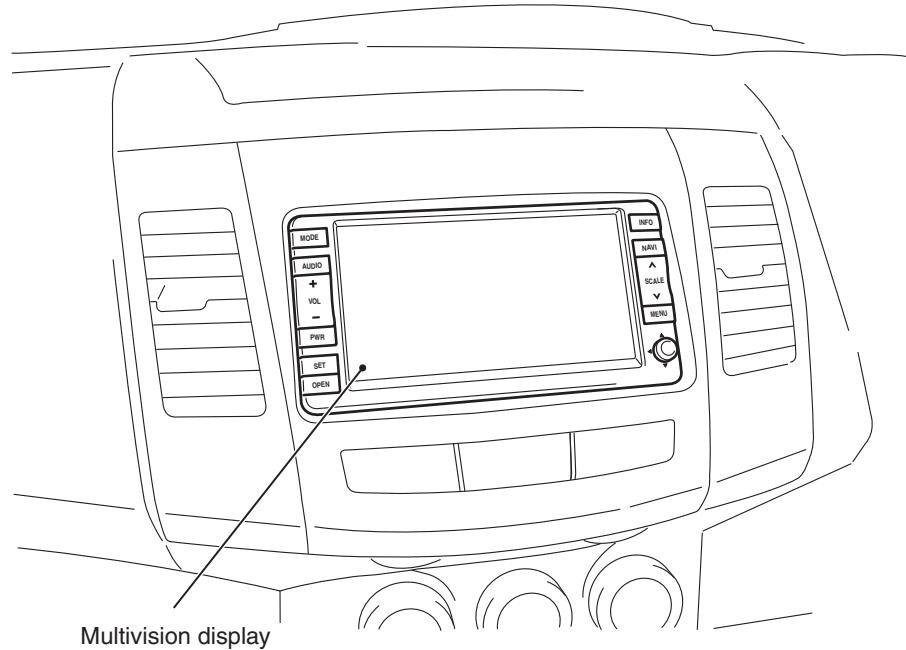


MMCS

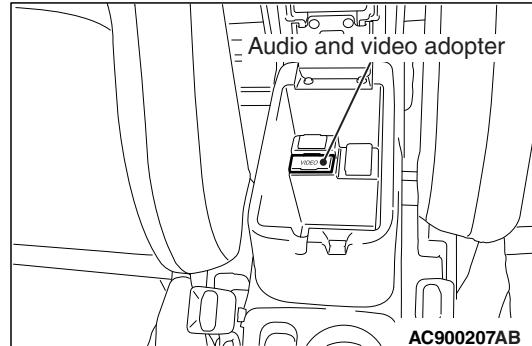
GENERAL INFORMATION

M1546000100501

For Mitsubishi multi-communication system (MMCS), the multivision display (7-inch liquid crystal display of wide 2 DIN size) with hard disk drive (40 GB) and the CD/DVD drive is established.



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The audio and video adapter has been established to the center tray in order to connect visual equipment such as game machine and video player.

Display (function)	Content
Navigation	Displays the navigation functions including the map display, search, guidance, information search, Carpool/HOV lane.
Vehicle position information	Displays the position information of current location. (Longitude and latitude, altitude, GPS reception status)
CD/DVD	Plays the CD or DVD inserted to the drive (for MP3/WMA)
Music server	Plays back the music data on hard disk drive, and records the music CD.
Rear display screen	Displays image via a rear display unit (DVD drive-incorporated rear seat 9-inch wide LCD display).

