altitude of the vehicle position changes.
- There may be an error of approximately 10 m (30 ft.) in position detected by three-dimensional positioning, which is more accurate than two-dimensional positioning. The accuracy can be even lower depending on the arrangement of the GPS satellites utilized for the positioning.
- Position detection is not possible when the vehicle is in an area where radio waves from the GPS satellite do
 not reach, such as in a tunnel, parking lot in a building, and under an elevated highway. Radio waves from
 the GPS satellites may not be received when some object is located over the GPS antenna.
- Position correction by GPS is not available while the vehicle is stopped.

Component Parts Location

Refer to AV-145, "Component Parts Location".

Component Description

INFOID:000000001502643

INFOID:000000001502642

Part name	Description	
AV control unit	 Controls each operation of the navigation system DVD-ROM drive is built in Voice guidance signal is output to BOSE speaker amp. 	
BOSE speaker amp.	Voice guidance signal is input from AV control unit, and it is output to speakers.	
Tweeter	Voice guidance signal from BOSE speaker amp. is output.	
Steering switches	 Each operation of navigation system can be performed Switch operating signal is output to AV control unit 	
Microphone	Sends voice signals to AV control unit	
GPS antenna	GPS signal is received and is output to AV control unit.	

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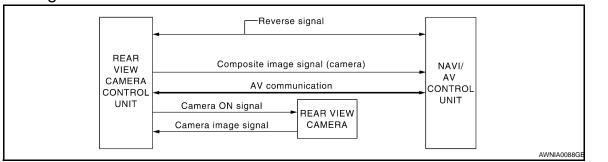
[BOSE AUDIO WITH NAVIGATION]

REAR VIEW MONITOR SYSTEM

< FUNCTION DIAGNOSIS >

REAR VIEW MONITOR SYSTEM

System Diagram



System Description

When the selector is in the R position, the display shows a view to the rear of the vehicle. Lines which indicate the vehicle clearance and distances are also displayed.

AV COMMUNICATION LINE

The rear view camera control unit is connected to the AV control unit using an AV communication line. This line is used to transmit and receive data.

Component Parts Location

Refer to AV-145, "Component Parts Location".

Component Description

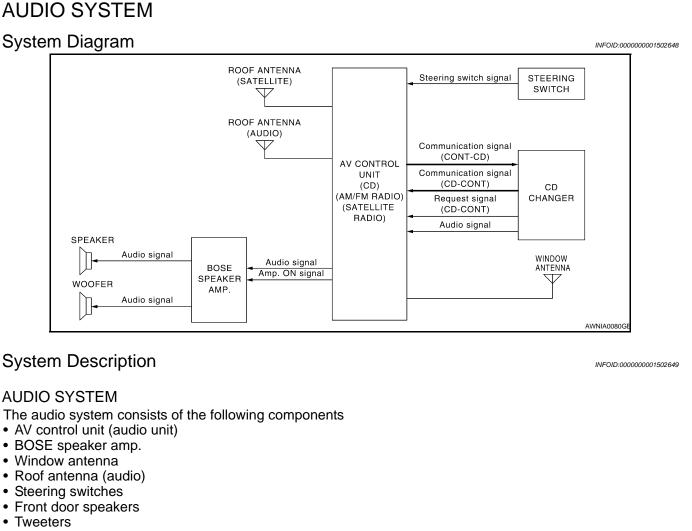
INFOID:000000001502647

INFOID:000000001502646

Part name	Description	
AV control unit	Camera image signal is sent from rear view camera control unit	
Rear view camera control unit	 Receives reverse signal from back-up lamp relay Receives rear view camera image signal Sends camera ON signal to rear view camera Sends image signal to AV control unit 	
Rear view camera	 Receives camera ON signal from rear view camera control unit Sends image signal to rear view camera control unit 	

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]



- Center speaker
- Rear door speakers
- Woofers

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CD changer

When the audio system is on, radio signals are received by the window antenna and roof antenna. The audio unit then sends audio signals to the BOSE speaker amp. The BOSE speaker amp, amplifies the audio signals before sending them to the front door speakers, tweeters, center speaker, rear door speakers and woofers. Refer to Owner's Manual for audio system operating instructions.

SATELLITE RADIO SYSTEM

The satellite radio system consists of the following components

Roof antenna (satellite)

Satellite radio tuner

When the satellite radio system is on, radio signals are supplied to the satellite radio tuner from the satellite antenna. The satellite radio tuner then sends audio signals to the audio unit. Refer to Owner's Manual for satellite radio system operating instructions.

SPEED SENSITIVE VOLUME SYSTEM

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

Component Parts Location

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Refer to AV-145, "Component Parts Location".

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AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

Component Description

[BOSE AUDIO WITH NAVIGATION]

Part name	Description	
AV control unit	 Controls audio system and satellite radio system functions Audio information is displayed on display screen 	
BOSE speaker amp.	Receives power (amp ON) and audio signals from AV control unit, and outputs audio signals to each speaker.	
CD changer	Sends audio signals to AV control unit	
Front door speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds	
Tweeter	Outputs audio signal from BOSE speaker amp.Outputs high range sound	
Center speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds	
Rear door speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds	
Woofer	Outputs audio signal from BOSE speaker amp.Outputs low range sound	
Steering switches	 Each audio operation can be operated Steering switch signal (operation signal) is output to AV control unit 	
Satellite antenna	Audio signal (satellite radio) is received and output to AV control unit.	

HANDS-FREE PHONE SYSTEM

< FUNCTION DIAGNOSIS >

HANDS-FREE PHONE SYSTEM



[BOSE AUDIO WITH NAVIGATION]

System Diagram INFOID:000000001502652 Sound signal Sound signal SPEAKER (TEL voice, Voice (TEL voice, Voice TEL voice signal BOSE guidance signal) guidance signal) SPEAKER AV CONTROL TEL started AMP STEERING UNIT SWITCH (Bluetooth® module) Mic. signal • MICROPHONE รีอ AWNIA00570

System Description

INFOID:000000001502653

Refer to the owner's manual for Bluetooth telephone system operating instructions. NOTE:

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

Bluetooth telephone system allows users who have a Bluetooth cellular telephone to make a wireless connection between their cellular telephone and the AV control unit. Hands-free cellular telephone calls can be sent and received. Personal memos can be created using the Nissan Voice Recognition system. Some Bluetooth cellular telephones may not be recognized by the AV control unit. When a cellular telephone or the AV control unit is replaced, the telephone must be paired with the AV control unit. Different cellular telephones may have Н different pairing procedures. Refer to the cellular telephone operating manual.

AV CONTROL UNIT

When the ignition switch is turned to ACC or ON, the AV control unit will power up. During power up, the AV control unit is initialized and performs various self checks. Initialization may take up to 10 seconds. During this time the Bluetooth ON indicator will flash until initialization is complete. If a phone is present in the vehicle and paired with the AV control unit, Nissan Voice Recognition will then become active and the Bluetooth ON indicator will remain on. Bluetooth telephone functions can be turned off using the Nissan Voice Recognition system.

STEERING WHEEL AUDIO CONTROL SWITCHES

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

The following functions can be performed using the steering wheel audio control switch:

- 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

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

BLUETOOTH ON INDICATOR

The Bluetooth ON indicator is located in the overhead console. The indicator will flash during power up while the AV control unit is initializing. This process may take up to 10 seconds. If a phone is present in the vehicle and paired with the AV control unit, the indicator will remain on to indicate that the system is ready for voice commands. The indicator flashes during self-diagnosis.

Component Parts Location

Refer to AV-145, "Component Parts Location".

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< FUNCTION DIAGNOSIS >

HANDS-FREE PHONE SYSTEM

[BOSE AUDIO WITH NAVIGATION]

Component Description

Part name	Description
AV control unit	Controls hands-free phone functionsDisplays hands-free phone information on display screen
BOSE speaker amp.	Inputs power (amp ON) and sound signal from AV control unit, and outputs sound signal to each speaker.
Front door speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Tweeter	Outputs audio signal from BOSE speaker amp.Outputs high range sound
Center speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Rear door speaker	Outputs audio signal from BOSE speaker amp.Outputs high, mid and low range sounds
Woofer	Outputs audio signal from BOSE speaker amp.Outputs low range sound
Steering switches	Start a voice recognition sessionAnswer and end telephone callsAdjust the volume level
Microphone	Sends voice signals to AV control unit

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

DESCRIPTION

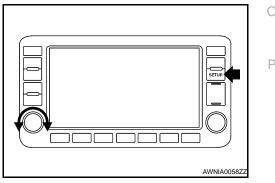
- Diagnosis function consists of the self-diagnosis mode performed automatically and the CONFIRMATION/ ADJUSTMENT mode operated manually.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.
- CONFIRMATION/ADJUSTMENT mode is used to perform trouble diagnosis that requires operation and judgment by an operator (trouble that cannot be automatically judged by the system), to check/change the set value, and to display the History of Errors of the multi AV system.

DIAGNOSIS ITEM

Mode			Description	
Self-diagnosis			 AV control unit diagnosis (DVD-ROM drive will not be diagnosed when no map DVD-ROM is in it. Analyzes connection between the AV control unit, CD changer, satel- lite radio antenna and GPS antenna. 	
	Display diagnosis	Color spectrum bar	Color tone of the screen can be checked by the display of a color bar.	
		Gradation bar	Shading of the screen can be checked by the display of a gray scale.	
		Touch panel	Touch panel response can be checked.Touch panel calibration can be performed.	
	Vehicle signals		The following vehicle signals are analyzed: Vehicle speed signal, park- ing brake signal, light signal, ignition switch signal, and reverse signal.	
	Speaker test		Connection can be checked by sending a test tone to each speaker.	
	Navigation		XM NavTraffic subscription status can be checked.	
	Error history		Diagnosis results previously stored in the memory are displayed in this mode.	
CONFIRMATION/ ADJUSTMENT	Vehicle CAN diagnosis		The transmitting/receiving of CAN communication can be monitored.	
ADJUSTMENT	Handsfree phone	Handsfree volume adjustment	Volume of hands-free phone can be adjusted.	
		Voice microphone test	Hands-free phone microphone can be tested.	
		Delete handsfree memory	Hands-free phone memory can be deleted.	
	Bluetooth	Confirm / Change Passkey	Bluetooth passkey can be changed.	
	Diuelootri	Confirm / Change Device Key	Bluetooth device name can be changed.	
	XM SAT		Traffic channel information can be reviewed and changed.	

OPERATION PROCEDURE

- 1. Start the engine.
- 2. Turn the audio system off.
- 3. While pressing the "SETUP" button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)



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< FUNCTION DIAGNOSIS >

 The initial trouble diagnosis screen will be displayed, and items "Self-Diagnosis" and "Confirmation/Adjustment" can be selected.

	-	
•	i System Diagnosis	🔁 Back

Self Diagnosi	S	
Confirmation	/ Adjustment	

SELF-DIAGNOSIS

- 1. Perform self-diagnosis by selecting "Self-diagnosis".
 - Self-diagnosis subdivision screen is displayed, and the selfdiagnosis mode starts.
 - A bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis. **NOTE:**

Self-diagnosis requires approximately 10 seconds to complete.

System Diagnosis	Back
Self I Confi	
(i) Please select an item	
	ALNIA0087ZZ

2. 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 Note	Red	Green

System Diagnosis>Connection Confi (SBack)
CD Changer
SAT Antenna
GPS Antenna
ALNIA0088ZZ

Note:

- Only the control unit (AV control unit) is displayed in red.
- If multiple malfunctions occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > yellow > gray.
- 3. Select a switch on the "SELF DIAGNOSIS" screen and comments for the diagnosis results will be shown.

Self diagnosis did not detect any error. Please refer to the Confirmation/ Adjustment function or service manual for more detailed diagnosis information.	
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Self-Diagnosis Results

[BOSE AUDIO WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Area with yellow connection lines	Description	Possible malfunction location / Action to take
System Diagnosis>Connection Confi Back CD Changer SAT Antenna GPS Antenna Red ALNIA0090GB	AV control unit malfunction is detect- ed	Replace the AV control unit. Refer to <u>AV-260, "Removal and Installation"</u> .
I System Diagnosis>Connection Confi Back CD Changer SAT Antenna Control unit I GPS Antenna I GPS Antenna I I GPS Antenna I I I I Berger I I I I Berger I I Berger I Berger I Berger I Berger I Berger I Berger Berger	GPS antenna connection malfunction is detected	GPS antenna
System Diagnosis > Connection Confi Seck CD Changer SAT Antenna GPS Antenna GPS Antenna Control unit GPS Antenna ALNIA0092GB	Poor connection is detected in satel- lite antenna	 Satellite antenna feeder Satellite antenna

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< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Image: System Diagnosis > Connection Confi Image: CD Changer Image: CD C	No diagnosis due to internal malfunc- tion of CD changer	Replace the CD changer. Refer to <u>AV-</u> 262, "Removal and Installation".
Image: System Diagnosis>Connection Confi Image: CD Changer Image: CD Cha	 CD changer power supply and ground circuits A malfunction is detected in communication circuit between AV control unit and CD changer (REQ1 signal or communication signal) A malfunction is detected in communication signal between AV control unit and CD changer (REQ1 signal or communication signal) 	 CD changer power supply and ground circuits Communication line between AV control unit and CD changer (REQ1 signal or communication signal)

CONFIRMATION/ADJUSTMENT MODE

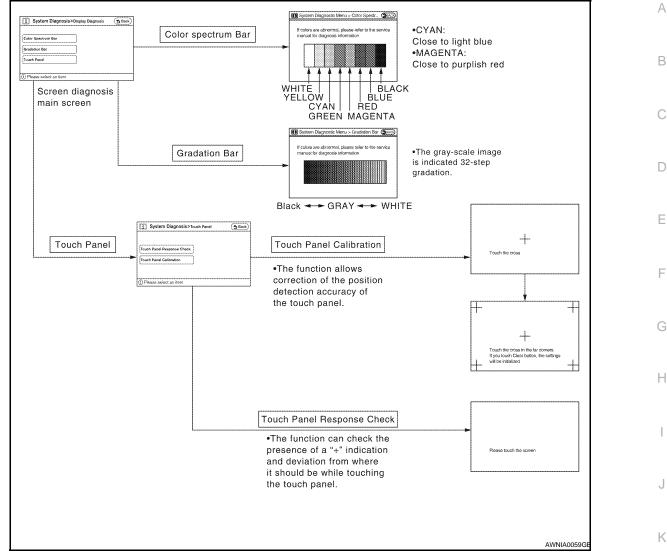
- 1. Start the diagnosis function and select "Confirmation/Adjustment". The confirmation/adjustment mode indicates where each item can be checked or adjusted.
- 2. Select each button on the "Confirmation/Adjustment Mode" screen to display the relevant trouble diagnosis screen. Press the "BACK" button to return to the initial Confirmation/Adjustment Mode screen.

Display Diagnosis		
Vehicle Signals		
Speaker Test		
Navigation		
Error History		
i) Please select an item		

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Display Diagnosis



Vehicle Signals

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

Vehicle speed	OFF	
Parking brake	OFF	
Lights	OFF	
Ignition	ON	
Reverse	OFF	

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Diagnosis item	Dis- play	Vehicle status	Remarks	Ρ
	ON	Vehicle speed > 0 km/h		
Vehicle speed	OFF	Vehicle speed = 0 km/h	.	
	-	Ignition switch in ACC position	Changes in indication may be delayed by approxi- mately 1.5 seconds. This is normal.	
Parking brake	ON	Parking brake is applied.		
F arking brake	OFF	Parking brake is released.		

< FUNCTION DIAGNOSIS >

Diagnosis item	Dis- play	Vehicle status	Remarks
Lights	ON	Light switch ON	Block the light beam from the auto light optical sensor.
Lights	OFF	Light switch OFF	block the light beam nom the auto light optical sensor.
Ignition	ON	Ignition switch ON	
Ignition	OFF	Ignition switch in ACC position	
	ON	Selector lever in R position	
Reverse	OFF	Selector lever in any position other than R	Changes in indication may be delayed by approxi- mately 1.5 seconds. This is normal.
	-	Ignition switch in ACC position	

Speaker Test

Select "SPEAKER TEST" to display the speaker diagnosis screen. Press "START" to generate a test tone in speakers. Press "End" to stop the test tones.

NOTE:

The speakers are tested in the following order:

Front left tweeter > front center > front right tweeter > front right > rear right > woofer > rear left > front left

System Diagnosis>Speaker Test	Back
Speaker Testing Front Left Tweeter	Start
(i) Push start to test next speaker	
	ALNIA0097ZZ

Navigation

The XM NavTraffic subscription status can be checked.

System Diagnosis>Navigation	(S Back)
XM S XM SAT subscribed	
(i) Please select an item	
	ALNIA0098ZZ

Error History

The error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.

Vehicle CAN Diagnosis

DIAGNOSIS SYSTEM (AV CONTROL UNIT) IS S [BOSE AUDIO WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

- CAN communication status and error counter is displayed.
- 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.

