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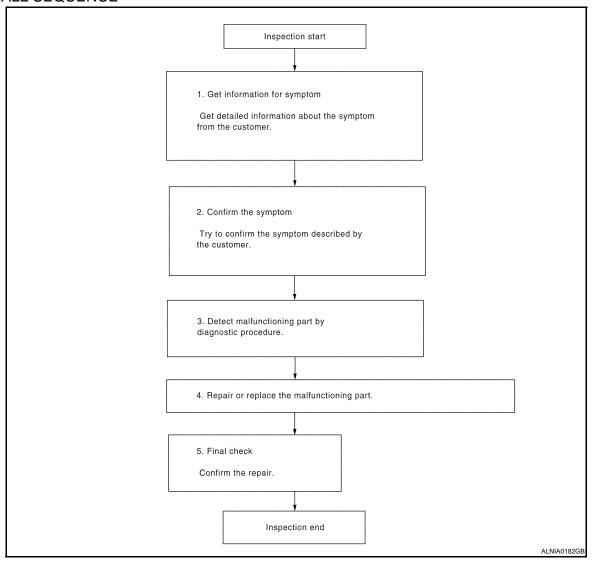
< BASIC INSPECTION > [BASE AUDIO]

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.

Has the symptom been repaired?

YES >> Inspection End.

NO >> GO TO 2

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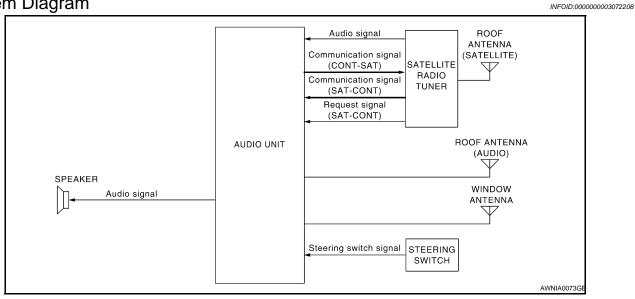
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FUNCTION DIAGNOSIS

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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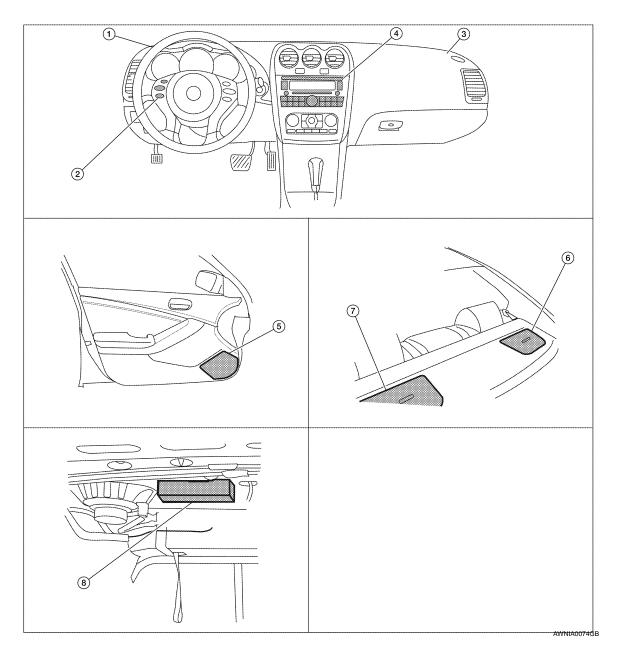
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Component Parts Location

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- 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
- 8. Satellite radio tuner B123, B133 (with satellite radio tuner)
- Tweeter RH M52
- Rear speaker RH B44

Component Description

INFOID:0000000003072211

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

AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

[BASE AUDIO]

Part name	Description
Front door speakers	Outputs audio signal from audio unit Outputs high, mid and low range sounds
Tweeters	Outputs audio signal from audio unit Outputs high range sounds
Rear speakers	Outputs audio signal from audio unit Outputs high, mid and 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.

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[BASE AUDIO]

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DIAGNOSIS SYSTEM (AUDIO UNIT)

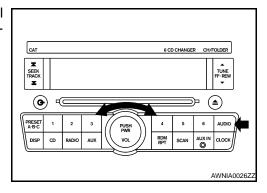
Diagnosis Description

Self-diagnosis mode can check the following items.

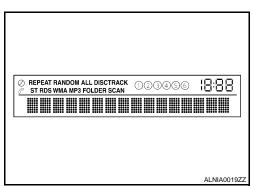
- Audio unit hardware/software versions
- Continuity of each speaker channel
- · Continuity of each audio unit switch

OPERATION PROCEDURE

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

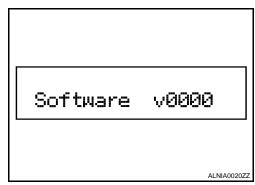


4. Initially, all display segments will be illuminated.



Version Check

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



DIAGNOSIS SYSTEM (AUDIO UNIT)

FUNCTION DIAGNOSIS > IBASE AUDIOI

<1 ONCTION DIAGNOSIS >	
2. Press the "AUDIO" switch again to display the "Hardware" (audio hardware version).	
	Hardware v0000
	ALNIA0021ZZ
3. Press the "AUDIO" switch again to display the "CD Mech" (CD mechanism version).	
	CD Mech v0000
	ALNIA0022ZZ
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 topo to each channel (FL. Pl. PR. EP) for 1 second	
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 >

[BASE AUDIO]

When	all segi	ments a	re illuminated	d, press	the "T	UNE"	down	switch	to
enter	button	check	diagnostics.	When	each	audio	unit	switch	is
presse	ed, a to	ne will s	sound and the	e switch	name	e will be	e disp	layed.	

BUTTON CHECK

[BASE AUDIO]

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

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1.CHECK FUSES

Check that the following fuses are not blown.

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

Are the fuses OK?

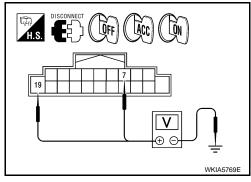
YES >> GO TO 2

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

2. POWER SUPPLY CIRCUIT CHECK

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

	Terminal No.					
Unit	(+)		()	OFF	ACC	ON
	Connector	Terminal	(-)			
Audio unit M4	M43	19	Ground	Battery voltage	Battery voltage	Battery voltage
	IVI43	7	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 audio unit case ground.

Does case ground pass inspection?

YES >> Inspection End.

>> Repair audio unit case ground.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER: Diagnosis Procedure

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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. ΑV

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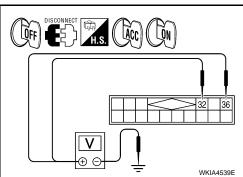
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2.power supply circuit check

- 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.

Unit	7	Terminal No.				
	(+)		(-)	OFF	ACC	ON
	Connector	Terminal	(-)			
Satellite radio tuner (factory in- stalled)	B123	32	Ground	Battery voltage	Battery voltage	Battery voltage
		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.

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FRONT DOOR SPEAKER

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

Diagnosis Procedure

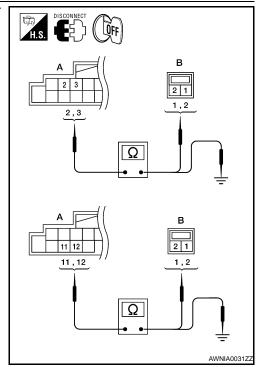
1. HARNESS CHECK

- 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			
Audio unit Speaker				Continuity
Connector	Terminal	Connector	Terminal	
A: M43	2	B: D3	1	
	3	D. D3	2	Yes
	11	B: D103	1	165
	12	D. D103	2	

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

		Continuity		
Connector	Terminal	_		
	2			
A: M43	3	Ground	No	
A. IVI43	11	Giouna		
	12			



Are continuity results as specified?

YES >> GO TO 2

NO >> • 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.
- Push "POWER" switch.

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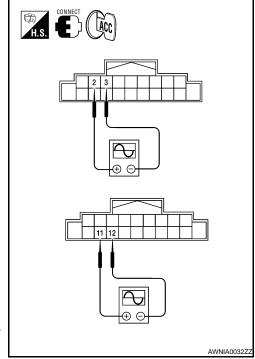
4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

	Term	ninals			
	(+)		(-)	Condi-	Reference
Con- nec- tor	Termi- nal	Con- nec- tor	Termi- nal	tion signal	
	2		3		
M43	11	M43	12	Receive audio signal	(V) 1 0 -1 1 ms

Is the audio signal voltage as specified?

YES >> Replace speaker. Refer to <u>AV-47, "Removal and Installation"</u>.

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



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TWEETER

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

Diagnosis Procedure

1. HARNESS CHECK

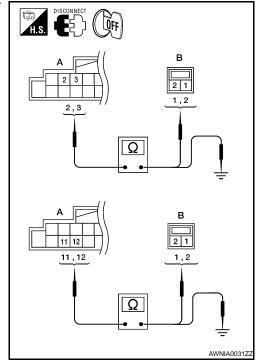
 Disconnect audio unit connector M43 (A) and suspect tweeter connector (B).

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

	Term			
Audi	o unit	Twe	eeter	Continuity
Connector	Terminal	Connector	Terminal	
	2	B: M51	1	
A: M43	3	D. IVIST	2	Yes
A. W+0	11	B: M52	1	165
	12	D. IVIOZ	2	

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

	Continuity			
Connector	Terminal	_		
	2			
A: M43	3	Ground	No	
A. IVI 4 3	11	Giouna		
	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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< COMPONENT DIAGNOSIS >

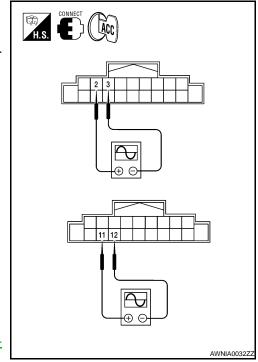
- 1. Connect audio unit connector and tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

	Term	ninals				
(+)		(-)		Condi-	Reference	
Con- nec- tor	Termi- nal	Con- nec- tor	Termi- nal	tion	signal	
	2		3			
M43	11	M43	12	Receive audio signal	(V) 1 0 -1 1 ms SKIA0177E	

Is the audio signal voltage as specified?

YES >> Replace tweeter. Refer to <u>AV-47, "Removal and Installation"</u>.

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



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REAR SPEAKER

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

Diagnosis Procedure

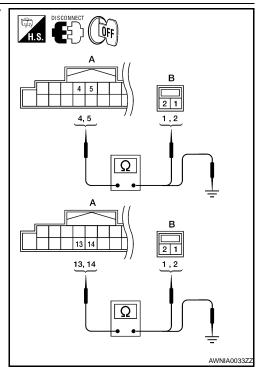
1. HARNESS CHECK

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

	Term			
Audi	o unit	Continuity		
Connector	Terminal	Connector	Terminal	
	4	B: B26	1	
A: M43	5	D. D20	2	Yes
A. W+3	13	B: B44	1	165
	14	D. D44	2	

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

	Terminals						
	Continuity						
Connector	Terminal	_					
	4						
A: M43	5	Ground	No				
A. W43	13	Giodila					
	14						



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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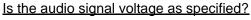
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< COMPONENT DIAGNOSIS >

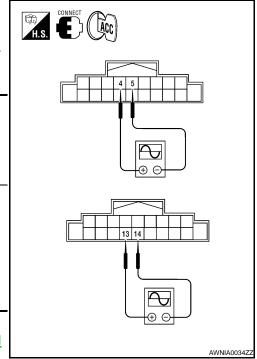
- 1. Connect audio unit connector and rear speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

	Terminals					
(-	+)		(-)	Condi-	Reference	
Con- nector	Termi- nal	Con- nector	Terminal	tion	signal	
	4		5			
M43	13	M43	14	Receive audio signal	(V) 1 0 -1 1 ms SKIA0177E	



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

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



STEERING SWITCH

Description INFOID:0000000003072221

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

Diagnosis Procedure

INFOID:0000000003072222

Α

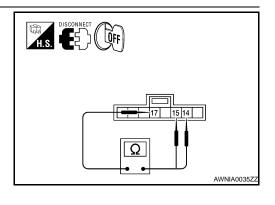
D

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1. CHECK STEERING SWITCH RESISTANCE

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

Terr	minal	Signal name	Condition	Resistance (Ω) (Approx.)
15	17	Seek (down)	Depress (station) down switch.	165
13	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



Do the steering switches check OK?

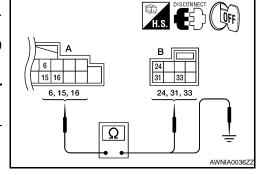
YES >> GO TO 2

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

2. CHECK HARNESS

- 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 (B) and audio unit harness connector M43 (A).

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



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

	A			
Connector	Terminal	_	Continuity	
	6			
M43	15	Ground	No	
	16			

Are the continuity results as specified?

YES >> GO TO 3

NO >> Repair harness.

3. SPIRAL CABLE CHECK

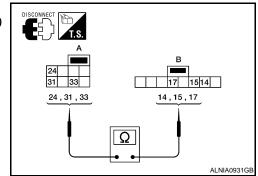
	H.S. PISCONNECT OFF
A 6 15 16 6, 15, 16	B 24 31 33 24, 31, 33 = 24, 31, 33

[BASE AUDIO]

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

 (A) and M88 (B).

	A	E	В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	24		14	
M30	31	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]

COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

SATELLITE RADIO TUNER: Description

INFOID:0000000003072223

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

SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:0000000003072224

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.

AWNIA0038Z

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.

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.

2. 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 - $\scriptscriptstyle 3$

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.

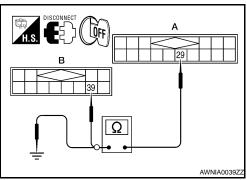
Continuity should not exist.

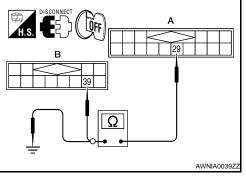
Are continuity results as specified?

YES >> GO TO 4

NO >> Repair harness or connector.

4.CHECK REQ1 SIGNAL





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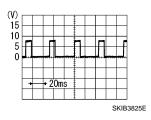
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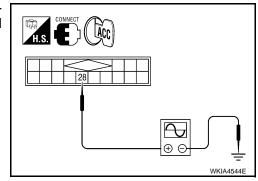
M

< COMPONENT DIAGNOSIS >

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





Are voltage readings as specified?

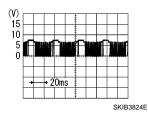
YES >> GO TO 5

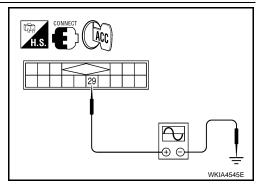
NO >> Replace audio unit. Refer to AV-45, "Removal and Installation".

5. CHECK TXD SIGNAL

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

29 - Ground





Are the voltage readings as specified?

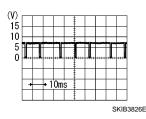
YES >> GO TO 6

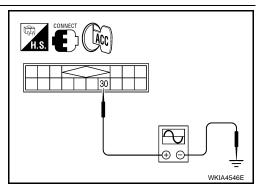
NO >> Replace satellite radio tuner.

6.CHECK RXD SIGNAL

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

30 - Ground





Are the voltage readings as specified?

YES >> Replace satellite radio tuner.

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

[BASE AUDIO]

SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

SATELLITE RADIO TUNER: Description

INFOID:0000000003072225

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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:0000000003072226

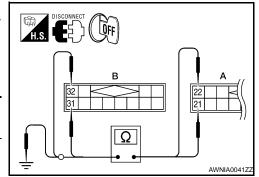
LEFT CHANNEL

1. CHECK HARNESS

1. Turn ignition switch OFF.

- 2. Disconnect satellite radio tuner (factory installed) connector B123 (A) and audio unit connector M45 (B).
- Check continuity between satellite radio tuner (factory installed) and audio unit.

А		E	Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
B123	21	M45	31	Yes	
D125	22	IVITS	32	163	



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

	А		Continuity	
Connector	Terminal	_		
B123	21	Ground	No	
B123	22	Giodila	INO	

Are continuity results as specified?

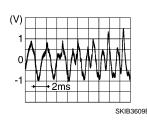
YES >> GO TO 2

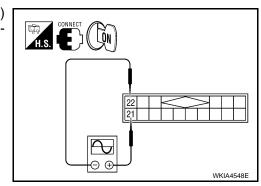
NO >> Repair harness or connector.

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 voltage readings as specified?

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

NO >> Replace satellite radio tuner. Refer to AV-134, "Removal and Installation".

RIGHT CHANNEL

1. CHECK HARNESS

AV-27

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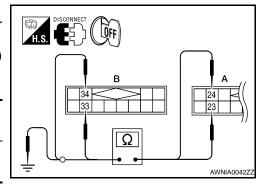
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< COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. 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.

P	1	E	Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
B123	23	M45	33	Yes	
B123	24	10145	34		



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

	А		Continuity	
Connector	Terminal		Continuity	
B123	23	Ground	No	
D123	24	Giouna	INO	

Are continuity results as specified?

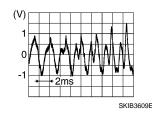
YES >> GO TO 2

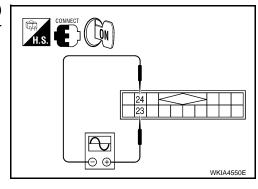
NO >> Repair harness or connector.

2.CHECK RIGHT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- 3. 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 AV-134, "Removal and Installation".

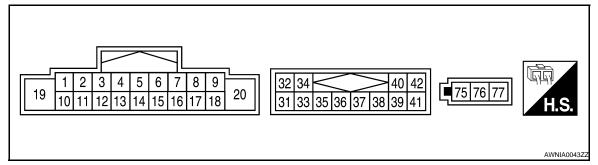
< ECU DIAGNOSIS > [BASE AUDIO]

ECU DIAGNOSIS

AUDIO UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)			Signal		Condition	
+	_	Item input/ output				Reference value
2 (W)	3 (B)	Audio sound signal front LH	Output	ON	Receive audio sig- nal	(V) 1 0 -1 1 ms
4 (O/B)	5 (W/R)	Audio sound signal rear LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
					Press SOURCE switch	Approx. 0.0V
6	Ground	Remote con-	Input	ON	Press SEEK UP switch	Approx. 0.75V
(W/G)		trol A			Press VOL UP switch	Approx. 2.0V
					Except for above	Approx. 5.0V
7 (V/Y)	Ground	ACC signal	Input	ON Ignition switch ACC or ON		Battery voltage
11 (G/W)	12 (BR)	Audio sound signal front RH	Output	ON	Receive audio sig- nal	(V) 1 0 -1 1 ms

AV-29

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	minal color)		Signal input/		Condition	Defended in
+	_	- Item	output Ignition switch		Operation	Reference value
13 (L)	14 (B/W)	Audio sound signal rear RH	Output	Output ON Receive audio signal		(V) 1 0 -1 1 ms
15 (L/B)	_	Remote con- trol ground	Input	_	_	_
					Press SEEK DOWN switch	Approx. 0.75V
16 (GR/L)	Ground Remote control B Input ON		Press VOL DOWN switch	Approx. 2.0V		
					Except for above	Approx. 5.0V
19 (Y/R)	Ground	Battery power	Input	_	_	Battery voltage
32 (Y/L)	31 (W/L)	Audio left channel sound signal from satellite radio tuner	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms
34 (BR/L)	33 (Y/G)	Audio right channel sound signal from satellite radio tuner	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms
35	_	Shield ground (audio signal)	_	_	-	0V
36	-	Shield ground (data)	_	_	-	0V

AUDIO UNIT

< ECU DIAGNOSIS > [BASE AUDIO]

	minal e color)	Signal Item input/		Condition		Reference value	
+	_	nem	output	Ignition switch	Operation	Reference value	
38 (R)	Ground	Satellite radio tuner request to audio unit	Input		Turn audio unit ON	5V	
39 (G)	Ground	Audio RX	Input	ON	Operate audio vol- ume	(V) 6 4 2 0 ** 5ms SKIA4403E	
40 (B)	Ground	Audio TX	Output		Operate audio vol- ume	(V) 6 4 2 0 • • • 2ms SKIA4402E	
75 (B)	Ground	Amp power supply	Output	ON	Turn audio unit ON	Battery voltage	
76 (B)	Ground	Main antenna	Input	ON	Turn audio unit ON	-	

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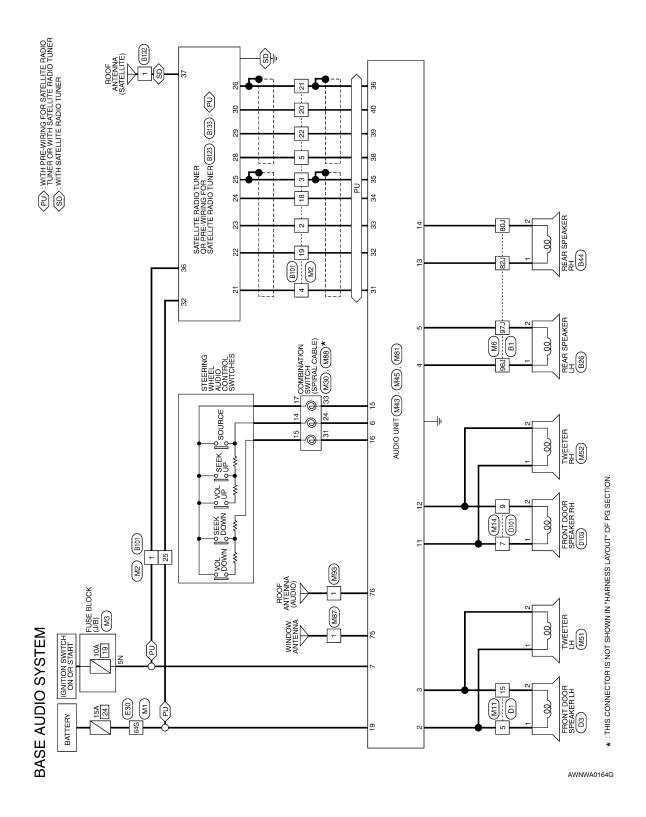
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Wiring Diagram

INFOID:0000000003072228



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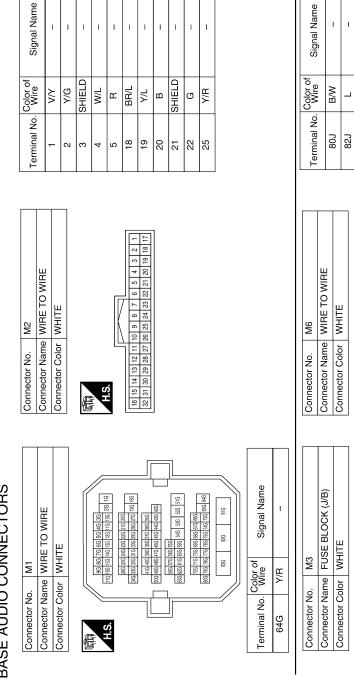
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BASE AUDIO CONNECTORS



Signal Name	ı	I	ı	ı				
Color of Wire	B/W	_	O/B	W/R				
Terminal No.	807	827	96	97J				
Connector No. M6		_		90 80 70 60 50 40 30	(1) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	201 (Sed (Sed) Sed (S		[25] [25] [25] [25] [25] [25] [25] [25]
Connector No. M3	Connector Name FOSE BLOCK (J/B)			3N SN 1N	8N / M 8M 5M 4M	Ferminal No. Color of Signal Name	- \/\	
Conne	Course		4	ATH THE	N.	Termin	2N	

RFQ1 (SAT TO COMBI) RX (SAT TO COMBI) TX (COMBI TO SAT)

Œ ധ В

39 38

41

42

DAT EARTH EARTH

36

BAT

Υ'R

SAT RH INPUT (+)

SHIELD SHIELD

BR/L

Y/G

STRG_SW_GND

B/W PB STRG_SW_B

GR/L

SAT LH INPUT (-) SAT LH INPUT (+) SAT RH INPUT (-)

W/L

Ϋ́

33 33 35

Signal Name

Color of

Wire

Terminal No.

Connector Name | AUDIO UNIT Connector Color WHITE

Connector No. M45

Connector No. M14	M14	Connector No. M30	M30
Connector Name	Connector Name WIRE TO WIRE	Connector Name	COMBINATION SWITCH
Connector Color WHITE	WHITE		(SPIRAL CABLE)
		Connector Color GRAY	GRAY
	5 6 7 8 9 10		

30	Connector Name COMBINATION SWITCH	PINAL CABLE)	RAY	24 25 38 27 34 39	of Signal Name	AUDIO_STRG_SW_		
Connector No. M30	Connector Name Co	0)	Connector Color GRAY	H.S.	Color of Wire	24 W/G	31 GR/L	
_	<u> </u>		<u> </u>					-
4	RE TO WIRE	IITE		9 10	Signal Name	ı	1	
È	me WIF	or WH		2 9	Color of Wire	G/W	BR	
Connector No. M14	Connector Name WIRE TO WIRE	Connector Color WHITE		H.S.	Terminal No. Wire	7	6	
			7			ı		
	E TO WIRE	IE I		4 5 6 7 11 12 13 14 15 16	Signal Name	1	1	
M1	me WIR	lor WHI		8 9 10	Color of Wire	>	В	
Connector No. M11	Connector Name WIRE TO WIRE	Connector Color WHITE		南南 H.S.	Terminal No. Wire	2	15	

REMOTE_B	'B AUDIO_STRG_SW_GND	
5	7 	
5	33	

)								
Terminal No		Ú	0	2	8	6	10	11
Connector No. M43	Connector Name AUDIO UNIT		Connector Color WHITE			1 2 3 4 5 6 7 8 9	19 10 11 12 13 14 15 16 17 18 20	

ILL_CONT_OUT

TAIL/ILL_RLY

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

GW BR

12 13 4 15 16 17 48 19 20

STRG_SW_A

λ/\ ΡY R/

Signal Name

Color of Wire M/G

Г	ᆚ		1	- 1 - 5
	6	18		2
	œ	17		=
F	~	16		Signal Nam
-	9	15		Ü
- I K	2	14		
Π	4	13		
	e	10 11 12 13 14 15 16 17		\ _
	2	11		5
	-	10		Color of
·	٦L	19		
	Č	0	_	Terminal No

Signal Name	ı	FR SP LH (+)	FR SP LH (-)	RR SP LH (+)	RR SP LH (-)
Color of Wire	ı	M	В	O/B	W/R
Terminal No.	-	2	8	4	2

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A

В

С

D

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K

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M

ΑV

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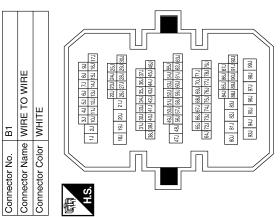
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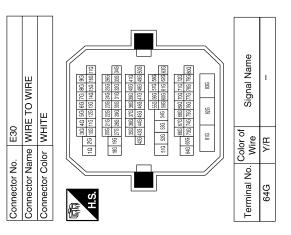
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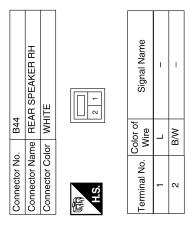
	NO UNIT	47	75 76 77	Signal Name	AMP POWER SUPPLY	MAIN ANTENNA	ı
. M81	me AUE	or GR/		Color of Wire	В	В	1
Connector No. M81	Connector Name AUDIO UNIT	Connector Color GRAY	品S.	Terminal No. Wire	75	9/	2.2
					ı	ı	1
	EETER RH	NWO		Signal Name	1	1	
M52	ne TWE	or BRC		Color of Wire	G/W	BR	
Connector No. M52	Connector Name TWEETER RH	Connector Color BROWN	南 H.S.	Terminal No. Wire	-	2	
			_		ı		1
	ETER LH	NM		Signal Name	I	ı	
M51	ne TWE	or BRO		Color of Wire	8	В	
Connector No. M5'	Connector Name TWEETER L	Connector Color BROWN	师 H.S.	Terminal No. Wire	-	2	

Connector No. M93 Connector Name ROOF ANTENNA (AUDIO) Connector Color WHITE		Signal Name	ı				
me ROO or WHII		Color of Wire	В				
Connector No. M93 Connector Name ROOF	雨 H.S.	Terminal No.	-				
	1						
M88 COMBINATION SWITCH (SPIRAL CABLE) GRAY	17 16 15 14 13	Signal Name	REMOTE A	REMOTE B	GND		
M88 ne COM (SPIF) or GRA	20 19 18	Color of Wire	8	_	BR		
Connector No. M88 Connector Name COMB (SPIRA Connector Color GRAY	所 H.S.	Terminal No.	14	15	17		
Connector No. M87 Connector Name WINDOW ANTENNA Connector Color BLACK	-	Signal Name	1				
me WINDC		Color of Wire	В				
Connector No. Connector Name	原 H.S.	Terminal No.	-				

Signal Name	ı	ı	ı	ı
Color of Wire	B/W	_	O/B	W/R
Terminal No. Wire	807	82J	961	64A







		1			
AR SPEAKER LH	IITE	2 1	Signal Name	I	ı
			Color of Wire	O/B	W/R
Connector Na	Connector Co	赋 H.S.	Terminal No.	-	2
	Connector Name REAR SPEAKER LH			Silver WHITE Solor of Color of Wire	Solor of Mire O/B

ALNIA0075GB

Signal Name	SAT_LCH (-)	SAT_LCH (+)	SAT_RCH (-)	SAT_RCH (+)	EARTH (SIG)	DATA	1	EC1 (SAT-COMBI)	TXD (SAT_COMBI)	RXD (COMBI_SAT)	I	BAT	ı	ı	_	ACC
Color of Wire	M/L	Y/L	Y/G	BR/L	SHIELD	SHIELD	1	R/L	R/W	В	-	Y/R	-	1	_	GR/W
Terminal No.	21	22	23	24	25	56	27	28	59	30	31	32	33	34	35	36

Connector No.	B123
Connector Name	SATELLITE RADIO TUNER OR PRE-WIRING FOR SATELLITE RADIO TUNER
Connector Color WHITE	WHITE
2 2 2 3 4 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	22 24 26



ပိ	Connector No.	Š.	or I	9	١.	ш.	B101	=									
ပိ	Connector Name WIRE TO WIRE	ect.	or I	Nai	me	>	∦	Æ	1	>	ИR	Щ					
ပိ	Connector Color WHITE	ğ	b	8	ō	-	Ĭ	ΙË	l								
惺																	
Ţ	-																
7	H.S.																
		ı								7							
	46	45	16 15 14 13 13 11 10 0	ç	13	Ŧ	Ş	o	a	1	4	4	_	c	٥	F	
	2	2	ţ	2	7	-	2	0	0	,	,	,	ŧ	2	7	-	
	32	31	32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17	53	28	27	26	25	24	23	22	21	20	19	18	17	

	-	4						
	2	20						
	က	19		ခ				
	4	24 23 22 21 20 19 18 17		Signal Name				
	2	21		=	1	1		1
	9	22		l gu				
I	7	23		Sic				
	8	24						
	6	52						
١	15 14 13 12 11 10 9	26 25		Color of Wire	GR/W	/R	SHIELD	
٦	F	27		§	3	Y/G	₽	W/L
	12	88		ري ا	ဗ	ľ	송	_
	5	82		o.				
	14	32 31 30 29		Z				
	15	31		na	_	l _N	3	4
	16	32		Ē		'		`
L			_	Terminal No.				
						_		_

	E TO WIRE	11	13 12 11 10 9 8	Signal Name	-	I
5	e WIF	or WHITE	7 6 5 4 16 15 14 13	Color of Wire	Μ	<u>a</u>
Connector No.	Connector Name WIRE TO WIRE	Connector Color	H.S.	Terminal No.	2	15

B133	SATELLITE RADIO TUNER OR PRE-WIRING FOR SATELLITE RADIO TUNER	VIOLET		of Signal Name	ANTENNA SIGNAL
				Color of Wire	В
Connector No.	Connector Name	Connector Color	崎南 H.S.	Terminal No.	37

Connector No.	B132
Connector Name	Connector Name ROOF ANTENNA (SATELLITE)
Connector Color BROWN	BROWN
	Œ

ROOF ANTENNA (SATELLITE)	BROWN		Signal Name	ı
			Color of Wire	В
nector Name	nnector Color	نې	minal No.	1

语.S.H.S.		
	引 H.S.	

