SECTION AV
AUDIO, VISUAL & NAVIGATION SYSTEM

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000007577879

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.**

Precaution for Trouble Diagnosis

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AV COMMUNICATION SYSTEM

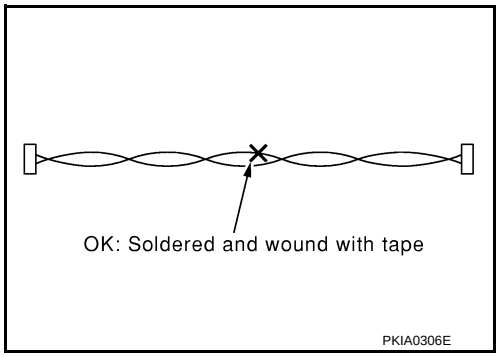
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

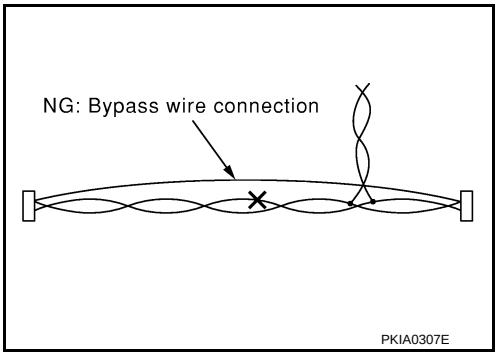
INFOID:0000000007577881

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.)

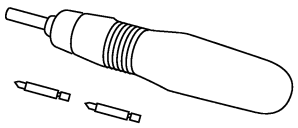


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000007577882

Tool name	Description
Power tool  PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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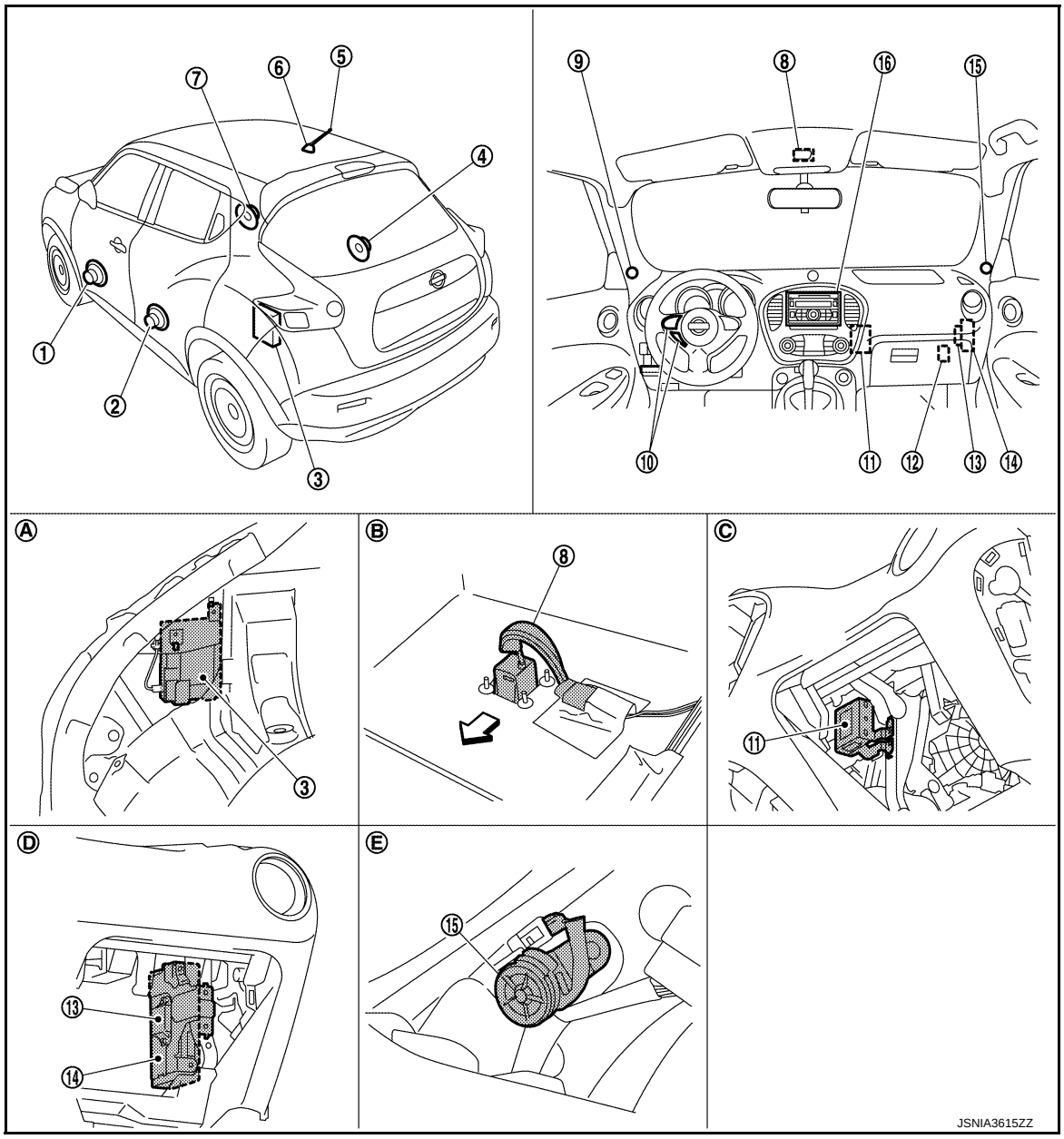

1.	Front door speaker LH	2.	Rear door speaker LH	3.	Satellite radio tuner
4.	Rear door speaker RH	5.	Antenna rod	6.	Antenna base (antenna amp. and satellite radio antenna)
7.	Front door speaker RH	8.	Microphone	9.	Tweeter LH
10.	Steering switch	11.	iPod adapter	12.	iPod connector
13.	TEL antenna	14.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

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	• 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	• Outputs sound signal from audio unit. • Outputs high, mid and low range sounds.
Tweeter	• Outputs sound signal from audio unit. • Outputs high range sounds.
Rear door speaker	• Outputs sound signal from audio unit. • Outputs high, mid and low range sounds.
TEL adapter unit	• 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	• Receives the TEL voice signal and outputs it to the TEL adapter unit. • TEL antenna is unified with a TEL adapter unit.
Microphone	• 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	• Inputs iPod sound signal from iPod®, and outputs iPod sound signal to audio unit. • Receiving/transmitting of iPod® operation signals are performed as follows: - between audio unit and iPod adapter: AV communication. - between iPod® and iPod adapter: serial communication.
Antenna base	A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted. ANTENNA AMP. • Radio signal received by rod antenna is amplified and transmitted to audio unit. • Power (antenna amp. ON signal) is supplied from audio unit. SATELLITE RADIO ANTENNA • Receives satellite radio waves and outputs it to audio unit.
Satellite radio tuner	• 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.

SYSTEM

System Diagram

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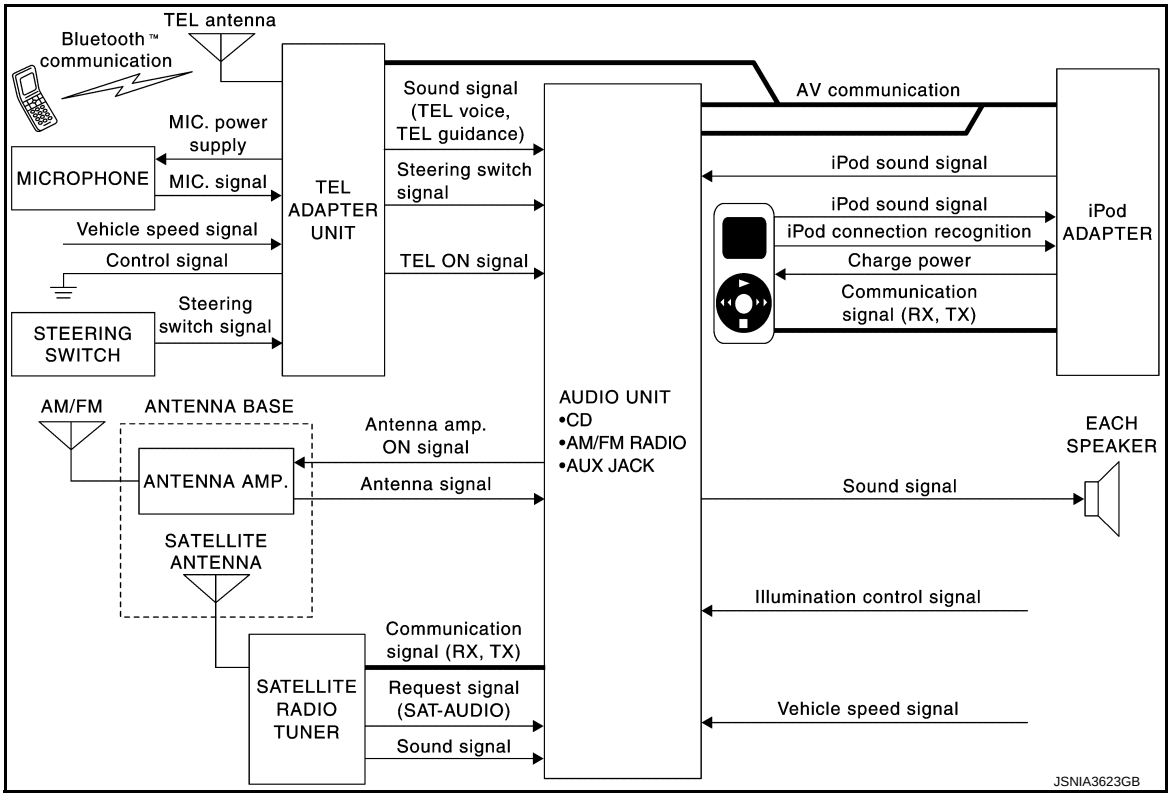
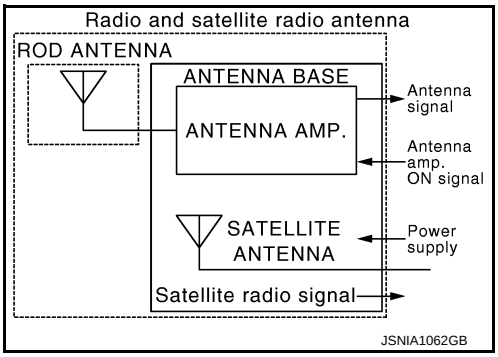


NOTE:

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



System Description

INFOID:0000000007577886

AUDIO SYSTEM

Audio functions

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

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

AUDIO FUNCTION

AM/FM Radio

- 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 the 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 gone 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.

DIAGNOSIS SYSTEM (AUDIO UNIT)

On Board Diagnosis Function

INFOID:0000000007577887

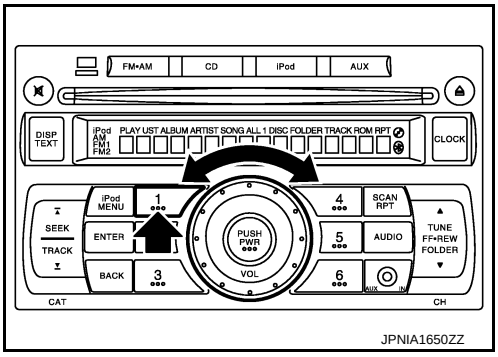
ON BOARD DIAGNOSIS ITEM

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.



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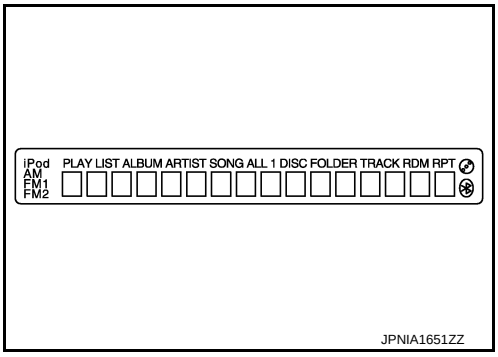
4. Initially, all display segments will be illuminated.



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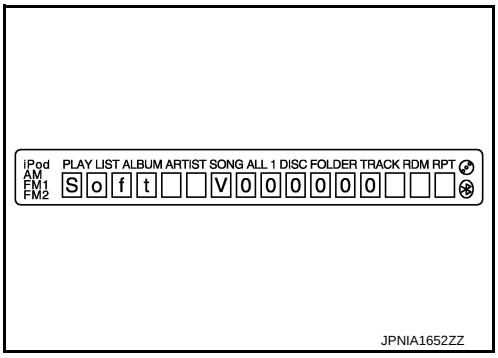
5. Press the “DISP TEXT” switch to enter version diagnostics. “Soft” (audio software version) is displayed.



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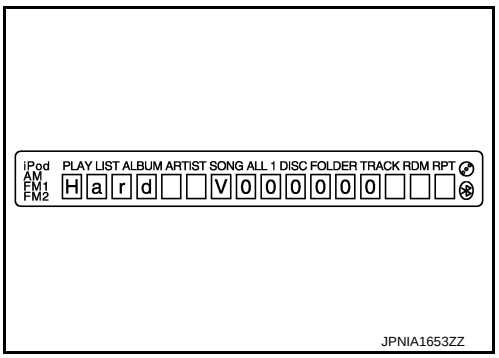
6. Press the “DISP TEXT” switch again to display the “Hard” (audio hardware version).



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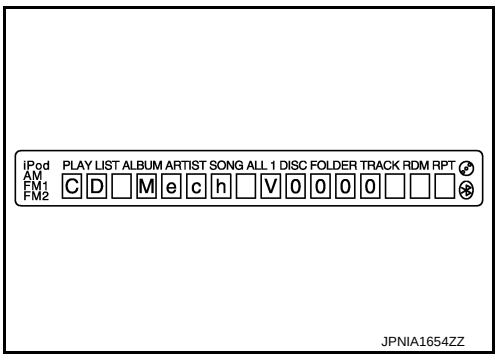
7. Press the “DISP TEXT” switch again to display the “CD Mech” (CD mechanism version).



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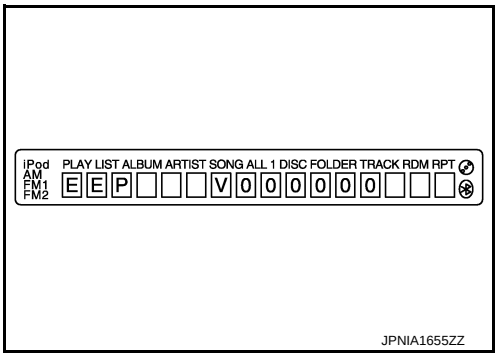
8. Press the “DISP TEXT” switch again to display the “EEP” (audio unit EEPROM version).



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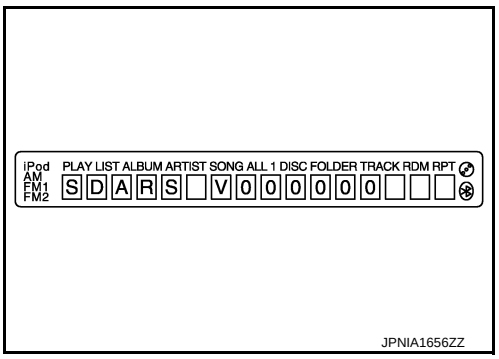
9. Press the “DISP TEXT” switch again to display the “SDARS” (satellite radio version).



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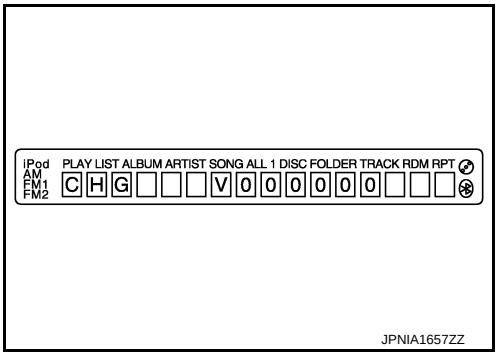
10. Press the “DISP TEXT” switch again to display the “CHG” (audio CD changer version). If audio CD changer is not connected, “FFFFFF” is displayed.



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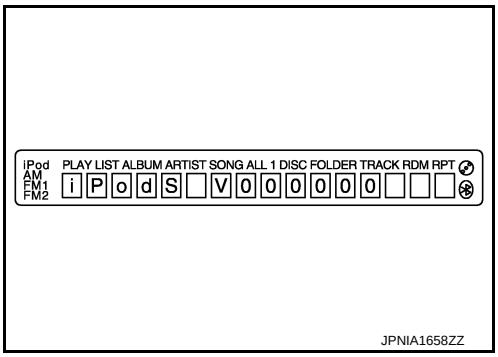
11. Press the “DISP TEXT” switch again to display the “iPodS” (iPod software version). “FFFFFF” is displayed when communication signals between the audio unit and iPod adapter include a malfunction.



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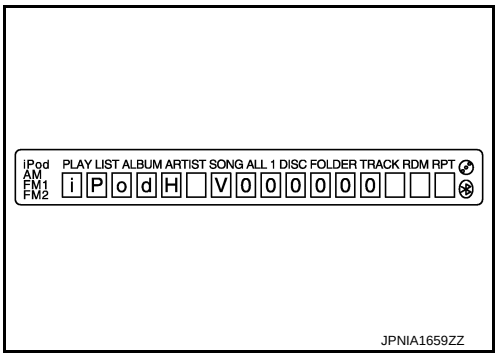
12. Press the “DISP TEXT” switch again to display the “iPodH” (iPod hardware version). “FFFFFF” is displayed when communication signals between the audio unit and iPod adapter include a malfunction.



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Finishing Self-diagnosis Mode

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

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Description

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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:0000000007577889

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.

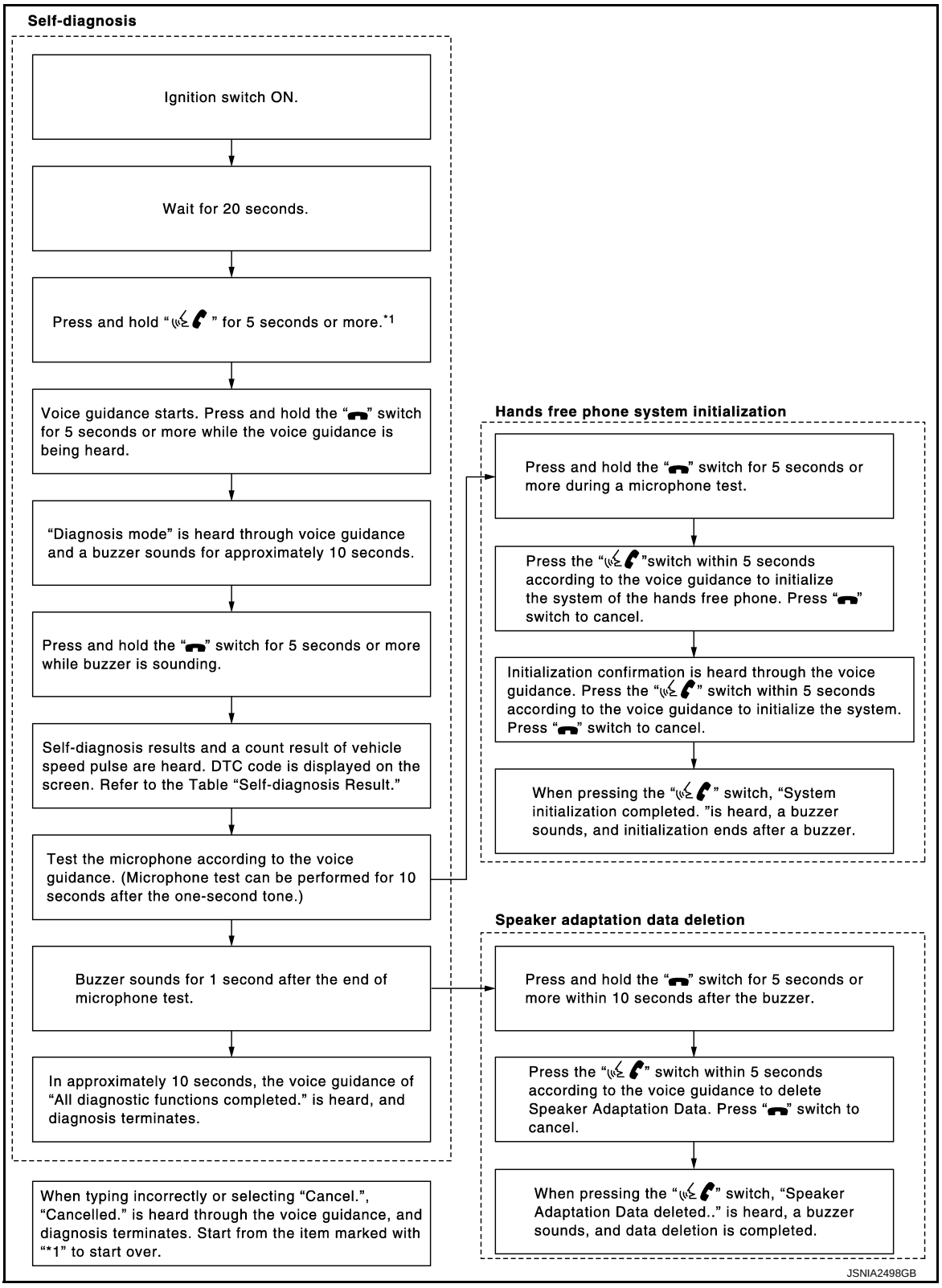
Self-diagnosis results

DTC (Audio screen)	Failure massage	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.

