

AUDIO AND VIDEO

SECTION **AV**

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PRECAUTION

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

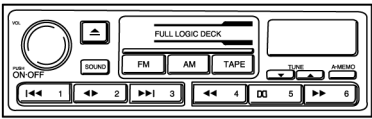
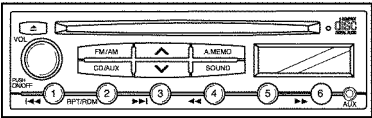
The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the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

WARNING:

- To install/remove the SRS airbag, pretensioner seatbelt system related components and harness, turn the ignition switch “OFF”, disconnect the battery terminals and wait over 3 minutes. (This is to discharge all the remaining electricity in the airbag sensor unit’s auxiliary power circuit.)
- Do not use air impact or electrical tools when installing/removing the components.
- Do not use any hand-held tools for harness used in SRS airbag and pretensioner seatbelt systems. Be careful with the harness not to tangle with or interfere with other components.
- Do not use any electrical test equipments such as circuit tester when inspecting the SRS airbag and pretensioner seatbelt circuit while installed unless the Service Manual instructs to do so. (The weak current in the tester can cause the SRS airbag to operate.)
- Do not insert any foreign materials such as a screwdriver in the airbag module and pretensioner seatbelt connector in order to prevent unintended operation due to static electricity.
- The harnesses used in SRS airbag and pretensioner are covered with yellow insulation for easy identification.
- Refer to “RS Restraint System” in this Service Manual for safe airbag system service information.

AUDIO

Audio Unit

Part number	Model	AUX function
56120-52100	1 DIN AM/FM/TAPE  SQRZ007_D1	-
56120-52100	1 DIN AM/FM/CDP  SQRX001_D1	●

Precautions

- Use neutral detergent when cleaning the LCD display. Never use any organic detergent(such as thinner and gasoline) and chemical detergent.
- Connect/disconnect connectors while the power is turned off.
- Before service, be sure to disconnect the negative (-) terminal of the battery.
- When electrical system is suspicious for trouble symptoms, inspect the fuse, connector open-circuit, terminal dislocation and bad connection first.

CAUTION:

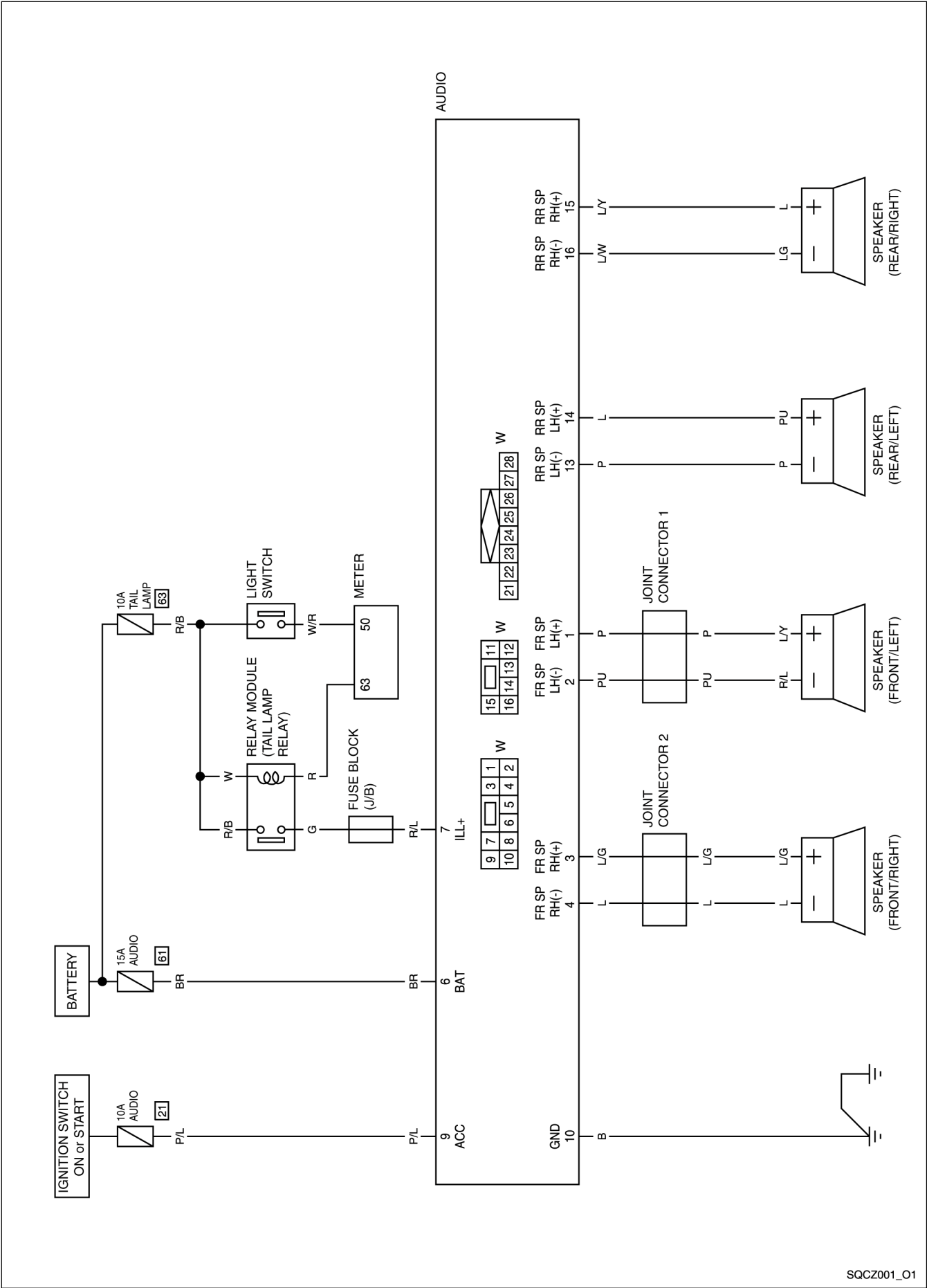
- To repair the open-circuit or connector dislocation, refer to AV-5 “Circuit Diagram” and AV-6 “Wiring Diagram”.

AUDIO

Audio Unit Standard

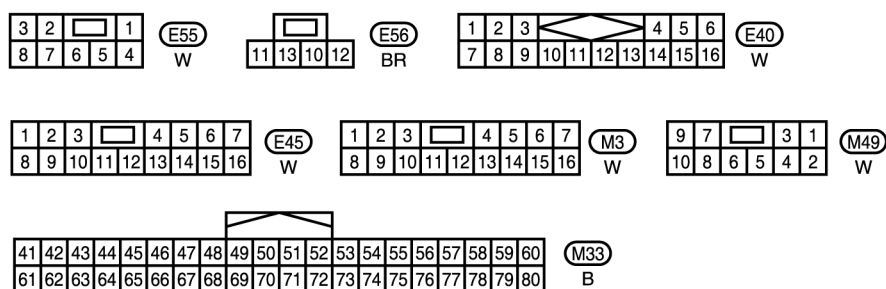
Function		AM/FM radio, CD deck, CD changer, remote control, H/Free function, AUX
Radio	<ul style="list-style-type: none"> One-touch memory function allows storing 6 AM stations and 12 FM stations. The stations with the strongest signals will automatically be received and set in the radio station memory/calling buttons (1 to 6) in order of the frequency. (AUTO MEMORY) Tuning stops automatically when a station is found (SEEK) 	
	Tuning	PLL frequency synchronizer system
	Frequency range	AM 531 KHz ~ 1,602 KHz, FM 87.5 MHz ~ 108.0 MHz
	Mid frequency	AM 450 KHz, FM 10.7 MHz
	Usable sensitivity	Below AM 34 dBu (at S/N 20Db), below FM 13 dBu (at S/N 30 Db)
	Automatic stop sensitivity	AM 32 ± 6 dBu, FM 25 ± 6 dBu
Tape	Usable tape	4 track, 2 channel stereo cassette tape play deck
	Speed	-1 ~ +4%
	FF/REW speed	110 sec. (C-60)
	Signal to noise ratio	Normal tape (120us): -45 dB / 52 dB (DOLBY NR ON) Metal tape (70us): -47 dB / 54 dB (DOLBY NR ON)
CD player	<ul style="list-style-type: none"> 12 cm compact disk player The current track is played repeatedly (REPEAT: RPT) All the tracks on the current CD are played in random order (RANDOM: RDM) The selected music is played (BOOKMARK). Compression file (MP3, WMA) can be played. Track up/down Shows file structure (folders and file names). 	
	Frequency characteristics	17 Hz (6.5 ± 3 dBu), 20 KHz (7.0 ± 3 dBu)
	Signal to noise ratio	Over 70 dB
AUX	<ul style="list-style-type: none"> Can connect and play a portable audio system and MP3 player by using AUX port. 	
TEL	<ul style="list-style-type: none"> Hands-free function and privacy talk function 	
Other functions	<ul style="list-style-type: none"> Remote control function EQ (Classic, Jazz, Rock) control function 5.8" FSTN LCD Auto power on function Rheostatic function for display (12 stages) 	
Error notification function	To protect the audio system, the advanced sensor in the system detects errors and notify it to driver.	
Specifications	Load impedance	4 Ω /CH
	OUTPUT	43W \times 4CH
	Battery voltage	DC 13.2 V (10.8 V ~ 15.6 V)
	Backup current	Less than 3 mA