Color of Wire	В	
Terminal No.		

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SHIELD

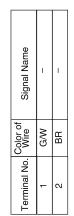
√/ B

5 18 19 20 21 22 25 25

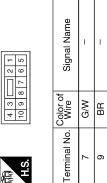
A/A Y/B

R/L BR/L

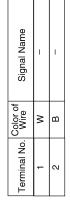
Connector No.	D103
Connector Name	Connector Name FRONT DOOR SPEAKER RH
Connector Color WHITE	WHITE
原 H.S.	











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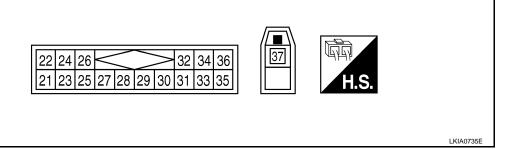
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< ECU DIAGNOSIS > [BASE AUDIO]

SATELLITE RADIO TUNER

Reference Value

TERMINAL LAYOUT



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PHYSICAL VALUES

Tern (Wire	ninal color)		Signal		Condition	Voltage
+	_	Item	input/ 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

SATELLITE RADIO TUNER

< ECU DIAGNOSIS > [BASE AUDIO]

Terminal (Wire color)		. Item	Signal input/	Condition		Voltage
+	_	ilem	output I	Ignition switch	Operation	(approx.)
30 (B)	Ground	Communication signal (AUDIO-SAT)	Input	ON	Set to the satellite radio mode	(V) 15 10 5 0 10ms SKIB3826E
32 (Y/R)	Ground	Battery power supply		OFF		Battery voltage
36 (GR/W)	Giouna	ACC power supply	Input	ACC	_	ballery voltage
37 (B)	_	Antenna signal		_	_	_

AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

SYMPTOM DIAGNOSIS

AUDIO SYSTEM AUDIO UNIT

AUDIO UNIT: Symptom Table

INFOID:0000000003072231

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

 $\overline{\mathsf{CD}}$

CD : Symptom Table

INFOID:0000000003072232

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

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER: Symptom Table

INFOID:00000000003072233

Symptom	Possible cause	Reference page
Inoperative	Satellite radio tuner power or ground circuit Satellite radio tuner communication circuit Satellite radio tuner	AV-15AV-25AV-134
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 	AV-27AV-27AV-134

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[BASE AUDIO]

NORMAL OPERATING CONDITION

Description INFOID:0000000003072234

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

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	Ignition components
The occurrence of the noise is lin	ked with the operation of the fuel pump.	Fuel pump condenser
Noise only occurs when various	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, audio unit malfunction
electrical components are operating.	The noise occurs when various motors are operating.	Motor case ground Motor
The noise occurs constantly, not just under certain conditions.		 Rear defogger coil 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

PRECAUTIONS

< PRECAUTION > [BASE AUDIO]

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 SR and SB section of this Service Manual.

WARNING:

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

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< PREPARATION > [BASE AUDIO]

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000003072236

Tool name		Description
Power tool	PBIC0191E	Loosening bolts and nuts

< ON-VEHICLE REPAIR >

[BASE AUDIO]

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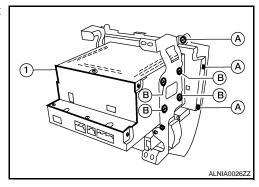
ON-VEHICLE REPAIR

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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< ON-VEHICLE REPAIR > [BASE AUDIO]

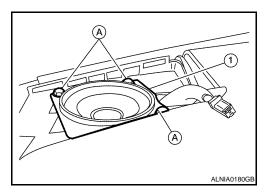
TWEETER

Removal and Installation

INFOID:0000000003072238

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

< ON-VEHICLE REPAIR >

[BASE AUDIO]

FRONT DOOR SPEAKER

Removal and Installation

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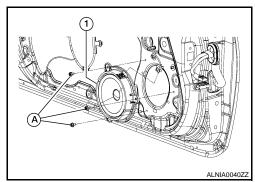
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REMOVAL

- 1. Remove the front door finisher. Refer to INT-11, "Removal and Installation".
- 2. 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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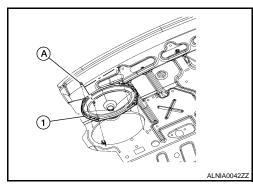
REAR SPEAKER

Removal and Installation

INFOID:0000000003072240

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.

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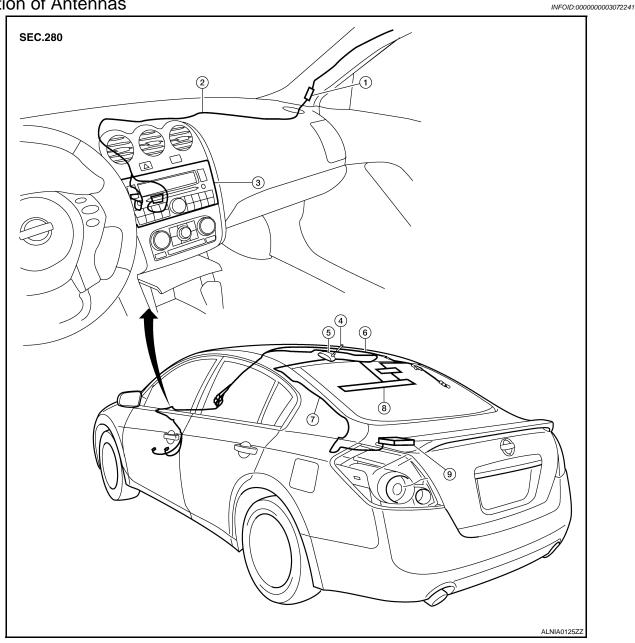
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AUDIO ANTENNA

Location of Antennas



- 1. Audio unit harness connector
- 4. Roof antenna rod
- Satellite feederRoof Antenna

Removal

- 2. Audio unit harness
- 5. Roof antenna base
- 8. Window antenna
- 3. Audio unit
- 6. Antenna feeder (to audio unit)
- 9. Satellite radio tuner

REMOVAL AND INSTALLATION

- 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.

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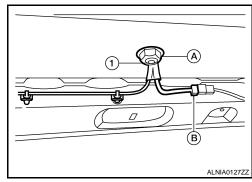
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[BASE AUDIO]

< ON-VEHICLE REPAIR >

- 4. Remove the roof antenna nut (A), then disconnect the antenna feeder connector (B) and remove the antenna feeder (1) from the roof.
- 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

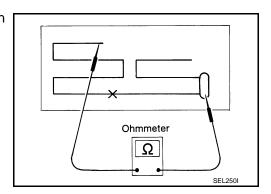
Installation is in the reverse order of removal.

Window Antenna Repair

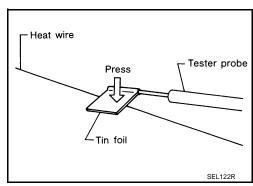
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ELEMENT CHECK

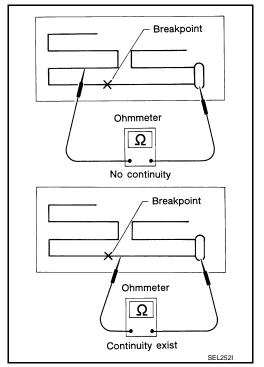
 Attach probe circuit tester (ohm setting) to antenna terminal on each side.



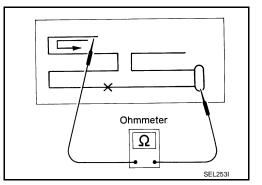
 When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



If an element is broken, no continuity will exist.



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

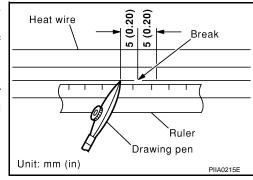


REPAIR EQUIPMENT

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

REPAIRING PROCEDURE

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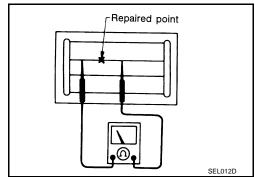
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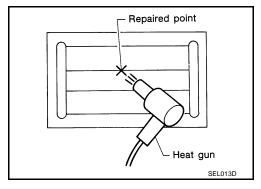
After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

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 > [BASE AUDIO]

STEERING SWITCH

Removal and Installation

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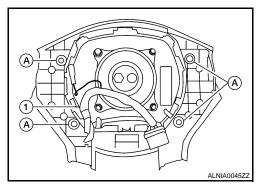
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REMOVAL

- 1. Remove the driver airbag module. Refer to SRS-4. "Removal and Installation".
- 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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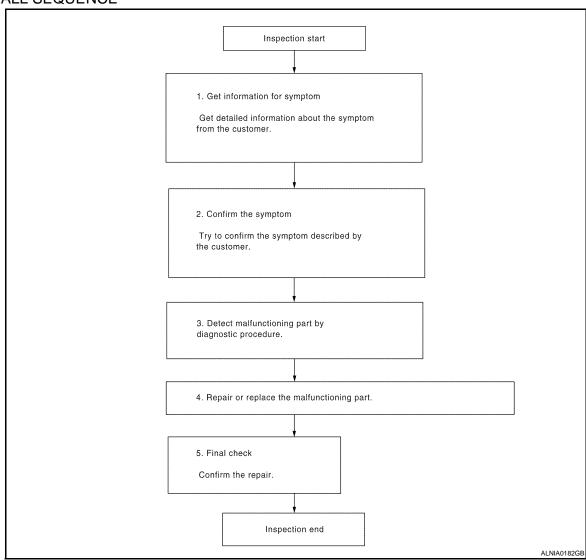
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BASIC INSPECTION

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.

DIAGNOSIS AND REPAIR WORKFLOW	
< BASIC INSPECTION > [BOSE AUDIO WITHOUT NAVIGAT	ION]
Is malfunctioning part detected?	
YES >> GO TO 4	Α
NO >> GO TO 2	
4.REPAIR OR REPLACE THE MALFUNCTIONING PART	В
 Repair or replace the malfunctioning part. 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.	E
NO >> GO TO 2	
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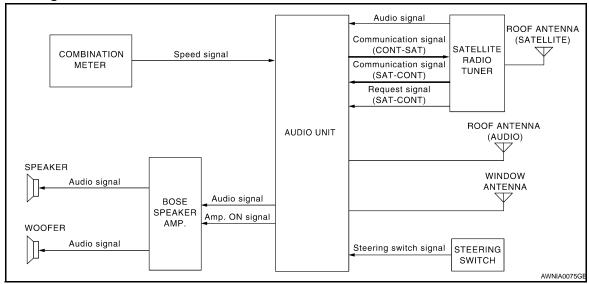
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FUNCTION DIAGNOSIS

AUDIO SYSTEM

System Diagram

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System Description

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AUDIO SYSTEM

The audio system consists of the following components

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

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 rear subwoofers.

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.

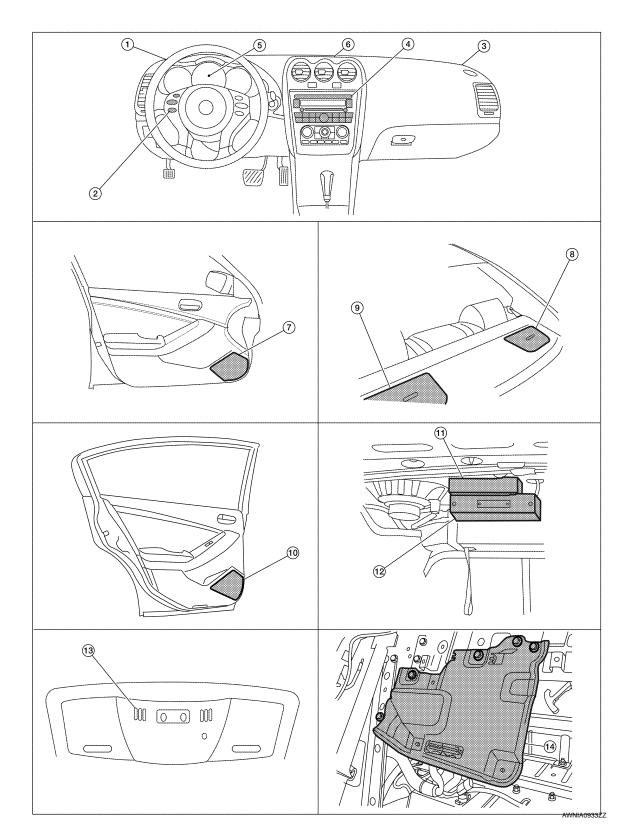
Refer to Owner's Manual for satellite radio system operating instructions.

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

INFOID:0000000003072248



- 1. Tweeter LH M51
- 4. Audio unit M43, M44, M45, M81
- 2. Steering wheel audio control switch- 3.
- 5. Combination meter M24
- 3. Tweeter RH M52
- 6. Center speaker M151

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AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 7. Front door speaker LH D3 RH D10310. Rear door speaker
- 11. Satellite radio tuner B123, B133

Rear subwoofer RH B124

9. Rear subwoofer LH B120

- 10. Rear door speake LH D202 RH D302
- Satellite radio tuner B123, B133 (viewed under parcel shelf near rear speaker LH)
- Bluetooth control unit B125, B126 (viewed under parcel shelf near rear speaker LH) (with Bluetooth)

- 13. Microphone R7 (with Bluetooth)
- 14. BOSE speaker amp B121, B122 (view with rear seat back removed)

Component Description

INFOID:0000000003072249

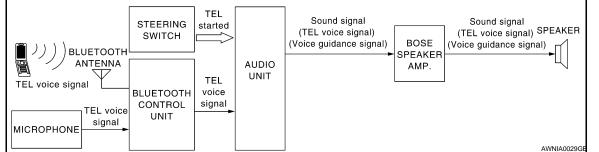
Part name	Description
Audio unit	Controls audio system and satellite radio system functions
BOSE speaker amp.	Receives power (amp ON) and audio signals from audio unit, and outputs audio signals to each speaker.
Steering switches	Each audio operation can be operatedSteering switch signal (operation signal) 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
Rear subwoofers	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

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System Description

INFOID:0000000003072251

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.

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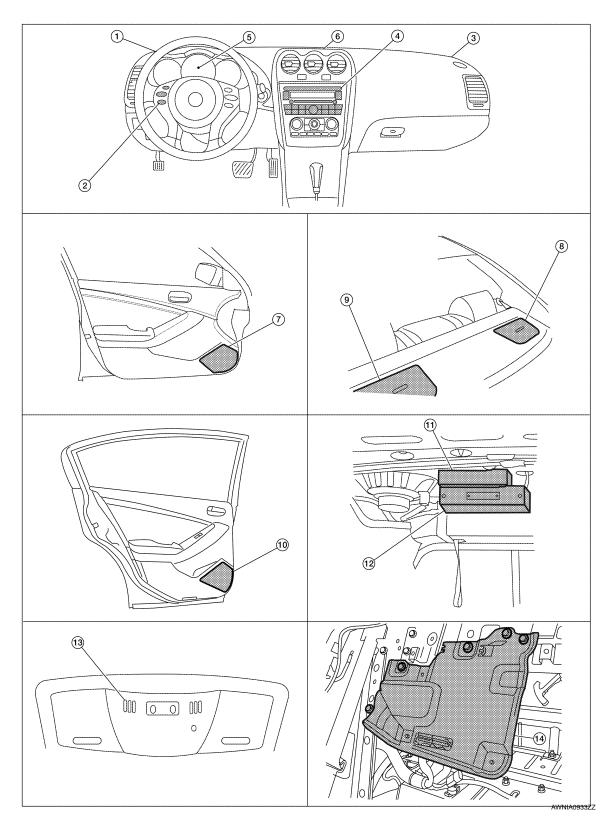
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Component Parts Location

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- 1. Tweeter LH M51
- 4. Audio unit M43, M44, M45, M81
- 2. Steering wheel audio control switch- 3.
- 5. Combination meter M24
- 3. Tweeter RH M52
- 6. Center speaker M151

HANDS-FREE PHONE SYSTEM

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 7. Front door speaker LH D3 RH D103
- 8. Rear subwoofer RH B124
- 9. Rear subwoofer LH B120

- Rear door speaker
 LH D202
 RH D302
- Satellite radio tuner B123, B133 (viewed under parcel shelf near rear speaker LH)
- Bluetooth control unit B125, B126 (viewed under parcel shelf near rear speaker LH) (with Bluetooth)

13. Microphone R7 (with Bluetooth)

Component Description

14. BOSE speaker amp B121, B122 (view with rear seat back removed)

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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	amp.
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

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DIAGNOSIS SYSTEM (AUDIO UNIT)

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

DIAGNOSIS SYSTEM (AUDIO UNIT)

Diagnosis Description

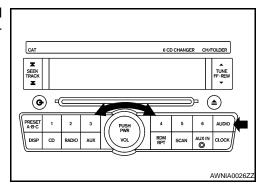
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Self-diagnosis mode can check the following items.

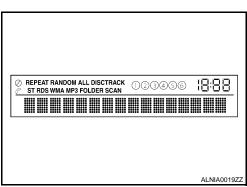
- Audio unit hardware/software versions
- · Continuity of each speaker channel
- Continuity of each audio unit switch

OPERATION PROCEDURE

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

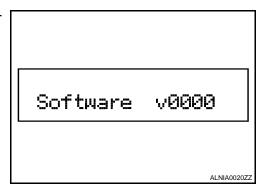


4. Initially, all display segments will be illuminated.



Version Check

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



DIAGNOSIS SYSTEM (AUDIO UNIT)

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

<u> </u>	to hor birrores	<u>-</u> _
	Press the "AUDIO" switch again to display the "Hardware" audio hardware version).	
		Hardware v0000
		ALNIA0021ZZ
	Press the "AUDIO" switch again to display the "CD Mech" (CD nechanism version).	
		CD Mech v0000
		Sandar I Pantani I V Sandari
		ALNIA0022ZZ
	Press the "AUDIO" switch again to display the "SDARS" (satelte radio version).	
		SDARS V0000
		SDARS v0000
		ALNIA0023ZZ
	nel Check Diagnostics n all segments are illuminated, press the "TUNE" up switch to	
enter	channel check diagnostics. The self-diagnostic function will send a tone to each channel (FL, RL, RR, FR) for 1 second.	
thom	sond a tone to each chairmer (i E, ixe, ixx, i ix) for i second.	
		Channel check FL
		CHAINEL CHECK I E
		ALNIA0024ZZ
Buttor	n Check Diagnostics	

DIAGNOSIS SYSTEM (AUDIO UNIT)

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

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.	
	BUTTON CHECK

DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

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INFOID:0000000003072255

DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

Diagnosis Description

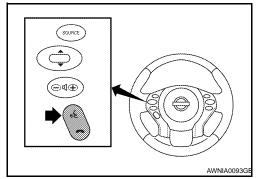
The Bluetooth control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

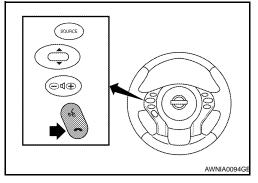
- · Internal control unit failure
- Bluetooth antenna connection open or shorted
- Steering wheel audio control switches (SEND/END) stuck closed
- · Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth inquiry check

OPERATION PROCEDURE

- Turn ignition switch to ACC or ON.
- 2. Wait for the Bluetooth system to complete initialization. This may take up to 10 seconds.
- 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.



- 4. While the prompt is playing, press and hold the steering wheel audio control switch END button until you hear the "Diagnostics mode" prompt. The Bluetooth system will sound a 5 second beep.
- 5. While the beep is sounding, press and hold the steering wheel audio control switch END button again until you hear prompts.
- 6. The Bluetooth system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician. Refer to AV-65, "Work Flow".
- 7. After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails refer to AV-65, "Work Flow".
- 8. Self-diagnosis mode is complete when the voice prompt says "All diagnostic functions completed".



Work Flow

Failure Message	Action		
"Internal failure"	Replace Bluetooth control unit. Refer to AV-139, "Removal and Installation".		
"Bluetooth antenna open"	Inspect harness connection.		
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-138, "Removal and Installation"</u> .		
"Phone/Send for Hands Free System is stuck"	Check steering wheel audio control switches. Refer to AV-86, "Diagnosis Procedure".		
"Phone/End for the Hands Free System is stuck"			
"Microphone test" (failed interactive test)	 Inspect harness between Bluetooth control unit and microphone. Replace microphone. Refer to <u>AV-137</u>, "Removal and Installation". 		

AV-65

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT: Diagnosis Procedure

INFOID:0000000003072257

1.CHECK FUSE

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

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

Are the fuses OK?

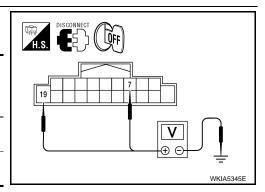
YES >> GO TO 2

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

2.audio unit power supply circuit check

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

	-	Terminal No.				
Unit	(+)		(-)	OFF	ACC	ON
	Connector	Terminal	(-)			
Audio unit	M43	19	Ground	Battery voltage	Battery voltage	Battery voltage
Addio driit	IVI43	7	Ground	0V	Battery voltage	Battery voltage



Are the voltage readings as specified?

YES >> GO TO 3

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

· Repair harness or connector.

3.ground circuit check

Inspect audio unit case ground.

Does case ground pass inspection?

>> Inspection End. YES

>> Repair audio unit case ground. NO

BOSE SPEAKER AMP

BOSE SPEAKER AMP: Diagnosis Procedure

INFOID:0000000003072258

1.CHECK FUSE

Check for blown fuses.

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

Are the fuses OK?

YES >> GO TO 2

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

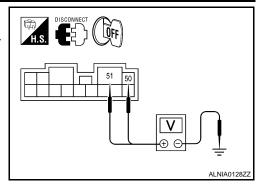
2.CHECK POWER SUPPLY CIRCUIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

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

		Terminal No.		
Unit	(+)	(-)	Voltage (approx.)
	Connector	Terminal	(-)	(-11)
BOSE	5.100	50		Battery
speaker amp	B122	51	Ground	voltage



Is battery voltage present?

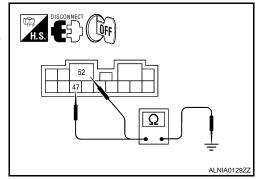
YES >> GO TO 3

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

3. CHECK GROUND CIRCUIT

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

		Terminal No.		
Unit	(-	+)	(-)	Continuity
	Connector	Terminal	(-)	
BOSE	D.100	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

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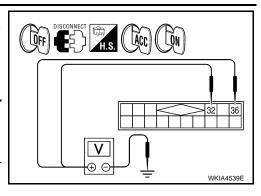
Н

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 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.

	-	Terminal No.				
Unit	(+)		(-)	OFF	ACC	ON
	Connector	Terminal	(-)			
Satellite radio tuner	B123	32	Ground	Battery voltage	Battery voltage	Battery voltage
(factory in- stalled)	D123	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

INFOID:0000000003072260

1. CHECK FUSE

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

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

Are the fuses OK?

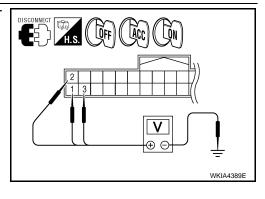
YES >> GO TO 2

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.

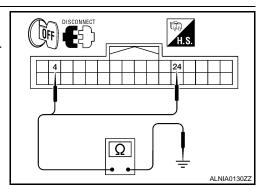
< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

$\overline{\mathbf{3.}}$ 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.

		Terminal No).	
Unit	(+)		(-)	Continuity
	Connector	Terminal	(-)	
Ground	B126	4	Ground	Yes
Giouria	D120	24	Giouna	162



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 (Approx.)
Microphone VCC signal	R7	4	ON	5V

WKIA5796E

Is proper voltage present?

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

2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

- Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit and microphone connectors.
- 3. 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.

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

DISCONNECT B H.S.
29
Ω
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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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< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- 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

CONNECT H.S. H.S. 29 ALNIA0133ZZ

Is proper voltage present?

YES >> Inspection End.

NO >> Replace Bluetooth control unit. Refer to <u>AV-139</u>. "Removal and Installation".

4. CHECK GROUND CIRCUIT

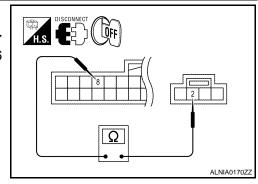
- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit and microphone connectors.
- Check continuity between microphone harness connector R7 terminal 2 and Bluetooth control unit harness connector B126 terminal 8.

Signal name	Continuity
Microphone ground	Continuity should exist.

Is continuity present?

YES >> Inspection End.

NO >> Repair harness or connector.



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

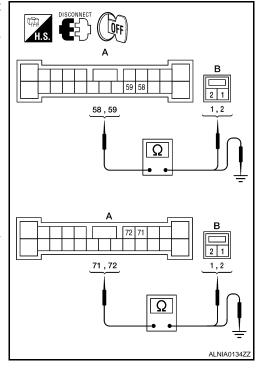
1. HARNESS CHECK

- 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).

А		В		Continuity
Connector	Terminal	Connector	Terminal	
	58	D3	1	
B121	59	DS	2	Yes
	71	D103	1	165
	72		2	

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

Terminals			
A B			Continuity
Connector	Terminal		
	58	Ground	No
B121	59		
DIZI	71	Ground	
	72		



Are continuity test results as specified?

YES >> GO TO 2

NO

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

· Repair harness or connector.

2.FRONT SPEAKER SIGNAL CHECK

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< 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.

Connec-	Terr	ninal	Condition	Reference
tor	(+)	(-)	Condition	signal
	58	59		
B121	71	72	Receive audio sig- nal	1 0 -1 1 ms 3 3KA0177E

Is audio signal voltage as specified?

YES >> Replace suspect speaker. Refer to <u>AV-131, "Removal and Installation"</u>.

NO >> GO TO 3

3. HARNESS CHECK

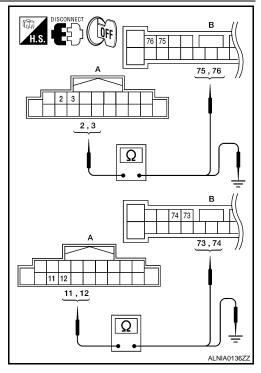
- 1. Disconnect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Check continuity between audio unit harness connector M43 (A) and BOSE speaker amp. harness connector B121 (B).

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

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

Terminals			
A			Continuity
Connector	Terminal		
	2		
M43	3	Ground	No
10143	11	Giouna	NO
	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

FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

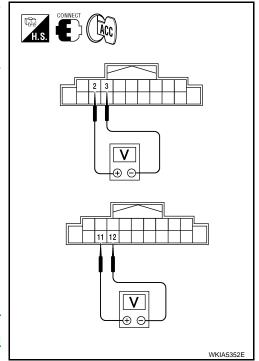
- Connect audio unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

Connector	Tern	ninals	Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	2	3			
M43	11	12	Receive audio sig- nal	(V) 1 0 -1 1 ms	

Are the audio signal voltage readings as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-128.</u> "<u>Removal and Installation"</u>.

NO >> Replace audio unit. Refer to <u>AV-127, "Removal and Installation"</u>.



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TWEETER

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

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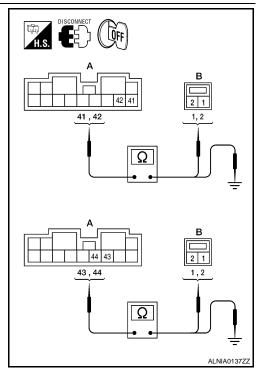
1. HARNESS CHECK

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

	Continuity			
Connector	Terminal	Connector		
B122	41	M51	1	Yes
	42		2	
	44		1	165
	43	M52	2	

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

	Terminals			
	A	_	Continuity	
Connector	Terminal			
	41		No	
B122	42	Ground		
B122	44	Ground		
	43			



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

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	41	42			
B122	44	43	Receive audio sig- nal	(V) 1 0 -1 1 ms	

Are the audio signal voltage readings as specified?

