

SECTION **AV**

AUDIO, VISUAL & NAVIGATION SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:000000009752015

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Removing of Battery Terminal

INFOID:000000010273675

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

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

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

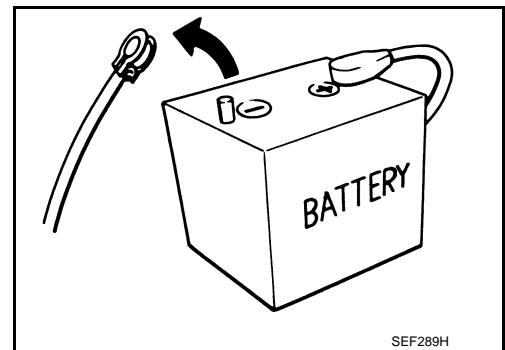
NOTE:

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

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

NOTE:

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



Precaution for Trouble Diagnosis

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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.

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PRECAUTIONS

< PRECAUTION >

[AUDIO WITHOUT NAVIGATION]

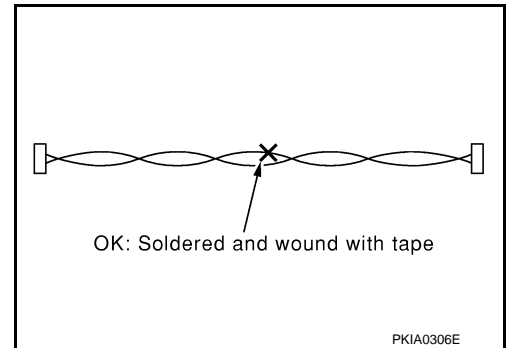
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

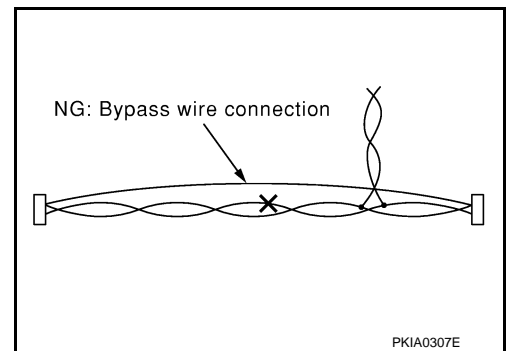
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AV COMMUNICATION SYSTEM

- 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.)

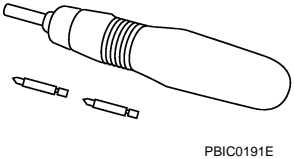


PREPARATION

PREPARATION

Commercial Service Tools

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Tool name	Description
Power tool  PBIC0191E	Loosening screws

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COMPONENT PARTS

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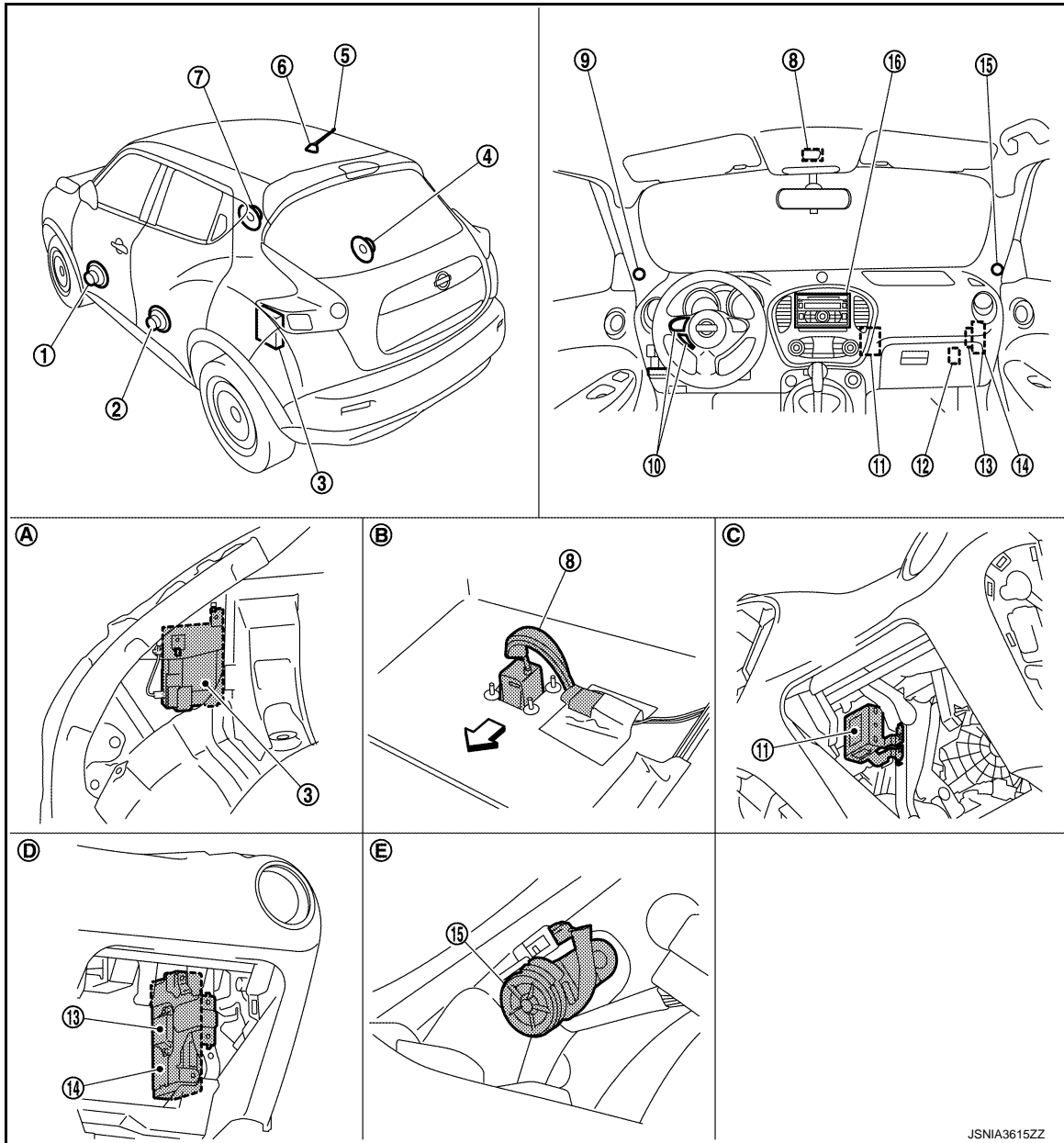
[AUDIO WITHOUT NAVIGATION]

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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- | | | |
|--------------------------|-------------------------|--|
| 1. Front door speaker LH | 2. Rear door speaker LH | 3. Satellite radio tuner |
| 4. Rear door speaker RH | 5. Antenna rod | 6. Antenna base (antenna amp. and satellite radio antenna) |
| 7. Front door speaker RH | 8. Microphone | 9. Tweeter LH |
| 10. Steering switch | 11. iPod adapter | 12. iPod connector |
| 13. TEL antenna | 14. TEL adapter unit | 15. Tweeter RH |
| 16. Audio unit | | |
| A. Luggage side LH | B. Back of headlining | C. Glove box assembly removed condition |

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[AUDIO WITHOUT NAVIGATION]

- D. Glove box assembly removed condition E. Front pillar finisher removed condition

↩: Vehicle front

Component Description

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Part name	Description
Audio unit	Controls audio system and hands-free phone system functions.
Steering switch	<ul style="list-style-type: none"> • Operation for audio and hands-free phone are possible. • Steering switch signal (operation signal) is output to TEL adapter unit. • Steering switch signal (operation signal) is output to audio unit via TEL adapter unit.
Front door speaker	<ul style="list-style-type: none"> • Outputs sound signal from audio unit. • Outputs high, mid and low range sounds.
Tweeter	<ul style="list-style-type: none"> • Outputs sound signal from audio unit. • Outputs high range sounds.
Rear door speaker	<ul style="list-style-type: none"> • Outputs sound signal from audio unit. • Outputs high, mid and low range sounds.
TEL adapter unit	<ul style="list-style-type: none"> • Inputs the TEL voice signal from TEL antenna and outputs it to the audio unit. • It is connected with the audio unit via AV communication and controlled with the audio unit.
TEL antenna	<ul style="list-style-type: none"> • Receives the TEL voice signal and outputs it to the TEL adapter unit. • TEL antenna is unified with a TEL adapter unit.
Microphone	<ul style="list-style-type: none"> • Used for hands-free phone operation. • Microphone signal is transmitted to TEL adapter unit. • Power (microphone VCC) is supplied from TEL adapter unit.
iPod adapter	<ul style="list-style-type: none"> • Inputs iPod sound signal from iPod®, and outputs iPod sound signal to audio unit. • Receiving/transmitting of iPod® operation signals are performed as follows: <ul style="list-style-type: none"> - between audio unit and iPod adapter: AV communication. - between iPod® and iPod adapter: serial communication.
Antenna base	<p>A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.</p> <p>ANTENNA AMP.</p> <ul style="list-style-type: none"> • Radio signal received by rod antenna is amplified and transmitted to audio unit. • Power (antenna amp. ON signal) is supplied from audio unit. <p>SATELLITE RADIO ANTENNA</p> <ul style="list-style-type: none"> • Receives satellite radio waves and outputs it to audio unit.
Satellite radio tuner	<ul style="list-style-type: none"> • Receives radio signals from satellite radio antenna (satellite radio antenna is built into antenna base). • Sends sound signals to audio unit.

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

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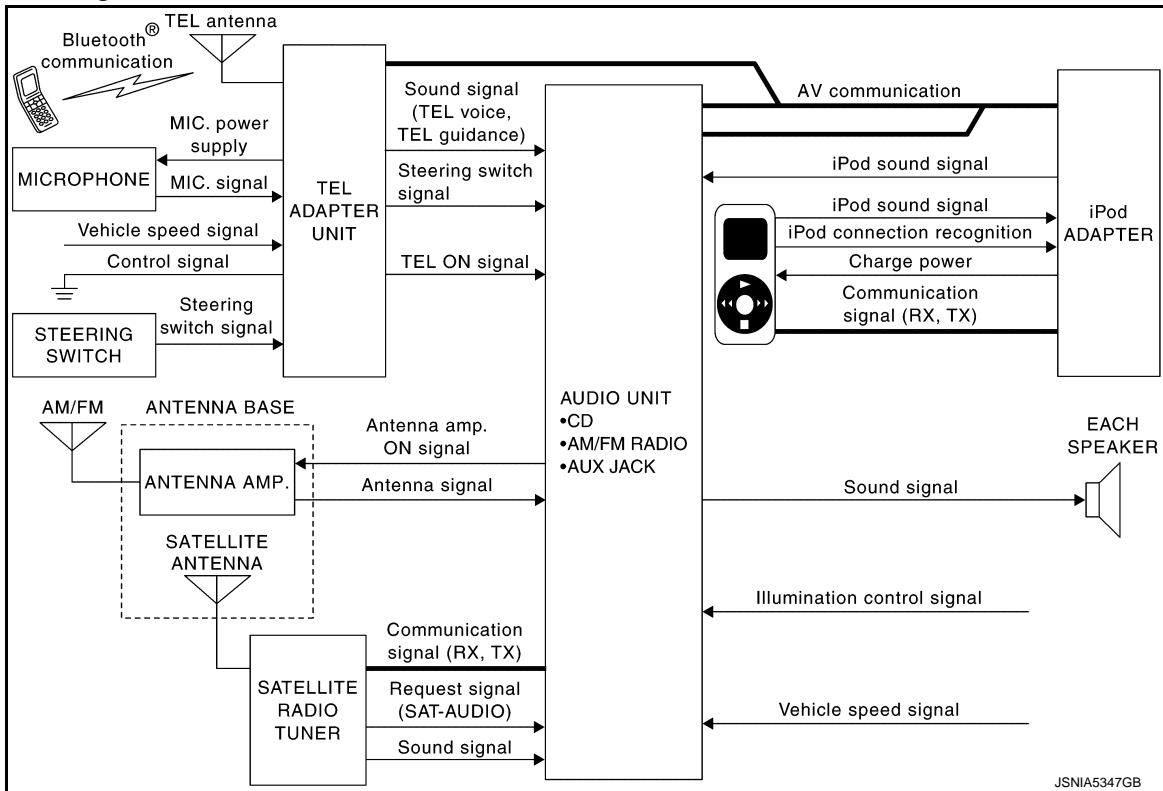
< SYSTEM DESCRIPTION >

[AUDIO WITHOUT NAVIGATION]

SYSTEM

System Diagram

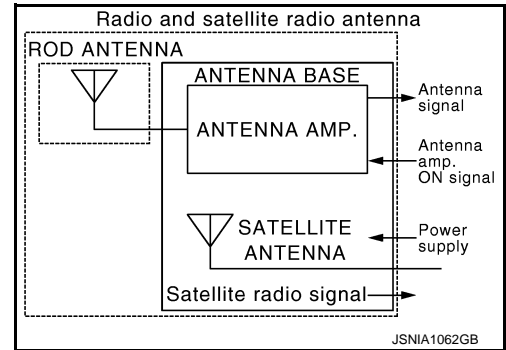
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NOTE:

An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



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System Description

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AUDIO SYSTEM

Audio functions

Audio function	AM/FM radio
	Satellite radio
	CD
	AUX input
	iPod® connection
	Speed sensitive volume
Hands-free phone system	

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AUDIO FUNCTION

AM/FM Radio

SYSTEM

< SYSTEM DESCRIPTION >

[AUDIO WITHOUT NAVIGATION]

- AM/FM radio tuner is built into audio unit.
- Radio signals are received by radio antenna, next they are amplified by antenna amp., and finally they are input to audio unit. (Antenna amp. is built into antenna base.)
- Audio unit outputs the sound signal to each speaker.

Satellite Radio

- Radio signals are supplied to satellite radio tuner from the satellite radio antenna. (satellite radio antenna is built into antenna base.)
- The satellite radio tuner sends sound signal to the audio unit.
- Audio unit outputs the sound signal to each speaker.

CD

- CD function is built into audio unit.
- Audio unit outputs sound signal to each speaker when CD is inserted to audio unit.

Auxiliary input

- When the external device is connected to the auxiliary (AUX) input jack of the audio unit, the external device inputs a sound signal to the audio unit.
- When AUX mode is selected, audio unit outputs sound signal to each speaker.

iPod® Connection

- Connect iPod® and iPod adapter with wire harness and iPod adapter input iPod sound signal from iPod®.
- When iPod® mode is selected, iPod adapter outputs iPod sound signal to audio unit.
- Audio unit outputs the sound signal to each speaker.

Speed Sensitive Volume

- Volume level of this system goes up and down automatically in proportion to the vehicle speed.
- The control level can be selected by the customer.

HANDS-FREE PHONE FUNCTION

- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the audio unit and output to the front speaker when operating the telephone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-15, "On Board Diagnosis Function"](#).

When Receiving A Call

TEL voice signal received with the cellular phone is input from TEL antenna via TEL adapter unit to audio unit with Bluetooth® communication and output to the front speaker. The operation is performed with the steering switch or voice recognition function.

When A Call Is Originated

Speech sound (TEL voice signal) is input from the microphone to the TEL adapter unit. It is input from the TEL antenna via Bluetooth® communication to the cellular phone. It is transmitted to the phone on the other side. The operation is performed with the steering switch or voice recognition function.

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DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[AUDIO WITHOUT NAVIGATION]

DIAGNOSIS SYSTEM (AUDIO UNIT)

On Board Diagnosis Function

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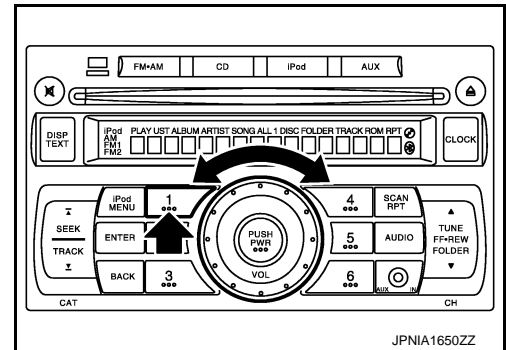
ON BOARD DIAGNOSIS ITEM

Self-diagnosis mode can check the following items.

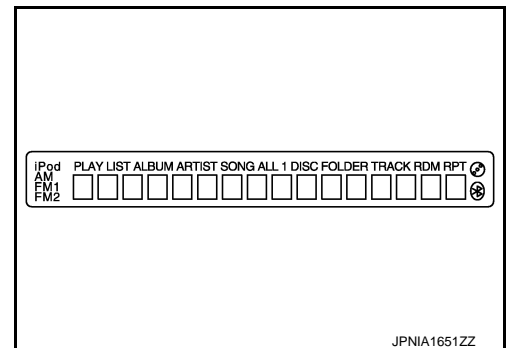
- Display all icons and segments
- Audio unit hardware/software/CD mechanism/EEPROM versions
- Satellite radio version
- Audio CD changer version
- iPod® hardware/software versions

METHOD OF STARTING

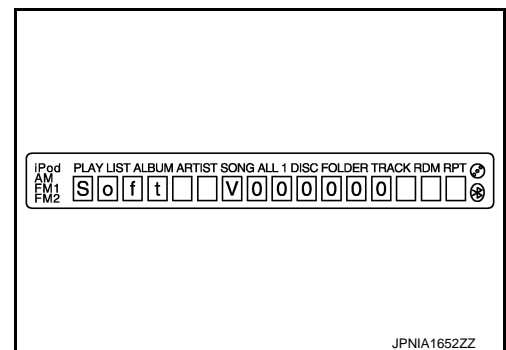
1. Turn ignition switch to the ON position.
2. Turn the audio unit off.
3. While pressing the “1” button, turn the volume control dial clockwise or counterclockwise 30 clicks or more. When the self-diagnosis mode is started, a short beep will be heard.



4. Initially, all display segments will be illuminated.



5. Press the “DISP TEXT” switch to enter version diagnostics. “Soft” (audio software version) is displayed.

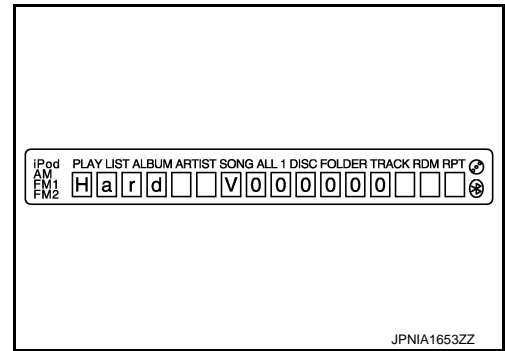


DIAGNOSIS SYSTEM (AUDIO UNIT)

[AUDIO WITHOUT NAVIGATION]

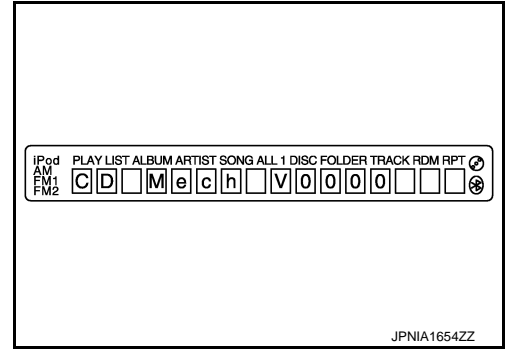
< SYSTEM DESCRIPTION >

- Press the “DISP TEXT” switch again to display the “Hard” (audio hardware version).



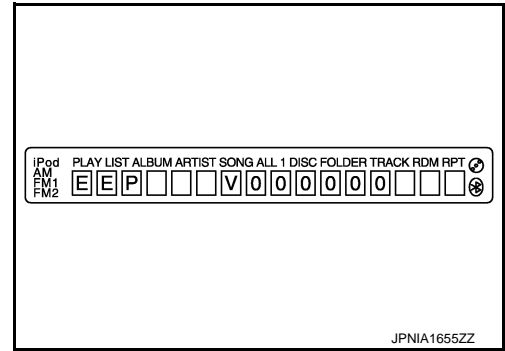
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- Press the “DISP TEXT” switch again to display the “CD Mech” (CD mechanism version).



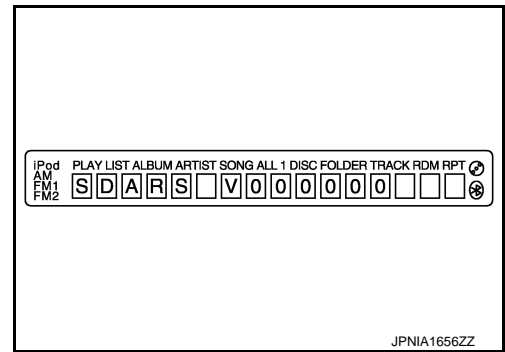
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- Press the “DISP TEXT” switch again to display the “EEP” (audio unit EEPROM version).



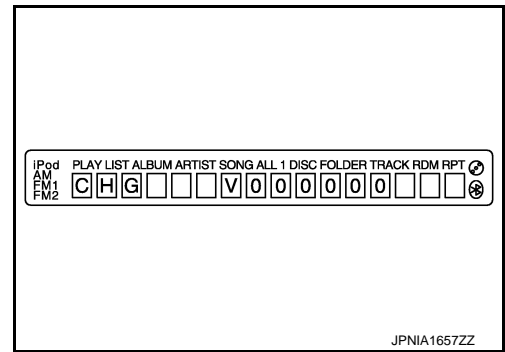
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- Press the “DISP TEXT” switch again to display the “SDARS” (satellite radio version).



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- Press the “DISP TEXT” switch again to display the “CHG” (audio CD changer version). If audio CD changer is not connected, “FFFFFF” is displayed.



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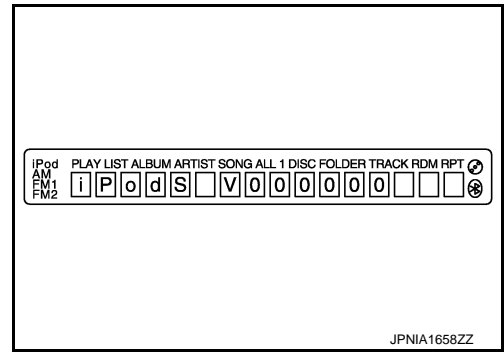
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DIAGNOSIS SYSTEM (AUDIO UNIT)

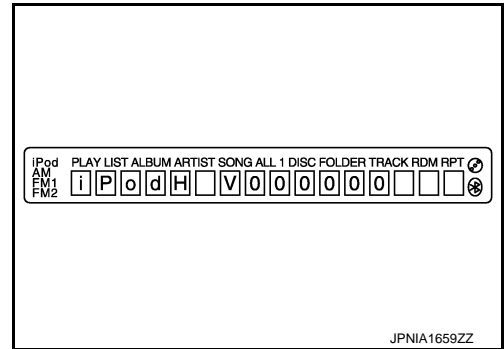
< SYSTEM DESCRIPTION >

[AUDIO WITHOUT NAVIGATION]

11. Press the “DISP TEXT” switch again to display the “iPodS” (iPod® software version). “FFFFFF” is displayed when communication signals between the audio unit and iPod adapter include a malfunction.



12. Press the “DISP TEXT” switch again to display the “iPodH” (iPod® hardware version). “FFFFFF” is displayed when communication signals between the audio unit and iPod adapter include a malfunction.



Finishing Self-diagnosis Mode

Self-diagnosis Mode is canceled when turning ignition switch OFF.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[AUDIO WITHOUT NAVIGATION]

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Description

INFOID:000000009752024

During on board diagnosis the diagnosis function of TEL adapter unit starts with the operation of the steering switch and performs the diagnosis when ignition switch ACC.

On Board Diagnosis Function

INFOID:000000009752025

ON BOARD DIAGNOSIS ITEM

The on board diagnosis has 3 modes: the self-diagnosis mode that performs the trouble diagnosis, the speaker adaptation data deleting mode and the hands free phone system initialization mode.

CAUTION:

- Perform the diagnosis with the vehicle stopped.
- Perform STEP2 if necessary.

STEP	MODE	Description
STEP 1	Self-diagnosis	The self-diagnosis mode performs the microphone test and the diagnosis of TEL adapter unit, TEL antenna and steering unit, and then reads out the results with the sound and indicates them on the audio screen.
STEP 2	Hands free phone system initialization	Hands free phone system initialization mode can perform the initialization of hands free phone system.
	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.

SELF-DIAGNOSIS RESULTS

Self-diagnosis mode reads out the self-diagnosis results and indicates DTC on the audio screen.

NOTE:

- Error count is read out simultaneously when reading out the DTC name.
- The errors are read out continuously when some errors occur at the same time. The DTC displays are combined and displayed. For example, DTC 01100 is displayed when DTC 01000 and DTC 00100 are indicated at the same time.

Self-diagnosis results

DTC (Audio screen)	Failure message	Possible causes
DTC 10000	Internal failure	TEL adapter unit
DTC 01000	Bluetooth antenna open	TEL antenna
DTC 00100	Bluetooth antenna shorted	
DTC 00010	Button ladder A is stuck	Steering switch
DTC 00001	Button ladder B is stuck	
DTC 00000	There are no failure records to report	—

The Details of Error Count

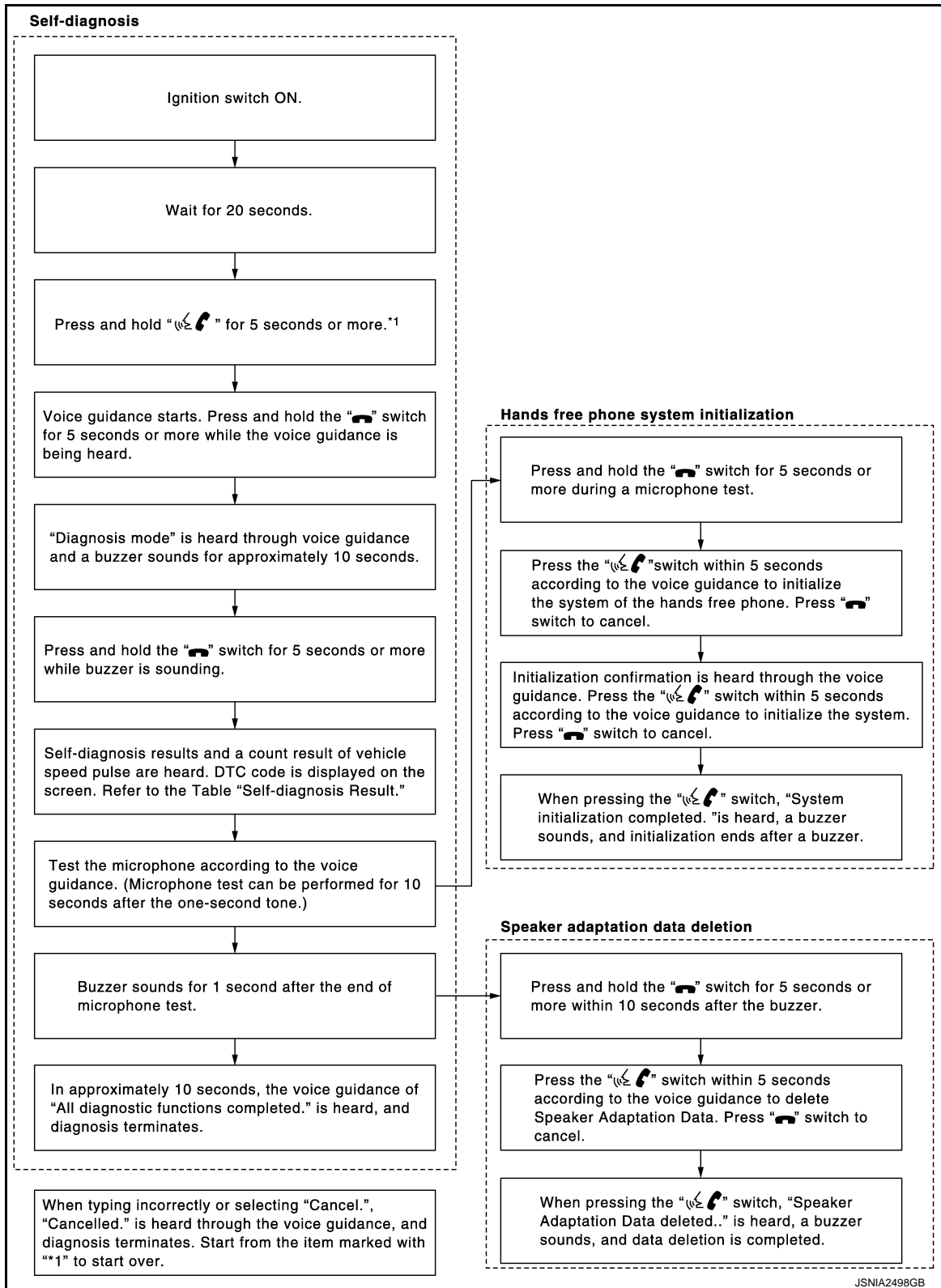
The error count guides "0" when the error occurs. The next time it counts up "1" if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands free phone system is performed.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[AUDIO WITHOUT NAVIGATION]

FLOW CHART OF TROUBLE DIAGNOSIS



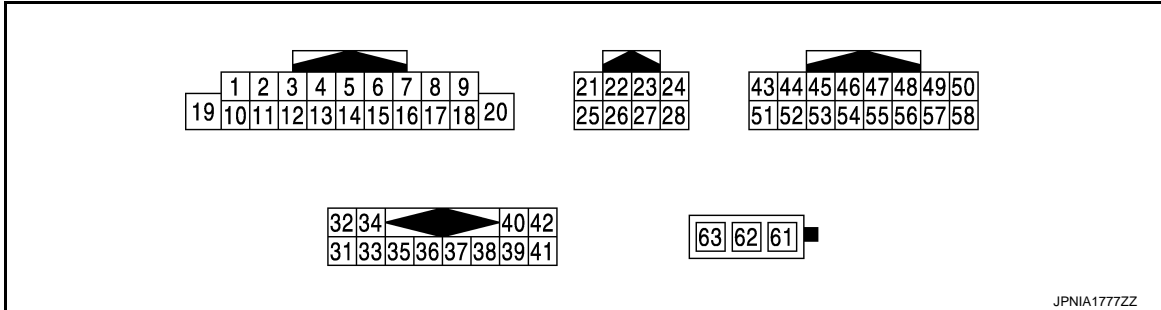
ECU DIAGNOSIS INFORMATION

AUDIO UNIT

Reference Value

INFOID:000000009752026

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	-	Signal name	Input/ Output			
2 (W)	3 (GR)	Sound signal front speaker LH	Out- put	Igni- tion switch ON	Sound output.	Outputs waveform synchronized with sound. SKIB3609E
4 (LG)	5 (W)	Sound signal rear speaker LH	Out- put	Igni- tion switch ON	Sound output.	Outputs waveform synchronized with sound. SKIB3609E
6 (W/L) ^{*1} (W) ^{*2}	15 (L/G) ^{*1} (P) ^{*2}	Steering switch signal A	Input	Igni- tion switch ON	Keep pressing SOURCE switch. Keep pressing SEEK UP switch. Keep pressing SEEK DOWN switch. Keep pressing switch. Except for above.	0.2 V 0.8 V 1.6 V 2.2 V 3.3 V
7 (L)	Ground	ACC power sup- ply	Input	Igni- tion switch ACC	—	10.8 - 15.6 V Battery voltage

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	-	Signal name	Input/ Output			
9 (V)	8 (GR)	Illumination control signal	Input	Ignition switch ON	<ul style="list-style-type: none"> Lighting switch 1ST When meter illumination is maximum 	<p style="text-align: right; font-size: small;">JPNIA1687GB</p>
					<ul style="list-style-type: none"> Lighting switch 1ST When meter illumination is step 11 	<p style="text-align: right; font-size: small;">JPNIA1686GB</p>
					<ul style="list-style-type: none"> Lighting switch 1ST When meter illumination is minimum 	0 V
11 (G)	12 (R)	Sound signal front speaker RH	Output	Ignition switch ON	Sound output.	<p style="text-align: right; font-size: small;">SKIB3609E</p>
13 (BR)	14 (Y)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output.	<p style="text-align: right; font-size: small;">SKIB3609E</p>
16 (GR/B) ^{*1} (LG) ^{*2}	15 (L/G) ^{*1} (P) ^{*2}	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0.2 V
					Keep pressing VOL UP switch.	0.8 V
					Keep pressing switch.	1.6 V
					Except for above.	3.3 V
18 (Y)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	waveform according to vehicle speed input. <p style="text-align: right; font-size: small;">JSNIA0012GB</p>

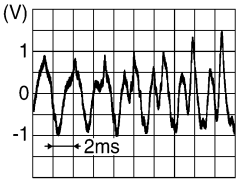
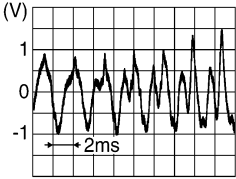
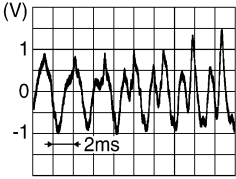
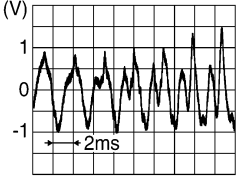
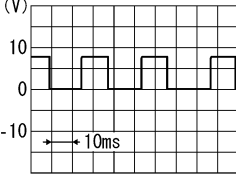
NOTE:

The maximum voltage varies depending on the specification (destination unit).