Circuit Diagram



SQCZ001_01

AU/Audio-01

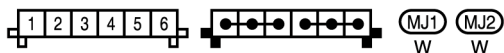
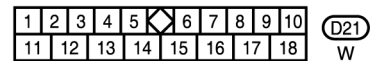
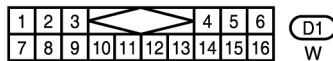
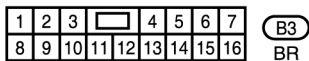
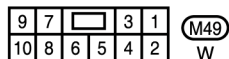
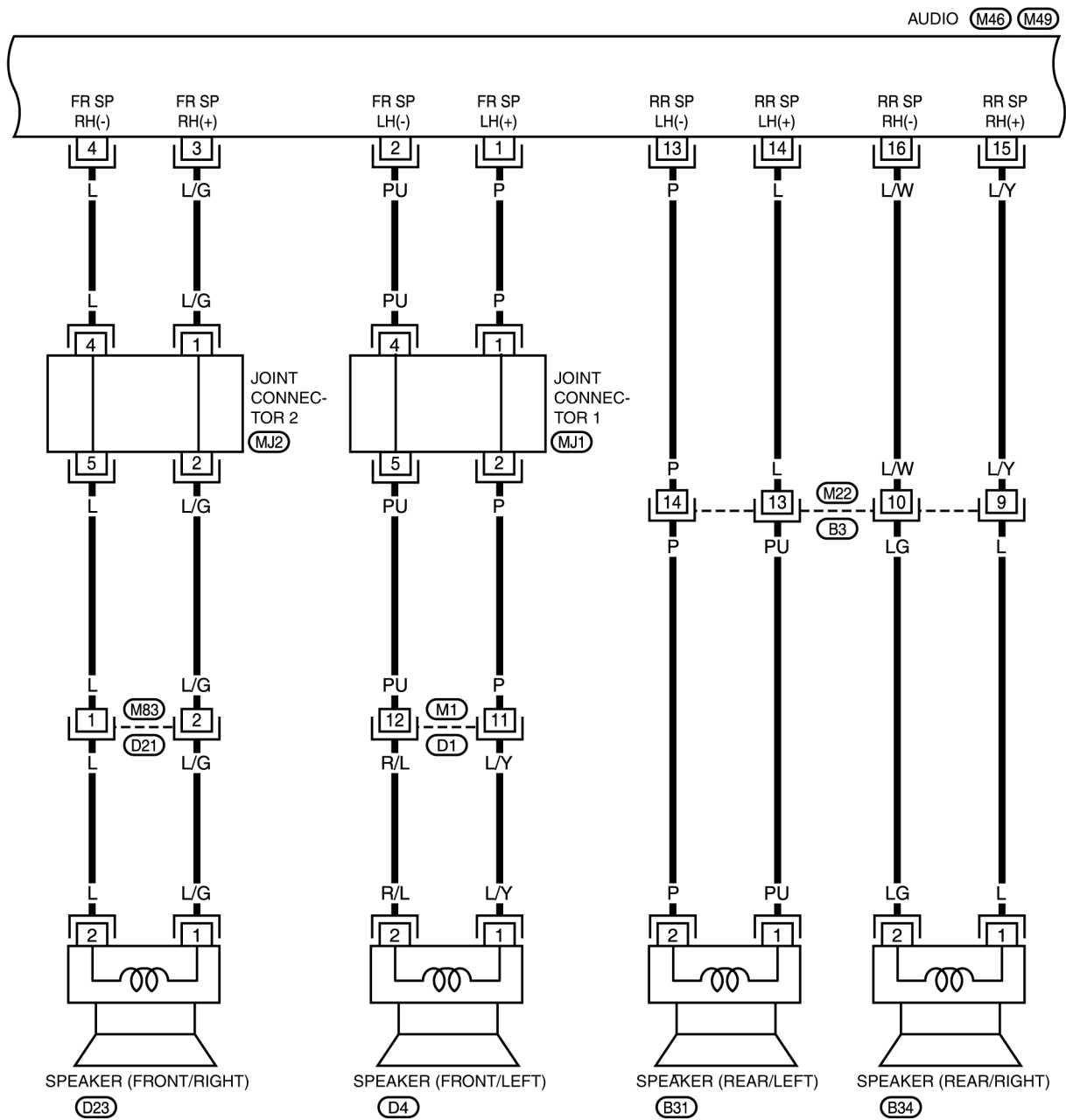


