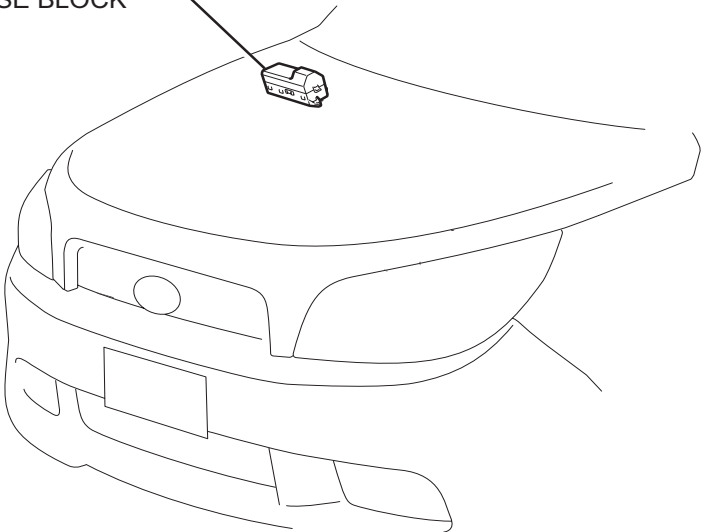


AUDIO SYSTEM

LOCATION

ENGINE COMPARTMENT FUSE BLOCK
-TAIL FUSE

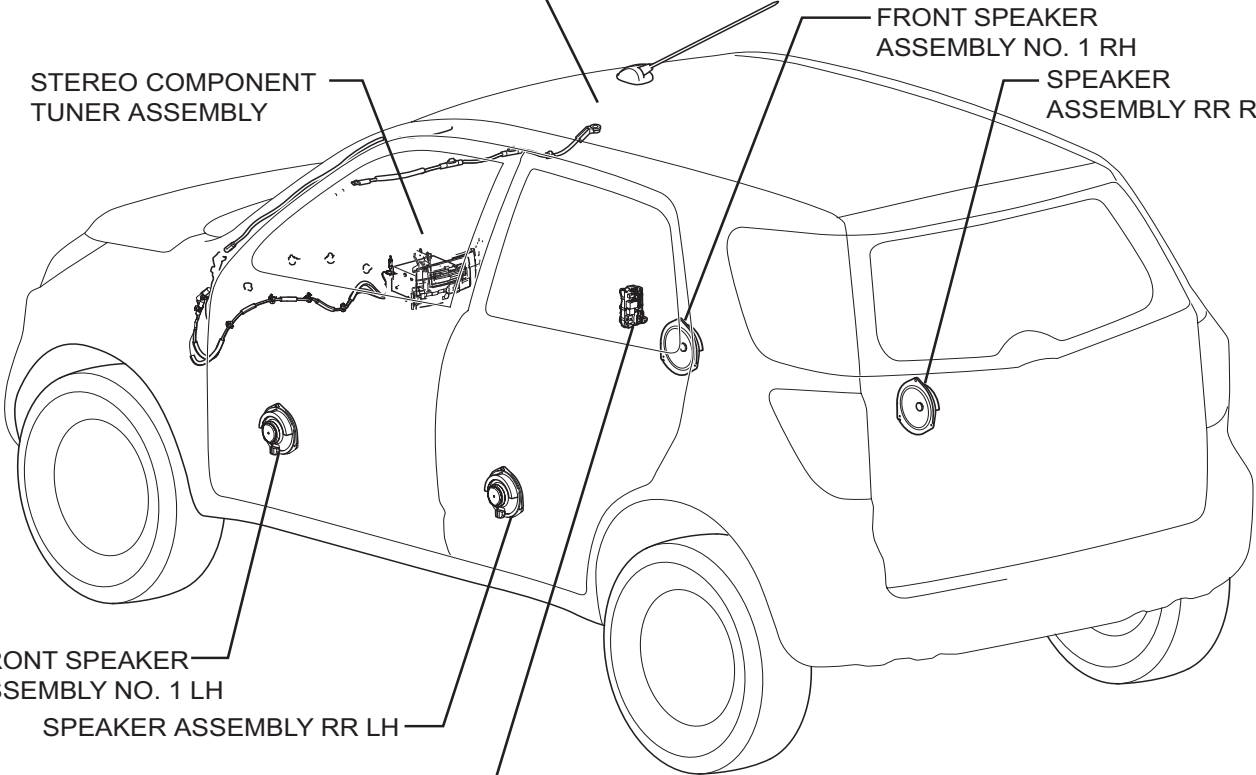


ANTENNA ASSEMBLY (WITH HOLDER)

STEREO COMPONENT
TUNER ASSEMBLY

FRONT SPEAKER
ASSEMBLY NO. 1 RH

SPEAKER
ASSEMBLY RR RH



FRONT SPEAKER
ASSEMBLY NO. 1 LH

SPEAKER ASSEMBLY RR LH

INSTRUMENT PANEL FUSE BLOCK
-ACC FUSE



DIAGNOSTIC TROUBLE CODE CHART

HINT:

- The following diagnostic trouble codes may appear during a service inspection.
- Each device is described in the following order: physical address, parts name.

1. PHYSICAL ADDRESS: 190, PARTS NAME: RADIO RECEIVER ASSEMBLY

HINT:

- Logical address 01: Communication Control
- Logical address 60: Radio unit
- Logical address 62: CD-P
- Logical address 64: MD-P

Logical Address - Diagnostic Trouble Code	Diagnostic Item	Description	Countermeasure	Remarks
01 - D6	No master	• The device storing this code was once disconnected from the system while the ignition switch was turned to the ACC or ON position. • The master device was once disconnected from the system while this code was being stored.	Check the power source system and the wire harness of the AVC-LAN communication system of the stereo component tuner assembly.	This code may be recorded even if no failure is detected, depending on the condition of the battery or the power source wave when the engine is started.
01 - D8	No response to connection confirmation command	• The component indicated by the sub-code was once disconnected from the system after the engine was started. • The component indicated by the sub-code was disconnected from the system after the engine start.	Check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the sub-code.	This code is recorded 180 seconds after the power supply of the component indicated by the sub-code is disconnected with the ignition switch in the ACC or ON position.
01 - D9	Last mode error	• A component (sound or visual system) that was functioning before the engine was turned off is disconnected from the system while the ignition switch was in the ACC or ON position. • A component (sound or visual system) that was functioning before the engine was turned off was disconnected from the system while the ignition switch was in the ACC or ON positions.	Check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the sub-code.	This code may be recorded even if no failure is detected, depending on the condition of the battery or the power source wave when the engine is started.
01 - DA	No response to ON / OFF command	The component indicated by the sub-codes does not respond when sound or visual modes are changed. (This code is detected when the display or the sound does not change when the buttons are operated.)	1. Check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the sub-code. 2. If the error still occurs, replace the component indicated by the sub-code.	-