Items	Display (Current)	Malfunction counter (Past)
Rx (ECM)	OK / UNKWN	OK / 0 - 39
Rx (Cluster)	OK / UNKWN	OK / 0 - 39
Rx (HEV)	OK / UNKWN	OK / 0-39

Handsfree Phone

The hands-free phone reception volume adjustment, microphone test and memory erase functions are available.

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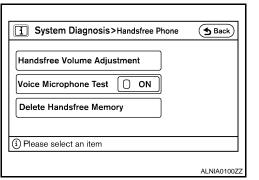
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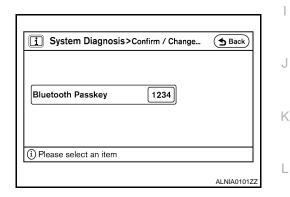
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Bluetooth

Passkey confirmation/change

- The passkey of Bluetooth can be confirmed and changed.
- The passkey can be changed by four digits within 0 to 9.



Device name confirmation/change

- The device name of Bluetooth can be confirmed and changed.
- The device name can be changed by sixteen digits within A to Z (small character can be used) and (hyphen).

System Diagnosis>	Confirm / Change 🕚 Ba	ck
Device Name	MY-CAR]
i) Please select an item		

XM SAT

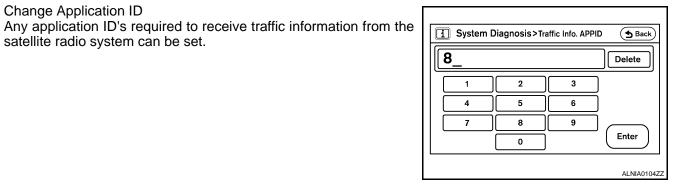
< FUNCTION DIAGNOSIS >

Change Channel

- Any necessary channels required to receive traffic information from the satellite radio system can be set.

System Diagnosis>Traffic Info. CH Back 255 Delete 2 3 1 5 6 4 8 7 9 Enter 0 ALNIA0103ZZ

[BOSE AUDIO WITH NAVIGATION]



i System Diagnosis>Traffic Info. EXTID Back 5 Delete 3 1 2 5 4 6 8 9 7 Enter 0 ALNIA0105ZZ

Change EXT ID

Change Application ID

satellite radio system can be set.

- Any EXT ID's required to receive traffic information from the satellite radio system can be set.

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

MULTI AV diagnosis mode	Description
SELF-DIAG RESULTS	Displays AV control unit self-diagnosis results.
DATA MONITOR	Displays AV control unit input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
AV COMM MONITOR	Allows the technician to monitor the status of the Multi AV system communication signals.
ECU PART NUMBER	The part number of AV control unit can be checked.

SELF-DIAG RESULTS

Display Item List Refer to AV-241, "DTC Index".

DATA MONITOR

Display Item List

CONSULT - III Function (MULTI AV)

DIAGNOSIS SYSTEM (AV CONTROL UNIT) SIS > [BOSE AUDIO WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

-	Display item [unit]	ALL SIGNALS	SELECTION FROM MENU	Description	А
-	VHCL SPD SIG [ON/OFF]	х	х	Displays "ON" when vehicle speed > 0 km/h. Displays "OFF" when vehicle speed = 0 km/h.	В
-	PKB SIG [ON/OFF]	Х	Х	Displays [ON/OFF] condition of parking brake switch.	
-	ILLUM SIG [ON/OFF]	Х	Х	Displays [ON/OFF] condition of lighting switch.	
-	IGN SIG [ON/OFF]	Х	Х	Displays [ON/OFF] condition of ignition switch.	С
	REV SIG [ON/OFF]	Х	Х	Displays [ON/OFF] condition of back-up lamp switch.	

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COMPONENT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

Refer to LAN-7, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1000	CAN COMM CIRCUIT [U1000]	When AV control unit is not transmitting or receiving CAN communication signals for 2 sec- onds or more.

Diagnosis Procedure

INFOID:000000001502660

Symptom: Displays "CAN COMM CIRCUIT [U1000]" as a self-diagnosis result of AV control unit.

1.CHECK CAN COMMUNICATION

Select "SELF-DIAG RESULTS" mode for "MULTI AV" with CONSULT-III.

>> Go to "LAN system". Refer to LAN-10, "Condition of Error Detection".

INFOID:000000001502658

[BOSE AUDIO WITH NAVIGATION] < COMPONENT DIAGNOSIS > U1010 CONTROL UNIT (CAN) А Description INFOID:000000001502661 Refer to LAN-7, "System Description". В **DTC** Logic INFOID:000000001502662 С DTC DETECTION LOGIC DTC CONSULT-III display **Detection condition** D CONTROL UNIT (CAN) U1010 When a malfunction is detected during initial diagnosis for CAN controller of each control unit. [U1010] **Diagnosis Procedure** Е INFOID:000000001502663 Symptom: Displays "CONTROL UNIT (CAN) [U1010]" as a self-diagnosis result of AV control unit. **1.**CHECK CAN COMMUNICATION F Select "SELF-DIAG RESULTS" mode for "MULTI AV" with CONSULT-III. >> Go to "LAN system". Refer to LAN-10, "Condition of Error Detection". Н Κ L Μ AV

U1010 CONTROL UNIT (CAN)

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U1200 AV CONTROL UNIT

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502665

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	Action to take
U1200	Cont Unit FLASH-ROM [U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal- lation"</u> .

U1201 AV CONTROL UNIT

Description

Refer to AV-143. "System Description".

DTC Logic

INFOID:000000001502667

INFOID:000000001502666

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	Action to take	
U1201	GYRO NO CONN [U1201]	An internal malfunction is detected in AV control unit (gy- rocompass disconnection).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal- lation"</u> .	D
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U1204 GPS COMM

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502669

INFOID:000000001502668

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	Action to take
U1204	GPS COMM [U1204]	An internal malfunction is detected in AV control unit (GPS malfunction).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal-</u> lation".

U1205 GPS ROM

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502671

DTC DETECTION LOGIC

	DTC	CONSULT-III display	Detection condition	Action to take	_
-	U1205	GPS ROM [U1205]	An internal malfunction is detected in AV control unit (GPS malfunction).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal-</u> lation".	D
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U1206 GPS RAM

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502673

INFOID:000000001502672

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	Action to take
U1206	GPS RAM [U1206]	An internal malfunction is detected in AV control unit (GPS malfunction).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal-</u> lation".

U1207 GPS RTC

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502675

INFOID:000000001502674

DTC DETECTION LOGIC

 DTC	CONSULT-III display	Detection condition	Action to take	_
U1207	GPS RTC [U1207]	An internal malfunction is detected in AV control unit (GPS malfunction).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal- lation"</u> .	D
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U1208 DVD-ROM COMM

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502677

INFOID:000000001502678

INFOID:000000001502676

[BOSE AUDIO WITH NAVIGATION]

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1208	DVD-ROM COMM [U1208]	An internal malfunction is detected in AV control unit (DVD-ROM).

Diagnosis Procedure

1.CHECK DVD-ROM

Check DVD-ROM for dirt, scratches and warpage.

Is the DVD-ROM clean and undamaged?

OK >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u>.

NG >> Replace DVD-ROM map.

[BOSE AUDIO WITH NAVIGATION]

	OVD-ROM REA	П	
Descripti			INFOID:000000001502679
	<u>/-143, "System Descrip</u>	<u>otion"</u> .	
DTC Log	IC		INFOID:000000001502680
DTC DETE	ECTION LOGIC		
DTC	CONSULT-III display	Detection condition	
U1209	DVD-ROM READ [U1209]	An internal malfunction is detected in AV control unit (DVD-ROM).	
Diagnosi	s Procedure		INFOID:000000001502681
1. CHECK	DVD-ROM		
	-ROM for dirt, scratch		
	-ROM clean and undate Replace AV control u	maged? Init. Refer to <u>AV-260, "Removal and Installation"</u> .	
NO >>			
110 22	Replace DVD-ROM r	map.	
110 22	 Replace DVD-ROM r 	map.	
	 Replace DVD-ROM r 	map.	
	 Replace DVD-ROM r 	map.	
	 Replace DVD-ROM r 	map.	
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	• Replace DVD-ROM r	map.	
	 Replace DVD-ROM r 	map.	
	• Replace DVD-ROM r	nap.	
	• Replace DVD-ROM r	map.	
	• Replace DVD-ROM r	map.	
	 Replace DVD-ROM r 	map.	
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	 Replace DVD-ROM r 	map.	
	 Replace DVD-ROM r 	map.	
	 Replace DVD-ROM r 	map.	
	 Replace DVD-ROM r 	map.	

U120A DVD-ROM DISC

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502683

INFOID:000000001502684

INFOID:000000001502682

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U120A	DVD-ROM DISC [U120A]	An internal malfunction is detected in AV control unit (DVD-ROM).

Diagnosis Procedure

1.CHECK DVD-ROM

Check DVD-ROM for dirt, scratches and warpage.

Is the DVD-ROM clean and undamaged?

YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u>.

NO >> Replace DVD-ROM map.

U120C DVD-ROM MECHA DETECT

< COMPONENT DIAGNOSIS >

U120C DVD-ROM MECHA DETECT

Description INFOID:000000001502685 Refer to AV-143, "System Description". В **DTC** Logic INFOID:000000001502686 С DTC DETECTION LOGIC DTC CONSULT-III display Detection condition D DVD-ROM MECHA DE-U120C An internal malfunction is detected in AV control unit (DVD-ROM). TECT [U120C] Ε **Diagnosis Procedure** INFOID:000000001502687 1.CHECK DVD-ROM F Check DVD-ROM for dirt, scratches and warpage. Is the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".

NO >> Replace DVD-ROM map.

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[BOSE AUDIO WITH NAVIGATION]

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U120D DVD-ROM DRIVE MECHA

Description

Refer to AV-143, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U120D	DVD-ROM MECHA [U120D]	An internal malfunction is detected in AV control unit (DVD-ROM).

Diagnosis Procedure

1.CHECK DVD-ROM

Check DVD-ROM for dirt, scratches and warpage.

Is the DVD-ROM clean and undamaged?

YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u>.

NO >> Replace DVD-ROM map.

INFOID:000000001502688

INFOID:000000001502689

U1210 DVD-ROM SEEK

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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U1210 D	VD-ROM SEE	К	
Descriptio	on		INFOID:000000001502691
Refer to <u>AV-</u>	143. "System Descrip	otion".	
OTC Logi			INFOID:000000001502692
	CTION LOGIC		
DTC	CONSULT-III display DVD-ROM SEEK	Detection condition	
U1210	[U1210]	An internal malfunction is detected in AV control unit (D)	VD-ROM).
_	Procedure		INFOID:000000001502693
	ROM for dirt, scratch		
			n
YES >>		nit. Refer to AV-260, "Removal and Installation	<u>-</u> .
YES >> NO >>	Replace DVD-ROM r	nap.	<u> </u>
YES >> NO >>	Replace DVD-ROM r	nap.	
YES >> NO >>	Replace DVD-ROM r	nap.	
YES >> NO >>	Replace DVD-ROM r	nap.	
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> .
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> .
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	<u>-</u> -
YES >> NO >>	Replace DVD-ROM r	nap.	
YES >> NO >> NO	Replace DVD-ROM r	nap.	

U1212 DVD-ROM DATA FORWARD

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502695

INFOID:000000001502696

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1212	DVD-ROM DATA FOR- WARD [U1212]	An internal malfunction is detected in AV control unit (DVD-ROM).

Diagnosis Procedure

1.CHECK DVD-ROM

Check DVD-ROM for dirt, scratches and warpage.

Is the DVD-ROM clean and undamaged?

YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u>.

NO >> Replace DVD-ROM map.

[BOSE AUDIO WITH NAVIGATION]

U1213 DVD-ROM DATA

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< COMPONENT DIAGNOSIS >		
U1213 DVD-ROM DAT	A	
Description		INFOID:00000001502697
Refer to AV-143, "System Descrip	otion".	
DTC Logic		INFOID:00000001502698
DTC DETECTION LOGIC		
DTC CONSULT-III display DVD-ROM DATA	Detection condition	
U1213 [U1213]	An internal malfunction is detected in AV control unit (D)	/D-ROM).
Diagnosis Procedure		INFOID:000000001502699
1.CHECK DVD-ROM		
Check DVD-ROM for dirt, scratch Is the DVD-ROM clean and unda		
YES >> Replace AV control u	init. Refer to AV-260, "Removal and Installation"	1
NO >> Replace DVD-ROM	map.	

U1214 DVD-ROM TIMEOUT

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502701

INFOID:000000001502702

INFOID:000000001502700

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1214	DVD-ROM TIMEOUT [U1214]	An internal malfunction is detected in AV control unit (DVD-ROM).

Diagnosis Procedure

1.CHECK DVD-ROM

Check DVD-ROM for dirt, scratches and warpage.

Is the DVD-ROM clean and undamaged?

YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u>.

NO >> Replace DVD-ROM map.

U1215 DVD-ROM LOAD

Description INFOIL:00000001502703 Refer to AV-143. "System Description". INFOIL:00000001502704 DTC Logic INFOIL:00000001502704 DTC DETECTION LOGIC INFOIL:00000001502704 DTC CONSULT-III display Detection condition U1215 DVD-ROM LOAD [U1215] An internal malfunction is detected in AV control unit (DVD-ROM). Diagnosis Procedure INFOIL:00000001502706 .CHECK DVD-ROM Check DVD-ROM for dirt, scratches and warpage. sthe DVD-ROM for dirt, scratches and warpage. Sthe DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".			TH NAVIGATION]
Refer to AV-143. "System Description". DTC Logic DTC DETECTION LOGIC DTC CONSULT-III display DVD-ROM LOAD U1215 DVD-ROM LOAD U1215 DVD-ROM LOAD An internal malfunction is detected in AV control unit (DVD-ROM). Diagnosis Procedure INFOID.00000001562704 .CHECK DVD-ROM Check DVD-ROM for dirt, scratches and warpage. s the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".	U1215 DVD-ROM LO	AU	
DTC Logic INFOID-0000001502704 DTC DETECTION LOGIC Detection condition U1215 DVD-ROM LOAD [U1215] An internal malfunction is detected in AV control unit (DVD-ROM). Diagnosis Procedure INFOID-00000001502705 .CHECK DVD-ROM Check DVD-ROM for dirt, scratches and warpage. s the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".	Description		INFOID:000000001502703
DTC CONSULT-III display Detection condition U1215 DVD-ROM LOAD [U1215] An internal malfunction is detected in AV control unit (DVD-ROM). Diagnosis Procedure INFOLD:00000001502705 CHECK DVD-ROM Check DVD-ROM for dirt, scratches and warpage. s the DVD-ROM for dirt, scratches and warpage. S the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".	Refer to <u>AV-143, "System Desc</u>	cription".	
DTC CONSULT-III display Detection condition U1215 DVD-ROM LOAD [U1215] An internal malfunction is detected in AV control unit (DVD-ROM). Diagnosis Procedure INFOID:00000001502705 CHECK DVD-ROM Check DVD-ROM Check DVD-ROM for dirt, scratches and warpage. s the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".	DTC Logic		INFOID:000000001502704
U1215 DVD-ROM LOAD [U1215] An internal malfunction is detected in AV control unit (DVD-ROM). Diagnosis Procedure INFOID:00000001502705 .CHECK DVD-ROM Check DVD-ROM for dirt, scratches and warpage. s the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".	DTC DETECTION LOGIC		
U1215 [U1215] An internal mainduction is detected in AV control unit (DVD-ROM). Diagnosis Procedure INFOID:00000001502705 .CHECK DVD-ROM Check DVD-ROM for dirt, scratches and warpage. s the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation".	DTC CONSULT-III display	/ Detection condition	
CHECK DVD-ROM Check DVD-ROM for dirt, scratches and warpage. s the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u> .		An internal malfunction is detected in AV control unit (DVD-ROM).	
Check DVD-ROM for dirt, scratches and warpage. <u>s the DVD-ROM clean and undamaged?</u> YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u> .	Diagnosis Procedure		INFOID:000000001502705
s the DVD-ROM clean and undamaged? YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u> .	1. CHECK DVD-ROM		
YES >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u> .			
No >> Replace DVD-ROM map.		-	
	NO >> Replace AV contro	I while related and installation.	

U1216 AV CONTROL UNIT

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502707

INFOID:000000001502706

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	Action to take
U1216	CAN CONT [U1216]	An internal malfunction is detected in AV control unit (CAN controller).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal-</u> lation".

U1217 AV CONTROL UNIT

< COMPONENT DIAGNOSIS >

U1217 AV CONTROL UNIT

Description

Refer to AV-143. "System Description".

DTC Logic

INFOID:000000001502709

INFOID:000000001502708

DTC DETECTION LOGIC

	DTC	CONSULT-III display	Detection condition	Action to take	_
-	U1217	BLUETOOTH CONN [U1217]	An internal malfunction is detected in AV control unit (Blue- tooth module connection malfunction).	Replace AV control unit. Refer to <u>AV-260</u> , "Removal and Instal- lation".	D
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U1220 AV CONTROL UNIT

Description

Refer to AV-143, "System Description".