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AUDIO

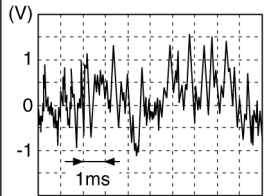
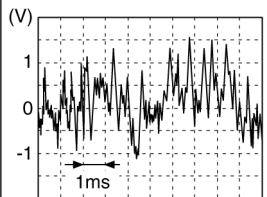
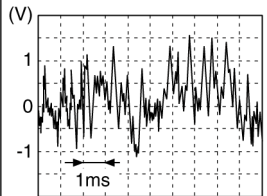
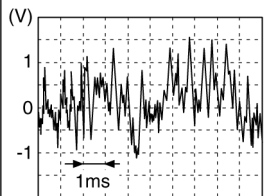
Wiring Diagram

AU/Audio-02



AUDIO

Terminals and Reference Value for Audio Unit

Terminal (Wire color)		Signal name	Input/ Output signal	Measuring condition		Reference value	Example of symptom
+	-			Ignition switch	Operation or condition		
4 (L)	3 (L/B)	Front door speaker (RH)	Output	ON	When receiving audio signal	 SQDX001_D1	No sound from front door speaker RH and tweeter RH.
2 (Pu)	1 (P)	Front door speaker (LH)	Output	ON	When receiving audio signal	 SQDX001_D1	No sound from front door speaker LH and tweeter LH.
6 (BR)	Body ground	Battery power supply	Input	OFF	-	Battery voltage	System does not work properly.
7 (R/L)	Body ground	Illumination signal	Input	ON	lighting switch ON (1st position)	Approx. 12 V	Audio unit illumination does not come on when lighting switch is ON (1st position).
					Lighting switch OFF	Approx. 0 V	
9 (P/L)	Body ground	Ignition switch ACC	Input	ACC	-	Battery voltage	System does not work properly.
10 (B)	Body ground	Ground	-	ON	-	Approx. 0 V	-
14 (L)	13 (P)	Rear door speaker LH	Output	ON	When receiving audio signal	 SQDX001_D1	
15 (L/Y)	16 (L/W)	Rear door speaker RH	Output	ON	When receiving audio signal	 SQDX001_D1	

TROUBLE DIAGNOSIS

Trouble Diagnosis

External causes (bad CD or tape) or miss-manipulation makes troubles on the audio system. Check following items fully before service.