AV

Logical Address - Diagnostic Trouble Code	Diagnostic Item	Description	Countermeasure	Remarks
01 - DB	Mode status error	Echoing is detected from the component indicated by the sub-code.	Check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the sub-code.	This code may be recorded even if no failure is detected, depending on the condition of the battery or the power source wave when the engine is started.
01 - DC	Failure in transmission	A transmission failure has occurred in relation to the component indicated by the sub-code. (This code does not always indicate a failure.)	1. If the same sub-code is recorded for the other components, check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the sub-code. 2. If the same code does not is recorded for any other component, delete the DTC and wait for a while.	This code may be recorded by turning the ignition switch on after the engine has been on for at least 60 seconds.
01 - DD	Master reset (momentary interruption)	The master component was disconnected from the system after the engine was started.	1. Check the power source system and the wire harness of the AVC-LAN communication system of the stereo component tuner assembly. 2. If the error reoccurs frequently, replace the stereo component tuner assembly.	This code may be recorded by restarting the ignition after the engine has been started.
01 - DE	Slave reset (momentary interruption)	A slave component was once disconnected from the system after the engine started.	Check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the sub-code.	This code may be recorded by restarting the ignition after the engine has been started.
01 - DF	Master error	• A component with a display malfunctions and the master function is switched to an audio device. • A communication error occurs between a sub-master (audio) component and the master component.	Check the power source system and the wire harness of the AVC-LAN communication system of the stereo component tuner assembly.	This code is recorded 210 seconds after the power supply of the stereo component tuner assembly is turned off with the ignition switch in the ACC or ON position.
01 - E0	Registration complete indication error	A registration complete command cannot be received from the master.	This code is for engineering purposes and it may be detected even when it does not indicate a failure.	This code may be recorded even if no failure is detected, depending on the condition of the battery or the power source wave when the engine is started.
01 - E1	Voice processing component ON error	The amplifier detects that its output has stopped, but the source component is still operating.	Check the power source system and the wire harness of the AVC-LAN communication system of the stereo component tuner assembly.	This code may be recorded even if no failure is detected, depending on the condition of the battery or the power source wave when the engine is started.
01 - E2	ON / OFF indication parameter error	An error occurred in the command controlling the ON / OFF by the master component.	Replace the stereo component tuner assembly	-

Logical Address - Diagnostic Trouble Code	Diagnostic Item	Description	Countermeasure	Remarks
01 - E3	Registration demand transmission	- A registration demand command is output from the component indicated by the sub-code - A registration demand command is output when a connection confirmation command is received from a sub-master component.	This code is for engineering purposes and it may be detected even when it does not indicate a failure.	This code may be recorded even if no failure is detected, depending on the condition of the battery or the power source wave when the engine is started.
01 - E4	Multiple frame incomplete	The multiple frame transmission is incomplete.	This code is for engineering purposes and it may be detected even when it does not indicate a failure.	This code may be recorded even if no failure is detected, depending on the condition of the battery or the power source wave when the engine is started.
60-11	FM tuner PLL lock failure	FM tuner PLL circuit malfunction	- Delete the DTC and check the wiring of the radio antenna. - Recheck the symptom after deleting the DTC, and replace the stereo component tuner assembly if the same code is detected.	-
60-43	AM tuner malfunction	AM tuner malfunction	Replace the stereo component tuner assembly	-
60-44	FM tuner malfunction	FM tuner malfunction	Replace the stereo component tuner assembly	-
62-42	CD disc read error	The CD disc signal cannot be read.	- Check the CD (for cracks, etc.). (Retry with another CD.) - Clean the CD player (the pick-up lens). - Recheck the symptom after deleting the DTC, and replace the stereo component tuner assembly if the same code is detected.	-
62-44	CD malfunction	CD mechanism function failure	- Check the CD (for cracks, etc.). - Check for foreign matters in the component. - Recheck the symptom after deleting the DTC, and replace the stereo component tuner assembly if the same code is detected.	-
62-45	EJECT error	The CD cannot be ejected.	- Replace the CD. - Recheck the symptom after deleting the DTC, and replace the stereo component tuner assembly if the same code is detected.	-
62-46	The CD is dirty, damaged, or upside down.	- The CD is dirty or damaged. - The CD is upside down.	- Check the CD. (Retry with another CD.) - Clean the CD. - Recheck the symptom after deleting the DTC, and replace the stereo component tuner assembly if the same code is detected.	-

PROBLEM SYMPTOMS TABLE

GENERAL

Symptom	Suspected Area	See Page
Pressing the power switch does not turn on the system	Fuses (DOME,ACC)	-
	Replace the stereo component tuner assembly	-
The night light of the stereo component tuner assembly does not come on	Fuse (TAIL)	-
	Replace the stereo component tuner assembly	-
Liquid crystal display error	Check the lighting of all the elements	AV-13
	Replace the stereo component tuner assembly	-

Switches

Symptom	Suspected Area	See Page
The panel switches do not operate	Check if there is any foreign matter jammed around the switches that have problems	-
	Check the panel switch (all elements lighting mode)	-
	Replace the stereo component tuner assembly	-

AUDIO GENERAL

AV

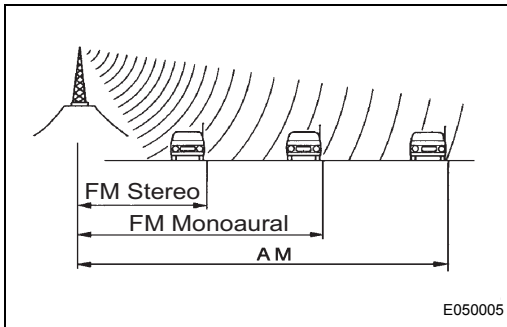
Symptom	Suspected Area	See Page
In all modes, there is no sound, or a low volume of or a bad quality of sound from certain speakers	Check front speaker assembly No. 1	AV-31
	Check speaker assembly RR	AV-33
	Check the wire harness and connectors of the vehicle (between the stereo component tuner assembly and the speaker that has the problem)	AV-20
	Replace the stereo component tuner assembly	-

DESCRIPTION

1. RADIO FREQUENCY BAND
- (a) The table below describes the radio frequency bands currently used for radio broadcasting.

Frequency	30kHz	300kHz	3MHz	30MHz	300MHz
Name	LF	MF	HF	VHF	
Radio Frequency	LW	AM (MW)	SW	FM (UKW)	
Modulation Type	Amplitude Modulation			Frequency Modulation	

L F : Low Frequency
M F : Medium Frequency
H F : High Frequency
VHF : Very High Frequency



2. SERVICE AREA

- (a) FM stereo broadcasting can be unavailable even where AM broadcasting is available without any inconvenience as there is a significant difference in their service areas. In addition to the smaller service area, FM stereo broadcasting can be easily affected by noise or other interference (such as phasing noise, multi-path noise or fade out).

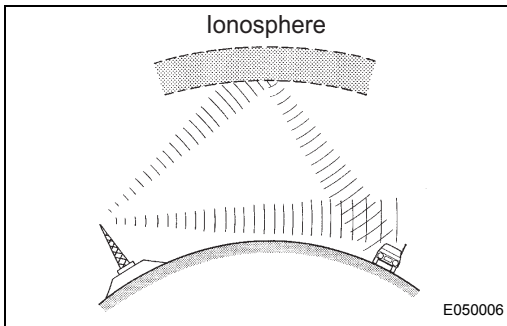
3. RADIO RECEPTION PROBLEMS

HINT:

Besides noise problems, there are other problems called phasing noise, multi-path noise or fade out. These problems do not occur due to electrical noise. They occur because of the quality of the radio waves themselves.