YES >> Replace suspect tweeter. Refer to <u>AV-129</u>, "<u>Removal</u> and <u>Installation</u>".

NO >> GO TO 3

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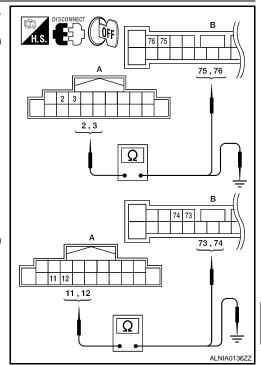
3. HARNESS CHECK

- 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).

	Continuity			
Connector	Terminal	Connector Terminal		
	2	B121	75	
M43	3		76	Yes
	11		73	163
	12		74	

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

	Terminals					
	А		Continuity			
Connector	Terminal]				
	2		No			
M43	3	Ground				
10143	11	Ground				
	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.TWEETER SIGNAL CHECK

[BOSE AUDIO WITHOUT NAVIGATION]

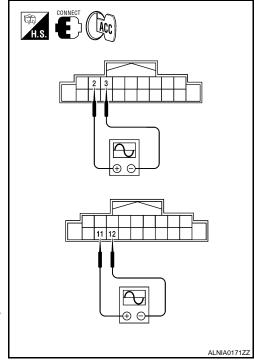
- Connect audio unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	2	3			
M43	11	12	Receive audio sig- nal	1 0 -1 1 ms SKIA0177E	

Are the audio signal voltage readings as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-128.</u> "<u>Removal and Installation"</u>.

NO >> Replace audio unit. Refer to <u>AV-127, "Removal and Installation"</u>.



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CENTER SPEAKER

Description

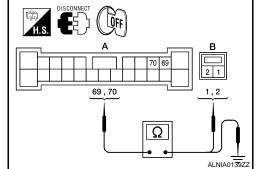
The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the center speaker using the audio signal circuits.

Diagnosis Procedure

1. HARNESS CHECK

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

	A B				
Connector	Terminal	Connector	Terminal		
B121	69	M151	1	Yes	
וצוט	70	IVITOT	2	162	



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

	Terminals				
	Α		Continuity		
Connector	Terminal	_			
B121	69	Ground	No		
BIZI	70	Glound			

Are continuity test results as specified?

YES >> GO TO 2

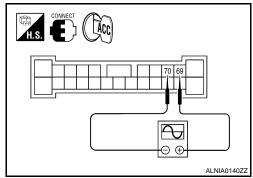
NO >> • Check connector housings for disconnected or loose terminals.

· Repair harness or connector.

2.CENTER SPEAKER SIGNAL CHECK

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

Connector	Terminals		Condition	Reference		
Connector	(+)	(-)	Condition	signal		
B121	69	70	Receive audio sig- nal	(V) 1 0 -1 1 ms		



Is the audio signal voltage reading as specified?

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

NO >> GO TO 3

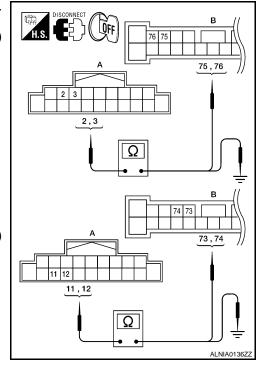
3. HARNESS CHECK

- 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	В		Continuity
Connector	Terminal	Connector	Terminal	
	2	B121	75	
M43	3		76	Yes
IVI43	11		73	165
	12		74	

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

-	Continuity		
Connector	Terminal	_	
-	2	Ground	No
M43	3		
IVITO	11	Giouna	
	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

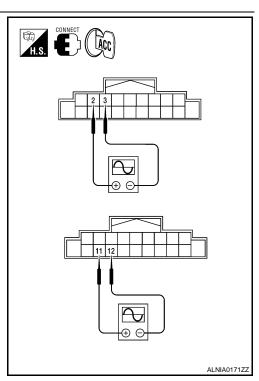
- Connect audio unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	2	3			
M43	11	12	Receive audio sig- nal	(V) 1 0 -1 1 ms :	

Are the audio signal voltage readings as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-128</u>, <u>"Removal and Installation"</u>.

NO >> Replace audio unit. Refer to <u>AV-127, "Removal and Installation".</u>



REAR DOOR SPEAKER

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

1. HARNESS CHECK

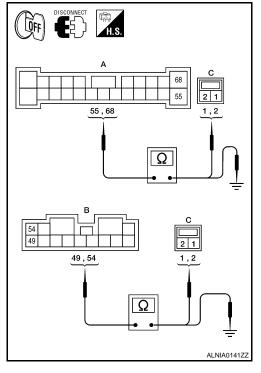
1. Disconnect BOSE speaker amp. connectors B121, B122 and suspect speaker connector.

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

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

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

Connector	Terminal	-	Continuity	
A: B121	55			
A. BIZI	68	Ground	No	
B: B122	49	Glound	NO	
B. B122	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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< COMPONENT DIAGNOSIS >

- Connect BOSE speaker amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between BOSE speaker amp. harness connectors B121 (A) and B122 (B) terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
A: B121	68	55			
B: B122	54	49	Receive audio sig- nal	(V) 1 0 -1 1 ms SKIA0177E	

Are audio signal voltage readings as specified?

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

NO >> GO TO 3

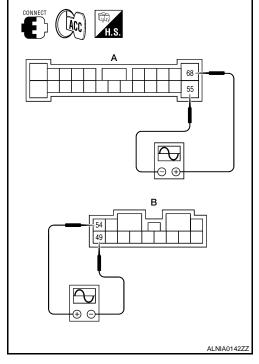
3. HARNESS CHECK

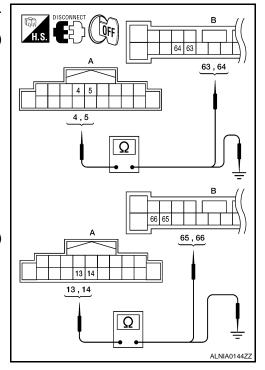
- 1. Disconnect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Check continuity between audio unit harness connector M43 (A) and BOSE speaker amp. harness connector B121 (B).

A B				Continuity
Connector	Terminal	Connector Terminal		
	4	B121	64	
M43	5		63	Yes
IVI43	13	DIZI	66	165
	14		65	l

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

	Terminals					
	A					
Connector	Terminal	T				
	4					
M43	5	Ground	No			
IVI43	13	Ground				
	14					
			•			





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

REAR DOOR SPEAKER

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

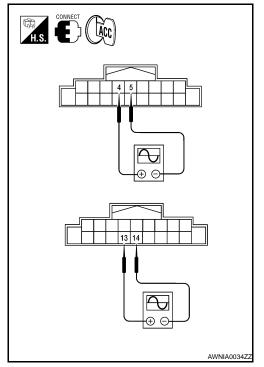
- 1. Connect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

Connector	Terminals Condition		Reference		
	(+)	(-)	Condition	signal	
	4	5			
M43	13	14	Receive audio sig- nal	(V) 1 0 -1 1 ms	

Is the audio signal voltage reading as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-128</u>, <u>"Removal and Installation"</u>.

NO >> Replace audio unit. Refer to <u>AV-127, "Removal and Installation"</u>.



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SUBWOOFER

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

INFOID:0000000003072271

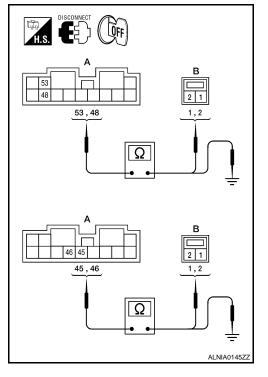
1. HARNESS CHECK

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

	АВ				
Connector	Terminal	Connector	Terminal		
	53	B120 -	1		
B122	48		2	Yes	
DIZZ	45		1	165	
	46	D124	2		

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

	Terminals			
	Continuity			
Connector	Terminal] _		
	53			
B122	48	Ground	No	
D122	45	Ground		
	46			



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 SUBWOOFER SIGNAL CHECK

SUBWOOFER

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

(ACC)

- 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.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	53	48			
B122	45	46	Receive au- dio signal	(V) 1 0 -1 1 ms	

Is the audio signal voltage as specified?

YES >> Replace suspect rear subwoofer. Refer to <u>AV-133.</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).

	Continuity			
Connector	Terminal	Connector Terminal		
	4	B121	64	
M43	5		63	Yes
IVI43	13		66	165
	14		65	

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

	Continuity			
Connector	Terminal]		
	4	Ground	No	
M43	5			
IVITO	13	Ground		
	14			

ALNIA0146ZZ ALNIA0146ZZ A 63, 64 A 63, 64 A 65, 66 A 65, 66 A 65, 66

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

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< COMPONENT DIAGNOSIS >

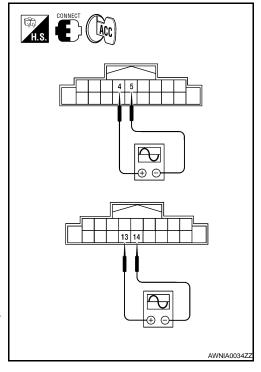
- 1. Connect audio unit connector M43 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

Connector	Term	ninals	Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	4	5			
M43	13	14	Receive audio sig- nal	(V) 1 0 -1 1 ms SKIA0177E	

Is the audio signal voltage as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-128.</u> "Removal and Installation".

NO >> Replace audio unit. Refer to <u>AV-127, "Removal and Installation"</u>.



AMP ON SIGNAL CIRCUIT

Description INFOID:0000000003072272

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

INFOID:00000000003072273

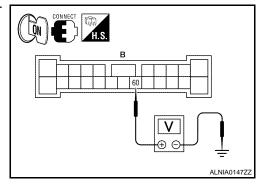
${\bf 1.}{\sf CHECK\ AMP\ ON\ SIGNAL\ (BOSE\ SPEAKER\ AMP)}$

- Turn audio system ON.
- 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. >> GO TO 2 NO



2. CHECK AMP ON SIGNAL (AUDIO UNIT)

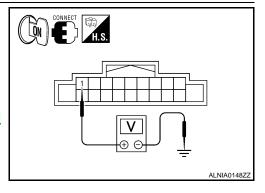
Check voltage between audio unit harness connector M43 terminal 1 and ground.

1 - Ground : More than approx. 6.5V

Is voltage greater than 6.5V?

YES >> Repair harness or connector.

NO >> Replace audio unit. Refer to AV-127, "Removal and Installation".



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STEERING SWITCH

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

Diagnosis Procedure

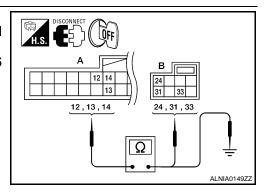
INFOID:0000000003072275

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.

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



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

	_	Continuity	
Connector	Terminal	-	
	12		
B126	13	Ground	No
	14		

Are the continuity test results as specified?

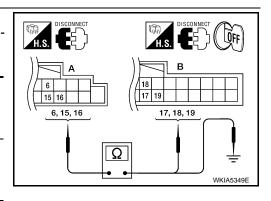
YES >> GO TO 2

NO >> Repair harness.

2. CHECK HARNESS

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

Α	A B			Continuity
Connector	Terminal	Connector Terminal		
	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

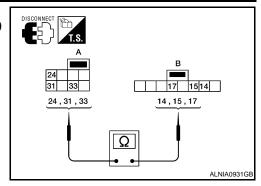
STEERING SWITCH

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

- Disconnect spiral cable connector M88.
- Check continuity between spiral cable harness connector M30 and M88.

	A	В		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	24		14		
M30	31	M88	15	Yes	
	33		17		



Are the continuity test results as specified?

YES >> GO TO 4

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

4. CHECK STEERING SWITCH

Check steering switch. Refer to AV-88, "Component Inspection".

Does the steering switch pass inspection?

>> Replace Bluetooth control unit. Refer to AV-139, "Removal and Installation" YES

>> Replace steering switch. Refer to AV-136, "Removal and Installation". NO

WITHOUT BLUETOOTH

1. CHECK STEERING SWITCH

Check steering switch. Refer to AV-88, "Component Inspection".

Does the steering switch pass inspection?

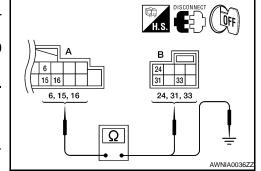
YES >> GO TO 2

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

2. CHECK HARNESS

- Turn ignition switch OFF.
- 2. 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).

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



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

		Continuity	
Connector	Terminal		
	6		
M43	15	Ground	No
	16		

Are the continuity test results as specified?

YES >> GO TO 3

NO >> Repair harness.

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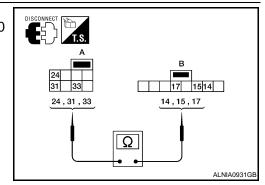
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3. SPIRAL CABLE CHECK

- 1. Disconnect spiral cable connector M88.
- Check continuity between spiral cable harness connector M30 and M88.

	A	В		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	24		14		
M30	31	M88	15	Yes	
33			17		



Are the continuity test results as specified?

YES >> Inspection End.

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

Component Inspection

INFOID:0000000003072276

WITH BLUETOOTH

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

Standard

Between terminals 14 and 17

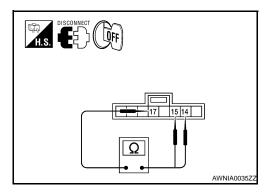
ightharpoonup switch ON : 0 Ω

SEEK UP switch ON : $108 - 112 \Omega$ SEEK DOWN switch ON : $323 - 337 \Omega$

Between terminals 15 and 17

VOL DOWN switch ON : $\mathbf{0} \Omega$

VOL UP switch ON: $108 - 112 \Omega$ \checkmark switch ON: $323 - 337 \Omega$ SOURCE switch ON: $990 - 1030 \Omega$



WITHOUT BLUETOOTH

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

Standard

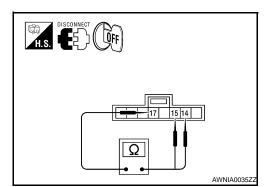
Between terminals 14 and 17

SOURCE switch ON : $\mathbf{0} \Omega$

SEEK UP switch ON : $162 - 168 \Omega$ VOLUME UP switch ON : $639 - 665 \Omega$

Between terminals 15 and 17

SEEK DOWN switch ON : $162 - 168 \Omega$ VOL DOWN switch ON : $639 - 665 \Omega$



COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

SATELLITE RADIO TUNER: Description

INFOID:0000000003072277

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

SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:0000000003072278

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.

AWNIA0038Z

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

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.

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.

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.

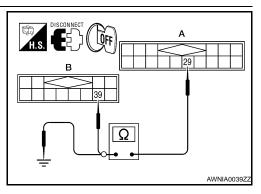
Continuity should not exist.

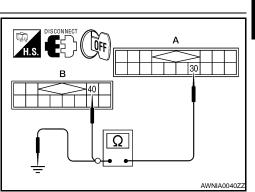
Are the continuity test results as specified?

YES >> GO TO 4

NO >> Repair harness or connector.

4. CHECK REQ1 SIGNAL





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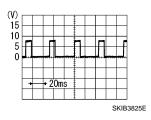
COMMUNICATION SIGNAL CIRCUIT

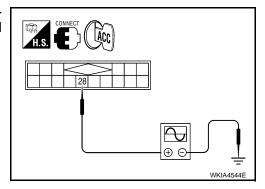
[BOSE AUDIO WITHOUT NAVIGATION]

< COMPONENT DIAGNOSIS >

- 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





Are the voltage readings as specified?

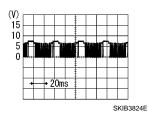
YES >> GO TO 5

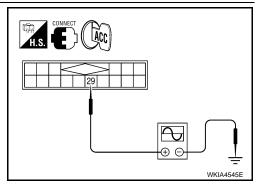
NO >> Replace audio unit. Refer to AV-45, "Removal and Installation".

5. CHECK TXD SIGNAL

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

29 - Ground





Are the voltage readings as specified?

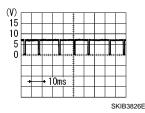
YES >> GO TO 6

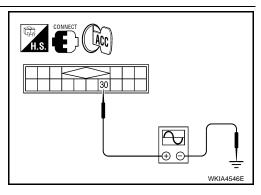
NO >> Replace satellite radio tuner. Refer to AV-134, "Removal and Installation".

6. CHECK RXD SIGNAL

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

30 - Ground





Are the voltage readings as specified?

YES >> Replace satellite radio tuner. Refer to AV-134, "Removal and Installation".

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

SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

SATELLITE RADIO TUNER: Description

INFOID:0000000003072279

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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

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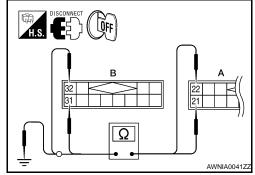
LEFT CHANNEL

1. CHECK HARNESS

1. Turn ignition switch OFF.

- 2. 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.

<u> </u>	١	E	3	Continuity
Connector	Terminal	Connector	Terminal	
B123	21	M45	31	Yes
D123	22	IVI43	32	163



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

	Terminals				
	Continuity				
Connector	Terminal	_			
B123	21	Ground	No		
D123	22	Giouna	NO		

Are continuity test results as specified?

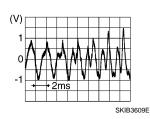
YES >> GO TO 2

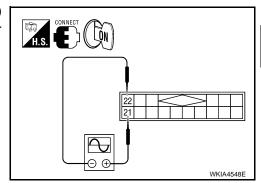
NO >> Repair harness or connector.

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 AV-45, "Removal and Installation".

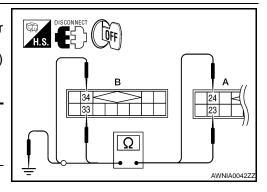
NO >> Replace satellite radio tuner. Refer to AV-134, "Removal and Installation".

RIGHT CHANNEL

1. CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. 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.

	Continuity			
Connector	Terminal	Connector	Terminal	
B123	23	M45	33	Yes
B125	24	IVI43	34	165



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

	Continuity		
Connector	Terminal	_	
B123	23	Ground	No
	24	Giouna	INO

Are continuity test results as specified?

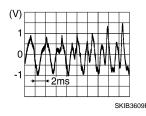
YES >> GO TO 2

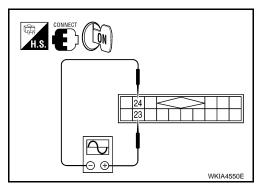
NO >> Repair harness or connector.

2. CHECK RIGHT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- 3. 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 AV-134, "Removal and Installation".

MICROPHONE SIGNAL CIRCUIT

Description

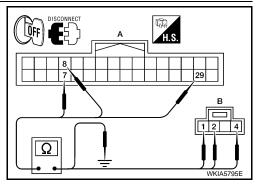
Voice signals are transmitted from the microphone to the Bluetooth control unit using the microphone signal circuits.

Diagnosis Procedure

1. CHECK HARNESS BETWEEN BLUETOOTH CONTROL UNIT AND MICROPHONE

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

-		Tern	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		
	A		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

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

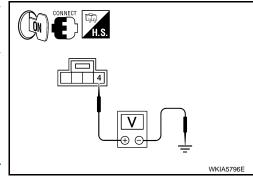
4 - Ground : Approx. 5V

Is voltage reading approx. 5 volts?

YES >> GO TO 3

NO >> Replace Bluetooth control unit. Refer to <u>AV-139</u>, <u>"Removal and Installation"</u>.

3.CHECK MICROPHONE SIGNAL



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MICROPHONE SIGNAL CIRCUIT

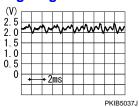
[BOSE AUDIO WITHOUT NAVIGATION]

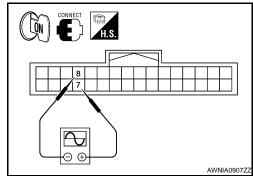
< COMPONENT DIAGNOSIS >

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 AV-139. "Removal and Installation".

NO >> Replace microphone. Refer to AV-137, "Removal and Installation".

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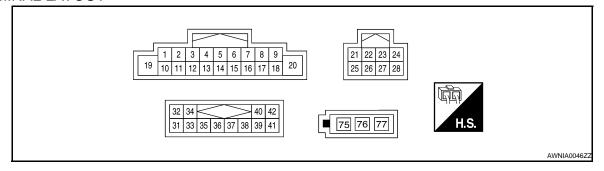
Р

ECU DIAGNOSIS

AUDIO UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES - WITH BLUETOOTH

	ninal color)	ltem	Signal in-		Condition	Reference value
+	_	nem	put/out- put	Ignition switch	Operation	Reference value
1 (B/P)	Ground	Amp. ON signal	Output	ON	_	More than approx. 6.5V
2 (G)	3 (R)	Audio sound signal front LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
4 (GR/V)	5 (W/L)	Audio sound signal rear LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
					Press SEEK DOWN switch.	0.7V
6 (W/G)	Ground	Remote con- trol A	Input	ON	Press SEEK UP switch.	1.3V
,					Press 🗪 switch.	2.0V
					Except for above.	3.3V
7 (V/Y)	Ground	ACC signal	Input	ON	Ignition switch ACC or ON	Battery voltage
10	_	Shield	-	_	_	Approx. 0V

[BOSE AUDIO WITHOUT NAVIGATION]

		ninal color)		Signal in-		Condition	Defenses unles
	+	_	ltem	put/out- put	Ignition switch	Operation	Reference value
	11 (B)	12 (W)	Audio sound signal front RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
	13 (V)	14 (LG)	Audio sound signal rear RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
_	15 (L/B)	_	Remote con- trol ground	Input	_	_	-
						Press SOURCE switch.	OV
						Press "≨ switch.	0.7V
	16 (GR/L)	Ground	Remote con- trol B	Input	ON	Press VOL UP switch.	1.3V
						Press VOL DOWN switch	2V
						Except for above.	3.3V
	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
	19 (Y/R)	Ground	Battery power	Input	_	_	Battery voltage
	20	_	Shield	1	ı	_	Approx. 0V
	21	_	M-CAN +	_	_	_	-
	22	_	M-CAN -	ı	ı	_	-
	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	_	-

AUDIO UNIT

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[BOSE AUDIO WITHOUT NAVIGATION]

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-		ninal color)		Signal in-		Condition	Defense de
_	+	_	Item	put/out- put	Ignition switch	Operation	Reference value
_	32 (Y/L)	31 (W/L)	Audio left channel sound signal from satellite radio tuner	Input	ON	Receive audio sig- nal	(V) 1 0 -1 1 ms
	34 (BR/L)	33 (Y/G)	Audio right channel sound signal from satellite radio tuner	Input	ON	Receive audio sig- nal	(V) 1 0 -1 1 ms
	35	_	Shield ground (audio signal)	_	-	-	0V
	36	_	Shield ground (data)	_	-	-	0V
-	38 (R)	Ground	Satellite radio tuner request to audio unit	Input		Turn audio unit ON	5V
_	39 (G)	Ground	Audio RX	Input	ON	Operate audio vol- ume	(V) 6 4 2 0 *** 5ms SKIA4403E
	40 (B)	Ground	Audio TX	Output		Operate audio vol- ume	(V) 6 4 2 0 + + 2ms SKIA4402E
_	75 (B)	Ground	Amp power supply	Output	ON	Turn audio unit ON	Battery voltage
_	76 (B)	Ground	Main antenna	Input	ON	Turn audio unit ON	-

PHYSICAL VALUES - WITHOUT BLUETOOTH

	ninal color)		Signal in-		Condition	
+	_	- Item	put/out- put	Ignition switch	Operation	Reference value
1 (B/P)	Ground	Amp. ON signal	Output	ON	-	More than approx. 6.5V
2 (G)	3 (R)	Audio sound signal front LH	Output	ON	Receive audio signal	(V) 1 0 -1 -1 -1
4 (GR/V)	5 (W/L)	Audio sound signal rear LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
					Press SOURCE switch.	0.0V
6	Ground	Remote con-	Input	ON	Press SEEK UP switch.	0.75V
(W/G)		trol A			Press VOL UP switch.	2.0V
					Except for above.	5.0V
7 (V/Y)	Ground	ACC signal	Input	ON	Ignition switch ACC or ON	Battery voltage
10	_	Shield	-	_	_	Approx. 0V
11 (B)	12 (W)	Audio sound signal front RH	Output	ON	Receive audio sig- nal	(V) 1 0 -1 1 ms
13 (V)	14 (LG)	Audio sound signal rear RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
15 (L/B)	-	Remote con- trol ground	Input	_	-	-
					Press SEEK DOWN switch.	0.75V
16 (GR/L)	Ground	Remote con- trol B	Input	ON	Press VOL DOWN switch.	2.0V
					Except for above.	5.0V

AUDIO UNIT

[BOSE AUDIO WITHOUT NAVIGATION]

	minal e color)	lkom	Signal in-		Condition	Deference value
+	-	ltem	put/out- put	Ignition switch	Operation	Reference value
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
19 (Y/R)	Ground	Battery power	Input	_	_	Battery voltage
20	_	Shield	-	_	_	Approx. 0V
21	_	M-CAN +	_	_	_	-
22	-	M-CAN -	-	_	_	-
23	_	Shield	1	_	_	Approx. 0V
25	_	Tel. Shield	-	_	_	Approx. 0V
26 (BR)	27 (Y)	Telephone au- dio in	-	_	_	-
28 (R/W)	Ground	Telephone ON signal	Input	ON	_	-
32 (Y/L)	31 (W/L)	Audio left channel sound signal from satellite radio tuner	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms
34 (BR/L)	33 (Y/G)	Audio right channel sound signal from satellite radio tuner	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms
35	_	Shield ground (audio signal)	_	_	_	0V
36	_	Shield ground (data)	-	_	_	0V

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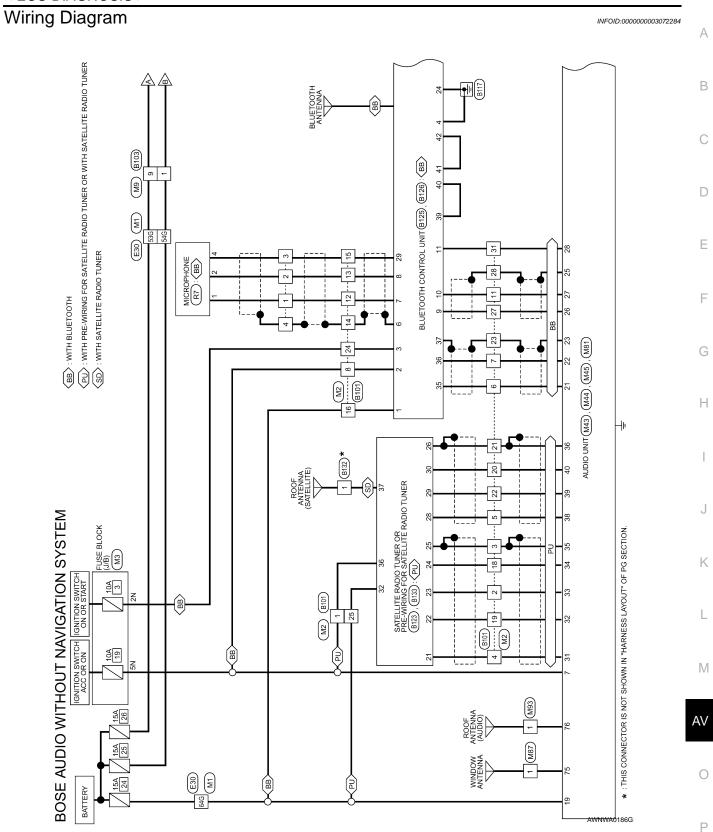
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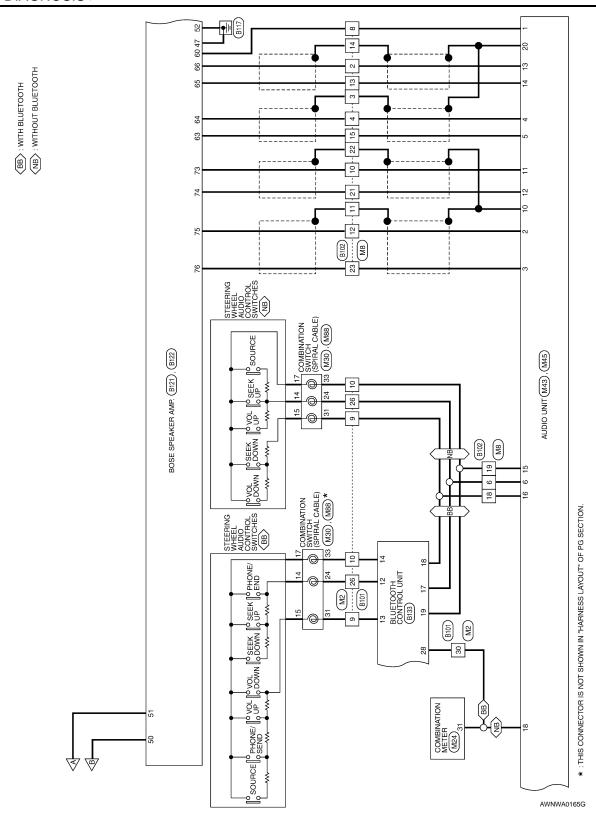
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[BOSE AUDIO WITHOUT NAVIGATION]

	minal color)	lto m	Signal in-		Condition	Reference value
+	_	Item	put/out- put	Ignition switch	Operation	Reference value
38 (R)	Ground	Satellite radio tuner request to audio unit	Input		Turn audio unit ON	5V
39 (G)	Ground	Audio RX	Input	ON	Operate audio vol- ume	(V) 6 4 2 0 *** 5ms SKIA4403E
40 (B)	Ground	Audio TX	Output		Operate audio vol- ume	(V) 6 4 2 0 + 2ms SKIA4402E
75 (B)	Ground	Amp power supply	Output	ON	Turn audio unit ON	Battery voltage
76 (B)	Ground	Main antenna	Input	ON	Turn audio unit ON	-