Display (function)	Content
Radio	Displays the receiving station information. Also, the operation of receiving channel can be performed.
Sound control	Adjusts the high/middle/low tone and balance. Function to set music type, sound field, and others when adopting the Rockford Fosgate ® premium sound system
AUX	Plays the image and sound input through the audio and video adapter. (Image cannot be seen during driving because of the driving restriction.)
USB/iPod	Plays the sound input through the USB adapter.
Drive information	Displays the average fuel consumption, instantaneous fuel consumption, possible cruising distance, driving time, and lap time.
Environmental data	Displays the atmospheric pressure* and ambient temperature.
Maintenance information	Displays the maintenance information for engine oil, oil filter, tire rotation, clean air filer, and brake system.
A/C information	Displays the A/C information.
ETACS function customization	Function for ETACS-ECU customization
Mobile Phone/Bluetooth Audio	Function to operate the hands free interface system using the multivision display <Vehicles with hands free module>
Calendar	Displays the calendar.

*NOTE: * : May not be displayed depending on the engine model.*

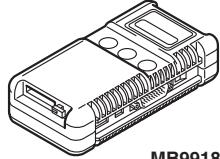
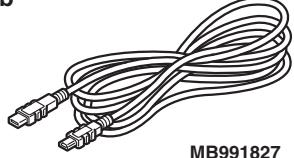
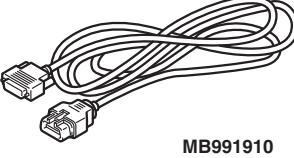
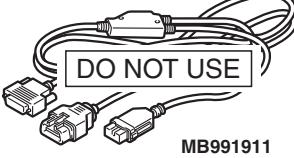
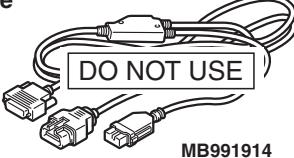
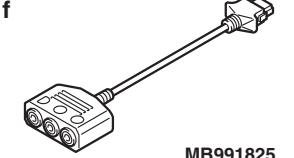
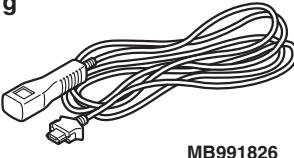
- The storage of very large map data is now possible, and the following contents have been adopted.
 - Map type navigation
 - NAVTEQ map database
 - Map data stored in hard disk drive
- Most sophisticated LSI has been used as one for car navigation system.

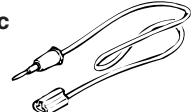
*NOTE: *LSI stands for Large Scale Integration, and is a large-scale integrated circuit (IC) containing between 1,000 and 100,000 circuit elements.*

- U.S. English, French, and Spanish are available to select.
- By attaching the hands free module, the hands free cellular phone system becomes available.
- By attaching the satellite radio tuner, the SIR-IUS™ satellite radio broadcasting becomes available.

SPECIAL TOOLS

M1540200300211

Tool	Tool number and name	Supersession	Application
a  MB991824	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826	MB991824-KIT <i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i>	⚠ CAUTION M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle. CAN bus diagnostics, diagnostic trouble code or data list check.
b  MB991827	M.U.T.-III sub assembly		
c  MB991910	a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable		
d  DO NOT USE MB991911	c. M.U.T.-III main harness A (Vehicles with CAN communication system)		
e  DO NOT USE MB991914	d. M.U.T.-III main harness B (Vehicles without CAN communication system)		
f  MB991825	e. M.U.T.-III main harness C (for Chrysler models only)		
g  MB991826 MB991958	f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness		

Tool	Tool number and name	Supersession	Application
   	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tools	Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector. a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
	MB992006 Extra fine probe	—	Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector.

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 – Troubleshooting contents

[P.00-7.](#)

M1546001500115

PRECAUTIONS ON SERVICING MMCS

PRIOR TO DISCONNECTING THE VEHICLE BATTERY

The MMCS stores a lot of information which your customer registers in its memory. All of this information will be cleared when the battery terminals are disconnected. Therefore, the preset channels must be stored before the vehicle battery is disconnected. Vehicle's current position and destinations must be stored if the vehicle battery remains disconnected for long periods.