DTC Logic

INFOID:000000001502711

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	Action to take
U1220	XM SERIAL COMM [U1220]	An internal malfunction is detected in AV control unit (sat- ellite radio tuner communication malfunction).	Replace AV control unit. Refer to <u>AV-260, "Removal and Instal- lation"</u> .

INFOID:000000001502710

U1244 GPS ANTENNA

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[BOSE AUDIO WITH NAVIGATION]

	PS ANTENNA	•	<u> </u>	
Descriptio	on		INFOID:000000001502712	A
Refer to <u>AV-</u>	143, "System Descrip	<u>otion"</u> .		В
DTC Logi	С		INFOID:000000001502713	
DTC DETE	CTION LOGIC			С
DTC	CONSULT-III display	Detection	condition	_
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detect	ted.	D
Diagnosis	Procedure		INFOID:000000001502714	Е
1.GPS ANT	TENNA CHECK			
Inspect GPS antenna and antenna feeder for damage or poor connection. <u>Is the GPS antenna and feeder clean and undamaged?</u>				
YES >>	GO TO 2	-		
•	Repair or replace ma AV CONTROL UNIT \	•		G
	nition switch ON.	VOLIAGE		
2. Check v	oltage between AV c	ontrol unit connector M90 terminal		Н
73 and (grouna.		J CO Lis.	
	Ground	: Approx. 5V		I
-	e reading as specified Replace GPS antenr	d? a. Refer to <u>AV-269, "Removal and</u>		
	Installation".			J
	Installation".	nit. Refer to <u>AV-260, "Removal and</u>		K
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U124C CD CHANGER

Description

Refer to AV-143, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U124C	N-BUS CD CHG CONN [U124C]	 A malfunction is detected in CD changer power supply and ground circuits Malfunction occurs in request signal circuit. (Between CD changer and AV control unit) Malfunction occurs in communication signal circuit. (Between CD changer and AV control unit) unit)

Diagnosis Procedure

INFOID:000000001502717

1. CHECK CD CHANGER POWER SUPPLY AND GROUND CIRCUIT

Check CD changer power supply and ground circuit. Refer to <u>AV-193, "CD CHANGER : Diagnosis Proce-dure"</u>.

Do power and ground check OK?

YES >> GO TO 2

NO >> Repair power supply or ground circuit.

2. CHECK COMMUNICATION CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect CD changer connector M42 and AV control unit connector M48.
- Check continuity between CD changer harness connector M42 (A) terminals 8, 9 and 10 and AV control unit harness connector M48 (B) terminals 69, 70 and 72.
 - 8 72
 - 9 69
 - 10 70

- : Continuity should exist. : Continuity should exist.
- : Continuity should exist.
- Check continuity between CD changer harness connector M42 (A) terminals 8, 9, 10 and ground.
 - 8, 9, 10 Ground

: Continuity should not exist.

Are the continuity test results as specified?

- YES >> GO TO 3
- NO >> Repair harness or connector.

3. CHECK REQUEST SIGNAL

1. Connect CD changer connector and AV control unit connector.

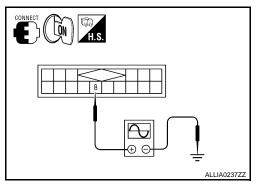
- 2. Turn ignition switch ON.
- 3. Check signal between CD changer harness connector M42 terminal 8 and ground.

(V)

- 10

8 - Ground





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 A
 69,70,72

 B
 9

 B
 9

 B
 9

 B
 9

 C
 C

INFOID:000000001502715

INFOID:000000001502716

U124C CD CHANGER

< COMPONENT DIAGNOSIS >

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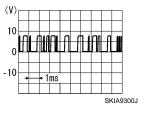
Are the voltage readings as specified?

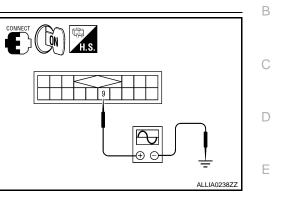
- YES >> GO TO 4
- NO >> Replace CD changer. Refer to <u>AV-262, "Removal and Installation"</u>.

4.CHECK COMMUNICATION SIGNAL

Check signal between CD changer harness connector M42 terminal 9 and ground.

9 - Ground





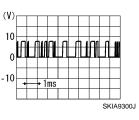
Are the voltage readings as specified?

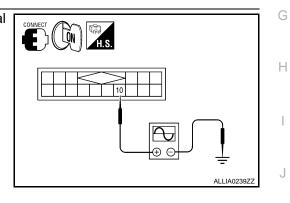
NO >> Replace CD changer. Refer to <u>AV-262, "Removal and Installation"</u>.

5.CHECK COMMUNICATION SIGNAL

Check signal between CD changer harness connector M42 terminal 10 and ground.

10 - Ground





Are the voltage readings as specified?

- YES >> Inspection End.
- NO >> Replace AV control unit. Refer to <u>AV-260, "Removal and Installation"</u>.

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< COMPONENT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000001502718

1.CHECK FUSE

Check that the following fuses of the AV control unit are not blown.

Unit	Terminals	Signal name	Fuse No.
	20	Battery power	24
AV control unit	7	Ignition switch ACC or ON	19
	10	Ignition switch ON or START	3

Are the fuses OK?

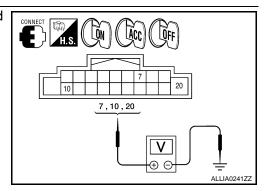
YES >> GO TO 2

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Ap- prox.)
Battery power supply		20	OFF	
ACC power supply	M47	7	ACC	Battery voltage
Ignition signal		10	ON	g .



[BOSE AUDIO WITH NAVIGATION]

Are the voltage tests as specified?

YES >> GO TO 3

NO >> Check harness between AV control unit and fuse.

${f 3.}$ CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connectors.
- Check continuity between AV control unit harness connector M47 terminal 19 and ground.

Signal name	Continuity	
Ground	Continuity should exist.	

Does continuity exist?

- YES >> Inspection End.
- NO >> Repair harness or connector.

REAR VIEW CAMERA CONTROL UNIT

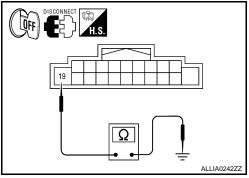
REAR VIEW CAMERA CONTROL UNIT : Diagnosis Procedure

INFOID:000000001502719

1.CHECK FUSE

Check that the following fuses of the rear view camera control unit are not blown.

Unit	Terminals	Signal name	Fuse No.
Rear view camera control unit	1	Battery power	24
	2	Ignition switch ACC or ON	19



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< COMPONENT DIAGNOSIS >

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Are the fuses OK? YES >> GO TO 2

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between rear view camera control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B31	1	OFF	Battery voltage
ACC power supply	160	2	ACC	Dattery Voltage

Are the voltage readings as specified?

- YES >> GO TO 3
- NO >> Check harness between rear view camera control unit and fuse.

3. CHECK GROUND CIRCUIT

- Turn ignition switch OFF. 1.
- Disconnect rear view camera control unit connector. 2.
- Check continuity between rear view camera control unit harness 3. connector B31 terminal 3 and ground.

Signal name	Continuity
Ground	Continuity should exist.

Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector.

REAR VIEW CAMERA

REAR VIEW CAMERA : Diagnosis Procedure

1.CHECK POWER SUPPLY CIRCUIT (REAR VIEW CAMERA SIDE)

Check voltage between rear view camera harness connector and ground.

Signal name	Connector No.	Terminal No.	Transmission position	Value (Approx.)
Camera ON signal	B35	1	Reverse	6V

Is voltage reading approximately 6 volts?

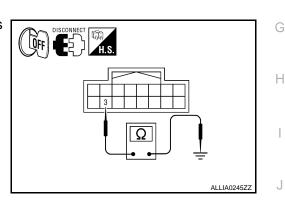
YES >> GO TO 4 NO >> GO TO 2

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2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.

2. Disconnect rear view camera and rear view camera control unit connectors.



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INFOID:000000001502720

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< COMPONENT DIAGNOSIS >

3. Check continuity between rear view camera harness connector B35 (A) terminal 1 and rear view camera control unit harness connector B31 (B) terminal 8.

Signal name	Continuity
Camera ON signal	Continuity should exist.

4. Check continuity between rear view camera harness connector B35 (A) terminal 1 and ground.

Signal name	Continuity
Camera ON signal	Continuity should not exist.

Are continuity test results as specified?

YES >> GO TO 3

NO >> Repair harness or connector.

3.CHECK POWER SUPPLY CIRCUIT (CAMERA CONTROL UNIT SIDE)

- 1. Connect rear view camera control unit harness connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between rear view camera control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Transmission position	Value (Approx.)
Camera ON signal	B31	8	Reverse	6V

Is voltage reading approximately 6 volts?

- YES >> Inspection End.
- NO >> Replace rear view camera control unit. Refer to AV-275, "Removal and Installation".

4.CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect rear view camera harness connector.
- 3. Check continuity between rear view camera harness connector B35 terminal 2 and ground.

Signal name	Continuity
Ground	Continuity should exist.

Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector.

BOSE SPEAKER AMP

BOSE SPEAKER AMP : Diagnosis Procedure

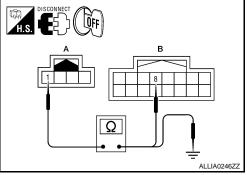
1.CHECK FUSE

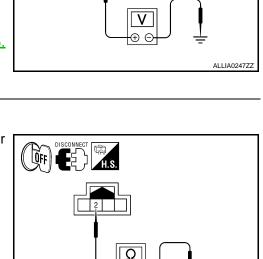
Check that the following fuses of the BOSE speaker amp. are not blown.

Unit	Terminals	Signal name	Fuse No.
BOSE speaker amp.	50	Battery power 25	
BOSE speaker amp.	51	Ballery power	26

Are the fuses OK?

[BOSE AUDIO WITH NAVIGATION]





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< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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YES >> GO TO 2 NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect BOSE speaker amp connector.
- 3. Check voltage between BOSE speaker amp harness connector and ground.

Unit	(+)		(-)	Voltage (approx.)
	Connector	Terminal	()	
BOSE	5400	50	<u> </u>	Battery
speaker amp	B122	51	Ground	voltage

Are the voltage readings as specified?

- YES >> GO TO 3
- NO >> Check harness between BOSE speaker amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.

- 2. Disconnect BOSE speaker amp connector.
- Check continuity between BOSE speaker amp harness connector and ground.

	Terminal No.			
Unit	(·	(+)		Continuity
	Connector	Terminal	(-)	
BOSE	5/00	47	. .	
speaker amp	B122	52	Ground	Yes

Are continuity test results as specified?

YES >> Inspection End.

NO >> Repair harness or connector.

CD CHANGER

CD CHANGER : Diagnosis Procedure

1.CHECK FUSE

Check that the following fuses of the CD changer are not blown.

Unit	Terminals	Signal name	Fuse No.	A
	12	Battery power	24	
CD changer	16	Ignition switch ACC or ON	19	

Are the fuses OK?

YES >> GO TO 2

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

POWER SUPPLY AND GROUND CIRCUIT DSIS > [BOSE AUDIO WITH NAVIGATION]

< COMPONENT DIAGNOSIS >

Check voltage between CD changer harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M42	12	OFF	Battery voltage
ACC power supply	10142	16	ACC	Dattery voltage

Are the voltage readings as specified?

YES >> Inspection End.

NO >> Check harness between CD changer and fuse.

MICROPHONE

MICROPHONE : Diagnosis Procedure

1.CHECK POWER SUPPLY CIRCUIT (MICROPHONE SIDE)

Check voltage between microphone harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch posi- tion	Value (Ap- prox.)
Microphone VCC signal	R7	4	ON	5V

Is proper voltage present?

YES >> GO TO 4

NO >> GO TO 2

2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

- 1. Turn ignition switch OFF.
- 2. Disconnect microphone and AV control unit harness connectors.
- Check continuity between microphone harness connector R7 (A) terminal 4 and AV control unit harness connector M46 (B) terminal 46.

Signal name	Continuity
Microphone VCC signal	Continuity should exist.

 Check continuity between microphone harness connector R7 (A) terminal 4 and ground.

Signal name	Continuity
Microphone VCC signal	Continuity should not exist.

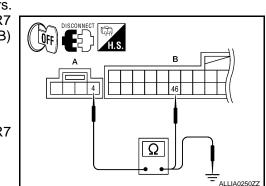
Are the continuity test results as specified?

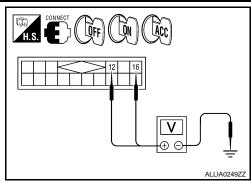
YES >> GO TO 3

NO >> Repair harness or connector.

3.CHECK POWER SUPPLY CIRCUIT (AV CONTROL UNIT SIDE)

- 1. Connect AV control unit harness connector.
- 2. Turn ignition switch to ACC.





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< COMPONENT DIAGNOSIS >

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Microphone VCC signal	M46	46	ACC	5V

Is voltage approximately 5 volts?

YES >> Inspection End.

NO >> Replace AV control unit. Refer to AV-260, "Removal and Installation".

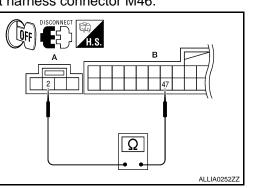
4.CHECK GROUND CIRCUIT

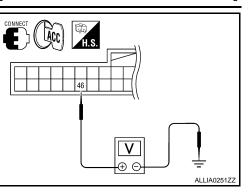
- Turn ignition switch OFF. 1.
- Disconnect microphone harness connector R7 and AV control unit harness connector M46. 2.
- 3. Check continuity between microphone harness connector R7 (A) terminal 2 and AV control unit harness connector M46 (B) terminal 47.

Signal name	Continuity
Ground	Continuity should exist.

Does continuity exist?

- YES >> Inspection End.
- NO >> Repair harness or connector.





AV-195

[BOSE AUDIO WITH NAVIGATION]

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FRONT DOOR SPEAKER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the front door speakers using the audio signal circuits.

Diagnosis Procedure

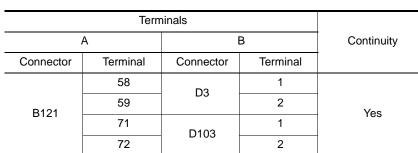
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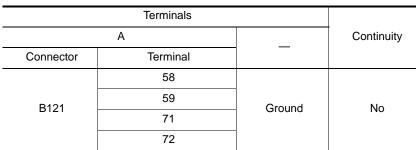
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1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B121 and suspect speaker connector.
- 2. Check continuity between BOSE speaker amp. harness connector B121 (A) and suspect speaker harness connector (B).



3. Check continuity between BOSE speaker amp. harness connector B121 (A) and ground.

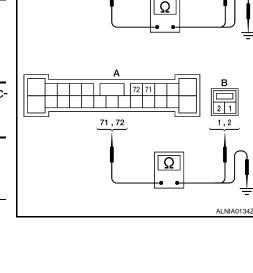


Are continuity test results as specified?

YES >> GO TO 2 NO >> • Check co

- >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

2.FRONT DOOR SPEAKER SIGNAL CHECK



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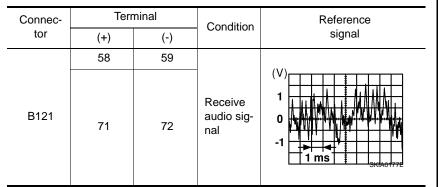
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FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

- 1. Connect BOSE speaker amp. connector B121 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between BOSE speaker amp. harness connector B121 terminals with CONSULT-III or oscilloscope.



Is audio signal voltage as specified?

YES >> Replace suspect speaker. Refer to <u>AV-265</u>, "Removal <u>and Installation"</u>.

NO >> GO TO 3

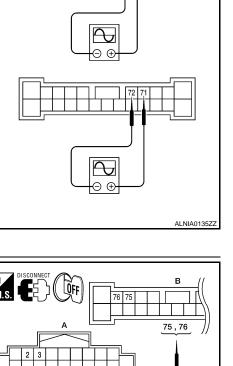
3.HARNESS CHECK

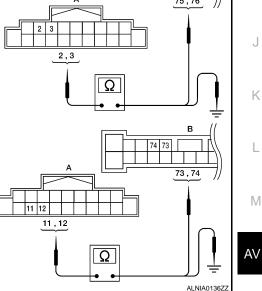
- 1. Disconnect AV control unit connector M47 and BOSE speaker amp. connector B121.
- Check continuity between audio unit harness connector M47 (A) and BOSE speaker amp. harness connector B121 (B).

A B			Continuity	
Connector	Terminal	Connector	Terminal	
M47	2	B121	75	
	3		76	Yes
	11		73	165
	12		74	

3. Check continuity between AV control unit harness connector M47 (A) and ground.

		Continuity	
Connector Terminal			
	2		No
M47	3	Ground	
	11		
	12		





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Are continuity test results as specified?

YES >> GO TO 4

- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.
- **4.**FRONT DOOR SPEAKER SIGNAL CHECK

[BOSE AUDIO WITH NAVIGATION]

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ACC

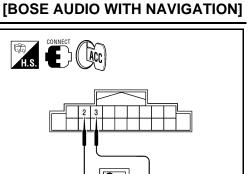
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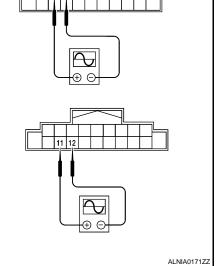
FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

- 1. Connect AV control unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between AV control unit harness connector ter-4. minals with CONSULT-III or oscilloscope.