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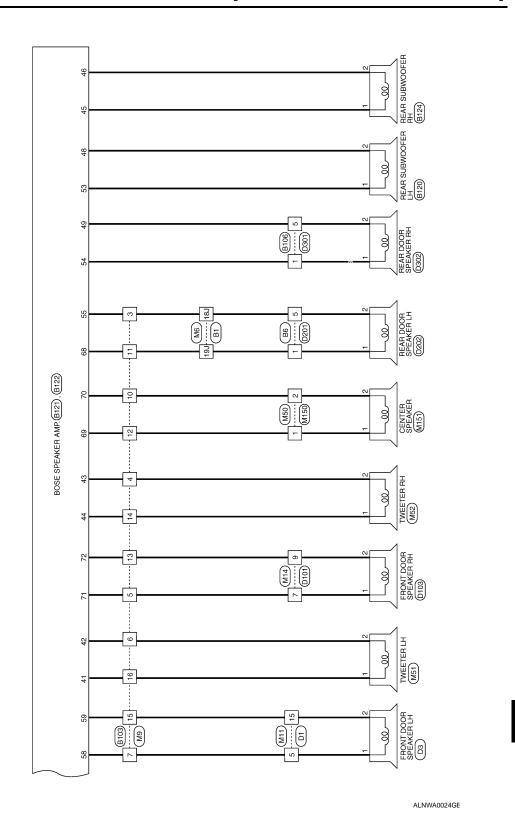
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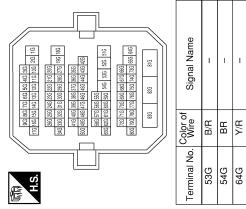
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BOSE AUDIO WITHOUT NAVIGATION SYSTEM CONNECTORS

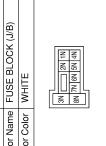
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Connector No.	Connector Name	Connector Color	
	E TO WIRE	TE	
Connector No. M1	Connector Name WIR	Connector Color WHI	
	M1	M1 WIRE TO WIRE	

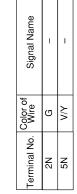
Signal Name	1	ı	ı	ı	1	ı	I	ı	ı	ı	I	I	1	1	ı	ı	ı	1	-	
Color of Wire	>	B/R	R/B	SHIELD	R/L	Y/R	BR/L	Y/L	В	SHIELD	g	SHIELD	ŋ	Y/R	M/G	BR	SHIELD	M/N	₩/A	
Terminal No.	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	30	31	
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-	1												
7	8		Signal Name										
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9	22		S										
7	23												
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우			Color of Wire	λ/	Y/G	SHIELD	M/L	Œ	-	B/W	٨/٨	GR/L	L/B
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12	28		亨										
33	30 29												
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16 15 14 13 12 11 10 9	8		Terminal No.										
9	32		 										
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Collination 140.	2
Connector Name	Connector Name FUSE BLOCK (J/B)
Connector Color WHITE	WHITE





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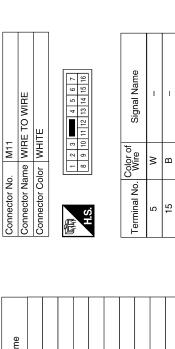
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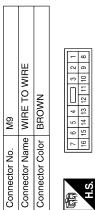
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Connector No. M7	
Signal Name	Signal Name
Color of Wire BR/R R/G	Color of Wire Chart Mire Chart Mi
Terminal No. 18J 19J	Terminal No. 12 13 14 14 15 15 22 22 23 23
Connector No. M6 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE Salar Sal	Connector No. M8 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color C



Signal Name	ı	ı	1	_	ı	ı	_	_	ı	-	_	_	1	_
Color of Wire	BR	BR/R	GR/L	G/W	В/У	8	B/R	O/B	R/G	B/P	BR	0/7	В	ГG
Terminal No.	-	ဧ	4	2	9	7	6	10	7	12	13	14	15	16



Connector No.	M3C	
Connector Name		COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	lor GRAY	47
原语 H.S.	31	24 25 26 27
Terminal No. Wire	Color of Wire	Signal Name
24	9/M	AUDIO_STRG_SW_ _REMOTE_A
31	GR/L	AUDIO_STRG_SW_ REMOTE_B
33	L/B	AUDIO_STRG_SW_GND

	ETER			14 15 16 17 18 19 20	34 35 36 37 38 39 40	me	5
	Connector Name COMBINATION METER	TE		9 10 11 12 13 14	26 27 28 29 30 31 32 33 3	Signal Name	TUO R/A8
. M24	me CON	lor WHI		6 7 8	26 27 28	Color of Wire	W/N
Connector No.	Connector Na	Connector Color WHITE	H.S.	1 2 3 4 5	21 22 23 24 25	Terminal No.	31

WIRE TO WIRE		Г	4	9 10	ı
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Signal Name	I	ı	
Color of Wire	G/W	BR	
Terminal No.	7	6	

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M44				21 22 23	25 26		10000	Wire	-	۵	SHIELD	1	SHIELD	BR	>	B/W	_	M50	e WIRE 1	v WHITE			1 2			olor of	Wire	B/P	0/B					D
Connector No.	Connector Color			•	ō.			Terminal No.	21	22		24	25 S	26	27	28		Connector No.	Connector Name	Connector Color			ď	3			Terminal No.	-	2					Е
Con	Sol							Term										Conr	Con	Conr		E	S.H.				Term							F
										٥									1	<u></u>	+	<u> </u>	Ŧ				MBI)	BI)	4T)					G
Signal Name	STRG_SW_A	ACC	ILL-	ILL+	1	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)	RR SP RH (-)	STRG_SW_GND	STRG_SW_B	1	SPEED SIGNAL	BAT	1			-	Signal Name	SAT LH INPUT (-)	SAT LH INPUT (+)	SAT RH INPUT (-)	SAT RH INPUT (+)	EARTH	DAT EARTH	ı	RFQ1 (SAT TO COMBI)	RX (SAT TO COMBI)	TX (COMBI TO SAT)	1	I			Н
Color of Wire	M/G	٨/٨	R/Y	B/L	SHIELD	В	3	>	LG	L/B	GR/L	ı	W/N	Y/R	SHIELD			Color of	Wire	M/L	Y/L	Y/G	BR/L	SHIELD	SHIELD	1	R	G	В	1	1	-		I
Terminal No.	9		8	6	10	11	12	13	14	15	16	17	18	19	20				0	31	32	88	34	35	36	37	38	39	40	41	42			J
		7					Г		Τ	<u> </u>	Τ			7				Г		Γ	7													K
				6 8 2	16 17 18 20			Signal Name	AMP_ON	FR SP LH (+)	FR SP LH (-)	RR SP LH (+)	RR SP LH (-)									7	39 41											L
M43	WHITE			3 4 5 6	12 13 14 15		,		ľ	15	i ii		R. P.					45	AUDIO UNIT	WHITE		$\ $	5 36 37											M
				7	19 10 11			o. Wire	B/P	g	Œ	GR/V	M/L					No. M45		_	_	20 22	31 33											AV
Connector No.	Connector Color		£	U =	Ó	•		Terminal No.	-	2	ε	4	5					Connector No.	Connector Name	Connector Color				Ó										0

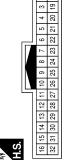
nector No. N N N N N N N N N	Terminal No. Color of Signal Name 75 B AMP SUPPLY 76 B MAIN ANTENNA 77	Connector No. M150 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No. Wire Signal Name 1 B/P 2 O/B	
Connector No. M52 Connector Name TWEETER RH Connector Color BROWN	Terminal No. Color of Signal Name 1 L/O 2 GR/L -	Connector No. M88 Connector Name COMBINATION SWITCH (SPIRAL CABLE) Connector Color GRAY	Terminal No. Color of Wire Signal Name 14 W REMOTE A 15 L REMOTE B 17 BR GND	
Connector No. M51 Connector Name TWEETER LH Connector Color BROWN	Terminal No. Wire Signal Name 1 LG - 2 B/Y -	Connector No. M87 Connector Name WINDOW ANTENNA Connector Color BLACK	Terminal No. Color of Signal Name	Connector No. M151 Connector Name CENTER SPEAKER Connector Color BROWN M.S. Terminal No. Wire Signal Name 1 B/P

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Signal Name	1			С
Color of Wire		52		D E
Termin				F
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B1	E WIN	1 22 102, 112, 112, 112, 112, 112, 112, 112,		Н
No. B1	Color WHITE	18 19 20 10 11 19 10 10 11 10 11 10 11 10 11 10 11 10 11 10 11 10 11 10 11 10		I
Connector No.	Connector Color	E T		J
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L d	VIRE	Signal Name	WIRE Signal Name	L
E30	WIRE 10 W	1210 1210	WHITE WHITE S S S T S S S T S S S T S S S T S S S T S	M
Connector No.	Connector Name WIRE 10 WIRE Connector Color WHITE		ctor Nc ctor N	AV
Conne	Conne	Terminal 53G 54G 64G 64G		0
			I AWNIP	A0732GB

Signal Name	I	-	1	-	-	ı	_	1	ı	_	1
Color of Wire	В	SHIELD	B/W	SHIELD	G/W	Y/R	M/G	BR	SHIELD	W/N	G/O
Terminal No. Wire	20	21	22	23	24	25	56	27	28	30	31

Signal Name	I	1	ı	ı	ı	ı	ı	ı	I	ı	ı	ı
Color of Wire	۵	٨/٨	GR/L	L/B	>	B/R	B/B	SHIELD	B/L	Y/B	BR/L	Y/L
Terminal No.	7	8	6	10	+	12	13	14	15	16	18	19

Connector No. B	B101
Connector Name WIRE TO WIRE	/IRE TO WIRE
Connector Color WHITE	HITE



Signal Name	1	I	I	-	ı	I
Color of Wire	GR/W	Y/G	SHIELD	M/L	R/L	_
Terminal No. Wire	-	2	င	4	5	9

Signal Name	I	I	I	I	1	1	1	1
Color of Wire	^	SHIELD	Υ	M/G	R/I	GR/V	SHIELD	B/R
Terminal No.	13	14	15	18	19	21	22	23

Signal Name	ı	ı	ı	ı	ı	ı	-	_	
Color of Wire	ГG	SHIELD	BR	GR/L	B/G	M/L	SHIELD	W/R	
Terminal No.	2	3	4	9	8	10	11	12	

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				2	24 23 22 21 20 19 18 17 16 15 14 13	ı
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Connector No.	Connector Name	Connector Color WHITE		S		_

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9	E TO WIRE	TE	2 3 5 6 7 8	Signal Name	_	_
B106	ne WIF	or WH	- 4	Color of Wire	٦	B/W
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	原南 H.S.	Terminal No. Wire	1	2

Signal Name	I	ı	ı	I	ı	ı	1	1	I
Color of Wire	8	B/R	O/B	R/G	B/P	BR	0/7	В	rg
Terminal No.	2	6	10	11	12	13	14	15	16

3	WIRE TO WIRE	NMO	4 5 6 7	9 10 11 12 13 14 15 16	Signal Name	I	I	I	I	I	
. B103		lor BROWN	1 2 3	8 9 10	Color of Wire	BR	BR/B	GR/L	G/W	В/У	
Connector No.	Connector Name	Connector Color	晋	H.S.	Terminal No.	-	က	4	5	9	

																	_
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 + OUT	INST CTR TWDR - OUT	FR DOOR RH + OUT	FR DOOR RH - OUT	FR RH + IN	NI - HB BH	FR LH + IN	FR LH - IN
Color of Wire	BR/B	>	В	B/G	>	BR	^	ГG	R/G	B/P	O/B	G/W	BR	M/L	GR/V	W/R	B/R
Terminal No.	55	58	59	09	63	64	65	99	89	69	20	71	72	73	74	75	92

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	BOSE SPEAKER AMP						88	22	
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	¥						72 71 70 69	58 57	
	Ä						72	69	
	S	Ζ					Г	62 61 60	
7	ls.	BROWN						61	
B121	õ	Ä					느	62	
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Connector No.	Connector Name	Connector Color	,				11	29	
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50	REAR SPEAKER SUBWOOFER LH	IITE	2 1	Signal Name	1
. B120		lor WHITE		Color of Wire	M/B
Connector No.	Connector Name	Connector Color	南 H.S.	Terminal No.	1

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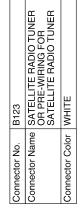
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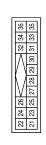
Signal Name	SAT_LCH (-)	SAT_LCH (+)	SAT_RCH (-)	SAT_RCH (+)	EARTH (SIG)	DATA	I	REQ1 (SAT - COMBI)	TXD (SAT_COMBI)	RXD (COMBI_SAT)	ı	BAT	1	1	I	ACC
Color of Wire	M/L	Y/L	Y/G	BR/L	SHIELD	SHIELD	1	B/L	W/A	В	1	Y/R	ı	1	1	GR/W
Terminal No.	21	22	23	24	25	56	27	28	59	30	31	32	33	34	35	36

Signal Name	M-CAN +_1	M-CAN2	M-CAN_SHIELD_1	M-CAN_JUMPER 1	M-CAN+_2	M-CAN_JUMPER 1	M-CAN2
Color of Wire	٦	Ь	SHIELD	Y/R	Y/R	SB	SB
Terminal No. Wire	35	36	37	39	40	41	42

SB

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B125	Connector Name BLUETOOTH CONTROL UNIT	WHITE	
Connector No.	Connector Name	Connector Color WHITE	









Signal Name	FR TWDR LH + OU	FR TWDR LH - OUT	FR TWDR RH - OU	FR TWDR RH + OU	RH WOOFER + OU	RH WOOFER - OUT	GNÐ	LH WOOFER - OUT	RR DOOR RH - OU	TVG
Color of Wire	ΓG	Β/Y	GR/L	9	BR/W	BR	B/W	G/B	B/W	aa
Terminal No.	41	42	43	44	45	46	47	48	49	US

Connector No.	B124
Connector Name	Connector Name REAR SUBWOOFER RH
Connector Color	WHITE

RR DOOR RH + OUT LH WOOFER + OUT

GND BAT

B/R B/W M/B

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	21	Connector Name ROOF ANTENNA	rellite)	NMO		Ę.	=1			Signal Name	ı
	. B132	me ROC	(SA	lor BROWN		냰	_]		Color of	Wire	В
	Connector No.	Connector Na		Connector Color		優	H.S.		Color of	Terminal No.	-
•								•			
	C S	a	+.		(+)	JT(-)	TROL	_	2	D	-

Signal Name	MIC_IN_+	MIC_IN	AUDIO_OUT(+)	AUDIO_OUT(-)	MUTE_CONTROL	LAD_IN1	LAD_IN2	LAD_GND	LAD_OUT_1	LAD_OUT_2	LAD_GND	CONT5	SPEED SIGNAL	MIC_POWER
Color of Wire	B/R	B/B	BR	>	G/O	W/G	GR/L	L/B	W/G	GR/L	L/B	B/W	M/A	R/L
Terminal No.	2	8	6	10	11	12	13	14	17	18	19	24	28	29

or No. B126	or Name BLUETHOOTH CONTROL UNIT	or Color WHITE	6 8 10 12 14 16 18 20 22 24 26 28 30 32 5 7 29 31 31 5 17 19 21 23 25 27 29 31	Color of Sizzal Name
Connector No.	Connector Name	Connector Color		Tomingl No Color o

Signal Name	BAT	ACC	NSI	GND	SHIELD
Color of Wire	A//B	٨/٨	G/W	B/W	SHIELD
Terminal No.	1	2	3	4	9

	WIRE TO WIRE	IITE	1 1 2 1 1 1 2 1 1 1	Signal Name	_	I
		lor WHITE	7 6 5 4 3 3	Color of Wire	W	В
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	2	15

			ſ		
ŭ	SATELLITE RADIO TUNER OR PRE-WIRING FOR SATELLITE RADIO TUNER	ıLET		Signal Name	ANTENNA SIGNAL
. B133		lor VIC		Color of Wire	В
onnector No.	onnector Name	onnector Color VIOLET	H.S.	erminal No.	37

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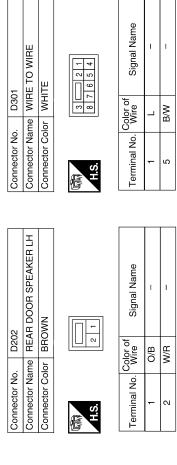
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Connector No.). D101	-	Connector No. D103	D103		Connector No. D201	o. D2	:01	
Connector Name WIR	me WIF	E TO WIRE	Connector Nar	ne FRONT DO	Connector Name FRONT DOOR SPEAKER	Connector Na	ame WI	Connector Name WIRE TO WIRE	
Connector Color WHI	lor	TE		HE.		Connector Color WHITE	olor WF	## ##	
			Connector Color	or BROWN					7
僵	4 3	2 1	4					3 2 1	
H.S.	10 9 8	3 7 6 5	H.S.	2 1		H.S.		8 7 6 5 4	
								_	Γ
				,		_ Color of	Color of		
Color of	Color of	Omol longing	Terminal No Wire		Signal Name	l erminal No.	Wire	Signal Name	
מוווומ ואס	N NE	Signal Ivalile				-	0/B	1	
7	G/W	1	-	G/W	1	2	W/R	ı	T
6	BR	ı	7	BR	ı				7



ALNIA0116GB

				Name	SIG	9	VCC			
7	Connector Name MICROPHONE	WHITE	2 3 4	of Signal Name	S	GND	O _A			
). R7	ame M			Color of Wire	≯	۳	В			
Connector No.	Connector Na	Connector Color	可 H.S.	Terminal No.	-	2	4			
	E TO WIRE	Щ	12 2 1 1 10 9 1	Signal Name	ı	ı	1	ı	1	1
H	ame WIRE	olor WHIT	8 7 6 5 14 13	Color of Wire	>	æ	В	SHIELD	В/У	BR
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S.	Terminal No.	-	2	က	4	7	13
							7			
2	REAR DOOR SPEAKER RH	NMC		Signal Name	1	ı				
). D302	me REA	olor BRC	[Color of Wire	٦	B/W				
Connector No.	Connector Name	Connector Color BROWN	H.S.	Terminal No.	-	2				

	BLUETOOTH ON INDICATOR	IITE	2 3 4	Signal Name	QNI	BAT
R8		or WHITE		Color of Wire	BB	Α̈́
Connector No.	Connector Name	Connector Color	画 H.S.	Terminal No. Wire	-	~

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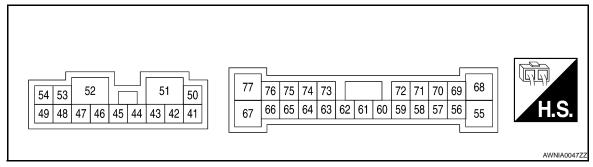
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BOSE SPEAKER AMP

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	ninal color)		Signal		Condition	
+	-	- Item	input/ output	Ignition switch	Operation	Reference value
41 (LG)	42 (B/Y)	Tweeter LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
44 (L/O)	43 (GR/L)	Tweeter RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
45 (BR/W)	46 (BR)	Woofer RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
47 (B/W)	Ground	Ground	_	ON	_	_
50 (BR)	Ground	Battery	Input	_	_	Battery voltage
51 (B/R)	Giouna	Dattery	IIIput	_	_	Dattery voltage
52 (B/W)	Ground	Ground	_	ON	_	_

BOSE SPEAKER AMP

	minal color)		Signal		Condition	
+	_	- Item	input/ output	Ignition switch	Operation	Reference value
53 (W/B)	48 (G/B)	Woofer LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
54 (L)	49 (B/W)	Rear door speaker RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
58 (W)	59 (B)	Front door speaker LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms skia0177E
60 (B/G)	Ground	Amp. ON signal	Input	ON	_	More than approx. 6.5V
64 (BR)	63 (Y)	Audio sound sig- nal rear LH	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms SKIA0177E
66 (LG)	65 (V)	Audio sound sig- nal rear RH	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms SKIA0177E
68 (R/G)	55 (BR/B)	Rear door speaker LH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms SKIA0177E

BOSE SPEAKER AMP

	minal color)	Itom	Signal		Condition	Reference value
+	_	- Item	input/ output	Ignition switch	Operation	Reference value
69 (B/P)	70 (O/B)	Center speaker	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
71 (G/W)	72 (BR)	Front door speaker RH	Output	ON	Receive audio signal	(V) 1 0 -1 1 ms
73 (W/L)	74 (GR/V)	Audio sound sig- nal front RH	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms
75 (W/R)	76 (B/R)	Audio sound sig- nal front LH	Input	ON	Receive audio signal	(V) 1 0 -1 1 ms

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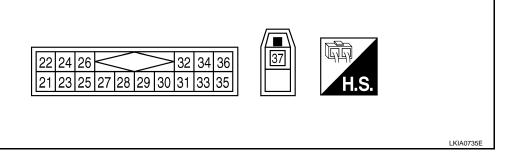
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SATELLITE RADIO TUNER

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	ninal color)	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 >

[BOSE AUDIO WITHOUT NAVIGATION]

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

BLUETOOTH CONTROL UNIT

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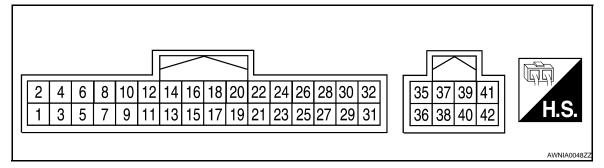
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BLUETOOTH CONTROL UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	ninal color)	Item	Signal input/		Condition	Reference value
+	_	nem	output	Ignition switch	Operation	(Approx.)
1 (Y/B)	Ground	Battery power	Input	_	-	Battery voltage
2 (V/Y)	Ground	ACC power	Input	ACC/ON	-	Battery voltage
3 (G/W)	Ground	IGN power	Input	ON/ START	-	Battery voltage
4 (B/W)	_	Ground	_	_	-	-
6	_	Shield	_	_	_	-
7 (B/R)	8 (R/B)	Mic-in signal	Input	-	-	-
9 (BR)	10 (Y)	Audio out	Output	ACC/ON	Bluetooth control unit sends audio sig- nal	(V) 1 0 -1 + 2ms SKIB3609E
11 (G/O)	_	Mute	Output	_	_	-
					Press SEEK DOWN switch.	0.7V
12 (W/G)	Ground	Remote con- trol switch 1	Input	ACC/ON	Press SEEK UP switch.	1.3V
,					Pressing A switch.	2.0V
					Except for above.	3.3V

BLUETOOTH CONTROL UNIT [BOSE AUDIO WITHOUT NAVIGATION]

LOO DIAO						
	ninal color)	Item	Signal input/		Condition	Reference value
+	_	nem	output	Ignition switch	Operation	(Approx.)
					Press SOURCE switch.	0V
					Press ò switch.	0.7V
13 (GR/L)	Ground	Remote con- trol switch 2	Input	ACC/ON	Press VOL UP switch.	1.3V
					Press VOL DOWN switch	2V
					Except for above.	3.3V
14 (L/B)	-	Remote con- trol ground	Input	-	-	-
					Press SEEK DOWN switch.	0.7V
17 (W/G)	Ground	Steering switch 1	Output	ACC/ON	Press SEEK UP switch.	1.3V
					Pressing - switch.	2.0V
					Except for above.	3.3V
					Press SOURCE switch.	0V
					Press "≨ switch.	0.7V
18 (GR/L)	Ground	Steering switch 2	Output	ACC/ON	Press VOL UP switch.	1.3V
					Press VOL DOWN switch	2V
					Except for above.	3.3V
19 (L/B)	Ground	Steering switch ground	Output	_	-	-
24 (B/W)	_	Ground	_	_	_	1
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
29 (R/L)	Ground	Microphone power	Output	_	_	-
35 (L)	_	M-CAN (+)	-	-		-
36 (P)	_	M-CAN (-)	_	-		-
37	_	Shield ground	_	_		-

[BOSE AUDIO WITHOUT NAVIGATION]

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:0000000003072288

AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	Audio unit power circuit Audio unit	• <u>AV-66</u> • <u>AV-127</u>
Steering switch does not operate	Steering switchAudio unit	<u>AV-86</u><u>AV-127</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. 	 AV-127 AV-66 AV-85 AV-66 AV-128
One or several speakers do not sound	 Front door speaker Tweeter Center speaker Rear door speaker Woofer 	 AV-71 AV-74 AV-77 AV-79 AV-82

CD

Symptom	Possible cause	Reference page
CD cannot be inserted.		
CD cannot be ejected.	Audio unit	AV-127
The CD cannot be played.	Addio driit	<u>AV-121</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 	AV-67AV-89AV-134
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-91</u> • <u>AV-91</u> • AV-134

HANDS-FREE PHONE

Symptom	Possible cause	Reference page
Inoperative	Bluetooth control unit power and ground circuit Bluetooth control unit	• <u>AV-68</u> • <u>AV-139</u>
Steering switch does not operate	Steering switch Bluetooth control unit	• <u>AV-86</u> • <u>AV-139</u>
Voice activated control does not operate	Microphone Steering switch Bluetooth control unit	• <u>AV-93</u> • <u>AV-86</u> • <u>AV-139</u>

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NORMAL OPERATING CONDITION

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 external noise from trains and other sources. It is not a malfunction.

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause.

NOTE:

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

Type of Noise and Possible Cause

Occurrence condition		Possible cause	
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	• Idnition components	
The occurrence of the noise is lin	ked with the operation of the fuel pump.	Fuel pump condenser	
Noise only occurs when various	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, audio unit malfunction	
electrical components are operating.	The noise occurs when various motors are operating.	Motor case ground Motor	
The noise occurs constantly, not just under certain conditions.		 Rear defogger coil 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 	

PRECAUTION

PRECAUTIONS

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

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 SR and SB section of this Service Manual.

WARNING:

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

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PREPARATION

[BOSE AUDIO WITHOUT NAVIGATION]

INFOID:0000000003072291

PREPARATION

PREPARATION

Tool name

Power tool

Commercial Service Tools

Description
Loosening bolts and nuts

PBIC0191E

AUDIO UNIT

[BOSE AUDIO WITHOUT NAVIGATION]

ON-VEHICLE REPAIR

AUDIO UNIT

Removal and Installation

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

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[BOSE AUDIO WITHOUT NAVIGATION]

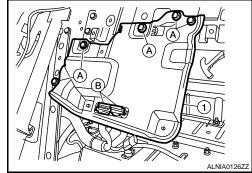
BOSE AMP.

Removal and Installation

INFOID:0000000003072293

REMOVAL

- 1. Disconnect the 12-volt battery negative terminal.
- 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).



INSTALLATION

Installation is in the reverse order of removal.

TWEETER

< ON-VEHICLE REPAIR >

[BOSE AUDIO WITHOUT NAVIGATION]

TWEETER

Removal and Installation

INFOID:0000000003072294

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

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[BOSE AUDIO WITHOUT NAVIGATION]

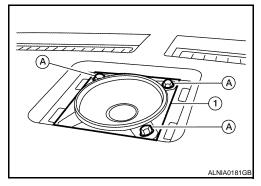
CENTER SPEAKER

Removal and Installation

INFOID:0000000003072295

REMOVAL

- 1. Remove the center speaker grille. Refer to IP-11, "Removal and Installation".
- 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.

FRONT DOOR SPEAKER

< ON-VEHICLE REPAIR >

[BOSE AUDIO WITHOUT NAVIGATION]

FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000003072296

For removal and installation, refer to AV-47, "Removal and Installation".

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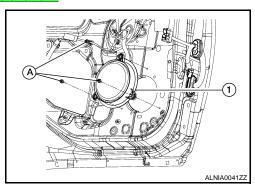
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REAR DOOR SPEAKER

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.

REAR SPEAKER

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[BOSE AUDIO WITHOUT NAVIGATION]

REAR SPEAKER

Removal and Installation

INFOID:0000000003072298

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

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SATELLITE RADIO TUNER

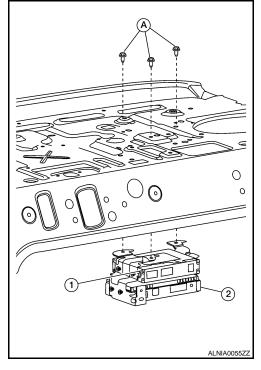
Removal and Installation

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).

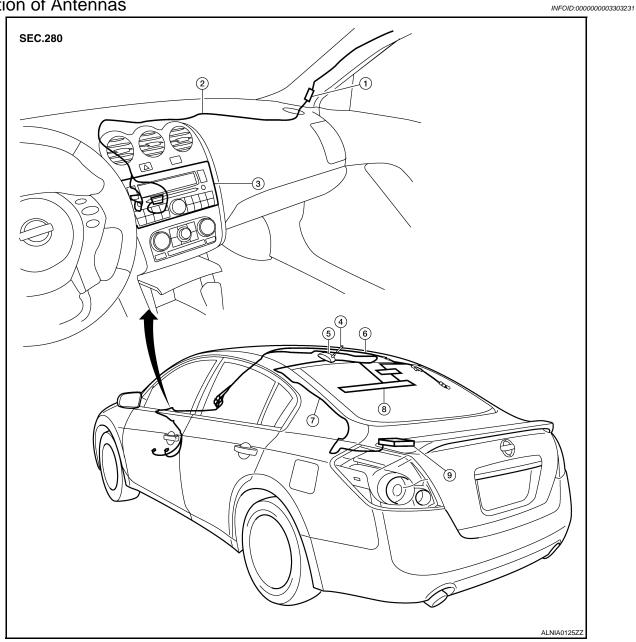


INSTALLATION

Installation is in the reverse order of removal.