Troubles In Radio, Tape and CD - Changer

Symptoms	Check Point	Result	Possible Cause & Remedy
Does not operate at all (No digital display and sound)	Is the ignition switch is in ACC?	No	Turn the ignition switch to ACC
	Is the 10 A (No. "16", in fuse block) normal?	No	Replace the 10 A fuse (No. "16", in fuse block)
	Is audio case ground normal?	No	Secure the case ground
	Is there battery voltage (about 12 V) on radio connector terminal No. "6" & "9" when ignition switch is ON?	Yes	Remove and repair the audio
		No	Inspect vehicle power system
No sound	Is the volume at minimum?	Yes	Increase the volume and recheck
	Are BAL and FAD selections at center?	No	Select the center and recheck
	Is there AC voltage at audio connector terminal No. "1", "2", "3", "4", "13", "14", "15" and "16" and is it varies when VOL is changed?	Yes	Check speaker wires and wires between the speaker and audio
		No	Remove and repair the audio
No sound from the rear speaker only	Is FAD selection at center?	No	Select the center and recheck
	Is there AC voltage at audio connector terminal No. "13", "14", "15" and "16" and is it varies when VOL is changed?	Yes	Check sub woofer wires and wires between audio unit and sub woofer
		No	Remove and repair the audio
Too noisy Bad sound quality	Are the BASS and TREB VR selections at center?	No	Select the center and recheck
	Is the sound OK when fine speakers are connected to the audio unit output directly?	Yes	Check speaker wires and wires between the speaker and audio unit
		No	Remove and repair the audio

Error Indication

To protect the CD integrated AM/FM audio system, the advanced sensor in the system detects errors and displays the error code on the screen.

If an error code is displayed on the screen, have the system checked at authorized audio service center.

Error	Error code
Temperature error → over 82°C	Error TEMP.
MECH ERROR	ERROR 1
SERVO ERROR	ERROR 2
DISC ERROR	ERROR 3
TIMER ERROR	ERROR 4

TROUBLE DIAGNOSIS

Troubles in Radio Only

Symptoms	Check point	Result	Possible cause & Remedy
No sound	Is it tuned at fine station?	Yes	Remove and repair the audio
		No	Tune to fine station and recheck
Too noisy	Is it tuned at fine station?	No	Tune to fine station and recheck
	Is the receiving frequency weak?	Yes	When the vehicle is far away from the broadcasting station, it normally receives weak frequency
	Are there any foreign objects (window tinting film or accessory antenna) on the rear window? (Note 1)	Yes	Reinstall the foreign objects away from the glass antenna
	Is the symptom apparent in a specific region? (Note 2)	Yes	It is not a malfunction because it happens in a specific region.
	Are the antenna cable and radio grounds OK?	Yes	1. Check the antenna 2. Remove and repair the audio
		No	Repair the troubling component
Radio (AM & FM) is noisy while engine running	1. Bad radio ground 2. Loose or out of ground 3. Ignition condenser or rear window defogger noise control condenser 4. Alternator 5. Ignition coil or secondary wire 6. Audio	1. Check radio ground 2. Check or tighten the ground 3. Check ignition condenser or rear window defogger noise control condenser 4. Check alternator 5. Check ignition coil or secondary wire 6. Remove and repair the audio	
Radio (AM & FM) is noisy when other equipment is turned on	1. Bad radio ground 2. Antenna 3. Bad ground of other equipment 4. Defective other equipment	1. Check radio ground 2. Check antenna 3. Check ground of other equipment 4. Replace other equipment	
No preset memories	Is the audio connector terminal No. "6" connection OK?	Yes	It is normal but happens when battery is replaced or audio connectors are reconnected
		No	Secure the terminal connection
No preset memories when ignition switch is turned off	Is the 15 A fuse (No. "31", in fuse block) normal?	No	Replace 15 A fuse (No. "31", in fuse block)
	Is there battery voltage (about 12 V) on radio connector terminal No. "6" when ignition switch is ON?	Yes	Remove and repair the audio
		No	Inspect vehicle power system