Terminals Reference Connector Condition signal (+) (-) 2 3 (V Receive 1 M47 audio sig-0 11 12 nal -1 SKIA0177E Are the audio signal voltage readings as specified?





- YES >> Replace BOSE speaker amp. Refer to AV-261,
- "Removal and Installation". NO >> Replace AV control unit. Refer to AV-260, "Removal and Installation".

TWEETER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the tweeters using the audio signal circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B122 and suspect tweeter connector.
- Check continuity between BOSE speaker amp. harness connector B122 (A) and suspect tweeter harness connector (B).

A B			Continuity	
Connector	Terminal	Connector	Terminal	
B122	41	M51	1	Yes
	42		2	
	44	M52	1	163
	43		2	

 Check continuity between BOSE speaker amp. harness connector B122 (A) and ground.

	Continuity		
Connector	Terminal		
	41		No
B122	42	Ground	
	44	Giodila	
	43		

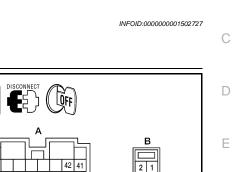
Are continuity test results as specified?

YES >> GO TO 2 NO >> • Check c

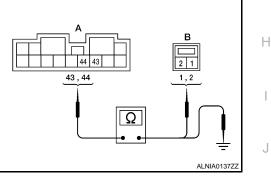
>> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.TWEETER SIGNAL CHECK



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[BOSE AUDIO WITH NAVIGATION]

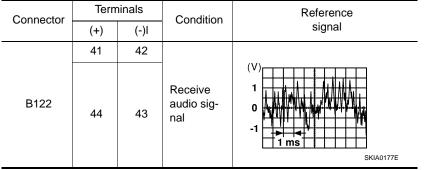
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TWEETER

< COMPONENT DIAGNOSIS >

- 1. Connect BOSE speaker amp. connector B122 and suspect tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between BOSE speaker amp. harness connector B122 terminals with CONSULT-III or oscilloscope.



Are voltage readings as specified?

YES >> Replace suspect tweeter. Refer to <u>AV-263. "Removal</u> and Installation".

3.HARNESS CHECK

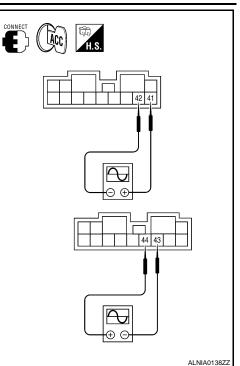
- 1. Disconnect AV control unit connector M47 and BOSE speaker amp. connector B121.
- Check continuity between AV control unit harness connector (A) M47 and BOSE speaker amp. harness connector B121 (B).

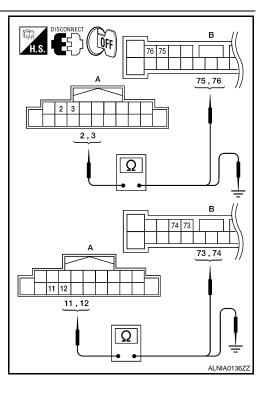
A B			Continuity	
Connector	Terminal	Connector	Terminal	
M47	2	B121	75	
	3		76	Yes
	11		73	165
	12		74	

3. Check continuity between AV control unit harness connector B121 (A) and ground.

	Continuity		
Connector Terminal			
M47	2		
	3	Ground	No
	11		
	12		

[BOSE AUDIO WITH NAVIGATION]





Are continuity test results as specified?

YES >> GO TO 4

- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

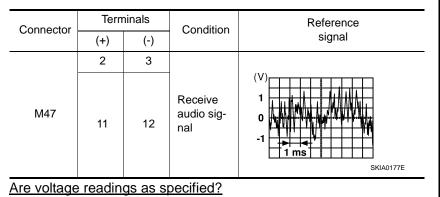
4.TWEETER SIGNAL CHECK

TWEETER

AV-201

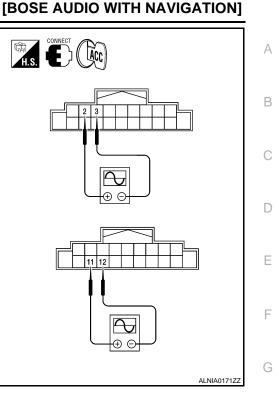
< COMPONENT DIAGNOSIS >

- 1. Connect AV control unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between AV control unit harness connector terminals with CONSULT-III or oscilloscope.





NO >> Replace AV control unit. Refer to <u>AV-260</u>, "<u>Removal and</u> <u>Installation</u>".



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CENTER SPEAKER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the center speaker using the audio signal circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B121 and center speaker connector M151.
- Check continuity between BOSE speaker amp. harness connec-2. tor B121 (A) and center speaker harness connector M151 (B).

A B			Continuity	
Connector	Terminal	Connector	Terminal	
B121	69	M151	1	Yes
	70	INTO T	2	165

Check continuity between BOSE speaker amp. harness connector B121 (A) and ground. Continuity

No

Are continuity to	est results as	specified?	

А

YES >> GO TO 2

Connector

B121

NO

3.

>> • Check connector housings for disconnected or loose terminals.

Ground

Repair harness or connector.

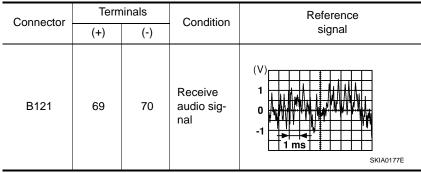
Terminals

Terminal

69

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- 2.CENTER SPEAKER SIGNAL CHECK
- Connect BOSE speaker amp. connector B121 and center 1. speaker connector M151.
- 2. Turn ignition switch to ACC.
- Push "POWER" switch. 3.
- Check the signal between BOSE speaker amp. harness connec-4. tor B121 terminals with CONSULT-III or oscilloscope.



Is the audio signal voltage as specified?

YES >> Replace center speaker. Refer to AV-264, "Removal and Installation".

NO >> GO TO 3

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CENTER SPEAKER

< COMPONENT DIAGNOSIS >

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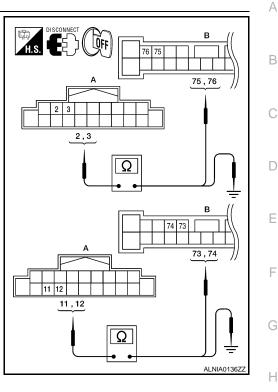


- 1. Disconnect AV control unit connector M47 and BOSE speaker amp. connector B121.
- Check continuity between audio unit harness connector M47 (A) and BOSE speaker amp. harness connector B121 (B).

Terminals				
	A B			Continuity
Connector	Terminal	Connector Terminal		
M47	2	B121	75	
	3		76	Yes
	11		73	165
	12	-	74	

 Check continuity between AV control unit harness connector M47 (A) and ground.

	Continuity			
Connector Terminal				
M47	2		No	
	3	Ground		
	11	Giodila	NO	
	12	-		



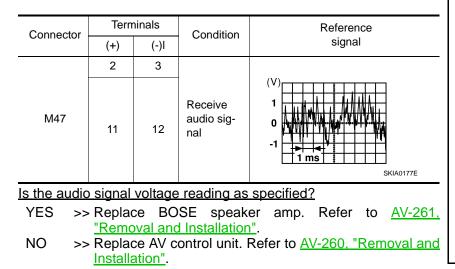
Are continuity test results as specified?

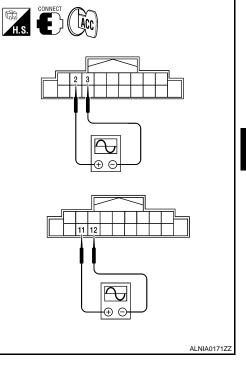
YES >> GO TO 4 NO >> • Check of

>> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

4.CENTER SPEAKER SIGNAL CHECK

- 1. Connect AV control unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M47 terminals with CONSULT-III or oscilloscope.





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REAR DOOR SPEAKER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the rear door speakers using the audio signal circuits.

Diagnosis Procedure

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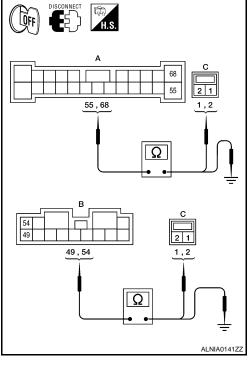
1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connectors B121, B122 and suspect speaker connector.
- Check continuity between BOSE speaker amp. harness connec-2. tors B121 (A) and B122 (B) and suspect speaker harness connector (C).

	Continuity					
Connector	Connector Terminal Connector Terminal					
A: B121	55	C: D202	2			
A. DIZI	68	C. D202	1	Yes		
B: B122	49	C: D302	2	165		
	54	C. D302	1			

3. Check continuity between BOSE speaker amp. harness connectors B121 (A) and B122 (B) and ground.

	BOSE	Continuity			
	Connector	Terminal			
	A: B121	68			
	A. DIZI	55	Ground	No	
_	B: B122	49	Giouna	INO	
	D. D122	54			



Are the continuity test results as specified?

YES >> GO TO 2 NO

>> • Check connector housings for disconnected or loose terminals.

• Repair harness or connector.

2.REAR DOOR SPEAKER SIGNAL CHECK

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REAR DOOR SPEAKER

Reference

signal

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< COMPONENT DIAGNOSIS >

- Connect BOSE speaker amp. connectors B121, B122 and suspect speaker connector.
- 2. Turn ignition switch to ACC.

Terminals

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and Installation".

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3. Push "POWER" switch.

Connector

A: B121

B: B122

YES

Check the signal between BOSE speaker amp. harness connectors (A) B121 and (B) B122 terminals with CONSULT-III or oscilloscope.

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>> Replace suspect speaker. Refer to AV-266, "Removal

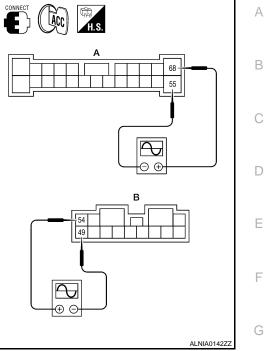
Condition

Receive audio sig-

nal

Is the audio signal voltage readings as specified?



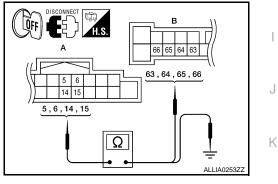


NO $>> \overline{\text{GO TO 3}}$. **3.**HARNESS CHECK

1. Disconnect AV control unit connector M47 and BOSE speaker amp. connector B121.

 Check continuity between AV control unit harness connector M47 (A) and BOSE speaker amp. harness connector B121 (B).

	Terminals				
AV cor	AV control unit BOSE speaker amp.				
Connector	Terminal	Connector Terminal			
M47	5	B121	64		
	6		63	Yes	
	14		66	Tes	
	15		65		



3. Check continuity between AV control unit harness connector M47 (A) and ground.

	Terminals				
A	Continuity				
Connector Terminal					
	5				
M47	6	Ground	No		
	14	Ground			
	15				

Are continuity test results as specified?

YES >> GO TO 4

NO

>> • Check connector housings for disconnected or loose terminals.

• Repair harness or connector.

4.REAR DOOR SPEAKER SIGNAL CHECK

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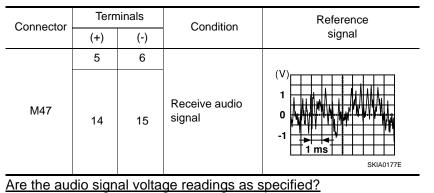


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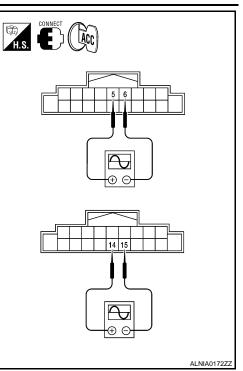
REAR DOOR SPEAKER

< COMPONENT DIAGNOSIS >

- 1. Connect AV control unit connector M47 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between AV control unit harness connector M47 terminals with CONSULT-III or oscilloscope.



- YES >> Replace BOSE speaker amp. Refer to <u>AV-261.</u> <u>"Removal and Installation"</u>.
- NO >> Replace AV control unit. Refer to <u>AV-260, "Removal and</u> <u>Installation"</u>.



< COMPONENT DIAGNOSIS > WOOFER

Description

The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the woofers using the audio signal circuits.

Diagnosis Procedure

1.HARNESS CHECK

- 1. Disconnect BOSE speaker amp. connector B122 and suspect rear subwoofer connector.
- Check continuity between BOSE speaker amp. harness connector B122 (A) and suspect rear subwoofer harness connector (B).

A B				Continuity
Connector	Terminal	Connector	Terminal	
B122	53	B120	1	
	48		2	Yes
	45	B124	1	Tes
	46	5124	2	

 Check continuity between BOSE speaker amp. harness connector B122 (A) and ground.

	Terminals		
	А		Continuity
Connector	Terminal		
	53		
B122	48	Ground	No
DIZZ	45	Giodila	NO
	46		

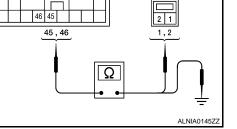


YES >> GO TO 2 NO >> • Check c

>> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.REAR SUBWOOFER SIGNAL CHECK





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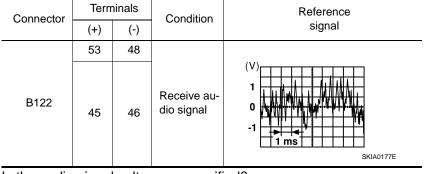
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WOOFER

< COMPONENT DIAGNOSIS >

- 1. Connect BOSE speaker amp. connector B122 and suspect rear subwoofer connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between BOSE speaker amp. harness connector B122 terminals with CONSULT-III or oscilloscope.



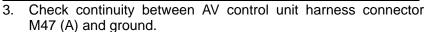
Is the audio signal voltage as specified?

YES >> Replace suspect rear subwoofer. Refer to <u>AV-132</u>. <u>"Removal and Installation"</u>.

3.HARNESS CHECK

- 1. Disconnect AV control unit connector M47 and BOSE speaker amp. connector B121.
- Check continuity between AV control unit harness connector M47 (A) and BOSE speaker amp. harness connector B121 (B).

	A	В.		Continuity
Connector	Terminal	Connector Terminal		Continuity
	5		64	
M47	6	B121	63	Yes
	14		66	165
	15		65	



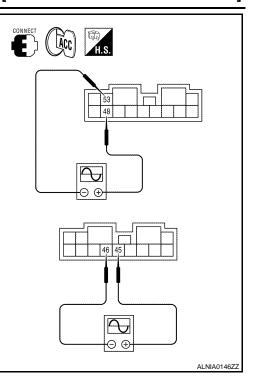
	A		Continuity
Connector Terminal			Continuity
	5		
M47	6	6 Ground	
10147	14	Ground	No
	15		

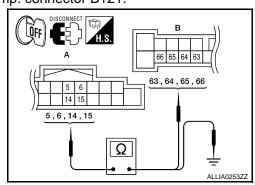
Are continuity test results as specified?

YES >> GO TO 4 NO >> • Check of

- >> Check connector housings for disconnected or loose terminals.
- Repair harness or connector.

4.REAR SUBWOOFER SIGNAL CHECK



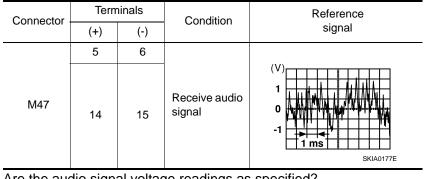


WOOFER

AV-209

< COMPONENT DIAGNOSIS >

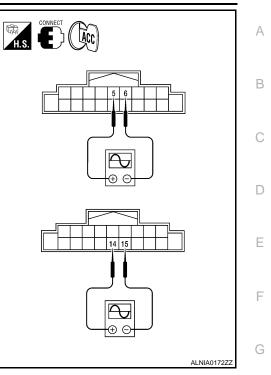
- 1. Connect AV control unit connector M47 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between AV control unit harness connector M47 terminals with CONSULT-III or oscilloscope.



Are the audio signal voltage readings as specified?

- YES >> Replace BOSE speaker amp. Refer to <u>AV-261.</u> <u>"Removal and Installation"</u>.
- NO >> Replace AV control unit. Refer to <u>AV-260, "Removal and</u> <u>Installation"</u>.

[BOSE AUDIO WITH NAVIGATION]



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AMP ON SIGNAL CIRCUIT

Description

When the audio system is turned on, a voltage signal is supplied from the AV control unit to the BOSE speaker amp. When this signal is received, the BOSE speaker amp. will turn on.

Diagnosis Procedure

1.CHECK AMP ON SIGNAL (BOSE SPEAKER AMP)

- 1. Turn audio system ON.
- 2. Check voltage between BOSE speaker amp. harness connector B121 terminal 60 and ground.