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

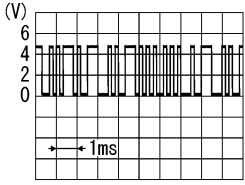
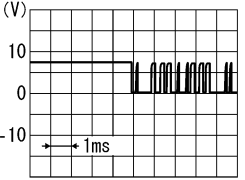

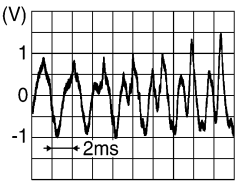
Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	-	Signal name	Input/ Out- put			
19 (BR)	Ground	Battery power supply	Input	Igni- tion switch OFF	—	10.8 - 15.6 V Battery voltage
21 (R)	25 (W)	iPod sound sig- nal LH	Input	Igni- tion switch ON	When iPod mode is se- lected.	Outputs waveform synchronized with sound.  SKIB3609E
23 (B)	27 (G)	iPod sound sig- nal RH	Input	Igni- tion switch ON	When iPod mode is se- lected.	Outputs waveform synchronized with sound.  SKIB3609E
28	—	Shield	—	—	—	—
32 (R)	31 (G)	Satellite radio sound signal LH	Input	Igni- tion switch ON	When satellite radio mode is selected.	Outputs waveform synchronized with sound.  SKIB3609E
34 (B)	33 (W)	Satellite radio sound signal RH	Input	Igni- tion switch ON	When satellite radio mode is selected.	Outputs waveform synchronized with sound.  SKIB3609E
35	—	Shield	—	—	—	—
36	—	Shield	—	—	—	—
37 (W)	—	Source change	—	—	—	—
38 (W)	Ground	Request signal (SAT TO AU- DIO)	Input	Igni- tion switch ON	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.  SKIA9299J

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AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)	
+	-	Signal name	Input/ Output				
39 (R)	Ground	Communication signal (SAT TO AUDIO)	Input	Ignition switch ON	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.  PKIB5039J	
40 (B)	Ground	Communication signal (AUDIO TO SAT)	Output	Ignition switch ON	When satellite radio mode is selected.	Waveform of 1.5 - 6.0 V is input.  SKIA9301J	
41 (P)	—	Control signal	—	—	—	—	
42 (Y)	—	Request signal (CHG TO AUDIO)	—	—	—	—	
47 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	
48 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	
49 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—	
54 (O) ^{*1} (Y) ^{*2}	Ground	TEL ON signal	Input	Ignition switch ON	While using hands-free phone system.	1.32 V or less	0 V
					While not using hands-free phone system.	1.33 V or more	5.0 V
55 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—	
56 (BR)	57 (GR)	Sound signal (TEL voice, voice guidance)	Input	Ignition switch ON	During voice guide output with the  switch pressed.	Outputs waveform synchronized with sound.  SKIB3609E	
58	—	Shield	—	—	—	—	
61	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	—	10.8 - 15.6 V	12.0 V
62	—	Antenna signal	Input	—	—	—	—

*1: With front fog lamp

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

*2: Without front fog lamp

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SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

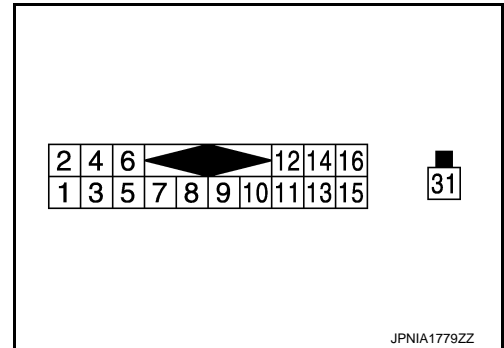
[AUDIO WITHOUT NAVIGATION]

SATELLITE RADIO TUNER

Reference Value

INFOID:00000009752027

TERMINAL LAYOUT



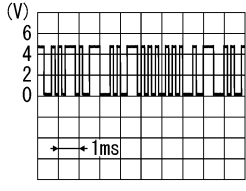
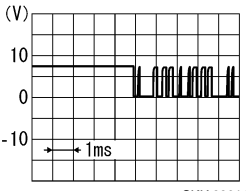
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	-	Signal name	Input/Output			
2 (R)	1 (G)	Satellite radio sound signal LH	Output	Ignition switch ON When satellite radio mode is selected.	Outputs waveform synchronized with sound.	<p>SKIB3609E</p>
4 (B)	3 (W)	Satellite radio sound signal RH	Output	Ignition switch ON When satellite radio mode is selected.	Outputs waveform synchronized with sound.	<p>SKIB3609E</p>
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
7 (P)	—	Control signal	—	—	—	—
8 (W)	15 (B)	Request signal (SAT TO AUDIO)	Output	Ignition switch ON When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.	<p>SKIA9299J</p>

SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	-	Signal name	Input/ Output			
9 (R)	15 (B)	Communication signal (SAT TO AUDIO)	Output	Ignition switch ON	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input. 
10 (B)	15 (B)	Communication signal (AUDIO TO SAT)	Input	Ignition switch ON	When satellite radio mode is selected.	Waveform of 1.5 - 6.0 V is input. 
11 (Y)	—	Request signal (CHG TO AU- DIO)	—	—	—	—
12 (BR)	15 (B)	Battery power supply	Input	Ignition switch OFF	—	10.8 - 15.6 V Battery voltage
13 (W)	—	Source change	—	—	—	—
16 (V)	15 (B)	ACC power sup- ply	Input	Ignition switch ACC	—	7.0 - 16.0 V Battery voltage
31	—	Satellite radio an- tenna signal	Input	—	—	—

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TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

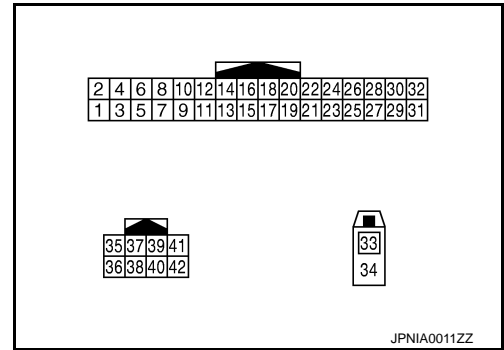
[AUDIO WITHOUT NAVIGATION]

TEL ADAPTER UNIT

Reference Value

INFOID:000000009752028

TERMINAL LAYOUT





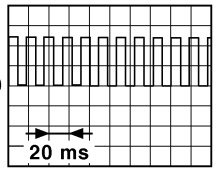
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	-	Signal name	Input/Output				
1 (BR)	4 (B)	Battery power supply	Input	Ignition switch OFF	—	9.0 - 16.0 V	Battery voltage
2 (L)	4 (B)	ACC power supply	Input	Ignition switch ACC	—	7.0 - 16.0 V	Battery voltage
3 (SB)	4 (B)	Ignition signal	Input	Ignition switch ON	—	7.0 - 16.0 V	Battery voltage
7 (G)	8	Microphone signal	Input	Ignition switch ON	Give a voice.	Outputs waveform synchronized with voice is input.	<p>PKIB5037J</p>
9 (BR)	10 (GR)	Sound signal (TEL voice, voice guidance)	Output	Ignition switch ON	During voice guide output with the Σ switch pressed.	Outputs waveform synchronized with sound.	<p>SKIB3609E</p>
11 (Y)	4 (B)	TEL ON signal	Output	Ignition switch ON	While using hands-free phone system.	1.32 V or less	0 V
					While not using hands-free phone system.	1.33 V or more	5.0 V

TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)	
+	-	Signal name	Input/ Output				
12 (G)	14 (V)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V	
					Keep pressing SEEK UP switch.	1.3 V	
					Keep pressing SEEK DOWN switch.	2.5 V	
					Keep pressing  switch.	3.4 V	
					Except for above.	5.0 V	
13 (R)	14 (V)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V	
					Keep pressing VOL UP switch.	1.3 V	
					Keep pressing  switch.	2.5 V	
					Except for above.	5.0 V	
17 (W)	19 (P)	Steering switch signal A	Output	Ignition switch ON	Keep pressing SOURCE switch.	0 V	
					Keep pressing SEEK UP switch.	0.9 V	
					Keep pressing SEEK DOWN switch.	1.6 V	
					Except for above.	3.3 V	
18 (LG)	19 (P)	Steering switch signal B	Output	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V	
					Keep pressing VOL UP switch.	0.9 V	
					Except for above.	3.3 V	
20 (B)	4 (B)	Control signal	—	Ignition switch ON	—	3.1 V or less	0 V
21 (B)	4 (B)	Control signal	—	Ignition switch ON	—	3.1 V or less	0 V
28 (Y)	4 (B)	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	Waveform ac- cording to ve- hicle speed is input.	<p>NOTE: The maximum voltage varies de- pending on the specification (des- tination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
29 (R)	8	Microphone VCC	Output	Ignition switch ON	—	4.7 - 5.3 V	5.0 V
33	4 (B)	TEL antenna sig- nal	Input/ Output	Ignition switch ON	Not connected to TEL antenna connector.	—	5.0 V

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TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	-	Signal name	Input/ Output			
34	—	Shield	—	—	—	—
35 (SB)	—	AV communica- tion signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communica- tion signal (L)	Input/ Output	—	—	—

IPOD ADAPTER

< ECU DIAGNOSIS INFORMATION >

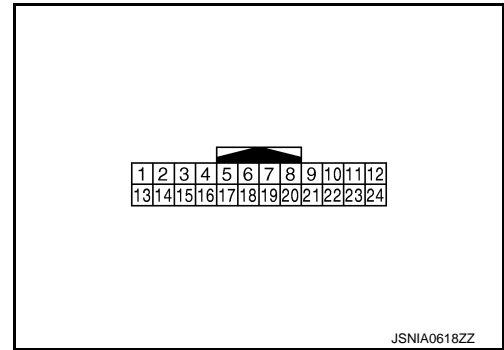
[AUDIO WITHOUT NAVIGATION]

IPOD ADAPTER

Reference Value

INFOID:000000009752029

TERMINAL LAYOUT



PHYSICAL VALUES

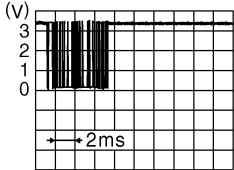
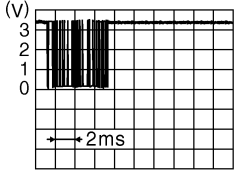
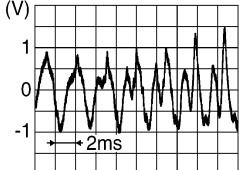
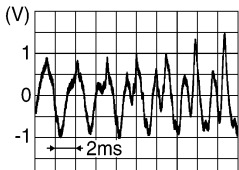
Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	-	Signal name	Input/ Output				
1 (R)	13 (W)	iPod sound signal LH	Output	Ignition switch ON	When iPod mode is selected.	Outputs waveform synchronized with sound.	
2 (B)	14 (G)	iPod sound signal RH	Output	Ignition switch ON	When iPod mode is selected.	Outputs waveform synchronized with sound.	
3 (L)	Ground	ACC power supply	Input	Ignition switch ACC	—	7.8 - 14.9 V	Battery voltage
4 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—	—
5 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	9.0 - 16.0 V	Battery voltage
6 (GR)	—	USB D+ signal	—	—	—	—	—
7 (LG)	—	USB D- signal	—	—	—	—	—
8 (W)	Ground	iPod battery charge 12 V	—	—	—	—	—

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IPOD ADAPTER

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	-	Signal name	Input/ Output				
9 (V)	Ground	Communication signal (iPod adapter→iPod®)	Output	Ignition switch ON	The wave pattern is displayed just after iPod connection.	After outputting waveform of 0 - 3.3V, constant signal of 3.3V is output.	 <p>JPNIA0462GB</p>
10 (LG)	Ground	Communication signal (iPod®→iPod adapter)	Input	Ignition switch ON	Connected to iPod®	After outputting waveform of 0 - 3.3V, constant signal of 3.3V is output.	 <p>JPNIA0462GB</p>
11 (R)	Ground	ACCESSORY-IDENTIFY	—	Ignition switch ON	Connected to iPod®	—	0 V
12 (L)	23 (Y)	iPod sound signal RH	Input	Ignition switch ON	When iPod mode is selected.	Outputs waveform synchronized with sound.	 <p>SKIB3609E</p>
15	—	Shield	—	—	—	—	—
16 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	—
16 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	—
17	—	Shield	—	—	—	—	—
20 (BR)	Ground	iPod battery charge 5 V	Output	Ignition switch ON	Connected to iPod®	—	5.0 V
21 (SB)	Ground	iPod connection recognition signal	Input	Ignition switch ON	Not connected to iPod®	—	4.0 V
					Connected to iPod®	—	0 V
22 (P)	Ground	ACCESSORY-DETECT	—	Ignition switch ON	Connected to iPod®	—	0 V
24 (G)	23 (Y)	iPod sound signal LH	Input	Ignition switch ON	When iPod mode is selected.	Outputs waveform synchronized with sound.	 <p>SKIB3609E</p>

AUDIO WITHOUT NAVIGATION

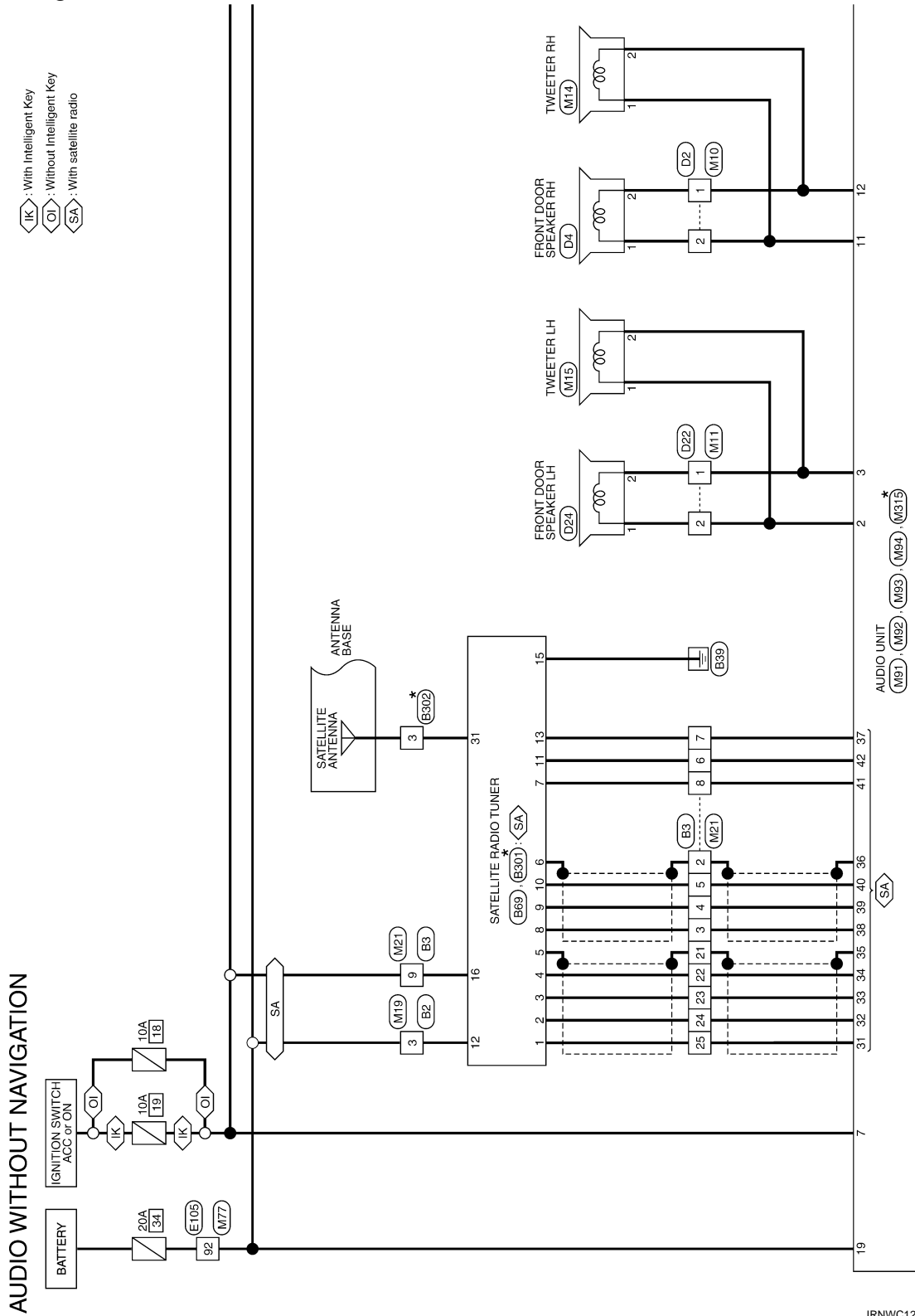
< WIRING DIAGRAM >

[AUDIO WITHOUT NAVIGATION]

WIRING DIAGRAM

AUDIO WITHOUT NAVIGATION

Wiring Diagram



INFOID:000000009752030

*: This connector is not shown in "Harness Layout".

2011/08/18

JRNWC1243GB

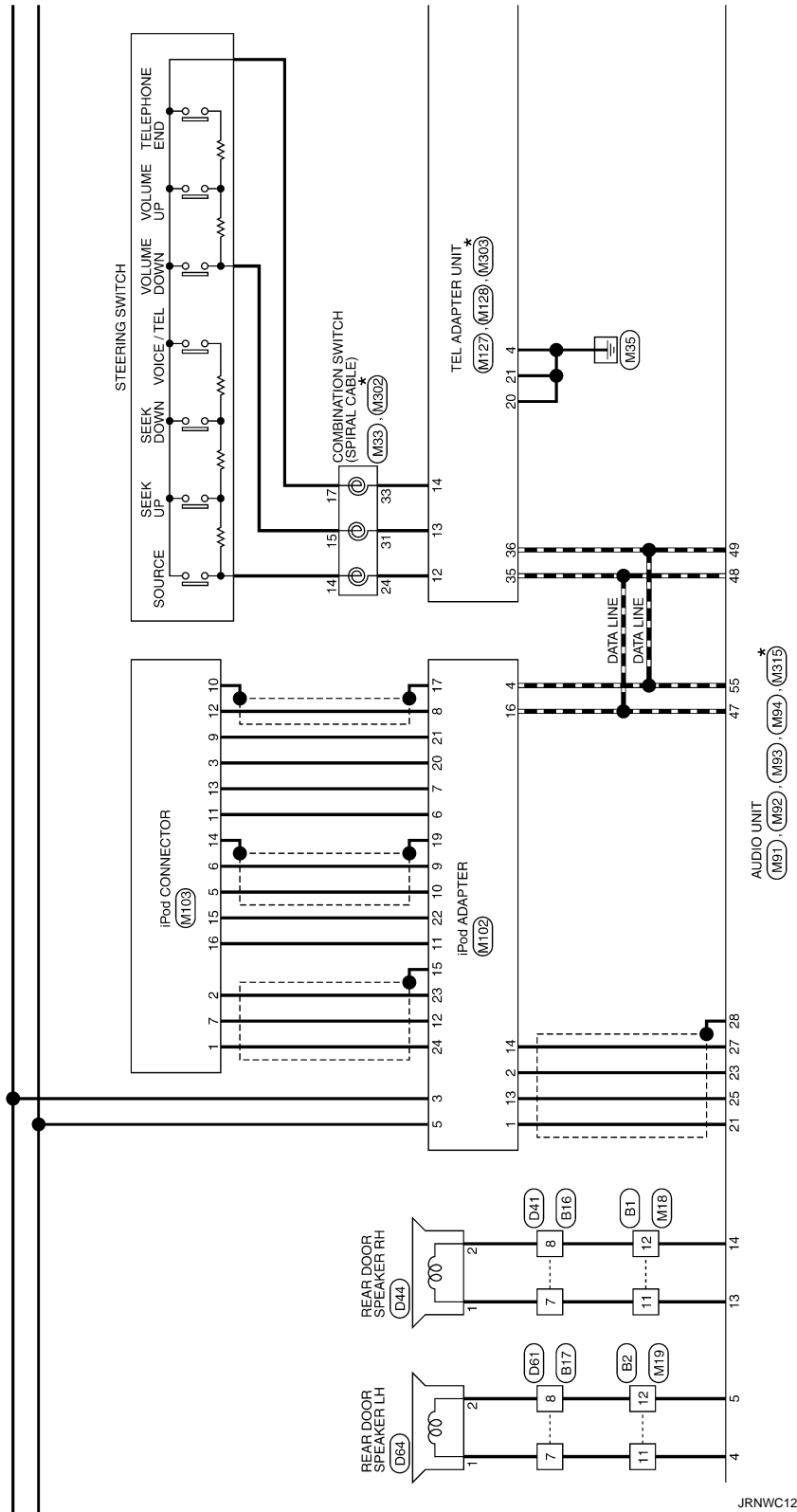
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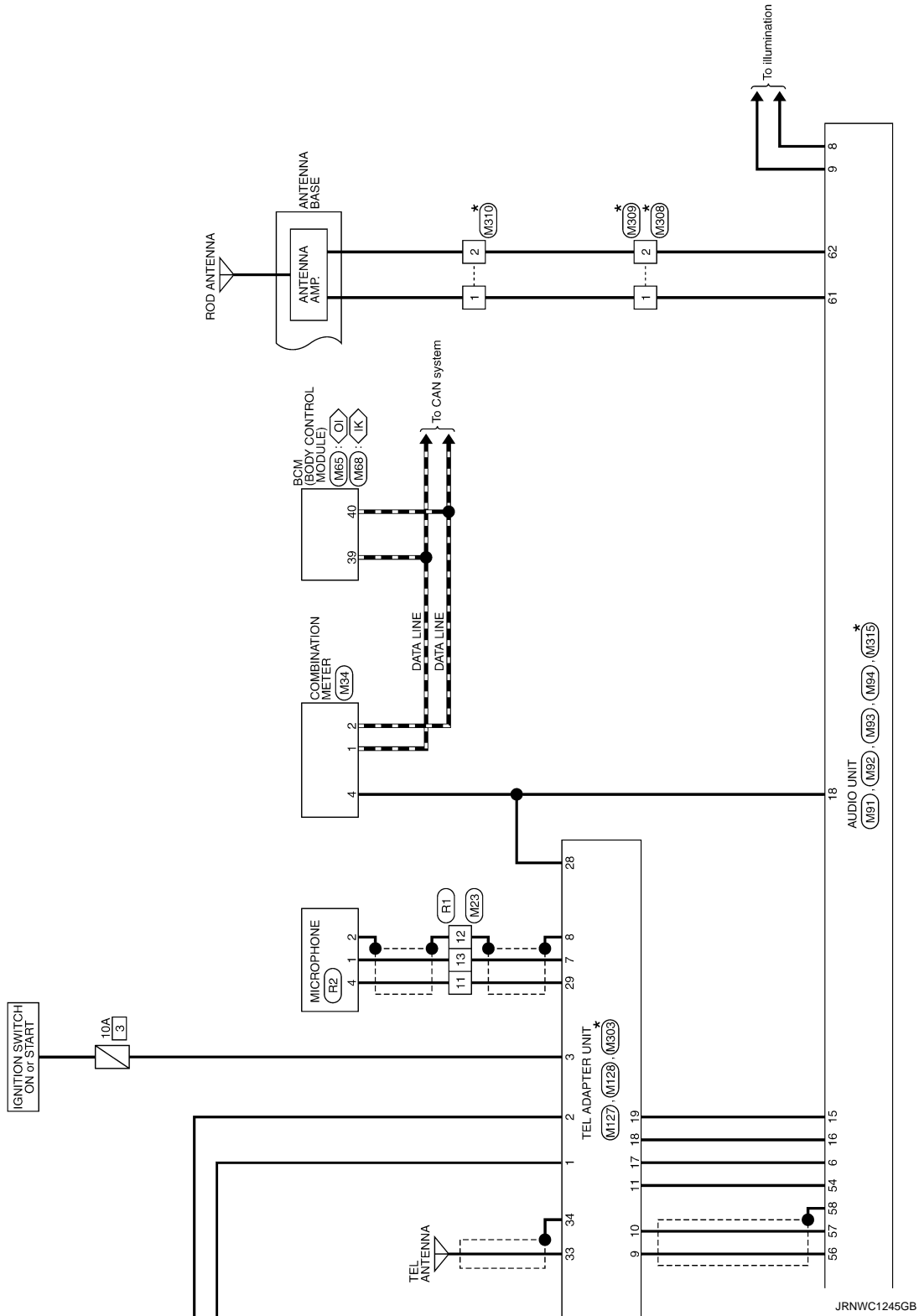


JRNWC1244GB

AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

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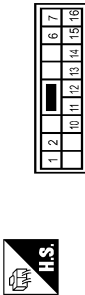
AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[AUDIO WITHOUT NAVIGATION]

AUDIO WITHOUT NAVIGATION

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	NS1BMW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	SB	-
3	W	-
4	Y	-
5	B	-
6	W	-
7	LG	-
8	Y	-
9	GR	-
10	W	-
11	LG	-
12	GR	-
13	GR	-
14	Y	-
15	LG	-
16	L	-

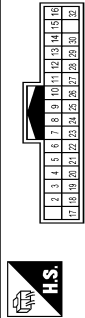
Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	NS1BMW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	BR	-
3	W	-
4	Y	-
5	G	-
6	G	-
7	V	-
8	SB	-
9	SB	-
10	V	-

11	W	-
12	R	-
13	R	-
14	P	-
15	L	-
16	G	-

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	-
2	W	-
3	W	-
4	R	-
5	B	-
6	Y	-
7	W	-
8	V	-
9	Y	-
10	SHIELD	-
11	R	-
12	G	-
13	W	-
14	B	-
15	L	-
16	BR	-
17	LG	-
18	W	-
19	G	-
20	Y	-
21	SHIELD	-
22	G	-
23	W	-
24	R	-
25	G	-
26	Y	-
27	SHIELD	-
28	W	-

29	B	-
30	B	-
32	R	-

Connector No.	B16
Connector Name	WIRE TO WIRE
Connector Type	NS1UPW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	W	-
3	W	-
4	L	-
5	G	-
6	W	-
7	LG	-
8	GR	-
9	LG	-
10	Y	-

Connector No.	B17
Connector Name	WIRE TO WIRE
Connector Type	NS1UPW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	Y	-
3	G	-
4	W	-
5	G	-
6	W	-
7	W	-
8	R	-
9	R	-
10	P	-

Connector No.	B89
Connector Name	SATELLITE RADIO TUNER
Connector Type	AL1RFW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	SATELLITE RADIO SOUND SIGNAL LH (-)
2	G	SATELLITE RADIO SOUND SIGNAL LH (+)
3	W	SATELLITE RADIO SOUND SIGNAL RH (-)
4	B	SATELLITE RADIO SOUND SIGNAL RH (+)
5	SHIELD	-
6	SHIELD	-
7	P	CONTROL
8	W	REQUEST SIGNAL (SAT AUDIO)
9	R	COMMUNICATION SIGNAL (SAT AUDIO)
10	B	COMMUNICATION SIGNAL (AUDIO SAT)
11	Y	REQUEST SIGNAL (GHS AUDIO)
12	BR	BAT
13	W	SOURCE CHANGE
15	B	GNL
16	V	ACC

Connector No.	B301
Connector Name	SATELLITE RADIO TUNER
Connector Type	FAKRA



Terminal No.	31
Color Of Wire	-
Signal Name [Specification]	SATELLITE RADIO ANTENNA SIGNAL

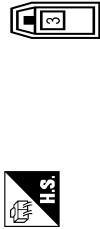
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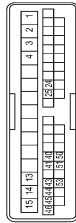
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Connector No.	E302
Connector Name	ANTENNA BASE
Connector Type	GT18C-1PP-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
3	-	-

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



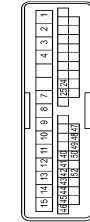
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	G	-
3	Y	-
4	V	-
13	W	-
14	SB	-
15	L	-
24	R	-
25	G	-
40	LG	-
41	Y	-
43	GR	-
44	W	-
45	W	-
46	BG	-
50	P	-
51	B	-
53	B	-

Connector No.	D4
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS20FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	D22
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	W	-
3	SB	-
4	V	-
7	G	4
8	BG	-
9	LG	-
10	BR	-
11	W	-
12	SB	-
13	B	-
14	L	-
15	B	-
24	G	-
25	R	-
40	V	-
41	P	-
42	L	-

43	GR	-
44	Y	-
45	BG	-
46	BG	-
47	G	-
48	L	-
49	R	-
50	LG	-
52	BR	-

Connector No.	D24
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS20FW-CS



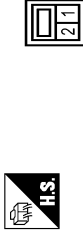
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	P	-

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
4	Y	-
5	G	-
7	LG	-
8	GR	-
9	BR	-
10	Y	-

Connector No.	D44
Connector Name	REAR DOOR SPEAKER RH
Connector Type	NS20FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	GR	-

Connector No.	D61
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
4	L	-
5	G	-
7	LG	-
8	GR	-
9	BR	-
10	Y	-

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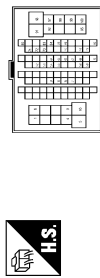
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Connector No.	D64
Connector Name	REAR DOOR SPEAKER LH
Connector Type	NS2BEM-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	
2	GR	

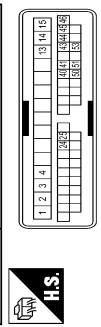
Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH86MM-CS1E-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
4	Y	
5	GR	
6	P	
9	G	
10	R	
34	O	
35	GR	
36	B	
37	P	
52	BR	
53	BR	
54	V	
55	O	
58	L	
59	Y	
64	LG	
65	GR	

66	R	
67	W	
68	SB	
70	LG	
71	LG	
72	V	
73	L	
76	R	
78	B	
79	W	
80	L	
83	Y	
84	LG	
85	GR	
86	GR	
87	SHIELD	
88	G	
89	G	
92	R	
95	BR	
96	P	
97	GR	
98	W	
99	V	
100	O	

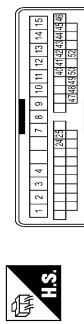
Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Type	TH40MM-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	
2	G	
4	V	
13	GR	
14	GR	
15	L	
18	GR	
24	R	
25	G	
40	LG	

41	Y	
43	V	
44	V	
45	LG	
46	BR	
50	P	
51	B	
53	B	

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH40MM-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	
2	W	
3	W	
4	V	
6	G	
9	LG	
10	Y	
11	GR	
12	GR	
13	B	
14	L	
15	P	
24	BR	
25	Y	
40	V	
41	P	
42	GR	
44	P	
45	G	
46	Y	
47	GR	
48	L	
49	R	
50	LG	

52	BR	
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Connector No.	M14
Connector Name	TWEETER RH
Connector Type	TK02PFR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	
2	R	

Connector No.	M15
Connector Name	TWEETER LH
Connector Type	TK02PFR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	
2	GR	

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	
2	GR	

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Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	NS18FW-CS



7	6	4	2	1
18	15	14	13	12
11	10	9	8	7

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	V	-
3	Y	-
4	SB	-
5	W	-
6	BR	-
7	Y	-
8	V	-
9	LG	-
10	L	-
11	BR	-
12	Y	-
13	V	-
14	Y	-
15	LG	-
16	L	-

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	NS19FW-CS



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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	BR	-
3	BR	-
4	SB	-
5	V	-
6	BR	-
7	V	-
8	BR	-
9	V	-
10	V	-
11	LG	-

12	W	-
14	G	-
15	L	-
18	G	-



Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Type	TH432FW-NH



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

Terminal No.	Color Of Wire	Signal Name [Specification]
2	SHIELD	-
3	B	-
4	W	-
5	R	-
6	Y	-
7	BR	-
8	P	-
9	SHIELD	-
10	B	-
11	W	-
12	W	-
13	W	-
14	LG	-
15	L	-
16	P	-
17	LG	-
18	W	-
19	G	-
20	R	-
21	SHIELD	-
22	L	-
23	R	-
24	G	-
25	R	-
26	R	-
27	SHIELD	-
28	V	-
29	L	-
30	LG	-

Connector No.	M23
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FEY-1V



24	25	26
31	32	33
34	33	34

Terminal No.	Color Of Wire	Signal Name [Specification]
24	R	-
25	R	-
26	R	-
27	GR	-
28	R	-
29	B	-
30	B	-
31	R	-
32	B	-
33	L	-
34	L	-

33	V	-	(Without front fog lamp)
34	LG	-	(Without front fog lamp)
34	R	-	(With front fog lamp)



Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
4	V	VEHICLE SPEED SIGNAL (P-PULSE) (With front fog lamp)
4	Y	VEHICLE SPEED SIGNAL (P-PULSE) (Without front fog lamp)
5	G	PADDLE SHIFTER UP SWITCH SIGNAL
6	BR	FUEL LEVEL SENSOR SIGNAL
7	R	AIR BAG SIGNAL
8	P	- (Without front fog lamp)
8	Y	- (With front fog lamp)
9	O	IGNITION SWITCH SIGNAL (Without front fog lamp)
9	W	IGNITION SWITCH SIGNAL (With front fog lamp)
10	SB	STOP SIGNAL
11	G	BRAKE FLUID LEVEL SWITCH SIGNAL
13	B	ILLUMINATION CONTROL SIGNAL (With front fog lamp)
13	GR	ILLUMINATION CONTROL SIGNAL (Without front fog lamp)
14	R	MANUAL MODE SHIFT UP SIGNAL (With front fog lamp)
14	V	MANUAL MODE SHIFT UP SIGNAL (Without front fog lamp)
15	L	ACC POWER SUPPLY
16	O	MANUAL MODE SHIFT DOWN SIGNAL (With front fog lamp)
16	W	MANUAL MODE SHIFT DOWN SIGNAL (Without front fog lamp)
17	G	WASHER LEVEL SWITCH SIGNAL (Without front fog lamp)
17	W	WASHER LEVEL SWITCH SIGNAL (With front fog lamp)
18	R	SECURITY SIGNAL
19	GR	AMBER SENSOR SIGNAL
20	CS	AMBER SENSOR GROUND (Without front fog lamp)
20	CS	AMBER SENSOR GROUND (With front fog lamp)
21	B	GROUND
22	B	GROUND
23	B	GROUND
24	L	FUEL LEVEL SENSOR GROUND
25	B	VDC GROUND

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26	V	PAIDLE SWITCH SIGNAL
27	V	FRONT DOOR LOCK SIGNAL
28	LG	BATTERY POWER SUPPLY
29	GR	IGNITION SIGNAL
30	LG	PASSENGER SEAT BELT WARNING SIGNAL (With front fog lamp)
31	V	A/C AUTO AMP CONNECTION RECOGNITION SIGNAL
32	LG	MANUAL MODE SIGNAL (With front fog lamp)
33	Y	MANUAL MODE SIGNAL (Without front fog lamp)
34	Y	NON-MANUAL MODE SIGNAL (With front fog lamp)
35	P	ALTERNATOR SIGNAL

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH48PW-NH



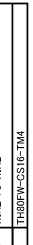
29	L	HAZARD SW
30	L	BK DOOR OPENER SW
31	L	FR DEFOG SW
32	LG	HAZARD SW (Without front fog lamp)
33	Y	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	R	COMBI SW OUTPUT 2
36	GR	COMBI SW OUTPUT 1
37	GR	KEY SW
38	R	IGN SW ON
39	L	CAN-H
40	P	CAN-L

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH48PB-NH




37	Y	A/C SW (Without front fog lamp)
38	LG	BLOWER FAN SW (Without front fog lamp)
39	L	BLOWER FAN SW (With front fog lamp)
40	L	HAZARD SW (With front fog lamp)
41	SB	HAZARD SW (Without front fog lamp)
42	L	BK DOOR OPENER SW
43	GR	DR DOOR UNLK SENS
44	LG	COMBI SW OUTPUT 5
45	Y	COMBI SW OUTPUT 4
46	R	COMBI SW OUTPUT 3
47	P	COMBI SW OUTPUT 2
48	G	COMBI SW OUTPUT 1
49	P	DETENT SW
50	SB	RECEIVER COMM
51	S	CAN-H
52	P	CAN-L

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH8BFW-CS (6-TM)



66	Y	-
67	V	-
68	R	-
69	V	-
70	R	-
71	R	-
72	GR	-
73	G	-
74	W	-
75	LG	-
76	V	-
77	V	-
78	LG	-
79	V	-
80	LG	-
81	P	-
82	P	-
83	P	-
84	G	-
85	BR	-
86	BR	-
87	SHIELD	-
88	SHIELD	-
89	Y	-
90	Y	-
91	Y	-
92	BR	-
93	R	-
94	Y	-
95	Y	-
96	L	-
97	GR	-
98	G	-
99	W	-
100	LG	-

Connector No.	M81
Connector Name	AUDIO UNIT
Connector Type	TH8BFW-CS2



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	COMBI SW INPUT 5
2	GR	COMBI SW INPUT 3
3	BR	COMBI SW INPUT 2
4	BR	COMBI SW INPUT 1
5	G	KEY CYL UNLOCK SW
6	W	KEY CYL LOCK SW
7	L	STOP LAMP SW
8	R	REAR WINDOW DEF SW
9	R	IGN SW ACC
10	W	DOOR LK & UNLK SW LOCK
11	L	DOOR LK & UNLK SW UNLOCK
12	Y	DOOR LK & UNLK SW LOCK (With front fog lamp)
13	BR	DOOR LK & UNLK SW UNLOCK (With front fog lamp)
14	P	RECEIVER GND
15	V	RECEIVER PWR SPLY
16	GR	RECEIVER CAN
17	G	MATS ANT AMP
18	R	SECURITY IND LAMP CONT
19	R	DOUBLE LINK
20	LG	MATS ANT AMP
21	LG	MATS ANT AMP
22	B	THERMO CONT AMP
23	W	A/C SW
24	O	BLOWER FAN SW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	COMBI SW INPUT 5
2	GR	COMBI SW INPUT 3
3	BR	COMBI SW INPUT 2
4	BR	COMBI SW INPUT 1
5	G	KEY CYL UNLOCK SW
6	W	KEY CYL LOCK SW
7	L	STOP LAMP SW 1
8	R	DOOR LK & UNLK SW LOCK (Without front fog lamp)
9	R	DOOR LK & UNLK SW LOCK (With front fog lamp)
10	W	DOOR LK & UNLK SW UNLOCK
11	L	DOOR LK & UNLK SW UNLOCK (With front fog lamp)
12	Y	DOOR LK & UNLK SW LOCK (Without front fog lamp)
13	BR	DOOR LK & UNLK SW UNLOCK (Without front fog lamp)
14	P	OPTICAL SENS
15	R	FR DEFOG SW
16	GR	RECEIVER PWR SPLY
17	V	RECEIVER CAN
18	L	MATS ANT AMP
19	P	SECURITY IND LAMP CONT
20	R	DOUBLE LINK
21	R	MATS ANT AMP
22	SB	MATS ANT AMP
23	LG	MATS ANT AMP
24	LG	THERMO AMP
25	B	A/C SW
26	B	A/C SW
27	W	A/C SW (With front fog lamp)