DIAGNOSIS TIPS CONCERNING THE ENTIRE SYSTEM

1. If at least two system functions are defective at the same time, it is possible that communication between the system components is abnormal. Check the system using the communication and wire connection check in the service mode.

M1546003000224

2. If an error is displayed, check that relevant wiring harness connectors are engaged correctly. If a failure is found, repair the connectors and check the trouble symptom again.
3. If the wiring harness connectors are engaged correctly, check the wiring harness. If the wiring harness is in good condition, replace relevant component(s). Now the error code and the service mode data must be stored.

NOTE: If a system communication related failure is suspected, diagnose the system.

DIAGNOSIS TIPS CONCERNING THE NAVIGATION FUNCTION

1. The precision of the GPS positioning is limited due to its operation principles. So, some of customer reports do not mean that the system is defective.

Prior to troubleshooting, interrogate your customer about how the navigation system is used and where he/she drives. If you determine that the system is OK, explain to your customer about how the system works and how the customer should operate it.

2. If the system is not OK, diagnose the system according to the trouble symptom chart.

ERROR MESSAGE

M1546023500221

When the multivision display detects its own unintentional operation or malfunction in the loaded disc, it displays the following error messages.

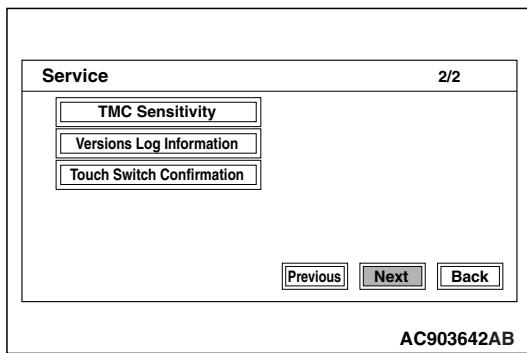
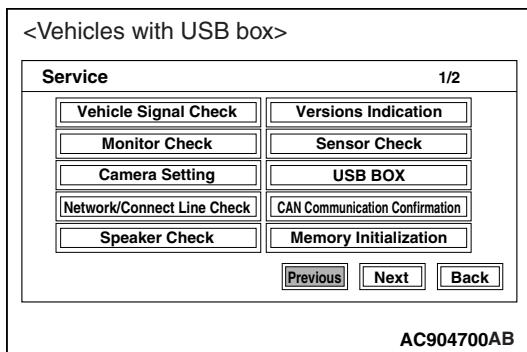
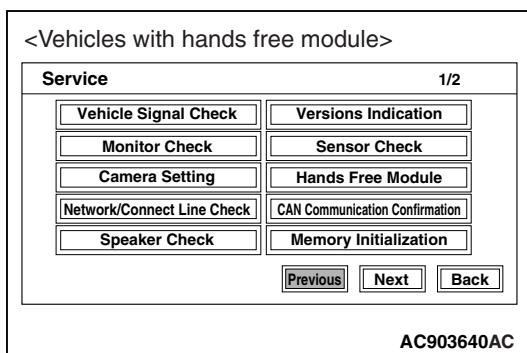
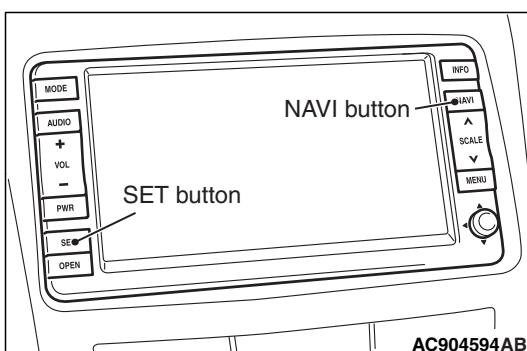
Error messages	Error contents	Cause	Action
The unit is too hot. Please wait...	Malfunction of HDD by high temperature	The temperature of HDD inside the multivision display is 201°F (94°C) or more.	Wait until the temperature drops to the operable temperature. After the temperature drops, the error message display is terminated, and then returns to the screen before the error message display.
The unit is too cold. Please wait...	Malfunction of HDD by low temperature	The temperature of HDD inside the multivision display is -4°F (-20°C) or less.	Wait until the temperature rises to the operable temperature by working the air conditioning. After the temperature rises, the error message display is terminated, and the screen returns to the status before displaying the error message.
It is difficult to read the hard disc. Wait for a while until the hard disk is restored.	Malfunction of HDD by vibration	Severe vibration is applied to the multivision display, and the reading of the HDD data is prohibited.	When the multivision display confirms the HDD data reading availability, it restarts automatically. Check if the multivision display is securely installed to the vehicle body.
	HDD Partition Error	System malfunction occurs to the HDD inside the multivision display.	The multivision display checks HDD automatically. "Restart" is displayed after the completion of the check. Select "Restart" to restart the multivision display. If it does not restart, turn the ignition switch to the OFF position to turn off the power supply, and then turn the ignition switch to the ON position to restart. After the restart, check that the OK is displayed for the HDD Drive in the "Network/Connect Line Check" of the MMCS service mode. If not, replace the multivision display.