60 - Ground

: More than approx. 6.5V

Is voltage greater than 6.5V?

YES >> Inspection End.

NO >> GO TO 2

2. CHECK AMP ON SIGNAL (AV CONTROL UNIT)

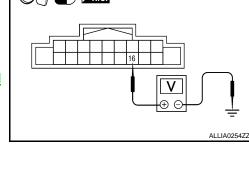
Check voltage between AV control unit harness connector M47 terminal 16 and ground.

16 - Ground

: More than approx. 6.5V

Is voltage approximately 6.5 volts?

- YES >> Repair harness or connector.
- NO >> Replace AV control unit. Refer to <u>AV-260, "Removal and</u> <u>Installation"</u>.



[BOSE AUDIO WITH NAVIGATION]

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STEERING SWITCH

Description

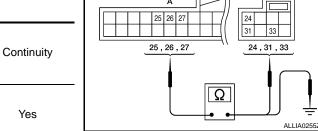
When one of the steering wheel audio control switches is pushed, the resistance in the steering switch circuit В changes depending on which button is pushed.

Diagnosis Procedure

1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M46 and spiral cable connector M30.
- Check continuity between AV control unit connector M46 termi-3. nals 25, 26, and 27 and spiral cable connector M30 terminals 24, 31, and 33.

-			Terminals		
	AV control unit Spiral cable			Continuity	
	Connector	Terminal	Connector		
_		25		24	
	M46	26	M30	33	Yes
		27		31	



Check continuity between AV control unit connector M46 and ground. 4.

	(+)		Continuity
Connector	Terminal	()	
	25		
M46	26	Ground	No
	27		

Are the continuity test results as specified?

YES >> GO TO 2

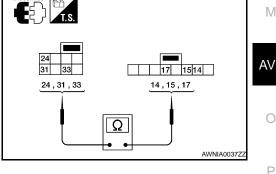
NO >> Repair harness.

2.SPIRAL CABLE CHECK

1. Disconnect spiral cable connector M88.

2. Check continuity between spiral cable harness connector M30 and M88.

Terminals				
Spiral cable				Continuity
Connector	Terminal	Connector	Terminal	
	24		14	
M30	31	M88	15	Yes
	33		17	



Are the continuity test results as specified?

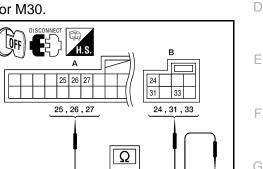
YES >> GO TO 3.

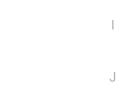
NO >> Replace spiral cable. Refer to SRS-6, "Removal and Installation".

3.CHECK STEERING SWITCH

Check steering switch. Refer to AV-212, "Component Inspection".

Does the steering switch pass inspection?





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STEERING SWITCH

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

YES >> Inspection End. NO >> Replace steering

NO >> Replace steering switch. Refer to <u>AV-270, "Removal and Installation"</u>.

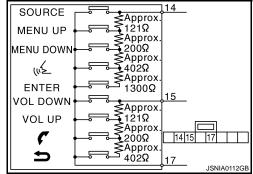
Component Inspection

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Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

: **716 – 730** Ω

Between terminals 14 and 17	
ENTER switch ON	: 2003 – 2043 Ω
տչ switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω



Between terminals 15 and

17	
Switch ON	

switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω

MICROPHONE SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT

Description

Power is supplied to the microphone from the AV control unit. The microphone transmits voice signals to the AV control unit.

Diagnosis Procedure

$1. {\sf CHECK} \ {\sf CONTINUITY} \ {\sf BETWEEN} \ {\sf AV} \ {\sf CONTROL} \ {\sf UNIT} \ {\sf AND} \ {\sf MICROPHONE} \ {\sf CIRCUIT}$

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connector M46 and microphone connector R7.
- Check continuity between AV control unit harness connector M46 (A) terminals 45, 46, 47 and microphone harness connector R7 (B) terminals 1, 2, 4.
 - 45 1 : Continuity should exist.
 - 47 2

46 - 4

- : Continuity should exist.
- : Continuity should exist.
- 4. Check continuity between AV control unit harness connector M46 (A) terminals 45, 46, 47 and ground.

45, 46, 47 - Ground

: Continuity should not exist.

Is inspection result OK?

YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK MICROPHONE VCC VOLTAGE

- 1. Connect AV control unit connector.
- 2. Turn ignition switch ON.
- Check voltage between AV control unit harness connector M46 terminals 46 and 47.

46 - 47

: Approx. 5V

Is inspection result OK?

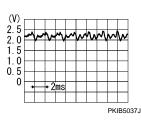
- YES >> GO TO 3
 - NO >> Replace AV control unit. Refer to <u>AV-260, "Removal and</u> <u>Installation"</u>.

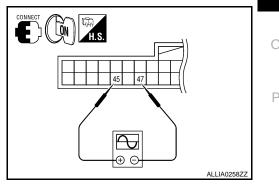


- 1. Connect microphone connector.
- Check signal between AV control unit harness connector M46 terminals 45 and 47.

2

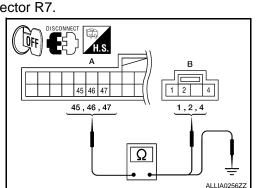


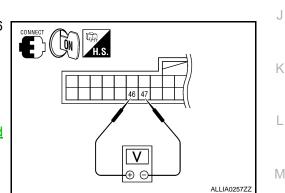




Is inspection result OK?

YES >> Replace AV control unit. Refer to AV-260. "Removal and Installation".





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MICROPHONE SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

NO >> Replace microphone. Refer to <u>AV-271, "Removal and Installation"</u>.

CAMERA IMAGE SIGNAL CIRCUIT (REAR VIEW CAMERA TO CAMERA CON-TROL UNIT)

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

CAMERA IMAGE SIGNAL CIRCUIT (REAR VIEW CAMERA TO CAMERA CONTROL UNIT)

Description

Rear view camera images are transmitted to the rear view camera control unit using the camera image signal circuits.

Diagnosis Procedure

1. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect rear view camera control unit connector and rear view camera connector.
- Check continuity between rear view camera control unit harness connector B31 (A) terminals 9, 10 and rear view camera harness connector B35 (B) terminals 3, 4.
 - 9 4 10 - 3

: Continuity should exist. : Continuity should exist.

- 4. Check continuity between rear view camera control unit harness connector B31 (A) terminals 9, 10 and ground.
 - 9, 10 Ground

: Continuity should not exist.

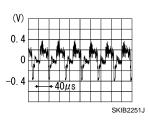
Is inspection result OK?

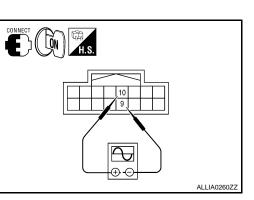
YES >> GO TO 2

- NO >> Repair harness or connector.
- 2.CHECK CAMERA IMAGE SIGNAL
- 1. Connect rear view camera control unit connector and rear view camera connector.
- 2. Turn ignition switch ON.
- Check signal between rear view camera control unit harness connector B31 terminals 10 and 9.

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10 - 9





Is inspection result OK?

- YES >> Replace rear view camera control unit. Refer to <u>AV-275, "Removal and Installation"</u>.
- NO >> Replace rear view camera. Refer to <u>AV-274, "Removal and Installation"</u>.

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CAMERA ON SIGNAL CIRCUIT

Description

When the selector lever is placed in the R position, the rear view camera control unit sends a camera ON signal to the rear view camera.

Diagnosis Procedure

$1. \mathsf{CHECK} \ \mathsf{CAMERA} \ \mathsf{ON} \ \mathsf{SIGNAL} \ \mathsf{CIRCUIT} \ \mathsf{CONTINUITY}$

- 1. Turn ignition switch OFF.
- 2. Disconnect rear view camera control unit connector and rear view camera connector.
- Check continuity between rear view camera control unit harness connector B31 (A) terminal 8 and rear view camera harness connector B35 (B) terminal 1.

8 - 1

: Continuity should exist.

4. Check continuity between rear view camera control unit harness connector B31 (B) terminal 8 and ground.

8 - Ground

: Continuity should not exist.

Is inspection result OK?

YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK CAMERA ON SIGNAL VOLTAGE

- 1. Connect rear view camera control unit connector and rear view camera connector.
- 2. Turn ignition switch ON.
- Check voltage between rear view camera control unit harness connector B31 terminal 8 and ground.

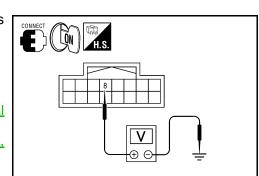
8 - Ground

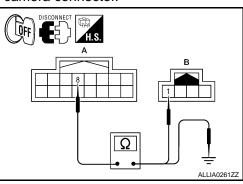
: Approx. 6V

Is inspection result OK?

- YES >> Replace rear view camera. Refer to <u>AV-274. "Removal</u> <u>and Installation"</u>.
- NO >> Replace rear view camera control unit. Refer to <u>AV-275</u>, <u>"Removal and Installation"</u>.

AV-216





[BOSE AUDIO WITH NAVIGATION]

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CAMERA IMAGE SIGNAL CIRCUIT (CAMERA CONTROL UNIT TO AV CON-TROL UNIT)

[BOSE AUDIO WITH NAVIGATION] < COMPONENT DIAGNOSIS > CAMERA IMAGE SIGNAL CIRCUIT (CAMERA CONTROL UNIT TO AV А CONTROL UNIT) Description INFOID:000000001502745 В Rear view camera image signals are transmitted from the rear view camera control unit to the AV control unit using the image signal circuits. Diagnosis Procedure INFOID:000000001502746 1. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY D 1. Turn ignition switch OFF. Disconnect rear view camera control unit connector B31 and AV control unit connector M46. 2. 3. Check continuity between rear view camera control unit harness Ε connector B31 (A) terminals 11, 12 and AV control unit harness connector M46 (B) terminals 34, 55. 11 - 55 : Continuity should exist. F 12 - 34 : Continuity should exist. 11,12 34.55 Check continuity between rear view camera control unit harness connector B31 (A) terminals 11, 12 and ground. 11, 12 - Ground : Continuity should not exist. ALLIA0263ZZ Н Is inspection result OK? YES >> GO TO 2 NO >> Repair harness or connector. 2.CHECK CAMERA IMAGE SIGNAL 1. Connect rear view camera control unit connector and AV control unit connector. Turn ignition switch ON. 2. Check signal between rear view camera control unit harness 3. connector B31 terminals 12 and 11. ÔN Æ Κ 12 - 11 ÷ (V L -0 Μ θE SKIB2251J ALLIA0264ZZ Is inspection result OK? YES >> Replace AV control unit. Refer to AV-260, "Removal and Installation". AV NO >> Replace rear view camera control unit. Refer to AV-275, "Removal and Installation".

< COMPONENT DIAGNOSIS >

REVERSE SIGNAL CIRCUIT

Description

A reverse signal is supplied from the back-up lamp relay to the rear view camera control unit. When this signal is received, the display shows a view to the rear of the vehicle.

Diagnosis Procedure

1.BACK-UP LAMP INSPECTION

1. Turn ignition switch ON.

2. Shift selector lever to R position.

Does back-up lamp illuminate?

YES >> GO TO 2

NO >> Check back-up lamp system. Refer to <u>EXL-4, "Work Flow"</u>.

2.CHECK REVERSE POSITION INPUT SIGNAL

With CONSULT-III

Select "DATA MONITOR" of "REARVIEW CAMERA". Operate ignition switch with "R POSI SIG" of "DATA MONITOR" and check operate status.

Without CONSULT-III

- 1. Turn ignition switch OFF.
- 2. Disconnect rear view camera control unit connector.
- 3. Turn ignition switch ON.
- 4. Shift selector lever to R position.
- 5. Check voltage between rear view camera control unit harness connector B31 terminal 4 and ground.

Battery voltage should exist.

Does battery voltage exist?

- YES >> Inspection End.
- NO >> Check harness for open or short between rear view camera control unit and back-up lamp relay.



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Rear view camera control unit connector

< ECU DIAGNOSIS >

ECU DIAGNOSIS AV CONTROL UNIT

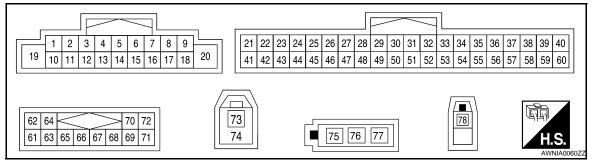
Reference Value

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III data monitor item

Display Item	Dis- play	Vehicle status	Remarks
VHCL SPD SIG	ON	Vehicle speed > 0 km/h (0 MPH)	
VICE OF DISIG	OFF	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed. This is
PKB SIG	ON	Parking brake is applied.	normal.
FKD SIG	OFF	Parking brake is released.	
ILLUM SIG	ON	Block the light beam from the auto light optical sensor when the light SW is ON .	
	OFF	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	ON	Ignition switch ON	-
	OFF	Ignition switch in ACC position	
	ON	Selector lever in R position	Changes in indication may be delayed. This is
REV SIG	OFF	Selector lever in any position other than R	normal.

TERMINAL LAYOUT



PHYSICAL VALUES

	ninal color)	Description			Condition	Reference value				
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	AV			
			signal Input switch		Parking brake ON	0V				
1 (G/R)	Ground	Parking brake signal	Input	switch ON	Parking brake OFF	Battery voltage	0			
2 (G)	3 (R)	Sound signal front LH	Output	Ignition switch ON		(V) 1 0 -1 • 2ms SKIB3609E	Ρ			
4	_	Shield	—		—	_				

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	ninal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
5 (GR/V)	6 (W/L)	Sound signal rear LH	Output	Ignition switch ON		(V) 1 0 -1 • 2ms SKIB3609E
7 (V/Y)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage
8 (V/W)	Ground	Vehicle speed (8-pulse) signal	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25MPH)	(V) 6 4 2 0 •••20ms SKIA6649J
9 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is OFF. Lighting switch is ON.	0V Battery voltage
10 (G)	Ground	Ignition signal	Input	Ignition switch ON	_	Battery voltage
11 (B)	12 (W)	Sound signal front RH	Output	Ignition switch ON		(V) 1 0 -1 + 2ms SKIB3609E
13		Shield		_	_	_
14 (V)	15 (LG)	Sound signal rear RH	Output	Ignition switch ON		(V) 1 0 -1 * * 2ms SKIB3609E
16 (B/P)	Ground	Amp. ON signal	Output	Ignition switch ON	_	Battery voltage
17 (P/B)	Ground	Reverse signal	Input	Ignition switch ON	R position	Battery voltage
18 (R/Y)	Ground	Illumination control	Input	OFF	_	Refer to INL-9, "System Descrip- tion".
19 (B)	Ground	Ground	_	Ignition switch ON		٥V

< ECU DIAGNOSIS >

	ninal color)	Description			Condition	Reference value	A
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	
20 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	В
24 (L)	_	CAN-H	Input/ Output		—	—	С
					Keep pressing SOURCE switch.	0V	D
					Keep pressing MENU UP switch.	1V	
25 (W/G)	26 (L/B)	Steering switch signal 1	Input	Ignition switch	Keep pressing MENU DOWN switch.	2V	Е
				ON	Keep pressing _w ≨ switch	3V	
					Keep pressing ENTER switch.	4V	F
					Except for above.	5V	0
26 (L/B)	Ground	Steering switch signal ground	_	Ignition switch ON	—	0V	G
					Keep pressing VOL DOWN switch.	0V	Н
27 (GR/L)	26 (L/B)	Steering switch signal 2	Input	Ignition switch	Keep pressing VOL UP switch.	1V	
27 (GR/L)	20 (L/D)	Steering Switch Signal 2	input	ON	Keep pressing 🌈 switch.	2V	
					Keep pressing 🗲 switch.	3V	J
					Except for above.	5V	
28		Shield			—	_	K
31 (W/R)	Ground	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is select- ed	(V) 1 0 -1 • 2ms SKIB3609E	L
32 (W)	Ground	AUX ground		Ignition switch ON	_	0V	AV
33 (W/L)	Ground	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is select- ed	(V) 1 0 -1 • 2ms SKIB3609E	O

< ECU DIAGNOSIS >

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
34 (W)	Ground	Camera image signal	Input	lgnition switch ON	Rear view camera image displayed	(V) 0.4 0 −0.4 • 40µs SKiB2251J
35		Shield			_	_
44 (P)		CAN-L	Input/ Output	—	_	_
45 (B/R)	Ground	Microphone signal	Input	Ignition switch ON	_	(V) 2. 0 1. 5 1. 0 0. 5 0 • • 2ms • • PKIB5037J
46 (R/L)	Ground	Microphone VCC	Output	Ignition switch ON	_	5V
47 (R/B)	Ground	Microphone ground		Ignition switch ON	_	0V
48	—	Shield	_	_	—	—
53 (V/G)	Ground	Camera-connection rec-	Input	Ignition switch	Connected to camera con- trol unit connector	0V
()		ognition signal	•	ON	Not connected to camera control unit connector	5V
55 (R)	Ground	Camera image signal	Input	Ignition switch ON	Rear view camera image displayed	(V) 0.4 −0.4 ••••40µs skiB2261J
62 (Y/L)	61 (W/L)	CD changer sound sig- nal LH	Input	Ignition switch ON	_	(V) 1 0 -1 • • 2 ms SKIB3609E
64 (Y/G)	63 (BR/L)	CD changer sound sig- nal RH	Input	Ignition switch ON	_	(V) 1 0 -1 • • 2ms SKIB3609E