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	COMBI SW INPUT 5
2	GR	COMBI SW INPUT 3
3	BR	COMBI SW INPUT 2
4	BR	COMBI SW INPUT 1
5	G	KEY CYL UNLOCK SW
6	W	KEY CYL LOCK SW
7	L	STOP LAMP SW 1
8	R	DOOR LK & UNLK SW LOCK (Without front fog lamp)
9	R	DOOR LK & UNLK SW LOCK (With front fog lamp)
10	W	DOOR LK & UNLK SW UNLOCK
11	L	DOOR LK & UNLK SW UNLOCK (With front fog lamp)
12	Y	DOOR LK & UNLK SW LOCK (Without front fog lamp)
13	BR	DOOR LK & UNLK SW UNLOCK (Without front fog lamp)
14	P	OPTICAL SENS
15	R	FR DEFOG SW
16	GR	RECEIVER PWR SPLY
17	V	RECEIVER CAN
18	L	MATS ANT AMP
19	P	SECURITY IND LAMP CONT
20	R	DOUBLE LINK
21	R	MATS ANT AMP
22	SB	MATS ANT AMP
23	LG	MATS ANT AMP
24	LG	THERMO AMP
25	B	A/C SW
26	B	A/C SW
27	W	A/C SW (With front fog lamp)

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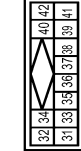
11	G	SOUND SIGNAL FRONT SPEAKER RH (+)
12	BR	SOUND SIGNAL FRONT SPEAKER RH (-)
13	BR	SOUND SIGNAL REARS SPEAKER RH (+)
14	Y	SOUND SIGNAL REARS SPEAKER RH (-)
15	L/G	STRG SW GND (With front fog lamp)
16	P	STRG SW GND (Without front fog lamp)
17	GF/B	STRG SW B (With front fog lamp)
18	LG	STRG SW B (Without front fog lamp)
19	BR	VEHICLE SPEED (S-PULSE)
		BATTERY

Connector No.	M82
Connector Name	AUDIO UNIT
Connector Type	TH82FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
21	R	iPod SOUND SIGNAL LH (+)
23	B	iPod SOUND SIGNAL RH (+)
25	G	iPod SOUND SIGNAL LH (-)
28	SHIELD	iPod SOUND SIGNAL RH (-)
		SHIELD

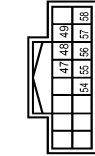
Connector No.	M83
Connector Name	AUDIO UNIT
Connector Type	AL2FW



Terminal No.	Color Of Wire	Signal Name [Specification]
31	G	SATELLITE RADIO SOUND SIGNAL LH (-)
32	R	SATELLITE RADIO SOUND SIGNAL LH (+)
33	W	SATELLITE RADIO SOUND SIGNAL RH (-)

34	B	SATELLITE RADIO SOUND SIGNAL RH (+)
35	SHIELD	SHIELD
37	W	SOURCE CHANGE
38	W	REQUEST SIGNAL (SAT AUDIO)
39	R	COMM (SAT AUDIO)
40	B	COMM (AUDIO SAT)
41	P	CONTROL
42	Y	REQUEST SIGNAL (CHG AUDIO)

Connector No.	M84
Connector Name	AUDIO UNIT
Connector Type	TH16FW-NH



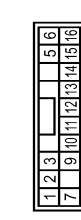
Terminal No.	Color Of Wire	Signal Name [Specification]
47	SB	AV COMM (H)
48	SB	AV COMM (H)
49	LG	AV COMM (L)
54	O	TEL ON (With front fog lamp)
55	LG	AV COMM (L) (fog lamp)
56	BR	SOUND SIGNAL (+)
57	GR	SOUND SIGNAL (-)
58	SHIELD	SHIELD

Connector No.	M102
Connector Name	iPod ADAPTER
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	iPod SOUND SIGNAL LH (+)
2	B	iPod SOUND SIGNAL RH (+)
3	B	ACCESSORY IDENTIFY
4	LS	AV COMM (L)
5	BR	BATTERY
6	GR	USB D+ SIGNAL
7	LG	USB D- SIGNAL
8	W	iPod BATTERY CHARGE 12V
9	V	COMM (iPod ADAPTER)
10	LG	COMM (iPod ADAPTER)
11	R	ACCESSORY IDENTIFY
12	L	iPod SOUND SIGNAL LH (+)
13	W	iPod SOUND SIGNAL LH (-)
14	G	iPod SOUND SIGNAL RH (-)
15	SHIELD	SHIELD
16	SHIELD	SHIELD
17	SHIELD	AV SHIELD (H)
18	SHIELD	SHIELD
19	SHIELD	SHIELD
20	BR	iPod BATTERY CHARGE 5V
21	SB	iPod CONNECTION RECOGNITION
22	P	ACCESSORY DETECT
23	Y	iPod SOUND SIGNAL GND
24	G	iPod SOUND SIGNAL LH (-)

Connector No.	M103
Connector Name	iPod CONNECTOR
Connector Type	IP10E5Y



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	iPod SOUND SIGNAL LH (+)
2	B	iPod SOUND SIGNAL RH (+)
3	BR	iPod BATTERY CHARGE 5V
4	LG	COMM (iPod ADAPTER)
5	LG	COMM (iPod ADAPTER)
6	V	iPod SOUND SIGNAL RH (+)
7	L	iPod SOUND SIGNAL RH (-)
8	SB	iPod CONNECTION RECOGNITION
9	SHIELD	GND
10	SHIELD	GND
11	GR	USB D+ SIGNAL
12	W	iPod BATTERY CHARGE 12V
13	LG	USB D- SIGNAL
14	SHIELD	SHIELD
15	P	ACCESSORY DETECT
16	R	ACCESSORY IDENTIFY

Connector No.	M127
Connector Name	TEL ADAPTER UNIT
Connector Type	TH39FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR	BATTERY
3	SB	ACC
4	B	IGNITION
5	B	GND
7	G	MICROPHONE SIGNAL
8	SHIELD	MICROPHONE SIGNAL GND

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AUDIO WITHOUT NAVIGATION

10	BR	SOUND SIGNAL (C)
11	GY	SOUND SIGNAL (C)
12	Y	TELEON SIGNAL
13	G	STRG SW A
14	R	STRG SW B
15	V	STRG SW GND
16	W	STRG SW A
17	W	STRG SW B
18	LG	STRG SW GND
19	P	CONTROL SIGNAL
20	B	CONTROL SIGNAL
21	B	CONTROL SIGNAL
22	B	CONTROL SIGNAL
23	B	CONTROL SIGNAL
24	B	CONTROL SIGNAL
25	B	CONTROL SIGNAL
26	Y	VEHICLE SPEED (L/SE)
27	Y	VEHICLE SPEED (L/SE)
28	Y	VEHICLE SPEED (L/SE)
29	R	MICROPHONE (CG)

Connector No.	M128
Connector Name	TEL ADAPTER UNIT
Connector Type	TH08FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
35	SB	AV COMM (H)
36	LG	AV COMM (L)
39	SB	AV COMM (H)
40	SB	AV COMM (H)
41	LG	AV COMM (L)
42	LG	AV COMM (L)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
17	BR	-
18	G	-
19	P	-
20	Y	-
14	R	-
15	L	-
16	B	-
17	B	-
18	G	-
19	P	-
20	Y	-

Connector No.	M303
Connector Name	TEL ADAPTER UNIT
Connector Type	GT16C-IS-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
33	-	TEL ANTENNA SIGNAL
34	-	SHIELD

Connector No.	M308
Connector Name	WIRE TO WIRE
Connector Type	GT13SS-LIS-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-

Connector No.	M309
Connector Name	WIRE TO WIRE
Connector Type	GT13SSN-1, PFP-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-

Connector No.	M310
Connector Name	ANTENNA BASE
Connector Type	GT13SSN-1, PFP-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA AMP. ON SIGNAL
2	-	AMP. TR. MAIN

Connector No.	M315
Connector Name	AUDIO UNIT
Connector Type	GT13SC-2, IS-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
61	-	ANTENNA AMP. ON SIGNAL
62	-	ANTENNA SIGNAL

JRNWD0696GB

AUDIO WITHOUT NAVIGATION

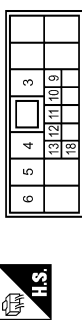
< WIRING DIAGRAM >

[AUDIO WITHOUT NAVIGATION]

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AUDIO WITHOUT NAVIGATION

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	NH10PW-CS10



Terminal No.	Color Of Wire	Signal Name [Specification]
3	B	-
4	Y	-
5	L/W	-
6	R/Y	-
8	V	-
10	R	-
11	R	-
12	SHIELD	-
13	L	-
18	B	-

Connector No.	R2
Connector Name	MICROPHONE
Connector Type	TX04PW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	MICROPHONE SIGNAL
2	SHIELD	MICROPHONE GND
4	R	MICROPHONE VCC

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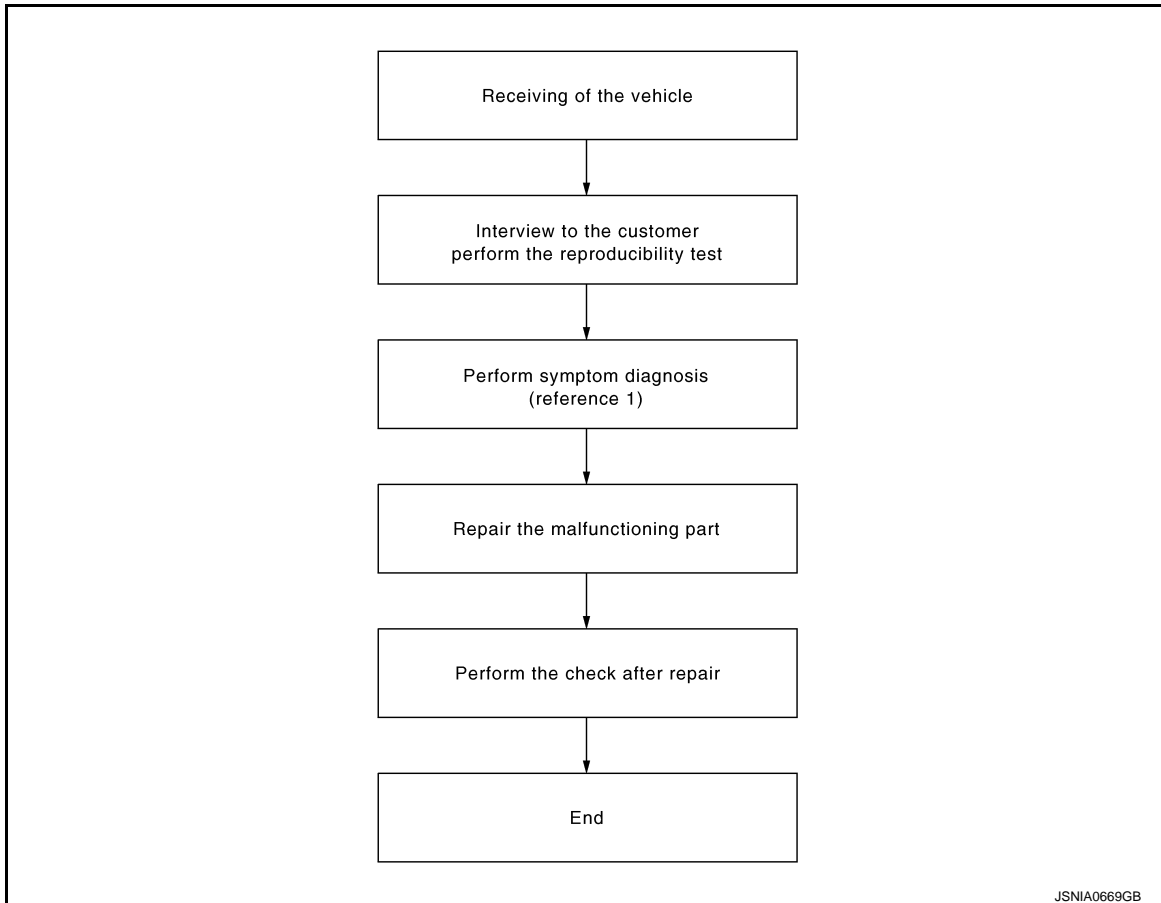
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009752031

OVERALL SEQUENCE



Reference 1...Refer to [AV-62, "Symptom Table"](#) (audio system) or [AV-64, "Symptom Table"](#) (hands-free phone system).

DETAILED FLOW

1. CHECK SYMPTOM

Check the malfunction symptoms by performing the following items.

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

>> GO TO 2.

2. PERFORM DIAGNOSIS BY SYMPTOM

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-62, "Symptom Table"](#) (audio system) or [AV-64, "Symptom Table"](#) (hands-free phone system).

>> GO TO 3.

3. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the malfunctioning parts.

>> GO TO 4.

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[AUDIO WITHOUT NAVIGATION]

4.FINAL CHECK

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

Is there any symptom?

YES >> GO TO 2.

NO >> INSPECTION END

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:000000009752032

1.CHECK FUSE

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

Power source		Fuse No.
Battery		34
Ignition switch ACC or ON	Models without Intelligent Key	18
	Models with Intelligent Key	19

Is inspection result OK?

YES >> GO TO 2.

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

2.CHECK AUDIO UNIT POWER SUPPLY CIRCUIT

Check voltage between the audio unit and ground.

Signal name	Audio unit	Probe		Condition	Standard	Reference value
		Terminal				
	Connector	(+)	(-)	Ignition switch		
Battery power supply	M91	19	Ground	OFF	10.8 - 15.6 V	Battery voltage
ACC power supply		7		ACC	10.8 - 15.6 V	

Is inspection result OK?

YES >> INSPECTION END

NO >> Check harness between audio unit and fuse.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:000000009752033

1.CHECK FUSES

Check that the following fuses of the satellite radio tuner are not blown.

Power source		Fuse No.
Battery		34
Ignition switch ACC or ON	Models without Intelligent Key	18
	Models with Intelligent Key	19

Is inspection result OK?

YES >> GO TO 2.

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

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between the satellite radio tuner and ground.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

Signal name	Satellite radio tuner	Probe		Condition	Standard	Reference value
		Terminal				
	Connector	(+)	(-)	Ignition switch		
Battery power supply	B69	12	15	OFF	10.8 - 15.6 V	Battery voltage
ACC power supply		16		ACC	7.0 - 16.0 V	

Is inspection result OK?

YES >> GO TO 3.

NO >> Check harness between satellite radio tuner and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect satellite radio tuner connector.
3. Check continuity between satellite radio tuner harness connector and ground.

Signal name	Connector	Terminal No.	Ignition switch position	Continuity
Ground	B69	15	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

TEL ADAPTER UNIT

TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000009752034

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.	
Battery	34	
Ignition switch ACC or ON	Models without Intelligent Key	18
	Models with Intelligent Key	19

Is the inspection result normal?

YES >> GO TO 2.

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

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	TEL adapter unit	Probe		Condition	Standard	Reference value
		Terminal				
	Connector	(+)	(-)	Ignition switch		
Battery power supply	M127	1	4	OFF	9.0 - 16.0 V	Battery voltage
ACC power supply		2		ACC	7.0 - 16.0 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between TEL adapter unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	M127	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

iPod ADAPTER

iPod ADAPTER : Diagnosis Procedure

INFOID:000000009752035

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.	
Battery	34	
Ignition switch ACC or ON	Models without Intelligent Key	18
	Models with Intelligent Key	19

Is the inspection result normal?

YES >> GO TO 2.

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

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between iPod adapter harness connector and ground.

Signal name	iPod adapter Connector	Probe Terminal		Condition Ignition switch	Standard	Reference value
		(+)	(-)			
Battery power supply	M102	5	Ground	OFF	9.0 - 16.0 V	Battery voltage
ACC power supply		3		ACC	7.8 - 14.9 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Check harness between iPod adapter and fuse.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:000000009752036

TEL adapter unit supplies power to microphone. The microphone transmits the sound voice to the TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752037

1. CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and microphone connector.
3. Check continuity between TEL adapter unit harness connector and microphone harness connector.

TEL adapter unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M127	7	R2	1	Existed
	8		2	
	29		4	

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
M127	7		Not existed
	29		

Is inspection result OK?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VOLTAGE MICROPHONE VCC

1. Connect TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector and ground.

Probe				Standard	Reference value (Approx.)
(+)		(-)			
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
M127	29	M127	8	4.7 - 5.3 V	5.0 V

Is inspection result OK?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).

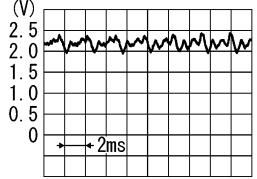
3. CHECK MICROPHONE SIGNAL

1. Turn ignition switch OFF.
2. Connect microphone connector.
3. Turn ignition switch ON.
4. Check signal between TEL adapter unit harness connector.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

Probe				Condition	Standard	Reference value
(+)		(-)				
TEL adapter unit						
Conne- ctor	Terminal	Conne- ctor	Terminal			
M127	7	M127	8	Give a voice.	Wave form synchronized with voice is input.	 <p>(V) 2.5 2.0 1.5 1.0 0.5 0</p> <p>← 2ms</p> <p>PKIB5037J</p>

Is inspection result OK?

- YES >> Replace TEL adapter unit. Refer to [AV-74. "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-75. "Removal and Installation"](#).

CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

CONTROL SIGNAL CIRCUIT

Description

INFOID:000000009752038

TEL adapter unit identifies the vehicle model according to the control signal and performs the control.

Diagnosis Procedure

INFOID:000000009752039

1. CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Standard	Continuity
Connector	Terminals			
M127	20		3.1 V or less	Existed
	21			

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).
NO >> Repair harness or connector.

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TELEPHONE ON SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

TELEPHONE ON SIGNAL CIRCUIT

Description

INFOID:000000009752040

When hands-free phone is being used, TEL adapter unit transmits telephone ON signal to audio unit.

Diagnosis Procedure

INFOID:000000009752041

1.CHECK CONTINUITY TELEPHONE ON SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and audio unit connector.
3. Check continuity between TEL adapter unit harness connector and audio unit harness connector.

TEL adapter unit		Audio unit		Continuity
Connector	Terminal	Connector	Terminal	
M127	11	M94	54	Existed

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
M127	11		Not existed

Is inspection result OK?

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

2.CHECK TELEPHONE ON SIGNAL

1. Connect audio unit connector and TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector and ground.

Probe		Condition	Standard	Reference value (Approx.)
(+)	(-)			
Audio unit		Ground		
Connector	Terminal			
M94	54	While using hands-free phone system.	1.32 V or less	0 V
		While not using hands-free phone system.	1.33 V or more	5.0 V

Is inspection result OK?

- YES >> INSPECTION END
NO >> Replace audio unit. Refer to [AV-68, "Removal and Installation"](#).

STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

Description

INFOID:000000009752042

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752043

1. CHECK STEERING SWITCH SIGNAL A (STEERING SWITCH TO TEL ADAPTER UNIT) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and spiral cable connector.
3. Check continuity between TEL adapter unit harness connector and spiral cable harness connector.

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M127	12	M33	24	Existed

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
M127	12		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to [SR-14, "Exploded View"](#).

3. CHECK TEL ADAPTER UNIT VOLTAGE

1. Connect TEL adapter unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector.

Probe				Standard	Reference value (Approx.)
(+)		(-)			
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
M127	12	M127	14	0 – 5.2 V	5.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).

4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-50, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [AV-78, "Exploded View"](#).

STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

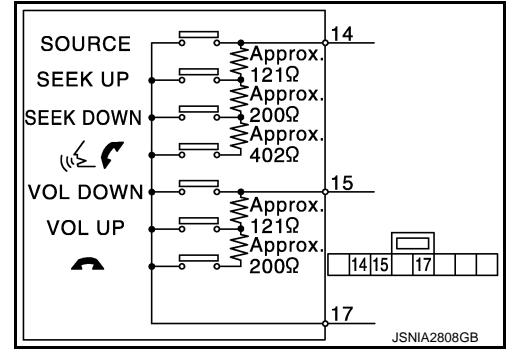
< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

INFOID:00000009752044

Component Inspection

Measure the resistance between the steering switch connector.



Standard

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

STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

Description

INFOID:000000009752045

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752046

1. CHECK STEERING SWITCH SIGNAL B (STEERING SWITCH TO TEL ADAPTER UNIT) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and spiral cable connector.
3. Check continuity between TEL adapter unit harness connector and spiral cable harness connector.

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M127	13	M33	31	Existed

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
M127	13		Not existed

Is the inspection result normal?

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

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace spiral cable. Refer to [SR-14, "Exploded View"](#).

3. CHECK TEL ADAPTER UNIT VOLTAGE

1. Connect TEL adapter unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector.

Probe				Standard	Reference value (Approx.)
(+)		(-)			
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
M127	13	M127	14	0 – 5.2 V	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).

4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-52, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace steering switch. Refer to [AV-78, "Exploded View"](#).

STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

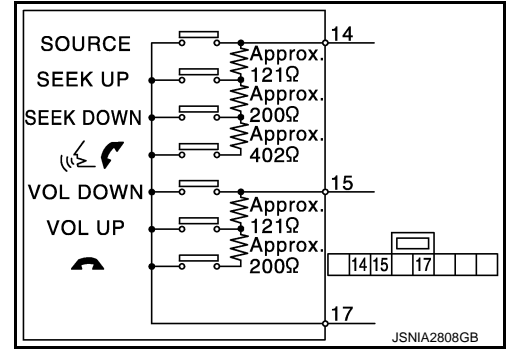
< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

INFOID:00000009752047

Component Inspection

Measure the resistance between the steering switch connector.



Standard

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

STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

Description

INFOID:000000009752048

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752049

1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and spiral cable connector.
3. Check continuity between TEL adapter unit harness connector and spiral cable harness connector.

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M127	14	M33	33	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to [SR-14, "Exploded View"](#).

3. CHECK GROUND CIRCUIT

1. Connect TEL adapter unit connector.
2. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
M127	14		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).

4. CHECK STEERING SWITCH

Check steering switch. Refer to [AV-54, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [AV-78, "Exploded View"](#).

STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

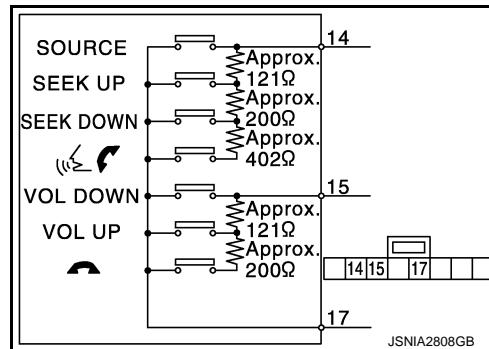
< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

Component Inspection

INFOID:00000009752050

Measure the resistance between the steering switch connector.



Standard

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

STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT) [AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

Description

INFOID:000000009752051

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752052

1. CHECK STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and TEL adapter unit connector.
3. Check continuity between audio unit harness connector and TEL adapter unit harness connector.

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M91	6	M127	17	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M91	6		Not existed

Is inspection result normal?

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

2. CHECK AUDIO UNIT VOLTAGE

1. Connect audio unit connector and TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector terminals.

Probe				Standard	Reference value (Approx.)
(+)		(-)			
Audio unit				0 – 3.3 V	3.3 V
Connector	Terminal	Connector	Terminal		
M91	6	M91	15		

Is inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).
NO >> Replace audio unit. Refer to [AV-68, "Removal and Installation"](#).

STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT) [AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

Description

INFOID:000000009752053

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752054

1. CHECK STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and TEL adapter unit connector.
3. Check continuity between audio unit harness connector and TEL adapter unit harness connector.

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M91	16	M127	18	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M91	16		Not existed

Is inspection result normal?

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

2. CHECK AUDIO UNIT VOLTAGE

1. Connect audio unit connector and TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector terminals.

Probe				Standard	Reference value (Approx.)
(+)		(-)			
Audio unit				0 – 3.3 V	3.3 V
Connector	Terminal	Connector	Terminal		
M91	16	M91	15		

Is inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).
NO >> Replace audio unit. Refer to [AV-68, "Removal and Installation"](#).

STEERING SWITCH SIGNAL GND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

STEERING SWITCH SIGNAL GND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

Description

INFOID:000000009752055

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752056

1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and TEL adapter unit connector.
3. Check continuity between audio unit harness connector and TEL adapter unit harness connector.

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M91	15	M127	19	Existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK GROUND CIRCUIT

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

Audio unit		Ground	Continuity
Connector	Terminal		
M91	15		Existed

Is inspection result normal?

YES >> Replace TEL adapter unit. Refer to [AV-74, "Removal and Installation"](#).

NO >> Replace audio unit. Refer to [AV-68, "Removal and Installation"](#).

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AV

COMMUNICATION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:000000009752057

Satellite radio tuner and audio unit are connected with a serial communication. They transmit the operation signal from audio unit to satellite radio tuner.

Diagnosis Procedure

INFOID:000000009752058

1. CHECK CONTINUITY COMMUNICATION SIGNAL (AUDIO-SAT) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect satellite radio tuner connector and audio unit connector.
3. Check continuity between satellite radio tuner harness connector and audio unit harness connector.

Satellite radio tuner		Audio unit		Continuity
Connector	Terminal	Connector	Terminal	
B69	9	M93	39	Existed
	10		40	Existed

4. Check continuity between satellite radio tuner harness connector and ground.

Satellite radio tuner		Ground	Continuity
Connector	Terminal		
B69	9		Not existed
	10		

Is inspection result OK?

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

2. CHECK AUDIO UNIT

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

Probe		Reference value (Approx.)
(+)	(-)	
Audio unit		4.0 V
Connector	Terminal	
M93	39	

Is inspection result OK?

- YES >> GO TO 3.
NO >> Replace audio unit. Refer to [AV-68. "Removal and Installation"](#).

3. CHECK SATELLITE RADIO TUNER

1. Turn ignition switch OFF.
2. Disconnect audio unit connector, and connect satellite radio tuner connector.
3. Turn ignition switch ON.
4. Check voltage between satellite radio tuner harness connector and ground.

COMMUNICATION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

Probe		Reference value (Approx.)
(+)	(-)	
Satellite radio tuner		
Connector	Terminal	
B69	10	

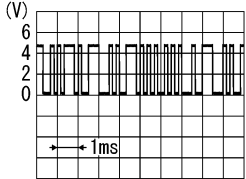
Is inspection result OK?

YES >> GO TO 4.

NO >> Replace satellite radio tuner. Refer to [AV-72, "Removal and Installation"](#).

4. CHECK COMMUNICATION SIGNAL (SAT TO AUDIO)

1. Turn ignition switch OFF.
2. Connect audio unit connector.
3. Turn ignition switch ON.
4. Check signal between satellite radio tuner harness connector and ground.

Probe				Condition	Standard	Reference value
(+) (+)		(+) (+)				
Satellite radio tuner						
Connector	Terminal	Connector	Terminal			
B69	9	B69	15	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.	 <p>PKIB5039J</p>

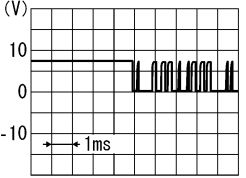
Is inspection result OK?

YES >> GO TO 5.

NO >> Replace satellite radio tuner. Refer to [AV-72, "Removal and Installation"](#).

5. CHECK COMMUNICATION SIGNAL (AUDIO TO SAT)

Check signal between audio unit harness connector and ground.

Probe		Condition	Standard	Reference value	
(+)	(+)				
Audio unit					
Connector	Terminal				
M93	40	Ground	When satellite radio mode is selected.	Waveform of 1.5 - 6.0 V is input.	 <p>SKIA9301J</p>

Is inspection result OK?

YES >> INSPECTION END

NO >> Replace audio unit. Refer to [AV-68, "Removal and Installation"](#).

REQUEST SIGNAL CIRCUIT (SAT TO AUDIO)

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

REQUEST SIGNAL CIRCUIT (SAT TO AUDIO)

Description

INFOID:000000009752059

Request signal transmits the signal to recognize the connection of satellite radio tuner from satellite radio tuner to audio unit.

Diagnosis Procedure

INFOID:000000009752060

1. CHECK CONTINUITY REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect satellite radio tuner connector and audio unit connector.
3. Check continuity between satellite radio tuner harness connector and audio unit harness connector.

Satellite radio tuner		Audio unit		Continuity
Connector	Terminal	Connector	Terminal	
B69	8	M93	38	Existed

4. Check continuity between satellite radio tuner harness connector and ground.

Satellite radio tuner		Ground	Continuity
Connector	Terminal		
B69	8		Not existed

Is inspection result OK?

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

2. CHECK AUDIO UNIT

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

Probe		Reference value (Approx.)
(+)	(-)	
Audio unit		Ground
Connector	Terminal	
M93	38	
		4.0 V

Is inspection result OK?

- YES >> GO TO 3.
NO >> Replace audio unit. Refer to [AV-68, "Removal and Installation"](#).

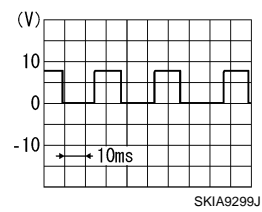
3. CHECK CONTINUITY REQUEST SIGNAL

1. Turn ignition switch OFF.
2. Connect satellite radio tuner connector.
3. Turn ignition switch ON.
4. Check signal between satellite radio tuner harness connector and ground.

REQUEST SIGNAL CIRCUIT (SAT TO AUDIO)

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

Probe				Condition	Standard	Reference value
(+)		(+)				
Satellite radio tuner						
Connector	Terminal	Connector	Terminal			
B69	8	B69	15	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.	

Is inspection result OK?

YES >> INSPECTION END

NO >> Replace satellite radio tuner. Refer to [AV-72. "Removal and Installation"](#).

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AUDIO SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

SYMPTOM DIAGNOSIS

AUDIO SYSTEM SYMPTOMS

Symptom Table

INFOID:000000009752061

RELATED TO AUDIO

Symptoms	Check items	Possible malfunction location / Action to take
Audio unit does not start.	—	Audio unit power supply and ground circuit. Refer to AV-42, "AUDIO UNIT : Diagnosis Procedure" .
No sound comes out.	No sound from all speakers.	Audio unit power supply and ground circuit. Refer to AV-42, "AUDIO UNIT : Diagnosis Procedure" .
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	<ul style="list-style-type: none"> Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Malfunction in speaker. Malfunction in audio unit.
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in audio unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	<ul style="list-style-type: none"> Poor connector connection of speaker. Sound signal circuit malfunction between audio unit and speaker. Malfunction in speaker. Poor installation of speaker (e.g. backlash and looseness) Malfunction in audio unit.
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> Poor connector connection of antenna or antenna feeder. Loose antenna base mounting nut. Refer to AV-73, "Removal and Installation"
Radio is not received or poor reception.	<ul style="list-style-type: none"> Other audio sounds are normal. Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises). 	<ul style="list-style-type: none"> Antenna amp. ON signal circuit malfunction. Poor connector connection of antenna or antenna feeder. Loose antenna base mounting nut. Refer to AV-73, "Removal and Installation".
Satellite radio is not received.	It change to satellite radio mode.	<ul style="list-style-type: none"> Antenna feeder (satellite radio) Satellite antenna (antenna base)
	It does not change to satellite radio mode.	<ul style="list-style-type: none"> Satellite radio tuner power supply and ground circuit. Refer to AV-42, "SATELLITE RADIO TUNER : Diagnosis Procedure". Request signal circuit. Refer to AV-60, "Diagnosis Procedure". Communication circuit between audio unit and satellite radio tuner. Refer to AV-58, "Diagnosis Procedure".

RELATED TO iPod®

Trouble Diagnosis Chart by Symptom

Connect another iPod® and check if the symptom is reproduced or not. If the symptom is reproduced, diagnose the vehicle. If no malfunction is detected, replace the iPod harness.

NOTE:

- It is unable to read a connection between iPod® and iPod harness.
- Charging of iPod® with no 5 V charging circuit is not supported. (e.g. iPod 1G mechanical scroll wheel, iPod Classic 2G touch-sensitive wheel, and iPod Classic 3G 4 touch button)

AUDIO SYSTEM SYMPTOMS

[AUDIO WITHOUT NAVIGATION]



< SYMPTOM DIAGNOSIS >

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
There is no sound from the iPod®.	Other audio sounds are normal.	<ul style="list-style-type: none"> iPod sound signal circuit between audio unit and iPod adapter. iPod sound signal circuit between iPod® and iPod adapter.
"iPod No connect" is displayed when "iPod" switch is pressed.	<ul style="list-style-type: none"> iPod battery charging is normal. iPod software and hardware version are displayed when performing audio unit self-diagnosis. 	Communication circuit between iPod® and iPod adapter.
	<ul style="list-style-type: none"> iPod battery charging is normal. iPod software and hardware version are not displayed when performing audio unit self-diagnosis. 	AV communication circuit between audio unit and iPod adapter.
	iPod battery charge does not work.	iPod adapter power supply and ground circuit. Refer to AV-44, "iPod ADAPTER : Diagnosis Procedure" .
iPod® cannot charge the battery.	Not chargeable even when connecting other iPod®. Refer to NOTE.	iPod battery charge 5 V circuit between iPod® and iPod adapter.

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

RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. (steering switch to TEL adapter unit) Refer to AV-53, "Diagnosis Procedure" .
"SOURCE", "SEEK UP", "VOL UP", "SEEK DOWN" and "VOL DOWN" switches are not operated.	Steering switch signal ground circuit. (TEL adapter unit to audio unit) Refer to AV-57, "Diagnosis Procedure" .
Only specified switch cannot be operated.	Replace steering switch. Refer to AV-78, "Removal and Installation" .
"  ", "SEEK UP", "SEEK DOWN" and "SOURCE" switches are not operated.	Steering switch signal A circuit. (steering switch to TEL adapter unit) Refer to AV-49, "Diagnosis Procedure" .
"SEEK UP", "SEEK DOWN" and "SOURCE" switches are not operated.	Steering switch signal A circuit. (TEL adapter unit to audio unit) Refer to AV-55, "Diagnosis Procedure" .
"  ", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (steering switch to TEL adapter unit) Refer to AV-51, "Diagnosis Procedure" .
"VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (TEL adapter unit to audio unit) Refer to AV-56, "Diagnosis Procedure" .

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HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

HANDS-FREE PHONE SYMPTOMS

Symptom Table

INFOID:000000009752062

RELATED TO HANDS-FREE PHONE

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

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
NOTE:
The customer's phone may be required, depending upon their concern.
3. Write down the customer's phone brand, model, and service provider.
NOTE:
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
4. Go to "www.nissanusa.com/bluetooth/".
 - a. Using the website's search engine, find out if the customer's phone is on the approved list.
 - b. If the customer's phone is NOT on the approved list:
Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
 - c. If the feature related to the customer's concern shows as "N" (not compatible):
Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features" list.
 - d. If the feature related to the customer's concern shows as "Y" (compatible):
Perform diagnosis as per the following table.



Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	<ul style="list-style-type: none"> • Both the reception and the speech cannot be performed. • Audio can be operated by steering switch. 	<ul style="list-style-type: none"> • TEL adapter unit power supply and ground circuit. Refer to AV-43, "TEL ADAPTER UNIT : Diagnosis Procedure". • Control signal circuit. Refer to AV-47, "Diagnosis Procedure". • AV communication circuit between audio unit and TEL adapter unit.
	<ul style="list-style-type: none"> • Both the reception and the speech cannot be performed. • Audio can be operated by steering switch. 	TEL ON signal circuit. Refer to AV-48, "Diagnosis Procedure" .
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to AV-62, "Symptom Table" .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to AV-45, "Diagnosis Procedure" .