Error messages	Error contents	Cause	Action
Please check the disc.	Disk type error	The specification of the disk used has a problem.	The disk used may have a problem. Check the disk for scratches or dirt. Also, perform the Inspection procedure 8 "CD/DVD cannot be Played" of the troubleshooting. (Refer to P.54A-539 .)
Play is impossible due to a focus error. Please eject the disc.	Focus error	The disk used has scratches and dirt, and the data cannot be read.	
Play is impossible. Please eject the disc.	Disk error Seek error Servo startup error TOC read error DVD-Video Disk info error (Disk information cannot be read.)	The data of the disk used has a malfunction, and the data cannot be read.	
Play is impossible due to a Mechanism error.	Power-on error Pickup operation error Mecha stack error Loading/eject error	The DVD drive inside the multivision display has a malfunction.	Perform the Inspection procedure 8 "CD/DVD cannot be Played" of the troubleshooting. (Refer to P.54A-539 .)
The region code is incorrect. Please eject the disc.	DVD-Video region code error	The region code of the DVD does not match the specification of the multivision display.	Replace with the DVD that matches the specification of the multivision display.
Please eject the disc. The monitor panel is too hot. Screen display has stopped to protect the liquid crystal panel. Wait until the monitor panel has cooled down.	Monitor high temperature error	The temperature of the monitor is 203°F (95°C) or more for 60 seconds or more.	The monitor turns OFF 5 seconds after the error message appears. Wait until the temperature of the monitor drops. The temperature drops, and then the multivision display returns automatically.

NOTE: "Environment" is not displayed on the "INFO" screen. Ambient temperature is not displayed on the environment screen. If atmospheric pressure or altitude is not displayed on the environment display, the CAN box unit may have a problem in the CAN communication with A/C-ECU or engine-ECU. Check if a diagnosis code is set in the CAN box unit.

SERVICE MODE

M1546016600903



HOW TO INITIATE THE SERVICE MODE

1. With the navigation system active, press and hold both the "NAVI" and "SET" buttons for 3.5 seconds.

2. The service mode will be initiated. Then "Service" screen will be displayed.

HOW TO TERMINATE THE SERVICE MODE

If the operations below are done, the service mode will be terminated.

- If "Back" button is selected on "Service" screen, the service mode will terminate and then return to the previous screen.
- If "NAVI" button is pressed with the service mode active, the service mode will terminate and change to the navigation screen.