CAUTION:

- It causes the glass antenna's receiving sensitivity to decrease.
- It is the noise caused by electrical fluctuation such as the fading noise and multi-pass noise; and outer noise such as the train. It is not a malfunction.
 - Fading Noise**
It is the noise generated when mountains or buildings that cause the changing frequency intensity in narrow spaces intercept the frequency.
 - Multi-pass noise**
It is the noise generated by the timing difference of the time the frequency reflected from the mountains or buildings reaches the antenna and the time the frequency sent from the broadcaster reaches the antenna.

TROUBLE DIAGNOSIS

Troubles in CD Only

Symptoms	Check item	
CD cannot be inserted.	<ul style="list-style-type: none"> CD Audio unit (CD player) 	GI
CD cannot be ejected.		
CD cannot be played.		
The sound skips, stops suddenly, or is distorted.		EM

Noise Inspection

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

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

Type of Noise and Possible Cause

Symptoms		Check item	
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	Ignition condenser	AC
	A whistling noise occurs while the engine speed is high. A booming noise occurs while the engine is running and the lighting switch is ON.	Alternator	AV
The occurrence of the noise is linked with the operation of the fuel pump.		Fuel pump condenser	EL
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, radio malfunction	
	The noise occurs when various motors are operating.	<ul style="list-style-type: none"> Motor case ground Motor 	WH
The noise occurs constantly, not just under certain conditions.		<ul style="list-style-type: none"> Rear window defogger coil malfunction Poor ground of antenna amp. or antenna feeder line 	CL
A cracking or snapping sound occurs while the vehicle is being driven. (especially when it is vibrating excessively)		<ul style="list-style-type: none"> Ground wire malfunction Ground due to incorrect installation of parts Wiring connections or a short circuit 	MT
			AT

Power Supply Circuit Check for Audio Unit

1. Check fuse

Check fuses for blown-out.

Unit	Signal	Fuse No.	
Audio unit	Battery power supply	61	BR
	Ignition switch ACC or ON	21	

REFERENCE:

For mounting locations of fuses and fusible link, refer to "FUSE BLOCK-JUNCTION BLOCK (J/B)" (WH-183).

OK or NG

OK → GO TO 2.

NG → If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

TROUBLE DIAGNOSIS

Speaker Inspection

1. Disconnect the speaker harness connector.
2. Measure the resistance between the speaker terminal "No. 1" and "No. 2".
 - The resistance should be 2 - 4 Ω .
3. Momentarily connect the 9-volt battery to the speaker terminal "No. 1" and "No. 2" using the jumper wire.
 - There should be a kind of sparking sound.