AUDIO ANTENNA

Location of Antennas



- 1. Audio unit harness connector
- 4. Roof antenna rod
- 7. Satellite feeder

- 2. Audio unit harness
- 5. Roof antenna base
- 8. Window antenna
- 3. Audio unit
- 6. Antenna feeder (to audio unit)
- 9. Satellite radio tuner

Roof Antenna

REMOVAL and INSTALLATION

For removal and installation, refer to AV-49, "Roof Antenna".

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STEERING SWITCH

< ON-VEHICLE REPAIR >

[BOSE AUDIO WITHOUT NAVIGATION]

STEERING SWITCH

Removal and Installation

INFOID:0000000003072301

For removal and installation, refer to AV-53. "Removal and Installation".

[BOSE AUDIO WITHOUT NAVIGATION]

MICROPHONE

Removal and Installation

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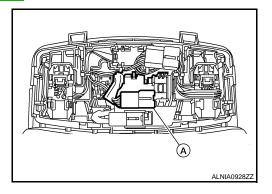
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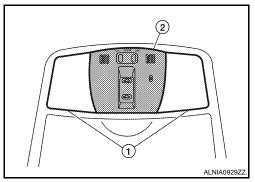
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REMOVAL

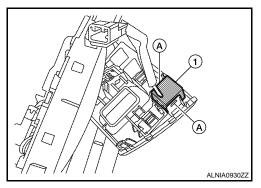
- 1. Remove the map lamp assembly. Refer to INT-18. "Exploded View".
- 2. Detach the microphone connector (A).



3. Remove the map lamp covers (1), then remove the map lamp assembly cover (2).



4. Release the microphone tabs (A), then remove the microphone (1).



INSTALLATION

Installation is in the reverse order of removal.

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[BOSE AUDIO WITHOUT NAVIGATION]

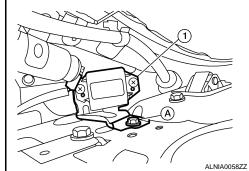
TEL ANTENNA

Removal and Installation

INFOID:0000000003072303

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.

TEL ADAPTER UNIT

Removal and Installation

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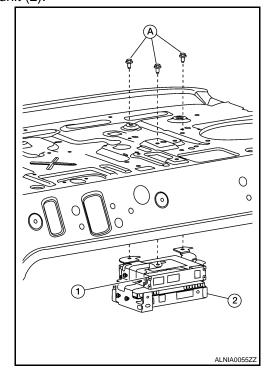
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REMOVAL

- 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)



INSTALLATION

Installation is in the reverse order of removal.

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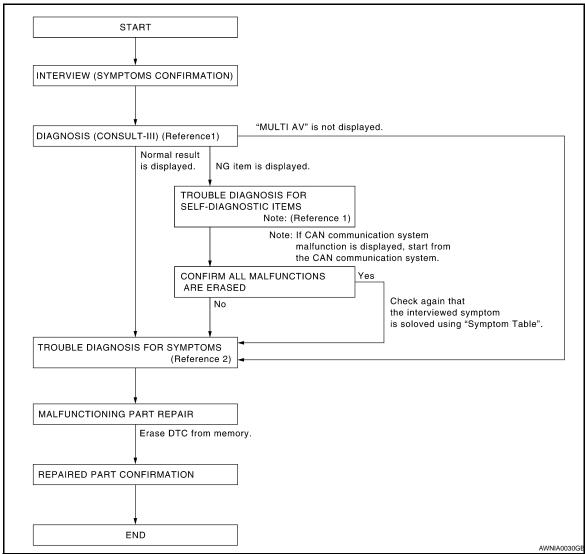
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE



- Reference 1... Refer to <u>AV-175</u>, "CONSULT III Function (MULTI AV)".
- Reference 2... Refer to AV-261, "Symptom Table".

DETAILED FLOW

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 step 4 of the diagnosis procedure if "MULTI AV" is not displayed.
- 2. Check if any DTC No. is displayed in the self-diagnosis results.

DIAGNOSIS AND REPAIR WORKFLOW	
< BASIC INSPECTION > [BOSE AUDIO WITH NAVIGATION]	
Is any DTC No. displayed?	
YES >> GO TO 3	Δ
NO >> GO TO 4 CHECK SELE DIA CNICCIE DESUITE (CONICIII T III)	
3.CHECK SELF-DIAGNOSIS RESULTS (CONSULT-III)	Е
 Check the DTC No. indicated in the self-diagnosis results. Perform the relevant diagnosis referring to the DTC No. list. Refer to <u>AV-252, "DTC Index"</u>. NOTE:	
Start with the diagnosis for the CAN communication system if "CAN COMM CIRCUIT [U1000] or CONTROL UNIT (CAN) [U1010]" is displayed.	С
>> GO TO 5	
4.PERFORM DIAGNOSIS BY SYMPTOM	
Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to <u>AV-261, "Symptom Table"</u> .	Е
>> GO TO 5	F
5. REPAIR OR REPLACE MALFUNCTIONING PARTS	
Repair or replace the identified malfunctioning parts. NOTE:	G
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.	F
>> GO TO 6	
6. CHECK AFTER REPAIR	
1. 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?	J
YES >> GO TO 3	
NO >> GO TO 7	K
7. FINAL CHECK	
Perform the operation check to confirm that the malfunction symptom is solved or that any other symptoms are present.	L
Are any symptoms present?	
YES >> GO TO 4 NO >> Inspection End.	N
110 22 moposion End.	

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INSPECTION AND ADJUSTMENT REAR VIEW MONITOR GUIDING LINE ADJUSTMENT

REAR VIEW MONITOR GUIDING LINE ADJUSTMENT: Description

INFOID:0000000003072306

This mode is used to modify the side distance guidelines if they are dislocated from the rear view monitor image, because of variations of body/camera mounting conditions.

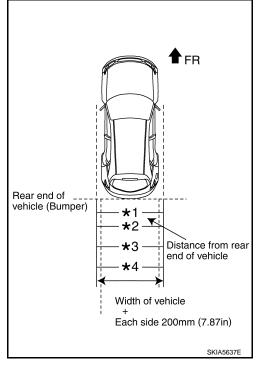
REAR VIEW MONITOR GUIDING LINE ADJUSTMENT: Special Repair Requirement

INFOID:0000000003072307

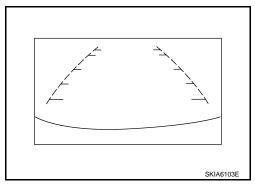
- 1. Create a correction line to modify the screen.
 - Draw lines on the rearward of the vehicle passing through the following points: 200 mm (7.87 inch) from both sides of the vehicle, and
 - *1: 0.5 m (1.5 feet)
 - *2: 1 m (3 feet)
 - *3: 2 m (7 feet)
 - *4: 3 m (10 feet)
 - and from the rear end of the bumper
- 2. With the ignition switch OFF, connect CONSULT-III, then turn ignition switch ON. Select "REARVIEW CAMERA".

CAUTION:

Stop engine for safety when correcting side distance guideline.



3. Shift the selector lever to R position.



- 4. Touch "SELCT GUIDELINE PATTERN" under "WORK SUPPORT" menu.
- 5. 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.
- 9. 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.

INSPECTION AND ADJUSTMENT

[BOSE AUDIO WITH NAVIGATION]

AV-143

AWNIA0077G

INFOID:0000000003072309

FUNCTION DIAGNOSIS

MULTI AV SYSTEM

System Diagram

INFOID:0000000003072308 **ROOF ANTENNA (SATELLITE)** Camera ON signal REAR VIEW **GPS** TEL voice signal Camera image signal CAMERA ANTENNA REAR VIEW ► CAN communication system CAMERA Reverse signal CONTROI UNIT Composite image signal (camera) AV communication Vehicle speed signal (8-pulse), Reverse signal, Parking brake signal Communication AV CONTROL UNIT signal (CD) CD Audio signal (AM/FM radio) CHANGER (Satellite radio) (Navigation) Mic. VCC (Bluetooth®) MICRO-Mic. signal PHONE WINDOW ANTENNA AUXILIARY Aux sound signal INPUT JACK ROOF ANTENNA SPEAKER (AUDIO) Sound signal BOSE Sound signal Steering switch WOOFER **SPEAKER** Amp. ON signal signal AMP. STEERING Sound signal **SWITCH**

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
Navigation system	<u>AV-150</u>
Audio system	<u>AV-160</u>
Rear view monitor system	<u>AV-156</u>
Hands-free phone system	<u>AV-164</u>

VOICE RECOGNITION

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

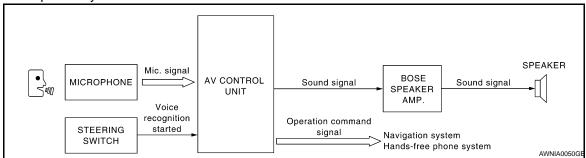
Navigation system

MULTI AV SYSTEM

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

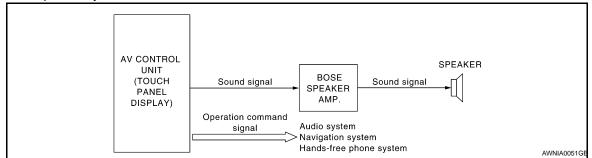
• Hands-free phone system



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



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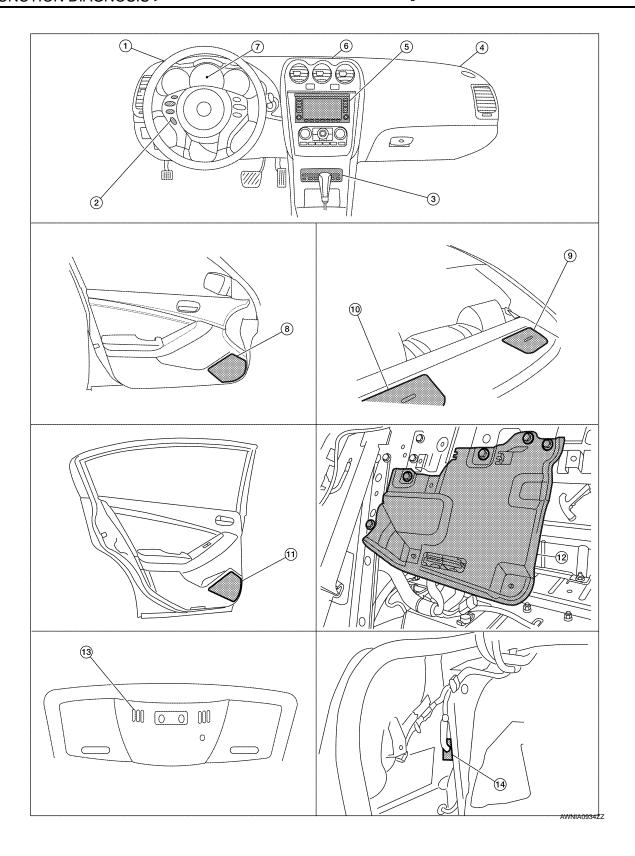
MULTI AV SYSTEM

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Component Parts Location

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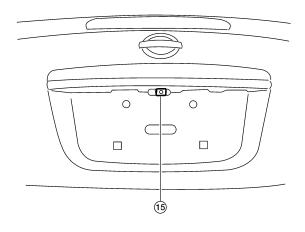
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1. Tweeter LH M51 2. Steering wheel audio control switches 3. CD changer M42 Tweeter RH M52 AV control unit M46, M47, M48, M81, 6. Center speaker M151 M90, M91 Front door speaker Combination meter M24 Rear subwoofer RH B124 7. 9. LH D3 RH D103 10. Rear subwoofer LH B120 11. Rear door speaker BOSE speaker amp. B121, B122 (view LH D202 with rear seat back removed) **RH D302** 13. Microphone R7 14. Rear view camera control unit B31 15. Rear view camera B35 (view with trunk side finisher LH removed)

Component Description

INFOID:0000000003072311

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, sate lite 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		
Rear subwoofer	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		

MULTI AV SYSTEM

< 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.	

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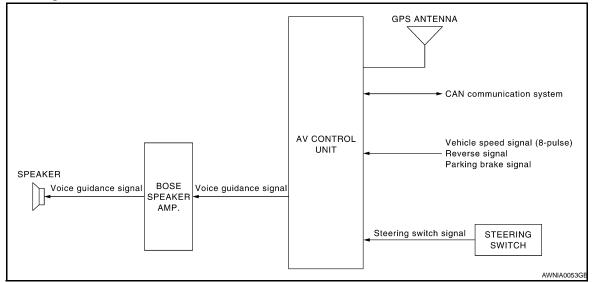
AV

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NAVIGATION SYSTEM

System Diagram

INFOID:0000000003072312



System Description

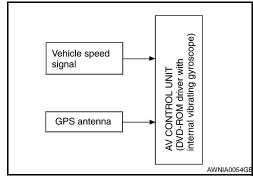
INFOID:0000000003072313

NOTE:

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

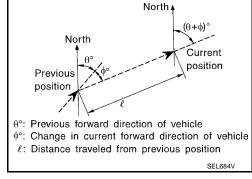
The navigation system periodically calculates the vehicle's current position according to the following three signals: Travel distance of the vehicle as determined by the vehicle speed sensor, turning angle of the vehicle as determined by the gyroscope (angular velocity sensor), and the direction of 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.



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

NAVIGATION SYSTEM

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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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.

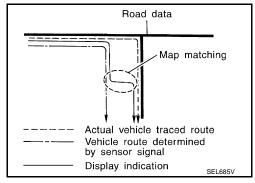
 In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the current-location mark has been repositioned.

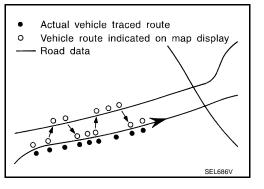
If there is an error in distance and/or direction, the alternative routes will be shown in different order of priority, and the wrong road can be avoided.

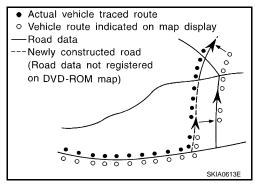
If two roads are running in parallel, they are of the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

- Map-matching does not function correctly when the road on which
 the vehicle is driving is new and not recorded in the map DVDROM, 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)







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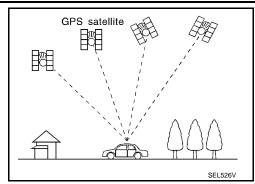
AV-151

NAVIGATION SYSTEM

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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.

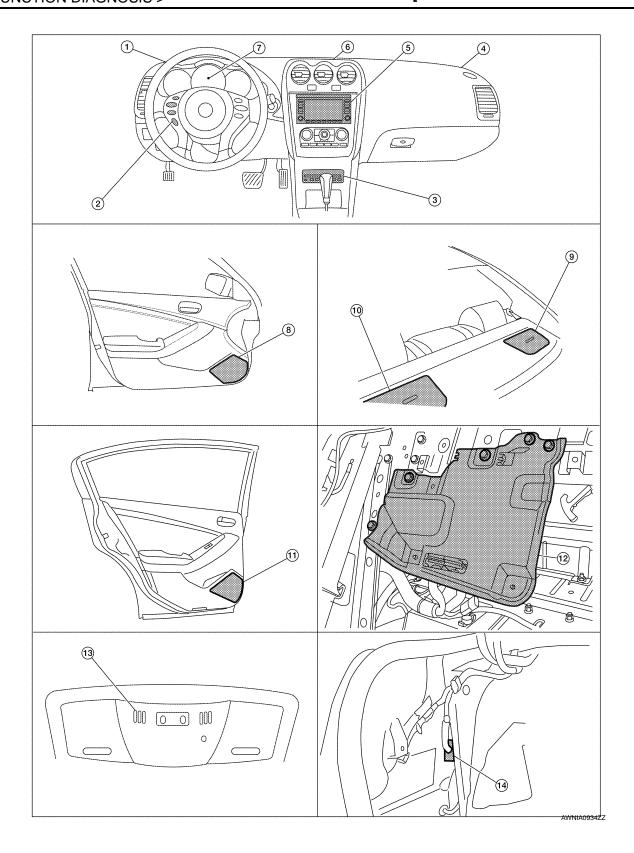
NAVIGATION SYSTEM [BOSE AUDIO WITH NAVIGATION] < FUNCTION DIAGNOSIS > **Component Parts Location** INFOID:0000000003303234 Α В С D Е F G Н J Κ L

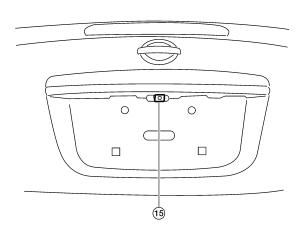
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- 1. Tweeter LH M51
- 4. Tweeter RH M52
- 7. Combination meter M24
- 10. Rear subwoofer LH B120
- 13. Microphone R7

- 2. Steering wheel audio control switches
- 5. AV control unit M46, M47, M48, M81, M90, M91
- 8. Front door speaker LH D3 RH D103
- 11. Rear door speaker LH D202

RH D302

 Rear view camera control unit B31 (view with trunk side finisher LH removed)

- 3. CD changer M42
- 6. Center speaker M151
- 9. Rear subwoofer RH B124
- 12. BOSE speaker amp. B121, B122 (view with rear seat back removed)
- 15. Rear view camera B35

Component Description

INFOID:0000000003072315

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 speake	
Tweeter	Voice guidance signal from BOSE speaker amp. is output.	
Steering switches	Each operation of navigation system can be performedSwitch 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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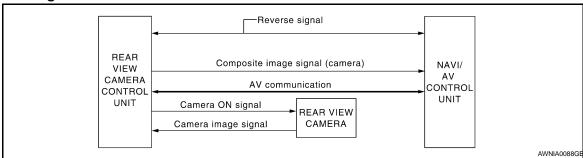
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REAR VIEW MONITOR SYSTEM

System Diagram

INFOID:0000000003072316



System Description

INFOID:0000000003072317

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.

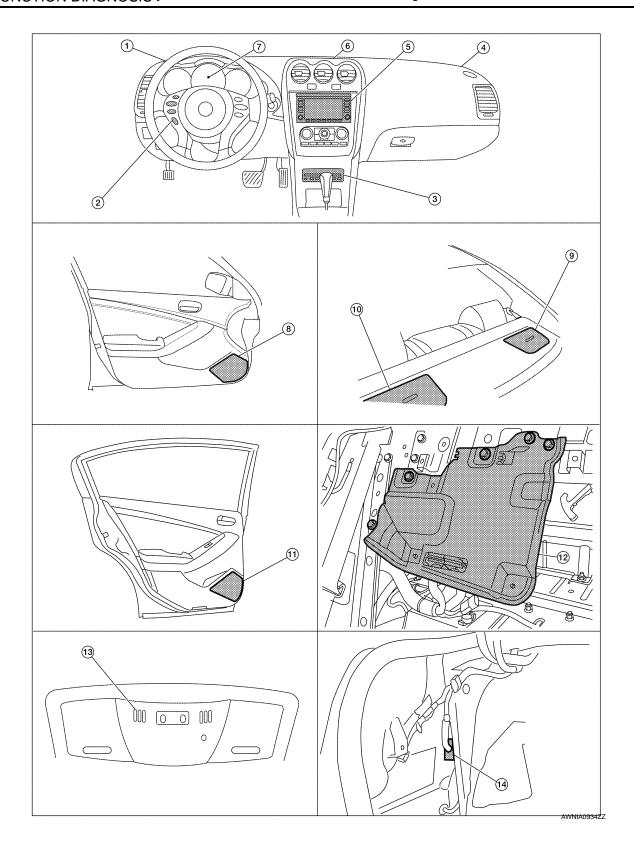
REAR VIEW MONITOR SYSTEM [BOSE AUDIO WITH NAVIGATION] < FUNCTION DIAGNOSIS > **Component Parts Location** INFOID:0000000003303235 Α В С D Е F G Н J Κ L

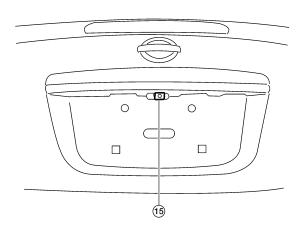
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1. Tweeter LH M51

4. Tweeter RH M52

7. Combination meter M24

10. Rear subwoofer LH B120

13. Microphone R7

2. Steering wheel audio control switches

 AV control unit M46, M47, M48, M81, M90, M91

8. Front door speaker LH D3 RH D103

11. Rear door speaker LH D202

RH D302

 Rear view camera control unit B31 (view with trunk side finisher LH removed) 3. CD changer M42

6. Center speaker M151

9. Rear subwoofer RH B124

12. BOSE speaker amp. B121, B122 (view with rear seat back removed)

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15. Rear view camera B35

Component Description

INFOID:0000000003072319

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

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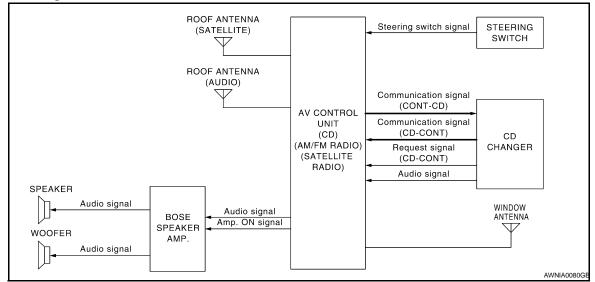
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AUDIO SYSTEM

System Diagram

INFOID:0000000003072320



System Description

INFOID:0000000003072321

AUDIO SYSTEM

The audio system consists of the following components

- AV control unit (audio unit)
- BOSE speaker amp.
- Window antenna
- Roof antenna (audio)
- Steering switches
- Front door speakers
- Tweeters
- · Center speaker
- Rear door speakers
- Subwoofers
- 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 subwoofers.

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

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Component Parts Location

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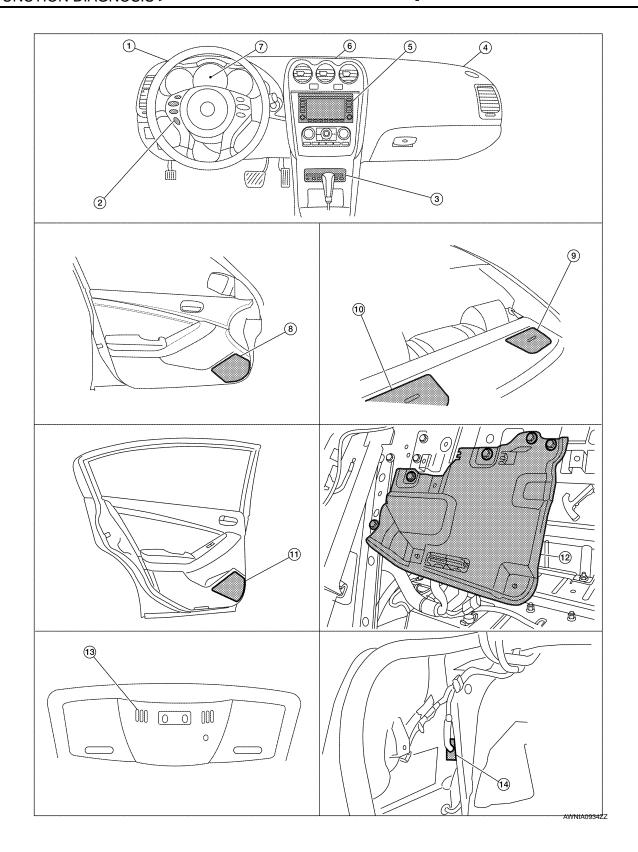
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[BOSE AUDIO WITH NAVIGATION]

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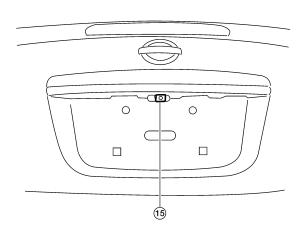
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1. Tweeter LH M51

4. Tweeter RH M52

7. Combination meter M24

10. Rear subwoofer LH B120

13. Microphone R7

2. Steering wheel audio control switches

5. AV control unit M46, M47, M48, M81, M90, M91

8. Front door speaker LH D3 RH D103

11. Rear door speaker LH D202 RH D302

 Rear view camera control unit B31 (view with trunk side finisher LH removed) 3. CD changer M42

6. Center speaker M151

9. Rear subwoofer RH B124

12. BOSE speaker amp. B121, B122 (view with rear seat back removed)

AWNIA0091GB

15. Rear view camera B35

Component Description

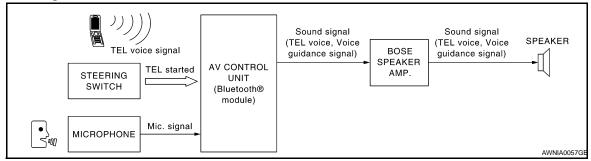
INFOID:0000000003072323

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		
Subwoofer	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

System Diagram

INFOID:0000000003072324



System Description

INFOID:0000000003072325

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 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 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

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.

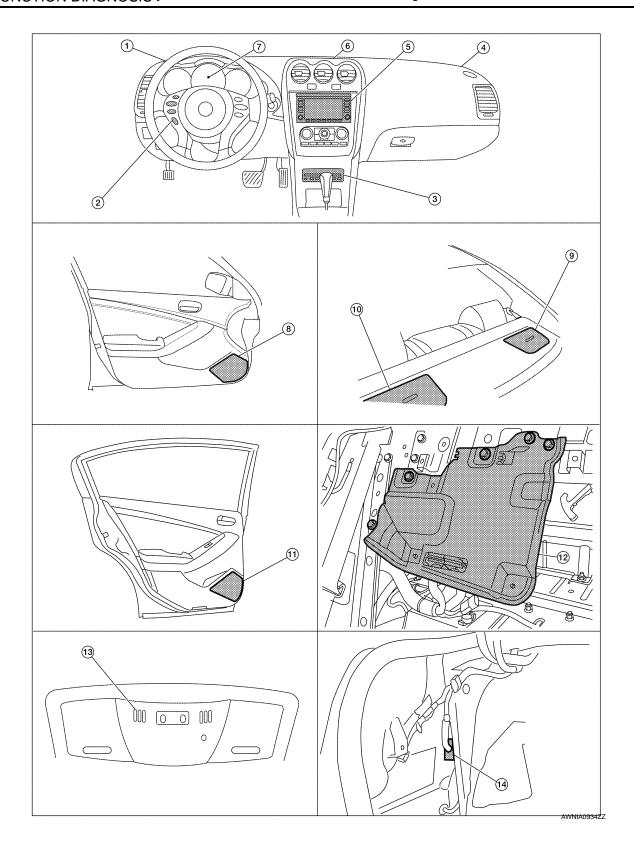
HANDS-FREE PHONE SYSTEM [BOSE AUDIO WITH NAVIGATION] < FUNCTION DIAGNOSIS > **Component Parts Location** INFOID:0000000003303238 Α В С D Е F G Н J Κ L

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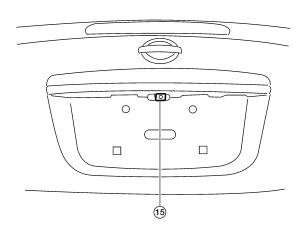
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1. Tweeter LH M51

4. Tweeter RH M52

7. Combination meter M24

10. Rear subwoofer LH B120

13. Microphone R7

2. Steering wheel audio control switches

 AV control unit M46, M47, M48, M81, M90, M91

8. Front door speaker LH D3 RH D103

11. Rear door speaker LH D202

RH D302

 Rear view camera control unit B31 (view with trunk side finisher LH removed) 3. CD changer M42

6. Center speaker M151

9. Rear subwoofer RH B124

12. BOSE speaker amp. B121, B122 (view with rear seat back removed)

AWNIA0091GB

15. Rear view camera B35

Component Description

INFOID:0000000003072327

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 session Answer and end telephone calls Adjust the volume level 	
Microphone	Sends voice signals to AV control unit	

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

INFOID:0000000003072328

DESCRIPTION

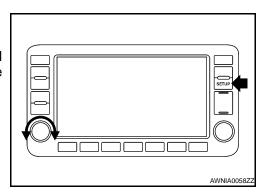
- Diagnosis function consists of the self-diagnosis mode performed automatically and the CONFIRMATION/ ADJUSTMENT mode operated manually.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on 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, satellite radio antenna and GPS antenna. 	
		Color spectrum bar	Color tone of the screen can be checked by the display of a color bar.	
	Display diagnosis	Gradation bar	Shading of the screen can be checked by the display of a gray scale.	
	_ represy and greene	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, parking 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.	
	Didelootii	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.)



< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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

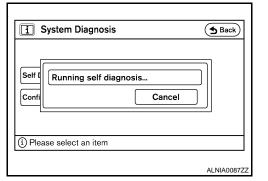
System Diagnosis	★ Back
Self Diagnosis Confirmation / Adjustment	
i Please select an item	
	ALNIA0086ZZ

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.

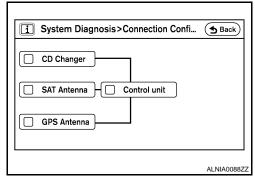
NOTE:

Self-diagnosis requires approximately 10 seconds to complete.



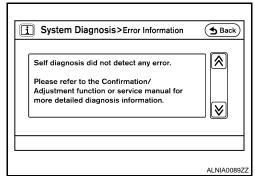
Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green



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.
- Select a switch on the "SELF DIAGNOSIS" screen and comments for the diagnosis results will be shown.