Service mode item

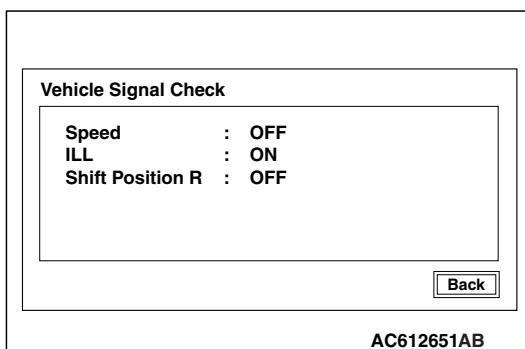
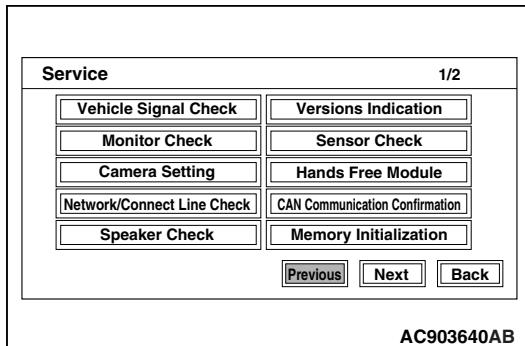
The following items can be checked or set in the service mode.

- Vehicle Signal Check
- Monitor Check
- Camera Setting
- Network/Connect Line Check

- Speaker Check
- Hands Free Module (Refer to [P.54A-586.](#)) <Vehicles with hands free module>
- USB BOX (Refer to [P.54A-639.](#)) <Vehicles with USB box>
- Versions Indication
- Sensor Check
- Touch Switch Confirmation
- CAN communication Confirmation
- Memory Initialization
- TMC Sensitivity
- Version Log Information

VEHICLE SIGNAL CHECK

1. Select "Vehicle Signal Check" on "Service" screen.

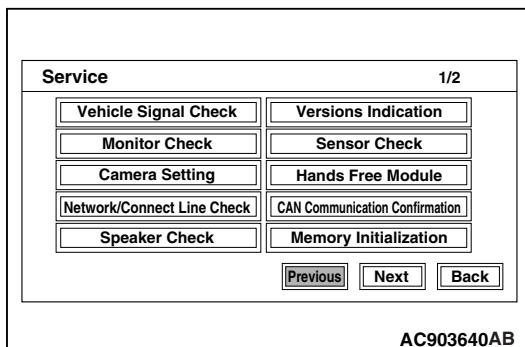


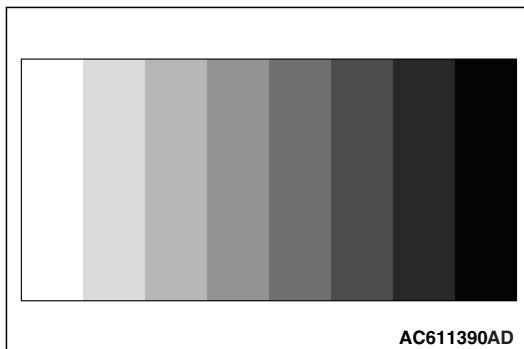
2. The check results will be displayed for the items below.

- "Speed": "ON" when the vehicle speed is 6 km/h or more, and "OFF" when the vehicle speed is 4 km/h or less.
- "ILL": "ON" when the lighting switch is on (headlight position), and "OFF" when they are off (except headlight position).
- "Shift Position R": "ON" when the selector lever is at R position, and "OFF" when it is at the other position.