< ECU DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

	minal color)	Description			Condition	Reference value
+	-	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
65	—	Shield	—	—	_	
66	—	Shield	—	—	—	_
69 (B)	Ground	Communication signal (CD→CONT)	Input	Ignition switch ON		(V) 10 0 -10 • • 1ms SKIA9300J
70 (G)	Ground	Communication signal (CONT→CD)	Input	Ignition switch ON		(V) 10 0 -10 + 1ms SKIA9301J
72 (R)	Ground	Request signal (CD→CONT)	Output	Ignition switch ON	_	(V) 10 0 −10 + 10ms SKIA9299J
73 (B)	_	GPS signal	Input	Ignition switch ACC	Not connected to GPS an- tenna connector	5V
74 (B)	_	Shield			—	—
75 (B)	Ground	Antenna amp. supply	Output	Ignition switch ACC	_	Battery voltage
76 (B)		Main antenna	Input		_	—
78 (B)	Ground	Satellite antenna signal	Input	Ignition switch ACC	Not connected to satellite antenna connector	5V

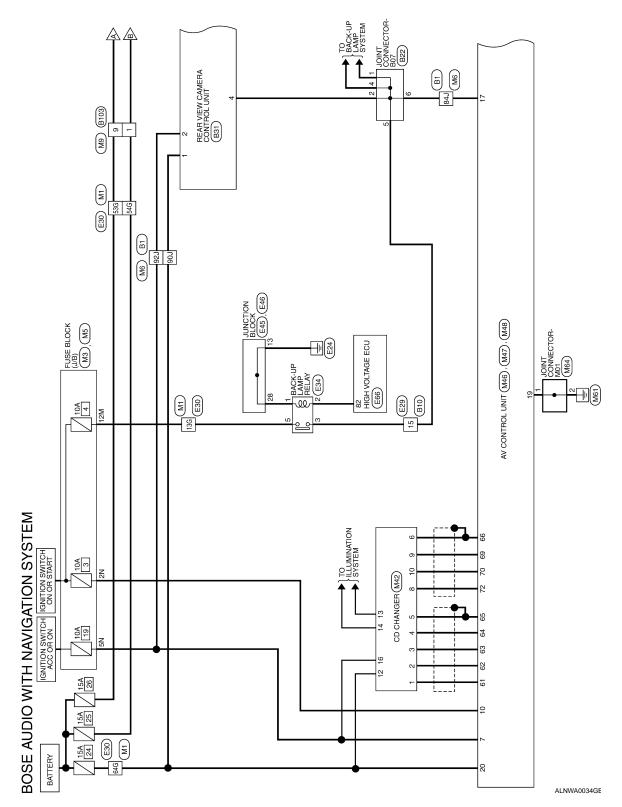
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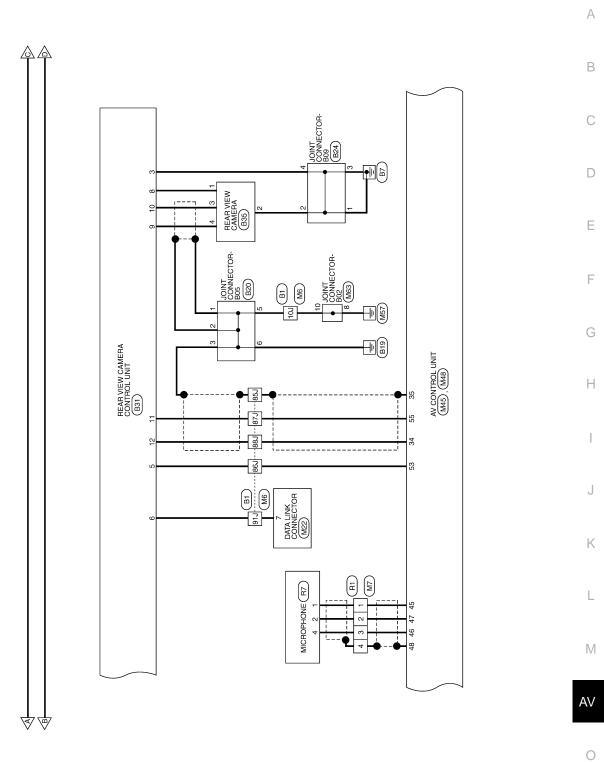
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Wiring Diagram

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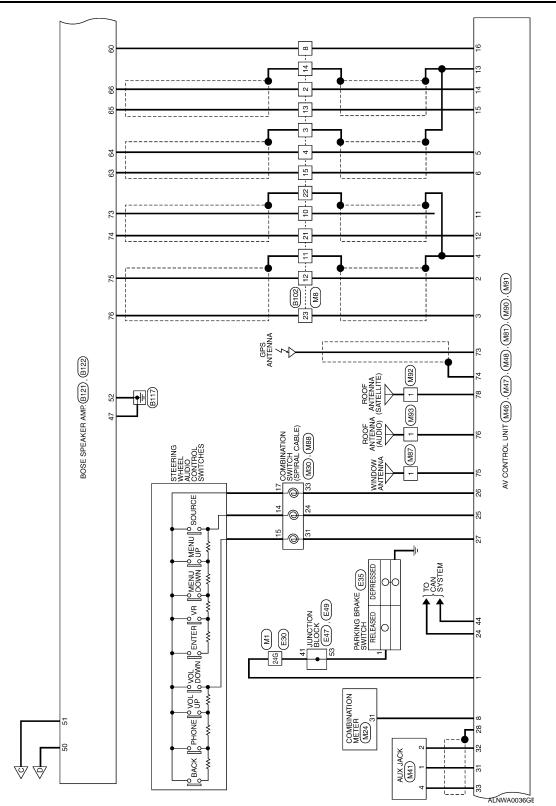
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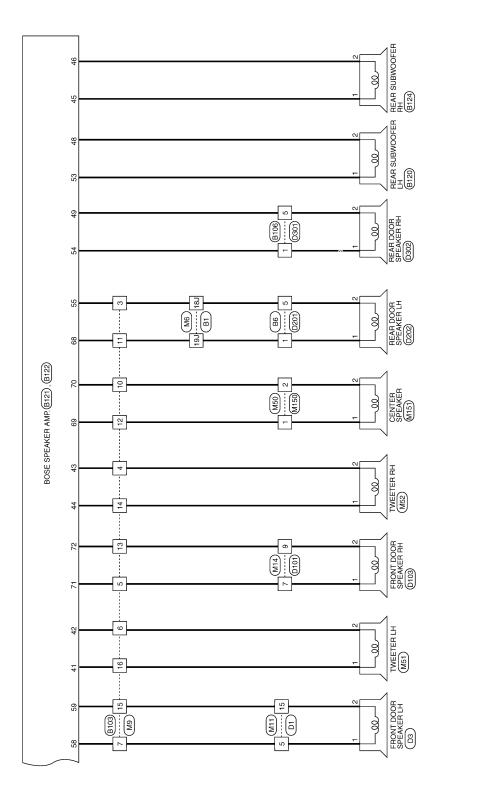
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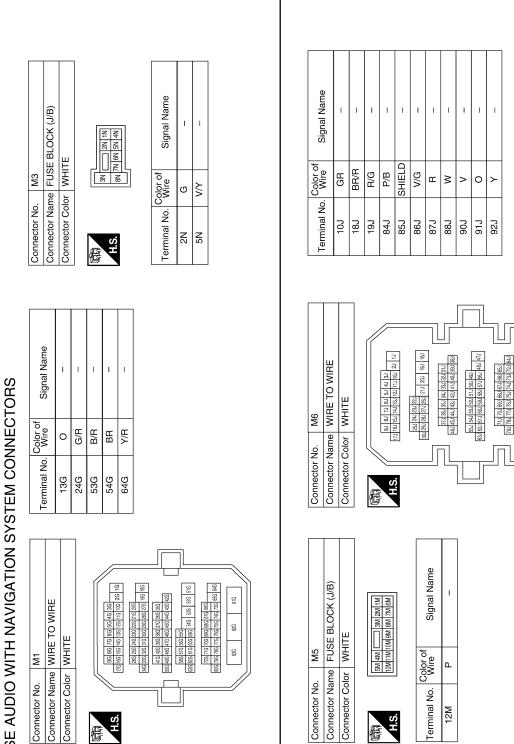
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BOSE AUDIO WITH NAVIGATION SYSTEM CONNECTORS

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87J 86J 85J 84J 92J 91J 90J 89J 88J 83J 82J 81J 80J

99J 98J 97J 96J 95J 94J 93J

AV CONTROL UNIT

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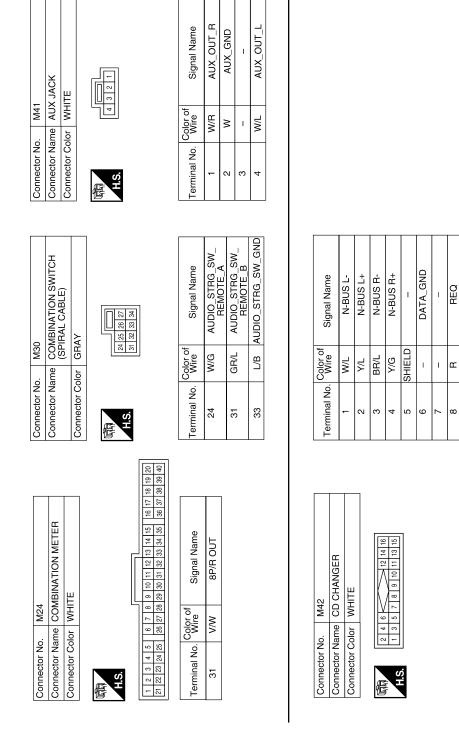
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	-	Connector Color BROWN	2 1 7 6 5 4 3 2 1 16 15 14 13 12 11 10 9 8 4 13 12 11 10 9 8	ne Terminal No. Wire Signal Name	1 BR -		GR/L	52 GW		9 B/R -	10 O/B –	11 R/G –		13 BR –	_		16 LG –	Connector No. M22	Connector Name DATA LINK CONNECTOR	Connector Color WHITE	(項] H.S.	Terminal No. Color of Signal Name	0	-	
Connector No. M8		Connector Color WHITE	(11) 12 11 10 9 8 7 6 5 4 3 2 24 23 22 21 20 19 18 17 16 15 14	Terminal No. Color of Signal Name	2	3 SHIELD –		B/P	10 B		13 LG –	14 SHIELD –	15 W/L –	21 W -	22 SHIELD –	23 R –		Connector No. M14	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S. 1 2 mm 3 4 5 6 7 8 9 10	Terminal No. Color of Signal Name	G/W	9 BR	
Connector No. M7	Connector Name WIRE TO WIRE	Connector Color WHITE	HS	Terminal No. Color of Signal Name	1 B/R –	2 R/B –		4 SHIELD –										Connector No. M11	Connector Name WIRE TO WIRE	Connector Color WHITE	123 <u>1112 3 1112 13 14 15 6 7</u> 1311 12 13 14 15 16 7	Terminal No. Color of Signal Name	N		

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AV CONTROL UNIT

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Connector No.	M46		Color of	i	-		Color of	i
Connector Name	AV CONTROL UNIT	I erminal No.	Wire	signal Name	Iermir	l erminal No.	Wire	2 D
Connector Color		29	1	Ι	45		B/R	-
		30	ı	1	46	6	R/L	[
f		31	W/R		47		R/B	2
		32	N	AUX_GND	48	_	SHIELD	
01		33	M/L	AUX_IN_L	49		1	
21 22 23 24 25 26 27	28 29 30 31 32 33 34 35 36 37 38 39	34	N	COMP_IN +	50		1	
41 42 43 44 45 46 4	42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	35	SHIELD	I	51		I	
Torminol No Col	Color of Sized Name	36	ı	I	52		I	
		37	1	1	23	_	V/G	Ъ.
21	1	38	ı	I	54	_	1	
22	1	39	ı	1	55		æ	
23	1	40	1	1	56	6	1	
24	L V-CAN_H	41	1	1	57		1	
25 V	W/G STRG_SW_SIG_1	42	1	1	28	_	1	
26 L	L/B STRG_SW_GND	43	1	1	20		1	
27 G	GR/L STRG_SW_SIG_2	44	٩	V-CAN I	60			
28 SH	SHIELD –							
Connector No.	M47	Terminal No.	Color of	Signal Name				
Connector Name	AV CONTROL UNIT			2				
Connector Color	WHITE	7	٨٧	ACC				
	-	8	W/N	SPEED (8P)				
Æ		6	R/L	ILL				
ľ	1 2 3 4 5 6 7 8 9	10	IJ	IGN				
H.S. 19	14 15 16 17 0	÷	ď	FB BH ±				

Signal Name	ACC	SPEED (8P)	ILL	IGN	FR_RH +	FR_RH -	I	RR_RH +	RR_RH -	AMP_ON	RV	ILL_CONT	GND	B+
Color of Wire	λ/λ	W/N	R/L	ŋ	В	Μ	SHIELD	>	ГG	B/P	P/B	R/Y	В	Y/R
Terminal No.	7	8	6	10	11	12	13	14	15	16	17	18	19	20

Signa			AL	AL	AL	8										Ņ
Color of Wire	1	ı	W/R	×	W/L	×	SHIELD	ı	I	I	I	I	I	I	I	Ч
Terminal No.	29	30	31	32	33	34	35	36	37	38	68	40	41	42	43	44
					ſ		29 60									

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39 40 59 60						_					
20 31 32 33 34 35 36 37 38 50 51 52 53 54 55 56 66 57 58	-	Signal Name	I	-		V-CAN_H	STRG_SW_SIG_1	STRG_SW_GND	STRG_SW_SIG_2	I	
26 27 28 46 47 48		Color of Wire	I	I	I	_	W/G	L/B	GR/L	SHIELD	
(現 H.S. 21 22 23 24 25 41 42 43 44 45		Terminal No.	21	22	23	24	25	26	27	28	



	Signal Name	PKB	FR_LH +	FR_LH -	I	RR_LH +
21 11 01	Color of Wire	G/R	5	щ	SHIELD	GR/V
2	erminal No.	۰,	2	в	4	5

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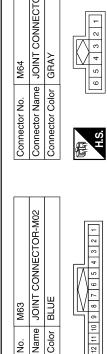
[BOSE AUDIO WITH NAVIGATION]

gnal Name

MIC_IN+ MIC_+B MIC_GND

I I T I

Connector No. M51 Connector Name TWEETER LH Connector Color BROWN	(月) H.S.		Terminal No. Wire Signal Name		ے در	Z B/X -									Connector No. M64	Connector Name JOINT CONNECTOR-M01	Connector Color GRAY
Connector No. M50 Connector Name WIRE TO WIRE Connector Color WHITE	H.S.		Terminal No. Wire Signal Name			- 0/B									Connector No. M63	Connector Name JOINT CONNECTOR-M02	Connector Color BLUE
M48 AV CONTROL UNIT GRAY	61 63 65 66 67 68 69 71	c of Signal Name	L N-BUS_L -	- N-BUS_L +	'L N-BUS_R -	G N-BUS_R+		DATA_GND	I	I	RX	TX	I	REQ2	M52	TWEETER RH	BROWN
Connector No.M48Connector NameAV CCConnector ColorGRAY	低日 H.S.	Terminal No. Wire	61 W/L	62 Y/L	63 BR/L	64 Y/G	65 SHIELD	- 99	67 –	- 68	69 B	70 G	71 –	72 R	Connector No.	Connector Name TWEETER RH	Connector Color BROWN



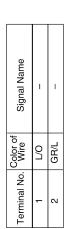
No. Color of Wire B B	Signal Name	-	I
° N	Color of Wire	В	в
Terminal 1 2	Terminal No.	÷	2

	Signal Name
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Color of Wire
H.S.	Terminal No.