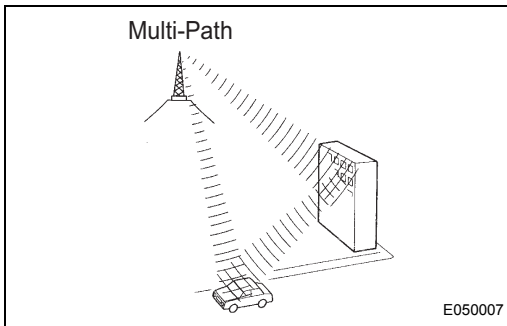
(a) Phasing noise

- (1) In addition to electrical interference, AM broadcasts are susceptible to another form of interference, especially at night. At night, AM radio waves are reflected off the ionosphere. These reflected waves can interfere with the signal received by the vehicle antenna directly from the transmitter. This interference is called PHASING NOISE.



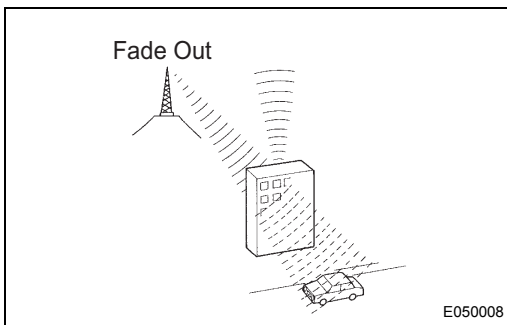
(b) Multi-path noise

- (1) Interference caused when radio waves are reflected off obstructions is called MULTI-PATH. The MULTI-PATH occurs when signals from radio broadcasting are reflected off buildings or mountains, and interfere with the signal that is directly received. The noise caused by this interference is called MULTI-PATH NOISE.



(c) Fade out

- (1) FM radio waves are of a higher frequency than AM radio waves. High frequency waves are easily deflected by obstacles such as buildings or mountains. Therefore, the FM signal may fade out or become weaker when obstacles such as buildings come between the vehicle and the transmitter. This interference is called fade out.



4. NOISE PROBLEMS

(a) Noise symptom questionnaire

- (1) When troubleshooting noise problems, it is very important to understand the customer's complaints. Therefore, use the questionnaire below to diagnose the problem accurately.

Broadcast Type	Symptom	Possible Cause
AM	Noise occurs in a certain area	There is a high possibility that the noise comes from outside.
AM	Noise occurs when listening to an intermittent broadcast	The identical program is often being transmitted by multiple stations. In such case, there is a possibility that the appropriate program that a user should select is not selected. This occurs especially in listening to NHK.

Broadcast Type	Symptom	Possible Cause
AM	Noise occurs at night	There is a high possibility that radio waves from a distant transmitter are interfering.
FM	Noise occurs while driving in a certain area	There is a high possibility that multi-path noise and phasing noise is occurring because of changes in FM frequency.

HINT:

If the noise symptoms are not covered by the questionnaire above, refer to RADIO RECEPTION PROBLEMS. Refer to the sections regarding multi-path noise and phasing noise.

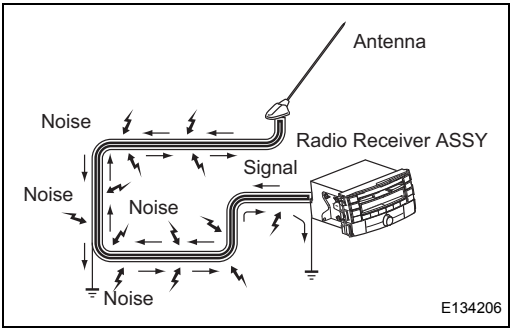
- (b) Points to check when confirming noise problems
- (1) Because the radio is equipped with a noise prevention function, noise may not affect normal radio operation and loud noise will not frequently occur. Therefore, if loud radio noise occurs, check that the ground of the antenna mounting base has been installed properly.
 - (2) Check that all of the specified noise prevention parts have been installed correctly and that the wiring is correct. Also, check that no non-specified parts have been used.
 - (3) To make it easier to determine the symptom, tune the radio so that it is slightly off frequency. This will make the noise easier to hear.

- (c) Antenna and noise
- (1) The electrical signal that is received by the antenna is transmitted to the radio through the core wire of the co-axial cable. If noise other than that from radio waves penetrates the cable, radio noise will occur and sound quality will worsen. To prevent such electrical noise from interfering with the radio, the core wire in the co-axial cable is wrapped with woven mesh shielding wire. This shield wire prevents noise interference by diverting current to the ground.

HINT:

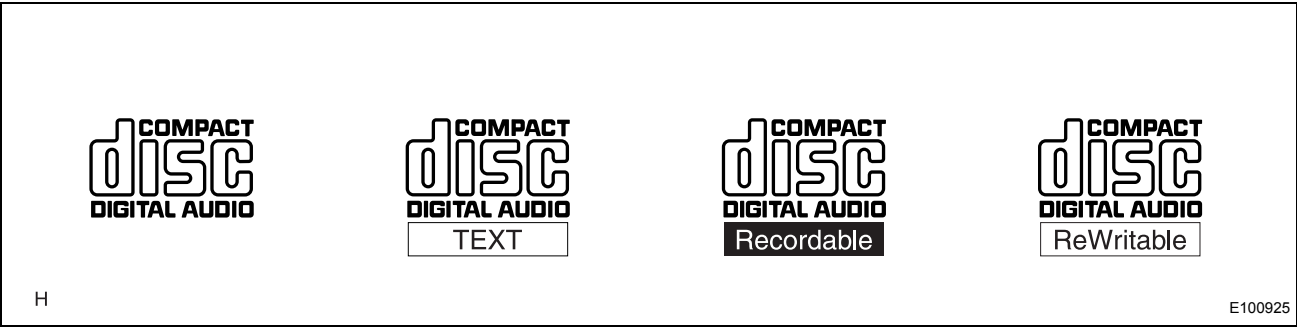
Noise occurs when the ground of the shield wire ground has a problem.

AV



5. CD

- (a) Compatible discs
- (1) This CD player is compatible with music CDs , CD-R (CD-Recordable) and CD-RW (CD-Rewritable) discs labeled with the marks shown in the illustration below.



- (b) Precautions regarding discs and playback
- NOTICE:**
- Copy-control CDs are unavailable.
 - Dual DISCs (discs with CD and DVD on opposite sides of the same disc) are unavailable.

- Occasionally CD-R or CD-RW cannot be played because of recording or disc condition such as damage, dirt or deterioration due to long exposure in the cabin environment.
- A CD-R or CD-RW that has not been finalized cannot be played.
- Be careful not to get finger prints, dirt or scratches on the discs.
- When handling discs, hold the edge and hole in the middle with your fingers, and make sure that the labeled side faces up.
- If a disc is left in the ejected position for a long period of time, the disc may be damaged and become unplayable.
- If a CD is played that has tape, stickers, labels on it (such as CD-R, rental or other labels) on its surface, there is a possibility that the disc may not eject properly and the component may be damaged.
- Store discs away from direct sunlight. (Direct sunlight may be damage discs, causing them to be unplayable.)
- Only disc that is round shape and diameter 12 cm or 8 cm can be played.
- Do not use special shaped disc, because it may cause component failure.
- Do not use discs that have transparent or translucent parts on the recordable area. These discs may not load or eject properly.
- An adapter is not required in order to play a single CD (8cm).

AV

HINT:

- Low temperature or rain may condense inside the player in the same manner as the glass fogs up. Under these conditions, CDs may skip or stop playing. If so, stop the player and allow it to air out and dehumidify before playing.
- CDs may skip if the player vibrates when driving over rough surfaces.