FLOW CHART OF TROUBLE DIAGNOSIS



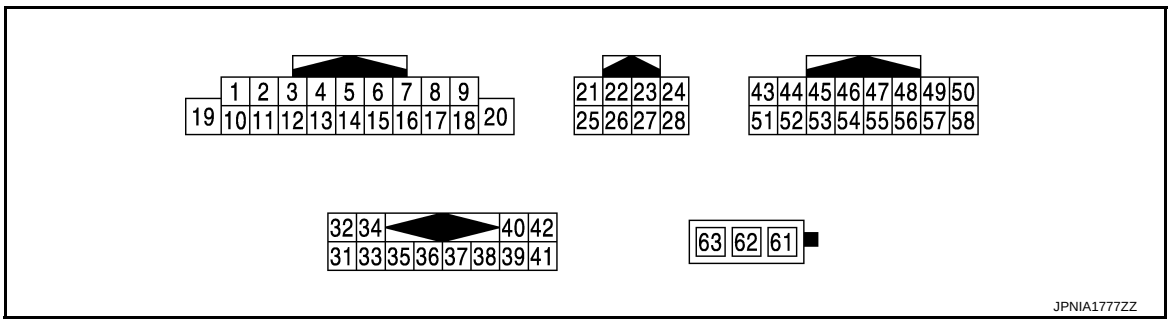
ECU DIAGNOSIS INFORMATION

AUDIO UNIT

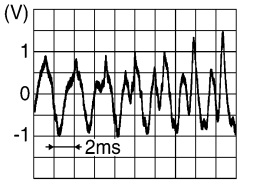
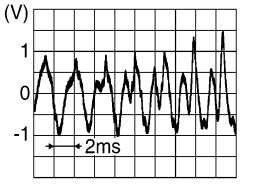
Reference Value

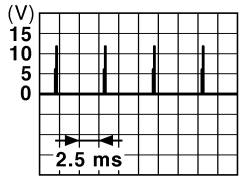
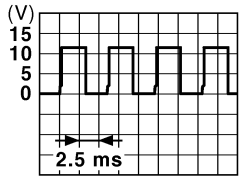
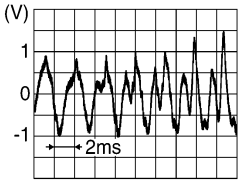
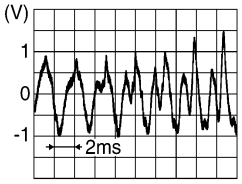
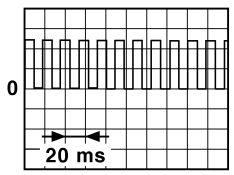
INFOID:0000000007577890

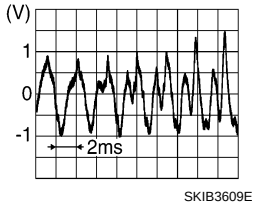
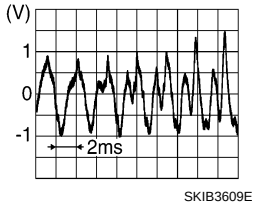
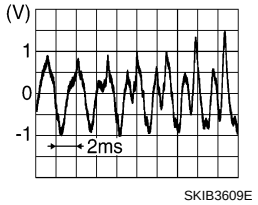
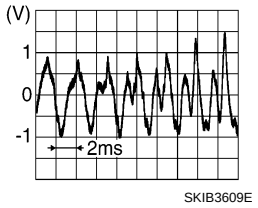
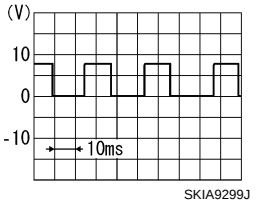
TERMINAL LAYOUT

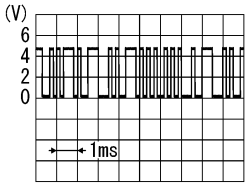
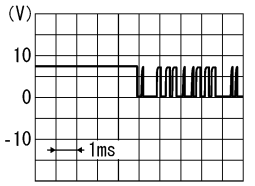
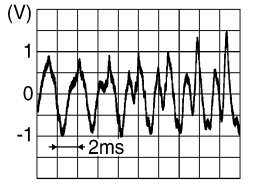


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output				
2 (W)	3 (GR)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output.	Outputs waveform synchronized with sound.	 SKIB3609E
4 (LG)	5 (W)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output.	Outputs waveform synchronized with sound.	 SKIB3609E
6 (W/ L)	15 (P)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 - 3.3 V	0.2 V
					Keep pressing SEEK UP switch.		0.8 V
					Keep pressing SEEK DOWN switch.		1.6 V
					Keep pressing switch.		2.2 V
					Except for above.		3.3 V
7 (L)	Ground	ACC power supply	Input	Ignition switch ACC	—	10.8 - 15.6 V	Battery voltage

Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output				
9 (V)	8 (GR)	Illumination control signal	Input	Ignition switch ON	• Lighting switch 1ST • When meter illumination is maximum	Waveform of 0 -15.6 V is input according to meter illumination step.	 JPNIA1687GB
					• Lighting switch 1ST • When meter illumination is step 11		 JPNIA1686GB
					• 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.	Outputs waveform synchronized with sound.	 SKIB3609E
13 (BR)	14 (Y)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output.	Outputs waveform synchronized with sound.	 SKIB3609E
16 (GR/ B)	15 (L/G)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 - 3.3 V	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 is input.	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB

Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output				
19 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	10.8 - 15.6 V	Battery voltage
21 (R)	25 (W)	iPod sound signal LH	Input	Ignition switch ON	When iPod mode is selected.	Outputs waveform synchronized with sound.	 SKIB3609E
23 (B)	27 (G)	iPod sound signal RH	Input	Ignition switch ON	When iPod mode is selected.	Outputs waveform synchronized with sound.	 SKIB3609E
28	—	Shield	—	—	—	—	—
32 (R)	31 (G)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	Outputs waveform synchronized with sound.	 SKIB3609E
34 (B)	33 (W)	Satellite radio sound signal RH	Input	Ignition 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 AUDIO)	Input	Ignition switch ON	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.	 SKIA9299J

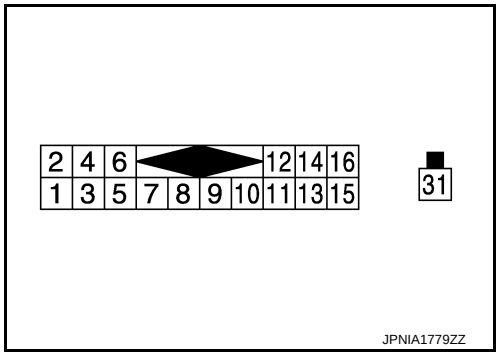
Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output				
39 (R)	Ground	Communication signal (SAT TO AUDIO)	Input	Ignition switch ON	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.	 PKIB5039J
40 (B)	Ground	Communication 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)	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	—	—	—	—

SATELLITE RADIO TUNER

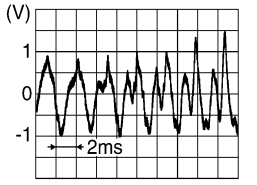
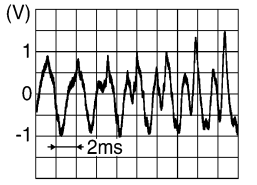
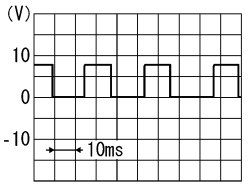
Reference Value

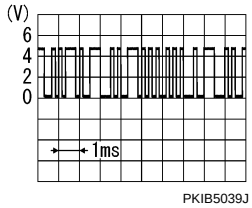
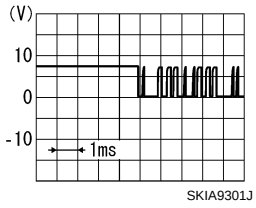
INFOID:0000000007577891

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.	 SKIB3609E
4 (B)	3 (W)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected.	Outputs waveform synchronized with sound.	 SKIB3609E
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.	 SKIA9299J

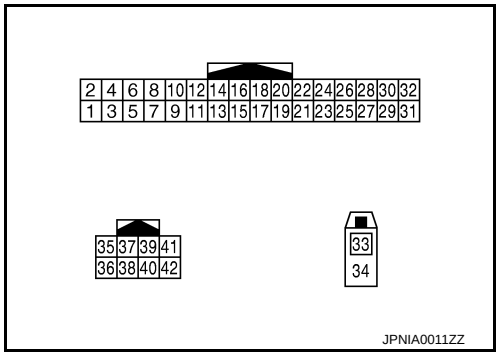
Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output				
9 (R)	15 (B)	Communication signal (SAT TO AUDIO)	Output	Ignition switch ON	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.	 PKIB5039J
10 (B)	15 (B)	Communication signal (AUDIO TO SAT)	Input	Ignition switch ON	When satellite radio mode is selected.	Waveform of 1.5 - 6.0 V is input.	 SKIA9301J
11 (Y)	—	Request signal (CHG TO AUDIO)	—	—	—	—	—
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 supply	Input	Ignition switch ACC	—	7.0 - 16.0 V	Battery voltage
31	—	Satellite radio antenna signal	Input	—	—	—	—

TEL ADAPTER UNIT

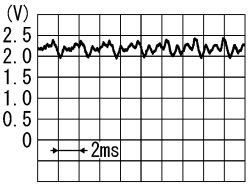
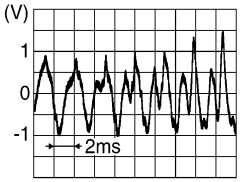
Reference Value

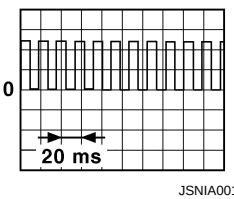
INFOID:0000000007577892

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.	 PKIB5037J
9 (BR)	10 (GR)	Sound signal (TEL voice, voice guidance)	Output	Ignition switch ON	During voice guide output with the switch pressed.	Outputs waveform synchronized with sound.	 SKIB3609E
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

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 - 5.2 V	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 - 5.2 V	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 - 3.3 V	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 - 3.3 V	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 according to vehicle speed is input.	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
29 (R)	8	Microphone VCC	Output	Ignition switch ON	—	4.7 - 5.3 V	5.0 V
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	—

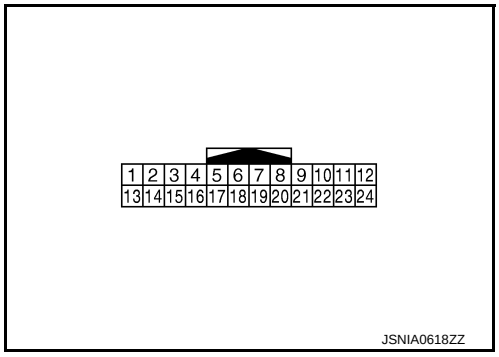
Terminal (Wire color)		Description		Condition		Standard	Reference value (Approx.)
+	–	Signal name	Input/ Output				
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—	—
33	4 (B)	TEL antenna signal	Input/ Output	Ignition switch ON	Not connected to TEL antenna connector.	—	5.0 V
34	—	Shield	—	—	—	—	—

IPOD ADAPTER

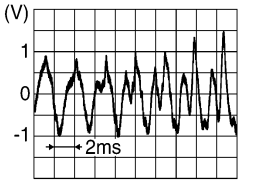
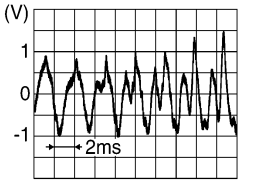
Reference Value

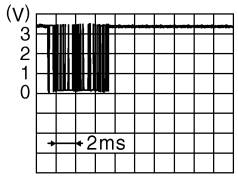
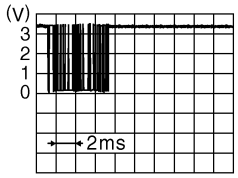
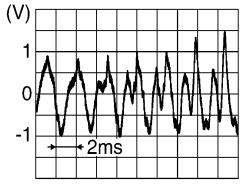
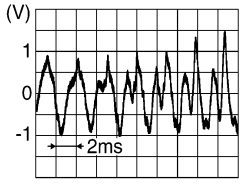
INFOID:0000000007577893

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	—	—	—	—	—

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.	 JPNIA0462GB
10 (LG)	Ground	Communication signal (iPod®→i-Pod adapter)	Input	Ignition switch ON	Connected to iPod®	After outputting waveform of 0 - 3.3V, constant signal of 3.3V is output.	 JPNIA0462GB
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.	 SKIB3609E
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.	 SKIB3609E