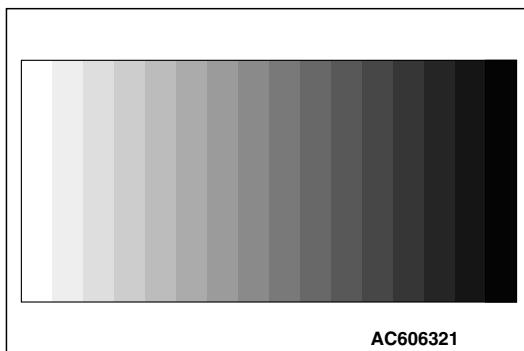
MONITOR CHECK

1. Select "Monitor Check" on "Service" screen.

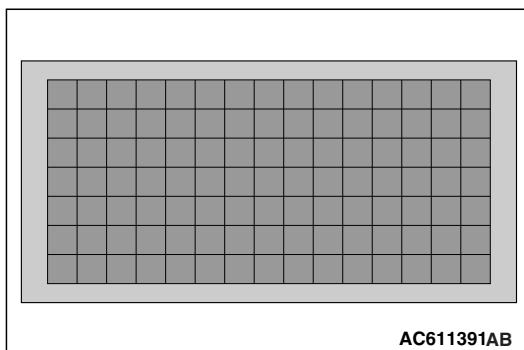




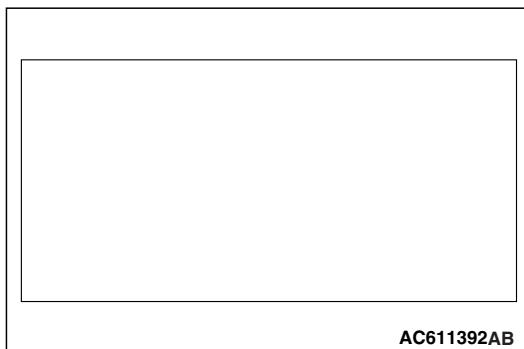
2. Eight color bars will be displayed.



3. When "Enter" is pressed on the navigation unit joystick while the eight color bars are shown, gray scale will be displayed with a 16-step gradation.



4. When "Enter" is pressed while the gray scale is shown with a 16-step gradation, a crosshatch pattern will be displayed (Each cell should be square).



5. When "Enter" is pressed on the navigation unit joystick while the crosshatch pattern is shown, the screen will turn white.

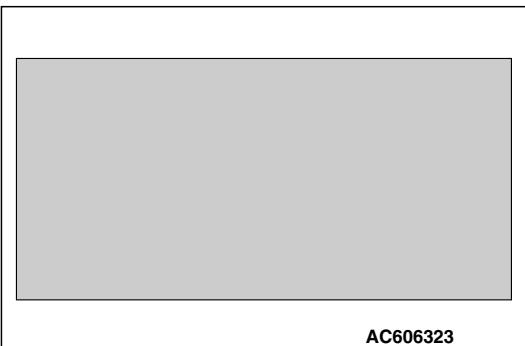


6. When "Enter" is pressed on the navigation unit joystick while the screen is white, it will turn black.



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7. When "Enter" is pressed on the navigation unit joystick while the screen is black, the screen will turn red.



AC606323

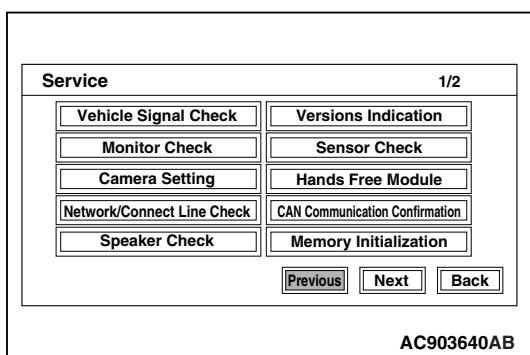
8. When "Enter" is pressed on the navigation unit joystick while the screen is red, it will turn green.



AC606324

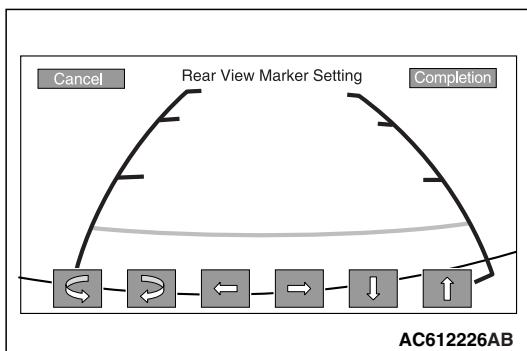
9. When "Enter" is pressed on the navigation unit joystick while the screen is green, it will turn blue.