RELATED TO STEERING SWITCH

HANDS-FREE PHONE SYMPTOMS

[AUDIO WITHOUT NAVIGATION]

< SYMPTOM DIAGNOSIS >

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. (steering switch to TEL adapter unit) Refer to AV-53. "Diagnosis Procedure" .
Only specified switch cannot be operated.	Replace steering switch.
"  ", "SEEK UP", "SEEK DOWN" and "SOURCE" switches are not operated.	Steering switch signal A circuit. (steering switch to TEL adapter unit) Refer to AV-49. "Diagnosis Procedure" .
"  ", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (steering switch to TEL adapter unit) Refer to AV-51. "Diagnosis Procedure" .

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AV

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

NORMAL OPERATING CONDITION

Description

INFOID:000000009752063

RELATED TO AUDIO

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

NOTE:

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

Symptoms	Cause and Counter measure
Cannot play	Check that the disc was inserted correctly.
	Check that the disc is scratched or dirty.
	Check if there is condensation inside the player. If there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the CD player will play correctly after it returns to the normal temperature.
	Files with extensions other than “.MP3”, “.WMA”, “.mp3”, or “.wma” cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format. This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
Poor sound quality	Check if the disc is scratched or dirty.
	Bit rate may be too low.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width, etc., might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities of data, such as for high bit rate data.
Move immediately to the next song when playing.	When a non-MP3/WMA file has been given an extension of “.MP3”, “.WMA”, “.mp3” or “.wma”, or when play is prohibited by copyright protection, there will be approximately 5 seconds of no sound and then the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the writing software. Therefore, the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

NOTE:

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

RELATED TO TELEPHONE

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITHOUT NAVIGATION]

Symptoms	Cause and Counter measure
System fails to interpret the command correctly.	1. Ensure that the command format is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at a level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). NOTE: If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. Refer to AV-15. "On Board Diagnosis Function" .
The system consistently selects the wrong entry from the phone book.	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
	2. Replace one of the names being confused with a new name.

RELATED TO HANDS-FREE PHONE

Symptom	Cause and Counter measure
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Some Bluetooth® enabled cellular phones may not be recognized by the in-vehicle phone module. Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" of HANDS-FREE PHONE SYMPTOM.
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. <ul style="list-style-type: none"> • The vehicle is outside of the telephone service area. • The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. • The cellular phone is locked to prevent it from being dialed. NOTE: While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

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AV

REMOVAL AND INSTALLATION

AUDIO UNIT

Removal and Installation

INFOID:000000009752064

REMOVAL

1. Remove cluster lid C. Refer to [JP-12, "Exploded View"](#).
2. Remove audio unit screws.
3. Disconnect audio unit connectors to remove audio unit and brackets as a single unit.
4. Remove brackets screws to remove audio unit.

INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[AUDIO WITHOUT NAVIGATION]

FRONT DOOR SPEAKER

Removal and Installation

INFOID:000000009752065

REMOVAL

1. Remove front door finisher. Refer to [INT-13. "Exploded View"](#).
2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door speaker.

INSTALLATION

Install in the reverse order of removal.

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TWEETER

Removal and Installation

INFOID:000000009752066

REMOVAL

1. Remove front pillar garnish. Refer to [INT-18. "Exploded View"](#).
2. Remove tweeter clip, then disconnect tweeter connector and remove tweeter.

INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[AUDIO WITHOUT NAVIGATION]

REAR DOOR SPEAKER

Removal and Installation

INFOID:000000009752067

REMOVAL

1. Remove rear door finisher. Refer to [INT-16. "Exploded View"](#).
2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

INSTALLATION

Install in the reverse order of removal.

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AV

SATELLITE RADIO TUNER

< REMOVAL AND INSTALLATION >

[AUDIO WITHOUT NAVIGATION]

SATELLITE RADIO TUNER

Removal and Installation

INFOID:000000009752068

REMOVAL

1. Remove luggage side lower finisher LH. Refer to [INT-33, "Exploded View"](#).
2. Disconnect satellite radio tuner connectors.
3. Remove screws to remove satellite radio tuner and brackets as a single unit.
4. Remove brackets screws to remove satellite radio tuner.

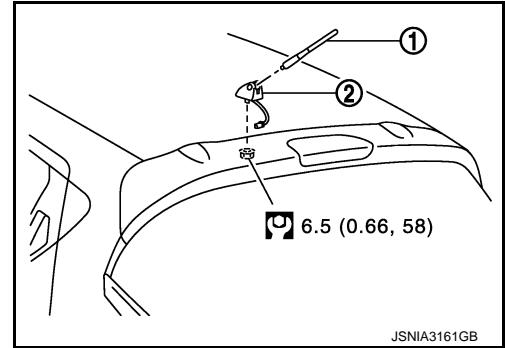
INSTALLATION


Install in the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:000000009752069



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

Removal and Installation

INFOID:000000009752070

REMOVAL

1. Remove headlining. Refer to [INT-27, "NORMAL ROOF : Exploded View"](#) (normal roof) or [INT-30, "SUN-ROOF : Exploded View"](#) (sunroof).
2. Disconnect antenna feeder connector.
3. Remove nut to remove antenna base.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

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AV

TEL ADAPTER UNIT

Removal and Installation

INFOID:000000009752071

REMOVAL

1. Remove glove box assembly. Refer to [IP-12. "Exploded View"](#).
2. Remove TEL adapter unit screws.
3. Disconnect TEL adapter unit connectors to remove TEL adapter unit and bracket as a single unit.
4. Remove bracket screws to remove TEL adapter unit.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

Removal and Installation

INFOID:000000009752072

REMOVAL

1. Remove headlining. Refer to [INT-27, "NORMAL ROOF : Exploded View"](#) (normal roof) or [INT-30, "SUN-ROOF : Exploded View"](#) (sunroof).
2. Remove microphone connector and pawl to remove microphone.

INSTALLATION

Install in the reverse order of removal.

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AV

IPOD ADAPTER

Removal and Installation

INFOID:000000009752073

REMOVAL

1. Remove glove box assembly. Refer to [IP-12. "Exploded View"](#).
2. Remove iPod adapter connector and screws.
3. Remove iPod adapter and brackets from the vehicle as a single unit.
4. Remove brackets screws to remove iPod adapter.

INSTALLATION

Install in the reverse order of removal.

IPOD CONNECTOR

< REMOVAL AND INSTALLATION >

[AUDIO WITHOUT NAVIGATION]

IPOD CONNECTOR

Removal and Installation

INFOID:000000009752074

REMOVAL

1. Remove glove box assembly. Refer to [IP-12, "Exploded View"](#).
2. Push the pawl from the back of glove box assembly to remove iPod connector.

INSTALLATION

Install in the reverse order of removal.

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AV

STEERING SWITCH

< REMOVAL AND INSTALLATION >

[AUDIO WITHOUT NAVIGATION]

STEERING SWITCH

Exploded View

INFOID:000000009752075

Refer to [SR-11, "Exploded View"](#).

Removal and Installation

INFOID:000000009752076

REMOVAL

Refer to [SR-11, "Removal and Installation"](#).

INSTALLATION

Install in the reverse order of removal.

ANTENNA FEEDER

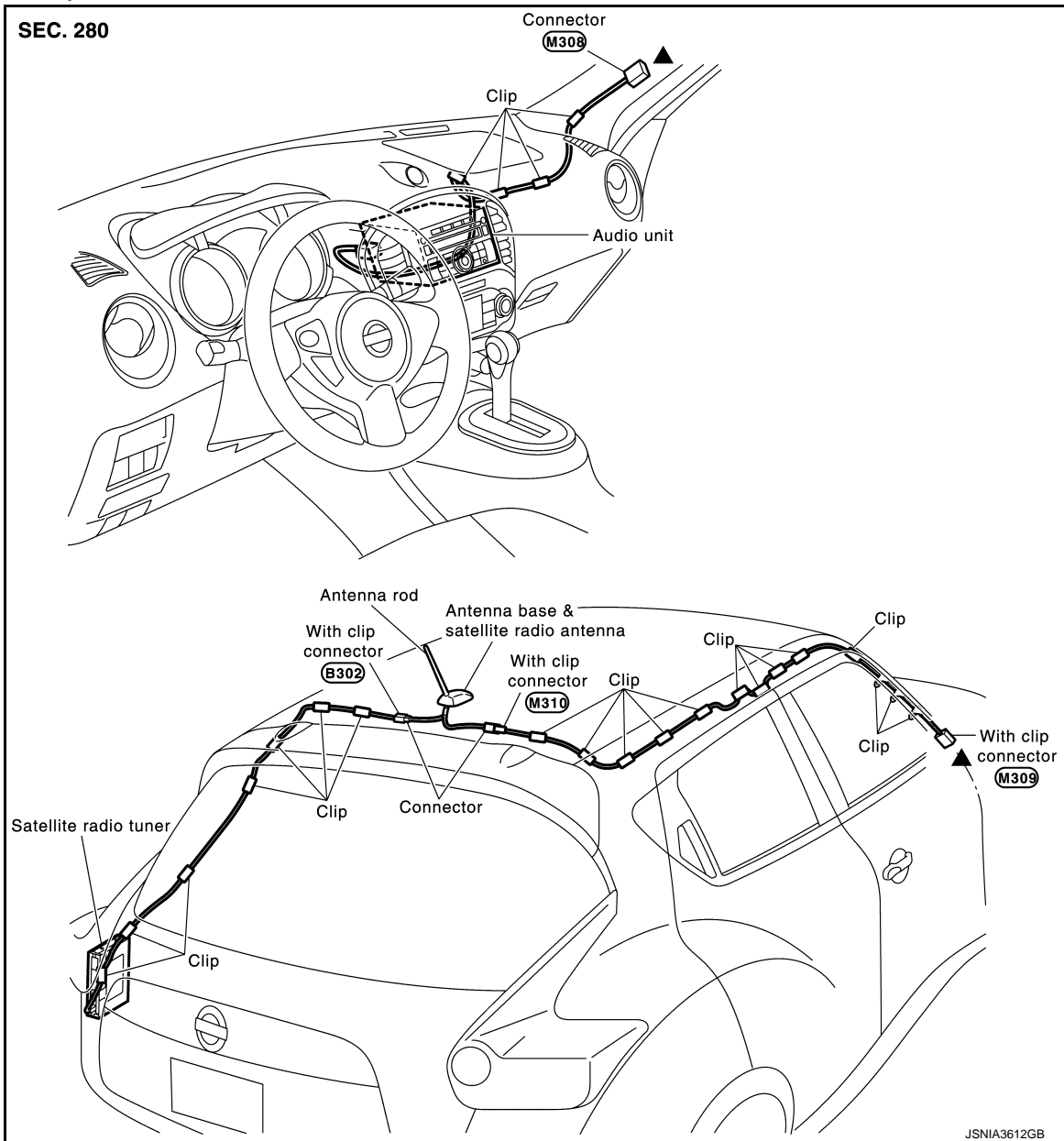
< REMOVAL AND INSTALLATION >

[AUDIO WITHOUT NAVIGATION]

ANTENNA FEEDER

Feeder Layout

INFOID:000000009752077



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

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PRECAUTION

PRECAUTIONS

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

INFOID:000000009752078

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Removing of Battery Terminal

INFOID:0000000010273676

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

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

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

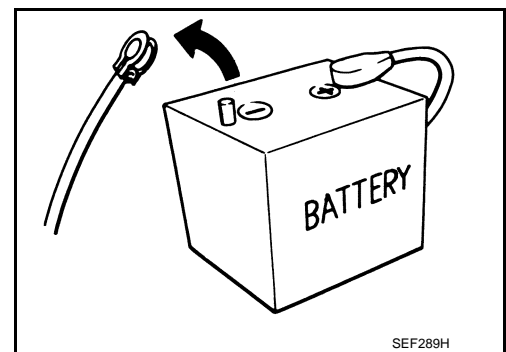
NOTE:

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

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

NOTE:

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



SEF289H

Precaution for Trouble Diagnosis

INFOID:000000009752079

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.

PRECAUTIONS

[AUDIO WITH NAVIGATION]

< PRECAUTION >

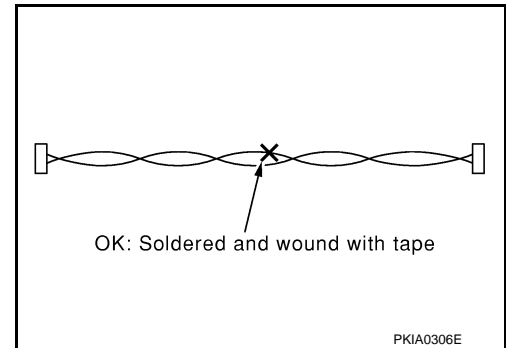
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

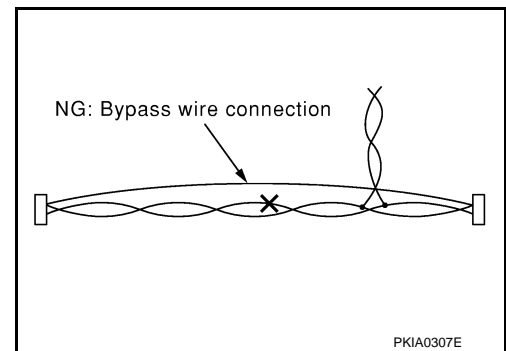
INFOID:000000009752080

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.)



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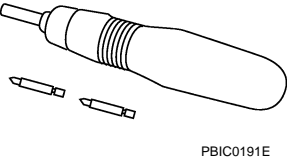
AV

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000009752081

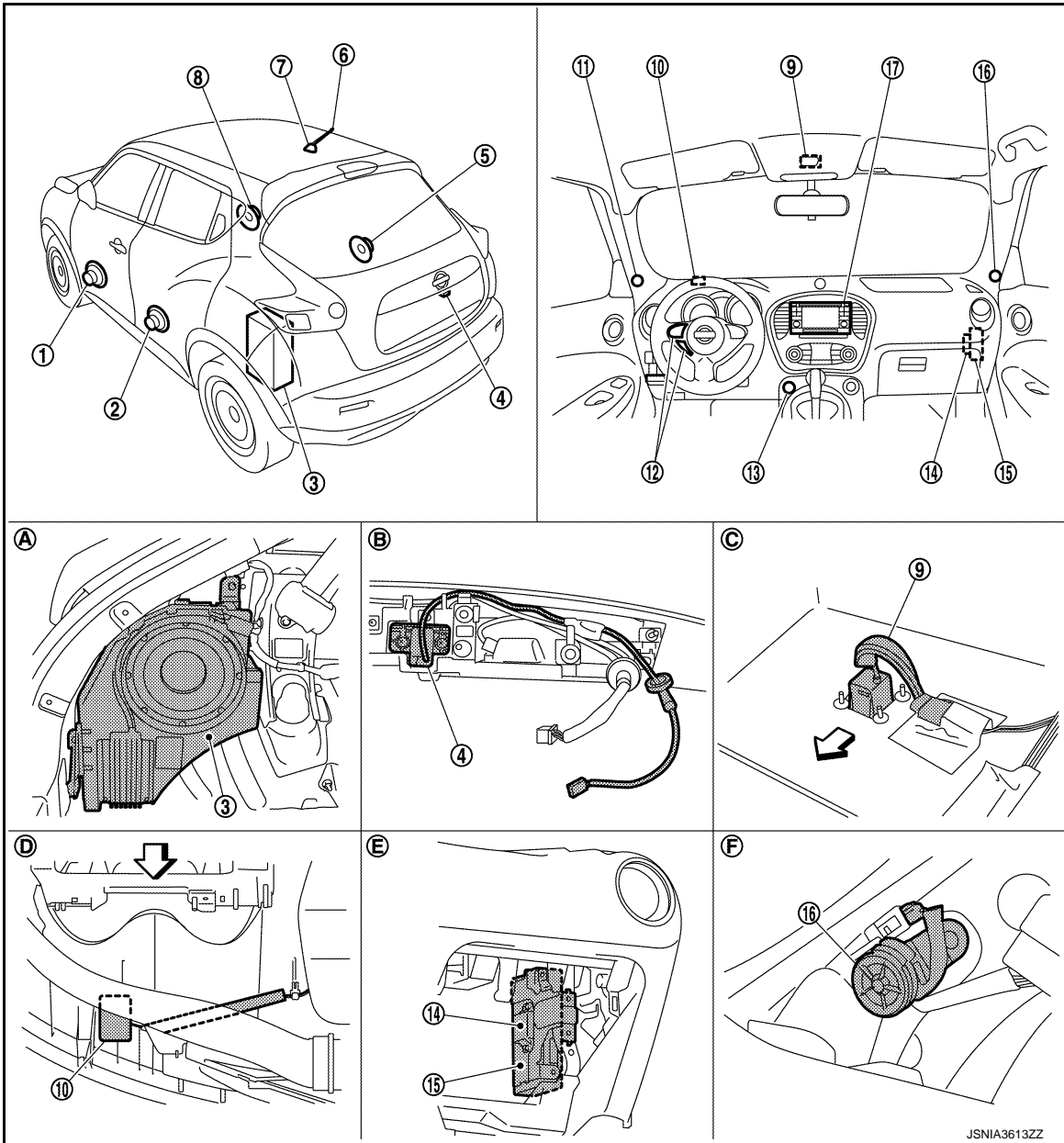
Tool name	Description
<p>Power tool</p>  <p>PBIC0191E</p>	<p>Loosening screws</p>

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000009752082



- | | | |
|--|---|--|
| 1. Front door speaker LH | 2. Rear door speaker LH | 3. Woofer |
| 4. Rear view camera | 5. Rear door speaker RH | 6. Antenna rod |
| 7. Antenna base (antenna amp. and satellite radio antenna) | 8. Front door speaker RH | 9. Microphone |
| 10. GPS antenna | 11. Tweeter LH | 12. Steering switch |
| 13. USB connector and AUX jack | 14. TEL antenna | 15. TEL adapter unit |
| 16. Tweeter RH | 17. NAVI control unit | |
| A. Luggage side LH | B. Back of back door finisher | C. Back of headlining |
| D. Back of instrument panel | E. Glove box assembly removed condition | F. Front pillar finisher removed condition |

↶ Vehicle front

JSNIA3613ZZ

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COMPONENT PARTS

[AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

Component Description

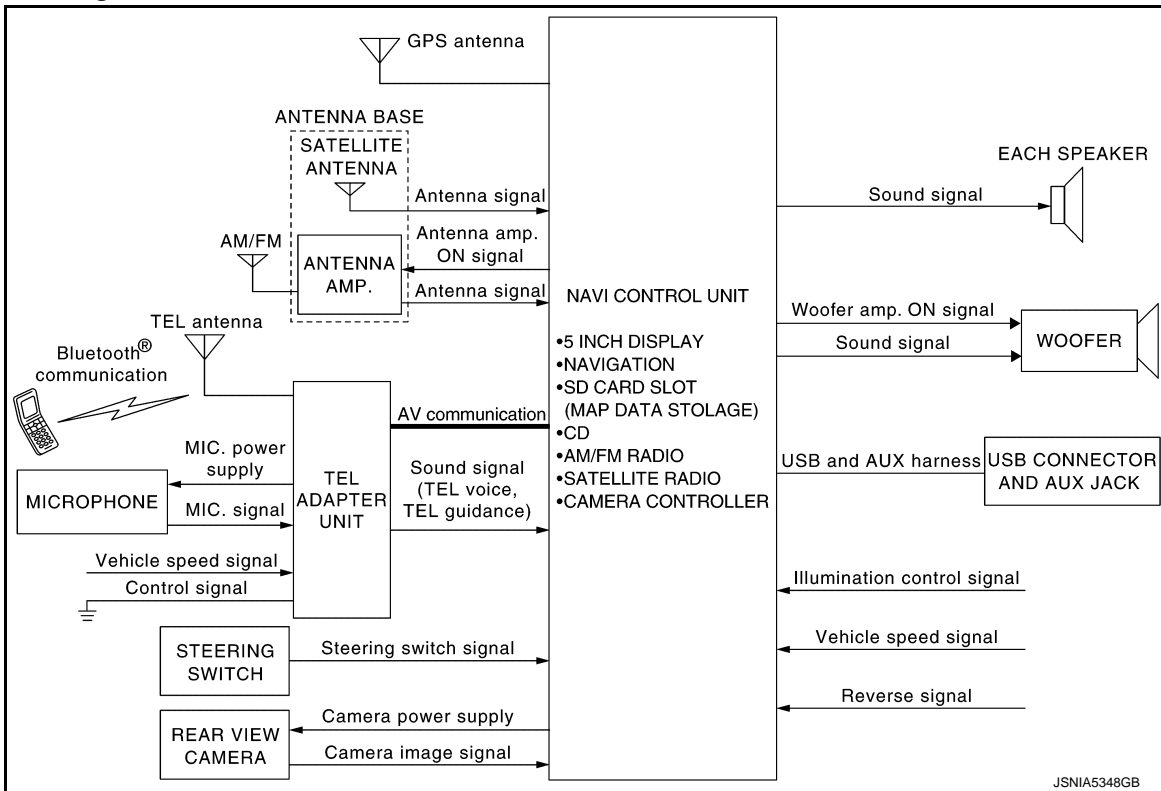
INFOID:000000009752083

Part name	Description
NAVI control unit	<ul style="list-style-type: none"> Operational switch of navigation system and audio system are integrated. Includes the audio, hands-free phone, navigation, satellite radio, rear view monitor, USB connection and AUX connection functions. Map data can be loaded from the SD-card inserted in the built-in SD-card slot. Sound signals are output to each speaker and woofer. It inputs the illumination signals that are required for the display dimming control. It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). Touch panel function can be operated for each system by touching a display directly. It supplies power to rear view camera. Camera image signal is input from rear view camera.
Map SD-card	A collection of Map data.
Front door speaker	<ul style="list-style-type: none"> Outputs sound signal from NAVI control unit. Outputs mid and low range sounds.
Tweeter	<ul style="list-style-type: none"> Outputs sound signal from NAVI control unit. Outputs high range sounds.
Rear door speaker	<ul style="list-style-type: none"> Outputs sound signal from NAVI control unit. Outputs high, mid and low range sounds.
Woofer	<ul style="list-style-type: none"> Woofer amp. ON signal is input from NAVI control unit. Outputs sound signal from NAVI control unit. Outputs low range sounds.
Steering switch	<ul style="list-style-type: none"> Operations for audio and hands-free phone are possible. Steering switch signal (operation signal) is output to NAVI control unit.
TEL adapter unit	<ul style="list-style-type: none"> Inputs the TEL voice signal from TEL antenna and outputs it to the NAVI control unit. It is connected with the NAVI control unit via AV communication and controlled with the NAVI control unit.
TEL antenna	<ul style="list-style-type: none"> Receives the TEL voice signal and outputs it to the TEL adapter unit. TEL antenna is unified with a TEL adapter unit.
Microphone	<ul style="list-style-type: none"> Used for hands-free phone operation. Microphone signal is transmitted to TEL adapter unit. Power (microphone VCC) is supplied from TEL adapter unit.
GPS antenna	GPS signal is received and transmitted to NAVI control unit.
Antenna base	<p>A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.</p> <p>ANTENNA AMP.</p> <ul style="list-style-type: none"> Radio signal received by rod antenna is amplified and transmitted to NAVI control unit. Power (antenna amp. ON signal) is supplied from NAVI control unit. <p>SATELLITE RADIO ANTENNA</p> <ul style="list-style-type: none"> Receives satellite radio waves and outputs it to NAVI control unit.
Rear view camera	<ul style="list-style-type: none"> Camera power supply is input from NAVI control unit. The image of vehicle rear view is transmitted to NAVI control unit.
USB connector and AUX jack	<ul style="list-style-type: none"> Sound signal of auxiliary input is transmitted to NAVI control unit. Sound signal of USB input is transmitted to NAVI control unit.

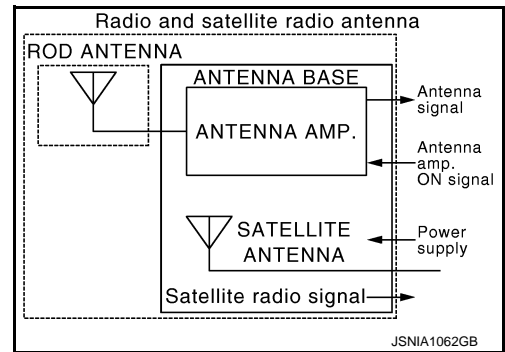
SYSTEM

System Diagram

INFOID:000000009752084



NOTE:
An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



System Description

INFOID:000000009752085

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

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

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

NAVIGATION SYSTEM FUNCTION

Description

- The navigation system can be operated by control panel of the NAVI control unit and display (touch panel) of the NAVI control unit.

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SYSTEM

[AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

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

POSITION DETECTION PRINCIPLE

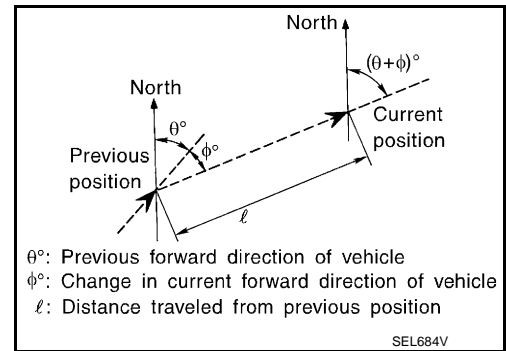
The navigation system periodically calculates the vehicle's current position according to the following three signals:

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

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

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

- Travel distance
Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.
- Travel direction
Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



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

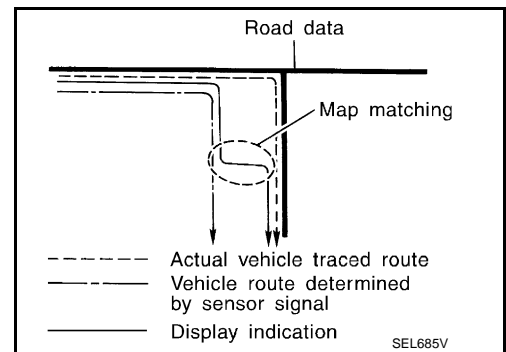
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

MAP-MATCHING

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

NOTE:

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



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

SYSTEM

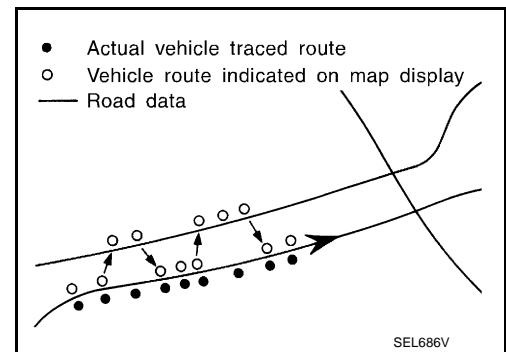
< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

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

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

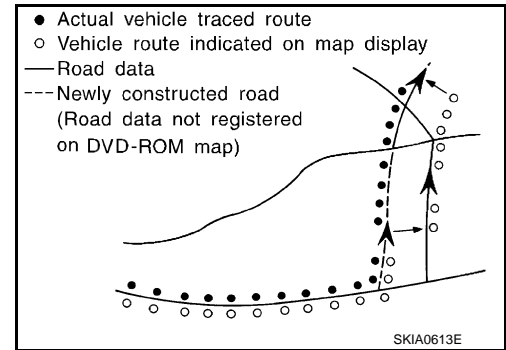
They are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



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

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

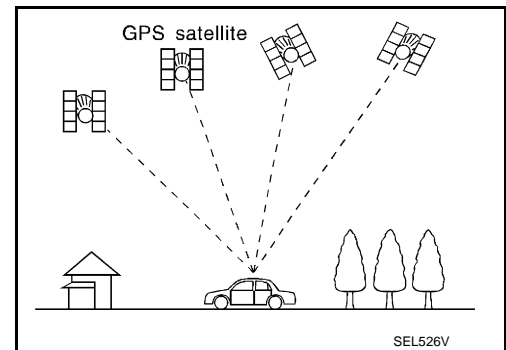
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map SD-card is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position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



GPS (Global Positioning System)

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

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



Accuracy of the GPS will deteriorate under the following conditions:

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

NOTE:

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

SATELLITE RADIO FUNCTION

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

AUXILIARY INPUT FUNCTION

- Sound can be output from an external device by connecting a device with USB connector and AUX jack.

- AUX sound signals are transmitted to each speaker and woofer via NAVI control unit.

REAR VIEW MONITOR FUNCTION

Camera Image Operation Principle

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

USB CONNECTION FUNCTION

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

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

NOTE:

Use the enclosed USB harness when connecting iPod® to USB connector and AUX jack.

SPEED SENSITIVE VOLUME SYSTEM

- Volume level of this system goes up and down automatically in proportion to the vehicle speed.
- The control level can be selected by the customer.

HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from NAVI control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the NAVI control unit and output to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-92. "On Board Diagnosis Function"](#).

When A Call Is Originated

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

When Receiving A Call

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

DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

On Board Diagnosis Function

INFOID:000000009752086

On-Board Diagnosis Item

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

Service test mode

Mode	Item	Content
Service version	—	The version data of the parts is shown displayed.
Service radio	FM monitor	The Change Mediator monitors the dynamic values of the current tuner. If the band is switched within the radio monitor context, the active monitor is switched as well.
	AM monitor	
	XM monitor	The version data is displayed.
	XM functions	<ul style="list-style-type: none">• Clear XM Chipset NVM• Reset all XM settings• XM CBM debug mode ON/OFF• External Diag mode ON/OFF The current system status is displayed.
Service configuration	Touch Display Calibration	The function allows connection of the position detection accuracy of the touch panel.

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DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

	Mode	Item	Content
Service system status	Running system status	<ul style="list-style-type: none"> • SD card slot access • Power Supply • Speed Signal • Direction Signal • Illumination Signal • GPS Antenna • BTHFU Status • Radio Antenna • USB Device • iPod® firmware version • Steering wheel key 	The current system status is displayed.
	System history	<ul style="list-style-type: none"> • SD-card Slot - Sub-Unit Connection Malfunction • Programming Error • Radio-Antenna Circuit Malfunction • FM-Antenna 1 Connection Malfunction • GPS Antenna Circuit Malfunction • CD-Drive Mechanical Malfunction • CD Read Malfunction • Power Supply voltage: Lower Limit Exceeded • Power Supply voltage: Upper Limit Exceeded • Reduced system Functionality due to over temperature • Display switched OFF due to over temperature • SD card removed without being de-mounted • Codeplug missing 	The history of the system status is reported in the report memory, displayed.
	Speaker test 100 Hz	—	This activates a sequence of test tone outputs to the four speaker lines one after the other for 1 second. The frequency can be chosen by user selection (100 Hz and 4 kHz).
	Speaker test 4 kHz	—	
Display test	—	This provides a test sequence where test displays (plain colored display: e.g. white, black, red, blue, green) are shown one after the other. The respective color is shown for an indicated period of time (parameter). After the display test, the design of the display previously available is stored. While the screen shows a plain colored display, a pixel malfunction may be detected.	

DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

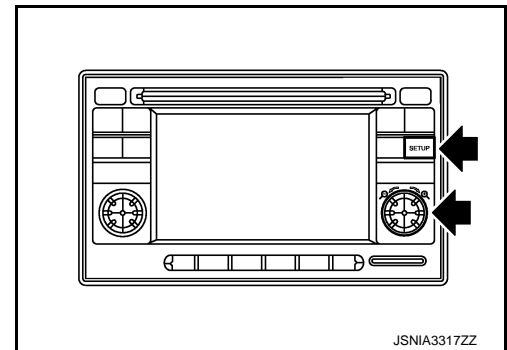
< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

Mode	Item	Content
Service system configuration	<ul style="list-style-type: none"> • 2/4 pulse speed • Clock ON/OFF • Camera guidelines • Equalizing settings • RF tuning • Antenna type • Sound system • Sub Out • Steering wheel 	The device is configured by a connected hardware circuit. The parameter is influenced.
Self test	<ul style="list-style-type: none"> • SD-card Access Malfunction • Radio-Antenna Circuit Malfunction • GPS Antenna Circuit Malfunction • XM Antenna Circuit Malfunction 	A system self test is executed: the result is stored into the error memory which is shown afterwards as a list of codes of the detected malfunctions.

METHOD OF STARTING

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



END ON-BOARD DIAGNOSIS

Turn OFF ignition switch.

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DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Description

INFOID:000000009752087

During on board diagnosis the diagnosis function of TEL adapter unit starts with the operation of the steering switch and performs the diagnosis when ignition switch ACC.

On Board Diagnosis Function

INFOID:000000009752088

ON BOARD DIAGNOSIS ITEM

The on board diagnosis has 3 modes: the self-diagnosis mode that performs the trouble diagnosis, the speaker adaptation data deleting mode and the hands free phone system initialization mode.

CAUTION:

- Perform the diagnosis with the vehicle stopped.
- Perform STEP2 if necessary.

STEP	MODE	Description
STEP 1	Self-diagnosis	The self-diagnosis mode performs the microphone test and the diagnosis of TEL adapter unit, TEL antenna and steering unit, and then reads out the results with the sound and indicates them on the audio screen.
STEP 2	Hands free phone system initialization	Hands free phone system initialization mode can perform the initialization of hands free phone system.
	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.

SELF-DIAGNOSIS RESULTS

Self-diagnosis mode reads out the self-diagnosis results and indicates DTC on the audio screen.

NOTE:

- Error count is read out simultaneously when reading out the DTC name.
- The errors are read out continuously when some errors occur at the same time. The DTC displays are combined and displayed. For example, DTC 01100 is displayed when DTC 01000 and DTC 00100 are indicated at the same time.