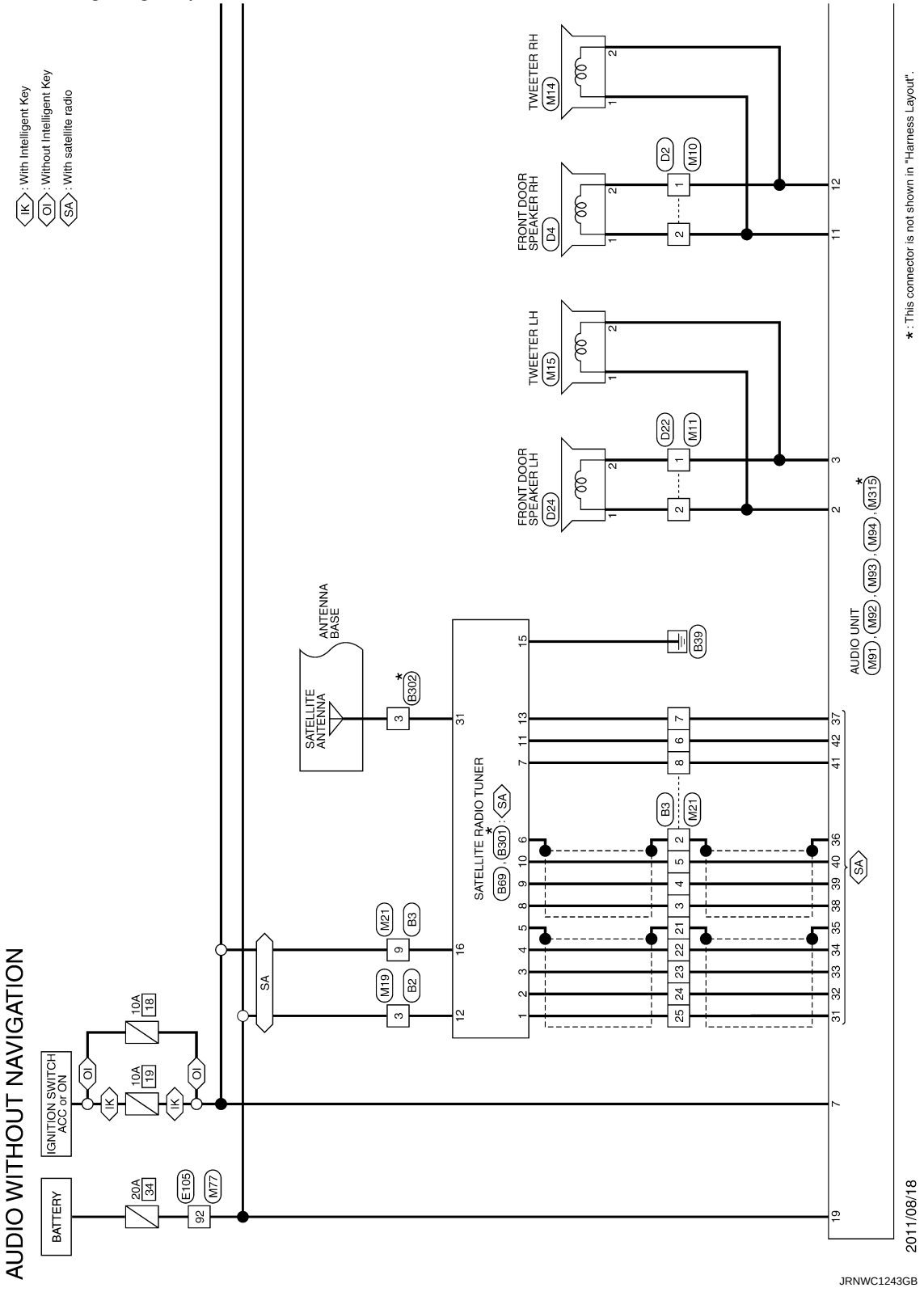
WIRING DIAGRAM

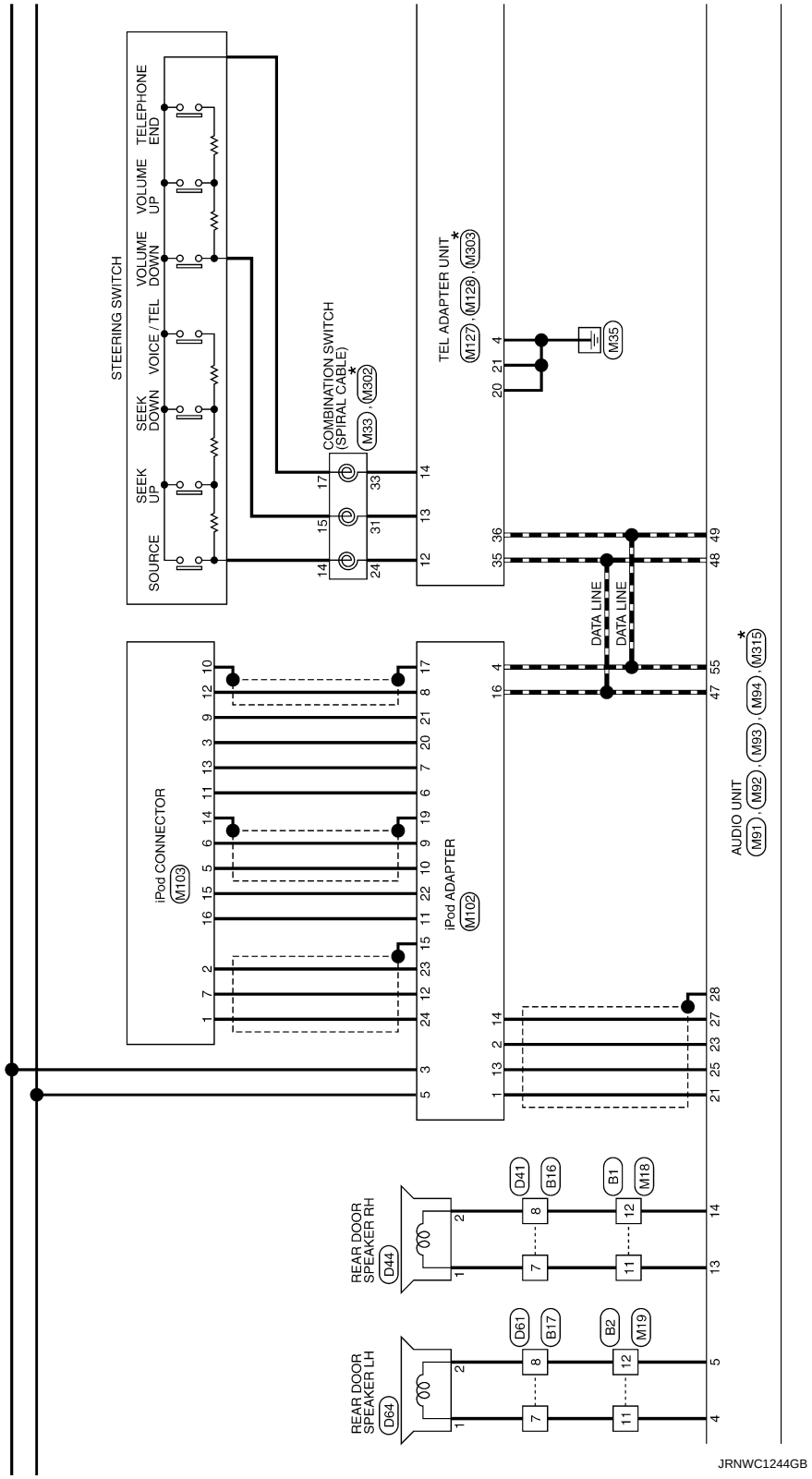
AUDIO WITHOUT NAVIGATION

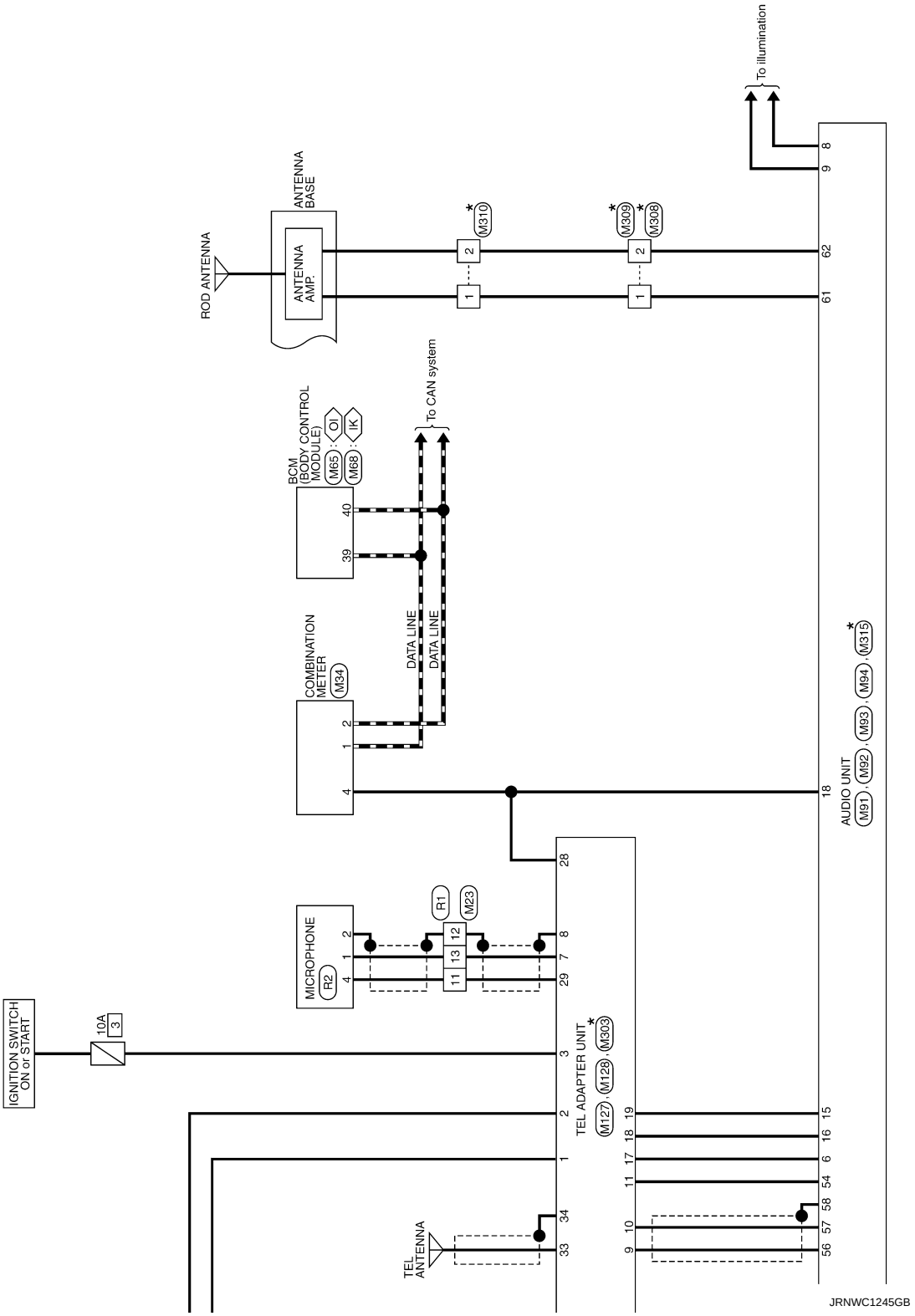
Wiring Diagram

INFOID:0000000007577894

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




STEERING SWITCH
SOURCE
SEEK UP
SEEK DOWN
VOICE / TEL
VOLUME DOWN
VOLUME UP
TELEPHONE END
COMBINATION SWITCH (SPIRAL CABLE)
M33, M302
TEL ADAPTER UNIT
M127, M128, M303
M35
DATA LINE
DATA LINE
iPod CONNECTOR
M103
iPod ADAPTER
M102
AUDIO UNIT
M91, M92, M93, M94, M315
REAR DOOR SPEAKER RH
D44
REAR DOOR SPEAKER LH
D64
D41
B16
B1
M18
D61
B17
B2
M19
JRNWC1244GB


To illumination
ANTENNA BASE
ROD ANTENNA
ANTENNA AMP.
M310
M309
M308
BCM (BODY CONTROL MODULE)
M65
M68
OI
IK
To CAN system
COMBINATION METER
M34
DATA LINE
DATA LINE
AUDIO UNIT
M91
M92
M93
M94
M315
MICROPHONE
R2
R1
M23
IGNITION SWITCH ON or START
10A
3
TEL ADAPTER UNIT
M127
M128
M303
TEL ANTENNA
JRNWC1245GB

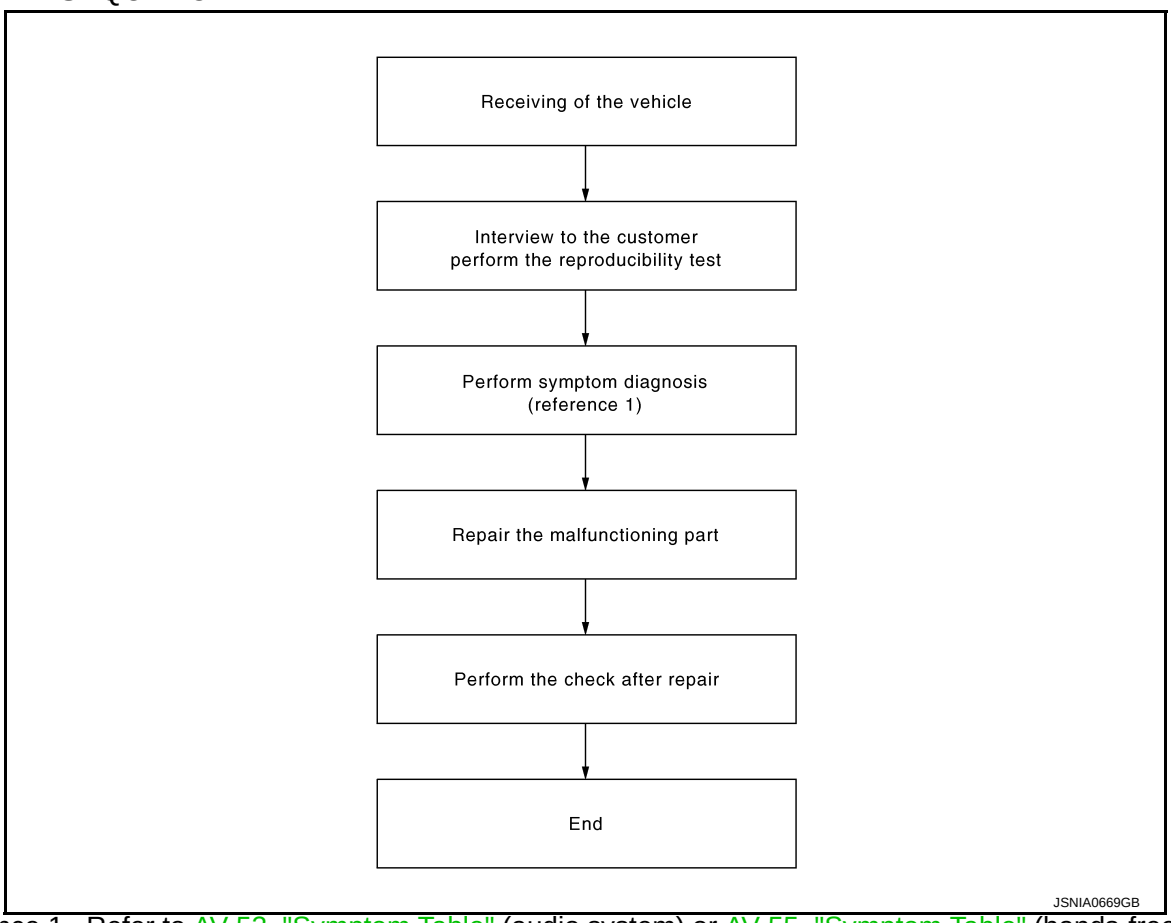
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000007577895

OVERALL SEQUENCE



Reference 1···Refer to AV-53, "Symptom Table" (audio system) or AV-55, "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-53, "Symptom Table" (audio system) or AV-55, "Symptom Table" (hands-free phone system).

>> GO TO 3.

3.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the malfunctioning parts.

>> GO TO 4.

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

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000007577896

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:0000000007577897

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.

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:0000000007577898

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.

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:0000000007577899

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	Probe		Condition	Standard	Reference value
		Terminal				
	Connector	(+)	(–)	Ignition switch		
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

Description

INFOID:0000000007577900

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

Diagnosis Procedure

INFOID:0000000007577901

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.

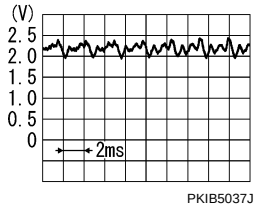
Probe				Standard	Reference value (Approx.)
(+)		(–)			
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
M127	29	M127	8	4.7 - 5.3 V	5.0 V

Is inspection result OK?

YES >> GO TO 3.
NO >> Replace TEL adapter unit. Refer to AV-65, "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.

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.	

PKIB5037J

Is inspection result OK?

YES >> Replace TEL adapter unit. Refer to AV-65, "Removal and Installation".
NO >> Replace microphone. Refer to AV-66, "Removal and Installation".

CONTROL SIGNAL CIRCUIT

Description

INFOID:0000000007577902

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

Diagnosis Procedure

INFOID:0000000007577903

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-65, "Removal and Installation".
NO >> Repair harness or connector.

TELEPHONE ON SIGNAL CIRCUIT

Description

INFOID:0000000007577904

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

Diagnosis Procedure

INFOID:0000000007577905

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-59, "Removal and Installation".

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

Description

INFOID:0000000007577906

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

Diagnosis Procedure

INFOID:0000000007577907

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-13, "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-65, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-41, "Component Inspection".

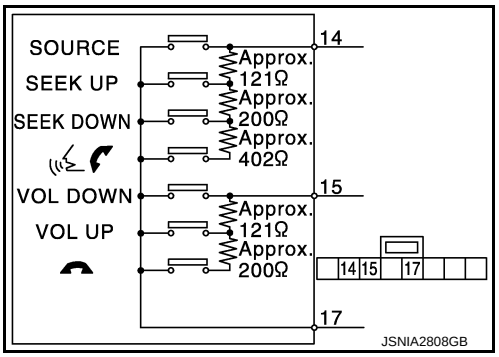
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-69, "Exploded View".

Component Inspection

INFOID:0000000007577908

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		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)

Description

INFOID:0000000007577909

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

Diagnosis Procedure

INFOID:0000000007577910

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-13, "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-65, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-43, "Component Inspection".

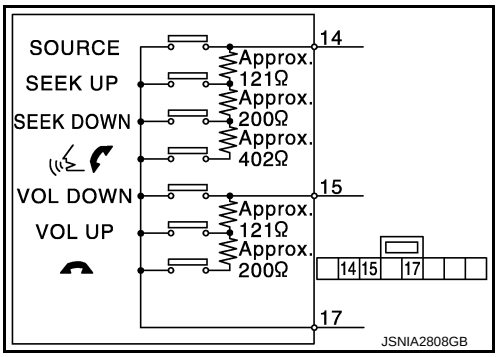
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-69, "Exploded View".

Component Inspection

INFOID:0000000007577911

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		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)

Description

INFOID:0000000007577912

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

Diagnosis Procedure

INFOID:0000000007577913

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-13, "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-65, "Removal and Installation".

4.CHECK STEERING SWITCH

Check steering switch. Refer to AV-45, "Component Inspection".

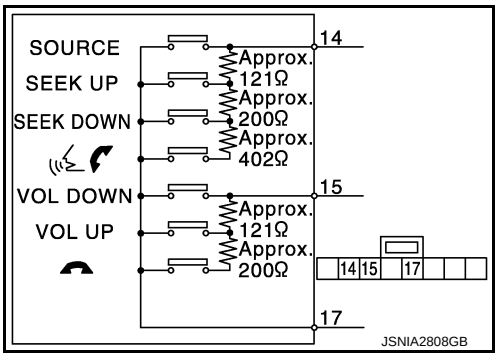
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-69, "Exploded View".

Component Inspection

INFOID:0000000007577914

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		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)

Description

INFOID:0000000007577915

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

Diagnosis Procedure

INFOID:0000000007577916

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					
Connector	Terminal	Connector	Terminal		
M91	6	M91	15	0 – 3.3 V	3.3 V

Is inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-65, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-59, "Removal and Installation".

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

Description

INFOID:0000000007577917

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

Diagnosis Procedure

INFOID:0000000007577918

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					
Connector	Terminal	Connector	Terminal		
M91	16	M91	15	0 – 3.3 V	3.3 V

Is inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-65, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-59, "Removal and Installation".

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

Description

INFOID:0000000007577919

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

Diagnosis Procedure

INFOID:0000000007577920

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-65, "Removal and Installation".
NO >> Replace audio unit. Refer to AV-59, "Removal and Installation".

COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000007577921

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:0000000007577922

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		Ground	
Connector	Terminal		
M93	39		4.0 V

Is inspection result OK?

YES >> GO TO 3.
NO >> Replace audio unit. Refer to AV-59, "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.

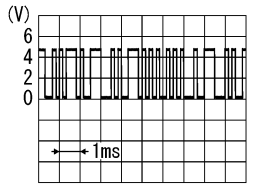
Probe			Reference value (Approx.)
(+)		(–)	
Satellite radio tuner		Ground	
Connector	Terminal		
B69	10		7.5 V

Is inspection result OK?

YES >> GO TO 4.
NO >> Replace satellite radio tuner. Refer to AV-63, "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.

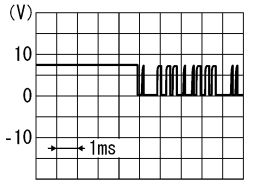
Probe				Condition	Standard	Reference value
(+)		(+)				
Satellite radio tuner						
Connector	Terminal	Connector	Terminal			
B69	9	B69	15	When satellite radio mode is selected.	Waveform of 0.5 - 7.0 V is input.	 PKIB5039J

Is inspection result OK?

YES >> GO TO 5.
NO >> Replace satellite radio tuner. Refer to AV-63, "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.	 SKIA9301J

Is inspection result OK?

YES >> INSPECTION END
NO >> Replace audio unit. Refer to AV-59, "Removal and Installation".

REQUEST SIGNAL CIRCUIT (SAT TO AUDIO)

Description

INFOID:0000000007577923

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

Diagnosis Procedure

INFOID:0000000007577924

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.

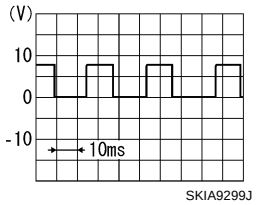
Probe			Reference value (Approx.)
(+)		(–)	
Audio unit		Ground	
Connector	Terminal		
M93	38		4.0 V

Is inspection result OK?

YES >> GO TO 3.
NO >> Replace audio unit. Refer to AV-59, "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.

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.	 SKIA9299J

Is inspection result OK?

YES >> INSPECTION END
NO >> Replace satellite radio tuner. Refer to AV-63, "Removal and Installation".

SYMPTOM DIAGNOSIS

AUDIO SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000007577925

AUDIO SYSTEM

Symptoms	Check items	Possible malfunction location / Action to take
Audio sound is not heard.	No sound from all speakers.	Audio unit power supply and ground circuit. Refer to AV-33, "AUDIO UNIT : Diagnosis Procedure".
	Sound is not heard only from the specific places.	Sound signal circuit of malfunctioning system.
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit. • Antenna base • Antenna feeder
Satellite radio is not received.	When “AUX” switch is pressed, it change to satellite radio mode.	• Satellite radio sound signal circuit • Satellite radio antenna
	When “AUX” switch is pressed, it does not change to satellite radio mode.	• Satellite radio tuner power supply and ground circuit. Refer to AV-33, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Request signal circuit. Refer to AV-51, "Diagnosis Procedure". • Communication circuit between audio unit and satellite radio tuner. Refer to AV-49, "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)

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.	• 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.	• 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.
	• 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-35, "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-44, "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-48, "Diagnosis Procedure".
Only specified switch cannot be operated.	Replace steering switch. Refer to AV-69, "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-40, "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-46, "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-42, "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-47, "Diagnosis Procedure".

HANDS-FREE PHONE SYMPTOMS

Symptom Table

INFOID:0000000007577926

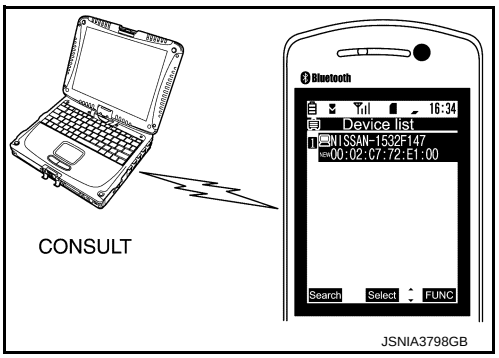
RELATED TO HANDS-FREE PHONE

- Check that the cellular phone is corresponding type (Bluetooth™ enabled) when the hands-free related malfunction vehicle is in service before performing a diagnosis.
- There is a case that malfunction occurs due to the version change of the phone type, etc. even though it is a corresponding type. Therefore, confirm it by changing the cellular phone to another corresponding type phone, and check that it operates normally. It is necessary to distinguish whether the cause is the vehicle or cellular phone. Check to ensure the customer's phone is supported by checking the phone compatibility for the hands-free system.

Simple Check for Bluetooth™ Communication

If cellular phone and TEL adapter unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn on a cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT, then start Windows®.
3. Set CONSULT near a cellular phone.
4. When operated Bluetooth™ registration by cellular phone, check if CONSULT* would be displayed on the device name.
   (If other Bluetooth™device is located near cellular phone, a name of the device would be displayed also.)
   NOTE:
   *:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunction. Repair the cellular phone first, then perform diagnosis.
- If CONSULT is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.

Trouble Diagnosis Chart by Symptom

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.	• Both the reception and the speech cannot be performed. • Audio can be operated by steering switch.	• TEL adapter unit power supply and ground circuit. Refer to AV-34, "TEL ADAPTER UNIT : Diagnosis Procedure". • Control signal circuit. Refer to AV-38, "Diagnosis Procedure". • AV communication circuit between audio unit and TEL adapter unit.
	• Both the reception and the speech cannot be performed. • Audio can be operated by steering switch.	TEL ON signal circuit. Refer to AV-39, "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-53, "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-36, "Diagnosis Procedure".

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-44, "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-40, "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-42, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000007577927

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.
	Check if the disc is protected by copyright.
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.

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

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.

REMOVAL AND INSTALLATION

AUDIO UNIT

Removal and Installation

INFOID:0000000007577928

REMOVAL

1. Remove cluster lid C. Refer to IP-11, "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

INFOID:0000000007577929

REMOVAL

1. Remove front door finisher. Refer to INT-12, "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:0000000007577930

REMOVAL

1. Remove front pillar garnish. Refer to INT-17, "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

INFOID:0000000007577931

REMOVAL

1. Remove rear door finisher. Refer to INT-15, "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.

SATELLITE RADIO TUNER

Removal and Installation

INFOID:0000000007577932

REMOVAL

1. Remove luggage side lower finisher LH. Refer to INT-32, "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.

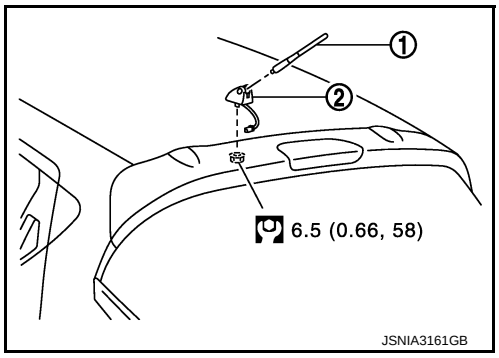
INSTALLATION

Install in the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:0000000007577933



1. Antenna rod
2. Antenna base

: N·m (kg-m, in-fb)

Removal and Installation

INFOID:0000000007577934

REMOVAL

1. Remove headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" (normal roof) or INT-29, "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.

TEL ADAPTER UNIT

Removal and Installation

INFOID:0000000007577935

REMOVAL

1. Remove glove box assembly. Refer to IP-11, "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:0000000007577936

REMOVAL

1. Remove headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" (normal roof) or INT-29, "SUN-ROOF : Exploded View" (sunroof).
2. Remove microphone connector and pawl to remove microphone.

INSTALLATION

Install in the reverse order of removal.