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H.S. E

Signal Nam	I	I	
Color of Wire	В	GR	
Terminal No.	8	10	



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		A			
M88 COMBINATION SWITCH (SPIRAL CABLE) GRAY GRAY re f Remote A Remote A Remote B R GND	Signal Name	B			
M92		D			
Connector No. M8 Connector Name CO Connector Color GR Connector Color GR 14 W 17 BR 17 BR 17 BR	Connector Name ROOF ANTENNA Connector Color BROWN Terminal No. Color of Signal Ne 1 B	E			
	ŎŬŬ Ĕ	F			
		G			
Signal Name	Connector Name AV CONTROL UNIT Connector Color VIOLET	Η			
M91	Color VIO B B	I			
Connector No. M87 Connector Name WINDOW ANTENNA Connector Name WINDOW ANTENNA Connector Name WINDOW ANTENNA Terminal No. Color of Wire Signal Name 1 B - Connector No. M91	Connector Name Connector Color H.S. Terminal No. Col 78	J			
		Κ			
Connector No. M81 Connector Name AV CONTROL UNIT Connector Name AV CONTROL UNIT Connector Name AV SONTROL UNIT Terminal No. GRAY 75 B 77 - 77 -	Connector Name AV CONTROL UNIT Connector Color GRAY	L			
M81 AV CONTR GRAY Fine B MA MA M90	GRAY GRAY	Μ			
or No. Color GRA M81	Connector Name AV Connector Color GR H.S. 73 B 74 B 74 B	٩V			
Connector No. Connector Name Connector Color T5 75 77 Connector No.	Connector No Connector Co Terminal No. 73 74	0			
1	ALNIA0121GB	Ρ			
		-			

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[BOSE AUDIO WITH NAVIGATION]

AV-233

Connector No. M151 Connector Name CENTER SPEAKER Connector Color BROWN	Terminal No. Color of Wire Signal Name 1 B/P - 2 O/B -	Connector No. E34 Connector Name BACK-UP LAMP RELAY Connector Color BLUE	Terminal No. Color of Wire Signal Name 1 O/B - 2 Y - 3 P/B - 5 O -	
so te TO WIRE	Signal Name -	E30 E30 e WIRE TO WIRE r WHITE ass.def 56160 To 180 1c0 25160 To 180 1c0 250 To 2000 Bad 2561 260 1c0 250 To 2000 Bad 2561 260	450 350 <td>Signal Name</td>	Signal Name
0. M150 ame WIRE T blor WHITE	Color of Wire B/P O/B		100 000 000 000 000 000 000 000 000 000	Color of Wire O G/R B/R BR
Connector No. M150 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No.	Connector No. E30 Connector Name WIRE TO WIRE Connector Color WHITE		Terminal No. 13G 24G 53G 54G
Connector No. M93 Connector Name ROOF ANTENNA Connector Color WHITE	Terminal No. Color of Signal Name	Connector No. E29 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Color WHITE In 12 11 10 9 8	Terminal No. Color of Signal Name	ALNIAO

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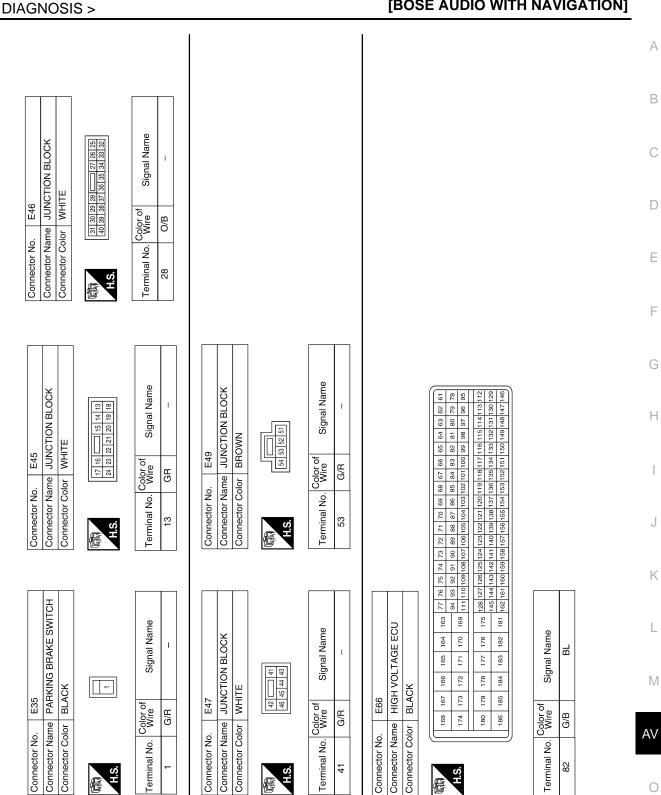
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AV CONTROL UNIT

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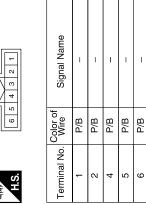
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AV CONTROL UNIT

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Connector No. B6 Connector Name WIRE TO WIRE	Connector Color WHITE			S					Torminal Na Color of Signal Nama	wire	1 O/B –		Connector No. B22 Connector Name JOINT CONNECTOR-B07 Connector Color GRAY
Terminal No. Color of Signal Name	10J GR –	18J BR/B –	19J R/G –	84J P/B –	85J SHIELD –	86J V/G –	87J R –	- W B8J	- A PO6	91) 0 -	92J Y -		Connector No. B20 Connector Name JOINT CONNECTOR-B05 Connector Color GRAY
Connector No. B1 Connector Name WIRE TO WIRE	Connector Color WHITE			T	11 21 120 120 120 120 120 120 120 120 150 150 150 150		R.	311 323 334 354 357 367 377 377 377 377 377 377 377 377 37		471 484 584 531 581 531 581 551 551 551 551 551 551 551 551 55			Connector No. B10 Connector Name WIRE TO WIRE Connector Color WHITE Image: State of the state of



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Signal Name	I	-	Ι	I	I
Color of Wire	GR	GR	GR	GR	в

Terminal No.

Signal Name Т

Terminal No. Color of Wire

P/B

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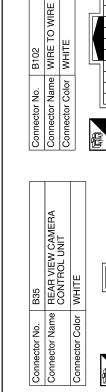
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Color of Wire	>	٢	>	в	P/B	V/G	0	GR	7	
Terminal No. Wire	,	_	2	ю	4	5	9	8	6	
Connector No. B31	Connector Name REAR VIEW CAMERA		Connector Color WHITE			H.S. 2 4 6 8 10 12 14 16 1 3 5 7 0 11 13 15				
Connector No. B24	Connector Name JOINT CONNECTOR-B09	Connector Color GRAY						Terminal No Color of Signal Name		(

Signal Name	-	-	-	-	
Color of Wire	в	В	В	В	
Terminal No. Wire	Ļ	2	е	4	



AV-237

B102

1234	
同 H.S.	

Signal Name	CAMERA ON	GND	COMP +	COMP -
Color of Wire	GR	в	٩	L
Terminal No.	-	2	e	4

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	-	2	3	4	5	9	8	6	
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DDL (K-LINE) CAMERA ON

CAMERA + COMP -COMP +

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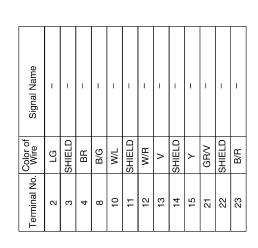
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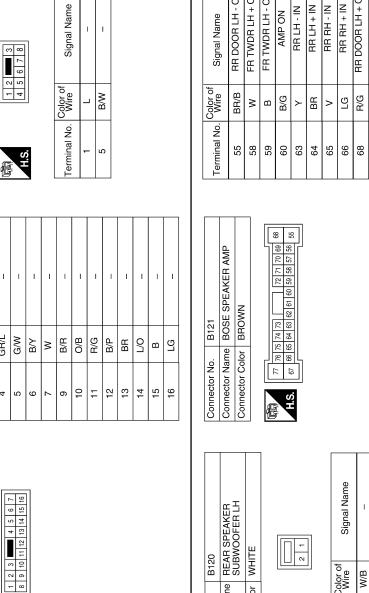
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AV CONTROL UNIT

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Signal Name

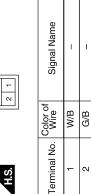
+ В



Signal Name	RR DOOR LH - OUT	FR TWDR LH + OUT	FR TWDR LH - OUT	AMP ON	RR LH - IN	RR LH + IN	NI - HA AA	NI + HA AA	RR DOOR LH + OUT	INST CTR TWDR + OUT	INST CTR TWDR - OUT	FR DOOR RH + OUT
Color of Wire	BR/B	3	в	B/G	≻	ВВ	>	Ľ	R/G	B/P	O/B	G/W
Terminal No.	55	58	59	60	63	64	65	66	68	69	20	71

Signal Name	I	I	I	I	1	I	I	I	I	I	I	I	I	I
Color of Wire	BR	BR/B	GR/L	G/W	Βγ	×	B/R	O/B	R/G	B/P	BR	D/J	в	ГG
Terminal No. Color of Wire	-	e	4	5	9	7	6	10	1	12	13	14	15	16

ပိ	ပိပြိ		
B120	REAR SPEAKER SUBWOOFER LH	HITE	
Connector No. B	Connector Name R	Connector Color WHITE	围 H.S.



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[BOSE AUDIO WITH NAVIGATION]

FR DOOR RH - OUT

FR RH + IN

FR LH + IN FR LH - IN

FR RH - IN

GR/V W/R B/R

W/L

73 74 75

ВВ

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AV CONTROL UNIT

< ECU DIAGNOSIS >

Connector Name WIRE TO WIRE

Connector Name WIRE TO WIRE Connector Color BROWN

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B103

Connector No.

Connector No. B106

Connector Color WHITE

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AV-238

Connector No. B124 Connector Name REAR SUBWOOFER RH	Connector Color WHITE	_		HS 2 1		-	Terminal No. Wire Signal Name	BR/W	a a a	5					Connector No. D101		H.S.	Terminal No Color of Sirnal Nama	ellw G/W				
Terminal No. Color of Signal Name	41 LG FR TWDR LH + OUT					BR			49 B/W RR DOOR RH - OUT	50 BR BAT	51 B/R BAT	52 B GND	53 W/B LH WOOFER +OUT	54 L RR DOOR RH + OUT	Connector No. D3		H.S.	Terminal No. Color of Sinnal Name					
Connector No. B122	Connector Narrie BOSE SPEANEN AMP Connector Color BROWN		Ľ	54 53 52 51 50 AD AD AD AD AD AD AD	74 64 40 47 40 47										Connector No. D1	_	HS.	Tarminal No Color of Sirnal Name		: @			

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[BOSE AUDIO WITH NAVIGATION]

AV-239

Connector No. D103 Connector Name FRONT DOOR SPEAKER RH Connector Color BROWN	Connector No. D201 Connector Name WIRE TO WIRE Connector Color WHITE	Connector No.D202Connector NameREAR DOOR SPEAKER LHConnector ColorBROWN
H.S.	(項) H.S.	H.S.
Terminal No.Color of WireSignal Name1G/W-2BR-	Terminal No. Color of Wire Signal Name 1 O/B - 5 W/R -	Terminal No. Color of Wire Signal Name 1 O/B - 2 W/R -
Connector No.D301Connector NameWIRE TO WIREConnector ColorWHITE	Connector No. D302 Connector Name REAR DOOR SPEAKER RH Connector Color BROWN	Connector No.R1Connector NameWIRE TO WIREConnector ColorWHITE
H.S.	HS.	H.S. 16 15 14 13 12 11 10 9
Terminal No. Color of Wire Signal Name 1 L - 5 B/W -	Terminal No. Color of Wire Signal Name 1 L - 2 B/W -	Terminal No.Color of WireSignal Name1W-2R-3B-4SHIELD-
Connector No. R7 Connector Name MICROPHONE Connector Color WHITE	Terminal No.Color of WireSignal Name1WSIG2RGND4BVCC	

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[BOSE AUDIO WITH NAVIGATION]

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DTC Index

[BOSE AUDIO WITH NAVIGATION]

А

CONSULT-III display	Malfunction	Reference page
CAN COMM CIRCUIT [U1000]	When AV control unit is not transmitting or receiving CAN communication signals for 2 seconds or more.	<u>AV-166</u>
CONTROL UNIT (CAN) [U1010]	When a malfunction is detected during initial diagnosis for CAN controller of each control unit.	<u>AV-167</u>
Cont Unit FLASH- ROM U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	<u>AV-260</u>
GYRO NO CONN U1201]	An internal malfunction is detected in AV control unit (gyrocompass disconnection).	<u>AV-260</u>
GPS COMM U1204]	An internal malfunction is detected in AV control unit (GPS malfunction).	<u>AV-260</u>
GPS ROM U1205]	An internal malfunction is detected in AV control unit (GPS malfunction).	<u>AV-260</u>
GPS RAM U1206]	An internal malfunction is detected in AV control unit (GPS malfunction).	<u>AV-260</u>
GPS RTC U1207]	An internal malfunction is detected in AV control unit (GPS malfunction).	<u>AV-260</u>
OVD-ROM COMM U1208]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-174</u>
OVD-ROM READ U1209]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-175</u>
OVD-ROM DISC U120A]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-176</u>
OVD-ROM MECHA DETECT U120C]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-177</u>
OVD-ROM MECHA U120D]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-178</u>
DVD-ROM SEEK U1210]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-179</u>
OVD-ROM DATA FORWARD U1212]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-180</u>
DVD-ROM DATA U1213]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-181</u>
OVD-ROM TIMEOUT U1214]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-182</u>
DVD-ROM LOAD J1215]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-183</u>
CAN CONT U1216]	An internal malfunction is detected in AV control unit (CAN controller).	<u>AV-260</u>
BLUETOOTH CONN U1217]	An internal malfunction is detected in AV control unit (Bluetooth module connection malfunc- tion).	<u>AV-260</u>
(M SERIAL COMM U1220]	An internal malfunction is detected in AV control unit (satellite radio tuner communication mal- function).	<u>AV-260</u>

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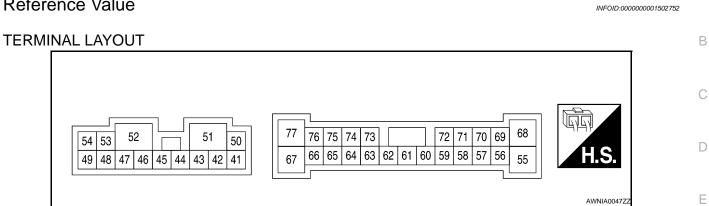
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CONSULT-III display	Malfunction	Reference page
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	<u>AV-187</u>
N-BUS CD CHG CONN [U124C]	 A malfunction is detected in CD changer power supply and ground circuits Malfunction occurs in request signal circuit. (Between CD changer and AV control unit) Malfunction occurs in communication signal circuit. (Between CD changer and AV control unit) 	<u>AV-188</u>

BOSE SPEAKER AMP

Reference Value

[BOSE AUDIO WITH NAVIGATION]



PHYSICAL VALUES

	ninal color)	Description		Condition	Reference value
+	-	Signal name	Input/Output		(Approx.)
41 (LG)	42 (B/Y)	Sound signal front tweeter LH	Output	Ignition switch ON	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
44 (L/O)	43 (GR/L)	Sound signal front tweeter RH	Output	Ignition switch ON	(V) 1 -1 * 2ms SKIB3609E
45 (BR/W)	46 (BR)	Sound signal woofer RH	Output	Ignition switch ON	(V) 1 0 -1 • 2ms SKIB3609E
47 (B/L)	Ground	GND	_	Ignition switch ON	0V
50 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
51 (B/R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
52 (B)	Ground	GND	_	Ignition switch ON	0V

BOSE SPEAKER AMP

< ECU DIAGNOSIS >

	ninal color)	Description		Condition	Reference value
+	_	Signal name	Input/Output		(Approx.)
53 (W/B)	48 (G/B)	Sound signal woofer LH	Output	Ignition switch ON	(V) 1 0 -1 * 2ms SKIB3609E
54 (L)	49 (B/W)	Sound signal rear door RH	Output	Ignition switch ON	(V) 1 0 -1 • 2ms SKIB3609E
58 (W)	59 (B)	Sound signal front door speaker LH	Output	Ignition switch ON	(V) 1 0 -1 • 2ms SKIB3609E
60 (B/G)	Ground	Amp. ON signal	Input	Ignition switch ACC	Battery voltage
64 (BR)	63 (Y)	Sound signal rear LH	Input	Ignition switch ON	(V) 1 0 -1 • 2ms SKIB3609E
66 (LG)	65 (V)	Sound signal rear RH	Input	Ignition switch ON	(V) 1 0 -1 •••2ms SKIB3609E
68 (R/G)	55 (BR/B)	Sound signal rear door LH	Output	Ignition switch ON	(V) 1 0 -1 •••• 2ms SKIB3609E

BOSE SPEAKER AMP

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[BOSE AUDIO WITH NAVIGATION]

	minal e color)	Description		Condition	Reference value	А
+	-	Signal name	Input/Output		(Approx.)	
69 (B/P)	70 (O/B)	Sound signal center speaker	Output	Ignition switch ON	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	B C D
71 (G/W)	72 (BR)	Sound signal front door speaker RH	Output	Ignition switch ON	(V) 1 -1 -1 SKIB3609E	E
73 (W/L)	74 (GR/V)	Sound signal front RH	Input	Ignition switch ON	(V) 1 0 -1 -1 SKIB3609E	G H
75 (W/R)	76 (B/R)	Sound signal front LH	Input	Ignition switch ON	(V) 1 0 -1 + 2ms SKIB3609E	I J K

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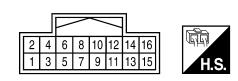
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REAR VIEW CAMERA CONTROL UNIT