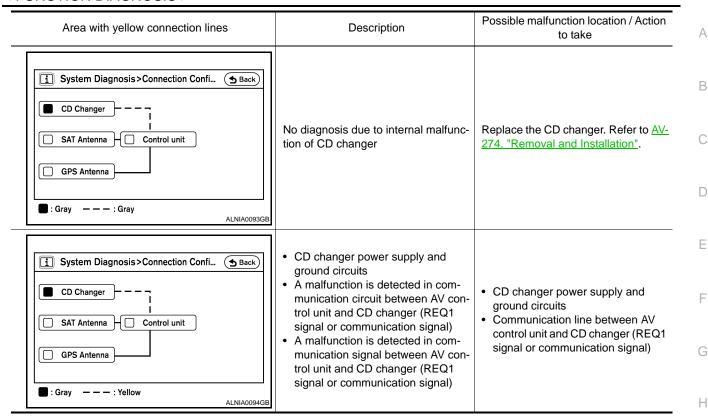
Self-Diagnosis Results

[BOSE AUDIO WITH NAVIGATION]

Area with yellow connection lines	Description	Possible malfunction location / Action to take
☐ System Diagnosis>Connection Confi ⑤ Back ☐ CD Changer ☐ SAT Antenna ☐ Control unit ☐ GPS Antenna ☐ : Red ALNIA0090GB	AV control unit malfunction is detected	Replace the AV control unit. Refer to AV-272, "Removal and Installation".
System Diagnosis>Connection Confi	GPS antenna connection malfunction is detected	GPS antenna
SAT Antenna GPS Antenna GPS Antenna GPS Antenna GPS Antenna ALNIA0092GB	Poor connection is detected in satellite antenna	Satellite antenna feederSatellite antenna

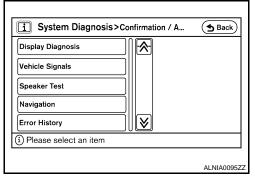
< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]



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.
- 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.

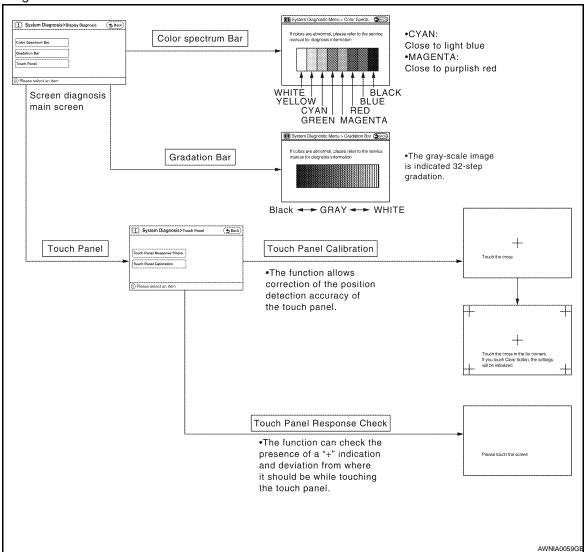


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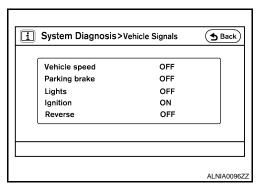
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Display Diagnosis



Vehicle Signals

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



Diagnosis item	Dis- play	Vehicle status	Remarks
	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 approximately 1.5 seconds. This is normal.
Parking brake	ON	Parking brake is applied.	
Faiking blake	OFF	Parking brake is released.	

< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Diagnosis item	Dis- play	Vehicle status	Remarks	
Lights	ON	Light switch ON	Block the light beam from the auto light optical sensor	
Ligitis	OFF	Light switch OFF	Block the light beam from the auto light optical sensor.	
Ignition	ON	Ignition switch ON		
	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 approximately 1.5 seconds. This is normal.	
	_	Ignition switch in ACC position		

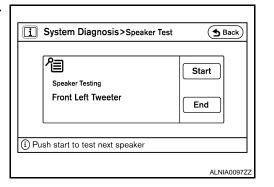
Speaker Test

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:

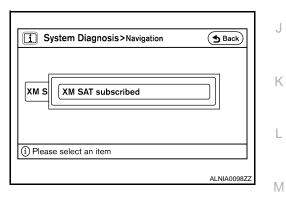
The speakers are tested in the following order:

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



Navigation

The XM NavTraffic subscription status can be checked.



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

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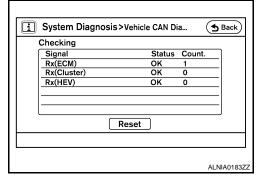
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[BOSE AUDIO WITH NAVIGATION]

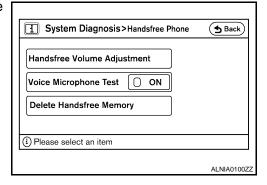
- CAN communication status and error counter is displayed.
- The error counter displays "OK" if any malfunction was not detected in the past and displays "0" if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter 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

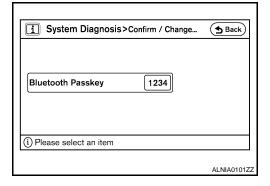
The hands-free phone reception volume adjustment, microphone test and memory erase functions are available.



Bluetooth

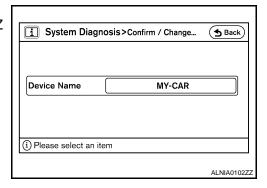
Passkey confirmation/change

- 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).

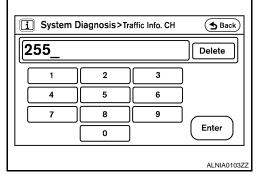


XM SAT

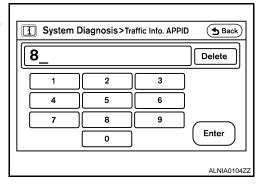
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[BOSE AUDIO WITH NAVIGATION]

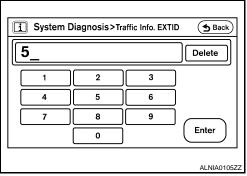
- Change Channel
- Any necessary channels required to receive traffic information from the satellite radio system can be set.



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



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



CONSULT - III Function (MULTI AV)

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-252, "DTC Index".

DATA MONITOR

Display Item List

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< FUNCTION DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Display item [unit]	ALL SIGNALS	SELECTION FROM MENU	Description
VHCL SPD SIG [ON/OFF]	х	х	Displays "ON" when vehicle speed > 0 km/h. Displays "OFF" when vehicle speed = 0 km/h.
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.
REV SIG [ON/OFF]	Х	Х	Displays [ON/OFF] condition of back-up lamp switch.

U1000 CAN COMM CIRCUIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

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 seconds or more.

Diagnosis Procedure

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".

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U1010 CONTROL UNIT (CAN)

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1010 CONTROL UNIT (CAN)

Refer to LAN-7, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1010	CONTROL UNIT (CAN) [U1010]	When a malfunction is detected during initial diagnosis for CAN controller of each control unit.

Diagnosis Procedure

INFOID:0000000003072335

Symptom: Displays "CONTROL UNIT (CAN) [U1010]" 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".

U1200 AV CONTROL UNIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1200 AV CONTROL UNIT

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

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U1201 AV CONTROL UNIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1201 AV CONTROL UNIT

Refer to AV-144, "System Description".

DTC Logic

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 (gyrocompass disconnection).	Replace AV control unit. Refer to AV-272, "Removal and Installation".

U1204 GPS COMM

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[BOSE AUDIO WITH NAVIGATION]

U1204 GPS COMM

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

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U1205 GPS ROM

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1205 GPS ROM

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

U1206 GPS RAM

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[BOSE AUDIO WITH NAVIGATION]

U1206 GPS RAM

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

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U1207 GPS RTC

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[BOSE AUDIO WITH NAVIGATION]

U1207 GPS RTC

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

U1208 DVD-ROM COMM

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U1208 DVD-ROM COM

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Description INFOID:0000000003072348

Refer to AV-144, "System Description".

DTC Logic INFOID:0000000003072349

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 AV-272, "Removal and Installation".

NG >> Replace DVD-ROM map.

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U1209 DVD-ROM READ

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[BOSE AUDIO WITH NAVIGATION]

U1209 DVD-ROM READ

Description INFOID:0000000003072351

Refer to AV-144, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1209	DVD-ROM READ [U1209]	An internal malfunction is detected in AV control unit (DVD-ROM).

Diagnosis Procedure

INFOID:0000000003072353

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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

		U120A DVD-ROM DISC	
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U120A [OVD-ROM DISC		
Description	on		A INFOID:00000000003072354
Refer to AV	-144. "System Descrip	otion".	В
DTC Log	ic		INFOID:0000000003072355
DTC DETE	ECTION LOGIC		С
DTC	CONSULT-III display	Detection condition	
U120A	DVD-ROM DISC [U120A]	An internal malfunction is detected in AV control unit (DVD-ROM).	D
Diagnosis	s Procedure		INFOID:0000000003072356
1. CHECK	DVD-ROM		
	-ROM for dirt, scratch	· -	F
	ROM clean and unda	maged? Init. Refer to <u>AV-272, "Removal and Installation"</u> .	
NO >>	Replace DVD-ROM r	map.	G
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U120C DVD-ROM MECHA DETECT

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U120C DVD-ROM MECHA DETECT

Refer to AV-144, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U120C	DVD-ROM MECHA DE- TECT [U120C]	An internal malfunction is detected in AV control unit (DVD-ROM).

Diagnosis Procedure

INFOID:0000000003072359

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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

U120D DVD-ROM DRIVE MECHA

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U120D DVD-ROM DRIVE MECHA

Refer to AV-144, "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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

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U1210 DVD-ROM SEEK

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[BOSE AUDIO WITH NAVIGATION]

U1210 DVD-ROM SEEK

Refer to AV-144, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	
U1210	DVD-ROM SEEK [U1210]	An internal malfunction is detected in AV control unit (DVD-ROM).	

Diagnosis Procedure

INFOID:0000000003072365

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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

U1212 DVD-ROM DATA FORWARD

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1212 DVD-ROM DATA FORWARD

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

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U1213 DVD-ROM DATA

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1213 DVD-ROM DATA

Refer to AV-144, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition	
U1213	DVD-ROM DATA [U1213]	An internal malfunction is detected in AV control unit (DVD-ROM).	

Diagnosis Procedure

INFOID:0000000003072371

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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

U1214 DVD-ROM TIMEOUT

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[BOSE AUDIO WITH NAVIGATION]

U1214 DVD-ROM TIMEOUT

Description INFOID:000000000002372

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

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U1215 DVD-ROM LOAD

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[BOSE AUDIO WITH NAVIGATION]

U1215 DVD-ROM LOAD

Description INFOID:00000000003072375

Refer to AV-144, "System Description".

DTC Logic

DTC DETECTION LOGIC

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:0000000003072377

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 AV-272, "Removal and Installation".

NO >> Replace DVD-ROM map.

U1216 AV CONTROL UNIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1216 AV CONTROL UNIT

Refer to AV-144, "System Description".

DTC Logic

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 AV-272, "Removal and Installation".

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U1217 AV CONTROL UNIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1217 AV CONTROL UNIT

Description INFOID:0000000003072380

Refer to AV-144, "System Description".

DTC Logic

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 (Bluetooth module connection malfunction).	Replace AV control unit. Refer to AV-272, "Removal and Installation".

U1220 AV CONTROL UNIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

U1220 AV CONTROL UNIT

Refer to AV-144, "System Description".

DTC Logic

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 (satellite radio tuner communication malfunction).	Replace AV control unit. Refer to AV-272, "Removal and Installation".

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U1244 GPS ANTENNA

Description

Refer to AV-144, "System Description".

DTC Logic

DTC DETECTION LOGIC

DTC	CONSULT-III display	Detection condition
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.

Diagnosis Procedure

INFOID:0000000003072386

1. GPS ANTENNA CHECK

Inspect GPS antenna and antenna feeder for damage or poor connection.

Is the GPS antenna and feeder clean and undamaged?

YES >> GO TO 2

NO >> Repair or replace malfunctioning parts.

2. CHECK AV CONTROL UNIT VOLTAGE

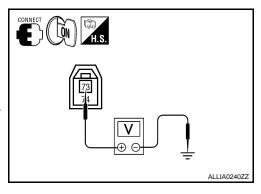
- 1. Turn ignition switch ON.
- 2. Check voltage between AV control unit connector M90 terminal 73 and ground.

73 - Ground : Approx. 5V

Is the voltage reading as specified?

YES >> Replace GPS antenna. Refer to <u>AV-281, "Removal and</u> Installation".

NO >> Replace AV control unit. Refer to AV-272, "Removal and Installation".



U124C CD CHANGER

Description

Refer to AV-144, "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) 	

Diagnosis Procedure

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1. CHECK CD CHANGER POWER SUPPLY AND GROUND CIRCUIT

Check CD changer power supply and ground circuit. Refer to <u>AV-204, "CD CHANGER: Diagnosis Procedure"</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.
- 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 : Continuity should exist.
9 - 69 : Continuity should exist.
10 - 70 : Continuity should exist.

- 4. 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?

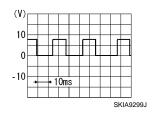
YES >> GO TO 3

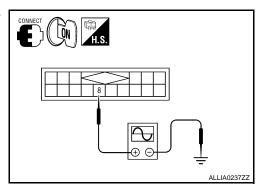
NO >> Repair harness or connector.

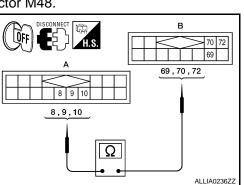
3.CHECK REQUEST SIGNAL

- Connect CD changer connector and AV control unit connector.
- Turn ignition switch ON.
- Check signal between CD changer harness connector M42 terminal 8 and ground.

8 - Ground







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< COMPONENT DIAGNOSIS >

Are the voltage readings as specified?

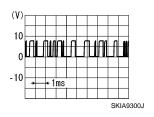
YES >> GO TO 4

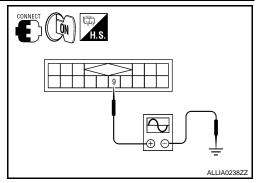
NO >> Replace CD changer. Refer to AV-274, "Removal and Installation".

4. CHECK COMMUNICATION SIGNAL

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

9 - Ground





Are the voltage readings as specified?

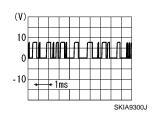
YES >> GO TO 5

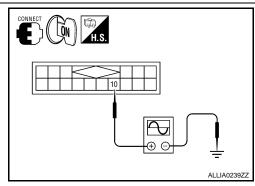
NO >> Replace CD changer. Refer to AV-274, "Removal and Installation".

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 AV-272, "Removal and Installation".

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

POWER SUPPLY AND GROUND CIRCUIT AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

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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 (Approx.)
Battery power supply		20	OFF	
ACC power supply	M47	7	ACC	Battery voltage
Ignition signal		10	ON	· sago

TH.S. ON ACC OFF 10 7, 10, 20 ALLIA0241ZZ

Are the voltage tests as specified?

YES >> GO TO 3

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

3. CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect AV control unit connectors.
- 3. 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.

DISCONNECT H.S.

REAR VIEW CAMERA CONTROL UNIT

REAR VIEW CAMERA CONTROL UNIT: Diagnosis Procedure

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
Near view carriera control unit	2	Ignition switch ACC or ON	19

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[BOSE AUDIO WITH NAVIGATION]

< COMPONENT DIAGNOSIS >

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	- B31	2	ACC	battery voltage

H.S. OFF ACC

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.
- Disconnect rear view camera control unit connector.
- Check continuity between rear view camera control unit harness connector B31 terminal 3 and ground.

Signal name	Continuity
Ground	Continuity should exist.

Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector.

ALLIA0245ZZ

REAR VIEW CAMERA

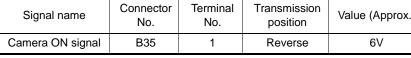
REAR VIEW CAMERA: Diagnosis Procedure

INFOID:0000000003072392

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

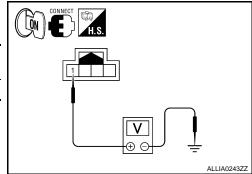
Check voltage between rear view camera harness connector and ground.

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



${\bf 2.} {\sf CHECK\ POWER\ SUPPLY\ CIRCUIT\ (CONTINUITY)}$

- Turn ignition switch OFF.
- Disconnect rear view camera and rear view camera control unit connectors.

< COMPONENT DIAGNOSIS >

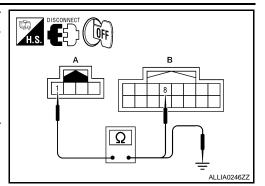
[BOSE AUDIO WITH NAVIGATION]

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.

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

NO

>> Inspection End. >> Replace rear view camera control unit. Refer to AV-287. "Removal and Installation". ALLIA0247ZZ

4. CHECK GROUND CIRCUIT

- 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.

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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	Pattery power	25
	51	Battery power	26

Are the fuses OK?

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[BOSE AUDIO WITH NAVIGATION]

< COMPONENT DIAGNOSIS >

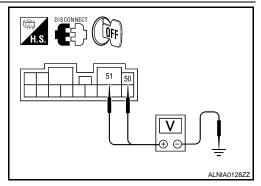
YES >> GO TO 2

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	(-)	(-11 -)
BOSE	D.100	50		Battery
speaker amp	B122	51	Ground	voltage



Are the voltage readings as specified?

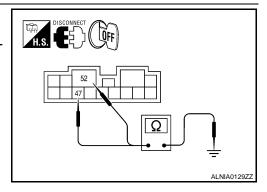
YES >> GO TO 3

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

3. CHECK GROUND CIRCUIT

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

Unit	(+)		(-)	Continuity
	Connector	Terminal	(-)	
BOSE	5.100	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

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1. CHECK FUSE

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

Unit	Terminals	Signal name	Fuse No.
CD changer	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

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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

CONNECT OFF ON CACC 12 16 V ALLIA0249ZZ

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

CONNECT H.S. WKIA5796E

Is proper voltage present?

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

$2. {\sf CHECK\ POWER\ SUPPLY\ CIRCUIT\ (CONTINUITY)}$

- 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.
- Turn ignition switch to ACC.

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[BOSE AUDIO WITH NAVIGATION]

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

CONNECT ACC H.S. ALLIA02512Z

Is voltage approximately 5 volts?

YES >> Inspection End.

NO >> Replace AV control unit. Refer to <u>AV-272</u>, "<u>Removal and Installation</u>".

4. CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect microphone harness connector R7 and AV control unit harness connector M46.
- Check continuity between microphone harness connector R7

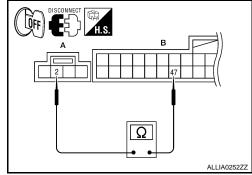
 (A) terminal 2 and AV control unit harness connector M46 (B) terminal 47.

Signal name	Continuity
Ground	Continuity should exist.

Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector.



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

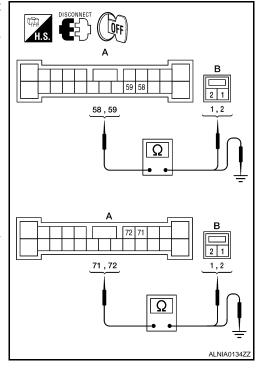
1. HARNESS CHECK

- 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).

	A B				
Connector	Terminal	Connector	Terminal		
B121	58	D3	1	Yes	
	59		2		
	71	D400	1	165	
	72	D103	2		

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

	Continuity			
Connector	Terminal			
	58		No	
B121	59	Ground		
BIZI	71	Giodila		
	72			



Are continuity test results as specified?

YES >> GO TO 2

NO

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

· Repair harness or connector.

2.FRONT DOOR SPEAKER SIGNAL CHECK

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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.

Connec-	Terminal		Condition	Reference	
tor	(+)	(-)	Condition	signal	
	58	59			
B121	71	72	Receive audio sig- nal	1 0 -1 1 ms 3KA0177E	

Is audio signal voltage as specified?

YES >> Replace suspect speaker. Refer to <u>AV-277, "Removal and Installation"</u>.

NO >> GO TO 3

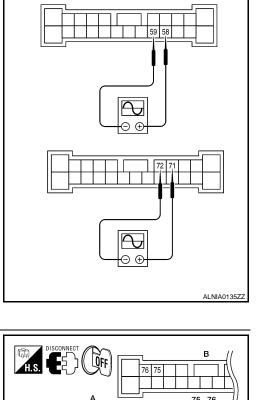
3. HARNESS CHECK

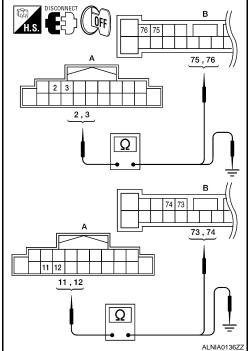
- 1. Disconnect AV control unit connector M47 and BOSE speaker amp. connector B121.
- 2. Check continuity between audio unit harness connector M47 (A) and BOSE speaker amp. harness connector B121 (B).

	Continuity			
Connector	Terminal	Connector Terminal		
	2	B121	75	
M47	3		76	Yes
	11		73	res
	12		74	

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

	Terminals				
	A				
Connector	Terminal	_			
-	2				
M47	3	Ground	No		
IVI47	11	Ground			
	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.FRONT DOOR SPEAKER SIGNAL CHECK

FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

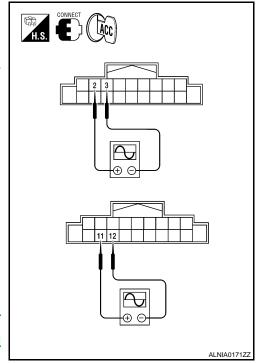
- 1. Connect AV control unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between AV control unit harness connector terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	2	3			
M47	11	12	Receive audio sig- nal	(V) 1 0 -1 1 ms	

Are the audio signal voltage readings as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-273.</u> "<u>Removal and Installation"</u>.

NO >> Replace AV control unit. Refer to <u>AV-272, "Removal and Installation"</u>.



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TWEETER

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

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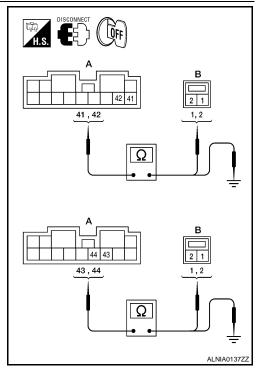
1. HARNESS CHECK

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

	АВ					
Connector	Terminal	Connector Terminal				
	41	M51	1	Yes		
B122	42		2			
DIZZ	44		1	165		
	43	M52	2			

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

	Terminals		
	Α		Continuity
Connector	Terminal		
	41		
B122	42	Ground	No
DIZZ	44	Ground	NO
	43		



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

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	41	42			
B122	44	43	Receive audio sig- nal	(V) 1 0 -1 1 ms	

Are voltage readings as specified?

YES >> Replace suspect tweeter. Refer to <u>AV-275, "Removal and Installation"</u>.

NO >> GO TO 3

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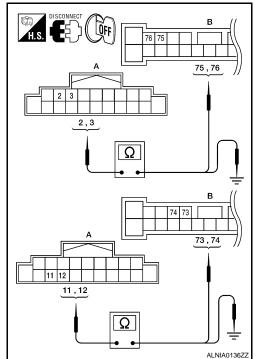
3. HARNESS CHECK

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

	Continuity			
Connector	Terminal	Connector Terminal		
	2	B121	75	
M47	3		76	Yes
	11		73	ies
	12		74	

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

	Terminals				
	Continuity				
Connector	Terminal				
	2				
M47	3 Ground		No		
IVI+1	11	Ground	INO		
	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.TWEETER SIGNAL CHECK

[BOSE AUDIO WITH NAVIGATION]

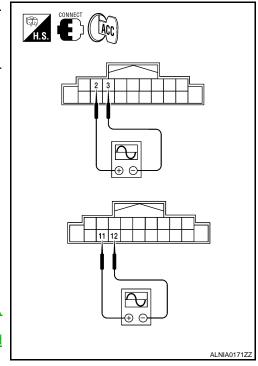
- 1. Connect AV control unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between AV control unit harness connector terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	2	3			
M47	11	12	Receive audio sig- nal	1 0 -1 1 ms SKIA0177E	

Are voltage readings as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-273.</u> "Removal and Installation".

NO >> Replace AV control unit. Refer to <u>AV-272, "Removal and Installation"</u>.



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CENTER SPEAKER

Description

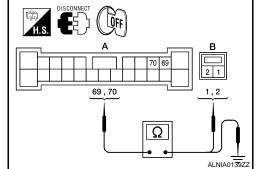
The audio unit sends audio signals to the BOSE speaker amp. The BOSE speaker amp. amplifies the audio signals before sending them to the center speaker using the audio signal circuits.

Diagnosis Procedure

1. HARNESS CHECK

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

	АВ			
Connector	Terminal	Connector	Terminal	
B121	69	M151	1	Yes
וצוט	70	IVITOT	2	165



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

	Terminals					
	A					
Connector	Terminal	_				
B121	69	Ground	No			
וצו	70	Giound	110			

Are continuity test results as specified?

YES >> GO TO 2

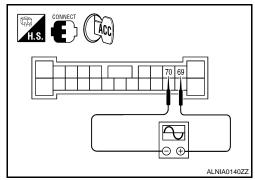
NO >> • Check connector housings for disconnected or loose terminals.

· Repair harness or connector.

2.CENTER SPEAKER SIGNAL CHECK

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

Connector	Terminals		Condition	Reference	
Connector	(+) (-) Condition		signal		
B121	69	70	Receive audio sig- nal	(V) 1 0 -1 1 ms	



Is the audio signal voltage as specified?

YES >> Replace center speaker. Refer to AV-276, "Removal and Installation".

NO >> GO TO 3

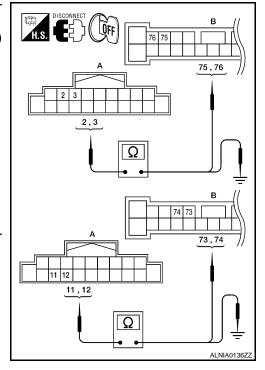
3. HARNESS CHECK

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

Terminals				
	A	В		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		
	2	Ground	No
M47	3		
101-7	11	Giodila	
	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

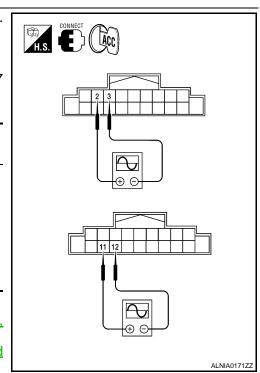
- Connect AV control unit connector and BOSE speaker amp. connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M47 terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Oorincolor	(+)	(-)	Condition	signal	
	2	3			
M47	11	12	Receive audio sig- nal	1 0 -1 1 ms : SKIA0177E	

Is the audio signal voltage reading as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-273</u>, <u>"Removal and Installation"</u>.

NO >> Replace AV control unit. Refer to AV-272, "Removal and Installation".



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

1. HARNESS CHECK

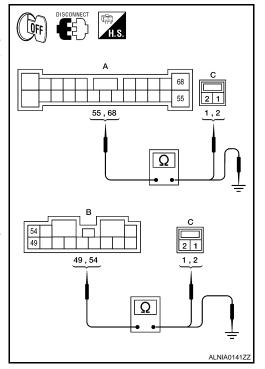
 Disconnect BOSE speaker amp. connectors B121, B122 and suspect speaker connector.

2. Check continuity between BOSE speaker amp. harness connectors B121 (A) and B122 (B) and suspect speaker harness connector (C).

	Continuity			
Connector	Terminal	Connector	Continuity	
A: B121	55	C: D202	2	
A. DIZI	68		1	Yes
B: B122	49	C: D302	2	163
	54	C. D302	1	

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

BOSI	Continuity		
Connector	Terminal	_	
A: B121	68		
A. DIZI	55	Ground	No
B: B122	49	Giodila	
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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< COMPONENT DIAGNOSIS >

- Connect BOSE speaker amp. connectors B121, B122 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between BOSE speaker amp. harness connectors (A) B121 and (B) B122 terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
A: B121	68	55			
B: B122	54	49	Receive audio sig- nal	(V) 1 0 -1 1 ms SKIA0177E	

Is the audio signal voltage readings as specified?

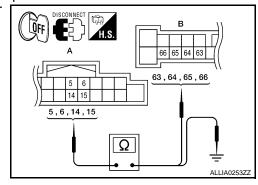
YES >> Replace suspect speaker. Refer to <u>AV-278</u>, "Removal and Installation".

NO >> 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).

AV cor	AV control unit BOSE speaker amp.			
Connector	Terminal	Connector	Terminal	
	5	B121	64	
M47	6		63	Yes
10147	14		66	165
	15		65	



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

Δ	Continuity		
Connector	Terminal	_	
	5	Ground	No
M47	6		
IVI47	14	Giodila	
	15		

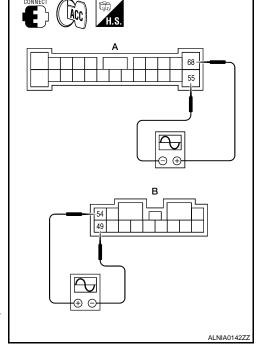
Are continuity test results as specified?

YES >> GO TO 4

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

• Repair harness or connector.

4. REAR DOOR SPEAKER SIGNAL CHECK



REAR DOOR SPEAKER

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

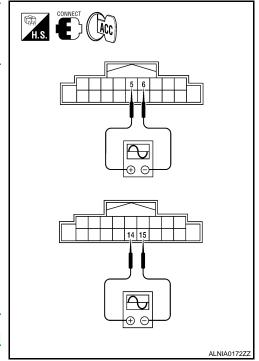
- 1. Connect AV control unit connector M47 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between AV control unit harness connector M47 terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	5	6			
M47	14	15	Receive audio signal	1 0 -1 1 ms SKIA0177E	

Are the audio signal voltage readings as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-273.</u> "Removal and Installation".

NO >> Replace AV control unit. Refer to <u>AV-272, "Removal and Installation"</u>.



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SUBWOOFER

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

INFOID:0000000003072405

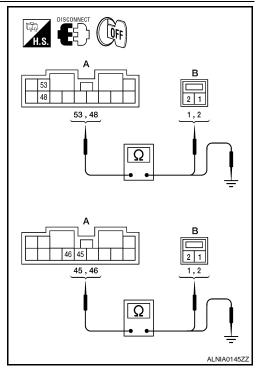
1. HARNESS CHECK

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

	A	В		Continuity
Connector	Terminal	Connector		
	53	B120	1	
B122	48	D120	2	Yes
DIZZ	45	B124	1	165
	46	D124	2	

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

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



Are the continuity test results as specified?

YES >> GO TO 2 NO >> • Check of

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

• Repair harness or connector.