IPOD ADAPTER

Removal and Installation

INFOID:0000000007577937

REMOVAL

1. Remove glove box assembly. Refer to IP-11, "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

INFOID:0000000007577938

REMOVAL

1. Remove glove box assembly. Refer to IP-11, "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.

STEERING SWITCH

Exploded View

INFOID:0000000007577939

Refer to SR-10, "Exploded View".

Removal and Installation

INFOID:0000000007577940

REMOVAL

Refer to SR-10, "Removal and Installation".

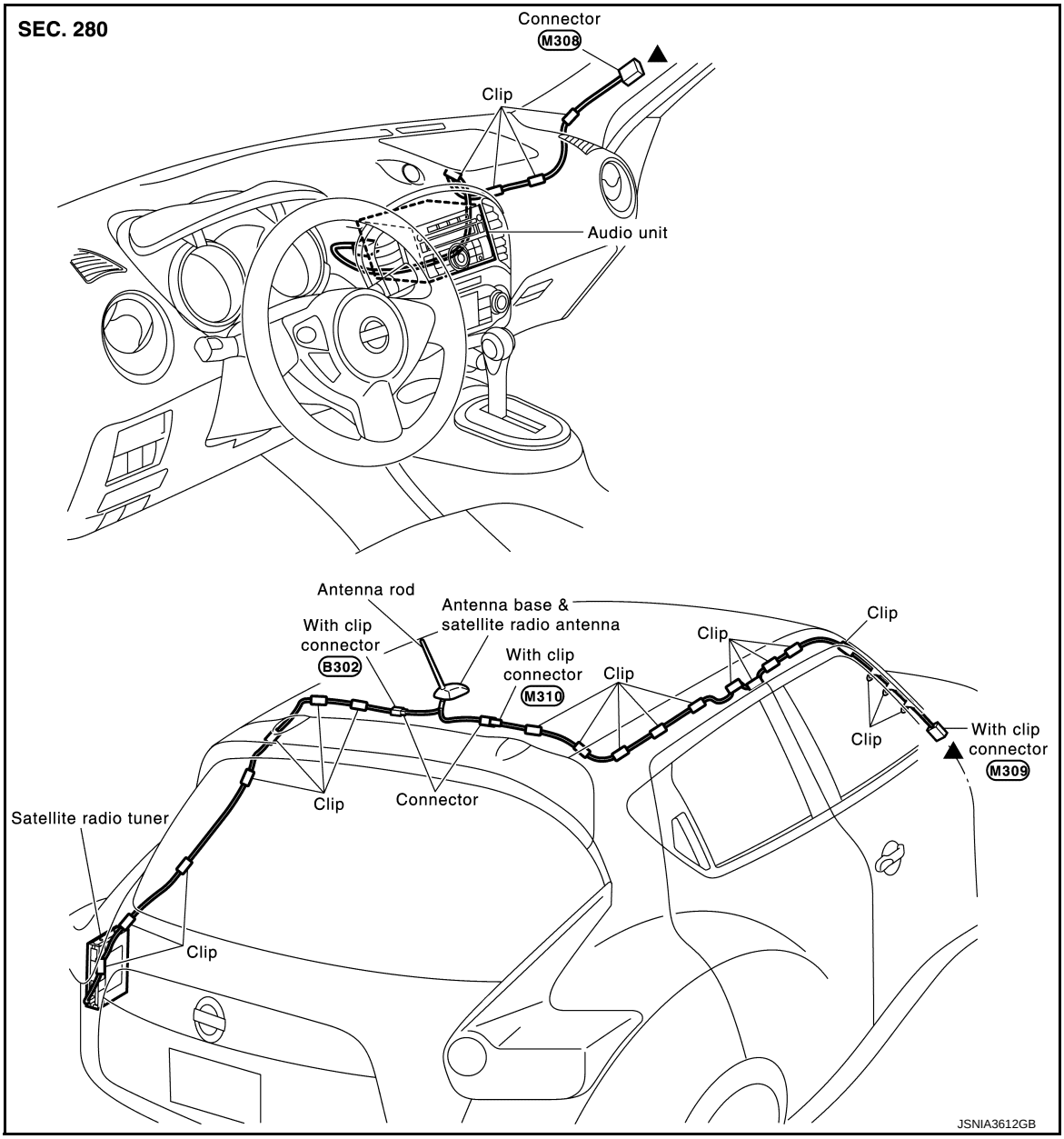
INSTALLATION

Install in the reverse order of removal.

ANTENNA FEEDER

Feeder Layout

INFOID:0000000007577941



PRECAUTION

PRECAUTIONS

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

INFOID:0000000007577942

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.**

Precaution for Trouble Diagnosis

INFOID:0000000007577943

AV COMMUNICATION SYSTEM

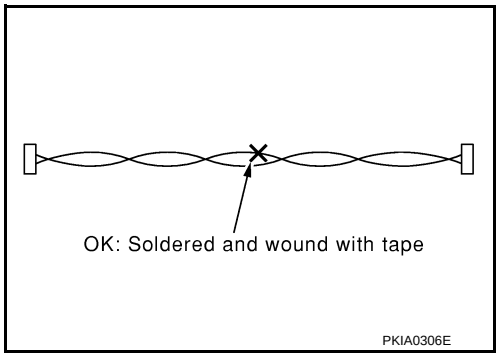
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

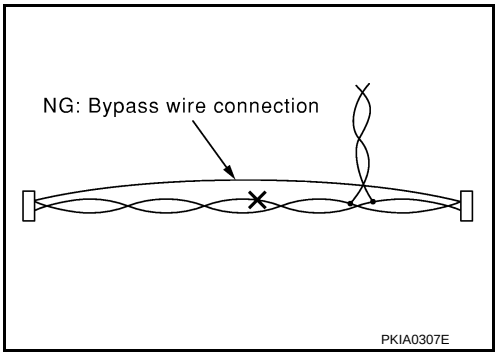
INFOID:0000000007577944

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.)

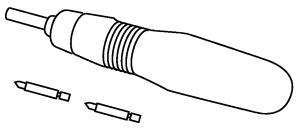


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000007577945

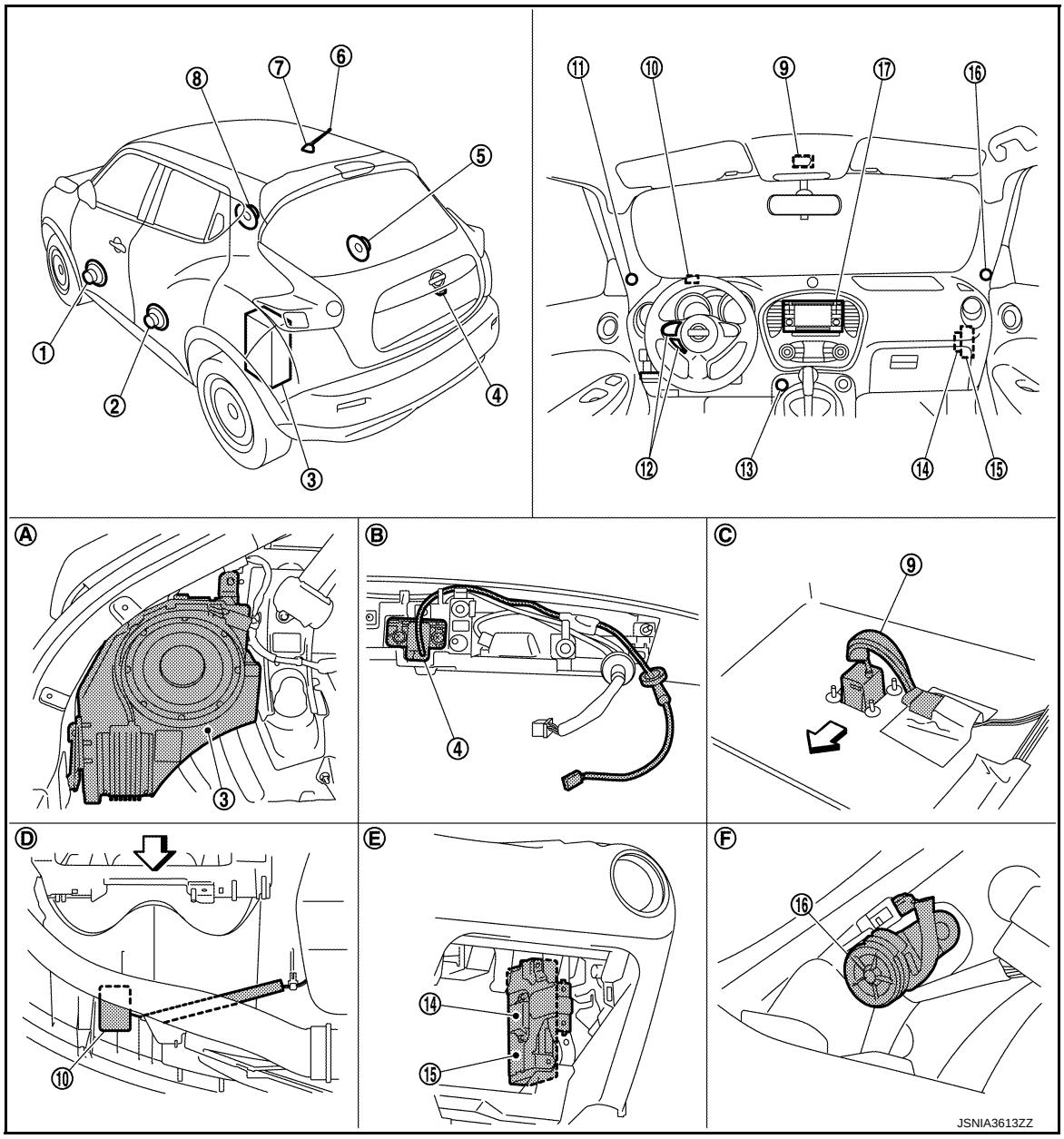
Tool name	Description
Power tool  PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000007577946



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

Component Description

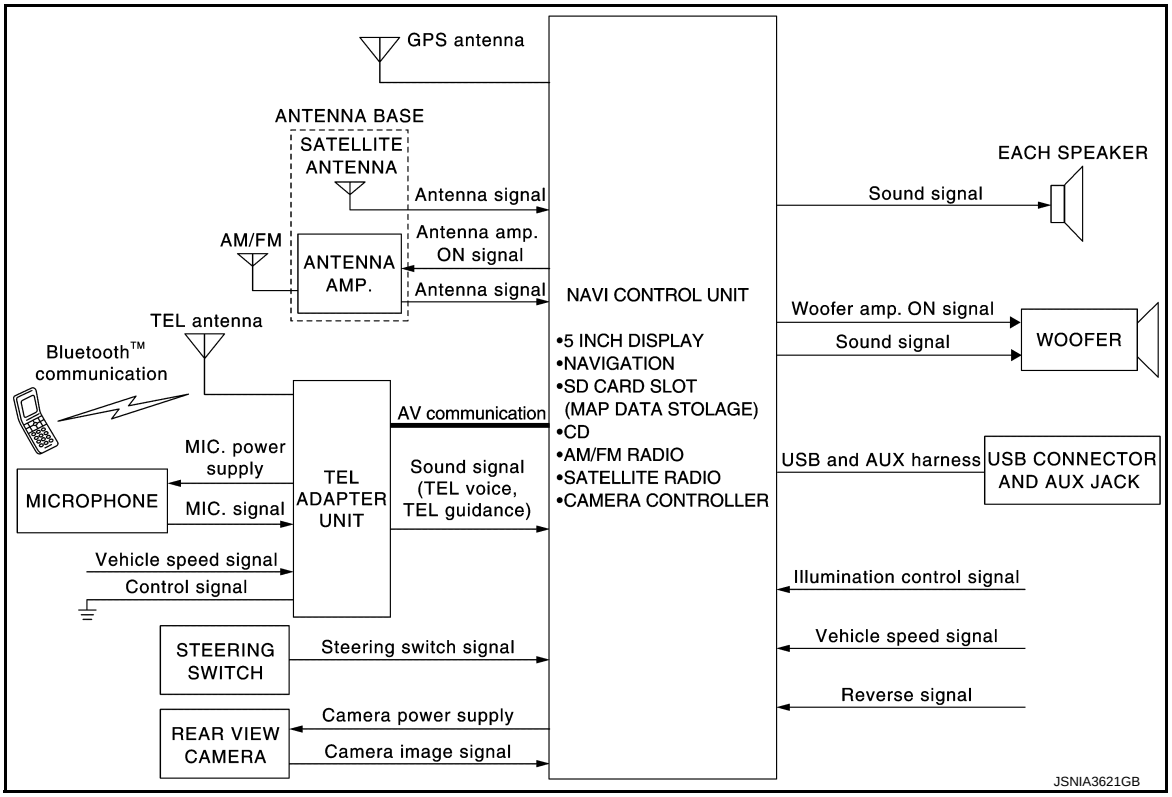
INFOID:0000000007577947

Part name	Description
NAVI control unit	• 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	• Outputs sound signal from NAVI control unit. • Outputs mid and low range sounds.
Tweeter	• Outputs sound signal from NAVI control unit. • Outputs high range sounds.
Rear door speaker	• Outputs sound signal from NAVI control unit. • Outputs high, mid and low range sounds.
Woofer	• Woofer amp. ON signal is input from NAVI control unit. • Outputs sound signal from NAVI control unit. • Outputs low range sounds.
Steering switch	• Operations for audio and hands-free phone are possible. • Steering switch signal (operation signal) is output to NAVI control unit.
TEL adapter unit	• 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	• Receives the TEL voice signal and outputs it to the TEL adapter unit. • TEL antenna is unified with a TEL adapter unit.
Microphone	• 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	A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted. ANTENNA AMP. • 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. SATELLITE RADIO ANTENNA • Receives satellite radio waves and outputs it to NAVI control unit.
Rear view camera	• 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	• Sound signal of auxiliary input is transmitted to NAVI control unit. • Sound signal of USB input is transmitted to NAVI control unit.

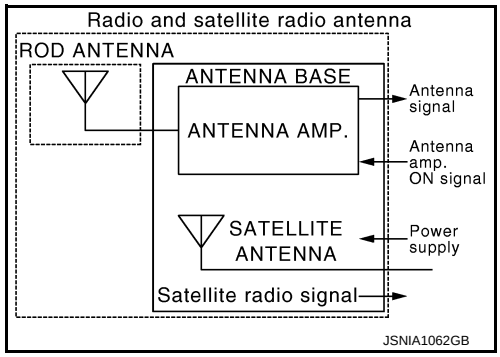
SYSTEM

System Diagram

INFOID:0000000007577948



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



System Description

INFOID:0000000007577949

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.

- 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

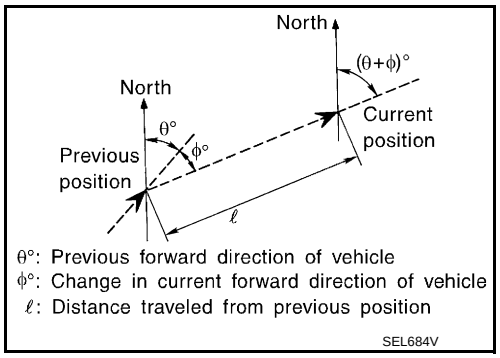
The navigation system periodically calculates the vehicle's current position according to the following three signals:

- 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.

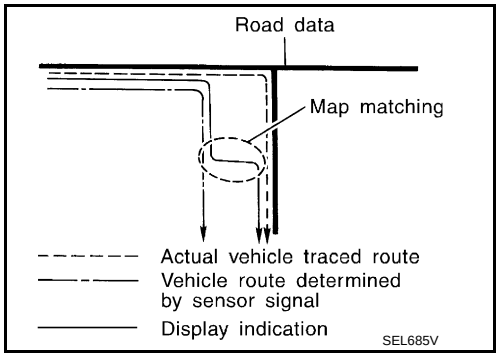
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

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.

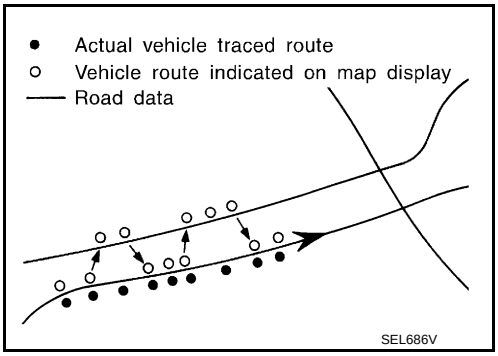
NOTE:

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

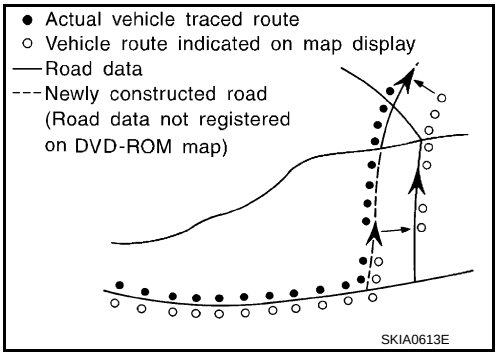


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the vehicle mark on the display must be corrected manually.

- 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.



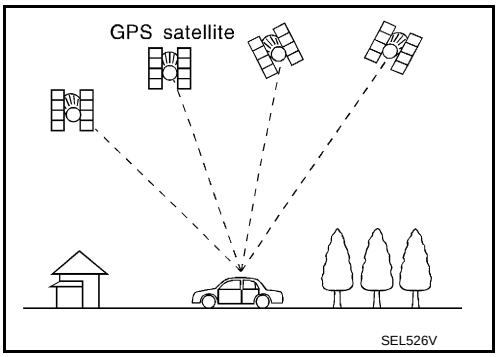
- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD-card, or when road pattern stored in the map data and the actual road pattern are different due to repair.
  The map-matching function may find another road and position the vehicle 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 gone 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-83, "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)

On Board Diagnosis Function

INFOID:0000000007577950

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

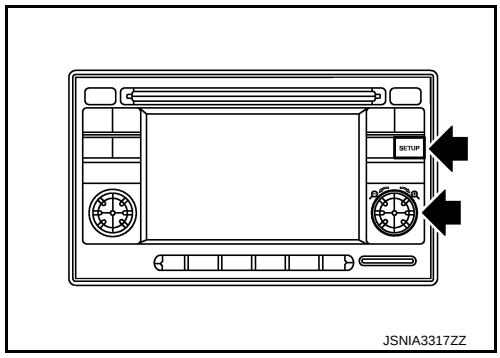
Mode		Item	Content
Service version		—	The version data of the parts is shown displayed.
Service radio	FM monitor	—	The Change Mediator monitors the dynamic values of the current tuner. If the band is switched within the radio monitor context, the active monitor is switched as well.
	AM monitor	—	
	XM monitor	—	The version data is displayed.
	XM functions	• 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.

Mode		Item	Content
Service system status	Running system status	• 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	• 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.

Mode	Item	Content
Service system configuration	• 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	• 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.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Description

INFOID:0000000007577951

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:0000000007577952

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.