Self-diagnosis results

DTC (Audio screen)	Failure message	Possible causes
DTC 10000	Internal failure	TEL adapter unit
DTC 01000	Bluetooth antenna open	TEL antenna
DTC 00100	Bluetooth antenna shorted	
DTC 00010	Button ladder A is stuck	Steering switch
DTC 00001	Button ladder B is stuck	
DTC 00000	There are no failure records to report	—

The Details of Error Count

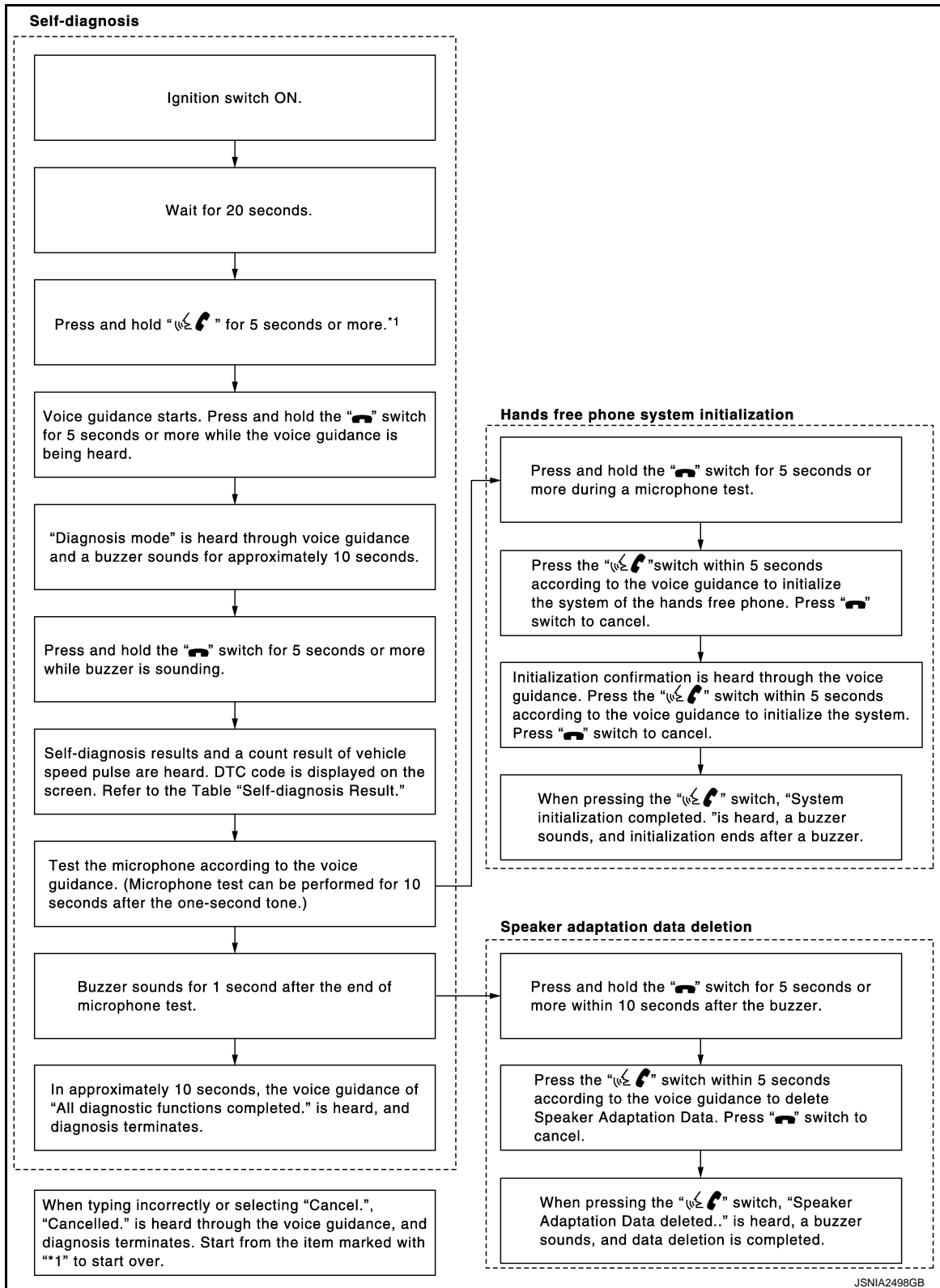
The error count guides "0" when the error occurs. The next time it counts up "1" if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands free phone system is performed.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[AUDIO WITH NAVIGATION]

FLOW CHART OF TROUBLE DIAGNOSIS



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NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

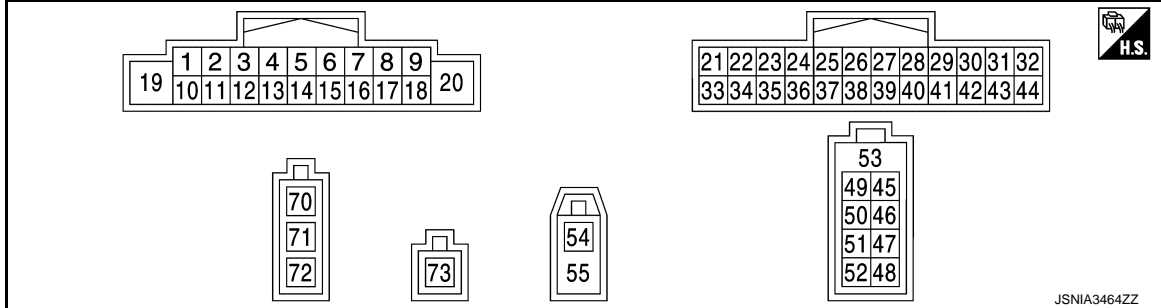
ECU DIAGNOSIS INFORMATION

NAVI CONTROL UNIT

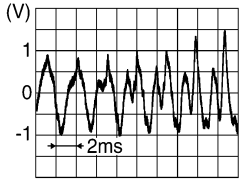
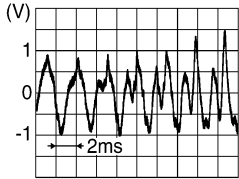

Reference Value

INFOID:0000000010283846

TERMINAL LAYOUT



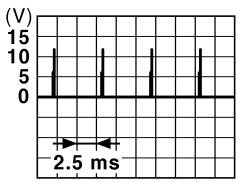
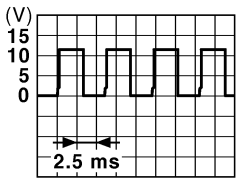
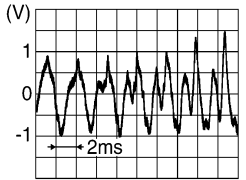
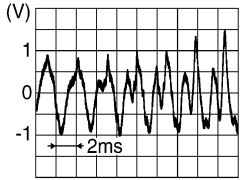

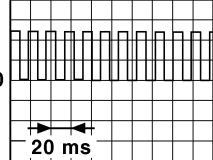
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
1 (R)	Ground	Woofer amp. ON signal	Output	Ignition switch ON	—	
2 (W)	3 (GR)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output. 	
4 (LG)	5 (W)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output. 	
6 (G)	15 (V)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing SEEK UP switch.	1.4 V
					Keep pressing SEEK DOWN switch.	2.5 V
					Keep pressing  switch.	3.5 V
					Except for above.	5.0 V
7 (L)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage

NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

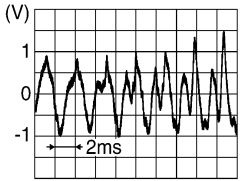

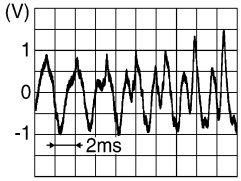
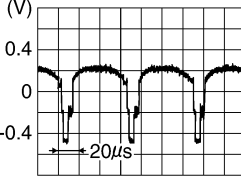
Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
9 (V)	8 (GR)	Illumination control signal	Input	Ignition switch ON	<ul style="list-style-type: none"> Lighting switch 1ST When meter illumination is maximum  <p style="text-align: right; font-size: small;">JPNIA1687GB</p>	
				Ignition switch ON	<ul style="list-style-type: none"> Lighting switch 1ST When meter illumination is step 11  <p style="text-align: right; font-size: small;">JPNIA1686GB</p>	
				Ignition switch ON	<ul style="list-style-type: none"> Lighting switch 1ST When meter illumination is minimum <p style="text-align: center;">0 V</p>	
11 (G)	12 (R)	Sound signal front speaker RH	Output	Ignition switch ON	Sound output.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
13 (BR)	14 (Y)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
16 (R)	15 (V)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
				Ignition switch ON	Keep pressing VOL UP switch.	1.4 V
				Ignition switch ON	Keep pressing  switch.	2.5 V
				Ignition switch ON	Except for above.	5.0 V
18 (Y)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	<p style="text-align: center;">NOTE: The maximum voltage varies depending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>

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NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
19 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (B)	Ground	EQ2	—	Ignition switch ON	—	0 V
25 (G)	Ground	Reverse signal	Input	Ignition switch ON	Shift position is in R.	12.0 V
					Shift position is in other than R.	0 V
30 (W)	31 (B)	Sound signal woofer	Output	Ignition switch ON	Sound output.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
32	—	Shield	—	—	—	—
34 (BR)	35 (Y) ^{*1} (GR) ^{*2}	Sound signal (TEL voice, voice guid- ance)	Input	Ignition switch ON	During voice guide output with the  switch pressed.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
36 (B)	Ground	TEL ground	—	Ignition switch ON	—	0 V
37	—	Shield	—	—	—	—
38 (G) ^{*1} (SB) ^{*2}	—	AV communication signal (H)	Input/ Output	—	—	—
39 (R) ^{*1} (LG) ^{*2}	—	AV communication signal (L)	Input/ Output	—	—	—
41 (V)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB0827E</p>
42	—	Shield	—	—	—	—
43 (LG)	Ground	Camera power supply	Output	Ignition switch ON	Shift position is in "R".	6.0 V

NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)	
+	-	Signal name	Input/ Output				
44 (L)	—	Camera ground	—	Ignition switch ON	—	0 V	A
45 (G)	—	USB ground	—	—	—	—	B
46 (W)	—	V BUS signal-	Input/ Output	—	—	—	C
47 (R)	—	USB D- signal	Input/ Output	—	—	—	D
48 (L)	—	USB D+ signal	Output	—	—	—	E
49 (R)	51 (Y)	AUX sound signal LH	Input	—	—	—	F
50 (W)	51 (Y)	AUX sound signal RH	Input	—	—	—	F
52	—	Shield	—	—	—	—	G
53	—	Shield	—	—	—	—	G
54	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected to GPS an- tenna connector.	5.0 V	H
55	—	Shield	—	—	—	—	H
70	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	—	12.0 V	I
71	—	Antenna signal	Input	—	—	—	J
73	—	Satellite radio antenna sig- nal	Input	—	—	—	J

*1: With front fog lamp

*2: Without front fog lamp

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TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

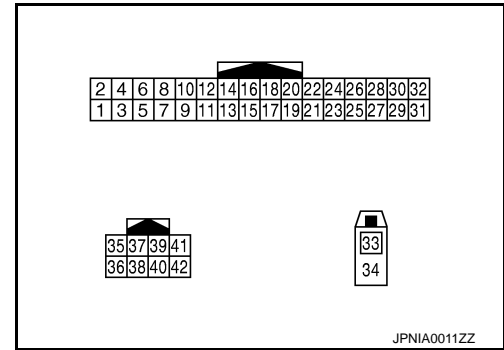
[AUDIO WITH NAVIGATION]

TEL ADAPTER UNIT

Reference Value

INFOID:000000009752090

TERMINAL LAYOUT



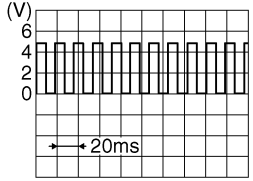
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	-	Signal name	Input/Output				
1 (BR)	4 (B)	Battery power supply	Input	Ignition switch OFF	—	9.0 - 16.0 V	Battery voltage
2 (L)	4 (B)	ACC power supply	Input	Ignition switch ACC	—	7.0 - 16.0 V	Battery voltage
3 (SB)	4 (B)	Ignition signal	Input	Ignition switch ON	—	7.0 - 16.0 V	Battery voltage
7 (G)	8	Microphone signal	Input	Ignition switch ON	Give a voice.	Outputs waveform synchronized with voice is input.	<p>PKIB5037J</p>
9 (BR)	10 (GR)	Sound signal (TEL voice, voice guidance)	Output	Ignition switch ON	During voice guide output with the Σ switch pressed.	Outputs waveform synchronized with sound.	<p>SKIB3609E</p>
23 (B)	4 (B)	Control signal	—	Ignition switch ON	—	3.1 V or less	0 V
24 (B)	4 (B)	Control signal	—	Ignition switch ON	—	3.1 V or less	0 V
27 (B)	4 (B)	Control signal	—	Ignition switch ON	—	3.1 V or less	0 V

TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)
+	-	Signal name	Input/ Output			
28 (Y)	4 (B)	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	Waveform ac- cording to ve- hicle speed is input.  <p style="text-align: right; font-size: small;">SKIA6649J</p>
29 (R)	8	Microphone VCC	Output	Ignition switch ON	—	4.7 - 5.3 V 5.0 V
33	4 (B)	TEL antenna sig- nal	Input/ Output	Ignition switch ON	Not connected to TEL antenna connector.	— 5.0 V
34	—	Shield	—	—	—	—
35 (SB)	—	AV communica- tion signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communica- tion signal (L)	Input/ Output	—	—	—
39 (SB)	—	AV communica- tion signal (H)	Input/ Output	—	—	—
40 (SB)	—	AV communica- tion signal (H)	Input/ Output	—	—	—
41 (LG)	—	AV communica- tion signal (L)	Input/ Output	—	—	—
42 (LG)	—	AV communica- tion signal (L)	Input/ Output	—	—	—

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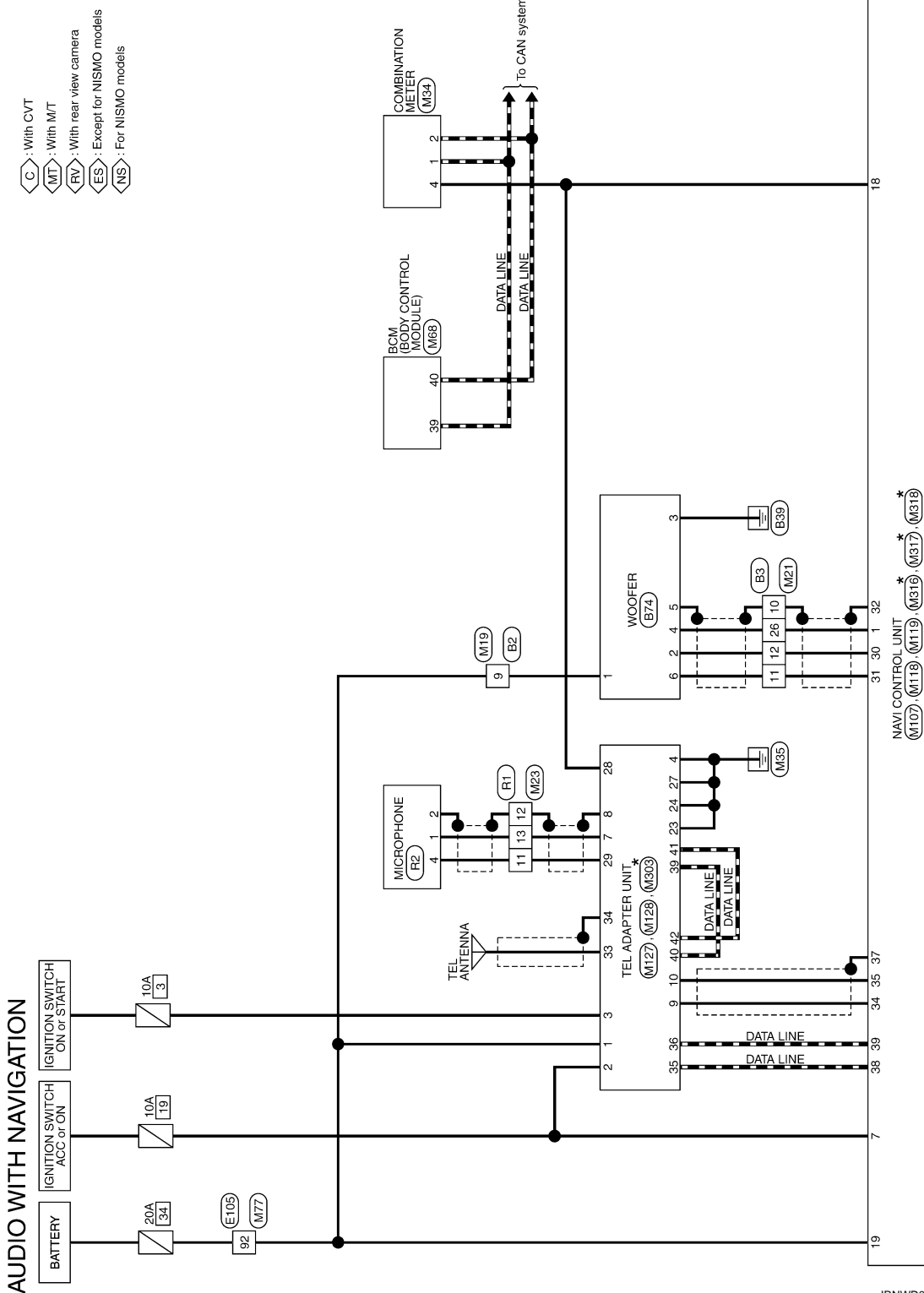
< WIRING DIAGRAM >

WIRING DIAGRAM

AUDIO WITH NAVIGATION

Wiring Diagram

INFOID:000000009752091



- ◻ : With CVT
- ◻ : With M/T
- ◻ : With rear view camera
- ◻ : Except for NISMO models
- ◻ : For NISMO models

*: This connector is not shown in "Harness Layout".

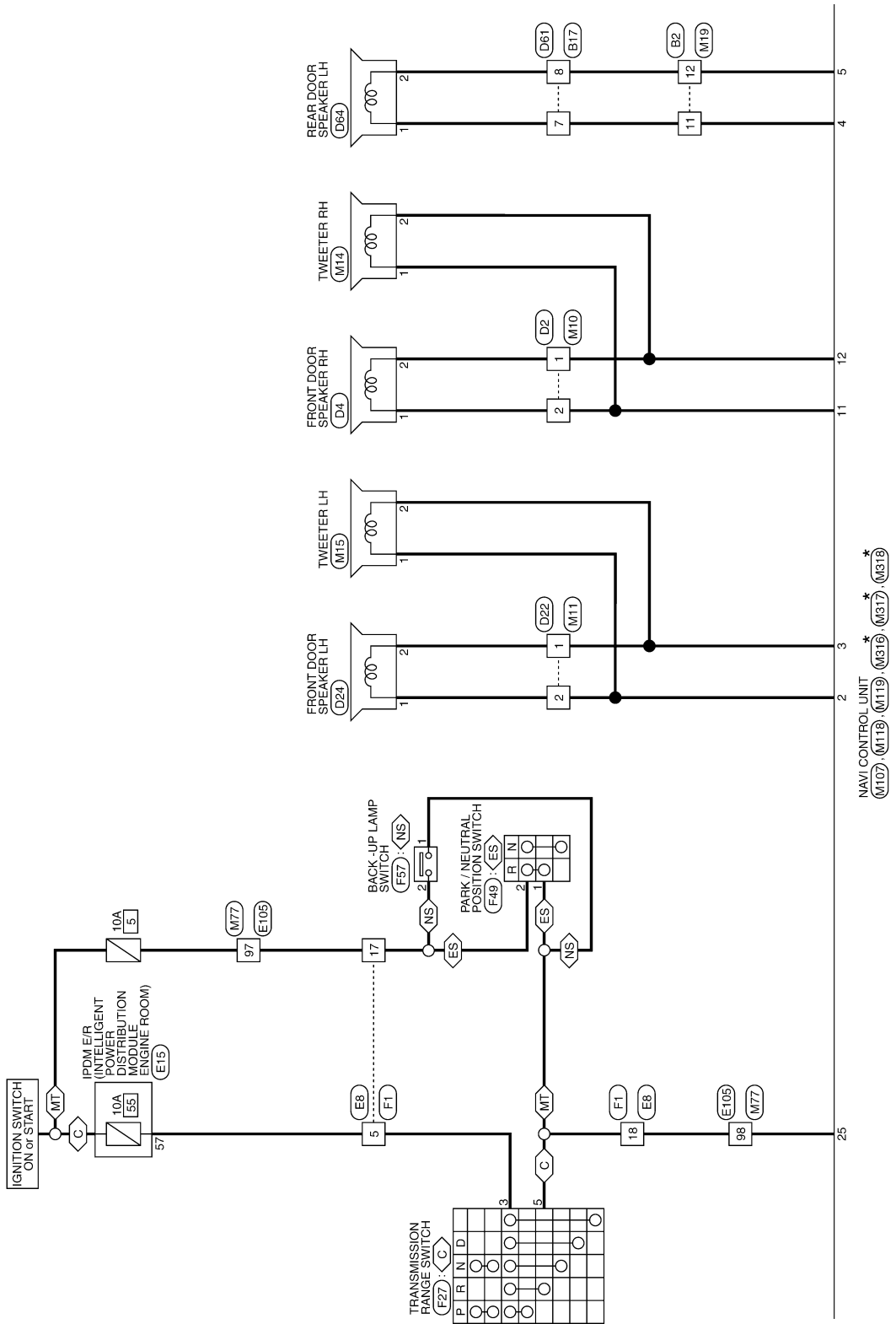
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AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[AUDIO WITH NAVIGATION]



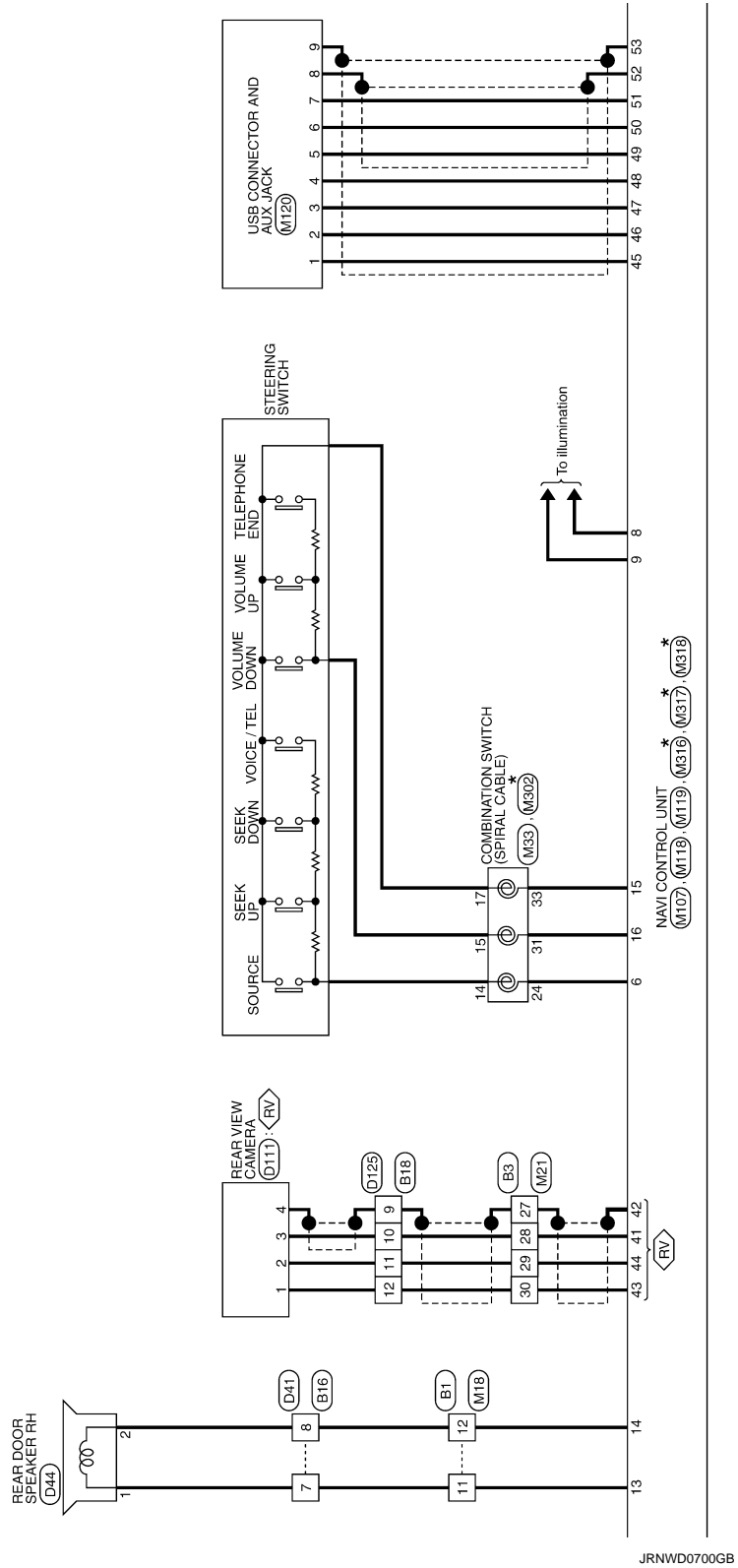
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AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[AUDIO WITH NAVIGATION]

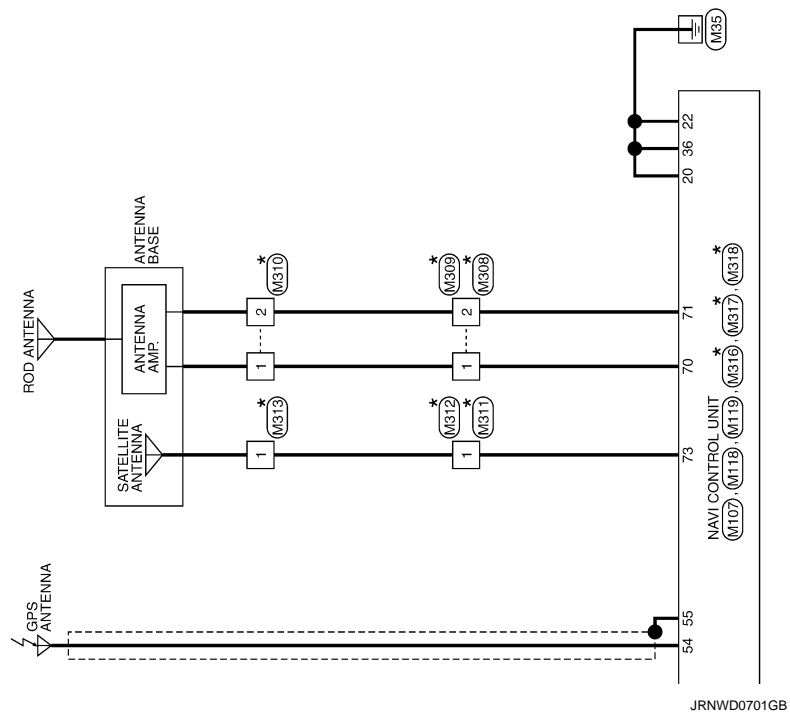


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AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[AUDIO WITH NAVIGATION]



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AUDIO WITH NAVIGATION

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	NS18BMV-CS



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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	
2	GR	
3	SB	
4	Y	
5	W	
6	G	
7	GR	
8	Y	
9	LG	
10	L	
11	W	
12	GR	
13	GR	
14	Y	
15	LG	
16	L	

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	NS18BMV-CS



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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	
2	BR	
3	Y	
4	W	
5	G	
6	Y	
7	V	
8	SB	
9	V	
10	V	

11	W
12	R
13	R
14	P
15	L
16	G

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH32BMV-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	
2	W	
3	R	
4	R	
5	B	
6	Y	
7	W	
8	Y	
9	V	
10	SHIELD	
11	R	
12	G	
13	W	
14	B	
15	L	
16	BR	
17	LG	
18	W	
19	G	
20	Y	
21	SHIELD	
22	W	
23	W	
24	R	
25	G	
26	Y	
27	SHIELD	
28	W	

29	R
30	R
31	R
32	R

Connector No.	B16
Connector Name	WIRE TO WIRE
Connector Type	NS10PFV-CS



4	5	6	7	8	9	10
11	12	13	14	15	16	17

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	
2	L	
3	G	
4	L	
5	G	
6	LG	
7	LG	
8	GR	
9	SHIELD	
10	Y	

Connector No.	B17
Connector Name	WIRE TO WIRE
Connector Type	NS10PFV-CS



4	5	6	7	8	9	10
11	12	13	14	15	16	17

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	
2	Y	
3	G	
4	Y	
5	LG	
6	Y	
7	R	
8	R	
9	R	
10	P	

Connector No.	B18
Connector Name	WIRE TO WIRE
Connector Type	NS12AMV-CS



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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	
2	LG	
3	P	
4	GR	
5	P	
6	Y	
7	L	
8	GR	
9	SHIELD	
10	W	
11	R	
12	B	

Connector No.	B74
Connector Name	WOOFER
Connector Type	NS18BFW-CS



1	2	3	4	5	6
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	BATTERY
2	GR	SOUND SIGNAL WOOFER (+)
3	B	GND
4	Y	WOOFER AMP. ON SIGNAL
5	SHIELD	SHIELD
6	R	SOUND SIGNAL WOOFER (-)

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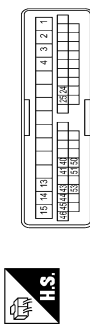
AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[AUDIO WITH NAVIGATION]

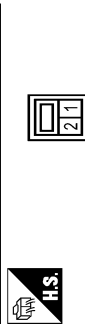
AUDIO WITH NAVIGATION

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



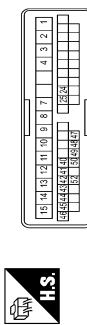
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	
2	G	
3	V	
4	V	
13	W	
14	SB	
15	L	
24	R	
25	G	
40	LG	
41	Y	
43	GR	
44	V	
45	W	
46	BG	
50	B	
53	B	

Connector No.	D4
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS02FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	
2	R	

Connector No.	D22
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



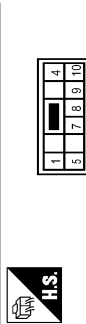
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	
2	W	
3	SB	
4	V	
7	G	
8	BG	
9	LG	
10	BR	
11	Y	
12	SB	
13	L	
14	L	
15	P	
24	G	
25	R	
40	V	
41	P	
42	L	
43	GR	
44	W	
45	Y	
46	BG	
47	G	
48	R	
50	LG	
52	BR	

Connector No.	D24
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS02FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	
2	P	

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS



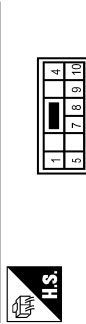
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	
4	L	
5	G	
7	LG	
8	GR	
9	BR	
10	Y	

Connector No.	D44
Connector Name	REAR DOOR SPEAKER RH
Connector Type	NS02FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	
2	GR	

Connector No.	D61
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	
4	L	
5	G	
7	LG	
8	GR	
9	BR	
10	Y	

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AUDIO WITH NAVIGATION

Connector No.	D125
Connector Name	REAR DOOR SPEAKER LH
Connector Type	NS125W-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	
2	GR	

Connector No.	D111
Connector Name	REAR VIEW CAMERA
Connector Type	TH111W-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	CAMERA POWER SUPPLY
2	R	CAMERA GND
3	Y	CAMERA IMAGE SIGNAL
4	SHIELD	

Connector No.	D125
Connector Name	WIRE TO WIRE
Connector Type	NS125W-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	
2	LG	
3	R	
4	GR	
5	P	
6	SB	
7	L	
8	V	
9	SHIELD	
10	Y	
11	R	
12	B	

Connector No.	EE
Connector Name	WIRE TO WIRE
Connector Type	SA438B-RS10-SJZZ



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
2	L	
3	O	
4	LG	
5	G	
6	V	
7	BR	
8	SB	

Terminal No.	Color Of Wire	Signal Name [Specification]
10	R	
11	O	
12	G	
13	O	
14	Y	
15	R	
16	SB	
17	GR	
18	W	
19	L/B	
20	L/W	
21	G	
22	G	
23	SHIELD	
24	P	
25	R	
26	B	
27	B	
28	LG	
29	S9	
30	R	
31	G	
32	Y	
33	BR	
34	W	
37	L	
39	B	
40	P	
42	L	
43	BR	
44	G	
45	BR	
46	Y	
47	SB	
48	LG	

Connector No.	E15
Connector Name	REAR INTELLIGENT POWER DISTRIBUTION MODULE FRAME
Connector Type	NS15EM-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	
2	GR	
3	O	
4	G	
5	G	
6	P	
7	G	
8	G	
9	SB	
10	O	
11	LG	
12	Y	
13	V	
14	SB	
15	LG	
16	L	
17	O	

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH105W-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	
4	Y	
5	GR	
6	P	
9	G	
10	R	

AUDIO WITH NAVIGATION

34	O	-	-
35	GR	-	-
36	B	-	-
37	P	-	-
38	SB	-	-
39	Y	-	-
40	LG	-	-
41	GR	-	-
42	W	-	-
43	SB	-	-
44	Y	-	-
45	LG	-	-
46	R	-	-
47	W	-	-
48	GR	-	-
49	Y	-	-
50	LG	-	-
51	GR	-	-
52	W	-	-
53	SB	-	-
54	Y	-	-
55	O	-	-
56	L	-	-
57	Y	-	-
58	L	-	-
59	Y	-	-
60	LG	-	-
61	GR	-	-
62	R	-	-
63	W	-	-
64	LG	-	-
65	GR	-	-
66	R	-	-
67	W	-	-
68	SB	-	-
69	Y	-	-
70	LG	-	-
71	Y	-	-
72	Y	-	-
73	L	-	-
74	R	-	-
75	R	-	-
76	R	-	-
77	B	-	-
78	B	-	-
79	W	-	-
80	L	-	-
81	Y	-	-
82	Y	-	-
83	Y	-	-
84	LG	-	-
85	GR	-	-
86	O	-	-
87	SHIELD	-	-
88	G	-	-
89	G	-	-
90	BR	-	-
91	BR	-	-
92	BR	-	-
93	P	-	-
94	GR	-	-
95	W	-	-
96	W	-	-
97	V	-	-
98	V	-	-
99	V	-	-
100	O	-	-

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Type	SA&BEP-RS10-SLZ

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	Y	-
3	Y	-
4	BG	-
5	LG	-
6	SB	-
7	G	-
8	R	-
9	R	-
10	BR	-
11	Y	-
12	G	-
13	BG	-
14	L	-
15	BR	-
16	G	-
17	SB	-
18	G	-
19	G	-
20	BR	-
21	G	-
22	BR	-
23	SHIELD	-
24	R	-
25	R	-
26	B	-
27	B	-
28	R	-
29	W	-
30	W	-
31	LG	-
32	LG	-
33	BR	-
34	G	-
37	G	-
39	B	-
40	P	-

41	BR	-
42	Y	-
43	G	-
44	G	-
45	BR	-
46	R	-
47	Y	-
48	GR	-

Connector No.	F27
Connector Name	TRANSMISSION RANGE SWITCH
Connector Type	RC08FG

Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	BR	-
3	LG	-
4	L	-
5	G	-
6	W	-
7	W	-
8	V	-

Connector No.	F49
Connector Name	PARK / NEUTRAL POSITION SWITCH
Connector Type	FEA08FG-LC

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	SB	-
3	BR	-

Connector No.	F57
Connector Name	BACK-UP LAMP SWITCH
Connector Type	RC02FB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	SB	-

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Type	TH40MP-CS15

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	G	-
3	SB	-
4	Y	-
14	GR	-
15	GR	-
24	R	-
25	G	-
40	LG	-
41	Y	-

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AUDIO WITH NAVIGATION

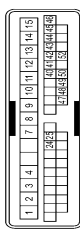
< WIRING DIAGRAM >

[AUDIO WITH NAVIGATION]

AUDIO WITH NAVIGATION

43	V	-
44	V	-
45	LG	-
46	BR	-
50	P	-
51	B	-
53	B	-

Connector No.	M11
Connector Name	TWEETER LH
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	W	-
3	W	-
4	V	-
5	R	-
6	G	-
7	G	-
8	LG	-
9	V	-
10	Y	-
11	W	-
12	GR	-
13	B	-
14	L	-
15	P	-
24	BR	-
25	Y	-
40	V	-
41	P	-
42	GR	-
43	V	-
44	P	-
45	P	-
46	Y	-
47	GR	-
48	L	-
49	R	-
50	LG	-
52	BR	-

Connector No.	M14
Connector Name	TWEETER RH
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	GR	-

Connector No.	M15
Connector Name	TWEETER LH
Connector Type	TK02FBR



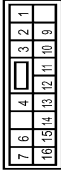
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	GR	-

Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	NS18FW-GS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	V	-
6	V	-
7	SR	-
10	W	-
11	BR	-
12	Y	-
13	V	-
14	Y	-
15	LG	-
16	L	-

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	NS18FW-GS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	BR	-
3	BR	-
4	W	-
5	W	-
6	V	-
7	V	-
8	BR	-
9	V	-
10	V	-
11	LG	-

12	W	-
13	B	-
14	C	-
15	C	-
16	G	-

Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH



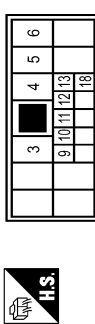
Terminal No.	Color Of Wire	Signal Name [Specification]
2	SHIELD	-
3	B	-
4	W	-
5	R	-
6	Y	-
7	Y	-
8	P	-
9	P	-
10	SHIELD	-
11	BR	-
12	W	-
13	W	-
14	LG	-
15	L	-
16	P	-
17	LG	-
18	W	-
19	G	-
20	R	-
21	SHIELD	-
22	L	-
23	W	-
24	W	-
25	G	-
26	R	-
27	SHIELD	-
28	V	-
29	L	-
30	LG	-

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AUDIO WITH NAVIGATION

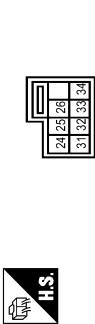
32	W	-
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Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10



Terminal No.	Color Of Wire	Signal Name [Specification]
3	B	-
4	Y	-
5	L	-
6	P	-
9	BR	-
10	P	-
11	R	-
12	SHIELD	-
13	G	-
16	B	-

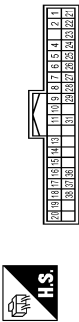
Connector No.	M33
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FQ-TV



Terminal No.	Color Of Wire	Signal Name [Specification]
24	G	-
25	R	-
28	GR	-
31	R	-
32	B	-
33	L	-