10. When "Enter" is pressed on the navigation unit joystick while the screen is green, it will return to the "Service" screen.

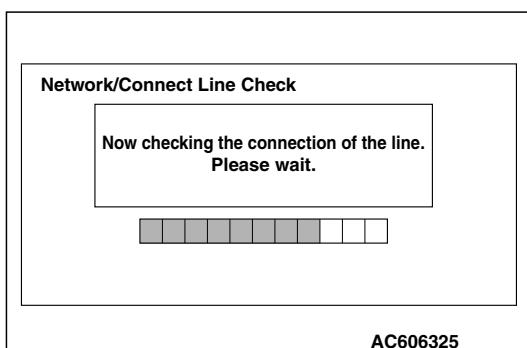
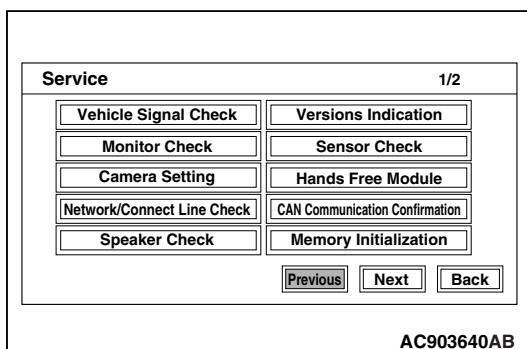
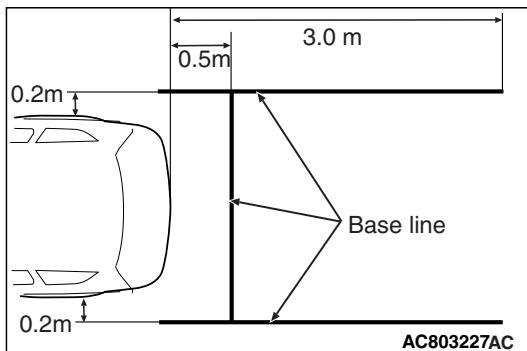


CAMERA SETTING

1. Select "Camera Setting" on "Service" screen.



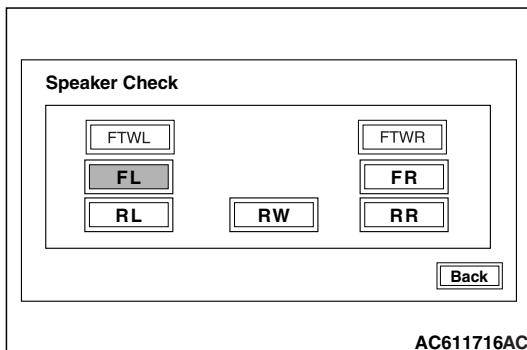
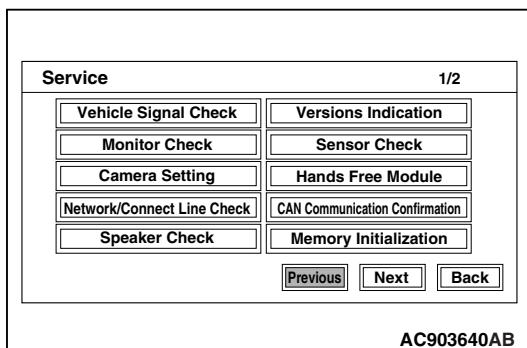
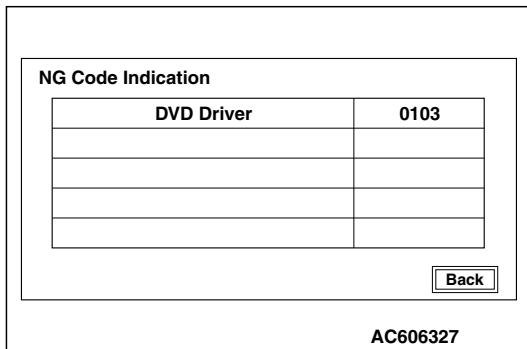
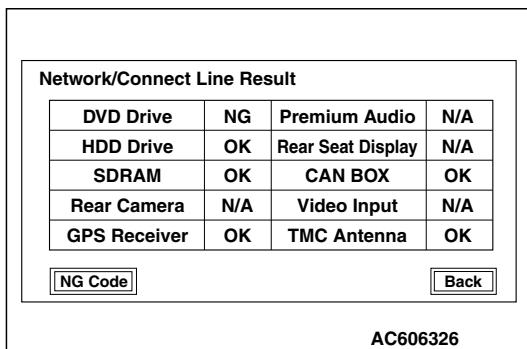
2. Draw base lines 0.5 m behind the vehicle and width +0.4 m (+0.2 m each for right and left) and align the guide line over the base lines.