(c) Cleaning

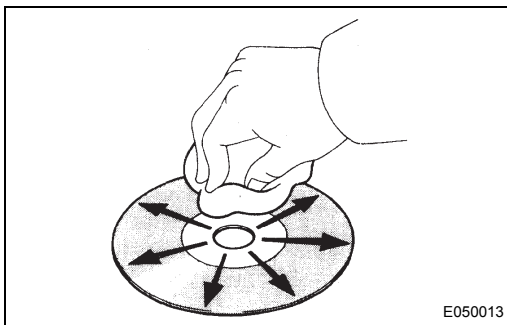
NOTICE:

Do not use lens cleaner because it may damage the pick-up part of the player.

- (1) Wipe the disc with a soft, dry cloth such as an lens cleaning cloth for use with eye glasses. Lightly wipe the disc, working radially from the center to the edge.

NOTICE:

- The disc may be damaged if the surface is pressed hard with fingers or rubbed with a rough cloth.
- Disc may be damaged and rendered unplayable by the use of treated rages or solvents like record cleaner, antistatic additive, alcohol, benzene or thinner.



E050013

6. COMMUNICATION SYSTEM

- (a) If components other than those available at the dealer have been installed, the components of the audio system may not be able to communicate with each other via the AVC-LAN.

- (b) The master component of the AVC-LAN is the stereo component tuner assembly. It has the resistance (a resistance of 60 to 80 , between terminal TX+ and terminal TX-) that is necessary for communication with the stereo component tuner assembly.
- (c) If there is an open or short circuit in the AVC-LAN, the audio system will not function normally as communication will not be possible.

7. DIAGNOSIS FUNCTION

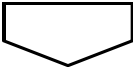
- (a) The audio system has diagnosis functions (displayed on the liquid crystal display of the stereo component tuner assembly).
- (b) A 3-digit component code (physical address) number (in hexa-decimals) is set in each function of the components that make up the AVC-LAN.
- (c) A 2-digit component code (logical address) number (in hexa-decimals) is set in each function of the components that make up the AVC-LAN.

HOW TO PROCEED WITH TROUBLE-SHOOTING

AV

1

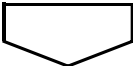
VEHICLE BROUGHT TO WORKSHOP



2

CONDUCT CUSTOMER PROBLEM ANALYSIS AND CHECK SYMPTOMS

HINT:
For customer problem analysis check, see page AV-12.

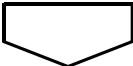


3

BASIC INSPECTION

- (a) Basic inspection
 - (1) Using a tester, measure the voltage of the battery.

Standard:
10 to 14 V (when the engine is stopped)
 - (2) Visually check for broken fuses, disconnected wire harnesses, short circuits and connectors with bad connections.



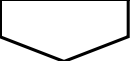
4

CHECK POWER SOURCE SUPPLY TO STEREO COMPONENT TUNER ASSEMBLY

- (a) CHECK THAT LIQUID CRYSTAL ILLUMINATION OF STEREO COMPONENT TUNER ASSEMBLY COMES ON
 - (1) Turn the ignition switch to the ACC or ON positions.
 - (2) When the audio power switch is turned ON, make sure the back light of the stereo component tuner assembly illuminates and the liquid crystal is displayed.



LIQUID CRYSTAL ILLUMINATION DOES NOT COME ON (PROBLEM SYMPTOMS TABLE: PRESSING POWER SWITCH DOES NOT TURN ON SYSTEM [See page AV-5.]



NO PROBLEM (GO TO STEP 5)

5 Check for DTCs.

HINT:

See page AV-13.

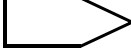
- (a) Check for DTCs.
 - (1) Record the DTCs.
- (b) Delete the DTCs.
- (c) Recheck for DTCs.
 - (1) Based on the DTCs recorded, reproduce the symptoms that caused the problem and recheck for the DTCs.

HINT:

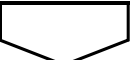
When outputting the DTC, see DIAGNOSTIC TROUBLE CODE CHART (AV-13).



DTC DETECTED (GO TO STEP 7)



UNABLE TO DETECT DTC AND UNABLE TO REPRODUCE PROBLEM [PERFORM MAL-FUNCTION SIMULATION] (SEE PAGE IN-33)



UNABLE TO DETECT DTC BUT ABLE TO REPRODUCE PROBLEM (GO TO STEP 6)

6 PROBLEM SYMPTOMS TABLE

HINT:

See page AV-5.



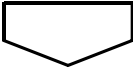
RELATED TO PROBLEM SYMPTOM (GO TO STEP 8)



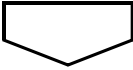
NOT LISTED IN PROBLEM SYMPTOM TABLE (GO TO STEP 7)

7 PERFORM TROUBLESHOOTING BASED ON PROBLEM SYMPTOM

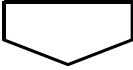
- (a) ECU terminals (See page AV-20.)



8	CHECK OR REPLACE
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9	CONFIRMATION TEST
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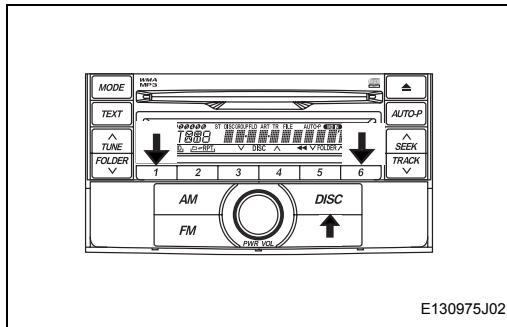
END

CUSTOMER PROBLEM ANALYSIS CHECK

Audio Problem Diagnosis Check Sheet			Date Vehicle Brought In / /	
Customer's name		License Plate No.	First Registration Year	
		Model	VIN	
Written By	Inspector's name	Engine Type	Odometer Reading	km
Description of Symptoms				
Date Problem First Occurred		Date Time		
Frequency Problem Occurs		Constant Occasional (__ times per day, __ times per month)		
Condition (Method of use and results)				
Weather	Clear Cloudy Rainy Snowy Others ()		Air Temperature Approx. ()°C	
Road	City Suburbs Highway Others ()		Paved Unpaved	
Problem Symptoms	Switch			
	Radio			
	CD			
	Static			
DTC Check	Device Name (Physical address)		First DTC	Second DTC
	Radio Receiver Assembly (190)			

AV

DIAGNOSIS SYSTEM



1. INSPECT DIAGNOSIS MODE

(a) Start the diagnosis mode.

- (1) When the audio is OFF and the ignition switch is in the ON or ACC position, press the DISC switch 3 times while pressing and holding preset buttons 1 and 6 at the same time.

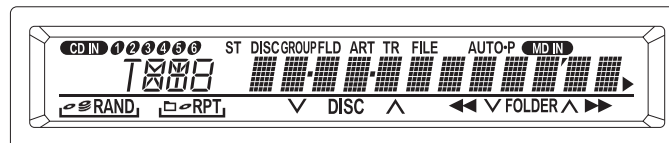
HINT:

After a beep sound sounds 3 times, start the the diagnosis and go to the all elements lighting mode.

(b) All elements illumination mode

HINT:

The element display check and the panel switch operation check are available in the all elements illumination mode.



- (1) Check that there are no problems with the illumination of the elements.
- (2) Make sure that a beep sound sounds when each of the panel switches is pressed.

HINT:

Pressing the SEEK / TRACK UP switch, opens the service inspection screen. Check the operation by changing screens.