33	V	- [Without front fog lamp]
34	G	- [Without front fog lamp]
34	R	- [With front fog lamp]

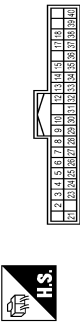
Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
4	V	VEHICLE SPEED SIGNAL (P-PULSE) [With front fog lamp]
4	Y	VEHICLE SPEED SIGNAL (P-PULSE) [Without front fog lamp]
5	G	PADDLE SHIFTER UP SWITCH SIGNAL
6	BR	FUEL LEVEL SENSOR SIGNAL
7	R	AIR BAG SIGNAL
8	P	- [Without front fog lamp]
8	Y	- [With front fog lamp]
9	G	STOP LAMP SW 1
10	SB	PARKING BRAKE SWITCH SIGNAL
11	G	STOP LAMP SW 2
13	B	BRAKE FLUID LEVEL SWITCH SIGNAL
13	GR	ILLUMINATION CONTROL SIGNAL [With front fog lamp]
13	GR	ILLUMINATION CONTROL SIGNAL [Without front fog lamp]
14	R	MANUAL MODE SHIFTER UP SIGNAL [With front fog lamp]
14	V	MANUAL MODE SHIFTER UP SIGNAL [Without front fog lamp]
15	L	ACC POWER SUPPLY
16	O	MANUAL MODE SHIFTER DOWN SIGNAL [With front fog lamp]
16	W	MANUAL MODE SHIFTER DOWN SIGNAL [Without front fog lamp]
17	G	WASHER LEVEL SWITCH SIGNAL [With front fog lamp]
17	W	WASHER LEVEL SWITCH SIGNAL [Without front fog lamp]
18	R	SECURITY SIGNAL
18	GR	AMBIENT SENSOR SIGNAL
20	G	AMBIENT SENSOR SIGNAL [With front fog lamp]
20	R	AMBIENT SENSOR SIGNAL [Without front fog lamp]
21	B	GROUND
22	B	GROUND
23	B	GROUND
24	L	FUEL LEVEL SENSOR GROUND
25	B	VDC GROUND

28	V	PADDLE SHIFTER DOWN SWITCH SIGNAL
28	LG	START SUPPLY
29	LS	START SIGNAL
29	LG	PASSENGER SIDE AIR BAG INFLATOR SIGNAL [With front fog lamp]
29	V	PASSENGER SIDE AIR BAG INFLATOR SIGNAL [Without front fog lamp]
31	P	A/C AUTO AMP CONNECTION RECOGNITION SIGNAL
36	LG	MANUAL MODE SIGNAL [With front fog lamp]
36	Y	MANUAL MODE SIGNAL [Without front fog lamp]
37	G	NON-MANUAL MODE SIGNAL [With front fog lamp]
37	P	NON-MANUAL MODE SIGNAL [Without front fog lamp]
38	P	ALTERNATOR SIGNAL

Connector No.	M35
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	Y	COMBI SW INPUT 3
5	CG	COMBI SW INPUT 2
6	W	COMBI SW INPUT 1
7	L	KEY CYL UNLOCK SW
8	R	KEY CYL LOCK SW
9	R	STOP LAMP SW 1
10	W	STOP LAMP SW 2
12	GR	DOOR LK & UNLK SW LOCK [Without front fog lamp]
13	Y	DOOR LK & UNLK SW LOCK [With front fog lamp]
14	P	DOOR LK & UNLK SW UNLOCK
14	P	OPTICAL SENS
15	W	RR DEFOGGER SW
17	R	OPTICAL SENS PWT SPLY
18	P	RECEIVER SW
18	SB	RECEIVER SW
23	B	SECURITY INJ LAMP CONT
24	SB	DOUBLE UNK
25	LG	NATS ANT AMP
26	B	THERMO AMP
27	W	A/C SW [With front fog lamp]
27	Y	A/C SW [Without front fog lamp]

28	LG	BLOWER FAN SW [Without front fog lamp]
28	O	BLOWER FAN SW [With front fog lamp]
29	L	HAZARD SW [Without front fog lamp]
29	SB	HAZARD SW [With front fog lamp]
30	L	BK DOOR OPENER SW
31	GR	DR DOOR UNLK SENS
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	CG	COMBI SW OUTPUT 3
35	R	COMBI SW OUTPUT 2
36	P	COMBI SW OUTPUT 1
37	G	DETENT SW
38	SB	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

Connector No.	M17
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V	-
5	W	-
6	P	-
9	R	-
10	R	-
34	LG	-
35	SB	-
36	B	-
37	P	-
52	R	-
53	L	-
54	SB	-
55	B	-
58	LG	-
59	G	-
64	G	-
65	GR	-
66	Y	-

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AUDIO WITH NAVIGATION

66	V	-
67	R	-
68	R	-
70	V	-
71	R	-
72	GR	-
73	G	-
76	W	-
78	LG	-
79	V	-
80	LG	-
83	P	-
84	G	-
85	BR	-
86	LG	-
89	SHIELD	-
90	SHIELD	-
92	BR	-
95	R	-
96	L	-
97	GR	-
98	G	-
99	W	-
100	LG	-

Connector No.	M107
Connector Name	NAVI CONTROL UNIT
Connector Type	TH35PW-C5Z



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	WOOFER AMP ON SIGNAL
2	W	SOUND SIGNAL FRONT SPEAKER LH (+)
3	GR	SOUND SIGNAL FRONT SPEAKER LH (-)
4	LG	SOUND SIGNAL REAR SPEAKER LH (+)
5	W	SOUND SIGNAL REAR SPEAKER LH (-)
6	G	STRG SW A
7	L	ACC
8	GR	ILLUMINATION CONTROL SIGNAL (-)
9	V	ILLUMINATION CONTROL SIGNAL (+)
11	G	SOUND SIGNAL FRONT SPEAKER RH (+)

12	R	SOUND SIGNAL FRONT SPEAKER RH (+)
13	BR	SOUND SIGNAL REAR SPEAKER RH (-)
14	Y	SOUND SIGNAL REAR SPEAKER RH (+)
16	R	STRG SW GND
18	Y	VEHICLE SPEED SIGNAL (8-PULSE)
19	BR	BATTERY GND
20	B	GND

Connector No.	M118
Connector Name	NAVI CONTROL UNIT
Connector Type	TH24PW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
22	B	EQ2
23	G	REVERSE SIGNAL
30	W	SOUND SIGNAL WOOFER (+)
31	SHIELD	SOUND SIGNAL WOOFER (-)
32	SHIELD	SOUND SIGNAL (+)
34	GR	SOUND SIGNAL (-) [Without front fog lamp]
35	GR	SOUND SIGNAL (-) [With front fog lamp]
36	B	TEL_GND
37	SHIELD	SHIELD
38	G	AV COMM (RH) [With front fog lamp]
39	SB	AV COMM (HL) [Without front fog lamp]
39	LG	AV COMM (L) [Without front fog lamp]
39	R	AV COMM (L) [With front fog lamp]
41	SHIELD	CAMERA IMAGE SIGNAL
42	SHIELD	SHIELD
43	LG	CAMERA POWER SUPPLY
44	L	CAMERA GND

Connector No.	M119
Connector Name	NAVI CONTROL UNIT
Connector Type	GT17-8P



Terminal No.	Color Of Wire	Signal Name [Specification]
46	W	USB GND
47	W	USB D+ SIGNAL
47	R	USB D- SIGNAL
48	L	V BUS SIGNAL
49	R	AUX SOUND SIGNAL LH (+)
50	W	AUX SOUND SIGNAL RH (+)
51	Y	AUX SOUND SIGNAL GND
52	SHIELD	SHIELD
53	SHIELD	SHIELD

Connector No.	M120
Connector Name	USB CONNECTOR AND AUX JACK
Connector Type	GT17-8P



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-
3	G	-
4	R	-
5	R	-
6	W	-
7	Y	-
8	SHIELD	-
9	SHIELD	-

Connector No.	M127
Connector Name	TEL ADAPTER UNIT
Connector Type	TH35PW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR	BATTERY
3	SB	ACC
3	SB	IGNITION
4	B	GND
7	G	MICROPHONE SIGNAL
8	SHIELD	MICROPHONE SIGNAL GND
9	BR	SOUND SIGNAL (+)
10	GR	SOUND SIGNAL (-)
11	Y	TEL ON SIGNAL
12	G	STRG SW A
13	R	STRG SW B
14	V	STRG SW GND
17	W	STRG SW A
18	LG	STRG SW B
19	B	STRG SW GND
21	B	CONTROL SIGNAL
23	B	CONTROL SIGNAL
24	B	CONTROL SIGNAL
27	B	CONTROL SIGNAL
28	Y	VEHICLE SPEED (8-PULSE)
29	R	MICROPHONE VCC

AUDIO WITH NAVIGATION

Connector No.	M328
Connector Name	TEL ADAPTER UNIT
Connector Type	TRD8FW-NH



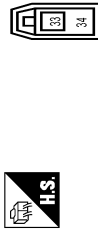
Terminal No.	Color Of Wire	Signal Name [Specification]
35	SB	AV COMM (H)
36	SB	AV COMM (L)
39	SB	AV COMM (H)
40	SB	AV COMM (H)
41	LG	AV COMM (L)
42	LG	AV COMM (L)

Connector No.	M302
Connector Name	COMBINATION SWITCH (SERIAL CABLE)
Connector Type	TRD8FY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	R	-
14	W	-
15	L	-
16	B	-
17	BR	-
18	G	-
19	P	-
20	Y	-

Connector No.	M303
Connector Name	TEL ADAPTER UNIT
Connector Type	GT16C-1S-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
33	-	TEL ANTENNA SIGNAL
34	-	SHIELD

Connector No.	M308
Connector Name	WIRE TO WIRE
Connector Type	GT13SS-1, 1S-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-

Connector No.	M309
Connector Name	WIRE TO WIRE
Connector Type	GT13SSN-1, 1PP-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-

Connector No.	M310
Connector Name	ANTENNA BASE
Connector Type	GT13SSN-1, 1PP-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA AMP. ON SIGNAL
2	-	AM-FM MAIN

Connector No.	M311
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-

Connector No.	M312
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-

Connector No.	M313
Connector Name	ANTENNA BASE
Connector Type	GT13SSN-1, 1PP-HU



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AUDIO WITH NAVIGATION

Terminal No.	Color Of Wire	Signal Name [Specification]
1	--	--

Connector No.	M316
Connector Name	NAVI CONTROL UNIT
Connector Type	GT13SH-2 1S-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
70	--	ANTENNA AMP. ON SIGNAL
71	--	ANTENNA SIGNAL

Connector No.	M317
Connector Name	NAVI CONTROL UNIT
Connector Type	FAKRA connector female Cds C



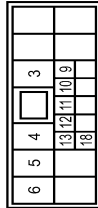
Terminal No.	Color Of Wire	Signal Name [Specification]
54	--	GPS ANTENNA SIGNAL
55	--	SHIELD

Connector No.	M318
Connector Name	NAVI CONTROL UNIT
Connector Type	FAKRA-JACK



Terminal No.	Color Of Wire	Signal Name [Specification]
73	--	SATELLITE RADIO ANTENNA SIGNAL

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	NH1DFW-CS10



Terminal No.	Color Of Wire	Signal Name [Specification]
3	B	--
4	W	--
5	L/W	--
6	R/Y	--
9	V	--
10	R	--
11	R	--
12	SHIELD	--
13	L	--
18	B	--

Connector No.	P2
Connector Name	MICROPHONE
Connector Type	TK94FW



Terminal No.	Color Of Wire	Signal Name [Specification]
2	SHIELD	MICROPHONE SIGNAL
4	R	MICROPHONE GND

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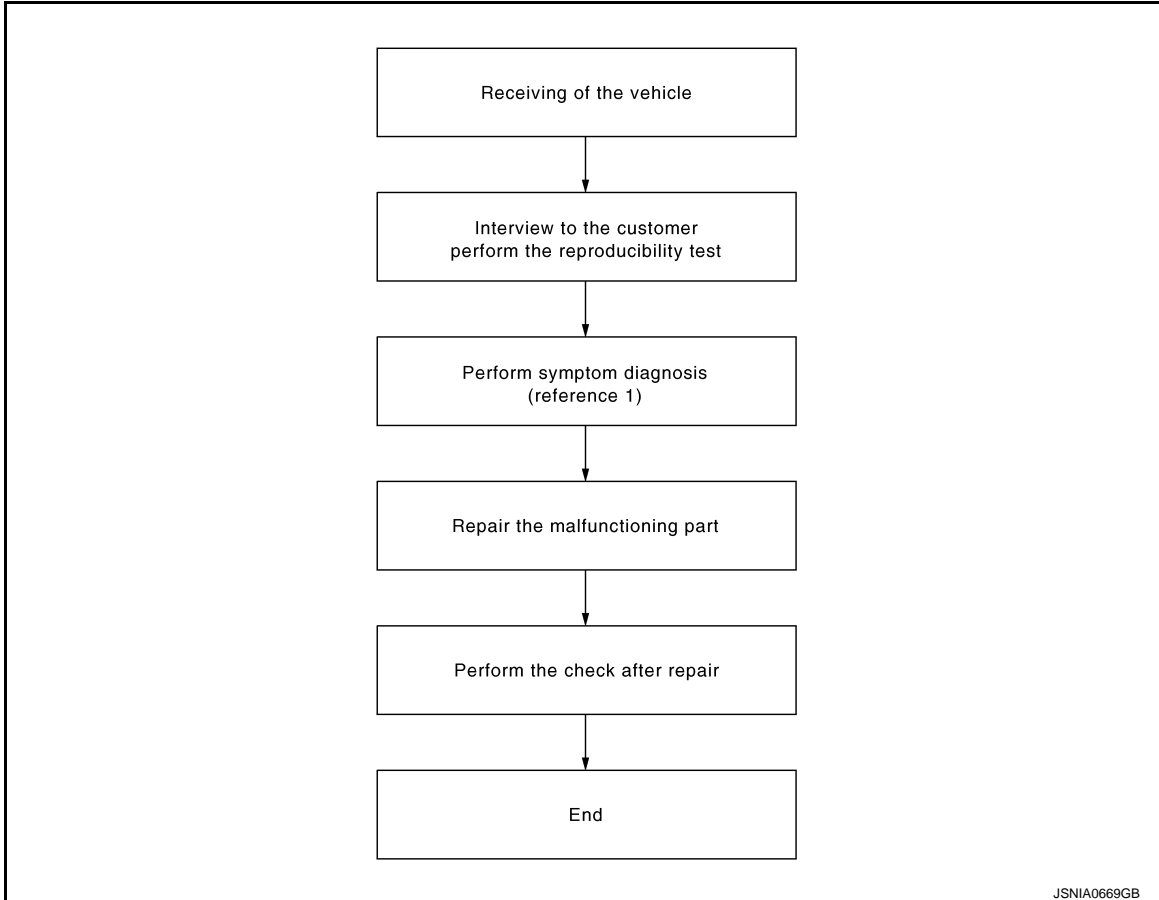
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009752092

OVERALL SEQUENCE



Reference 1...Refer to [AV-129, "Symptom Table"](#) (navigation system) or [AV-132, "Symptom Table"](#) (hands-free phone system).

DETAILED FLOW

1. CHECK SYMPTOM

Check the malfunction symptoms by performing the following items.

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

>> GO TO 2.

2. PERFORM DIAGNOSIS BY SYMPTOM

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-129, "Symptom Table"](#) (navigation system) or [AV-132, "Symptom Table"](#) (hands-free phone system).

>> GO TO 3.

3. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the malfunctioning parts.

>> GO TO 4.

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[AUDIO WITH NAVIGATION]

4. FINAL CHECK

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

Is there any symptom?

YES >> GO TO 2.

NO >> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

NAVI CONTROL UNIT

NAVI CONTROL UNIT : Diagnosis Procedure

INFOID:000000009752093

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
Ignition switch ACC or ON	19

Is inspection result 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 NAVI control unit harness connector and ground.

Signal name	NAVI control unit	Probe		Condition	Reference value
		Terminal			
	Connector	(+)	(-)	Ignition switch	
Battery power supply	M107	19	20	OFF	Battery voltage
ACC power supply		7		ACC	

Is inspection result OK?

YES >> GO TO 3.

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

3.CHECK GROUND CIRCUIT

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

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	M107	20	OFF	Existed

Is inspection result OK?

YES >> INSPECTION END

NO >> Repair harness or connector.

TEL ADAPTER UNIT

TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000009752094

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.

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

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	TEL adapter unit	Probe		Condition	Standard	Reference value
		Terminal				
	Connector	(+)	(-)	Ignition switch		
Battery power supply	M127	1	4	OFF	9.0 - 16.0 V	Battery voltage
ACC power supply		2		ACC		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between TEL adapter unit and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	M127	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:000000009752095

TEL adapter unit supplies power to microphone. The microphone transmits the sound voice to the TEL adapter unit.

Diagnosis Procedure

INFOID:000000009752096

1. CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and microphone connector.
3. Check continuity between TEL adapter unit harness connector and microphone harness connector.

TEL adapter unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M127	7	R2	1	Existed
	8		2	
	29		4	

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
M127	7		Not existed
	29		

Is inspection result OK?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VOLTAGE MICROPHONE VCC

1. Connect TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector and ground.

Probe				Standard	Reference value (Approx.)
(+)		(-)			
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
M127	29	M127	8	4.7 - 5.3 V	5.0 V

Is inspection result OK?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-146. "Removal and Installation"](#).

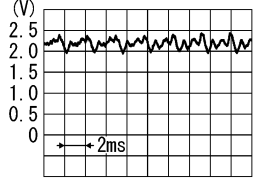
3. CHECK MICROPHONE SIGNAL

1. Turn ignition switch OFF.
2. Connect microphone connector.
3. Turn ignition switch ON.
4. Check signal between TEL adapter unit harness connector.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Probe				Condition	Standard	Reference value
(+)		(-)				
TEL adapter unit						
Connec-tor	Terminal	Connec-tor	Terminal			
M127	7	M127	8	Give a voice.	Wave form synchronized with voice is input.	 <p>(V) 2.5 2.0 1.5 1.0 0.5 0</p> <p>← 2ms</p> <p>PKIB5037J</p>

Is inspection result OK?

- YES >> Replace TEL adapter unit. Refer to [AV-146, "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-147, "Removal and Installation"](#).

CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

CONTROL SIGNAL CIRCUIT

Description

INFOID:000000009752097

TEL adapter unit identifies the vehicle model according to the control signal and performs the control.

Diagnosis Procedure

INFOID:000000009752098

1. CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Standard	Continuity
Connector	Terminals			
M127	23	Ground	3.1 V or less	Existed
	24			
	27			

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-146, "Removal and Installation"](#).
NO >> Repair harness or connector.

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CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:000000009752099

- The NAVI control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the NAVI control unit when power is supplied from the NAVI control unit.

Diagnosis Procedure

INFOID:000000009752100

1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

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

NAVI control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M118	43	D111	1	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M118	43		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VOLTAGE CAMERA POWER SUPPLY

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

Probe				Condition	Reference value (Approx.)
(+)		(-)			
NAVI control unit					
Connector	Terminal	Connector	Terminal		
M118	43	M107	20	Shift position is in "R".	6.0 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace NAVI control unit. Refer to [AV-139, "Removal and Installation"](#).

3. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

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

NAVI control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M118	41	D111	3	Existed

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

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

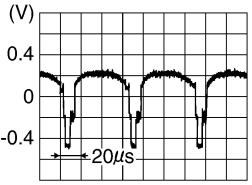
NAVI control unit		Ground	Continuity
Connector	Terminal		
M118	41		Not existed

Is inspection result normal?

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

4. CHECK CAMERA IMAGE SIGNAL

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

Probe				Condition	Reference value
(+)		(+)			
NAVI control unit					
Connector	Terminal	Connector	Terminal		
M118	41	M107	20	At rear view camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB0827E</p>

Is inspection result normal?

- YES >> Replace NAVI control unit. Refer to [AV-139, "Removal and Installation"](#).
- NO >> Replace rear view camera. Refer to [AV-149, "Removal and Installation"](#).

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WOOFER AMP. ON SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

WOOFER AMP. ON SIGNAL CIRCUIT

Description

INFOID:000000009752101

When the navigation system is turned on, a voltage signal is supplied from the NAVI control unit to the woofer. When this signal is received, the woofer will turn on.

Diagnosis Procedure

INFOID:000000009752102

1. CHECK CONTINUITY WOOFER AMP. ON SIGNAL CIRCUIT

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

NAVI control unit		Woofer		Continuity
Connector	Terminal	Connector	Terminal	
M107	1	B74	4	Existed

4. Check continuity between woofer harness connector and ground.

Woofer		Ground	Continuity
Connector	Terminal		
B74	4		Not existed

Is inspection result OK?

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

2. CHECK VOLTAGE WOOFER AMP. ON SIGNAL

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

Probe				Reference value (Approx.)
(+)		(-)		
NAVI control unit				
Connector	Terminal	Connector	Terminal	
M107	1	M107	20	12.0 V

Is inspection result OK?

- YES >> Replace woofer. Refer to [AV-143, "Removal and Installation"](#).
 NO >> Replace NAVI control unit. Refer to [AV-139, "Removal and Installation"](#).

STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:000000009752103

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

INFOID:000000009752104

1. CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect NAVI control unit connector and spiral cable connector.
2. Check continuity between NAVI control unit harness connector and spiral cable harness connector.

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M107	6	M33	24	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M107	6		Not existed

Is the inspection result normal?

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

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace spiral cable. Refer to [SR-14, "Exploded View"](#).

3. CHECK NAVI CONTROL UNIT VOLTAGE

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

Probe				Reference value (Approx.)
(+)		(-)		
NAVI control unit				
Connector	Terminal	Connector	Terminal	
M107	6	M107	15	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Replace NAVI control unit. Refer to [AV-139, "Removal and Installation"](#).

4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-124, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace steering switch. Refer to [AV-148, "Exploded View"](#).

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STEERING SWITCH SIGNAL A CIRCUIT

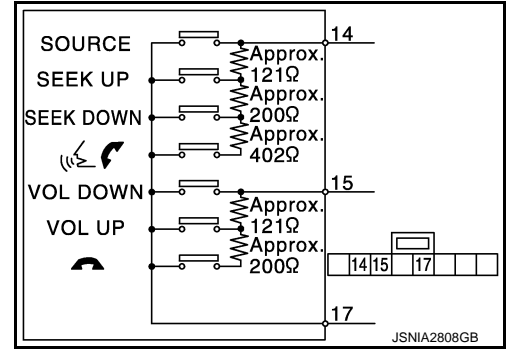
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[AUDIO WITH NAVIGATION]

INFOID:00000009752105

Component Inspection

Measure the resistance between the steering switch connector.



Standard

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

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:000000009752106

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

INFOID:000000009752107

1. CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect NAVI control unit connector and spiral cable connector.
2. Check continuity between NAVI control unit harness connector and spiral cable harness connector.

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M107	16	M33	31	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M107	16		Not existed

Is the inspection result normal?

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

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace spiral cable. Refer to [SR-14, "Exploded View"](#).

3. CHECK NAVI CONTROL UNIT VOLTAGE

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

Probe				Reference value (Approx.)
(+)		(-)		
NAVI control unit				
Connector	Terminal	Connector	Terminal	
M107	16	M107	15	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace NAVI control unit. Refer to [AV-139, "Removal and Installation"](#).

4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-126, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace steering switch. Refer to [AV-148, "Exploded View"](#).

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STEERING SWITCH SIGNAL B CIRCUIT

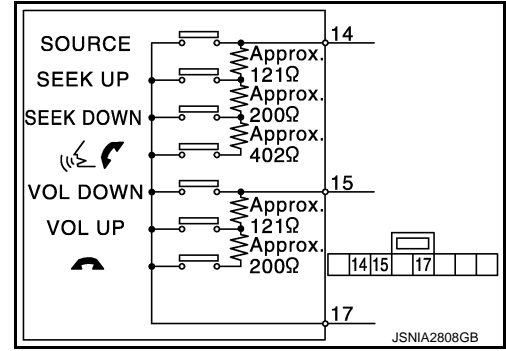
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[AUDIO WITH NAVIGATION]

INFOID:00000009752108

Component Inspection

Measure the resistance between the steering switch connector.



Standard

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

STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

STEERING SWITCH GROUND CIRCUIT

Description

INFOID:000000009752109

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

INFOID:000000009752110

1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect NAVI control unit connector and spiral cable connector.
2. Check continuity between NAVI control unit harness connector and spiral cable harness connector.

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M107	15	M33	33	Existed

Is the inspection result normal?

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

2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace spiral cable. Refer to [SR-14, "Exploded View"](#).

3. CHECK GROUND CIRCUIT

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M107	15		Existed

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Replace NAVI control unit. Refer to [AV-139, "Removal and Installation"](#).

4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-127, "Component Inspection"](#).

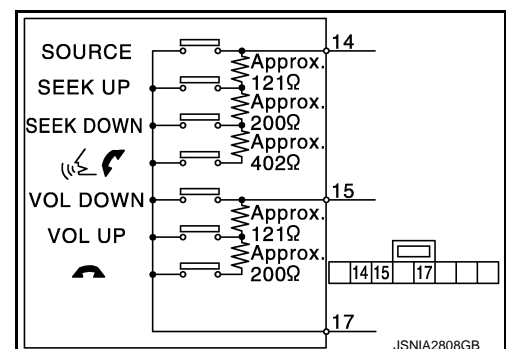
Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace steering switch. Refer to [AV-148, "Exploded View"](#).

Component Inspection

INFOID:000000009752111

Measure the resistance between the steering switch connector.





STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Standard

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

SYMPTOM DIAGNOSIS

NAVIGATION SYSTEM

Symptom Table

INFOID:000000009752112

RELATED TO NAVIGATION

NOTE:

Combined part of AV switch and NAVI control unit.

Symptoms	Check items	Probable malfunction location / Action to take
Display does not turn ON.	All switches cannot be operated.	NAVI control unit power supply and ground circuit. Refer to AV-115. "NAVI CONTROL UNIT : Diagnosis Procedure" .
	All switches can be operated.	NAVI control unit
All switches cannot be operated.	Display does not turn ON.	NAVI control unit power supply and ground circuit. Refer to AV-115. "NAVI CONTROL UNIT : Diagnosis Procedure" .
	Display turn ON.	NAVI control unit
Only specified switch cannot be operated.	–	NAVI control unit
Map screen is not displayed. (RGB image other than map is normal.)	• Check that the map SD-card is in the SD-card slot. • Check "SD Card Access" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	Map SD-card
	"OK" is displayed for "SD Card Access".	• NAVI control unit • Map SD-card
Voice guidance is not heard.	Audio sound is normal.	NAVI control unit
Display does not dim.	Check "Illumination Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	"Illumination Signal" reaches 100% when the lighting switch is ON.
		"Illumination Signal" does not reach 100% when the lighting switch is ON.
Vehicle icon does not move.	Check "Speed Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	A value of "Speed Signal" changes according to vehicle speeds.
		A value of "Speed Signal" does not change according to vehicle speeds.
Map matching is not complete GPS icon is not displayed	Check "GPS Antenna" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"Connected" is displayed for "GPS Antenna".
		"Connected" is not displayed for "GPS Antenna".
Traffic information (XM Traffic) is not received.	Check "XM Antenna" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"Detected" is displayed for "XM Antenna".
		"Detected" is not displayed for "XM Antenna".

RELATED TO AUDIO

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NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptoms	Check items	Probable malfunction location	
No sound comes out or the level of the sound is low.	No sound from all speakers.	NAVI control unit power supply and ground circuits malfunction. Refer to AV-115. "NAVI CONTROL UNIT : Diagnosis Procedure" .	
	Sound is not heard from woofer.	<ul style="list-style-type: none"> • Woofer power supply and ground circuit malfunction. • Sound signal (woofer) circuit malfunction. • Woofer amp. ON signal circuit malfunction. 	
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	<ul style="list-style-type: none"> • Poor connector connection of speaker. • Sound signal circuit malfunction between NAVI control unit and speaker. • Malfunction in speaker. • Malfunction in NAVI control unit. 	
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in NAVI control unit.	
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	<ul style="list-style-type: none"> • Poor connector connection of speaker. • Sound signal circuit malfunction between NAVI control unit and speaker. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in NAVI control unit. 	
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> • Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-144. "Exploded View". 	
Radio is not received or poor reception.	<ul style="list-style-type: none"> • Other audio sounds are normal. • Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises). 	<ul style="list-style-type: none"> • Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-144. "Exploded View". 	
Speed sensitive volume system does not work.	Check "Speed Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	A value of "Speed Signal" changes according to vehicle speeds.	Malfunction in NAVI control unit.
		A value of "Speed Signal" does not change according to vehicle speeds.	Vehicle speed signal circuit
Traffic information (XM Traffic) is not received.	Check "XM Antenna" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"Detected" is displayed for "XM Antenna".	Malfunction in NAVI control unit.
		"Detected" is not displayed for "XM Antenna".	<ul style="list-style-type: none"> • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-144. "Exploded View".

RELATED TO USB

NOTE:

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

Symptoms	Check items	Probable malfunction location / Action to take
iPod® or USB memory can not be recognized.	With iPod® or USB memory Connected, check "USB Device" in "SERVICE STATUS", "SERVICE MENU".	<ul style="list-style-type: none"> • USB and AUX harness • USB connector and AUX jack • NAVI control unit
		<ul style="list-style-type: none"> • "Removed" is displayed for "USB Device". • USB and AUX harness • USB connector and AUX jack

NAVIGATION SYSTEM

[AUDIO WITH NAVIGATION]

< SYMPTOM DIAGNOSIS >

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




RELATED TO AUXILIARY INPUT

NOTE:

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

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	<ul style="list-style-type: none"> • USB and AUX harness • USB connector and AUX jack

RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. Refer to AV-127, "Diagnosis Procedure" .
Only specified switch cannot be operated.	Steering switch
"  ", "  ", "SEEK UP", "SEEK DOWN" and "SOURCE" switches are not operated.	Steering switch signal A circuit. Refer to AV-123, "Diagnosis Procedure" .
"  ", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. Refer to AV-125, "Diagnosis Procedure" .
The steering switch operates improperly. (The above phenomena excluded.)	<ul style="list-style-type: none"> • EQ1 circuit • EQ3 circuit

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location / Action to take	
Camera image is not shown.	The guide line display is normal.	<ul style="list-style-type: none"> • Rear view camera image signal circuit • Rear view camera power supply and ground circuits Refer to AV-120, "Diagnosis Procedure" .	
The screen is not switched to camera image.	Check "Direction Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	"Reverse" is displayed for "Direction Signal" when the shift lever is in R.	NAVI control unit
		"Reverse" is not displayed for "Direction Signal" when the shift lever is in R.	Reverse signal circuit
The guide line display is malfunctioning.	—	EQ1 circuit	

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HANDS-FREE PHONE SYMPTOMS

Symptom Table

INFOID:000000009752113

RELATED TO HANDS-FREE PHONE

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

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.

NOTE:
The customer's phone may be required, depending upon their concern.
3. Write down the customer's phone brand, model, and service provider.

NOTE:
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
4. Go to "www.nissanusa.com/bluetooth/".
 - a. Using the website's search engine, find out if the customer's phone is on the approved list.
 - b. If the customer's phone is NOT on the approved list:

Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
 - c. If the feature related to the customer's concern shows as "N" (not compatible):

Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features" list.
 - d. If the feature related to the customer's concern shows as "Y" (compatible):

Perform diagnosis as per the following table.

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	—	<ul style="list-style-type: none"> • TEL adapter unit power supply and ground circuit. Refer to AV-115, "TEL ADAPTER UNIT : Diagnosis Procedure". • Control signal circuit Refer to AV-119, "Diagnosis Procedure". • AV communication circuit between NAVI control unit and TEL adapter unit.
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to AV-129, "Symptom Table" .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to AV-117, "Diagnosis Procedure" .



RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. Refer to AV-127, "Diagnosis Procedure" .
Only specified switch cannot be operated.	Replace steering switch. Refer to AV-148, "Exploded View" .

HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptoms	Possible malfunction location / Action to take
 "SEEK UP", "SEEK DOWN" and "SOURCE" switches are not operated.	Steering switch signal A circuit. Refer to AV-123, "Diagnosis Procedure" .
 "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. Refer to AV-125, "Diagnosis Procedure" .
The steering switch operates improperly. (The above phenomena excluded.)	<ul style="list-style-type: none"> • EQ1 circuit • EQ3 circuit

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AV

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

NORMAL OPERATING CONDITION

Description

INFOID:000000009752114

NOTE:

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

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The display is turned off.	Press "☀/☾" to turn on the display.
No voice guidance is available or the volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the voice guidance volume level.
No map is displayed on the screen.	The map SD-card is not inserted.	Insert the map SD-card correctly.
	A screen other than map screen is displayed.	Press "MAP".
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:

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

RELATED TO AUDIO

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

NOTE:

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

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

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

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

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

NOTE:

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

MAP SD-CARD

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

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

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

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

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

RELATED TO VEHICLE ICON

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

RELATED TO VOICE GUIDANCE

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

RELATED TO TRAFFIC INFORMATION

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptom	Possible cause	Possible solution	A
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.	A
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available	B
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.	C
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.	D
With the automatic detour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fastest route taking into consideration such things as traffic jams.	E
The route does not avoid road section with traffic information stating it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.	F
Traffic information displayed differs from information from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regulations. Always observe safe driving practices and follow all traffic regulations.	G

RELATED TO TELEPHONE

Symptoms	Cause and Counter measure	H
System fails to interpret the command correctly.	1. Ensure that the command format is valid.	H
	2. Ensure that the command is spoken after the tone.	I
	3. Speak clearly without pausing between words and at a level appropriate to the ambient noise level in the vehicle.	J
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). NOTE: If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.	K
	5. If more than one command was said at a time, try saying the commands separately.	L
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. Refer to AV-92, "On Board Diagnosis Function" .	M
The system consistently selects the wrong entry from the phone book.	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.	M
	2. Replace one of the names being confused with a new name.	M

RELATED TO HANDS-FREE PHONE

AV

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AUDIO WITH NAVIGATION]

Symptom	Cause and Counter measure
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Some Bluetooth® enabled cellular phones may not be recognized by the in-vehicle phone module. Refer to “RELATED TO HANDS-FREE PHONE (Check Compatibility)” of HANDS-FREE PHONE SYMPTOMS.
Cannot use hands-free phone	<p>Customer will not be able to use a hands-free phone under the following conditions.</p> <ul style="list-style-type: none"> • The vehicle is outside of the telephone service area. • The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. • The cellular phone is locked to prevent it from being dialed. <p>NOTE:</p> <p>While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones.</p>
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

REMOVAL AND INSTALLATION

NAVI CONTROL UNIT

Removal and Installation

INFOID:000000009752115

REMOVAL

1. Remove cluster lid C. Refer to [IP-12. "Exploded View"](#).
2. Remove NAVI control unit screws.
3. Disconnect NAVI control unit connectors to remove NAVI control unit and brackets as a single unit.
4. Remove brackets screws to remove NAVI control unit.

INSTALLATION

Install in the reverse order of removal.

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AV

FRONT DOOR SPEAKER

Removal and Installation

INFOID:000000009752116

REMOVAL

1. Remove front door finisher. Refer to [INT-13, "Exploded View"](#).
2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door speaker.

INSTALLATION

Install in the reverse order of removal.

TWEETER

Removal and Installation

INFOID:000000009752117

REMOVAL

1. Remove front pillar garnish. Refer to [INT-18. "Exploded View"](#).
2. Remove tweeter clip, then disconnect tweeter connector and remove tweeter.

INSTALLATION

Install in the reverse order of removal.

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AV

REAR DOOR SPEAKER

Removal and Installation

INFOID:000000009752118

REMOVAL

1. Remove rear door finisher. Refer to [INT-16. "Exploded View"](#).
2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

INSTALLATION

Install in the reverse order of removal.

WOOFER

Removal and Installation

INFOID:000000009752119

REMOVAL

1. Remove luggage side lower finisher LH. Refer to [INT-33, "Exploded View"](#).
2. Disconnect woofer connector.
3. Remove woofer screws to remove woofer.

INSTALLATION

Install in the reverse order of removal.