2. REAR SUBWOOFER SIGNAL CHECK

SUBWOOFER

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

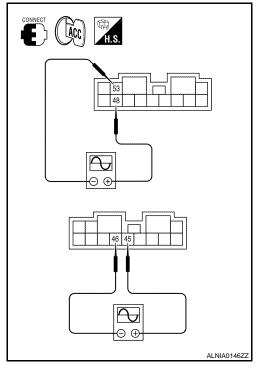
- Connect BOSE speaker amp. connector B122 and suspect rear subwoofer connector.
- Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between BOSE speaker amp. harness connector B122 terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	53	48			
B122	45	46	Receive audio signal	(V) 1 0 -1 1 ms	

Is the audio signal voltage as specified?

>> Replace suspect rear subwoofer. Refer to AV-133. "Removal and Installation".

NO >> GO TO 3



3. HARNESS CHECK

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

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

	A		B.		
Connector	Terminal	Connector Terminal		Continuity	
	5		64		
M47	6	B121	63	Yes	
IVI4 <i>1</i>	14	DIZI	66	165	
	15	i	65		

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

H.S. A 66 65 64 63	
63,64,65,66	
<u>5,6,14,15</u> Ω	
ALLIA0253ZZ	

	Α		Continuity
Connector	Terminal		Continuity
	5	Ground	No
M47	6		
10147	14	Giodila	NO
	15		
		10	•

Are continuity test results as specified?

YES

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

· Repair harness or connector.

4. REAR SUBWOOFER SIGNAL CHECK

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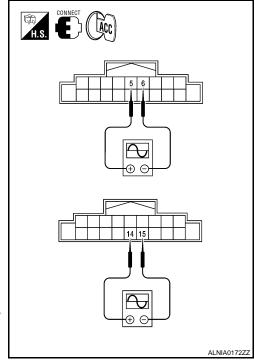
- 1. Connect AV control unit connector M47 and BOSE speaker amp. connector B121.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between AV control unit harness connector M47 terminals with CONSULT-III or oscilloscope.

Connector	Terminals		Condition	Reference	
Connector	(+)	(-)	Condition	signal	
	5 6				
M47	14	15	Receive audio signal	(V) 1 0 -1 1 ms SKIA0177E	

Are the audio signal voltage readings as specified?

YES >> Replace BOSE speaker amp. Refer to <u>AV-273.</u> "Removal and Installation".

NO >> Replace AV control unit. Refer to <u>AV-272, "Removal and Installation"</u>.



AMP ON SIGNAL CIRCUIT

Description INFOID:0000000003072406

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)

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

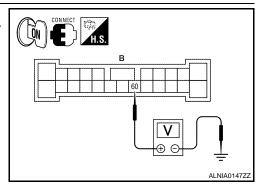
60 - Ground

: More than approx. 6.5V

Is voltage greater than 6.5V?

YES >> Inspection End.

>> GO TO 2 NO



$2.\mathsf{CHECK}$ AMP ON SIGNAL (AV CONTROL UNIT)

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

16 - Ground

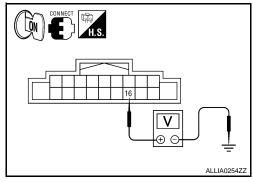
: More than approx. 6.5V

Is voltage approximately 6.5 volts?

YES >> Repair harness or connector.

NO

>> Replace AV control unit. Refer to AV-272, "Removal and Installation".



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INFOID:0000000003072407

STEERING SWITCH

Description INFOID:0000000003072408

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

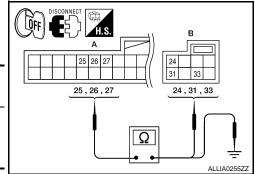
Diagnosis Procedure

INFOID:0000000003072409

1. CHECK HARNESS

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

A			В	Continuity
Connector	Terminal	minal Connector Terminal		Continuity
	25		24	
M46	26	M30	33	Yes
	27		31	



Check continuity between AV control unit connector M46 and ground.

	A		Continuity
Connector	Terminal	_	Continuity
	25		
M46	26	Ground	No
	27		

Are the continuity test results as specified?

YES >> GO TO 2

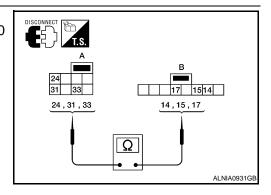
NO >> Repair harness.

2.SPIRAL CABLE CHECK

- Disconnect spiral cable connector M88.
- Check continuity between spiral cable harness connector M30

 (A) and M88 (B).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	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 <u>SRS-6</u>, "Removal and Installation".

3.CHECK STEERING SWITCH

Check steering switch. Refer to AV-223, "Component Inspection".

Does the steering switch pass inspection?

YES >> Inspection End.

NO >> Replace steering switch. Refer to AV-282, "Removal and Installation".

STEERING SWITCH

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Component Inspection

INFOID:0000000003072410

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

Standard

Between terminals 14 and

17

SOURCE switch **ON** : **0** Ω

| SOURCE | Approx. | MENU UP | Approx. | MENU DOWN | Approx. | Ap

Between terminals 15 and

17

ightharpoonup switch ON : 716 – 730 Ω ightharpoonup switch ON : 318 – 324 Ω VOL UP switch ON : 120 – 122 Ω

VOL DOWN switch ON : $\mathbf{0} \Omega$

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MICROPHONE SIGNAL CIRCUIT

Description INFOID:0000000003072411

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

Diagnosis Procedure

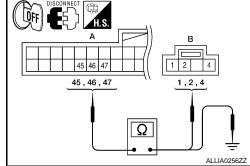
INFOID:0000000003072412

1. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

- Turn ignition switch OFF.
- 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 : Continuity should exist. 46 - 4 : 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

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

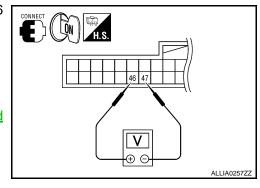
46 - 47 : Approx. 5V

Is inspection result OK?

YES >> GO TO 3

NO >> Replace AV control unit. Refer to AV-272, "Removal and

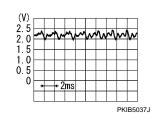
Installation".

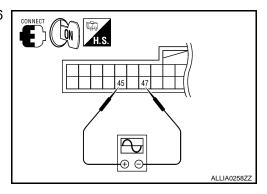


3.check microphone signal

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

45 - 47 ŧ





Is inspection result OK?

>> Replace AV control unit. Refer to AV-272, "Removal and Installation".

MICROPHONE SIGNAL CIRCUIT

CON	//IPONENT DIAGNOSIS >	[BOSE AUDIO WITH NAVIGATION]
NO	>> Replace microphone.	. Refer to AV-283, "Removal and Installation".

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

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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

Description INFOID:00000000307241

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

Diagnosis Procedure

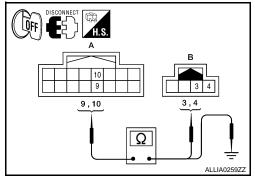
INFOID:0000000003072414

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.
- 3. 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 : Continuity should exist. 10 - 3 : Continuity should exist.

- 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?

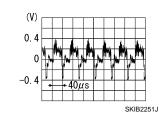
YES >> GO TO 2

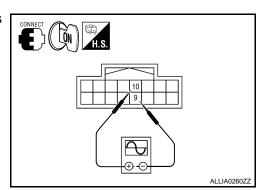
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

- 1. Connect rear view camera control unit connector and rear view camera connector.
- 2. Turn ignition switch ON.
- 3. Check signal between rear view camera control unit harness connector B31 terminals 10 and 9.

10 - 9





Is inspection result OK?

YES >> Replace rear view camera control unit. Refer to AV-287, "Removal and Installation".

NO >> Replace rear view camera. Refer to AV-286, "Removal and Installation".

CAMERA ON SIGNAL CIRCUIT

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. CHECK CAMERA ON SIGNAL CIRCUIT CONTINUITY

- 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.

$2.\mathsf{CHECK}$ CAMERA ON SIGNAL VOLTAGE

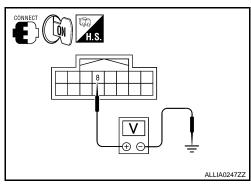
- 1. Connect rear view camera control unit connector and rear view camera connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between rear view camera control unit harness connector B31 terminal 8 and ground.

8 - Ground : Approx. 6V

Is inspection result OK?

YES >> Replace rear view camera. Refer to <u>AV-286, "Removal</u> and Installation".

NO >> Replace rear view camera control unit. Refer to AV-287, "Removal and Installation".



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CAMERA IMAGE SIGNAL CIRCUIT (CAMERA CONTROL UNIT TO AV CONTROL UNIT)

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

CAMERA IMAGE SIGNAL CIRCUIT (CAMERA CONTROL UNIT TO AV CONTROL UNIT)

Description

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

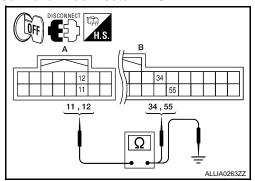
INFOID:0000000003072418

1. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect rear view camera control unit connector B31 and AV control unit connector M46.
- 3. Check continuity between rear view camera control unit harness connector B31 (A) terminals 11, 12 and AV control unit harness connector M46 (B) terminals 34, 55.

11 - 55 : Continuity should exist. 12 - 34 : Continuity should exist.

- 4. Check continuity between rear view camera control unit harness connector B31 (A) terminals 11, 12 and ground.
 - 11, 12 Ground : Continuity should not exist.



Is inspection result OK?

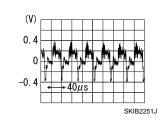
YES >> GO TO 2

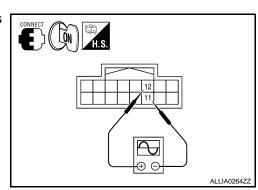
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

- 1. Connect rear view camera control unit connector and AV control unit connector.
- 2. Turn ignition switch ON.
- 3. Check signal between rear view camera control unit harness connector B31 terminals 12 and 11.

12 - 11





Is inspection result OK?

YES >> Replace AV control unit. Refer to AV-272, "Removal and Installation".

NO >> Replace rear view camera control unit. Refer to AV-287, "Removal and Installation".

REVERSE SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

REVERSE SIGNAL CIRCUIT

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

INFOID:0000000003072420

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1.BACK-UP LAMP INSPECTION

- 1. Turn ignition switch ON.
- Shift selector lever to R position.

Does back-up lamp illuminate?

YES >> GO TO 2

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

2.CHECK REVERSE POSITION INPUT SIGNAL

(P)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

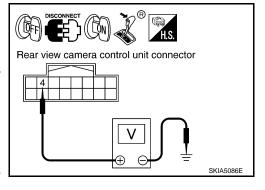
- Turn ignition switch OFF.
- 2. Disconnect rear view camera control unit connector.
- 3. Turn ignition switch ON.
- 4. Shift selector lever to R position.
- Check voltage between rear view camera control unit harness connector B31 terminal 4 and ground.

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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AV CONTROL UNIT

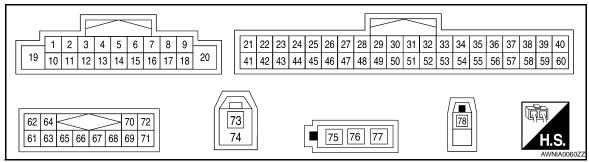
Reference Value

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)	
VHCL SPD SIG	OFF	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed. This is
PKB SIG	ON	Parking brake is applied.	normal.
FRB 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.	
ILLUM SIG	OFF	Expose the auto light optical sensor to light when the light SW is OFF or ON.	_
IGN SIG	ON	Ignition switch ON	
IGN SIG	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

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

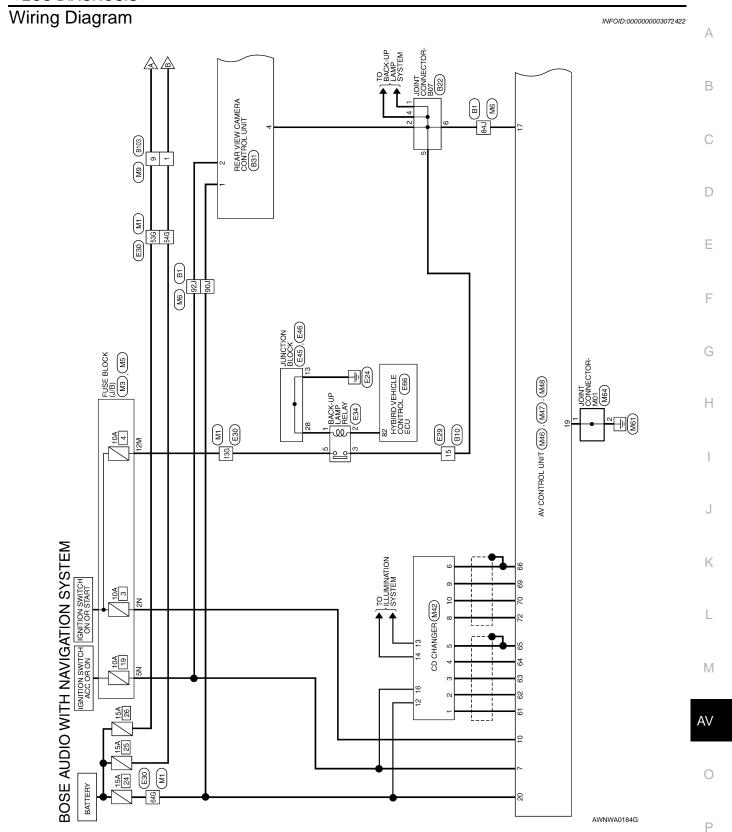
AV CONTROL UNIT

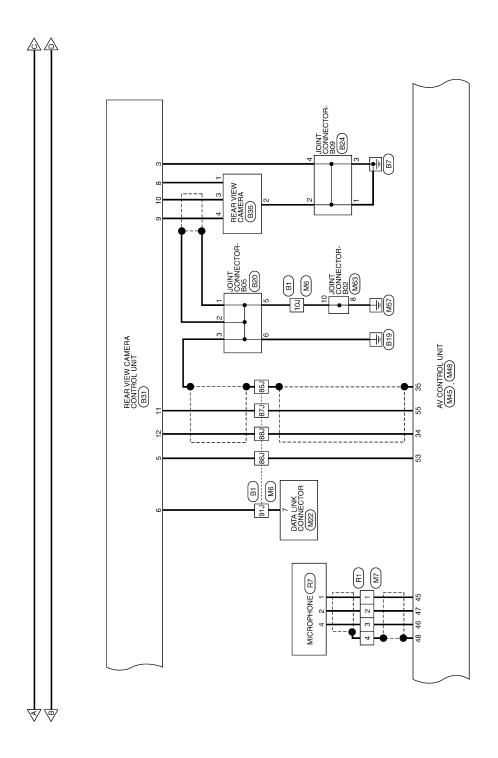
	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
5 (GR/V)	6 (W/L)	Sound signal rear LH	Output	Ignition switch ON	_	(V) 1 0 -1 + 2ms SKIB3609E
7 (V/Y)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage
8 (V/W)	Ground	Vehicle speed (8-pulse) signal	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25MPH)	(V) 6 4 2 0 *** 20ms SKIA6649J
9	Ground	Illumination signal	Input	OFF	Lighting switch is OFF.	0V
(R/L) 10 (G)	Ground	Ignition signal	Input	Ignition switch ON	Lighting switch is ON. —	Battery voltage 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 Description".
19 (B)	Ground	Ground	_	Ignition switch ON	_	0V

	minal					
	color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
20 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage
24 (L)	_	CAN-H	Input/ Output	_	_	_
					Keep pressing SOURCE switch.	0V
					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
,	,			ON	Keep pressing √ switch	3V
					Keep pressing ENTER switch.	4V
					Except for above.	5V
26 (L/B)	Ground	Steering switch signal ground	_	Ignition switch ON	_	0V
					Keep pressing VOL DOWN switch.	0V
27	26	Steering switch signal 2	Input	Ignition switch	Keep pressing VOL UP switch.	1V
(GR/L)	(L/B)	Steering Switch signal 2	iriput	ON	Keep pressing switch.	2V
					Keep pressing 5 switch.	3V
					Except for above.	5V
28	_	Shield			_	
31 (W/R)	Ground	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected	(V) 1 0 -1 → 2ms SKiB3609E
32 (W)	Ground	AUX ground	_	Ignition switch ON	_	OV
33 (W/L)	Ground	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected	(V) 1 0 -1 + 2ms SKIB3609E

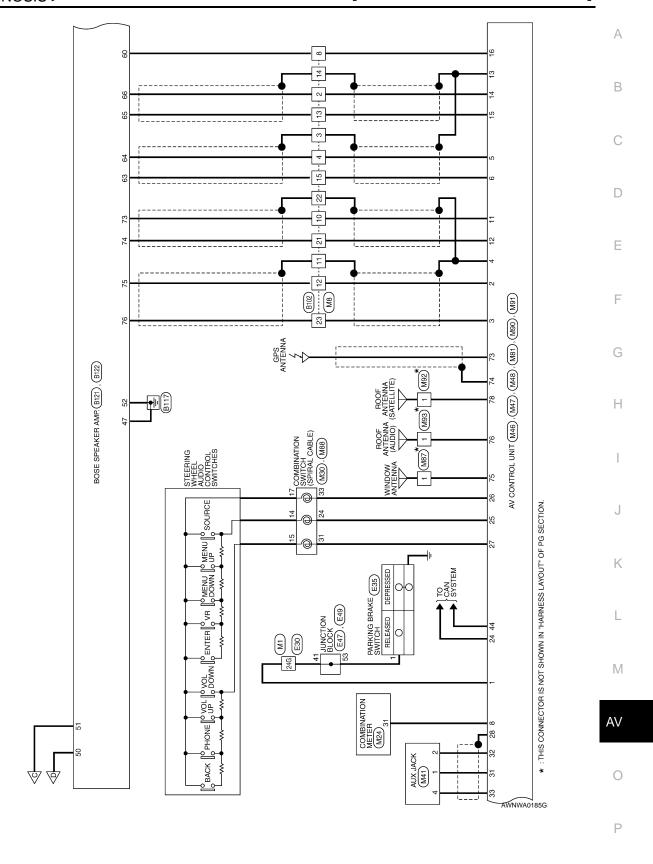
	minal e color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
34 (W)	Ground	Camera image signal	Input	Ignition switch ON	Rear view camera image displayed	(V) 0. 4 0 -0. 4 -0. 4 -0. 8 SKIB2251J
35	_	Shield	_		_	_
44 (P)	_	CAN-L	Input/ Output	_	_	_
45 (B/R)	Ground	Microphone signal	Input	Ignition switch ON	_	(V) 2. 5 2. 0 1. 5 1. 0 0. 5 0 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 recognition signal	Input	Ignition switch ON	Connected to camera control unit connector Not connected to camera control unit connector	0V 5V
55 (R)	Ground	Camera image signal	Input	Ignition switch ON	Rear view camera image displayed	(V) 0. 4 0 -0. 4 *** 40µs
62 (Y/L)	61 (W/L)	CD changer sound sig- nal LH	Input	Ignition switch ON	_	(V) 1 0 -1 *** 2ms SKIB3609E
64 (Y/G)	63 (BR/L)	CD changer sound signal RH	Input	Ignition switch ON	_	(V) 1 0 -1 + 2ms

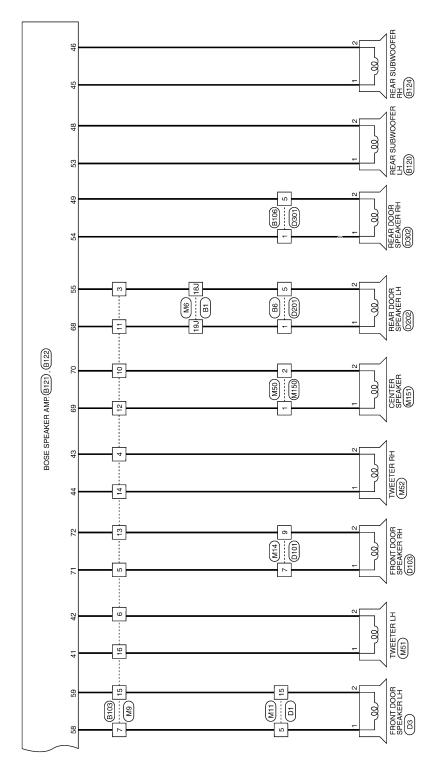
	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
65	_	Shield	_	_	_	_
66	_	Shield	_	_	_	_
69 (B)	Ground	Communication signal (CD→CONT)	Input	Ignition switch ON	_	(V) 10 0 -10 → +1ms SKIA9300J
70 (G)	Ground	Communication signal (CONT→CD)	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 antenna 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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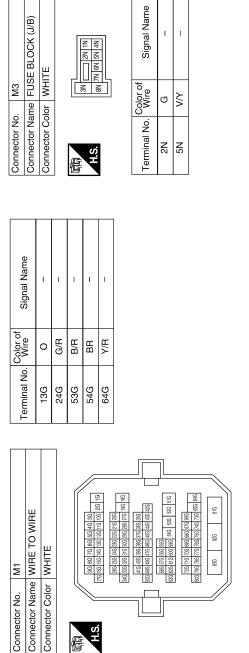
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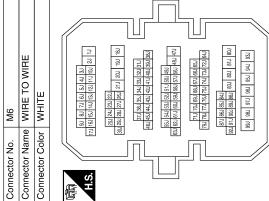
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BOSE AUDIO WITH NAVIGATION SYSTEM CONNECTORS





	FUSE BLOCK (J/B)	ITE	12M(1M)(10M)(9M) (8M) 7M (8M)	Signal Name	I	
. M5		lor WH	5M 4M 12M11M1	Color of Wire	۵	
Connector No.	Connector Name	Connector Color WHITE	所 H.S.	Terminal No.	12M	

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Connector No.	o. M7		Connector No.	No. M8		Connector No.	o. M9		
Connector Name WIRE TO Connector Color WHITE	ame WIRE T	RE TO WIRE	Connector Name WIRE T	Vame WIR	Connector Name WIRE TO WIRE Connector Color WHITE	Connector Name Connector Color	-	WIRE TO WIRE BROWN	
原动 H.S.	9 10 11	3 4 5 6 7 8 11 12 13 14 15 16	H.S.	12 11 10 9 8 24 23 22 21 2	20 19 18 17 16 15 14 13	所 H.S.	7 6 5 14 15 14	13 12 11 10 9 8	
Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	
-	B/B	ı	Ø	>	ı	-	BR	1	
2	B/B	1	က	SHIELD	1	က	BR/R	ı	
ဧ	R/L	1	4	GR/V	ı	4	GR/L	I	
4	SHIELD	ı	80	B/P	1	5	G/W	_	
			10	В	1	9	В/У	1	
			1-	SHIELD	1	7	Μ	_	
			12	g	ı	6	B/B	_	
			13	ΓG	1	10	g/O	-	
			14	SHIELD	1	=	B/G	I	
			15	M/L	1	12	B/P	I	
			21	>	1	13	BB	I	
			22	SHIELD	1	14	9	1	
			23	œ	1	15	В	ı	
						16	re	ı	
	Ιħ								
Connector No.	o. M11	,	Connector No.	No. M14		Connector No.	M22		
Connector Name WIRE TO	ame WIF	RE TO WIRE	Connector N	lame WIR	Connector Name WIRE TO WIRE	Connector Na	me DAT	Connector Name DATA LINK CONNECTOR	
Connector Color	-	WHITE	Connector Color	Solor WHITE	ТЕ	Connector Color WHITE	lor WHIT	щ	
A.S.	8 2 2 1	3	H.S.	2 9 2	7 8 9 10	哥 H.S.	9 10 11	12 13 14 15 16	
Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	
2	>	ı	7	G/W	ı	7	0	K-LINE	
15	В	1	6	BR	ı				

Signal Name	N-BUS L-	N-BUS L+	N-BUS R-	N-BUS R+	ı	DATA_GND	ı	REQ	RX	X	B+	IL-	ILL+	ACC
Color of Wire	M/L	Y/L	BR/L	Y/G	SHIELD	ı	1	æ	В	g	Y/R	R/Υ	R/L	V/Y
Terminal No.	-	2	3	4	2	9	7	8	6	10	12	13	14	16

Connector No.	. M42	42
Connector Name CD CHANGER	me CI	O CHANGER
Connector Color WHITE	lor W	HITE
H.S.	3 4	7 8 9 10 11 13 15

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Signal Name	MIC_IN+	MIC_+B	MIC_GND	I	I	ı			RV_CAM_SIG	I	COMP_IN-	_	-	ı	_	1
Color of Wire	B/R	R/L	B/B	SHIELD	1	-	_	_	V/G	-	В	_	ı	1	1	-
Terminal No.	45	46	47	48	49	20	51	25	53	54	22	99	22	58	59	09

Color of Signal Name	1	1	W/R AUX_IN_R	W AUX_GND	W/L AUX_IN_L	W COMP_IN +	SHIELD –	1	1	1	1	1			_	D V-CAN I
Color	'		W	≯	×	≥	SHE	'	1	1	1	1	-	-	1	Д
Terminal No.	59	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44

				39 40 59 60									
9	AV CONTROL UNIT	WHITE		29 30 31 32 33 34 35 36 37 38 49 50 51 52 53 54 55 56 57 58	Signal Name	I	I	ı	V-CAN_H	STRG_SW_SIG_1	STRG_SW_GND	STRG_SW_SIG_2	ı
). M46		-		26 27 28 46 47 48	Color of Wire	ı	ı	1	٦	M/G	8	GR/L	SHIELD
Connector No.	Connector Name	Connector Color	H.S.	21 22 23 24 25 41 42 43 44 45	Terminal No.	21	22	23	24	25	26	27	28

Signal Name	ACC	SPEED (8P)	┧	IGN	FR_RH +	FR_RH -	ı	RR_RH +	RR_RH -	AMP_ON	RV	ILL_CONT	GND	B+
Color of Wire	٨/٨	W/A	R/L	g	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

	AV CONTROL UNIT	ITE	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 20	Signal Name	DKB
. M47	ıme AV	lor WHITE	1	Color of Wire	a/5
Connector No.	Connector Name	Connector Color	斯 H.S.	Terminal No.	-



Signal Name	PKB	FR_LH +	FR_LH-	_	RR_LH +	RR_LH -
Color of Wire	G/R	5	Ж	SHIELD	GR/V	M/L
Terminal No.	-	2	3	4	2	9

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		А
		В
Signal Name	Connector No. M64 Connector Name JOINT CONNECTOR-M01 Connector Color GRAY H.S. 6 5 4 3 2 1 Terminal No. Wire Signal Name 2 B -	С
	M64 JOINT CO GRAY reference Signature Signatu	D
	Connector No. M6 Connector Name JOI Connector Color GR H.S. 6 5 H.S. 2 B 2 B 3	Е
Connector No. Connector Cold H.S. Terminal No. 2	Connector Nan Connector Cold Connector Cold Terminal No.	F
	WOS WOS	G
So IRE TO WIRE HITE Signal Name	Connector No. M63 Connector Name JOINT CONNECTOR-M02 Connector Color BLUE Terminal No. Color of Signal Name 8 B - 10 GR -	Н
Color of Wire B/P O/B	No. M63 Name JOINT Color BLUE 12 11 10 9 8 7 1 1 1 1 1 1 1 1 1	I
Connector No. M50 Connector Name WIRE TO WIRE Connector Color WHITE Terminal No. Wire 1 B/P 2 O/B	Connector No. Connector Name Connector Color H.S. Terminal No. W 8 10 Gol	J
		K
Connector No. M48 Connector Color GRAY Terminal No. Wire 63 BR/L N-BUS_L+ 63 BR/L N-BUS_L+ 64 Y/G N-BUS_R+ 65 SHIELD - 66 - DATA_GND 67 68 - TX 70 G TX 71 72 R REQ2	Signal Name	L
M48	M52 TWEETE BROWN or of ire 'O' 3/L	M
M4 AV Gonnector Name AV Connector Color GR Connector Color GR Color of Color of		AV
Connector Nan Connector Nan Connector Cold H.S. H.S. H.S. 62 63 63 64 64 65 66 69 67 70 71	Connector No. Connector Nam. Connector Color Terminal No. 2	0
	ALNIA0039GB	

	Connector Name COMBINATION SWITCH	אר טאטרב)	Y	17 16 15 14 13	Signal Name	REMOTE A	REMOTE B	GND
M88	e CON	[5)	or GRA	20 19 18 17	Solor of Wire	>	_	BR
Connector No.	Connector Nan		Connector Color GRAY	H.S.	Terminal No. Wire	14	15	17
]					
_	Connector Name WINDOW ANTENNA	ÓK			Signal Name	ı		
. W8	me WII	lor BLA			Color of Wire	В		
Connector No. M87	Connector Na	Connector Color BLACK		师 H.S.	Terminal No. Wire	-		
			_ _				, 	I
	CONTROL UNIT	> -		Z5 Z6 ZZ	Signal Name	AMP SUPPLY	MAIN ANTENNA	ı
M81	ne AV C	Connector Name AV CC Connector Color GRAY		Color of Wire	В	В	1	
Connector No.	Connector Name AV CONTRC	Connector Col		原 H.S.	Terminal No. Wire	75	9/	77