Reference Value

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WKIA5224E



PHYSICAL VALUES

Torn	ninal	Description			Condition	Reference value
(Wire color)		Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
1 (Y)	Ground	Battery power	Input	OFF	—	Battery voltage
2 (V)	Ground	ACC power	Input	ACC	—	Battery voltage
3 (B)	Ground	Ground	_	ON	_	0V
4 (P/B)	Ground	Reverse signal input	Input	ON	A/T selector lever R position	Battery voltage
4 (17D)	Cround	reverse signal input	mput	ÖN	A/T selector lever in other than R position	0V
5 (V/G)	Ground	AV Control	Output	ON	—	0V
6 (O)	Ground	DDL	Output	_	—	_
8 (GR)	Ground	Camera power output	Output	ON	A/T selector lever R position	6V
9 (L)	Ground	Camera image input (-)	Input	ON	—	0V
10 (P)	Ground	Camera image input (+)	Input	ON	A/T selector lever R position	(V) 0.6 0.4 0.2 0 -0.2 -0.4 -0.6 ***20 µ s SKIA4894E
11 (R)	Ground	Composite image output (-)	Output	ON	A/T selector lever R position	(V) 0.6 0.4 0.2 0.0 -0.2 -0.4 -0.6 -0.2 -0.4 -0.6 -0.2 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5
12 (W)	Ground	Composite image output (+)	Output	ON	A/T selector lever R position	(V) 0.6 0.4 0.2 0 -0.2 -0.4 -0.6



[BOSE AUDIO WITH NAVIGATION]

< ECU DIAGNOSIS >

CD CHANGER

Reference Value

INFOID:000000001502754

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TERMINAL LAYOUT В С > 12 14 16 2 4 6 < 1 3 5 7 8 9 10 11 13 15 D Е AWNIA0061ZZ

PHYSICAL VALUES

	minal color)	Description			Condition	Reference value	F
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)	G
2 (Y/L)	1 (W/L)	CD changer sound signal LH	Output	Ignition switch ON	When CD change mode is selected	(V) 1 0 -1 * 2ms SKiB3609E	H
4 (Y/G)	3 (BR/L)	CD changer sound signal RH	Output	Ignition switch ON	When CD change mode is selected	(V) 1 -1 + 2ms SKiB3609E	J K
5	_	Shield	_	—	—	_	- L
6	—	Shield	_		—	-	
8 (R)	Ground	Request signal (CD→CONT)	Output	Ignition switch ON	When CD change mode is selected	(V) 10 0 -10 + 10ms SKIA9299J	M AV O
9 (B)	Ground	Communication signal (CONT→CD)	Input	Ignition switch ON	When CD change mode is selected	(V) 10 0 -10 • 1 ms SKIA9300J	Ρ

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CD CHANGER

< ECU DIAGNOSIS >

	minal color)	Description		Condition		Reference value
+	_	Signal name	Input/ Output	Ignition switch Operation		(Approx.)
10 (G)	Ground	Communication signal (CD→CONT)	Output	Ignition switch ON	When CD change mode is selected	(V) 10 0 -10 • • 1 ms SKIA9301J
12 (Y/R)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage
13 (R/Y)	Ground	Illumination (-)	Input	OFF	_	Refer to INL-9, "System Descrip- tion".
14 (R/L)	Ground	Illumination (+)	Input	OFF	Lighting switch is OFF.	0V
14 (IVL)	Ground		input	OIT	Lighting switch is ON.	Battery voltage
16 (V/Y)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM

Symptom Table

NAVIGATION SYSTEM

			С
Symptom	Possible cause	Reference page	
Inoperative	AV control unit power and ground circuitAV control unit	• <u>AV-190</u> • <u>AV-260</u>	D
Steering switch does not operate	Steering switchAV control unit	• <u>AV-211</u> • <u>AV-260</u>	
Voice activated control does not operate	MicrophoneSteering switchAV control unit	 <u>AV-213</u> <u>AV-211</u> <u>AV-260</u> 	Ε

HANDS-FREE PHONE SYSTEM

Symptom	Possible cause	Reference page
Inoperative	AV control unit power and ground circuitAV control unit	• <u>AV-190</u> • <u>AV-260</u>
Steering switch does not operate	Steering switchAV control unit	• <u>AV-211</u> • <u>AV-260</u>
Voice activated control does not operate	MicrophoneSteering switchAV control unit	 <u>AV-213</u> <u>AV-211</u> <u>AV-260</u>

REAR VIEW MONITOR

Symptom	Possible cause	Reference page	
Inoperative	 Rear view camera control unit power and ground circuit Reverse signal circuit Camera ON signal circuit Camera image signal circuit (rear view camera to rear view camera control unit) 	 AV-190 AV-218 AV-216 AV-215 	_
	 Camera image signal circuit (rear view camera control unit to AV control unit) Rear view camera control unit 	 <u>AV-217</u> <u>AV-275</u> 	

AUDIO SYSTEM

Symptom	Possible cause	Reference page	M
Inoperative	 AV control unit power and ground circuit AV control unit 	• <u>AV-190</u> • <u>AV-260</u>	AV
Steering switch does not operate	Steering switchAV control unit	• <u>AV-211</u> • <u>AV-260</u>	-
All speakers do not sound	 AV control unit power and ground circuit BOSE speaker amp. ON signal BOSE speaker amp. power and ground circuit BOSE speaker amp. AV control unit 	 AV-190 AV-210 AV-192 AV-261 AV-260 	O
One or several speakers do not sound	 Front door speaker Tweeter Center speaker Rear door speaker Rear subwoofer 	 <u>AV-196</u> <u>AV-199</u> <u>AV-202</u> <u>AV-204</u> <u>AV-207</u> 	

[BOSE AUDIO WITH NAVIGATION]

INFOID:000000001502755 B

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< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000001502756

[BOSE AUDIO WITH NAVIGATION]

AUDIO SYSTEM

The majority of the audio troubles are the result of outside causes (bad CD, electromagnetic interference, etc.).

Noise

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	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 oper- ating.	The noise occurs when various motors are operat- ing.	Motor case groundMotor
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

NAVIGATION SYSTEM

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

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to pre- vent 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 cor- rectly.	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 sat- ellite 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 dim- ming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjust- ment function.	Perform screen dimming and select the nighttime screen by "SWITCH SCREENS".
Map screen will not scroll in accor- dance with the vehicle travel.	Current location is not displayed.	Press "MAP" button to display the current lo- cation.
Vehicle mark will not be shown.	Current location is not displayed.	Press "MAP" button to display the current lo- cation.
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 pan- el.	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 mov- ing the vehicle.
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 fit- ted or the system has been used on another vehi- cle.	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 CONFIRMA-TION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD–ROM will be released once a year.

Destination, Passing Points and Menu Items Cannot be Selected/Set

			. IV
Symptom	Cause	Remedy	1 1 1
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.	AV
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.	0
	Vehicle mark is not on the recommended route.	Drive on the recommended route.	
	Route guide is turned OFF.	Turn route guide ON.	Р
	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 rec- ommended route will be shown.)	Drive on the recommended route.	

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Cause	Remedy
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). Howev- er, the result is the same as that of the previous search.	Performed search with every conditions consid- ered. 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 se- lected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

Voice Guide

Symptom	Cause	Remedy
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by \bullet on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunctioning.
	The vehicle is not on the recommended route.	Return to the recommended route or re- search the route.
	Voice guide is turned OFF.	Turn voice guide ON.
	Route guide is turned OFF.	Turn route guide ON.
Voice guide does not match the ac- tual 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 des- tination.	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.	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 sec- tion. 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.

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

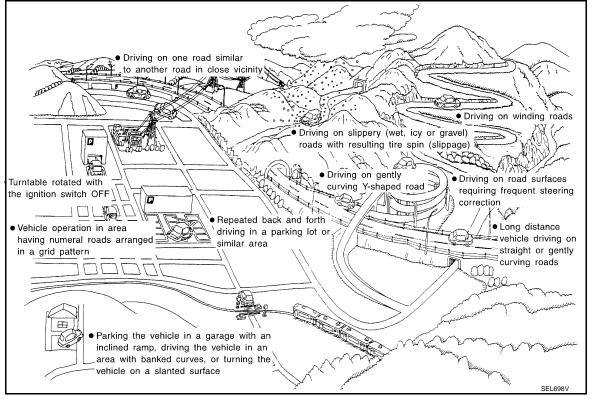
Symptom	Cause	Remedy
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destina- tion, or set the passing point on the route of your choice.
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunctioning.
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.

NOTE:

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

Examples of Current-Location Mark Displacement

Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.



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< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

[BOSE AUDIO WITH NAVIGATION]

ndition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Y-intersections	At a Y intersection or similar gradual divi- sion 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		
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	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and dis- tance errors may accumulate. As a result, the vehicle mark may deviate from the cor- rect 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 lo-
Zigzag roads	When driving on a zigzag road, the map may be matched to other roads in the simi- lar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	cation correction and, if neces- sary, direction correction.
Roads laid out in a grid pattern	When driving where roads are laid out in a grid pattern, or where many roads are run- ning in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the cor- rect 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 mis- take and the vehicle mark may deviate from the correct location.	
	Y-intersections ELK0192D Spiral roads ELK0193D Straight roads ELK0193D Zigzag roads ELK0194D Zigzag roads ELK0195D Roads laid out in a grid pattern ELK0196D	Y-intersections 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 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 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.

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Cause (co	ndition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
	In a parking lot	When driving in a parking lot, or other loca- tion 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 devi- ated from the correct location. When driving in circle or turning the steer- ing wheel repeatedly, direction errors accu- mulate, and the vehicle mark may deviate from the correct location.	
Place	Turntable Turntable SEL710V	When the ignition switch is OFF, the navi- gation 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 eas- ily 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 cas- es 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.	
	Road not 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.	
Map data 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 and matches the location to a nearby road. The vehicle mark may deviate from the cor- rect road.		
	ELK0201D		
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance still deviates, ad- just it by using the distance ad- justment function. (If the tire chain is removed, recover the original value.)

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< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Cause (con	dition) –: 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 stop- ping, 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 detec- tion, and may cause the vehicle mark to de- viate from the correct road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform lo- cation correction and, if neces- sary, direction correction.
How to cor- rect location	Position correction accuracy Within 1 mm (0.04 in)	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 SEL702V	If the accuracy of location settings during correction is poor, accuracy may be re- duced 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

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< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

- 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 A 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 B 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 ^G 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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< PRECAUTION > PRECAUTION PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-ER"

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

Precaution for Trouble Diagnosis

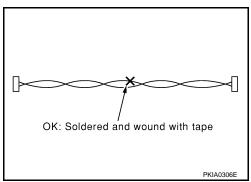
AV COMMUNICATION SYSTEM

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

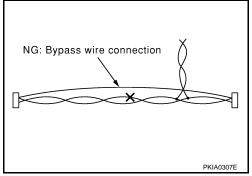
Precaution for Harness Repair

AV COMMUNICATION SYSTEM

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



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



AV-258

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[BOSE AUDIO WITH NAVIGATION]

< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000001502760

Tool name		Description	
		Loosening bolts and nuts	
Power tool			
	PBIC0191E		

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< ON-VEHICLE REPAIR > ON-VEHICLE REPAIR

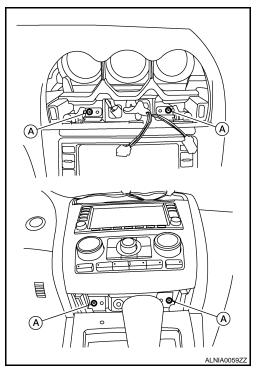
AV CONTROL UNIT

Removal and Installation

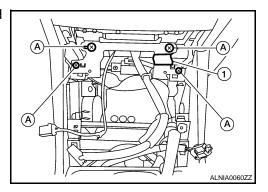
INFOID:000000001502761

REMOVAL

- 1. Disconnect the 12-volt battery negative terminal.
- 2. Remove cluster lid C. Refer to IP-11, "Removal and Installation".
- 3. Remove cluster lid D lower finisher. Refer to IP-11, "Removal and Installation".
- 4. Remove navigation audio unit upper and lower screws (A).



5. Remove the navigation audio unit bracket screws (A) and remove the navigation audio unit bracket (1).



6. Pull out the navigation audio unit assembly, disconnect the navigation audio unit assembly connectors.

INSTALLATION

Installation is in the reverse order of removal.

BOSE AMP.		А
Removal and Installation	INFOID:000000001502762	/ \
For removal and installation, refer to <u>AV-127, "Removal and Installation"</u> .		В
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CD CHANGER

Removal and Installation

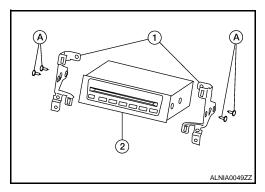
INFOID:000000001502763

REMOVAL

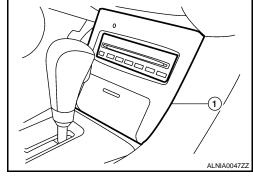
- 1. Remove Cluster D lower finisher. Refer to IP-11, "Removal and Installation".
- 2. Put selector lever in the drive (D) position.
- 3. Using a suitable tool remove the CD changer finisher (1), then disconnect the power socket, AUX jack connectors and remove the CD changer finisher (1).

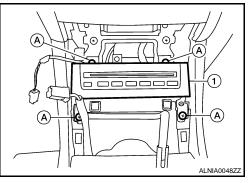
4. Remove the CD changer screws (A), pull out the unit, then disconnect the CD changer connector and remove the CD changer (1).

5. Remove the CD changer bracket screws (A).
CD changer brackets (1)
CD changer (2)



INSTALLATION Installation is in the reverse order of removal.





[BOSE AUDIO WITH NAVIGATION]

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Removal and Installation	INFOID:000000001502764	A
For removal and installation, refer to AV-128, "Removal and Installation".		В
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INFOID:000000001502765

CENTER SPEAKER

Removal and Installation

For removal and installation, refer to <u>AV-129</u>, "Removal and Installation".

< ON-VEHICLE REPAIR > FRONT DOOR SPEAKER А Removal and Installation INFOID:000000001502766 For removal and installation, refer to AV-47. "Removal and Installation". В С D Е F

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INFOID:000000001502767

REAR DOOR SPEAKER

Removal and Installation

For removal and installation, refer to <u>AV-131, "Removal and Installation"</u>.

REAR SPEAKER A Removal and Installation INFOID:00000001502768 For removal and installation, refer to AV-48, "Removal and Installation". B C D

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AUDIO ANTENNA

[BOSE AUDIO WITH NAVIGATION]

Roof Antenna

INFOID:000000001502769

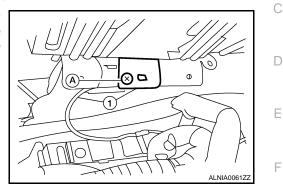
REMOVAL and INSTALLATION For removal and installation, refer to <u>AV-49, "Roof Antenna"</u>.

GPS ANTENNA

Removal and Installation

REMOVAL

- 1. Remove the combination meter. Refer to IP-11, "Removal and Installation".
- 2. Remove the navigation audio unit. Refer to Navigation audio unit.
- 3. Remove the GPS navigation antenna screw (A), then fish the GPS navigation antenna connector and harness (1), through the combination meter instrument panel opening and remove the GPS antenna.



INSTALLATION Installation is in the reverse order of removal.

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INFOID:000000001502771

STEERING SWITCH

Removal and Installation

For removal and installation, refer to <u>AV-53, "Removal and Installation"</u>.

MICROPHONE

[BOSE AUDIO WITH NAVIGATION]

< ON-VEHICLE REPAIR >	[BOSE AUDIO WITH NAVIGATION]	
MICROPHONE		
Removal and Installation	INFOID:000000001502772	
For removal and installation, refer to <u>AV-136. "Removal and Installati</u>	<u>on"</u> .	

[BOSE AUDIO WITH NAVIGATION]

TEL ANTENNA

Removal and Installation

For removal and installation, refer to <u>AV-137, "Removal and Installation"</u>.

INFOID:000000001502773

TEL ADAPTER UN	IT
< ON-VEHICLE REPAIR >	[BOSE AUDIO WITH NAVIGATION]
TEL ADAPTER UNIT	A
Removal and Installation	INFOID:000000001502774
For removal and installation, refer to AV-138, "Removal and Installation	ation". B
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REAR VIEW MONITOR

Removal and Installation

REMOVAL

- 1. Remove the license plate finisher. Refer to EXT-24, "Removal and Installation".
- 2. Remove trunk lid finisher. Refer to Trunk lid finisher.
- 3. Disconnect the rear view monitor connector (B), press the rear view monitor tab (A) and remove the rear view monitor (1).

INSTALLATION Installation is in the reverse order of removal.

Adjustment

INFOID:000000001502776

REAR VIEW MONITOR

For adjustment on the rear view monitor, refer to <u>AV-141, "REAR VIEW MONITOR GUIDING LINE ADJUST-MENT : Special Repair Requirement"</u>.

INFOID:000000001502775

CAMERA CONTROL UNIT

Removal and Installation

REMOVAL

- 1. Disconnect the 12-volt battery negative terminal.
- 2. Remove the trunk side finisher. Refer to INT-22, "Removal and Installation".

CAMERA CONTROL UNIT

3. Disconnect the rear view monitor control unit connector (A), then remove the rear view monitor screws (B) and remove the rear view monitor control unit (1).

INSTALLATION Installation is in the reverse order of removal. INFOID:000000001502777

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