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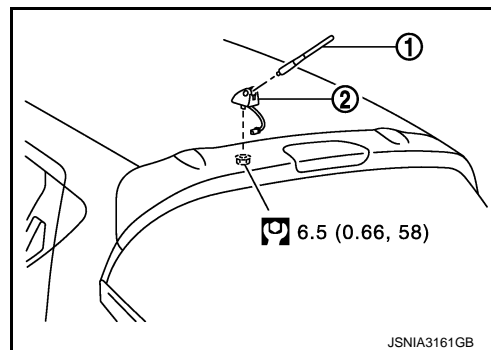
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ANTENNA BASE

Exploded View

INFOID:000000009752120



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

Removal and Installation

INFOID:000000009752121

REMOVAL

1. Remove headlining. Refer to [INT-27, "NORMAL ROOF : Exploded View"](#) (normal roof) or [INT-30, "SUN-ROOF : Exploded View"](#) (sunroof).
2. Disconnect antenna feeder connector.
3. Remove nut to remove antenna base.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

GPS ANTENNA

Removal and Installation

INFOID:000000009752122

REMOVAL

1. Remove instrument panel. Refer to [IP-12. "Exploded View"](#).
2. Remove antenna feeder clip, then remove GPS antenna screw and remove GPS antenna.

INSTALLATION

Install in the reverse order of removal.

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TEL ADAPTER UNIT

Removal and Installation

INFOID:000000009752123

REMOVAL

1. Remove glove box assembly. Refer to [IP-12. "Exploded View"](#).
2. Remove TEL adapter unit screws.
3. Disconnect TEL adapter unit connectors to remove TEL adapter unit and bracket as a single unit.
4. Remove bracket screws to remove TEL adapter unit.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

Removal and Installation

INFOID:000000009752124

REMOVAL

1. Remove headlining. Refer to [INT-27, "NORMAL ROOF : Exploded View"](#) (normal roof) or [INT-30, "SUN-ROOF : Exploded View"](#) (sunroof).
2. Remove microphone connector and pawl to remove microphone.

INSTALLATION

Install in the reverse order of removal.

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< REMOVAL AND INSTALLATION >

STEERING SWITCH

Exploded View

INFOID:000000009752125

Refer to [SR-11, "Exploded View"](#).

Removal and Installation

INFOID:000000009752126

REMOVAL

Refer to [SR-11, "Removal and Installation"](#).

INSTALLATION

Install in the reverse order of removal.

REAR VIEW CAMERA

Removal and Installation

INFOID:000000009752127

REMOVAL

1. Remove back door lower finisher. Refer to [INT-38, "Exploded View"](#).
2. Remove rear view camera screws to remove rear view camera.

INSTALLATION

Install in the reverse order of removal.

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AV

USB CONNECTOR AND AUX JACK

< REMOVAL AND INSTALLATION >

[AUDIO WITH NAVIGATION]

USB CONNECTOR AND AUX JACK

Removal and Installation

INFOID:000000009752128

REMOVAL

1. Remove cluster tray. Refer to [IP-12, "Exploded View"](#).
2. Push the pawl from the back of cluster tray to remove USB connector and AUX jack.

INSTALLATION

Install in the reverse order of removal.

ANTENNA FEEDER

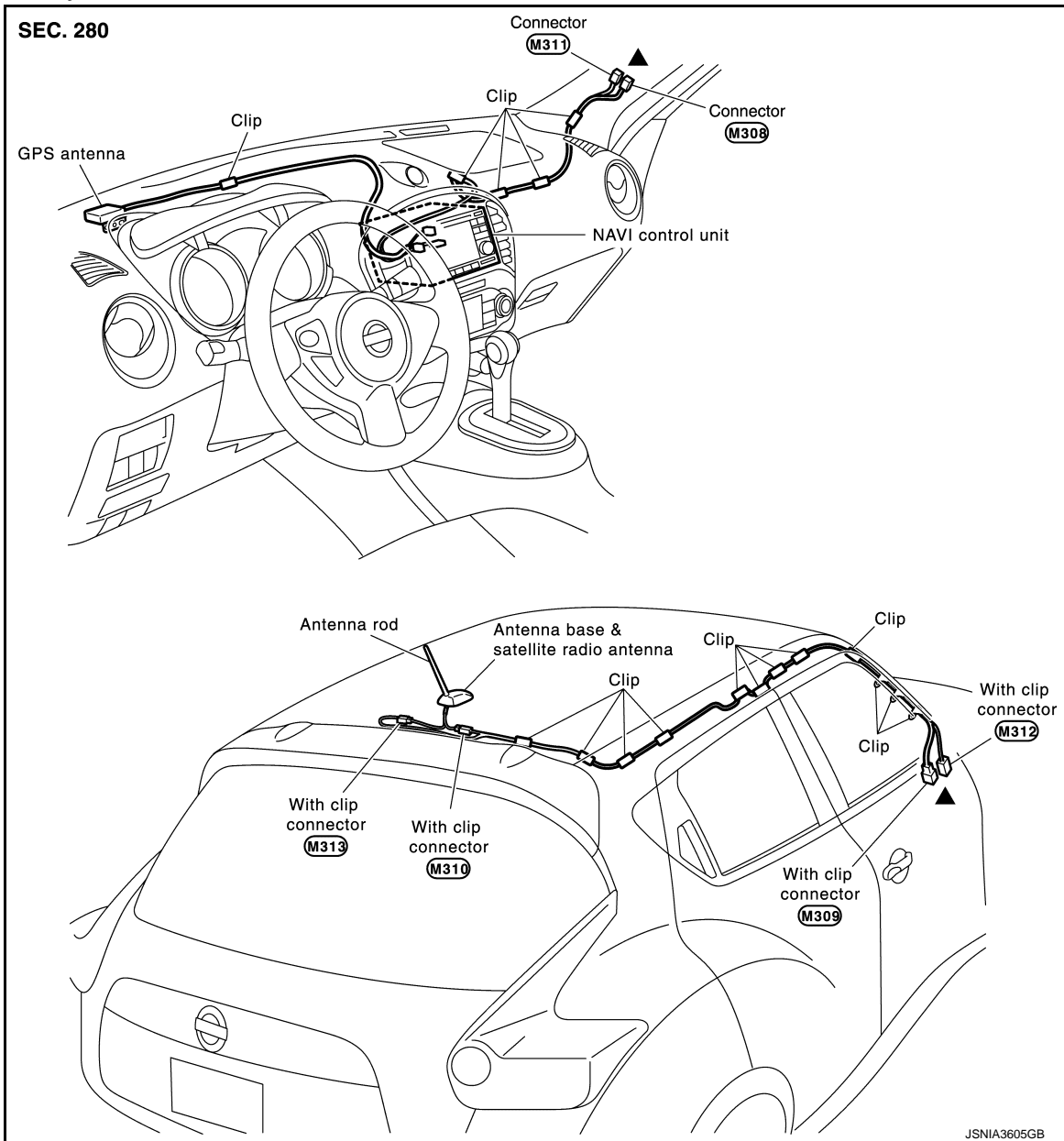
< REMOVAL AND INSTALLATION >

[AUDIO WITH NAVIGATION]

ANTENNA FEEDER

Feeder Layout

INFOID:000000009752129



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PRECAUTION

PRECAUTIONS

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

INFOID:000000009752130

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Precautions for Removing of Battery Terminal

INFOID:000000010273677

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

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

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

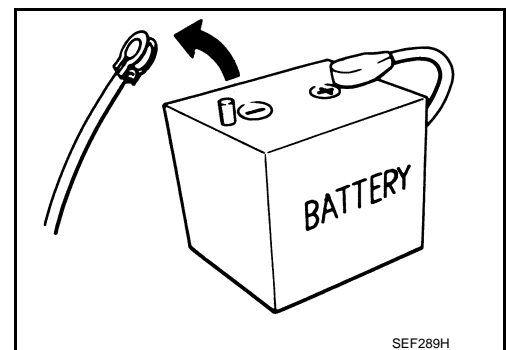
NOTE:

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

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

NOTE:

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



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COMPONENT PARTS

< SYSTEM DESCRIPTION >

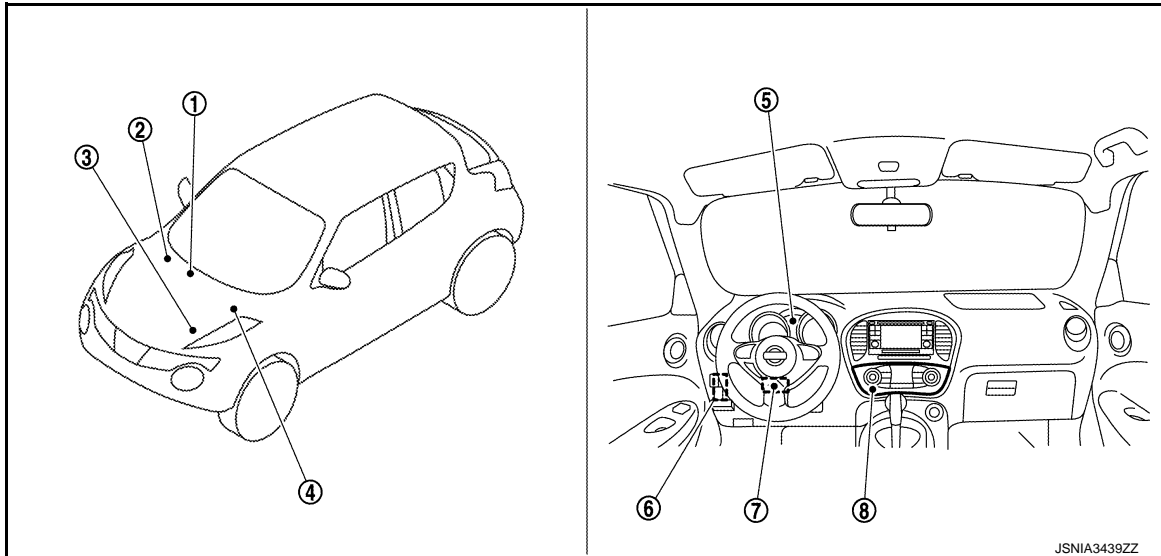
[INTEGRATED CONTROL SYSTEM]

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000009752131



- | | | |
|--|--|--|
| <p>1. A/C auto amp.
Refer to HAC-6, "Component Parts Location".</p> <p>4. TCM
Refer to TM-150, "CVT CONTROL SYSTEM : Component Parts Location".</p> <p>7. EPS control unit
Refer to STC-5, "Component Parts Location".</p> | <p>2. ABS actuator and electric unit (control unit)
Refer to BRC-9, "Component Parts Location".</p> <p>5. Combination meter</p> <p>8. Multi display unit</p> | <p>3. ECM
Refer to EC-14, "ENGINE CONTROL SYSTEM : Component Parts Location".</p> <p>6. BCM
Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" (with Intelligent Key system) or BCS-93, "BODY CONTROL SYSTEM : Component Parts Location" (without Intelligent Key system).</p> |
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Component Description

INFOID:000000009752132

Unit	Description
Multi display unit	<ul style="list-style-type: none"> A multi display unit integrating a color display and an operation panel is adopted. The display indicates the air conditioner operation status, driving mode, information, and setting screen. The unit transmits operation signals for air conditioner and drive mode to the respective units via CAN communication. It receives the drive mode selection, information display/setting, and necessary information for controlling the air conditioner control functions from the respective units via CAN communication.
Combination meter	<p>Transmits the following signals to the multi display unit via CAN communication.</p> <ul style="list-style-type: none"> Vehicle speed signal Odometer signal

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

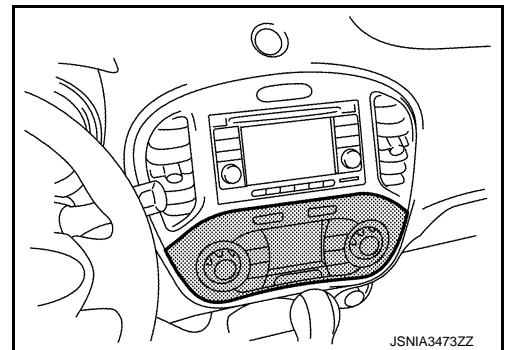
[INTEGRATED CONTROL SYSTEM]

Unit	Description
ECM	<ul style="list-style-type: none"> • Transmits the following signals to the multi display unit via CAN communication. <ul style="list-style-type: none"> - Engine speed signal - Fuel consumption monitor signal - Engine status signal - Engine torque signal - Boost pressure signal • Receives the following signals from TCM via CAN communication and changes over the throttle position characteristic (CVT models). <ul style="list-style-type: none"> - ECO mode signal - NORMAL mode signal - SPORT mode signal • Receives the following signals from the multi display unit via CAN communication and changes over the throttle position characteristic (M/T models). <ul style="list-style-type: none"> - ECO mode signal - NORMAL mode signal - SPORT mode signal
BCM	Transmits the position light request signal to the multi display unit via CAN communication.
TCM (CVT models)	<ul style="list-style-type: none"> • Receives the following signals from the multi display unit via CAN communication and changes over the gear shift line. <ul style="list-style-type: none"> - ECO mode signal - NORMAL mode signal - SPORT mode signal • Transmits the following signals to ECM via CAN communication. <ul style="list-style-type: none"> - Drive mode select signal
A/C auto amp.	<ul style="list-style-type: none"> • Transmits the A/C display signal to the multi display unit via CAN communication. • Receives the following signals from the multi display unit via CAN communication. <ul style="list-style-type: none"> - ECO mode signal - A/C ECO setting signal - A/C switch operation signal
EPS control unit	Receives the following signals from the multi display unit via CAN communication. <ul style="list-style-type: none"> • ECO mode signal • NORMAL mode signal • SPORT mode signal
ABS actuator and electric unit (control unit)	Transmits the following signals to the multi display unit via CAN communication. <ul style="list-style-type: none"> • Side G sensor signal • Decel G sensor signal

Multi Display Unit

INFOID:000000009752133

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



UNIQUE SWITCH

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

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

Operation description of unique switch

COMPONENT PARTS

< SYSTEM DESCRIPTION >

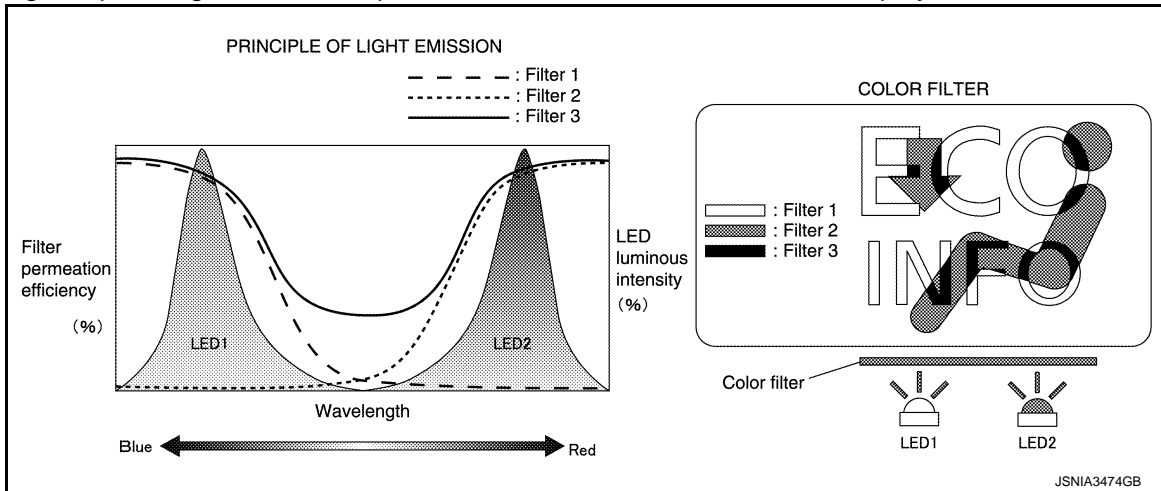
[INTEGRATED CONTROL SYSTEM]

In drive mode

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

In air conditioner mode

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



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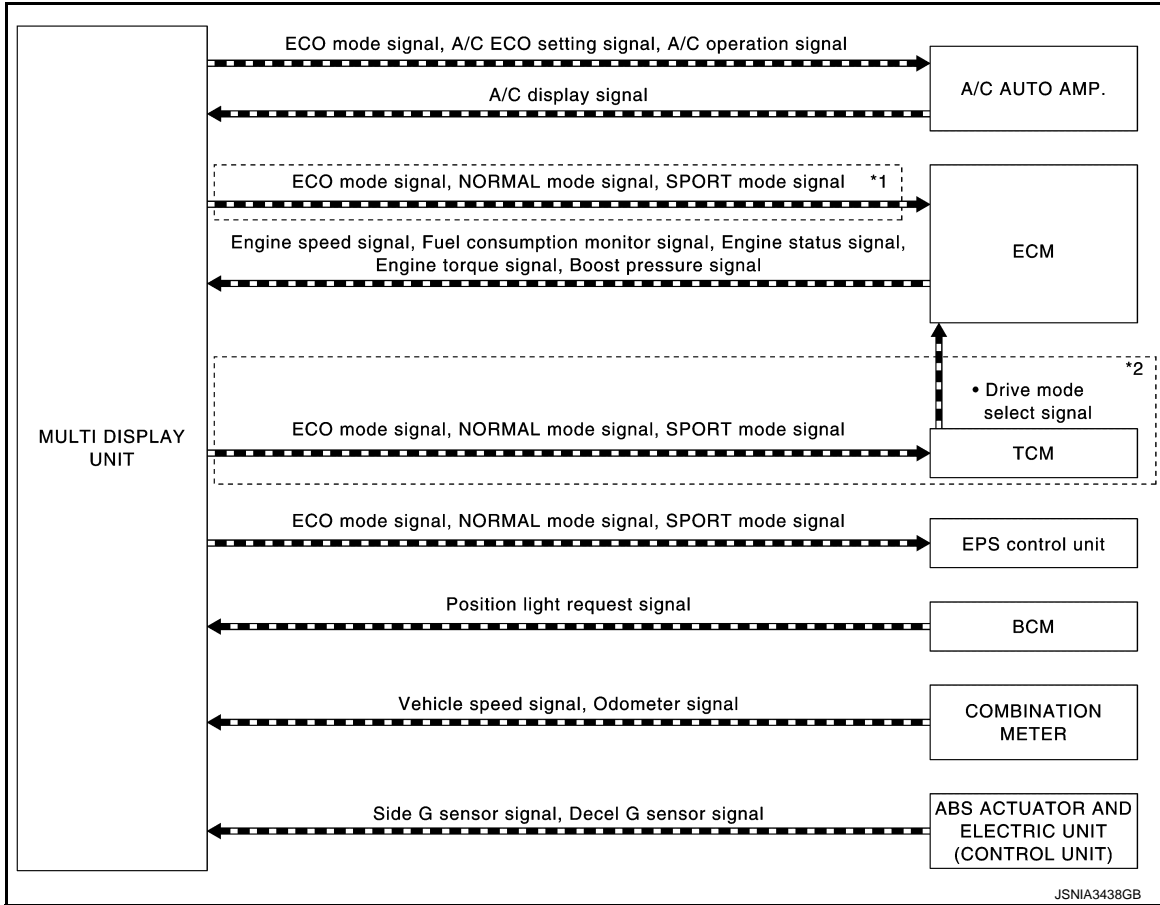
SYSTEM

INTEGRATED CONTROL SYSTEM

INTEGRATED CONTROL SYSTEM : System Description

INFOID:000000009752134

SYSTEM DIAGRAM



- *1: M/T models
- *2: CVT models

MULTI DISPLAY UNIT INPUT/OUTPUT SIGNAL

Output signal

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

SYSTEM

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

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

SYSTEM DESCRIPTION

- The multi display unit receives necessary information for controlling the following functions from the respective units via CAN communication.
 - D-MODE function
 - Information display/setting
 - Air conditioner adjustment function. Refer to [HAC-11. "System Description"](#).
- The multi display unit transmits the status of user-selected D-MODE (NORMAL, SPORT, or ECO) to the TCM (CVT models), ECM (M/T models), EPS control unit and A/C auto amp. For the D-MODE functions, refer to [DMS-6. "System Description"](#).
- TCM transmits to ECM the D-MODE status (NORMAL, SPORT, or ECO) received from the multi display unit (CVT models).
- ECM (M/T models) and EPS control unit receives the D-MODE status (NORMAL, SPORT, or ECO) from the multi display unit.
- The A/C auto amp. receives the air conditioner switch operation signal, ECO mode signal, and ECO mode switch signal from the multi display unit.
- The multi display unit integrates a diagnosis function that allows a diagnosis by CONSULT.

Nissan Dynamic Control System Display/Setting Functions

Category	Display function	Display content	
CLIMATE	CLIMATE CONTROL	HAC-11. "System Description"	
DRIVE MODE	NORMAL	ENGINE TORQUE GAUGE	Displays the engine torque in 5 grades when NORMAL is selected with the D-MODE switch.
		VOLTMETER	Displays the voltage input to the multi display unit in 5 grades along with engine torque gauge when NORMAL is selected with the D-MODE switch.
	SPORT	BOOST GAUGE	Displays the boost gauge reading in 5 grades when SPORT is selected with the D-MODE switch.
	ECO	INSTANTANEOUS FUEL CONSUMPTION GAUGE	Displays the instantaneous fuel consumption in 5 grades when ECO is selected with the D-MODE switch.

SYSTEM

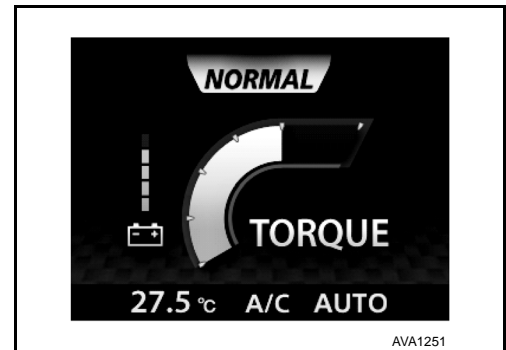
< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

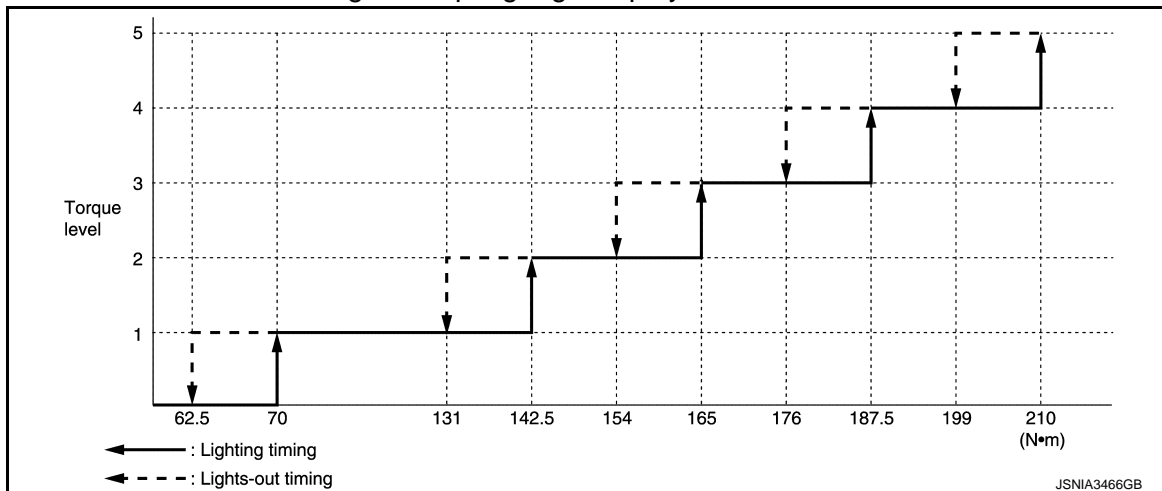
Category	Display function	Display content	
Drive Information	G-FORCE	Displays the status of side G and decel. G.	
	Drive Information	Travel time	<ul style="list-style-type: none"> Displays the total time of key switch ON from a reset to a next reset. If the total time exceeds 100 hours, the display is reset to "00:00:00" and the time calculation restarts.
		Average speed	Displays the average speed during key switch ON from a reset to a next reset.
		Travel distance	Displays the mileage during key switch ON from a reset to a next reset.
ECO Information	Fuel consumption history	Displays the fuel consumption history data on the basis of daily, weekly, drive interval and reset interval.	

Engine Torque Gauge

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

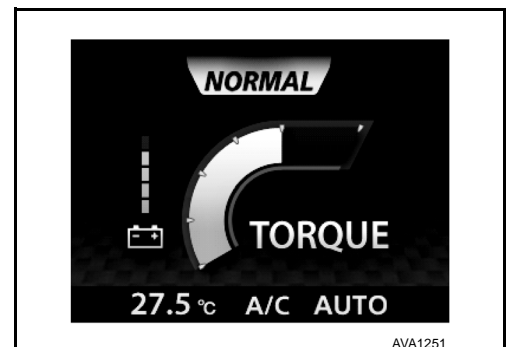


Engine torque gauge display characteristic



Voltmeter

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

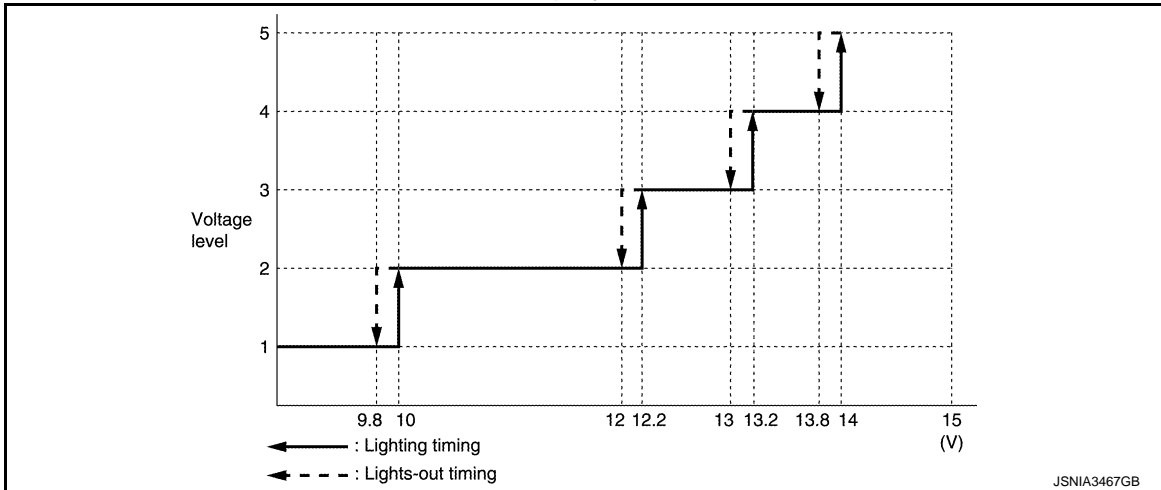


SYSTEM

< SYSTEM DESCRIPTION >

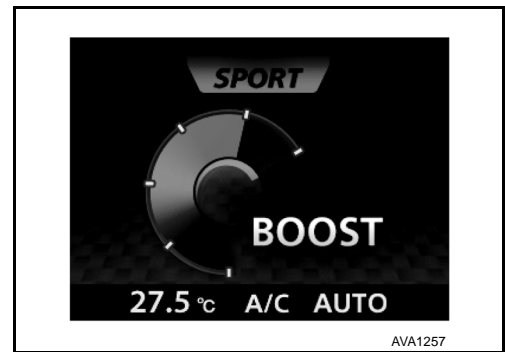
[INTEGRATED CONTROL SYSTEM]

Voltmeter display characteristic

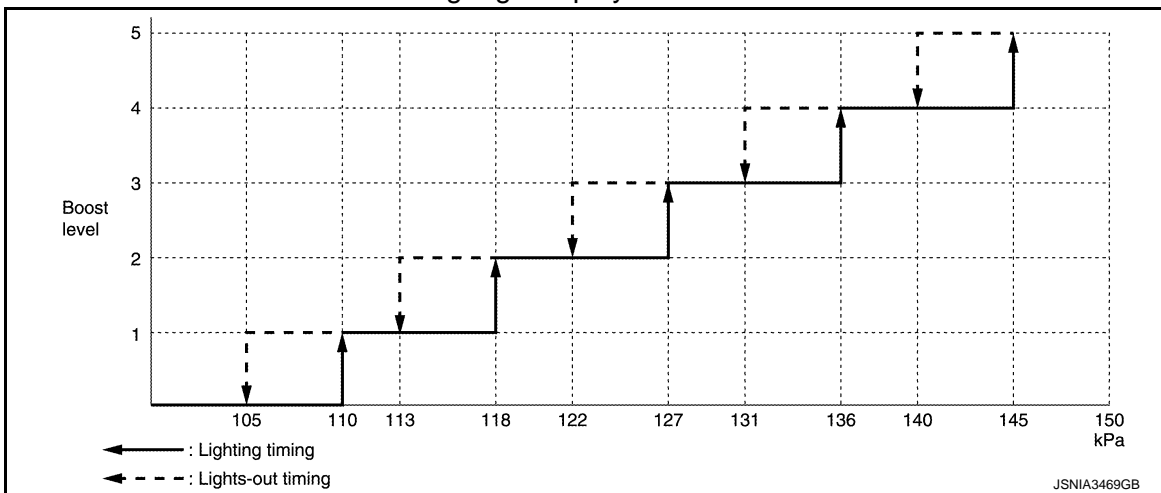


Boost Gauge

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

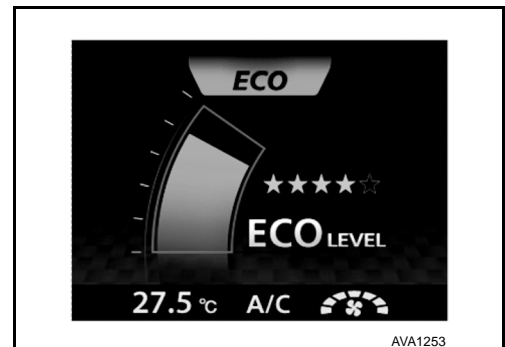


Boost gauge display characteristic



Instantaneous Fuel Consumption

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



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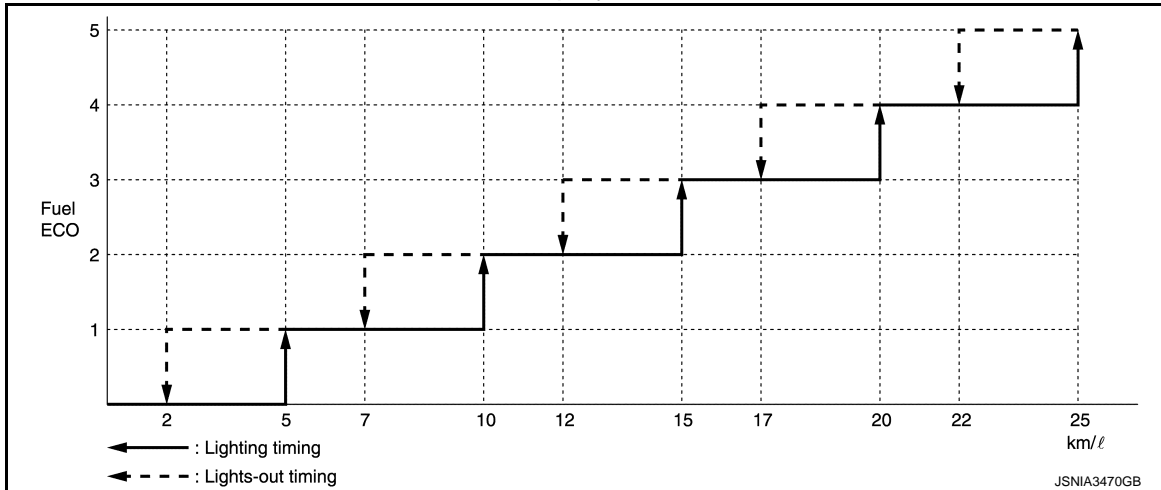
AV

SYSTEM

< SYSTEM DESCRIPTION >

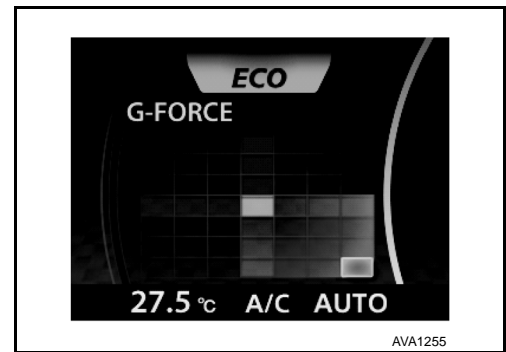
[INTEGRATED CONTROL SYSTEM]

Fuel ECO display characteristic



G-Force

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



Drive Information

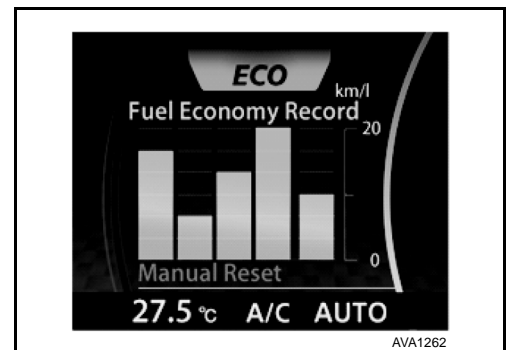
The travel time, average speed, and mileage are displayed as follows.

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



ECO Information

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



Set Up

SYSTEM

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

The following items can be set.

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



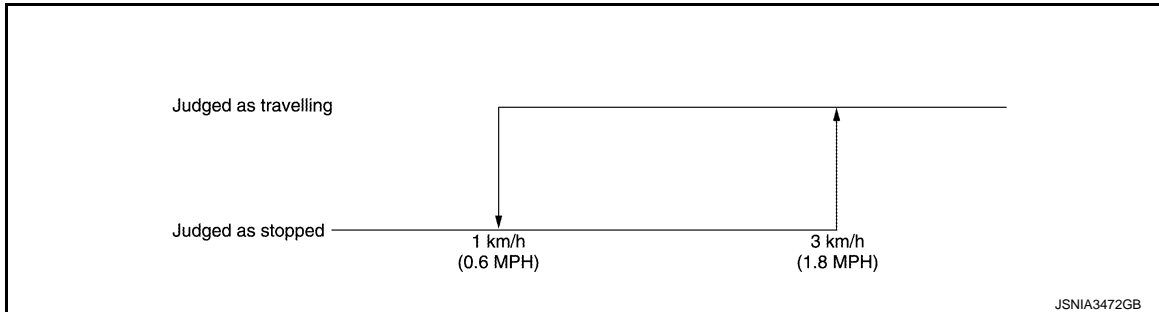
Display/operation restrictions

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

Function		Condition	Control content
ECO information (Fuel Economy Record)	Daily Reset, Weekly Reset, Re-set at Start, and Manual Reset	Driving	Cannot be operated (Reset, page scroll)
	Daily Reset, and Weekly Reset	When no time is set	Fuel consumption history is not displayed (Warning message appears)
SET UP		Driving	<ul style="list-style-type: none"> • Item selection and setting are not available • No display

Driving status judgment criterion

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



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HANDLING PRECAUTION

Integrated Control System

INFOID:000000009752135

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

DIAGNOSIS SYSTEM (MULTI DISPLAY UNIT)

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

DIAGNOSIS SYSTEM (MULTI DISPLAY UNIT)

CONSULT Function

INFOID:000000009752136

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to [AV-168, "DTC Index"](#).

DATA MONITOR

NOTE:

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

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

DIAGNOSIS SYSTEM (MULTI DISPLAY UNIT)

< SYSTEM DESCRIPTION >

[INTEGRATED CONTROL SYSTEM]

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

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

ACTIVE TEST

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

Indicator

Test Item	Function
INDICATOR	The sequence below is repeated. <ul style="list-style-type: none"> All indicators remain ON for 5 seconds in AIR CON mode ↔ All indicators remain ON for 5 seconds in D-MODE.