(c) Service inspection mode

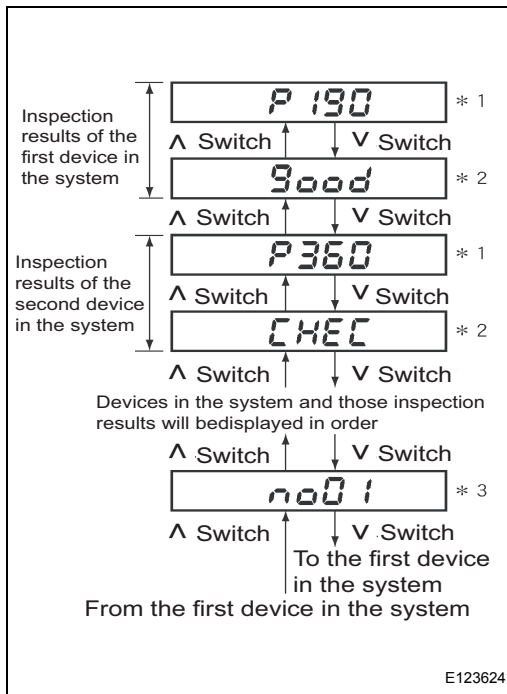
- (1) Press the SEEK / TRACK UP switch in the all elements illumination mode.

HINT:

- The service inspection mode is displayed.
- It may take about 40 seconds to complete the inspection.
- When the service inspection mode is displayed, the system inspection and the diagnosis memory inspection starts. The results are listed in order beginning with the lowest component code (physical address).

(d) Release diagnosis mode

- (1) Press and hold DISC switch for 3 seconds or more. Or turn the ignition switch to the OFF position.



(e) The service inspection mode result (for inspecting current and past system status)

(1) Use the SEEK / TRACK switch to check the result of each component that is connected to the system.

Term	Contents
Component Code (*1)	Physical address of the target component
Inspection results (*2)	After a diagnosis memory check and system inspection of the target component are performed, the present and past component status inspection results are displayed by the following six types: "good", "nCon (no connection)", ECHn (exchange)", CHEC (check)", "OLD (old)", nrES (no response)".
Connection check number (*3)	The current connection check numbers are displayed.

HINT:

- The illustration shows an example in which component code 190 (radio receiver) and component code 360 (CD changer) show in the system and there is a malfunction associated with component code 360.
- The inspection results are displayed in order, beginning with the smallest component code (physical address) followed by the inspection results for each component code.
- In that event that components purchased at a dealer or components that use the AVC-LAN system have not been added, codes above component code 190 (radio receiver assembly) will not be displayed.

AV

Component Code (*1) Description

Term	Definition
P	Symbol that indicates a physical address
Physical address	A 3-digit unique symbol (in hexadecimal) is set based on the functions in each component that makes up the AVC-LAN.

HINT:

Examples of physical addresses of connected optional components are shown below.

- 3A0 : MD changer
- 360 : CD changer

Inspection Result (*2) Description

Displayed Text	Source Term	Definition	Countermeasure
good	Good (normal)	Neither SYSTEM CHECK CONFIRMATION nor DIAGNOSTIC MEMORY RESPONSE is displayed.	-
nCon	No connection (no connection)	System is recognized during registration but the component does not respond to the DIAGNOSIS ON command.	Check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the component code (physical address).
ECHn	Exchange (Exchange)	DIAGNOSTIC ON CONFIRMATION confirms the item relevant to the current diagnosis. In addition, 1 or more DTCs for EXCHANGE are detected in either SYSTEM CHECK RESULT MODE or DIAGNOSTIC MEMORY MODE.	Go to the detailed information mode to check the trouble area indicated in the DTC list.

Displayed Text	Source Term	Definition	Countermeasure
CHEC	Check (Check)	DIAGNOSTIC ON CONFIRMATION confirms the item relevant to the current diagnosis. In addition, when no DTCs are detected for EXCHANGE, one or more DTCs for CHECK are detected in either SYSTEM CHECK MODE or DIAGNOSTIC MEMORY MODE.	Go to the detailed information mode to check the trouble area indicated in the DTC list.
OLd	Old (Old version)	DIAGNOSTIC ON CONFIRMATION confirms the item relevant to the current diagnosis. An old DTC application is identified and a DTC is detected in either SYSTEM CHECK RESULT MODE or DIAGNOSIS MEMORY MODE.	Go to the detailed information mode to check the trouble area indicated in the DTC list.
nrES	No response (No response)	The component gives no response to any one of SYSTEM CHECK MODE ON REQUEST, SYSTEM CHECK RESULT REQUEST and DIAGNOSIS MEMORY REQUEST.	Check the power source system and the wire harness of the AVC-LAN communication system of the component indicated by the component code (physical address).

(2) To restart the service check, press preset button 1.

HINT:

To restart the service check after the wire harness check, turn the ignition switch OFF (IG) and then start from the beginning.

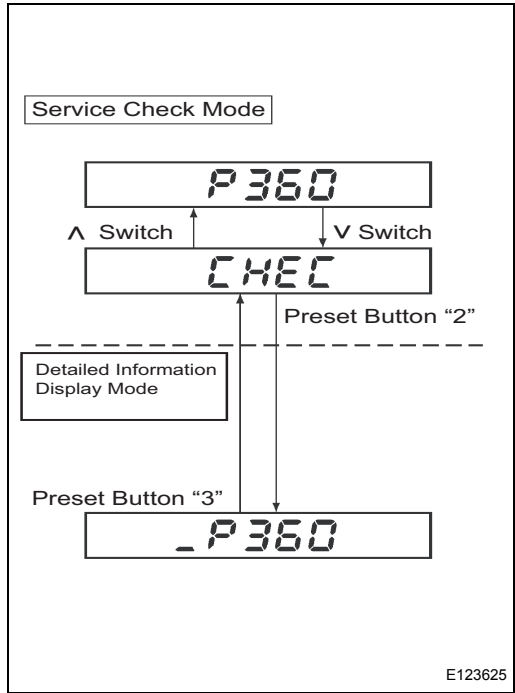
(f) Detailed information mode (DTC codes for malfunctioning components)

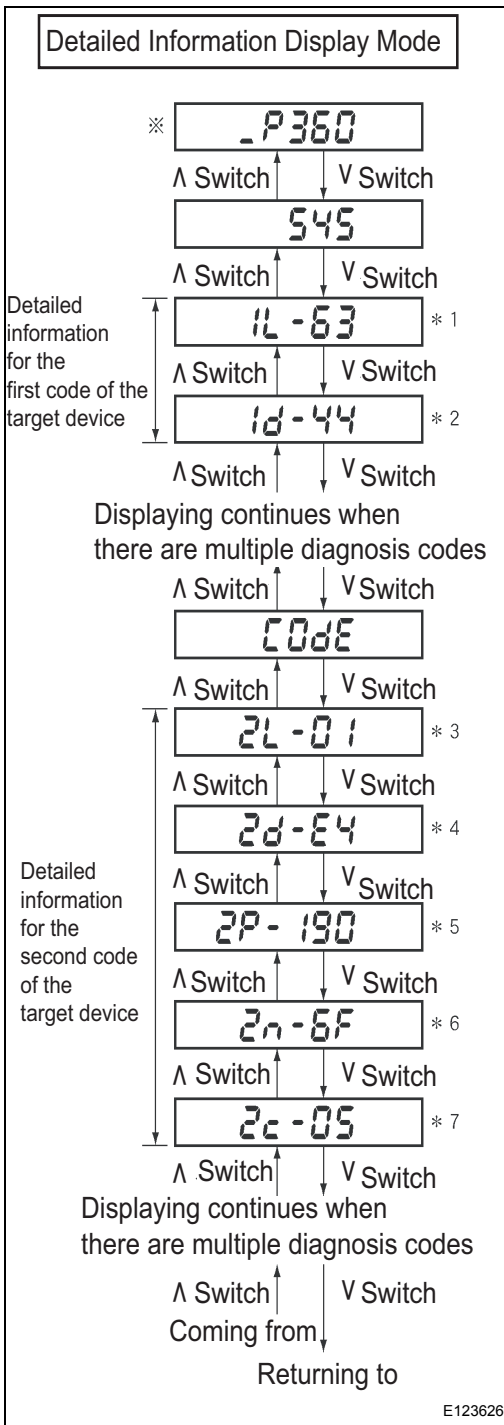
(1) When CHEC or ECHn is indicated, press preset button 2 to display the detailed information mode.