Antenna Inspection

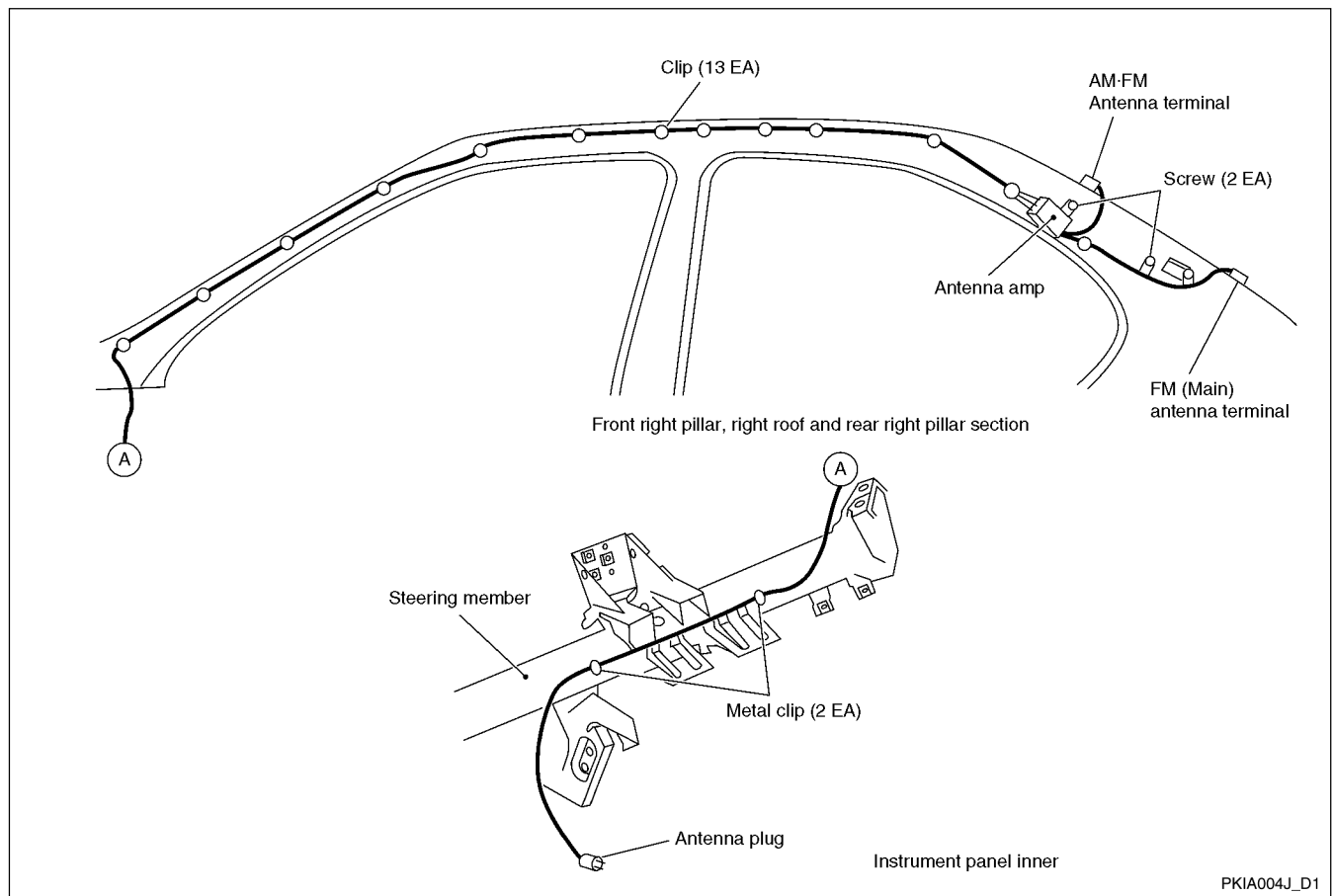
1. Secure the antenna ground using an auxiliary jumper wire.
 - If receiving capacity improves check the antenna ground (body side).

Radio Inspection

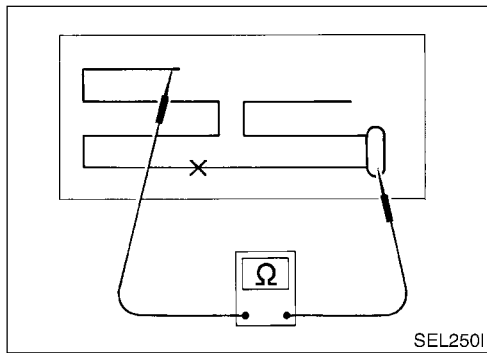
Measure every voltage under following conditions.

- Ignition switch ON or ACC.
- Radio ON.
- Connection between the radio and speaker.