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		А
		В
SPEAKER Signal Name	Connector No. E34	С
M151 Inne CENTER S Ilor BROWN Color of Si B/P O/B	Color of Wire P/B O O O	D
ctor Ng ctor Ng lal No.	Connector No. Connector Name Connector Color Terminal No. A.S. A.S. 5 6 6	Е
Conne Conne Termin	Conne Conne Termin 1 1 1 1 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3	F
		G
Signal Name	E TO WIRE TE Signal Name Signal Name Signal Name	Н
Connector No. M150 Connector Name WIRE TO WIRE Connector Color WHITE H.S. Terminal No. Wire Signal I 1 B/P	WHR WHR	I
Connector No. Connector Color Connector Color H.S. Terminal No. Color Terminal No. Color Terminal No. Color	Connector No. Connector Name Connector Color Terminal No. Color Sign Sign Sign Sign Sign Sign Sign Sig	J
		К
Aame	W W W W W W W W W W W W W W W W W W W	L
Connector No. M93 Connector Name ROOF ANTENNA (AUDIO) Connector Color WHITE H.S. Terminal No. Color of Signal Name 1 B -	3 1 1 1 1 1 1 1 1 1	M
No. M93 Name ROOF A (AUDIO) Color WHITE Color of Wire B	I └	AV
Connector No. Connector Color Connector Color H.S. Terminal No. W	Connector No. Connector Name Connector Name Terminal No. Terminal No. Terminal No.	0
	ALNIA0122GB	Р

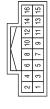
Connector Color WHITE	(4) 39 39 37 36 35 34 33 32 H.S.	Terminal No. Wire Signal Name						
Connector Name JUNCTION BLOCK Connector Color WHITE	17 16 15 14 13 24 22 22 22 19 18	Terminal No. Wire Signal Name	Connector No. E49 Connector Name JUNCTION BLOCK Connector Color BROWN	Feet 53 22 51	Terminal No. Wire Signal Name 53 G/R –		76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 81 80 79 78 110 109 108 107 106 105 104 103 102 111 111 112 113 112 114 140 139 138 137 136 135 131 130 139 138 137 136 139 139 139 139 139 139 139 139 139 139	
Connector Name PARKING BRAKE SWITCH Connector Color BLACK	Fig.	Terminal No. Wire Signal Name 1 G/R -	Connector No. E47 Connector Name JUNCTION BLOCK Connector Color WHITE	42	Terminal No. Wire Signal Name 41 G/R -	Connector No. E66 Connector Name HYBRID VEHICLE CONTROL ECU Connector Color BLACK	H.S. 168 167 166 165 164 168 77 76 7 176 7 177 177 177 177 177 177 1	Terminal No. Wire Signal Name 82 G/B BL

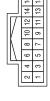
Connector No. B6 Connector Name WIRE TO WIRE	Connector Color WHITE			4 5 6 7					Color of	lerminal No. Wire Signal Name		L H/W	Connector No. B22	Connector Name JOINT CONNECTOR-B07	Connector Color GRAY	6 5 4 3 2 1	Terminal No. Wire Signal Name	1 P/B –	2 P/B –		5 P/B –	6 P/B –		
Signal Name	ı	ı	ı	ı	1	1	1	ı	ı	ı	ı			JOINT CONNECTOR-B05			Signal Name	1	ı	1	ı	1		
Color of Wire	GR	BR/B	R/G	P/B	SHIELD	N/G	œ	8	>	0	>		o. B20		olor GRAY	6 5 4 3	Color of Wire	GR	GR	GR	GR	В		
Terminal No.	107	181	197	847	85J	86J	87J	887	F06	91J	921		Connector No.	Connector Name	Connector Color	用.S.	Terminal No.	-	2	က	ည	9		
No. B1 Name WIRE TO WIRE	Color WHITE				10 20 100 110 120 130 140 150 150 170		197 197 2	31.1 82.0 33.0 34.0 35.0 35.0 35.0	38, 39, 40, 41, 42, 43, 44, 45, 48,	49.1 50.0 5.1 5.2 5.3 5.4 5.5 5.5 4.7 5.5 5.4 5.5 4.7 5.5 5.5 5.4 5.5 5.5 5.5 5.5 5.5 5.5 5.5		187 187	No. B10	Name WIRE TO WIRE	· Color WHITE	1 2 3 1 4 5 6 7 8 9 10 11 12 13 14 15 16	Color of Signal Name	P/B –						A
TE TE TE TE TE TE TE TE	GB																							

Signal Name	B+	ACC	GND	REV	CONTROL 1	DDL (K-LINE)	CAMERA ON	CAMERA -	CAMERA +	COMP -	COMP +
Color of Wire	>	>	В	P/B	N/G	0	GR	٦	Д	Ж	>
Terminal No.	1	2	8	4	2	9	8	6	10	1	12

	_	_	_	_	_	_	_	_	_	_	_		_
Signal Name	ı	-	-	ı	_	_	-	I	ı	I	I	_	I
Color of Wire	ГG	SHIELD	BB	B/G	M/L	SHIELD	W/R	>	SHIELD	>	GR/V	SHIELD	B/B
Terminal No.	2	က	4	8	10	11	12	13	14	15	21	22	23

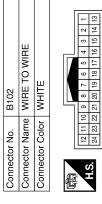








B24 JOINT CONNECTOR-B0 GRAY	3 2 1 🔲	Signal Name	-	ı	ı	1
B24 le JOINT	4	Color of Wire	В	ш	ш	<u>ш</u>
Connector No. Connector Name Connector Color	H.S.	Terminal No.	-	2	က	4



Connector No.	B35
Connector Name	REAR VIEW CAMER CONTROL UNIT
Connector Color	WHITE
S.H	1 2 3 4





Signal Name	CAMERA ON	GND	COMP +	COMP -
Color of Wire	GR	В	Ь	T
erminal No.	-	2	3	4

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,				_									_
	90	RE TO WIRE	11		6	5 6 7 8			Signal Name	o	ı	1	1
	B106	ne WIF	or WH		-	4			Color of Wire		_	W/W	à
	Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE			U	5:1		Terminal No. Wire		-	ď	ז
	omely lear	iai ivallie	ı	ı	1	-	ı	ı	ı			ı	ı

	Terminal No.	Color of Wire	Signal Name
T	55	BR/B	RR DOOR LH - OUT
	58	8	FR TWDR LH + OUT
	59	В	FR TWDR LH - OUT
» I :	09	B/G	AMP ON
2	63	>	BR LH - IN
	64	BR	RR LH + IN
	65	>	RR RH - IN
	99	LG	RR RH + IN
	89	R/G	RR DOOR LH + OUT
	69	B/P	INST CTR TWDR + OUT
	20	O/B	INST CTR TWDR - OUT
	71	G/W	FR DOOR RH + OUT
	72	BR	FR DOOR RH - OUT
	73	M/L	FR RH + IN
	74	GR/V	FR RH - IN
	75	W/R	FR LH + IN
	92	B/R	FR LH - IN

Signal Name	I	ı	1	ı	I	ı	ı	-	I	-	-	ı	1	1	
Color of Wire	BR	BR/B	GR/L	G/W	В/У	Μ	B/R	O/B	B/G	B/P	BR	0/7	В	LG	
Terminal No.	-	ဇ	4	5	9	2	6	10	11	12	13	14	15	16	

				88
	B121	Connector Name BOSE SPEAKER AMP	BROWN	77 76 77 77 77 80
	Connector No.	Connector Name	Connector Color BROWN	192 12

			2 9	8 9 10 11 12 13 14 15 16	
	R		4 5 6	14	
	⋉		4	13	
	0	z		12	
_	ΕJ	Į₹		Ξ	
B103	E	က္က	2 3	10	
œ	≥	ă	2	6	
	ອເ	Ľ	-	œ	
Connector No.	Connector Name WIRE TO WIRE	Connector Color BROWN	E	Q.F.	É

B120	REAR SPEAKER SUBWOOFER LH	WHITE	
Connector No.	Connector Name	Connector Color WHITE	

-	Signal Name	Ī	-	
<u> </u>	Color of Wire	8/M	g/9	
	Terminal No.	-	2	

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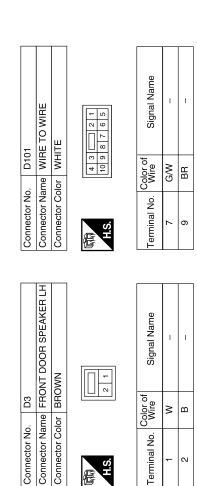
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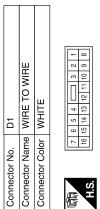
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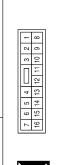
_	_		1			
24	REAR SUBWOOFER RH	ITE	2 1	Signal Name	-	1
. B124	1	lor WHITE		Color of Wire	BR/W	BB
Connector No.	Connector Name	Connector Color	明S.	Terminal No. Wire	-	2

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	BAT	BAT	GND	LH WOOFER +OUT	RR DOOR RH + OUT
Color of Wire	LG	В/Υ	GR/L	0/1	BR/W	BR	B/L	G/B	B/W	BR	B/R	В	M/B	_
Terminal No.	41	42	43	44	45	46	47	48	49	20	51	52	53	54











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				АВ
Connector No. D202 Connector Name REAR DOOR SPEAKER LH Connector Color BROWN		Signal Name	Signal Name	С
D202 REAR DOOF BROWN	2 1		0 4 2	D
Connector No. Connector Color Connector Color		Color of Wire O/B W/R	Connector Name WIRE T Connector Color WHITE Connector Color WHITE ALS 1 W Wire 2 R B B 3 B B 4 SHIELD	Е
Connector No. Connector Nam	H.S.	Terminal No.	Connector No. Connector No. Terminal No. 2 2 2 3 3 4 4	F
		9 B	ER RH RR RH	G
O WIRE	5 2 4	Signal Name	Connector Name REAR DOOR SPEAKER RH Connector Color BROWN	Н
Connector No. D201 Connector Name WIRE TO WIRE Connector Color WHITE	3 7 8	Color of Wire O/B W/R	Color of Wire BWW BWW BWW BWW BWW BWW BWW BWW BWW BW	ı
Connector No. D201 Connector Name WIRE T	原 A.S.	Terminal No.	Connector No. Connector Name Connector Color Terminal No. Terminal No.	J
				K
SPEAKER RH		Signal Name	WIRE Signal Name	L
Connector No. D103 Connector Name FRONT DOOR SPEAK Connector Color BROWN	1 2			M
No. D103 Name FRON Color BROW		Color of Wire GAW		AV
Connector No. D103 Connector Name FRONT I Connector Color BROWN	原面 H.S.	Terminal No.	Connector No. Connector Color Terminal No. Connector No. Connector Name Connector Name Connector Name	0
			ALNIA0124GB	Р

DTC Index

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-177</u>
CONTROL UNIT (CAN) [U1010]	When a malfunction is detected during initial diagnosis for CAN controller of each control unit.	<u>AV-178</u>
Cont Unit FLASH- ROM [U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	<u>AV-272</u>
GYRO NO CONN [U1201]	An internal malfunction is detected in AV control unit (gyrocompass disconnection).	AV-272
GPS COMM [U1204]	An internal malfunction is detected in AV control unit (GPS malfunction).	AV-272
GPS ROM [U1205]	An internal malfunction is detected in AV control unit (GPS malfunction).	<u>AV-272</u>
GPS RAM [U1206]	An internal malfunction is detected in AV control unit (GPS malfunction).	<u>AV-272</u>
GPS RTC [U1207]	An internal malfunction is detected in AV control unit (GPS malfunction).	<u>AV-272</u>
DVD-ROM COMM [U1208]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-185</u>
DVD-ROM READ [U1209]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-186</u>
DVD-ROM DISC [U120A]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-187</u>
DVD-ROM MECHA DETECT [U120C]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-188</u>
DVD-ROM MECHA [U120D]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-189</u>
DVD-ROM SEEK [U1210]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-190</u>
DVD-ROM DATA FORWARD [U1212]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-191</u>
DVD-ROM DATA [U1213]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-192</u>
DVD-ROM TIMEOUT [U1214]	An internal malfunction is detected in AV control unit (DVD-ROM).	<u>AV-193</u>
DVD-ROM LOAD [U1215]	An internal malfunction is detected in AV control unit (DVD-ROM).	AV-194
CAN CONT [U1216]	An internal malfunction is detected in AV control unit (CAN controller).	AV-272
BLUETOOTH CONN [U1217]	An internal malfunction is detected in AV control unit (Bluetooth module connection malfunction).	AV-272
XM SERIAL COMM [U1220]	An internal malfunction is detected in AV control unit (satellite radio tuner communication malfunction).	AV-272

AV CONTROL UNIT

< ECU DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

CONSULT-III display	Malfunction	Reference page
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	AV-198
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) 	AV-199

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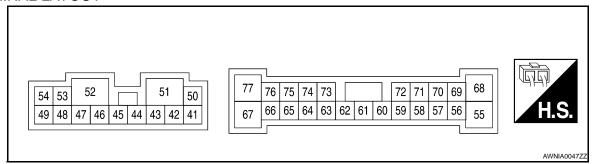
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BOSE SPEAKER AMP

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal color)	Description		Condition	Reference value
+	_	Signal name	Input/Output		(Approx.)
41 (LG)	42 (B/Y)	Sound signal front tweeter LH	Output	Ignition switch ON	(V) 1 0 -1 → 2ms SKIB3609E
44 (L/O)	43 (GR/L)	Sound signal front tweeter RH	Output	Ignition switch ON	(V) 1 0 -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

[BOSE AUDIO WITH NAVIGATION]

	minal e color)	Description		Condition	Reference value
+	_	Signal name	Input/Output	Condition	(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

[BOSE AUDIO WITH NAVIGATION]

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

REAR VIEW CAMERA CONTROL UNIT

< ECU DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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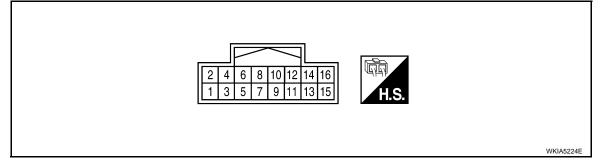
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REAR VIEW CAMERA CONTROL UNIT

Reference Value INFOID:0000000003072425

TERMINAL LAYOUT



PHYSICAL VALUES

Torr	minal	Description			Condition	Reference value
	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	Cround	Doverse signal input	lanut	ON	A/T selector lever R position	Battery voltage
(P/B)	Ground	Reverse signal input	Input	ON	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. 0. 2 0 0. 0. 2 0 0. 0. 2 0 0. 0. 2 0. 0. 2 0. 0. 2 0. 0. 2 0. 0. 2 0. 0. 3 0. 0

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REAR VIEW CAMERA CONTROL UNIT

< ECU DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Terminal		Description			Condition	Reference value
	color)	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
11 (R)	Ground	Composite image output (-)	Output	ON	A/T selector lever R position	(V) 0. 6 0. 4 0. 2 0. 2 0. 0 0. 0 0. 0 0. 0 0. 0 0. 0
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

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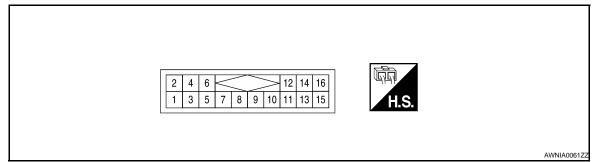
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CD CHANGER

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description			Condition	Reference value
+	_	Signal name	Input/ Output	Ignition switch	Operation	(Approx.)
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
4 (Y/G)	3 (BR/L)	CD changer sound signal RH	Output	Ignition switch ON	When CD change mode is selected	(V) 1 0 -1 + 2ms SKIB3609E
5	_	Shield	_	_	_	_
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
9 (B)	Ground	Communication signal (CONT→CD)	Input	Ignition switch ON	When CD change mode is selected	(V) 10 0 -10 -10 -KIA9300J

CD CHANGER

[BOSE AUDIO WITH NAVIGATION]

	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 -10 -10 -10 -10 -10 -10
12 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage
13 (R/Y)	Ground	Illumination (-)	Input	OFF	_	Refer to INL-9, "System Description".
14	Ground	Illumination (+)	Input	OFF	Lighting switch is OFF.	0V
(R/L)	Giodila	munimiauon (+)	input	011	Lighting switch is ON.	Battery voltage
16 (V/Y)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage

[BOSE AUDIO WITH NAVIGATION]

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM

Symptom Table

INFOID:0000000003072427

NAVIGATION SYSTEM

Symptom	Possible cause	Reference page
Inoperative	AV control unit power and ground circuit AV control unit	• AV-201 • AV-272
Steering switch does not operate	Steering switch AV control unit	• <u>AV-222</u> • <u>AV-272</u>
Voice activated control does not operate	MicrophoneSteering switchAV control unit	AV-224AV-222AV-272

HANDS-FREE PHONE SYSTEM

Symptom	Possible cause	Reference page
Inoperative	AV control unit power and ground circuit AV control unit	AV-201AV-272
Steering switch does not operate	Steering switch AV control unit	• <u>AV-222</u> • <u>AV-272</u>
Voice activated control does not operate	 Microphone Steering switch AV control unit	AV-224AV-222AV-272

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-201 • AV-229 • AV-227 • AV-226
	Camera image signal circuit (rear view camera control unit to AV control unit) Rear view camera control unit	AV-228AV-287

AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	AV control unit power and ground circuit AV control unit	• AV-201 • AV-272
Steering switch does not operate	Steering switch AV control unit	• <u>AV-222</u> • <u>AV-272</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-201 AV-221 AV-203 AV-273 AV-272
One or several speakers do not sound	 Front door speaker Tweeter Center speaker Rear door speaker Rear subwoofer 	 AV-207 AV-210 AV-213 AV-215 AV-218

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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	Occurrence condition	
Occurs only when engine is ON. A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.		Ignition components
The occurrence of the noise is lin	ked with the operation of the fuel pump.	Fuel pump condenser
Noise only occurs when various	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, audio unit malfunction
electrical components are operating.	The noise occurs when various motors are operating.	Motor case ground Motor
The noise occurs constantly, not just under certain conditions.		 Rear defogger coil 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		Cause Remedy		Cause Remedy		Cause Remedy	
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.						
No guide sound is heard.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.						
Audio guide volume is too low or too high.	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunctioning.						
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.						
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display (display unit).	System is not malfunction.						

Vehicle Mark

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunctioning.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	ttime The daytime screen is selected by the "SWITCH Perform screen dimming	
Map screen will not scroll in accordance 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 panel.	Do not place anything on top of the meter display (instrument panel).
	GPS satellites are not visible from current location.	Wait until GPS satellites are visible by moving the vehicle.
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD–ROM will be released once a year.

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

Symptom	Cause	Remedy
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn route guide ON.
	Route information is not available on the dark pink route.	System is not malfunctioning.
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.)	Drive on the recommended route.

< 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). However, the result is the same as that of the previous search.	Performed search with every conditions considered. However, the result is the same as that of the previous search.	System is not malfunctioning.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunctioning.
Some menu items cannot be selected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

Voice Guide

Symptom	Cause	Remedy
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunctioning.
	The vehicle is not on the recommended route.	Return to the recommended route or research the route.
	Voice guide is turned OFF.	Turn voice guide ON.
	Route guide is turned OFF.	Turn route guide ON.
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.

Route Search

Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) near- by and reset the destination and passing points onto it. Take care of the traveling direc- tion when there are separate up and down roads.
	Starting point and the destination are too close.	Set the destination at more distant point.
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the cur- rent location or the destination.	Turn the time-regulating search conditions OFF. Turn "Avoid regulation time" in the search conditions OFF.
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search ^(Note) Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunctioning.
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunctioning.

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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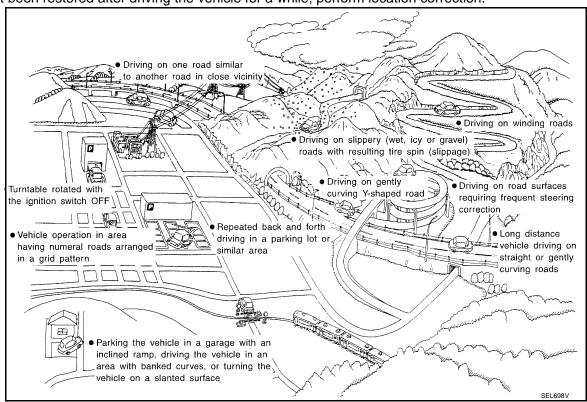
Symptom	Cause	Remedy
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic,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

NOTE:

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

Examples of Current-Location Mark Displacement

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



AV-265

[BOSE AUDIO WITH NAVIGATION]

Cause (con	ndition) -: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
	Y-intersections ELK0192D	At a Y intersection or similar gradual division of roads, an error in the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	
	Spiral roads		
	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.	
Road config-	Straight roads ELK0194D	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle is turned at a corner.	If after travelling about 10 km (6 miles) the correct location has
uration	Zigzag roads ELK0195D	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	not been restored, perform lo- 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 running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
	Parallel roads		
		When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	
	ELK0197D		

[BOSE AUDIO WITH NAVIGATION]

Cause (cor	ndition) -: While driving ooo: Display	Driving condition	Remarks (correction, etc.)	
	In a parking lot Parking lot SEL709V	When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location. When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.		В
Place	Turntable Turntable SEL710V	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turntable with the ignition OFF.		D E
	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	G
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	not been restored, perform location correction and, if necessary, direction correction.	Н
	Road not displayed on the map screen New road	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.		J
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 correct road.		K L M
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.)	AV

[BOSE AUDIO WITH NAVIGATION]

Cause (con	dition) -: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
	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.
Precautions for driving	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road.	Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
How to correct location	Position correction accuracy Within 1 mm (0.04 in) SELTOILV	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 SELT02V	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards.	Perform direction correction.

Location Correction by Map-Matching is Slow

- The map-matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map-matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

Name of Road is Not Displayed

The current road name may not be displayed if there are no road names displayed on the map screen.

Contents of Display Differ for Birdview[™] and the (Flat) Map Screen

Difference of the BIRDVIEW™ screen from the flat map screen are as follows.

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming too complex. In some cases
 and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

Vehicle Mark Shows a Position Which is Completely Wrong

In the following cases, the vehicle mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction.

- When location correction has not been done
- If the receiving conditions of the GPS satellite signal is poor, if the vehicle mark becomes out of place, it may
 move to a completely different location and not come back if location correction is not done. The position will
 be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed

< SYMPTOM DIAGNOSIS >

[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 can be detected with GPS, the location will be corrected.

Vehicle Mark Jumps

In the following cases, the vehicle mark may appear to jump as a result of automatic correction of the current location.

- When map matching has been done
- If the current location and the vehicle mark are different when map matching is done, the vehicle mark may seem to jump. At this time, the location may be "corrected" to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
- If the current location and the vehicle mark are different when the location is corrected using GPS measurements, the vehicle mark may seem to jump. At this time, the location may be "corrected" to a location which is not on a road.

Vehicle Mark is in a River or Sea

The navigation system moves the vehicle mark with no distinction between land and rivers or sea. If the vehicle mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

Vehicle Mark Automatically Rotates

The system wrongly memorizes the rotating status as stopping when the ignition switch is turned ON with the turntable rotating. That causes the vehicle mark to rotate when the vehicle is stopped.

When Driving on Same Road, Sometimes Vehicle Mark is in Right Place and Sometimes it is in Wrong Place The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

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PRECAUTION

PRECAUTIONS

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

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 SR and SB section of this Service Manual.

WARNING:

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

Precaution for Trouble Diagnosis

INFOID:0000000003072430

AV COMMUNICATION SYSTEM

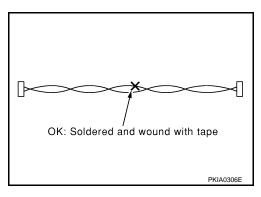
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

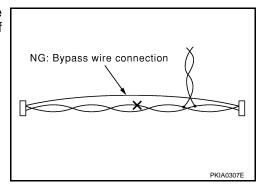
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AV COMMUNICATION SYSTEM

 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.)



PREPARATION

< PREPARATION >

[BOSE AUDIO WITH NAVIGATION]

PREPARATION

PREPARATION

Commercial Service Tools

Tool name		Description	
Power tool		Loosening bolts and nuts	
	PBIC0191E		

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ON-VEHICLE REPAIR

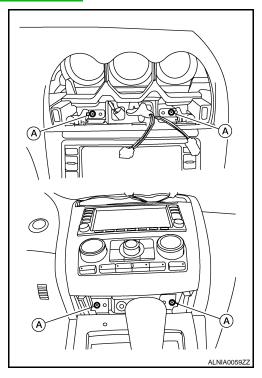
AV CONTROL UNIT

Removal and Installation

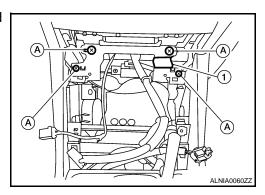
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REMOVAL

- 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.

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[BOSE AUDIO WITH NAVIGATION]

BOSE AMP.

Removal and Installation

INFOID:0000000003072434

For removal and installation, refer to AV-128, "Removal and Installation".

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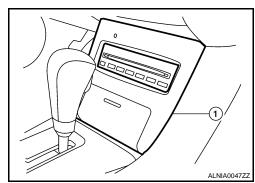
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CD CHANGER

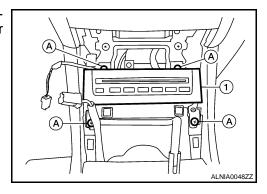
Removal and Installation

REMOVAL

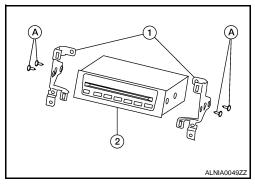
- 1. Remove Cluster D lower finisher. Refer to IP-11, "Removal and Installation".
- 2. Put selector lever in the drive (D) position.
- 3. Using a suitable tool remove the CD changer finisher (1), then disconnect the power socket, AUX jack connectors and remove the CD changer finisher (1).



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.

TWEETER

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[BOSE AUDIO WITH NAVIGATION]

TWEETER

Removal and Installation

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For removal and installation, refer to AV-129, "Removal and Installation".

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CENTER SPEAKER

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[BOSE AUDIO WITH NAVIGATION]

CENTER SPEAKER

Removal and Installation

INFOID:0000000003072437

For removal and installation, refer to AV-130, "Removal and Installation".

FRONT DOOR SPEAKER

< ON-VEHICLE REPAIR >

[BOSE AUDIO WITH NAVIGATION]

FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000003072438

For removal and installation, refer to AV-47, "Removal and Installation".

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REAR DOOR SPEAKER

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[BOSE AUDIO WITH NAVIGATION]

REAR DOOR SPEAKER

Removal and Installation

INFOID:0000000003072439

For removal and installation, refer to AV-132, "Removal and Installation".

REAR SPEAKER

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[BOSE AUDIO WITH NAVIGATION]

REAR SPEAKER

Removal and Installation

INFOID:0000000003072440

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

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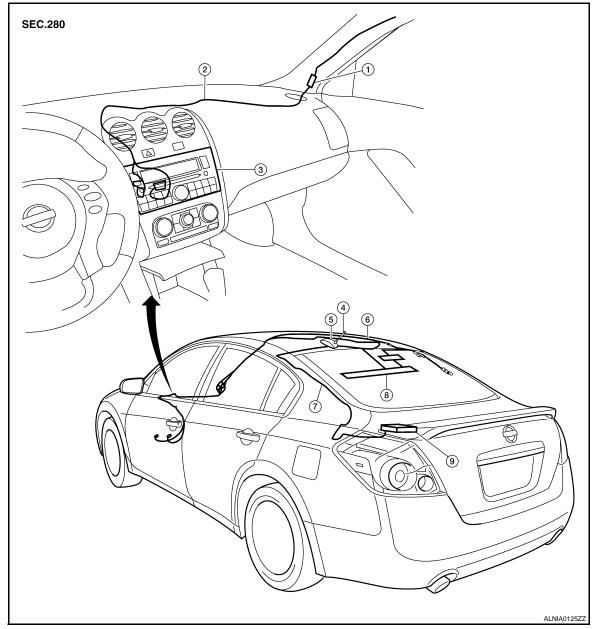
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AUDIO ANTENNA

Location of Antennas

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- 1. Audio unit harness connector
- 4. Roof antenna rod
- 7. Satellite feeder

- 2. Audio unit harness
- 5. Roof antenna base
- 8. Window antenna
- 3. Audio unit
- 6. Antenna feeder (to audio unit)
- 9. Satellite radio tuner

Roof Antenna

INFOID:0000000003072441

REMOVAL and INSTALLATION

For removal and installation, refer to AV-49. "Roof Antenna".

GPS ANTENNA

Removal and Installation

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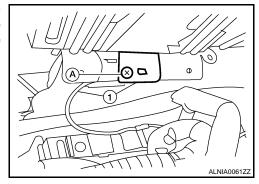
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REMOVAL

- 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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STEERING SWITCH

< ON-VEHICLE REPAIR >

[BOSE AUDIO WITH NAVIGATION]

STEERING SWITCH

Removal and Installation

INFOID:0000000003072443

For removal and installation, refer to AV-53. "Removal and Installation".

MICROPHONE

< ON-VEHICLE REPAIR >

[BOSE AUDIO WITH NAVIGATION]

MICROPHONE

Removal and Installation

INFOID:0000000003072444

For removal and installation, refer to AV-137, "Removal and Installation".

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TEL ANTENNA

[BOSE AUDIO WITH NAVIGATION]

TEL ANTENNA

Removal and Installation

INFOID:0000000003072445

For removal and installation, refer to AV-138, "Removal and Installation".

TEL ADAPTER UNIT

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[BOSE AUDIO WITH NAVIGATION]

TEL ADAPTER UNIT

Removal and Installation

INFOID:0000000003072446

For removal and installation, refer to AV-139, "Removal and Installation".

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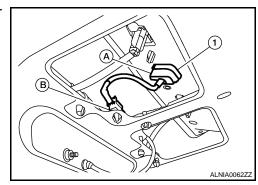
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REAR VIEW MONITOR

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:0000000003072448

REAR VIEW MONITOR

For adjustment on the rear view monitor, refer to <u>AV-142</u>. "REAR VIEW MONITOR GUIDING LINE ADJUST-MENT: Special Repair Requirement".

CAMERA CONTROL UNIT

CAMERA CONTROL UNIT

Removal and Installation

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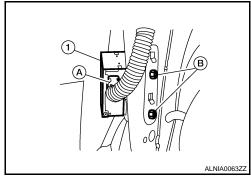
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REMOVAL

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

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