HINT:

In the detailed information mode, an underscore mark is displayed in front of the physical address that describes the component code, as shown in the illustration.

AV





- (2) Press the SEEK / TRACK switch to display SYSTEM CHECK RESULT (SyS) and DIAGNOSIS MEMORY RESPONSE RESULT (COdE).

HINT:

- The illustration shows an example in which a system check or diagnosis memory response shows that a component (CD changer) with device code 360 has diagnosis codes 63-44 and 01-E4.
- The check result details are displayed in the following order: SYSTEM CHECK RESULT (details are displayed after the characters, SyS), followed by DIAGNOSIS MEMORY RESPONSE RESULT (details are displayed after the characters, COdE).

- (3) Confirm system check result.

HINT:

- System check results are displayed after the characters, SyS, are displayed.
- System check results are displayed in the following order: component code → diagnostic trouble code.

System Check Result Display

Term	Definition
Diagnostic trouble code number	A serial number that is added to the diagnosis code for each component code
Logical address (*1)	A 2-digit code (in hexadecimal) given to each function (unit) that make up the components of the AVC-LAN device. (L is the symbol of that it is logical address.)
Diagnostic trouble code (*2)	Diagnostic trouble code (d indicates a diagnosis code.)

- (4) Check diagnosis memory response result.

HINT:

- The diagnosis memory response result is displayed after the characters, COdE.
- The diagnosis memory response result is displayed in the following order: component code → diagnostic trouble code → sub-code → connection check number → number of times of occurrence.

Diagnosis Memory Response Result Display

Term	Definition
Diagnostic trouble code number	A serial number that is added to the diagnosis code for each component code
Logical address (*3)	A 2-digit code (in hexadecimal) given to each function (unit) that make up the components of the AVC-LAN device. (L is the symbol of that it is logical address.)
Diagnostic trouble code (*4)	Diagnostic trouble code (d indicates a diagnosis code.)
Sub-code (*5)	The physical address is stored with the sub-code. (When there is no address information, --- is displayed.) P indicates a physical address.)
Connection check number (*6)	The connection check number (in hexadecimal) is displayed as a set with the diagnostic code. (When there is no connection check number, -- is displayed.) (n indicates a connection check number.)

AV

Term	Definition
Number of times of occurrence (*7)	The number of times of occurrence is displayed as a set with the diagnostic code. (The number of identical occurrences is shown in multiples of ten. So, for example, 0 is recorded for codes that occur fewer than ten times. If there is no information about the number of occurrences, -- is displayed.) (c indicates the number of times of occurrence.)

(5) Check the trouble area referring to the diagnosis code chart. (See page AV-2.)

(6) To return to the service check mode, press preset button 3.

(g) Clear the diagnostic trouble codes (individually).

(1) When ECHn (exchange) is displayed in the service check mode or detail information mode, press and hold preset button 5 for 2 seconds or more.

HINT:

- A beep sound sounds once when the memory clear operation is complete.
- After the DTC memory is cleared, only the component code (physical address) is displayed since the relevant diagnosis information for the component has been deleted.
- To confirm the DTC, press preset button 1 and restart the service check.

(h) Clear the diagnostic trouble codes (all).

(1) After repair the trouble area, start the diagnosis mode.

(2) Press and hold preset button 5 for 2 seconds or more. (CLr is displayed.)

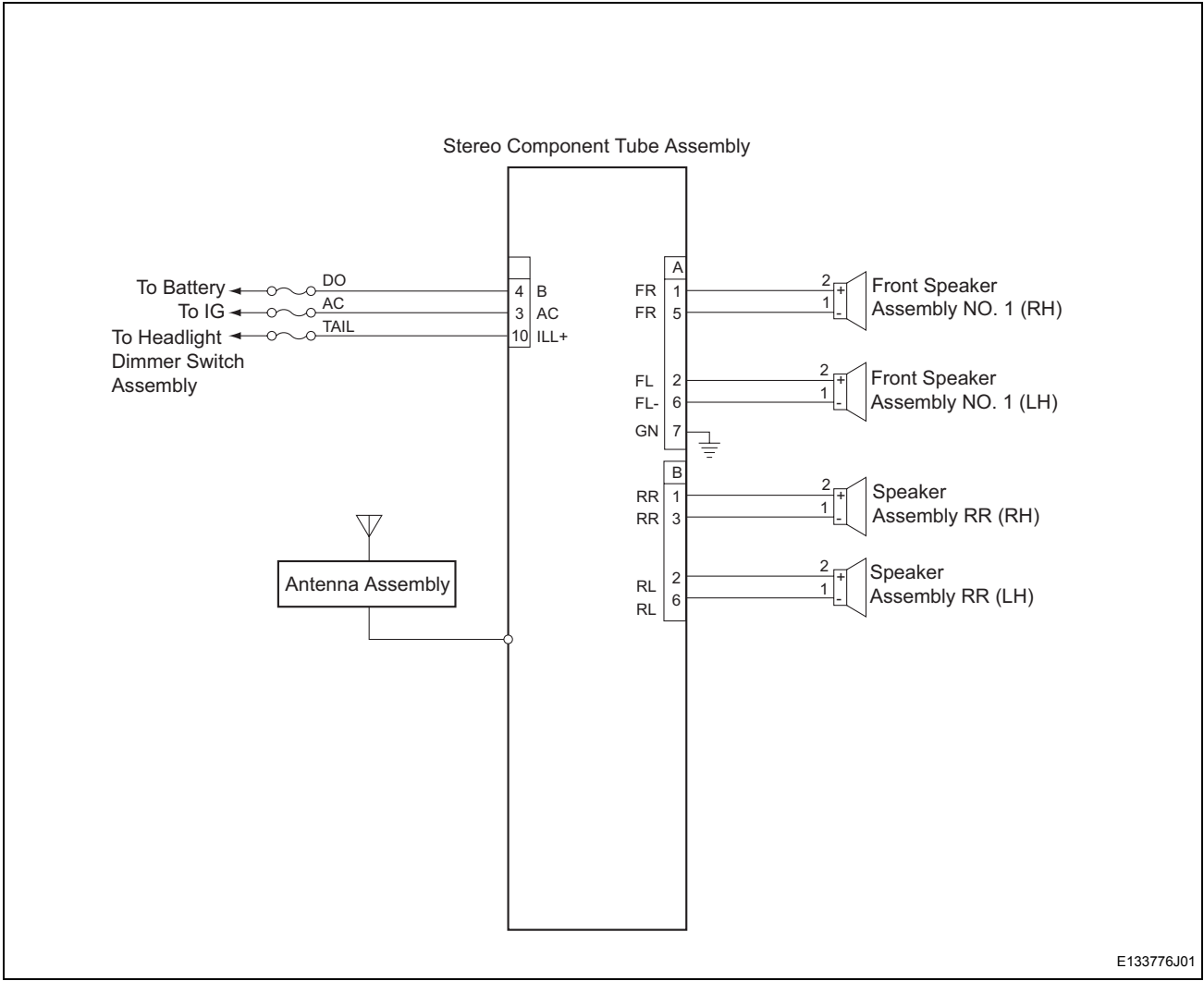
HINT:

- A beep sound sounds once when the memory clear operation is complete.
- After the DTC memory is cleared, only the component code (physical address) is displayed since all of the diagnosis information for the component has been deleted.