Antenna Location



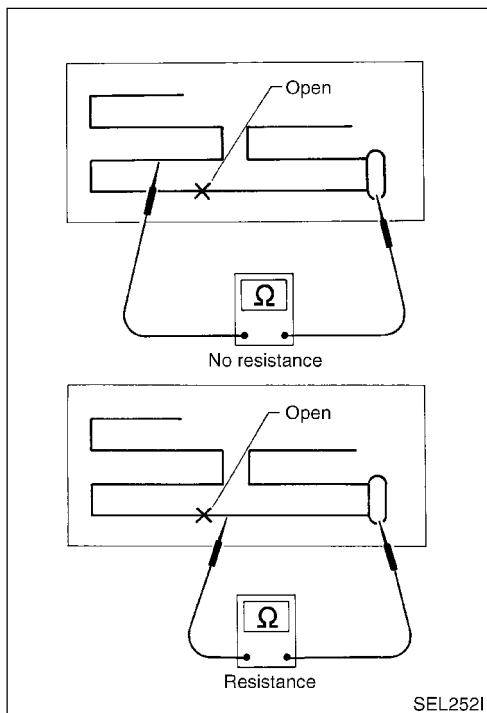
GLASS ANTENNA REPAIR



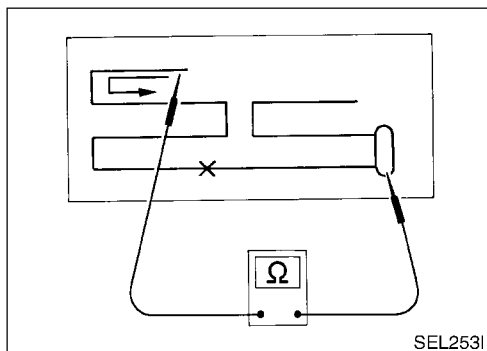
Glass Antenna Repair

OPEN-CIRCUIT INSPECTION

1. Place the circuit tester's probes (resistance mode) at both terminals of the antenna.



2. There will be no resistance if grid is open.



3. In order to locate the open grid, move the probe following the grid lines. When the probe passes through the open grid, the tester needle will shake.

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GLASS ANTENNA REPAIR

Open-Circuit Repair

REPAIR EQUIPMENT

1. Conductive silver composition
2. 30 cm ruler
3. Drawing pen
4. Dryer
5. Alcohol
6. Cloth

REPAIR PROCEDURE

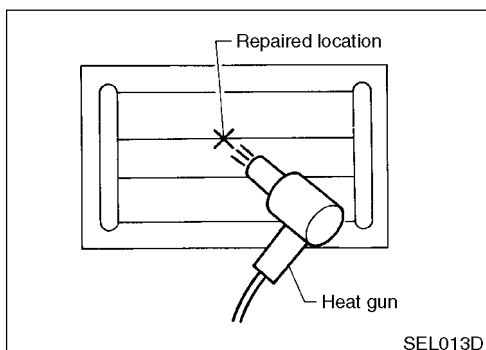
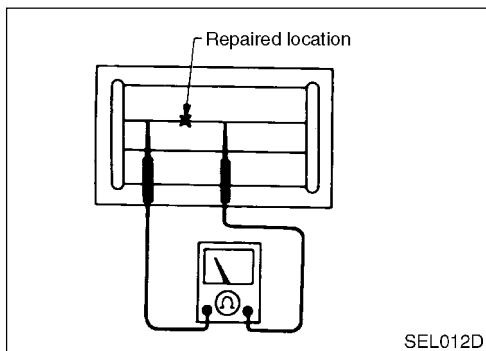
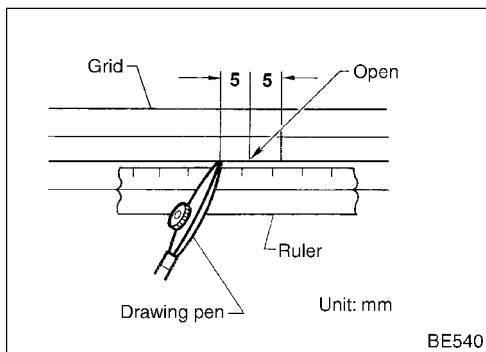
1. Wipe the open grid and clean the surroundings with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

Shake silver composition container before use.

3. Place the ruler on the glass following the open grid. Apply the silver composition with drawing pen at the cut location. Overlap about 5 mm on both existing grids.

4. After repairing, check repaired grid for continuity.

This inspection should be performed 10 minutes after the repair.



Do not touch the repaired location while testing.

5. Apply heat at the repaired location for about 20 minutes with a dryer. Maintain the dryer (heat gun) at least 3 cm from the window. If a heat gun is not available, wait about 24 hours.