MULTI DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[INTEGRATED CONTROL SYSTEM]

ECU DIAGNOSIS INFORMATION

MULTI DISPLAY UNIT

Reference Value

INFOID:000000009752137

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor item	Test condition		Reference value/Status
ECO SW	Ignition switch ON	ECO mode	On
		Other than the above	Off
NORMAL SW	Ignition switch ON	NORMAL mode	On
		Other than the above	Off
SPORTS SW	Ignition switch ON	SPORT mode	On
		Other than the above	Off
BOOST PRESSURE	Ignition switch ON	Engine running	Values according to boost pressure
ENGINE SPEED [Tr/min]	Ignition switch ON	Engine running	Values according to engine speed
ENGINE TORQUE [Nm]	Ignition switch ON	Engine running	Values according to engine torque
BATTERY VOLTAGE [V]	Ignition switch ON	—	Values according to input voltage
FUEL CONSUMPTION [mm ³]	Ignition switch ON	Engine running	Values according to instantaneous fuel consumption
VEHICLE SPEED [km/h]	Ignition switch ON	Driving	Values according to vehicle speed
LONG ACC [G]	Ignition switch ON	Driving	Values according to decel. G
TRANCE ACC [G]	Ignition switch ON	Driving	Values according to side G
DIST TOTAL [km/h]	Ignition switch ON	—	Values according to mileage
POSI LIGHT REQ	Ignition switch ON	Light SW at 1st or 2nd position	On
		Light switch OFF	Off
CLUSTER ILL REQ	Ignition switch ON	Block the light beam from the auto light sensor when the light switch is in the 1st position, 2nd position or AUTO position.	On
		Expose the auto light sensor to light when the light switch is OFF or in the 1st position, 2nd position or AUTO position.	Off
ENGINE STATUS	Ignition switch ON	Engine stop	STOP
		Engine stall	STALL
		Engine running	RUN
		Engine cranking	CRA
A/C SW*	Ignition switch ON	Cycles On/Off whenever the A/C switch is pressed.	On→Off→On
AUTO SW*	Ignition switch ON	Cycles On/Off whenever the AUTO switch is pressed.	On→Off→On

MULTI DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[INTEGRATED CONTROL SYSTEM]

Monitor item	Test condition		Reference value/Status
RR DEF SW*	Ignition switch ON	While the rear DEF switch is held down	On
	Ignition switch ON	Other than the above	Off
FR DEF SW*	Ignition switch ON	Cycles On/Off whenever the front DEF switch is pressed.	On→Off→On
VENT SW1*	Ignition switch ON	Cycles On/Off whenever the VENT, B/L, FOOT, or D/F switch is pressed.	On→Off→On
VENT SW2*	Ignition switch ON	Press the VENT switch.	VENT
		Press the B/L switch.	B/L
		Press the FOOT switch.	FOOT
		Press the D/F switch.	D/F
INTAKE SW*	Ignition switch ON	Cycles On/Off whenever the intake switch is pressed.	On→Off→On
INT SW LONG PUSH*	Ignition switch ON	Cycles On/Off whenever the intake switch is held down.	On→Off→On
Off SW*	Ignition switch ON	Cycles On/Off whenever the OFF switch is held down.	On→Off→On
TEMP SW1*	Ignition switch ON	Cycles On/Off whenever the temperature control dial is turned clockwise or counterclockwise.	On→Off→On
FAN SW1*	Ignition switch ON	Cycles On/Off whenever the fan control dial is turned clockwise or counterclockwise.	On→Off→On
A/C SW IND	Ignition switch ON	A/C switch indicator ON	On
		A/C switch indicator OFF	Off
A/C INDICATOR	Ignition switch ON	A/C indicator ON	On
		A/C indicator OFF	Off
Off INDICATOR	Ignition switch ON	Air conditioner OFF	On
		Other than the above	Off
AIR VENT IND	Ignition switch ON	Air conditioner OFF	Nothing displayed.
		VENT mode	VENT
		B/L mode	B/L
		FOOT mode	FOOT
		D/F mode	D/F
		DEF mode	DEF
FR DEF SW IND	Ignition switch ON	Front DEF switch indicator ON	On
		Other than the above	Off
FRE SW IND	Ignition switch ON	FRE switch indicator ON	On
		Other than the above	Off
REC SW IND	Ignition switch ON	REC switch indicator ON	On
		Other than the above	Off
RR DEF SW IND	Ignition switch ON	Rear DEF switch indicator ON	On
		Other than the above	Off
AUTO IND	Ignition switch ON	MANUAL mode	Off
		AUTO mode	Auto
TEMP IND [°C]	Ignition switch ON	—	Displays the temperature set by the user.
FAN IND	Ignition switch ON	Air conditioner OFF	Off
		Displays a value according to the fan speed.	1 to 7 speed

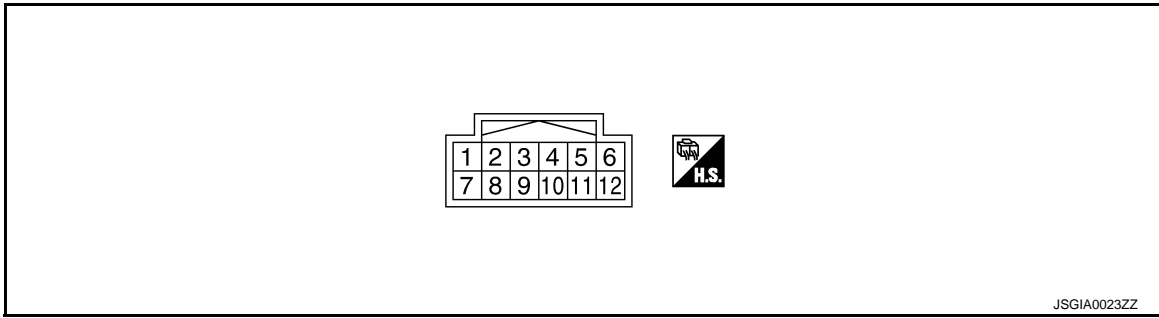
MULTI DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[INTEGRATED CONTROL SYSTEM]

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

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard	Reference value (Approx.)	
+	-	Signal name	Input/ Output				
1 (Y)	10 (B) 11 (B)	Battery power supply	Input	Ignition switch OFF	9 V – 16 V	Battery power supply	
2 (V)	10 (B) 11 (B)	Illumination signal	Input	Ignition switch OFF	Lighting switch 1ST position.	9 V – 16 V	
				Lighting switch OFF position.	0 V	0 V	
5 (GR)	10 (B) 11 (B)	Illumination control signal	Input	Ignition switch ON	<ul style="list-style-type: none"> Lighting switch 1ST position. When illumination control level is maximum. 	<p style="text-align: right;"><small>JPNIA1687GB</small></p>	
					<ul style="list-style-type: none"> Lighting switch 1ST position. When illumination control level is midway. 	0 V – 16 V	<p style="text-align: right;"><small>JPNIA1686GB</small></p>
					<ul style="list-style-type: none"> Lighting switch 1ST position. When meter illumination is minimum. 	12 V	
6 (L)	—	CAN -H	—	—	—	—	
7 (SB)	10 (B) 11 (B)	Ignition power supply	Input	Ignition switch ON	9 V – 16 V	Battery power supply	
12 (P)	—	CAN -L	—	—	—	—	

DTC Inspection Priority Chart

INFOID:000000009752138

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

MULTI DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[INTEGRATED CONTROL SYSTEM]

Priority	DTC inspection priority order item
1	<ul style="list-style-type: none"> • U1000 : CAN COMM CIRCUIT • U1010 : CONTROL UNIT (CAN)
2	<ul style="list-style-type: none"> • U1402 : ENGINE SPEED SIGNAL • U1405 : ENGINE TORQUE SIGNAL • U1406 : BOOST PRESSURE INPUT • U1412 : LONG ACC INPUT • U1413 : TRANS ACC INPUT

DTC Index

INFOID:000000009752139

DTC	CONSULT display	Refer to
U1000	CAN COMM CIRCUIT	AV-174, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN)	AV-175, "Diagnosis Procedure"
U1402	ENGINE SPEED SIGNAL	AV-176, "Diagnosis Procedure"
U1405	ENGINE TORQUE SIGNAL	AV-177, "Diagnosis Procedure"
U1406	BOOST PRESSURE INPUT	AV-178, "Diagnosis Procedure"
U1412	LONG ACC INPUT	AV-179, "Diagnosis Procedure"
U1413	TRANS ACC INPUT	AV-180, "Diagnosis Procedure"

INTEGRATED CONTROL SYSTEM

< WIRING DIAGRAM >

[INTEGRATED CONTROL SYSTEM]

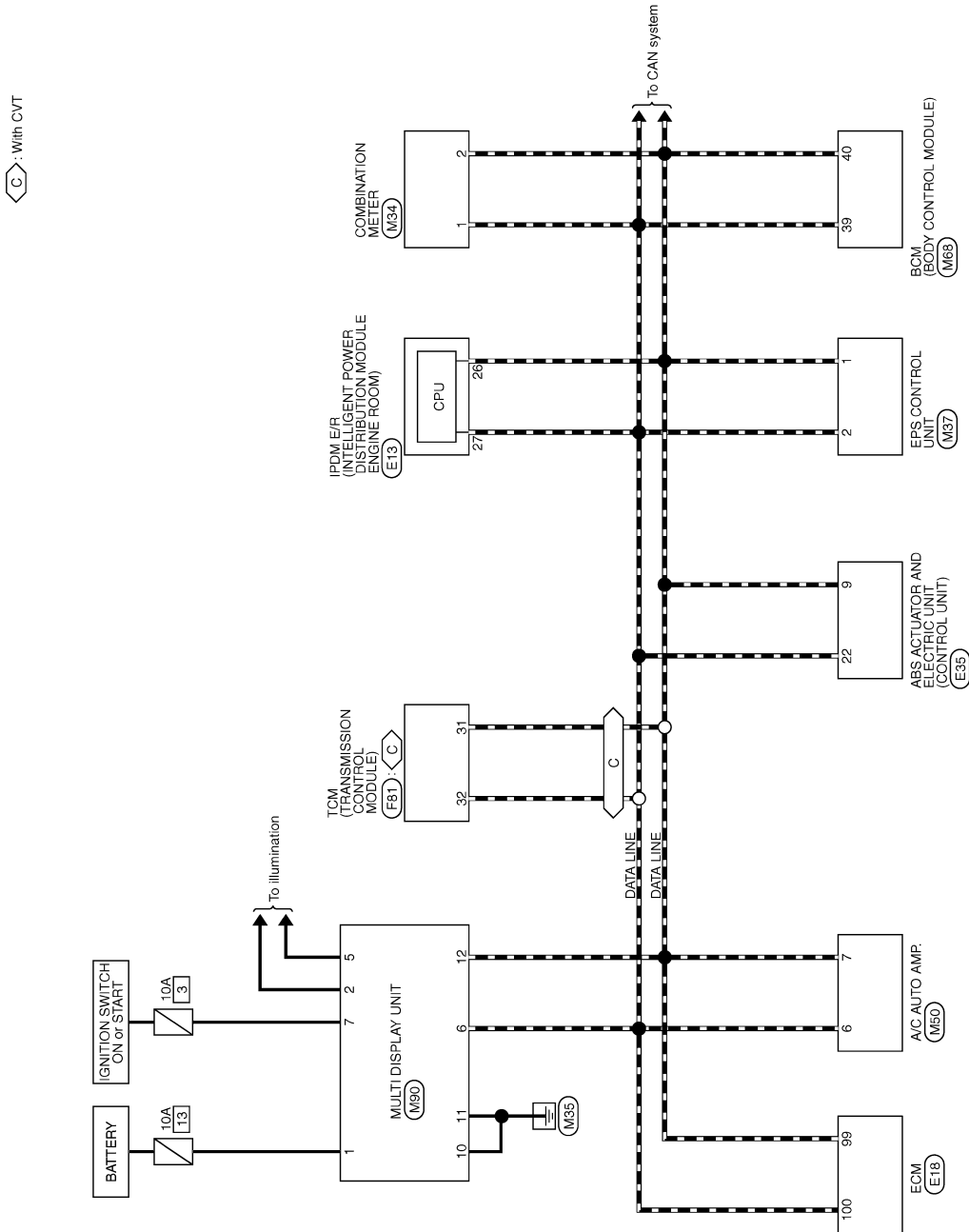
WIRING DIAGRAM

INTEGRATED CONTROL SYSTEM

Wiring Diagram

INFOID:000000009752140

INTEGRATED CONTROL SYSTEM



2012/07/20

JRNWC2702GB

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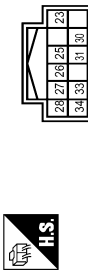
INTEGRATED CONTROL SYSTEM

< WIRING DIAGRAM >

[INTEGRATED CONTROL SYSTEM]

INTEGRATED CONTROL SYSTEM

Connector No.	E13
Connector Name	RELAY IN INTELLIGENT POWER DISTRIBUTION MODULE FRONT
Connector Type	TH12FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
28	Y	-
27	L	-
26	Y	-
25	Y	-
23	Y	-
34	G	-
33	G	-
31	L	-
30	L	-

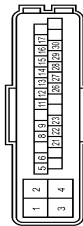
Connector No.	E18
Connector Name	ECM
Connector Type	RH24FCY-R2B-R-RH



Terminal No.	Color Of Wire	Signal Name [Specification]
100	L	CAN COMMUNICATION LINE (CAN-L)
101	V	SENSOR POWER SUPPLY
102	B	ACCELERATOR PEDAL POSITION SENSOR 1
103	R	ACCELERATOR PEDAL POSITION SENSOR 2
104	GR	DATA LINK CONNECTOR
105	GR	SENSOR COMMON ACCELERATOR PEDAL POSITION SENSOR 1
106	Y	POWER SUPPLY FOR ECM (BACKUP)
108	GR	CLUTCH PEDAL POSITION SWITCH
109	O	IGNITION SWITCH

110	P	ASCS STEERING SWITCH
111	B	SENSOR GROUND
112	BR	ECM RELAY (SEL5 SW1-OFF)
115	SB	STOP LAMP SWITCH
116	G	BRAKE PEDAL POSITION SWITCH
117	Y	FUEL PUMP RELAY
118	O	SENSOR POWER SUPPLY
119	BR	ACCELERATOR PEDAL POSITION SENSOR 2
120	Y	SENSOR GROUND
121	G	POWER SUPPLY FOR ECM
122	GR	THROTTLE CONTROL MOTOR POWER SUPPLY
123	B/Y	ECM GROUND
124	B/Y	ECM GROUND
125	U	A/V SENSOR HEATER
126	U	HEATED OIL SENSOR 2 HEATER
127	B/Y	ECM GROUND

Connector No.	E35
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	RH28FB-NU4-UH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	BAT (MTR)
2	L	BAT (SOL)
3	B	GND (SOL)
4	B	GND (MTR)
5	GR	VDC OFF SW
6	GR	BRAKE PEDAL POSITION SW
8	SB	STOP LAMP SW
9	P	CAN-L
11	BR	DP FR
12	W	DS FR
13	GR	SENSOR GROUND
14	R	LOCK UP SELECT SOLENOID VALVE
15	R	SEMI-L
16	Y	DS RR
18	V	IGN
17	W	REVERSE SIGNAL
21	Y	DP FR
22	L	CAN-H

23	LG	DP FL
24	SR	DP RL
27	BR	DSL FL
28	B	GRD
29	W	SERIAL-
30	O	DS RL

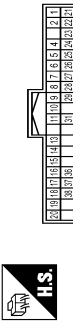
Connector No.	F81
Connector Name	TOM (TRANSMISSION CONTROL MODULE)
Connector Type	RH40FB-R2B-L-RH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	R RANGE SW
2	Y	N RANGE SW
3	W	D RANGE SW
4	V	-
5	B	GROUND
8	BR	LOCK (USE 2)
9	W	GROUND
10	W	DP (L,C,SEL2)
11	L	R RANGE SW
13	SR	CVT FLUID TEMPERATURE SENSOR
15	P	SECONDARY PRESSURE SENSOR
25	Y	SENSOR GROUND
26	LG	SENSOR POWER SUPPLY
27	GR	STEP MOTOR C
28	V	STEP MOTOR D
29	EG	STEP MOTOR B
30	R	STEP MOTOR A
31	P	CAN-H
32	L	CAN-L
33	BL	PRIMARY SPEED SENSOR
34	R	STOP MOTOR
37	R	LOCK UP SELECT SOLENOID VALVE
38	G	TORQUE CONVERTER CLUTCH SOLENOID VALVE
39	W	SECONDARY PRESSURE SOLENOID VALVE
40	Y	LINE PRESSURE SOLENOID VALVE
42	B	GROUND
46	LG	IGNITION POWER SUPPLY

47	EG	BATTERY POWER SUPPLY MEMORY BACK-UP
48	Y	IGNITION POWER SUPPLY

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
4	V	VEHICLE SPEED SIGNAL (P-PULSE) (With front fog lamp)
4	Y	VEHICLE SPEED SIGNAL (P-PULSE) (Without front fog lamp)
5	G	PADDLE SHIFTER UP SWITCH SIGNAL
6	BR	FUEL LEVEL SENSOR SIGNAL
7	R	AIR BAG SIGNAL
8	P	- (Without front fog lamp)
8	Y	- (With front fog lamp)
9	O	IGNITION POWER SUPPLY (Without front fog lamp)
9	W	IGNITION POWER SUPPLY (With front fog lamp)
10	SB	PARKING BRAKE SWITCH SIGNAL
11	G	BRAKE FLUID LEVEL SWITCH SIGNAL
13	B	ILLUMINATION CONTROL SIGNAL (With front fog lamp)
13	GR	ILLUMINATION CONTROL SIGNAL (Without front fog lamp)
14	R	MANUAL MODE SHIFT UP SIGNAL (Without front fog lamp)
14	V	MANUAL MODE SHIFT UP SIGNAL (With front fog lamp)
15	L	ACC POWER SUPPLY
16	O	MANUAL MODE SHIFT DOWN SIGNAL (With front fog lamp)
16	W	MANUAL MODE SHIFT DOWN SIGNAL (Without front fog lamp)
17	G	WASHER LEVEL SWITCH SIGNAL (Without front fog lamp)
17	W	WASHER LEVEL SWITCH SIGNAL (With front fog lamp)
18	R	SECURITY SIGNAL
19	GR	AMBIENT SENSOR SIGNAL
20	GR	AMBIENT SENSOR GROUND (Without front fog lamp)
20	LG	AMBIENT SENSOR GROUND (With front fog lamp)
21	B	GROUND
22	B	GROUND
23	L	GROUND
24	L	FUEL LEVEL SENSOR GROUND
25	B	VDC GROUND

INTEGRATED CONTROL SYSTEM

< WIRING DIAGRAM >

[INTEGRATED CONTROL SYSTEM]

INTEGRATED CONTROL SYSTEM

26	V	PADDLE SHIFTER DOWN SWITCH SIGNAL
27	W	BATTERY SUPPLY
28	GR	IGNITION SIGNAL
29	LG	IGNITION SIGNAL (With front fog lamp)
29	LG	PASSENGER SEAT BELT TENSIONER SIGNAL (With front fog lamp)
29	V	PASSENGER SEAT BELT TENSIONER SIGNAL (Without front fog lamp)
31	P	A/C AUTO AMP CONNECTION RECOGNITION SIGNAL
36	LG	MANUAL MODE SIGNAL (With front fog lamp)
36	Y	MANUAL MODE SIGNAL (Without front fog lamp)
37	G	NON-MANUAL MODE SIGNAL (With front fog lamp)
37	Y	NON-MANUAL MODE SIGNAL (Without front fog lamp)
38	P	ALTERNATOR SIGNAL

Connector No.	M37
Connector Name	EFS CONTROL UNIT
Connector Type	TH8F5W-NH



Terminal No.	Color	Wire	Signal Name [Specification]
1	P	CAN-L	
2	L	CAN-H	
4	LG	GND	

Connector No.	M50
Connector Name	A/C AUTO AMP
Connector Type	TH40FW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
2	LG		IN-VEHICLE SENSOR SIGNAL
3	V		INTAKE SENSOR SIGNAL
4	GR		AMBIENT SENSOR SIGNAL
5	P		SUNLOAD SENSOR SIGNAL

INTEGRATED CONTROL SYSTEM

6	L	CAN-H
7	W	INTAKE DOOR MOTOR PRR POWER SUPPLY
8	W	INTAKE DOOR MOTOR PRR POWER SUPPLY
9	P	A/C AUTO AMP CONNECTION RECOGNITION SIGNAL
10	R	SENSOR GROUND
11	SB	IGNITION POWER SUPPLY
12	Y	BATTERY POWER SUPPLY
13	GR	POWER TRANSISTOR CONTROL SIGNAL
14	LG	BLOWER FAN ON SIGNAL
15	Y	A/C ON SIGNAL
17	BR	A/MIX DRIVE SIGNAL 4
18	GR	A/MIX DRIVE SIGNAL 3
19	W	A/MIX DRIVE SIGNAL 2
20	L	A/MIX DRIVE SIGNAL 1
21	G	IGNITION POWER SUPPLY
22	SB	INTAKE DOOR MOTOR PRR I/B SIGNAL
23	GR	GROUND
24	G	REC DRIVE SIGNAL
26	V	FRE DRIVE SIGNAL
37	R	MODE DRIVE SIGNAL 4
38	P	MODE DRIVE SIGNAL 3
39	Y	MODE DRIVE SIGNAL 2
40	V	MODE DRIVE SIGNAL 1

Connector No.	M83
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

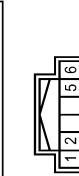


Terminal No.	Color	Wire	Signal Name [Specification]
2	L		COMBI SW INPUT 5
3	GR		COMBI SW INPUT 4
4	BR		COMBI SW INPUT 3
8	G		COMBI SW INPUT 2
7	L		KEY CYL LOCK SW
7	L		KEY CYL UNLOCK SW
8	R		STOP LAMP SW 1
8	R		STOP LAMP SW 1
10	W		
12	GR		DOOR LK & UNLK SW LOCK (Without front fog lamp)
12	Y		DOOR LK & UNLK SW LOCK (With front fog lamp)

12	P	CAN-L
----	---	-------

13	BR	DOOR LK & UNLK SW UNLOCK
14	W	RECEIVER SW
15	W	RECEIVER SW
17	R	OPTICAL SEAS PWR SPLY
18	V	RECEIVER GND
21	P	NATS ANT AMP
23	R	SECURITY IND LAMP CONT
24	SB	DOINGLE LINK
25	LG	NATS ANT AMP
26	B	THERMO AMP
27	W	A/C SW (With front fog lamp)
27	Y	A/C SW (Without front fog lamp)
28	LG	BLOWER FAN SW (With front fog lamp)
28	O	BLOWER FAN SW (Without front fog lamp)
29	L	HAZARD SW (With front fog lamp)
29	L	HAZARD SW (Without front fog lamp)
30	SB	BL MOTOR OPERATOR SW
31	GR	DR DOOR UNLK SENS
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	R	COMBI SW OUTPUT 2
36	P	COMBI SW OUTPUT 1
37	G	DETENT SW
38	SB	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

Connector No.	M9D
Connector Name	MULTI DISPLAY UNIT
Connector Type	TH12FW-NH



Terminal No.	Color	Wire	Signal Name [Specification]
2	V		BAT
2	V		ILL CONT
5	GR		ILL CONT
6	L		IGN
7	SB		IGN
10	B		GND
11	B		GND

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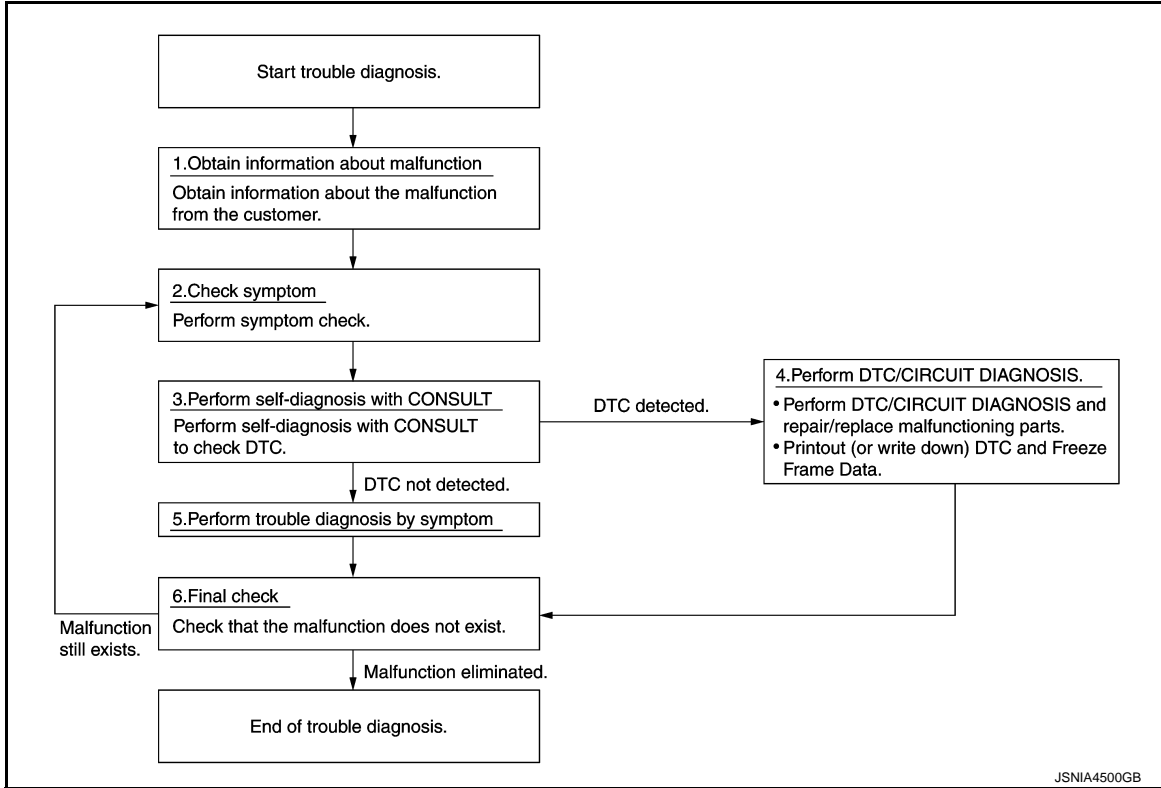
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000009752141

DESCRIPTION OF TROUBLE DIAGNOSIS FLOWCHART



DETAILS OF TROUBLE DIAGNOSIS FLOWCHART

1. OBTAIN INFORMATION ABOUT SYMPTOM

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

>> GO TO 2.

2. CHECK SYMPTOM

- Check the symptom based on the information obtained from the customer.
- Check if any other malfunctions are present.

>> GO TO 3.

3. CONSULT SELF-DIAGNOSIS

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

NOTE:

If "CAN COM CIRC [U1000]" is displayed, start the diagnosis from the CAN communication system. Refer to [AV-174, "Diagnosis Procedure"](#).

Is any DTC No. displayed?

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

4. DTC/SYSTEM DIAGNOSIS

DIAGNOSIS AND REPAIR WORK FLOW

[INTEGRATED CONTROL SYSTEM]

< BASIC INSPECTION >

1. Perform a DTC/system diagnosis and repair or replace any malfunctioning part.
2. When DTC is detected, follow the instructions below:
 - Record DTC and Freeze Frame Data.

A

>> GO TO 6.

B

5. PERFORM DIAGNOSIS BY SYMPTOM

Perform a diagnosis by symptom and repair or replace any malfunctioning part.

C

>> GO TO 6.

6. FINAL CHECK

D

Check that the multi display unit functions normally.

Does it operate normally?

E

- YES >> End of trouble diagnosis
- NO >> GO TO 2.

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DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000009752142

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

Refer to [LAN-28, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#) for details of the communication signal.

DTC Logic

INFOID:000000009752143

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000009752144

1. PERFORM SELF-DIAGNOSIS

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

Is CAN communication system displayed?

- YES >> Refer to [LAN-15, "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-46, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[INTEGRATED CONTROL SYSTEM]

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000009752145

Initial diagnosis of multi display unit

DTC Logic

INFOID:000000009752146

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Malfunction detection condition	Probable malfunction location
U1010	CONTROL UNIT (CAN)	Malfunction is detected during initial diagnosis of multi display unit CAN controller	Multi display unit

Diagnosis Procedure

INFOID:000000009752147

1. REPLACE THE MULTI DISPLAY UNIT

If DTC U1010 is detected, replace the multi display unit. [AV-183. "Removal and Installation"](#).

>> INSPECTION END

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U1402 ENGINE SPEED SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[INTEGRATED CONTROL SYSTEM]

U1402 ENGINE SPEED SIGNAL

DTC Logic

INFOID:000000009752148

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000009752149

1. PERFORM ECM SELF DIAGNOSIS

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

>> Refer to [EC-101, "DTC Index"](#).

U1405 ENGINE TORQUE SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[INTEGRATED CONTROL SYSTEM]

U1405 ENGINE TORQUE SIGNAL

DTC Logic

INFOID:000000009752150

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Malfunction detection condition	Probable malfunction location
U1405	ENGINE TORQUE SIGNAL	ECM continuously transmits abnormal engine torque signals for 2 seconds or more	ECM

Diagnosis Procedure

INFOID:000000009752151

1. PERFORM ECM SELF-DIAGNOSIS

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

>> Refer to [EC-101, "DTC Index"](#).

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U1406 BOOST PRESSURE INPUT

< DTC/CIRCUIT DIAGNOSIS >

[INTEGRATED CONTROL SYSTEM]

U1406 BOOST PRESSURE INPUT

DTC Logic

INFOID:000000009752152

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Malfunction detection condition	Probable malfunction location
U1406	BOOST PRESSURE INPUT	ECM continuously transmits abnormal boost pressure signals for 2 seconds or more	ECM

Diagnosis Procedure

INFOID:000000009752153

1. PERFORM ECM SELF-DIAGNOSIS

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

>> Refer to [EC-101, "DTC Index"](#).

U1412 LONG ACC INPUT

< DTC/CIRCUIT DIAGNOSIS >

[INTEGRATED CONTROL SYSTEM]

U1412 LONG ACC INPUT

DTC Logic

INFOID:000000009752154

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Malfunction detection condition	Probable malfunction location
U1412	LONG ACC INPUT	Abnormal decel G sensor signals are input from ABS actuator and electric unit (control unit) for 2 seconds or more	ABS actuator and electric unit (control unit)

Diagnosis Procedure

INFOID:000000009752155

1. PERFORM ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS

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

>> Refer to [BRC-50, "DTC Index"](#).

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U1413 TRANS ACC INPUT

< DTC/CIRCUIT DIAGNOSIS >

[INTEGRATED CONTROL SYSTEM]

U1413 TRANS ACC INPUT

DTC Logic

INFOID:000000009752156

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000009752157

1. PERFORM ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS

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

>> Refer to [BRC-50, "DTC Index"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[INTEGRATED CONTROL SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT

MULTI DISPLAY UNIT

MULTI DISPLAY UNIT : Diagnosis Procedure

INFOID:000000009752158

1.CHECK FUSES

Check if any of the following fuses are blown:

Signal name	Fuse No.
Battery power supply	13
Ignition power	3

Is the check result normal?

YES >> GO TO 2.

NO >> Replace fuse with a new one after repairing the applicable circuit.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multi display unit harness connector and ground.

Multi display unit				Signal name	Ignition switch	Standard	Reference value
(+)		(-)					
Connector	Terminal	Connector	Terminal				
M90	1	M90	5	Battery power supply	OFF	9 V – 16 V	Battery voltage
	7		10 11				
				Ignition power	ON	9 V – 16 V	Battery voltage

Is the check result normal?

YES >> GO TO 3.

NO >> Repair harness between fuse and multi display unit.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Remove multi display unit connector.
3. Check for continuity between multi display unit harness connector and ground.

Multi display unit		Ground	Continuity
Connector	Terminal		
M90	10		Exists
	11		Exists

Is the check result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

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SYMPTOM DIAGNOSIS

INTEGRATED CONTROL SYSTEM

Symptom Table

INFOID:000000009752159

Symptoms	Check items	Possible malfunction location/Action to take
Switches are inoperative	All switches do not work.	Perform self-diagnosis of CONSULT. Refer to AV-163. "CONSULT Function" .
	Only (one) specified switch does not work.	Replace multi display unit. Refer to AV-183. "Removal and Installation" .

MULTI DISPLAY UNIT

< REMOVAL AND INSTALLATION >

[INTEGRATED CONTROL SYSTEM]

REMOVAL AND INSTALLATION

MULTI DISPLAY UNIT

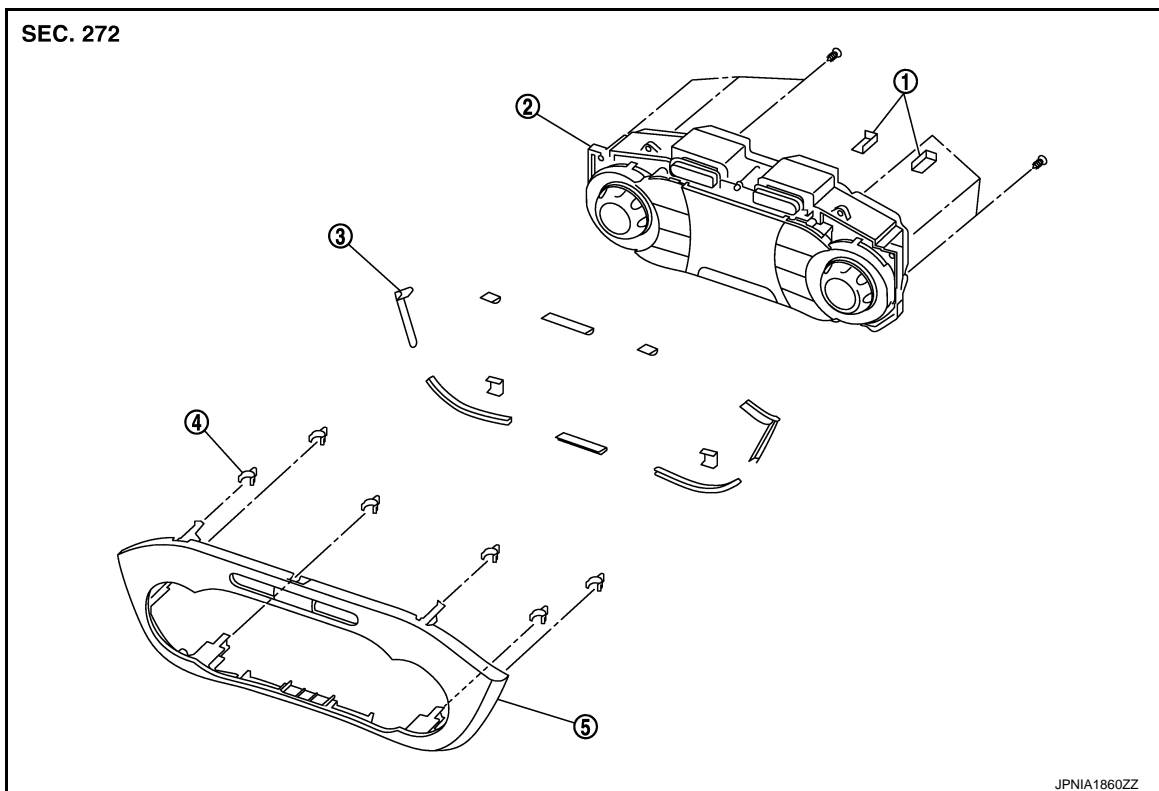
Exploded View

INFOID:000000009752160

REMOVAL

Refer to [IP-12. "Exploded View"](#).

DISASSEMBLY



- | | | |
|------------------|-----------------------|------------------|
| 1. Silencer tape | 2. Multi display unit | 3. Silencer tape |
| 4. Clip | 5. Control finisher | |

Removal and Installation

INFOID:000000009752161

REMOVAL

Refer to [IP-12. "Exploded View"](#).

CAUTION:

- When performing the work, use a shop cloth to protect the parts from damage.
- Always fix the harness clamp in position.

INSTALLATION

Install in the reverse order of removal.

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AV