(3) Press preset button 1 to restart the service check, and confirm that no DTCs are displayed for any of the component codes (physical address).

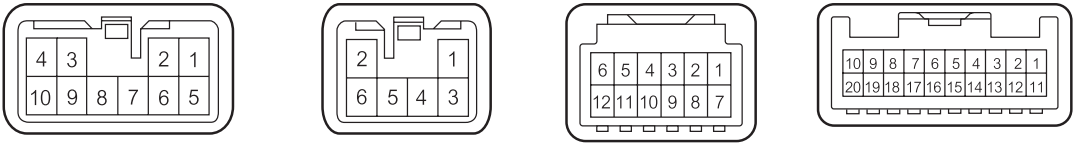
CIRCUIT DIAGRAM

1. CIRCUIT DIAGRAM



2. CONNECTOR CHART

Stereo Component Tuner Assembly

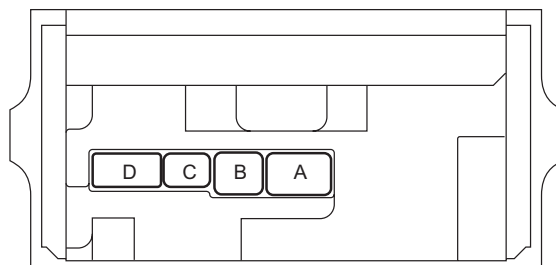


Front Speaker Assembly NO. 1 Speaker Assembly RR

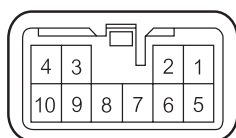


ECU TERMINALS

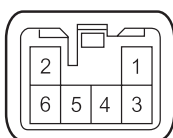
1. Stereo Component Tuner Assembly



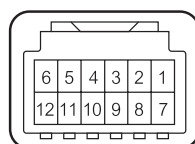
Connector A



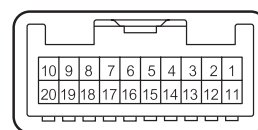
Connector B



Connector C



Connector D



E130978J01

Connector A

Terminal No.	Terminal Symbol	Input / Output	Tester Connection Positive (+) ↔ Negative (-)	Item	Measurement Condition	Standard	Malfunction symptom when the result is not as specified O: Open S: Short to Body
1	FR+	Output	A1 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from front speaker assembly No. 1 (RH) and speaker assembly FR No. 2 (RH)
2	FL+	Output	A2 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from front speaker assembly No. 1 (LH) and speaker assembly FR No. 2 (LH)
3	ACC	Input	A3 ↔ A7	Voltage	IG ACC	10 to 14 V	O: System does not operate S: Blown fuse
4	B	Input	A4 ↔ A7	Voltage	Always	10 to 14 V	O: System does not operate S: Blown fuse
5	FR-	Output	A5 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from front speaker assembly No. 1 (RH) and speaker assembly FR No. 2 (RH)

AV

Terminal No.	Terminal Symbol	Input / Output	Tester Connection Positive (+) ↔ Negative (-)	Item	Measurement Condition	Standard	Malfunction symptom when the result is not as specified O: Open S: Short to Body
6	FL-	Output	A6 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from front speaker assembly No. 1 (LH) and speaker assembly FR No. 2 (LH)
7	GND	-	A7 ↔ Body ground	Continuity	Always	Continuity	O: Noise slightly increased
10	ILL+	Input	A10 ↔ A7	Voltage	Headlight dimmer switch TAIL	10 to 14 V	O: No light illuminates at night S: Blown fuse

Connector B

Terminal No.	Terminal Symbol	Input / Output	Tester Connection Positive (+) ↔ Negative (-)	Item	Measurement Condition	Standard	Malfunction symptom when the result is not as specified O: Open S: Short to Body
1	RR+	Output	F1 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from speaker assembly RR (RH)
2	RL+	Output	F2 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from speaker assembly RR (LH)
3	RR-	Output	F3 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from speaker assembly RR (RH)
6	RL-	Output	F6 ↔ A7	Waveform	Audio system is playing	Waveform synchronized with sound is output	No sound from speaker assembly RR (LH)

Connector C

Terminal No.	Terminal Symbol	Input / Output	Tester Connection Positive (+) ↔ Negative (-)	Item	Measurement Condition	Standard	Malfunction symptom when the result is not as specified O: Open S: Short to Body
6	MUTE	Input	B6 ↔ A7	Voltage	Audio system is playing	3.5 V or more	O: Popping sound S: No sound from speaker

RADIO SIGNAL CANNOT BE RECEIVED (POOR RECEPTION)

INSPECTION PROCEDURE

1

CHECK RECEPTION AFTER CHANGING VEHICLE LOCATION

- (a) Change vehicle location.
 (1) Change vehicle location to be able to receive radio broadcast, and check if it is functioning normally.

Standard:

Reception returns to normal

OK

Normal (external factors like radio wave status)

NG

2

CHECK ACCESSORY PARTS (WINDOW TINT FILM OR TELEPHONE ANTENNAS, ETC.)

- (a) CHECK ACCESSORY PARTS
 (1) Check if any accessory parts, such as window tinting film or telephone antennas, etc., have been installed.

Standard:

No accessory parts

NG

Influence of accessory parts

OK

3

Check for antenna noise.

- (a) Check for antenna noise.
 (1) With the ignition switch in the ON or ACC position, turn on the radio and set the radio to the AM mode.
 (2) Remove the antenna rod.
 (3) Touch a screwdriver to the screw that connects the antenna rod of the antenna assembly, and check that noise is emitted from the speaker.

Standard:

Noise is emitted from the speaker (scratching sound).

OK

CHECK AND REPLACE STEREO COMPONENT TUNER ASSEMBLY

NG

4

CHECK ANTENNA CORD

- (a) PREPARE FOR INSPECTION
 (1) Make sure that the connection between the antenna holder and the antenna cord is visible.

AV

- (2) Disconnect the connection between the antenna holder and the antenna cord.
- (b) Check for noise.
 - (1) Turn the ignition switch to the ON or ACC position while the stereo component tuner assembly connector is connected.
 - (2) Turn on the radio and set it to the AM mode.
 - (3) Touch a screwdriver, thin wire, or other metal object to the antenna jack of the antenna cord, and check that noise is emitted from the speaker.

Standard:

Noise is emitted from the speaker (scratching sound).

OK

REPLACE ANTENNA HOLDER

NG

5

CHECK ANTENNA CORD NO. 2

- (a) PREPARE FOR INSPECTION
 - (1) Make sure that the connection between the antenna cord and antenna cord No. 2 is visible.
 - (2) Disconnect the connector between the antenna cord and antenna code No. 2.
- (b) Check for noise.
 - (1) Turn the ignition switch to the ON or ACC position while the stereo component tuner assembly connector is connected.
 - (2) Turn on the radio and set it to the AM mode.
 - (3) Touch a screwdriver, thin wire, or other metal object to the antenna jack of antenna cord No. 2, and check that noise is emitted from the speaker.