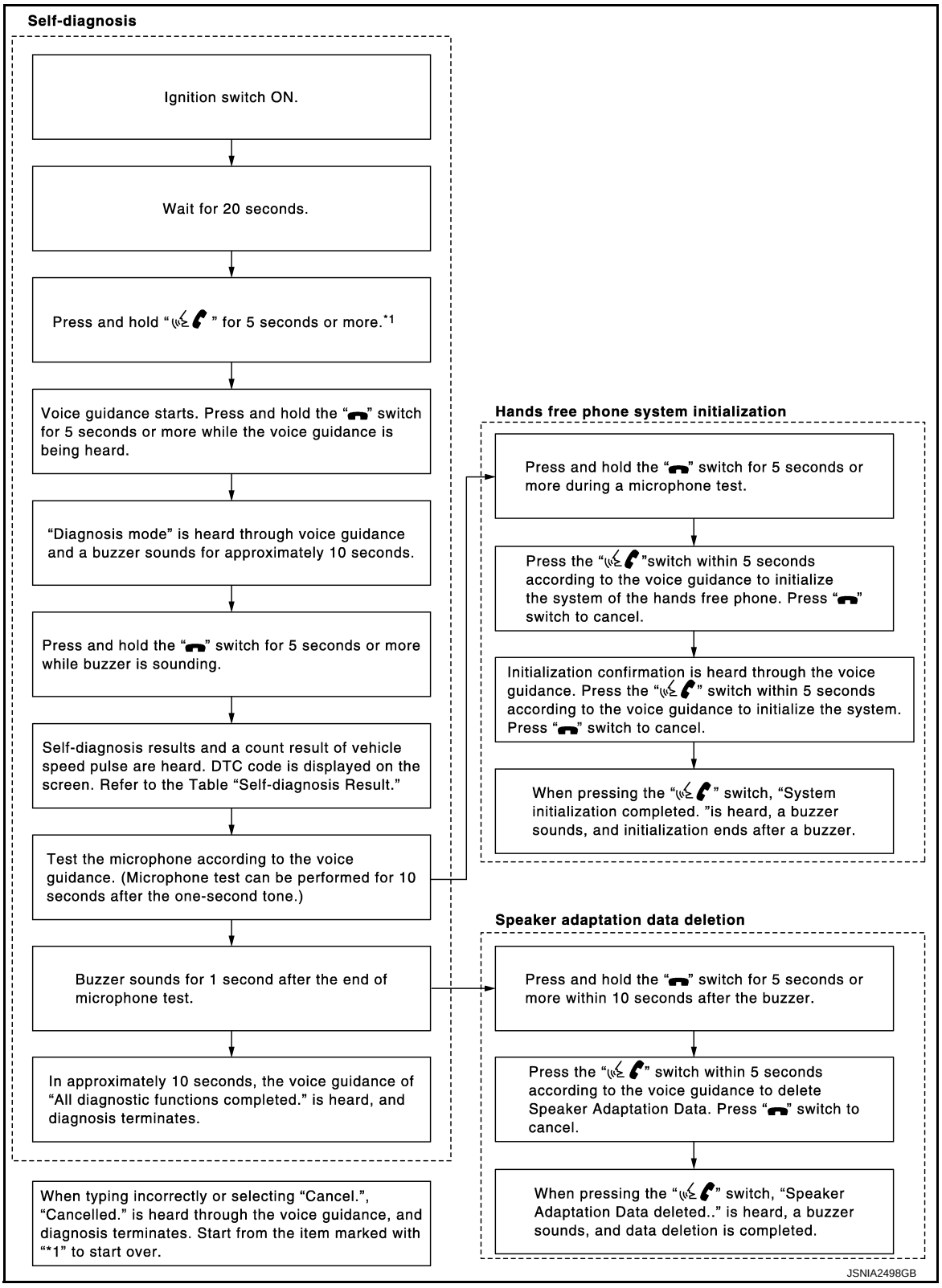
Self-diagnosis results

DTC (Audio screen)	Failure massage	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.

FLOW CHART OF TROUBLE DIAGNOSIS



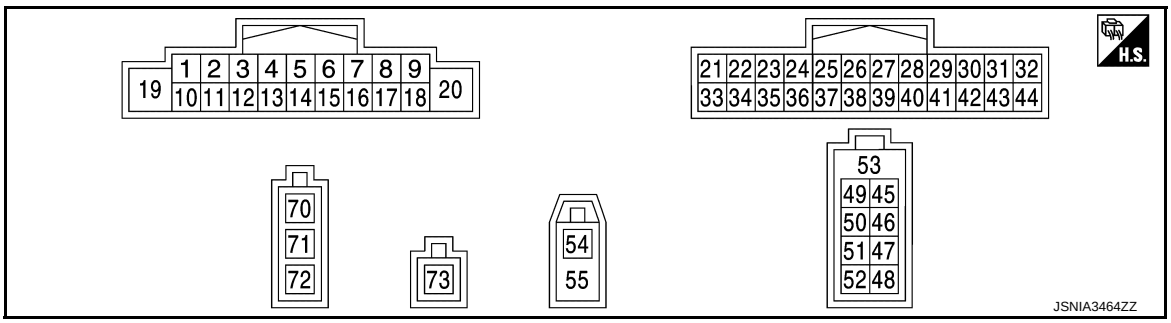
ECU DIAGNOSIS INFORMATION

NAVI CONTROL UNIT

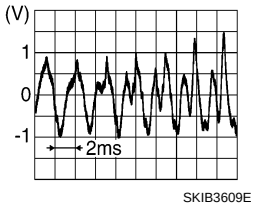
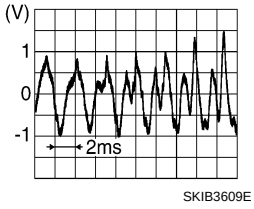
Reference Value

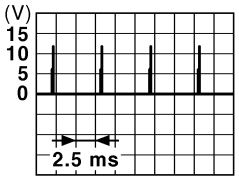
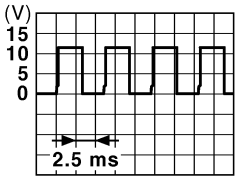
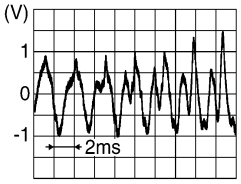
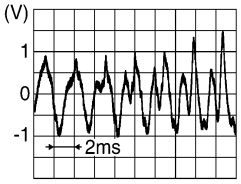
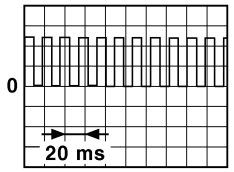
INFOID:0000000007577953

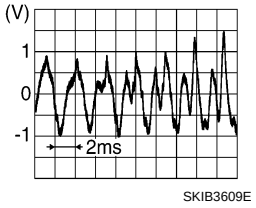
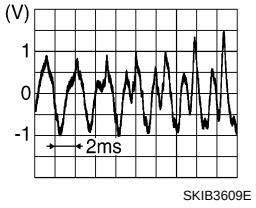
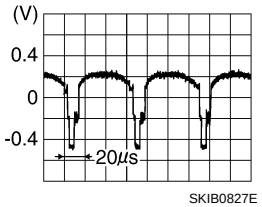
TERMINAL LAYOUT



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	—	12.0 V
2 (W)	3 (GR)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
4 (LG)	5 (W)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
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

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (V)	8 (GR)	Illumination control signal	Input	Ignition switch ON	• Lighting switch 1ST • When meter illumination is maximum	 JPNIA1687GB
					• Lighting switch 1ST • When meter illumination is step 11	 JPNIA1686GB
					• 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.	 SKIB3609E
13 (BR)	14 (Y)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
16 (R)	15 (V)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.4 V
					Keep pressing switch.	2.5 V
					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)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
21 (B)	Ground	EQ1	—	Ignition switch ON	—	0 V
23 (B)	Ground	EQ3*1	—	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.	 SKIB3609E
32	—	Shield	—	—	—	—
34 (BR)	35 (Y)	Sound signal (TEL voice, voice guidance)	Input	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
36 (B)	Ground	TEL ground	—	Ignition switch ON	—	0 V
37	—	Shield	—	—	—	—
38 (SB)*1 (G)*2	—	AV communication signal (H)	Input/ Output	—	—	—
39 (LG)*1 (R)*2	—	AV communication signal (L)	Input/ Output	—	—	—
41 (V)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 SKIB0827E
42	—	Shield	—	—	—	—
43 (LG)	Ground	Camera power supply	Output	Ignition switch ON	Shift position is in “R”.	6.0 V

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

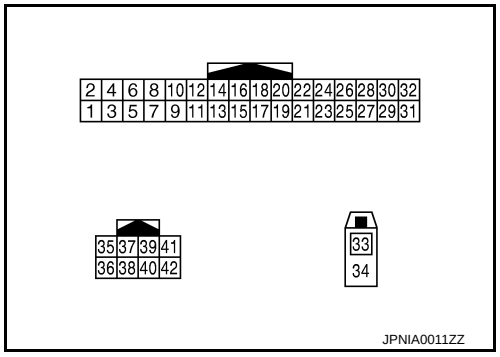
*1: Models without rear view camera.
*2: Models with rear view camera.

TEL ADAPTER UNIT

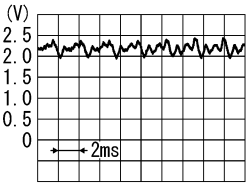
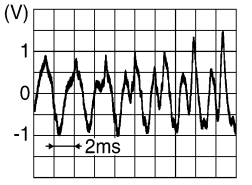
Reference Value

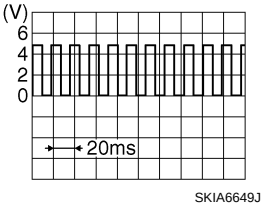
INFOID:0000000007577954

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.	 PKIB5037J
9 (BR)	10 (GR)	Sound signal (TEL voice, voice guidance)	Output	Ignition switch ON	During voice guide output with the switch pressed.	Outputs waveform synchronized with sound.	 SKIB3609E
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

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 according to vehicle speed is input.	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  SKIA6649J
29 (R)	8	Microphone VCC	Output	Ignition switch ON	—	4.7 - 5.3 V	5.0 V
33	4 (B)	TEL antenna signal	Input/ Output	Ignition switch ON	Not connected to TEL antenna connector.	—	5.0 V
34	—	Shield	—	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—	—
39 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	—
40 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—	—
41 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—	—
42 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—	—

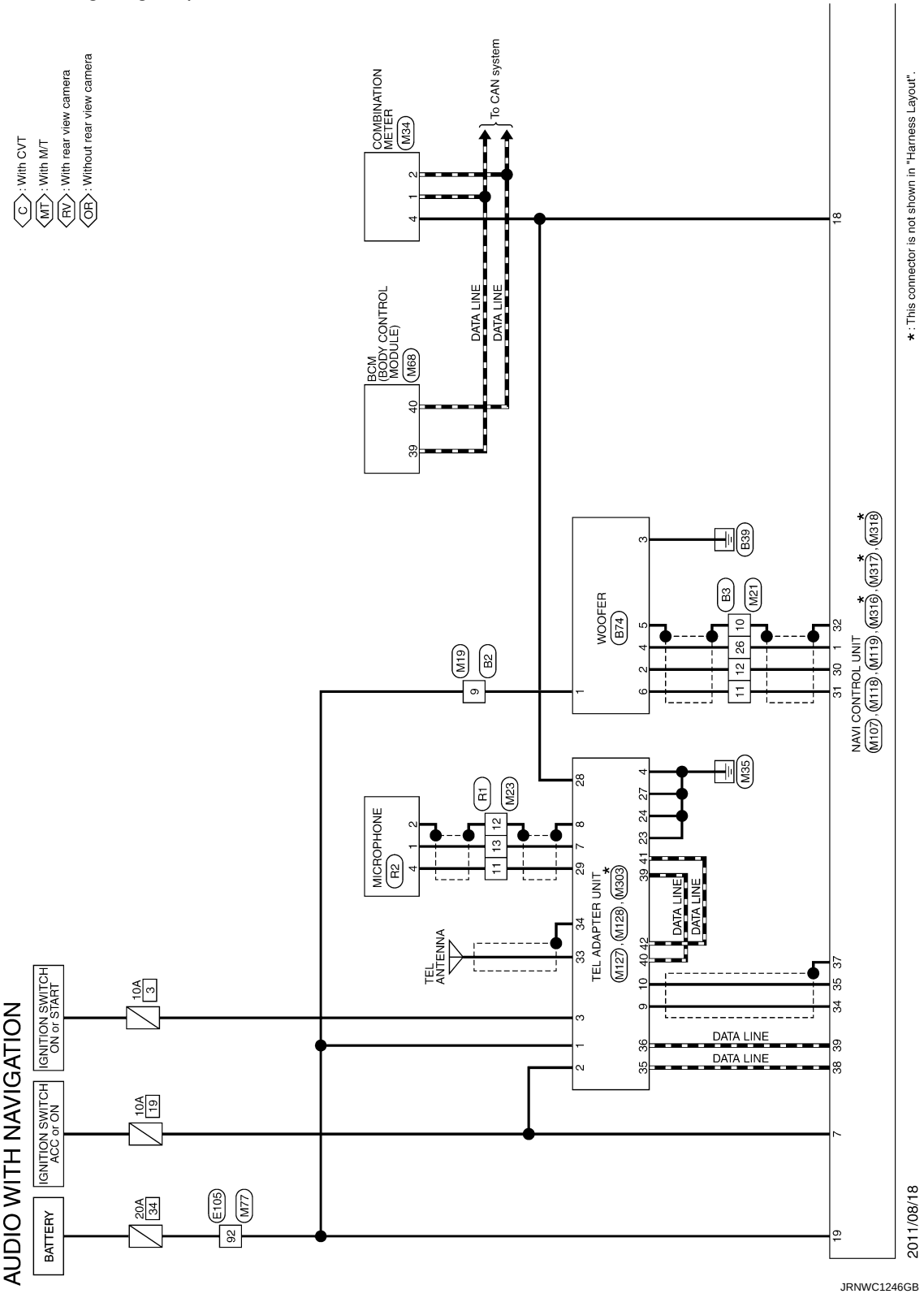
WIRING DIAGRAM

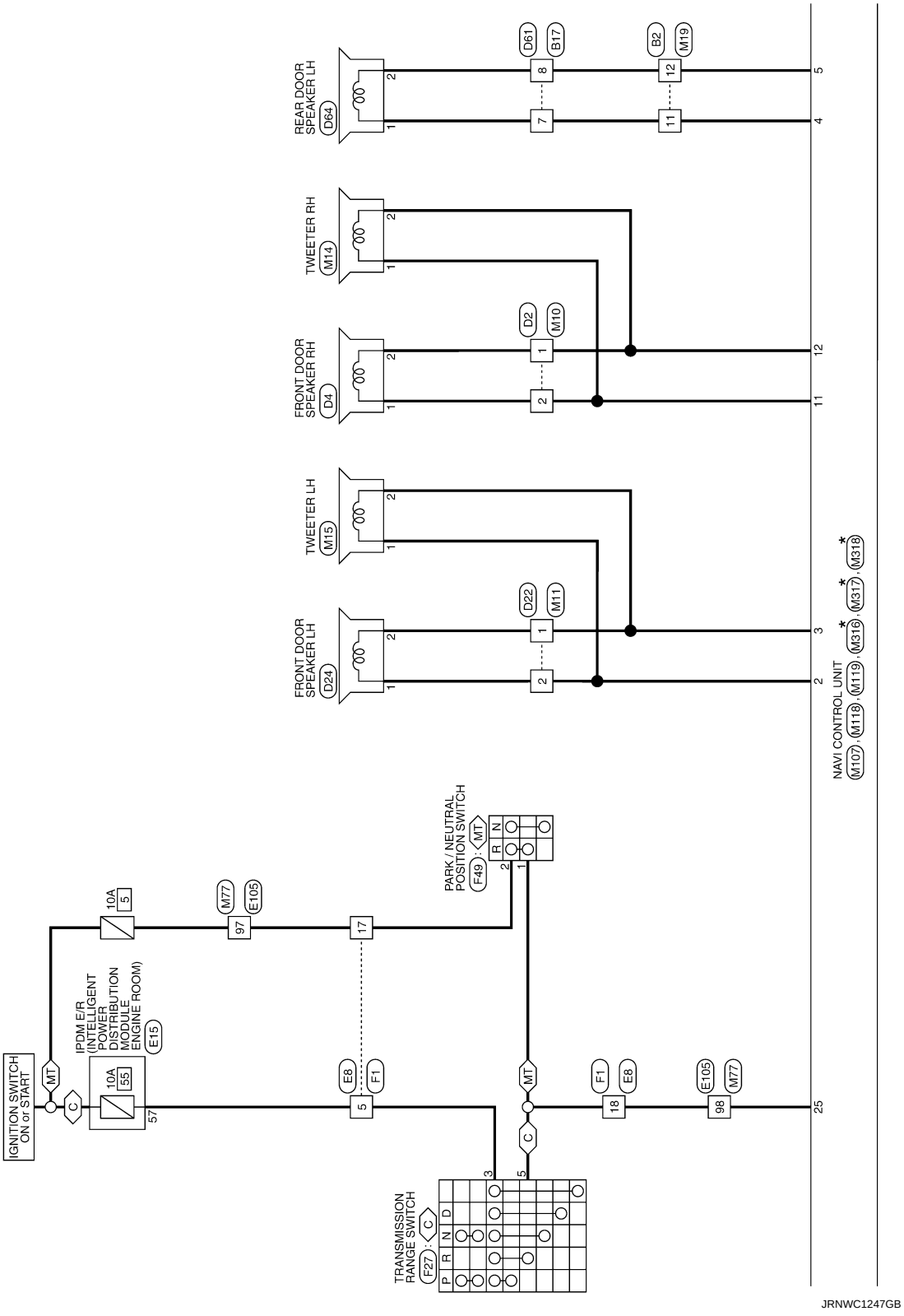
AUDIO WITH NAVIGATION

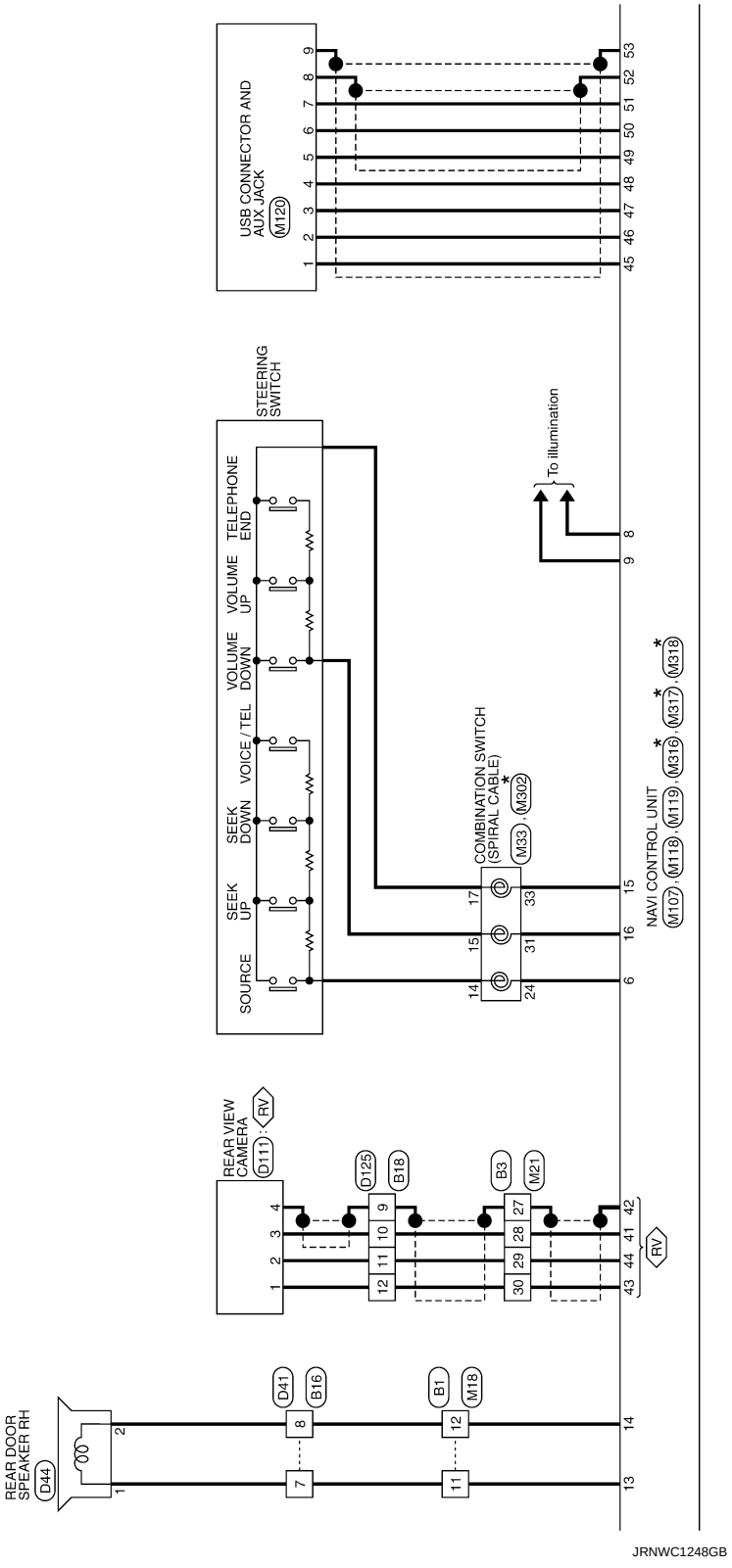
Wiring Diagram

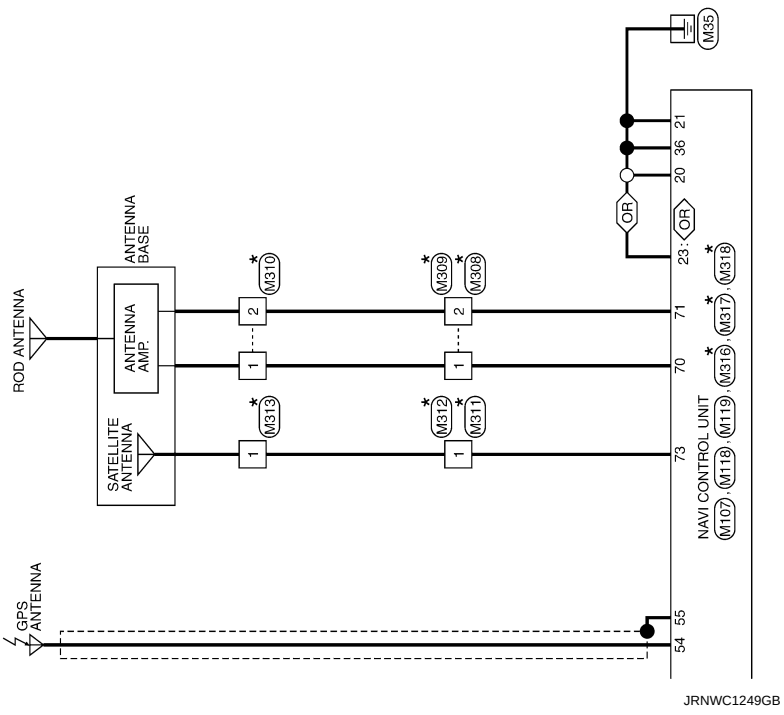
INFOID:0000000007577955

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




REAR DOOR SPEAKER LH
D64
D61
B17
B2
M19
TWEETER RH
M14
FRONT DOOR SPEAKER RH
D4
D2
M10
TWEETER LH
M15
FRONT DOOR SPEAKER LH
D24
D22
M11
NAVI CONTROL UNIT
M107, M118, M119, M316*, M317*, M318*
PARK/ NEUTRAL POSITION SWITCH
F49 : MT
TRANSMISSION RANGE SWITCH
F27 : C
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E15
10A 5
10A 55
M77
E105
E8
F1
MT
C
JRNWC1247GB