Standard:

Noise is emitted from the speaker (scratching sound).

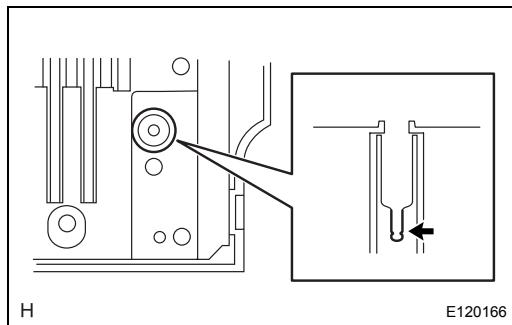
NG

REPLACE ANTENNA CORD NO. 2

OK

6

CHECK STEREO COMPONENT TUNER ASSEMBLY



- (a) PREPARE FOR INSPECTION
 - (1) Prepare the stereo component tuner assembly for removal.
 - (2) Disconnect the antenna plug.
- (b) Check for noise.
 - (1) Turn the ignition switch to the ON or ACC position while the stereo component tuner assembly connector is connected.
 - (2) Turn on the radio and set it to the AM mode.
 - (3) Touch a screwdriver, thin wire, or other metal object to the antenna jack of the stereo component tuner assembly No. 2, and check that noise is emitted from the speaker.

Standard:

Noise is emitted from the speaker (scratching sound).

NG

CHECK AND REPLACE STEREO COMPONENT TUNER ASSEMBLY

OK

REPLACE ANTENNA CORD

NOISE ENTERS

INSPECTION PROCEDURE

1

CHECK NOISE CONTAMINATION MODE

- (a) Check noise contamination source.
- (1) Operate the stereo component tuner assembly, and check for the source of the noise.

Standard:

Does noise occur only in radio mode or in all modes?

Result	Proceed to
Noise occurs only in radio mode	A
Noise occurs in all modes	B

B

Go To Step 8

A

AV

2

CHECK CONDITION WHEN ABNORMALITY OCCURS

- (a) CHECK CONDITION WHEN ABNORMALITY OCCURS
- (1) Check when (under what circumstances, location) noise occurs.

Standard:

Does noise occur only when driving in certain certain areas or everywhere?

Result	Proceed to
Noise occurs regardless of the location	A
Noise sounds in only certain areas	B

B

Electromagnetic wave interference

A

3

CHECK ACCESSORY PARTS (WINDOW TINT FILM OR TELEPHONE ANTENNAS, ETC.)

- (a) CHECK ACCESSORY PARTS
- (1) Check if any accessory parts, such as window tinting film or telephone antennas, etc., have been installed.

Standard:

Check that accessory parts are installed properly.

Result	Proceed to
Accessory parts are installed properly.	A
Accessory parts are not installed properly.	B

HINT:

Noise contamination in the radio mode is partially prevented by noise prevention in order to protect the radio from damage. Therefore loud noise does not occur frequently. If loud noise occurs, check the ground of the antenna connection, and check

if the manufacturer-specified noise prevention parts have been installed, or the wiring is connected properly.

B

Influence of accessory parts

A

4

INSPECT ANTENNA ASSEMBLY (WITH HOLDER) (INSTALLATION CONDITION)

- (a) Check the installation of the antenna holder.
 - (1) Check the condition of the antenna holder installation and check that there are no loose areas, misalignment or other failures.

NG

INSTALL PROPERLY

OK

5

CHECK ANTENNA PLUG REMOVAL (ANTENNA CORD)

- (a) PREPARE FOR INSPECTION
 - (1) Make sure that the connection between the antenna holder and the antenna cord is visible.
 - (2) Disconnect the connection between the antenna holder and the antenna cord.
- (b) Check for noise.
 - (1) Restart the stereo component tuner assembly with the antenna plug removed from the antenna cord, and check if noise occurs.

Standard:

Noise does not occur.

OK

REPLACE ANTENNA HOLDER

NG

6

CHECK ANTENNA PLUG REMOVAL (ANTENNA CORD NO. 2)

- (a) PREPARE FOR INSPECTION
 - (1) Make sure that the connection between the antenna cord and antenna cord No. 2 is visible.
 - (2) Disconnect the connector plug between the antenna cord and antenna code No. 2.
- (b) Check for noise.
 - (1) Restart the stereo component tuner assembly with the antenna plug removed from antenna cord No. 2, and check if noise occurs.

Standard:

Noise does not occur.

OK

REPLACE ANTENNA CORD

NG

AV

7**CHECK ANTENNA PLUG REMOVAL (STEREO COMPONENT TUNER ASSEMBLY)**

- (a) PREPARE FOR INSPECTION
- (1) Prepare the stereo component tuner assembly for removal.
 - (2) Remove the plug of antenna code No. 2
- (b) Check for noise.
- (1) With the antenna plug removed from stereo component tuner assembly, restart the stereo component tuner assembly, and check if noise occurs.

Standard:

Noise does not occur.

OK**REPLACE ANTENNA CORD NO. 2****NG****8****INSPECT SPEAKER INSTALLATION CONDITION**

- (a) Check the condition of the speaker installation and check that there are no loose areas, misalignment or other failures.
- (b) Check that there is no foreign matter in any of the speakers, no tears in the speaker cones, or other abnormalities.

Standard

Result	Proceed to
The speakers have no problems	A
Speaker installation failure	B
Foreign matter in the speaker	C
Tears on the speaker cones	D

B**INSTALL SPEAKER CORRECTLY****C****REMOVE CONTAMINANTS IN SPEAKERS****D****REPLACE SPEAKER****A****9****IDENTIFY CAUSE OF NOISE CONTAMINATION**

- (a) See the diagnostic trouble code below and identify the cause of noise contamination.

HINT:

- First make sure that the noise is not originating from outside the vehicle. Make sure not to skip this check. If the check is not performed, the source of the noise source may be unclear, resulting in a misdiagnosis.
- Troubleshoot noise problems in order of loudness, starting with the loudest noise.
- To make it easier to determine the symptom, tune the radio so that it is slightly off frequency. This will make the noise easier to hear.

Diagnostic Trouble Code Chart

Symptom	Cause Of Noise Contamination
Depressing the accelerator pedal increases whine, and stopping the engine stops the noise immediately	Alternator noise
The noise occurs when the air conditioning or heater is on	Blower motor noise
A noise occurs when accelerating suddenly on rough road or the ignition switch is turned ON (IG)	Fuel pump noise
A clicking sound when pressing and releasing the horn button, or a buzz sounding when the horn is pressed and held	Horn noise
The noise (buzzing) stops when the ignition is turned off	Ignition noise
A clattering noise when the turn signal is flashing	Flasher noise
Noise when the window washer is operating	Washer noise
A creaking noise that occurs when the engine is on and continues after the ignition is turned off	Water temperature sensor noise
A rubbing sound when the wiper is operating	Wiper noise
A popping sound when the brake pedal is depressed	Stop lamp switch noise
Other	Static electricity build up in the vehicle

Standard

Result	Proceed to
Cause of noise contamination cannot be determined	A
Cause of noise contamination can be determined	B

AV**B****REPLACE RELEVANT NOISE FILTERS****A****CHECK AND REPLACE STEREO COMPONENT TUNER ASSEMBLY**