USB CONNECTOR AND AUX JACK
M120
STEERING SWITCH
TELEPHONE END
VOLUME UP
VOLUME DOWN
VOICE / TEL
SEEK DOWN
SEEK UP
SOURCE
To illumination
COMBINATION SWITCH (SPIRAL CABLE)
M33
M302
NAVI CONTROL UNIT
M107
M118
M119
M316
M317
M318
REAR VIEW CAMERA
D111
RV
D125
B18
B3
M21
REAR DOOR SPEAKER RH
D44
D41
B16
B1
M18
JRNWC1248GB


M35
21
36
20
OR
OR
23
M318
M317
M316
M119
M118
M107
NAVI CONTROL UNIT
71
70
73
55
54
ANTENNA BASE
ANTENNA AMP.
SATELLITE ANTENNA
ROD ANTENNA
GPS ANTENNA
M310
M309
M308
M313
M312
M311
2
1
2
1
1
1
JRNWC1249GB

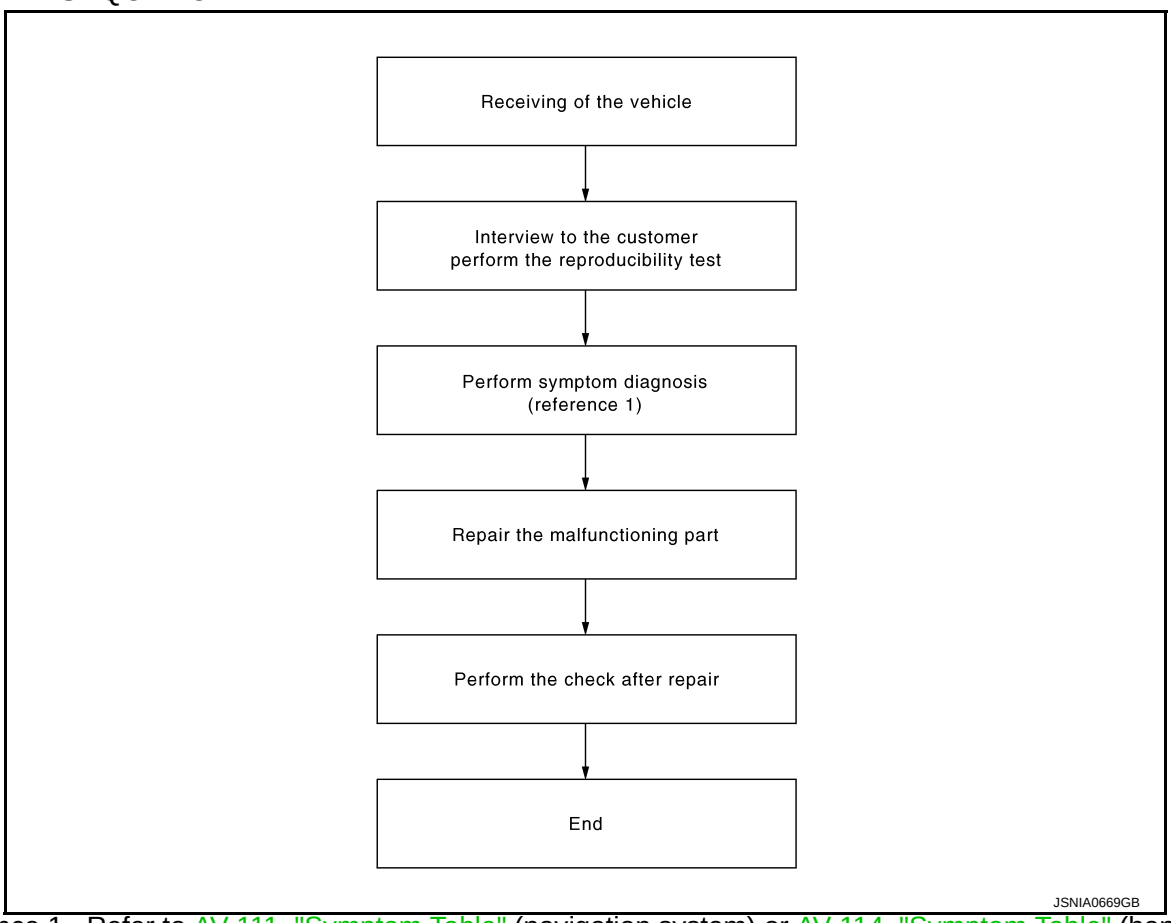
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000007577956

OVERALL SEQUENCE



Reference 1···Refer to AV-111, "Symptom Table" (navigation system) or AV-114, "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-111, "Symptom Table" (navigation system) or AV-114, "Symptom Table" (hands-free phone system).

>> GO TO 3.

3.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the malfunctioning parts.

>> GO TO 4.

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

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

NAVI CONTROL UNIT

NAVI CONTROL UNIT : Diagnosis Procedure

INFOID:0000000007577957

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:0000000007577958

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.

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.

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

Description

INFOID:0000000007577959

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

Diagnosis Procedure

INFOID:0000000007577960

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.

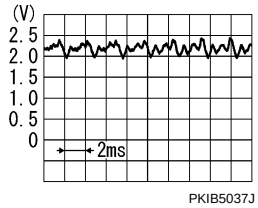
Probe				Standard	Reference value (Approx.)
(+)		(–)			
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
M127	29	M127	8	4.7 - 5.3 V	5.0 V

Is inspection result OK?

YES >> GO TO 3.
NO >> Replace TEL adapter unit. Refer to AV-127, "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.

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.	 PKIB5037J

Is inspection result OK?

YES >> Replace TEL adapter unit. Refer to AV-127, "Removal and Installation".
NO >> Replace microphone. Refer to AV-128, "Removal and Installation".

CONTROL SIGNAL CIRCUIT

Description

INFOID:0000000007577961

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

Diagnosis Procedure

INFOID:0000000007577962

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			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-127, "Removal and Installation".
NO >> Repair harness or connector.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000007577963

- 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:0000000007577964

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-120, "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.

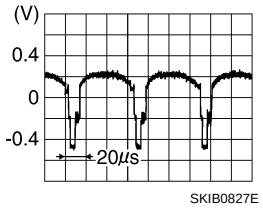
NAVI control unit		Ground	Continuity
Connector	Terminal		
M118	41		Not existed

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.	

SKIB0827E

Is inspection result normal?

YES >> Replace NAVI control unit. Refer to AV-120, "Removal and Installation".
NO >> Replace rear view camera. Refer to AV-130, "Removal and Installation".

WOOFER AMP. ON SIGNAL CIRCUIT

Description

INFOID:0000000007577965

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:0000000007577966

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-124, "Removal and Installation".
NO >> Replace NAVI control unit. Refer to AV-120, "Removal and Installation".

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000007577967

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

INFOID:0000000007577968

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-13, "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-120, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-106, "Component Inspection".

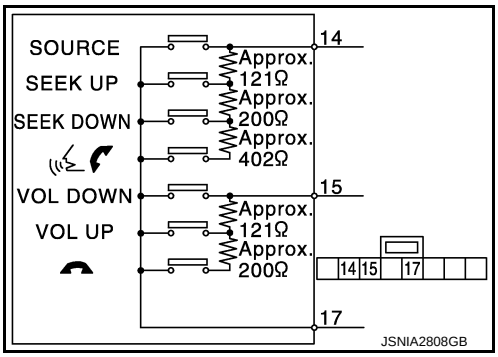
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-129, "Exploded View".

Component Inspection

INFOID:0000000007577969

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		switch ON	315 – 327
		VOL UP switch ON	119 – 123
		VOL DOWN switch ON	0

STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000007577970

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

INFOID:0000000007577971

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-13, "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-120, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-108, "Component Inspection".

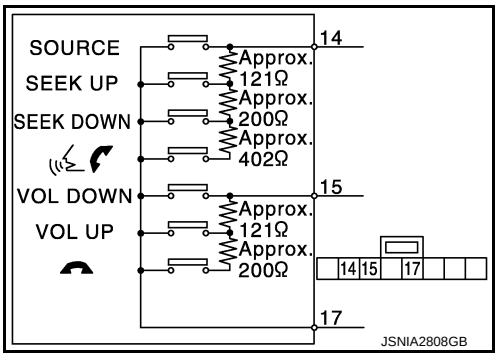
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-129, "Exploded View".

Component Inspection

INFOID:0000000007577972

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		switch ON	315 – 327
		VOL UP switch ON	119 – 123
		VOL DOWN switch ON	0

STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000007577973

Transmits the steering switch signal to NAVI control unit.

Diagnosis Procedure

INFOID:0000000007577974

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-13, "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-120, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-109, "Component Inspection".

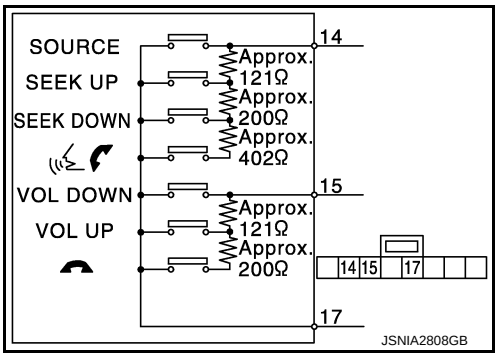
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-129, "Exploded View".

Component Inspection

INFOID:0000000007577975

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		switch ON	315 – 327
		VOL UP switch ON	119 – 123
		VOL DOWN switch ON	0

SYMPTOM DIAGNOSIS

NAVIGATION SYSTEM

Symptom Table

INFOID:0000000007577976

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-97, "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-97, "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”.	“OK” is displayed for “SD Card Access”.	Map SD-card
		“OK” is not 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.	NAVI control unit
		“Illumination Signal” does not reach 100% when the lighting switch is ON.	Illumination control signal circuit
Vehicle icon does not move.	Check “Speed Signal” in “SERVICE SYSTEM STATUS”, “SERVICE MENU”.	A value of “Speed Signal” changes according to vehicle speeds.	NAVI control unit
		A value of “Speed Signal” does not change according to vehicle speeds.	Vehicle speed signal circuit
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”.	NAVI control unit
		“Connected” is not displayed for “GPS Antenna”.	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”.	NAVI control unit
		“Detected” is not displayed for “XM Antenna”.	• Antenna base • Antenna feeder

RELATED TO AUDIO

Symptoms	Check items		Probable malfunction location / Action to take
Audio sound is not heard.	No sound from all speakers.		NAVI control unit power supply and ground circuit. Refer to AV-97, "NAVI CONTROL UNIT : Diagnosis Procedure".
	Sound is not heard from woofer.		• Sound signal woofer circuit • Woofer amp. ON signal circuit. Refer to AV-104, "Diagnosis Procedure".
	Sound is heard only from specific places.		Sound signal circuit of suspect system.
AM/FM radio is not received.	• Other audio sounds are normal. • Check “Radio Antenna” in “SERVICE SYSTEM SELF TEST”, “SERVICE MENU”.	“OK” is displayed for “Radio Antenna”.	NAVI control unit
		“OK” is not displayed for “Radio Antenna”.	• Antenna amp. ON signal circuit. • Antenna base • Antenna feeder
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.	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”.	NAVI control unit
		“Detected” is not displayed for “XM Antenna”.	• Antenna base • Antenna feeder

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”.	iPod or USB memory name is displayed for “USB Device”.	• USB and AUX harness • USB connector and AUX jack • NAVI control unit
		“Removed” is displayed for “USB Device”.	• USB and AUX harness • USB connector and AUX jack

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.	• 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-109, "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-105, "Diagnosis Procedure".

Symptoms	Possible malfunction location / Action to take
“”, “VOL UP” and “VOL DOWN” switches are not operated.	Steering switch signal B circuit. Refer to AV-107, "Diagnosis Procedure".
The steering switch operates improperly. (The above phenomena excluded.)	• 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.		• Rear view camera image signal circuit • Rear view camera power supply and ground circuits Refer to AV-102, "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

HANDS-FREE PHONE SYMPTOMS

Symptom Table

INFOID:0000000007577977

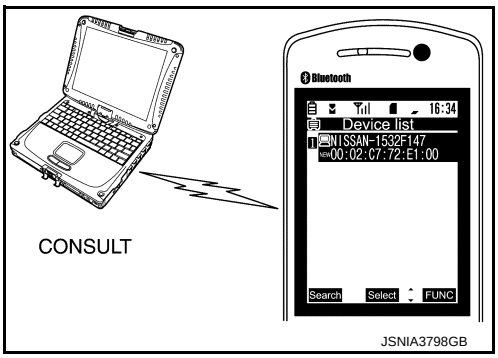
RELATED TO HANDS-FREE PHONE

- Check that the cellular phone is corresponding type (Bluetooth™ enabled) when the hands-free related malfunction vehicle is in service before performing a diagnosis.
- There is a case that malfunction occurs due to the version change of the phone type, etc. even though it is a corresponding type. Therefore, confirm it by changing the cellular phone to another corresponding type phone, and check that it operates normally. It is necessary to distinguish whether the cause is the vehicle or cellular phone. Check to ensure the customer's phone is supported by checking the phone compatibility for the hands-free system.

Simple Check for Bluetooth™ Communication

If cellular phone and TEL adapter unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn on a cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT, then start Windows®.
3. Set CONSULT near a cellular phone.
4. When operated Bluetooth™ registration by cellular phone, check if CONSULT* would be displayed on the device name.
   (If other Bluetooth™device is located near cellular phone, a name of the device would be displayed also.)
   NOTE:
   *:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunction. Repair the cellular phone first, then perform diagnosis.
- If CONSULT is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.

Trouble Diagnosis Chart by Symptom

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.	—	• TEL adapter unit power supply and ground circuit. Refer to AV-97, "TEL ADAPTER UNIT : Diagnosis Procedure". • Control signal circuit Refer to AV-101, "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-111, "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-99, "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-109, "Diagnosis Procedure".
Only specified switch cannot be operated.	Replace steering switch. Refer to AV-129, "Exploded View".

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-105, "Diagnosis Procedure".
“”, “VOL UP” and “VOL DOWN” switches are not operated.	Steering switch signal B circuit. Refer to AV-107, "Diagnosis Procedure".
The steering switch operates improperly. (The above phenomena excluded.)	• EQ1 circuit • EQ3 circuit

NORMAL OPERATING CONDITION

Description

INFOID:0000000007577978

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.

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.

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.

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

Symptom	Possible cause	Possible solution
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.
	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.
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 fasted rote taking into consideration such things as traffic jams.
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.
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.

RELATED TO TELEPHONE

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-83, "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.

REMOVAL AND INSTALLATION

NAVI CONTROL UNIT

Removal and Installation

INFOID:0000000007577979

REMOVAL

1. Remove cluster lid C. Refer to IP-11, "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.

FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000007577980

REMOVAL

1. Remove front door finisher. Refer to INT-12, "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:0000000007577981

REMOVAL

1. Remove front pillar garnish. Refer to INT-17, "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

INFOID:0000000007577982

REMOVAL

1. Remove rear door finisher. Refer to INT-15, "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:0000000007577983

REMOVAL

1. Remove luggage side lower finisher LH. Refer to INT-32, "Exploded View".
2. Disconnect woofer connector.
3. Remove woofer screws to remove woofer.

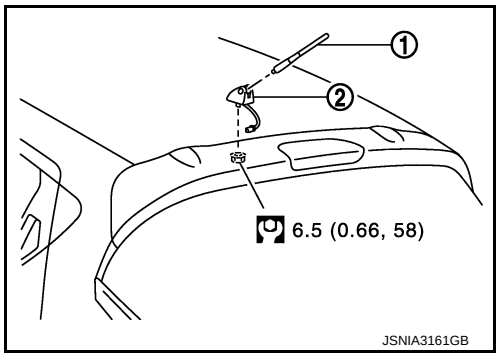
INSTALLATION

Install in the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:0000000007577984



1. Antenna rod
2. Antenna base

: N·m (kg-m, in-fb)

Removal and Installation

INFOID:0000000007577985

REMOVAL

1. Remove headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" (normal roof) or INT-29, "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:0000000007577986

REMOVAL

1. Remove instrument panel. Refer to IP-11, "Exploded View".
2. Remove antenna feeder clip, then remove GPS antenna screw and remove GPS antenna.

INSTALLATION

Install in the reverse order of removal.

TEL ADAPTER UNIT

Removal and Installation

INFOID:0000000007577987

REMOVAL

1. Remove glove box assembly. Refer to IP-11, "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:0000000007577988

REMOVAL

1. Remove headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" (normal roof) or INT-29, "SUN-ROOF : Exploded View" (sunroof).
2. Remove microphone connector and pawl to remove microphone.

INSTALLATION

Install in the reverse order of removal.

STEERING SWITCH

Exploded View

INFOID:0000000007577989

Refer to SR-10, "Exploded View".

Removal and Installation

INFOID:0000000007577990

REMOVAL

Refer to SR-10, "Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

REAR VIEW CAMERA

Removal and Installation

INFOID:0000000007577991

REMOVAL

1. Remove back door lower finisher. Refer to INT-37, "Exploded View".
2. Remove rear view camera screws to remove rear view camera.

INSTALLATION

Install in the reverse order of removal.

USB CONNECTOR AND AUX JACK

Removal and Installation

INFOID:0000000007577992

REMOVAL

1. Remove cluster tray. Refer to IP-11, "Exploded View".
2. Push the pawl from the back of cluster tray to remove USB connector and AUX jack.

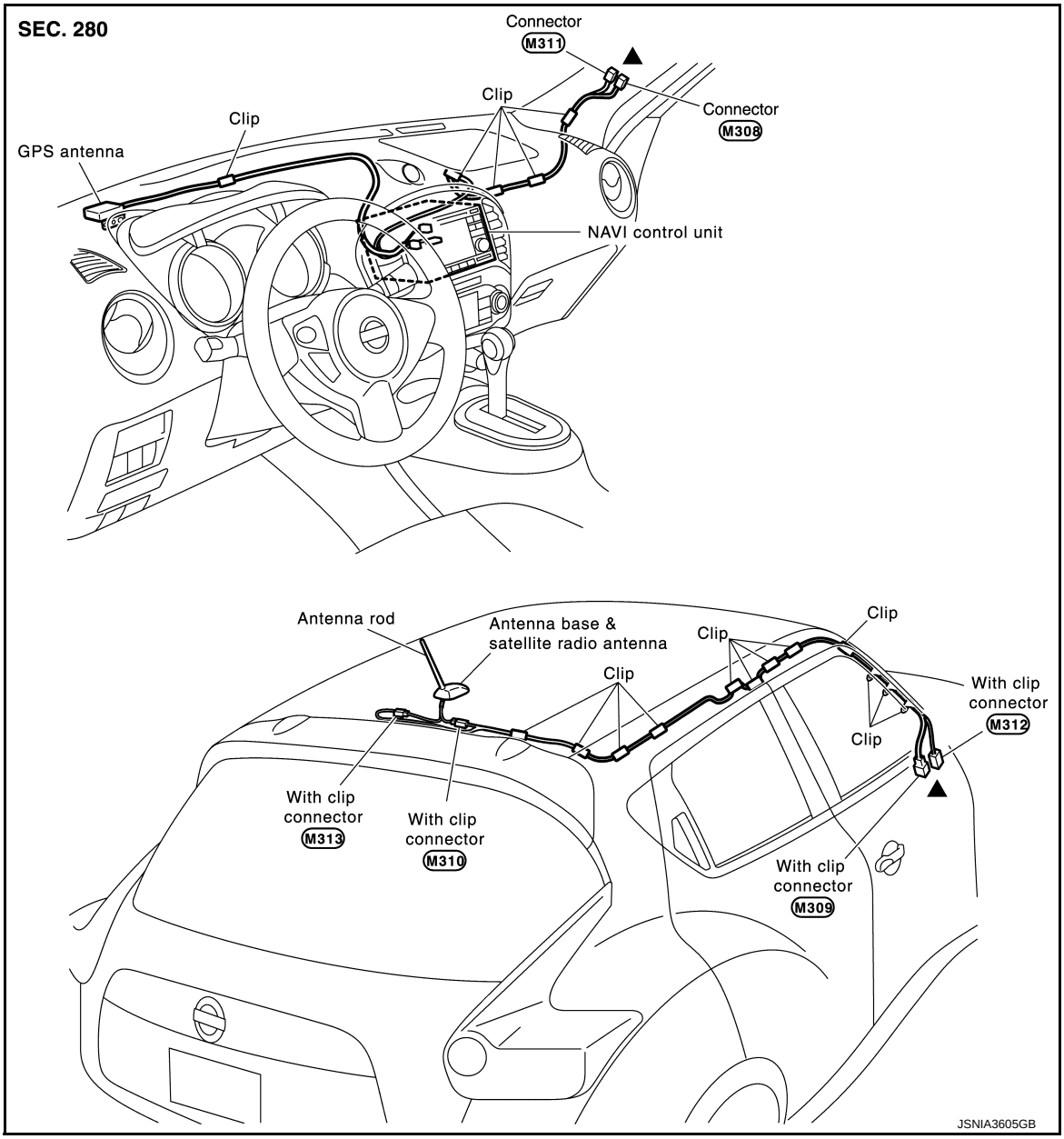
INSTALLATION

Install in the reverse order of removal.

ANTENNA FEEDER

Feeder Layout

INFOID:0000000007577993



PRECAUTION

PRECAUTIONS

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

INFOID:0000000007577994

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.

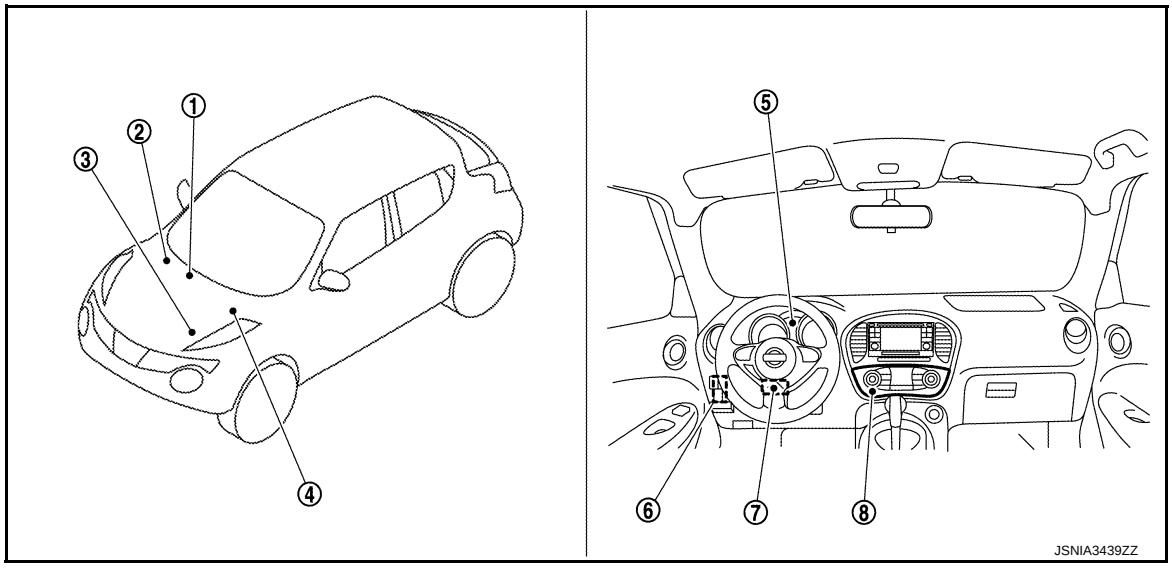
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious 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.**

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000007577995



1. A/C auto amp.
   Refer to HAC-6, "Component Parts Location".
2. ABS actuator and electric unit (control unit)
   Refer to BRC-8, "Component Parts Location".
3. ECM
   Refer to EC-16, "ENGINE CONTROL SYSTEM : Component Parts Location".
4. TCM
   Refer to TM-69, "CVT CONTROL SYSTEM : Component Parts Location".
5. Combination meter
6. BCM
   Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" (with Intelligent Key system) or BCS-83, "BODY CONTROL SYSTEM : Component Parts Location" (without Intelligent Key system).
7. EPS control unit
   Refer to STC-5, "Component Parts Location".
8. Multi display unit

Component Description

INFOID:0000000007577996

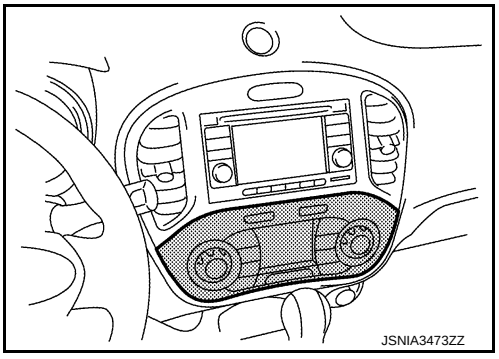
Unit	Description
Multi display unit	• A multi display unit integrating a color display and an operation panel is adopted. • The display indicates the air conditioner operation status, driving mode, information, and setting screen. • The unit transmits operation signals for air conditioner and drive mode 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	Transmits the following signals to the multi display unit via CAN communication. • Vehicle speed signal • Odometer signal

Unit	Description
ECM	• Transmits the following signals to the multi display unit via CAN communication. - 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). - 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). - 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)	• Receives the following signals from the multi display unit via CAN communication and changes over the gear shift line. - ECO mode signal - NORMAL mode signal - SPORT mode signal • Transmits the following signals to ECM via CAN communication. - Drive mode select signal
A/C auto amp.	• 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. - 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. • 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. • Side G sensor signal • Decel G sensor signal

Multi Display Unit

INFOID:0000000007577997

- 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

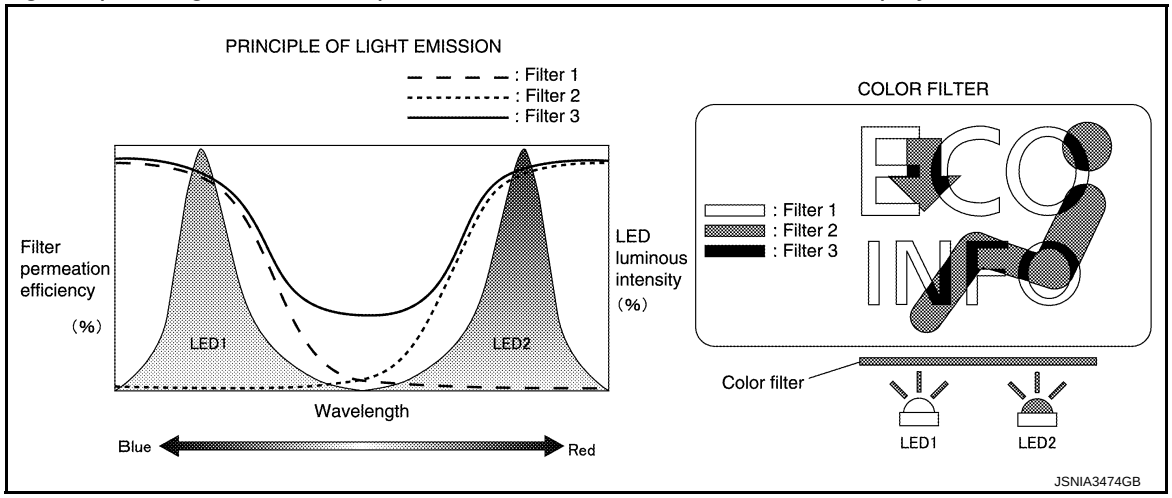
The switch integrates 2 types of LEDs*, filters that pass or absorb specified wavelengths (filter 1, filter 2), and filters adapted to both display colors (filter 3), enabling 2 different symbols to be displayed at a same position by LED changeover.

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

Operation description of unique switch

In drive mode
- LED1 lights up, the light from LED1 passes filter 1 and filter 3, and “ECO INFO” is displayed.

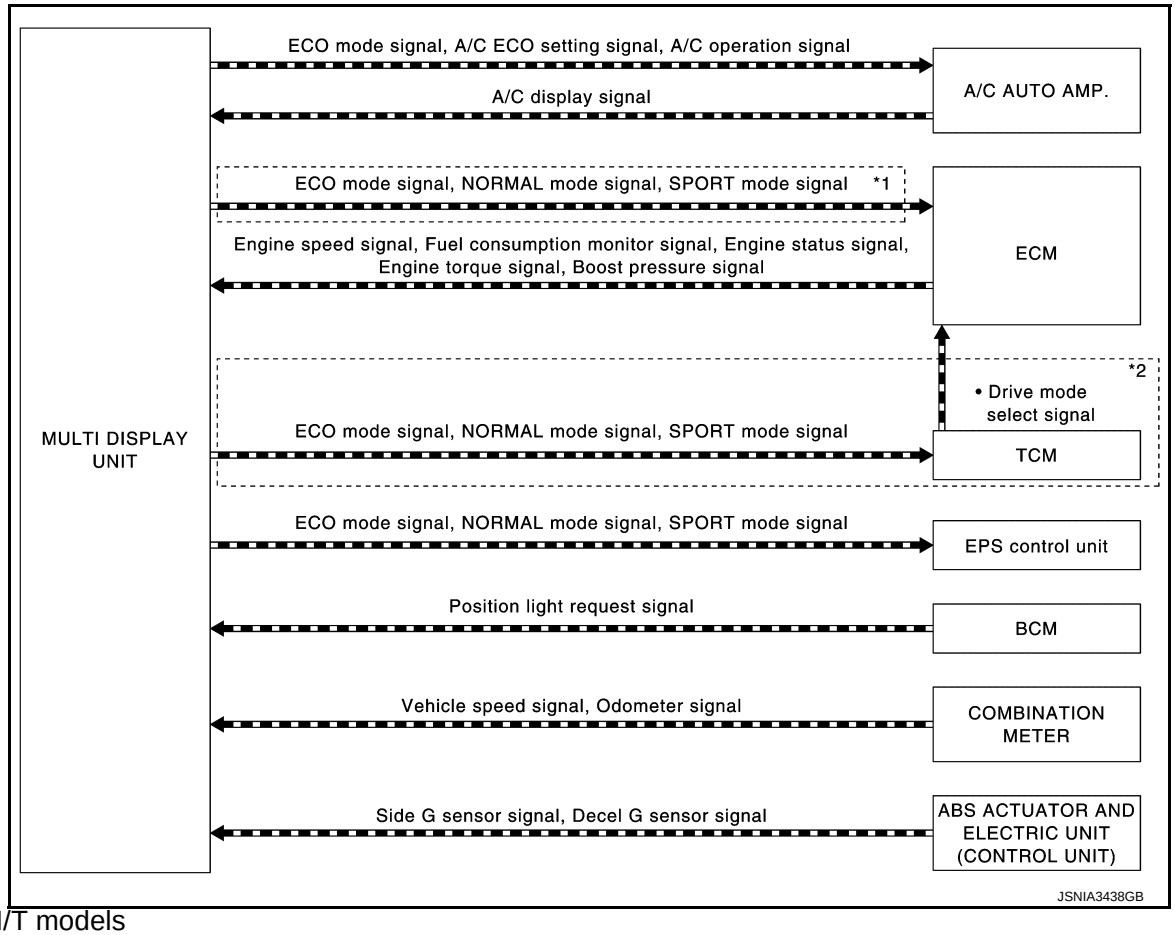
In air conditioner mode
- LED2 lights up, the light from LED2 passes filter 2 and filter 3, and “ ” is displayed.



SYSTEM
INTEGRATED CONTROL SYSTEM
INTEGRATED CONTROL SYSTEM : System Description

INFOID:0000000007577998

SYSTEM DIAGRAM



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

MULTI DISPLAY UNIT INPUT/OUTPUT SINGNAL

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.

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 presure signal	Receives the boost pressure signal calculated by ECM.
	Engine status signal	Receives the engine status signal.
BCM	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.

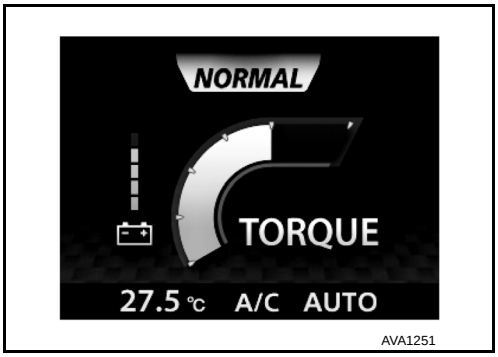
Nissan Dynamic Control System Display/Setting Functions

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.

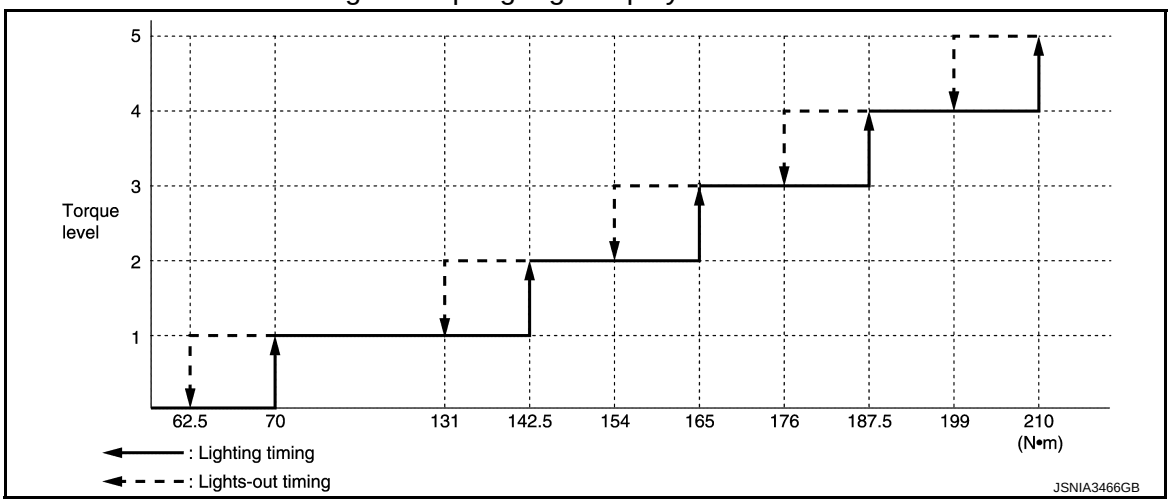
Category		Display function	Display content
Drive Information	G-FORCE		Displays the status of side G and decel. G.
	Drive Information	Travel time	• Displays the total time of key switch ON from a reset to a next reset. • If the total time exceeds 100 hours, the display is reset to "00:00:00" and the time 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.

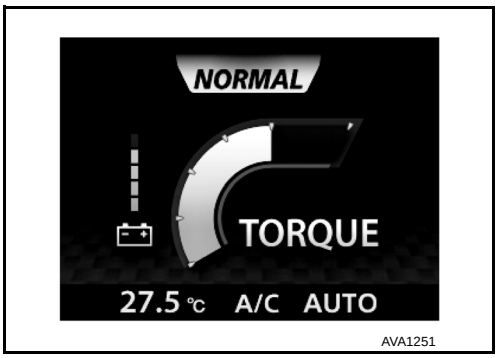


Engine torque gauge display characteristic

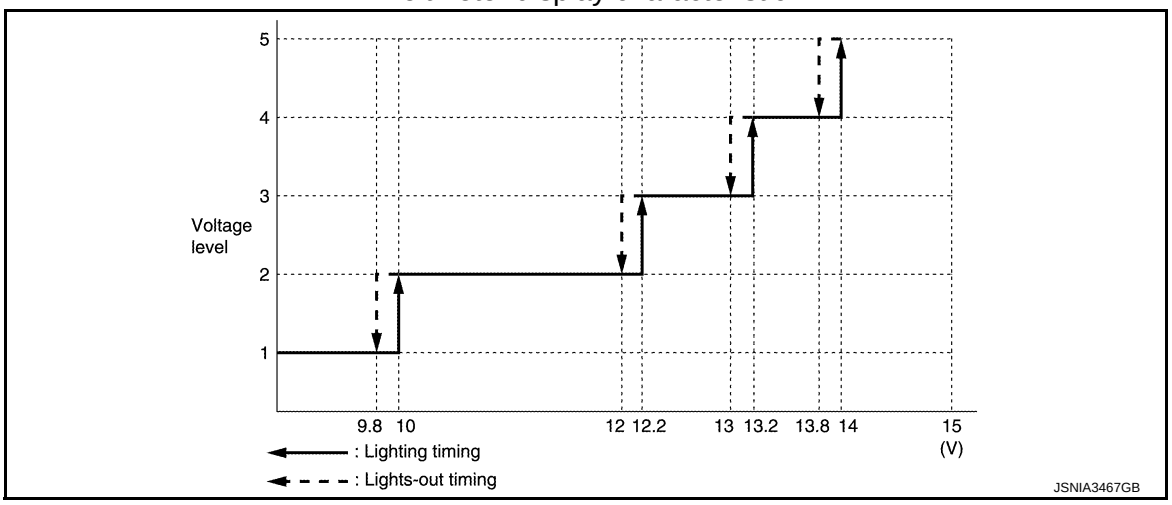


Voltmeter

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

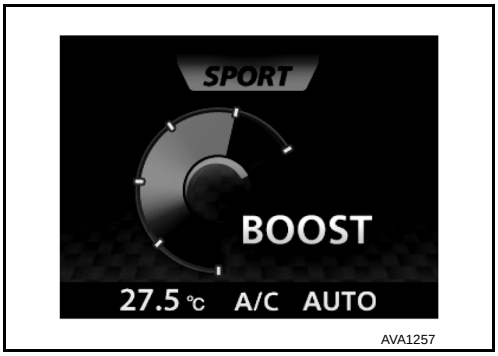


Voltmeter display characteristic

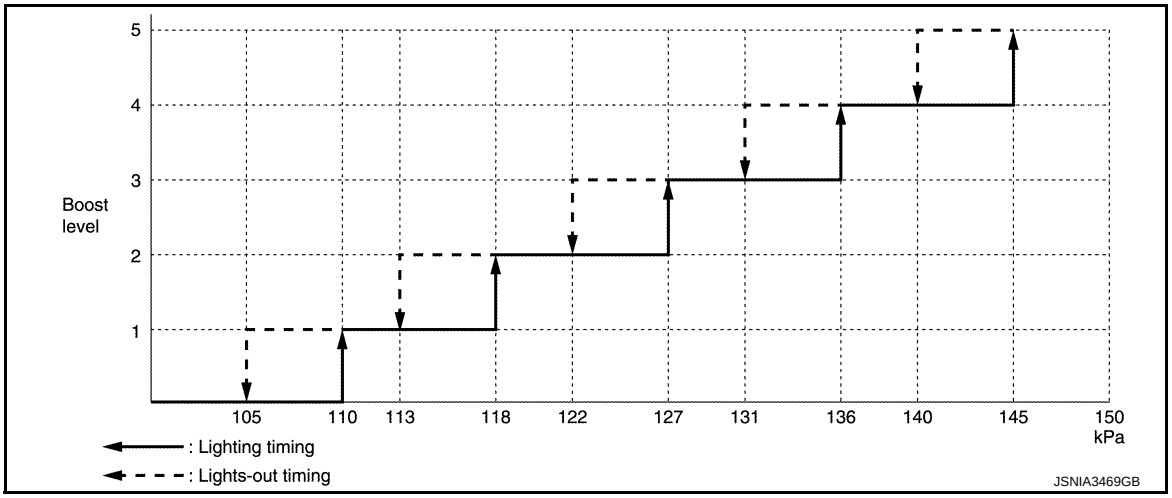


Boost Gauge

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

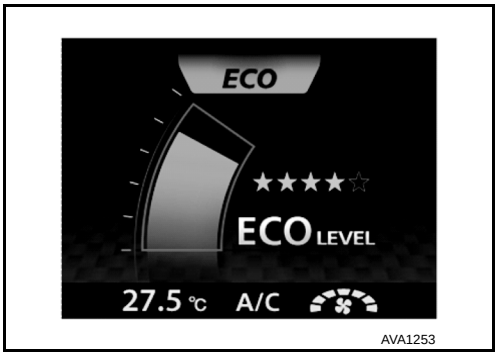


Boost gauge display characteristic

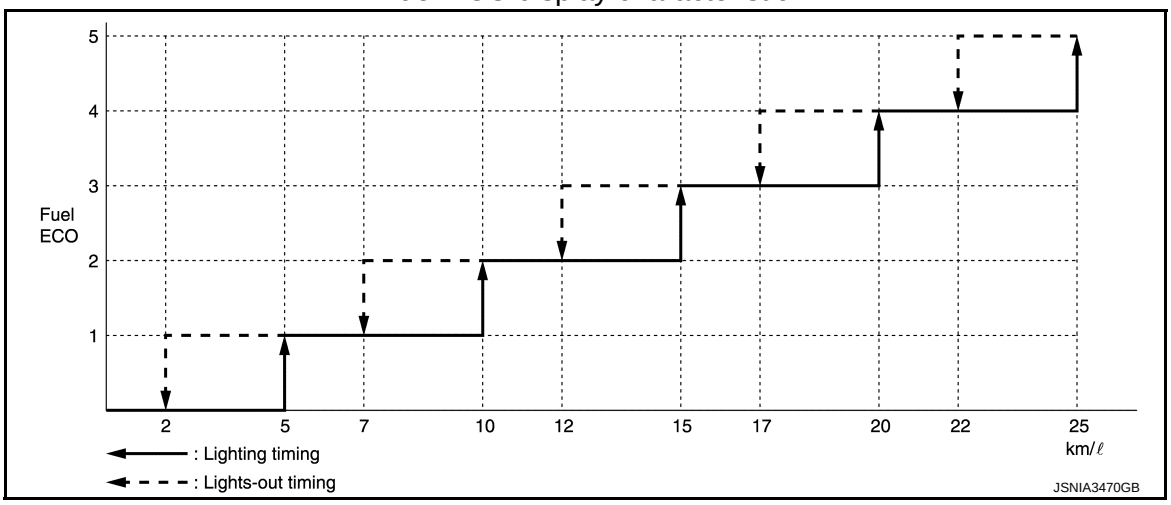


Instantaneous Fuel Consumption

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.

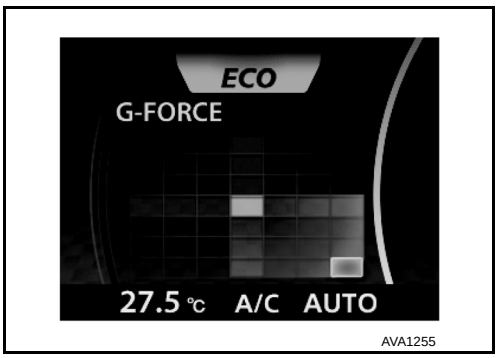


Fuel ECO display characteristic



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.



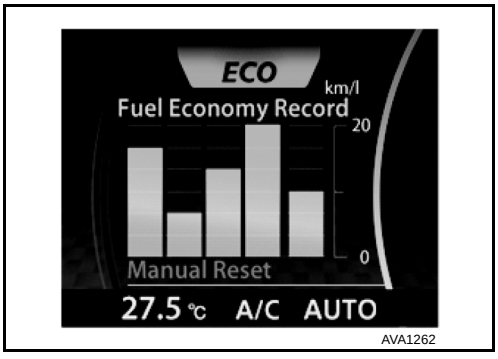
Drive Information

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.



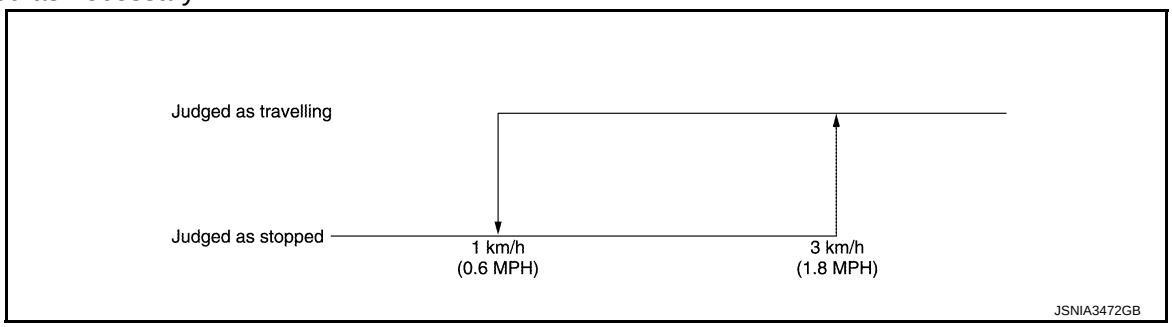
Set Up

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, Reset 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	• 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.



HANDLING PRECAUTION

Integrated Control System

INFOID:0000000007577999

- 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)

CONSULT Function

INFOID:0000000007578000

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-149, "DTC Index".

DATA MONITOR

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.
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.

Monitor item	Unit	Description
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. • All indicators remain ON for 5 seconds in AIR CON mode⇔All indicators remain ON for 5 seconds in D-MODE.

ECU DIAGNOSIS INFORMATION

MULTI DISPLAY UNIT

Reference Value

INFOID:0000000007578001

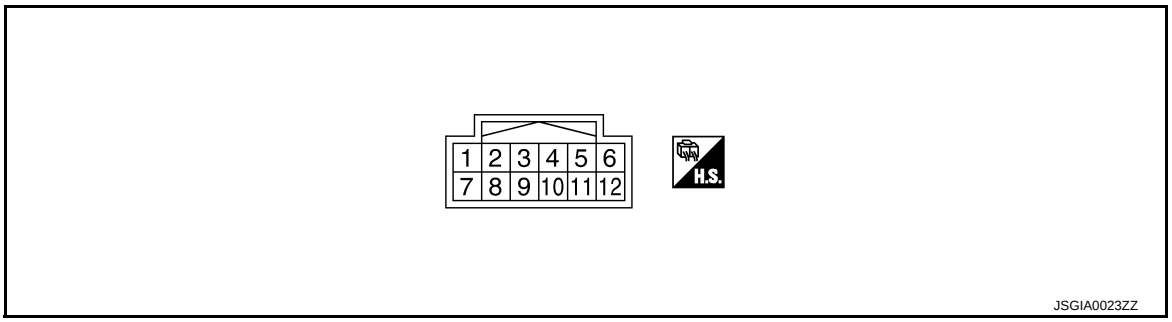
VALUES ON THE DIAGNOSIS TOOL

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
RR DEF SW*	Ignition switch ON	While the rear DEF switch is held down	On
	Ignition switch ON	Other than the above	Off

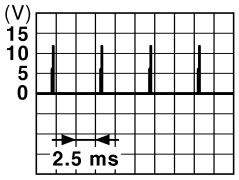
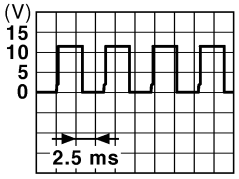
Monitor item	Test condition		Reference value/Status
FR DEF SW*	Ignition switch ON	Cycles On/Off whenever the front DEF switch is pressed.	On→Off→On
VENT SW1*	Ignition switch ON	Cycles On/Off whenever the VENT, B/L, FOOT, or D/F switch is pressed.	On→Off→On
VENT SW2*	Ignition switch ON	Press the VENT 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

*: 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	12 V
					Lighting switch OFF position.	0 V	0 V
5 (GR)	10 (B) 11 (B)	Illumination control signal	Input	Ignition switch ON	• Lighting switch 1ST position. • When illumination control level is maximum.	0 V – 16 V	 JPNIA1687GB
					• Lighting switch 1ST position. • When illumination control level is midway.		 JPNIA1686GB
					• Lighting switch 1ST position. • When meter illuminationis 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:0000000007578002

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

Priority	DTC inspection priority order item
1	• U1000 : CAN COMM CIRCUIT • U1010 : CONTROL UNIT (CAN)
2	• U1402 : ENGINE SPEED SIGNAL • U1405 : ENGINE TORQUE SIGNAL • U1406 : BOOST PRESSURE INPUT • U1412 : LONG ACC INPUT • U1413 : TRANS ACC INPUT

DTC Index

INFOID:0000000007578003

DTC	CONSULT display	Refer to
U1000	CAN COMM CIRCUIT	AV-153, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN)	AV-154, "Diagnosis Procedure"
U1402	ENGINE SPEED SIGNAL	AV-155, "Diagnosis Procedure"
U1405	ENGINE TORQUE SIGNAL	AV-156, "Diagnosis Procedure"
U1406	BOOST PRESSURE INPUT	AV-157, "Diagnosis Procedure"
U1412	LONG ACC INPUT	AV-158, "Diagnosis Procedure"
U1413	TRANS ACC INPUT	AV-159, "Diagnosis Procedure"

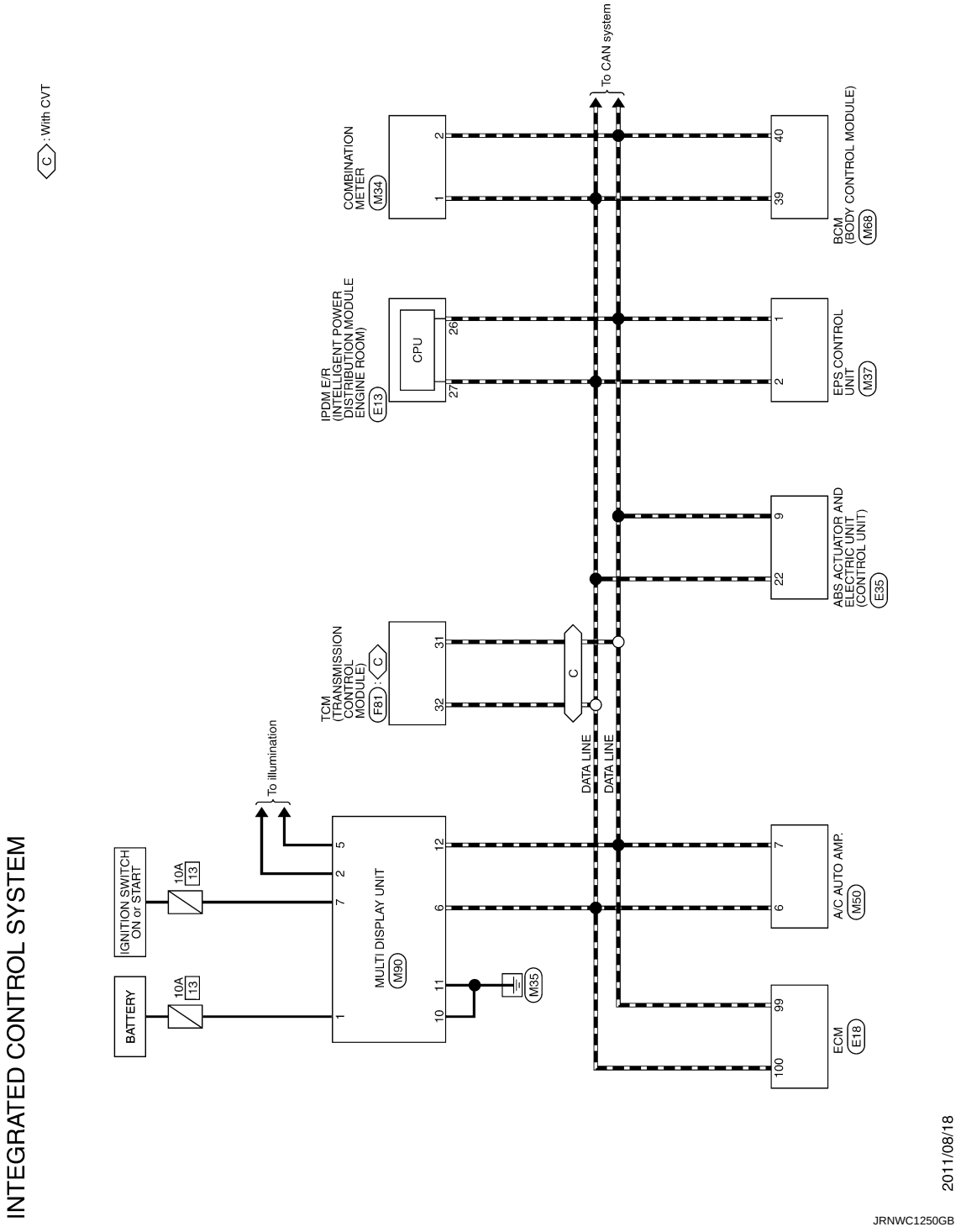
WIRING DIAGRAM

INTEGRATED CONTROL SYSTEM

Wiring Diagram

INFOID:0000000007578004

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".



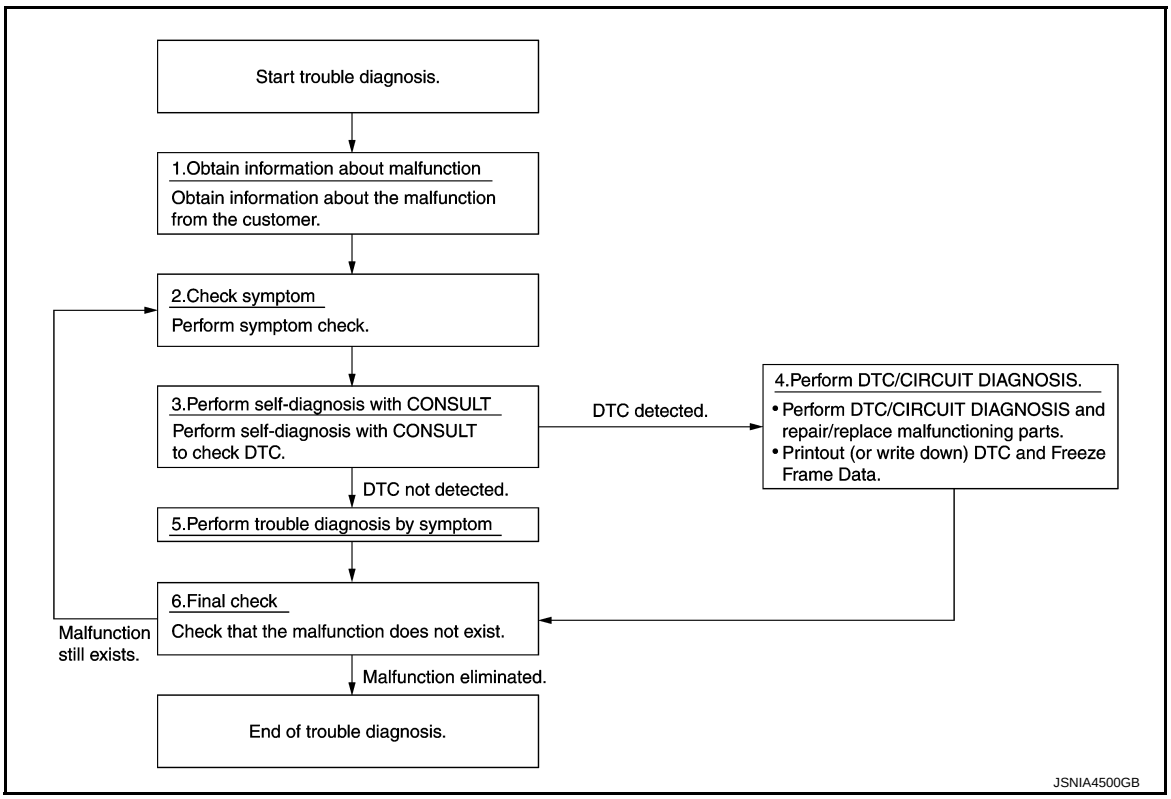
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000007578005

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-153, "Diagnosis Procedure".

Is any DTC No. displayed?

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

4. DTC/SYSTEM DIAGNOSIS

Perform a DTC/system diagnosis and repair or replace any malfunctioning part.

>> GO TO 6.

5. PERFORM DIAGNOSIS BY SYMPTOM

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

>> GO TO 6.

6. FINAL CHECK

Check that the multi display unit functions normally.

Does it operate normally?

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

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000007578006

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:0000000007578007

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:0000000007578008

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-43, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000007578009

Initial diagnosis of multi display unit

DTC Logic

INFOID:0000000007578010

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:0000000007578011

1.REPLACE THE MULTI DISPLAY UNIT

If DTC U1010 is detected, replace the multi display unit. AV-162, "Removal and Installation".

>> INSPECTION END

U1402 ENGINE SPEED SIGNAL

DTC Logic

INFOID:0000000007578012

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:0000000007578013

1.PERFORM ECM SELF DIAGNOSIS

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

>> Refer to EC-102, "DTC Index".

U1405 ENGINE TORQUE SIGNAL

DTC Logic

INFOID:0000000007578014

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:0000000007578015

1.PERFORM ECM SELF-DIAGNOSIS

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

>> Refer to EC-102, "DTC Index".

U1406 BOOST PRESSURE INPUT

DTC Logic

INFOID:0000000007578016

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:0000000007578017

1.PERFORM ECM SELF-DIAGNOSIS

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

>> Refer to EC-102, "DTC Index".

U1412 LONG ACC INPUT

DTC Logic

INFOID:0000000007578018

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:0000000007578019

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-49, "DTC Index".

U1413 TRANS ACC INPUT

DTC Logic

INFOID:0000000007578020

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:0000000007578021

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-49, "DTC Index".

POWER SUPPLY AND GROUND CIRCUIT
MULTI DISPLAY UNIT

MULTI DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000007578022

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 10 11	Battery power supply	OFF	9 V – 16 V	Battery voltage
	7			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.

SYMPTOM DIAGNOSIS

INTEGRATED CONTROL SYSTEM

Symptom Table

INFOID:0000000007578023

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-144, "CONSULT Function".
	Only (one) specified switch does not work.	Replace multi display unit. Refer to AV-162, "Removal and Installation".

REMOVAL AND INSTALLATION

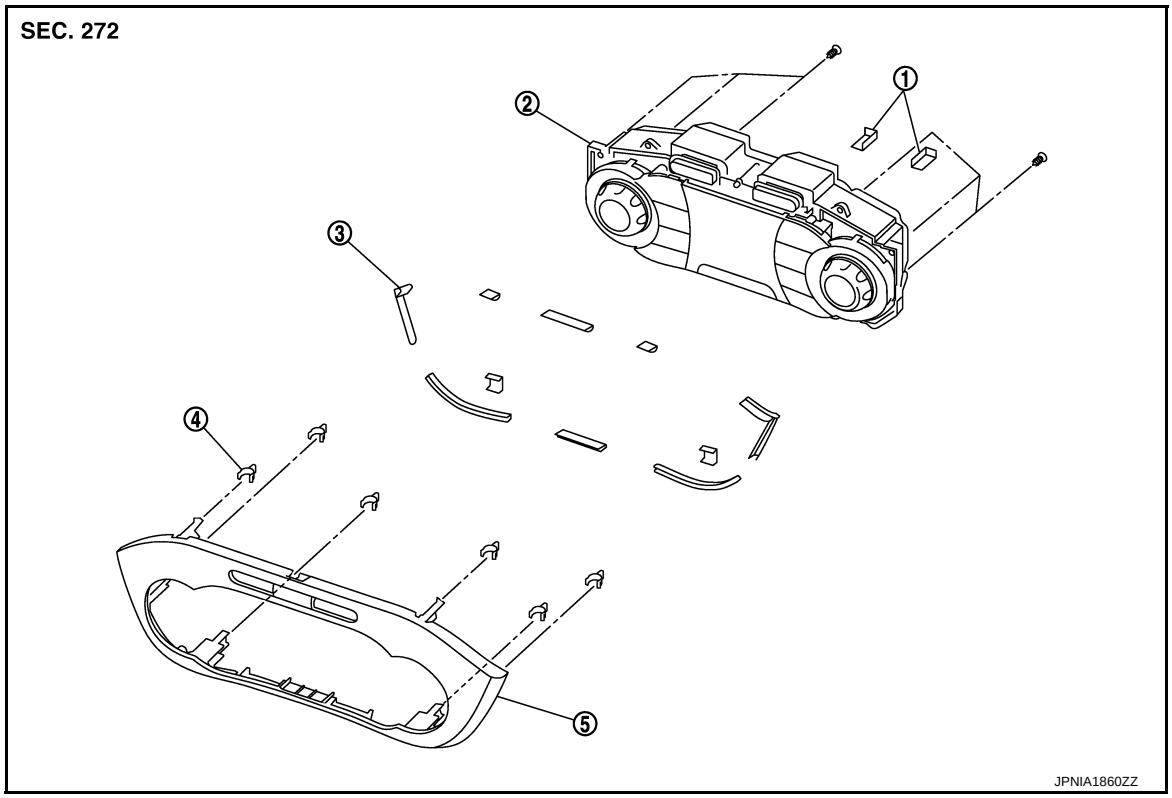
MULTI DISPLAY UNIT

Exploded View

INFOID:0000000007578024

REMOVAL
Refer to IP-11, "Exploded View".

DISASSEMBLY



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

Removal and Installation

INFOID:0000000007578025

REMOVAL
Refer to IP-11, "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.