NETWORK/CONNECT LINE CHECK

1. Select "Network/Connect Line Check" on "Service" screen.

2. A network and connect line check will be initiated. The "Network/Connect Line Check" screen will display how the check is in progress.



- When the network and connect line check is finished, the screen will change to "Network/Connect Line Result" to show the check results.

NOTE:

If there is "NG" or "N/A" as the check results, select "NG Code" on the "Network/Connect Line Result" screen. Then "NG code Indication" screen will show the NG code.

- If "Back" is selected on "Network/Connect Line Result", the screen will return to "Service" screen.

SPEAKER CHECK

- Select "Speaker Check" on "Service" screen.

- Select a speaker to be checked, and play test tone through the speaker.

NOTE:

- [FTWL] front tweeter (LH), [FTWR] front tweeter (RH) and [RW] subwoofer are not displayed for vehicles with 6 speakers.
- By operating the volume key, the volume can be changed.
- During the test, only the selected speaker sounds. If "Back" is selected during the test, the test tone will disappear.

USB BOX <VEHICLES WITH USB BOX>

1. Select "USB BOX" on "Service" screen.

NOTE: For item "USB BOX", refer or USB Box – Diagnosis Mode [P.54A-639](#).)

<Vehicles with USB box>

Service		1/2
Vehicle Signal Check	Versions Indication	
Monitor Check	Sensor Check	
Camera Setting	USB BOX	
Network/Connect Line Check	CAN Communication Confirmation	
Speaker Check	Memory Initialization	
		[Previous] [Next] [Back]

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<Vehicles with hands free module>

Service		1/2
Vehicle Signal Check	Versions Indication	
Monitor Check	Sensor Check	
Camera Setting	Hands Free Module	
Network/Connect Line Check	CAN Communication Confirmation	
Speaker Check	Memory Initialization	
		[Previous] [Next] [Back]

AC903640AD

HANDS FREE MODULE <VEHICLES WITH HANDS FREE MODULE>

1. Select "Hands Free Module" on "Service" screen.

NOTE: For item "Hands Free Module", refer or Hands Free module – Diagnosis Mode [P.54A-586](#).)

Service		1/2
Vehicle Signal Check	Versions Indication	
Monitor Check	Sensor Check	
Camera Setting	Hands Free Module	
Network/Connect Line Check	CAN Communication Confirmation	
Speaker Check	Memory Initialization	
		[Previous] [Next] [Back]

AC903640AB

Version Information

Loader	* * *	
Application	* * * * *	
Navi Sub Microcomputer	* * * * *	
Audio Microcomputer	* * * * *	
Map Data	* * *	* * * *
Monitor	* * *	
CAN BOX	* * *	

[Back]

AC610673AC

VERSIONS INDICATION

Displays versions indication (Loader, Application, Audio Microcomputer, Navi Sub Microcomputer, Map Data, Monitor, and CAN BOX).

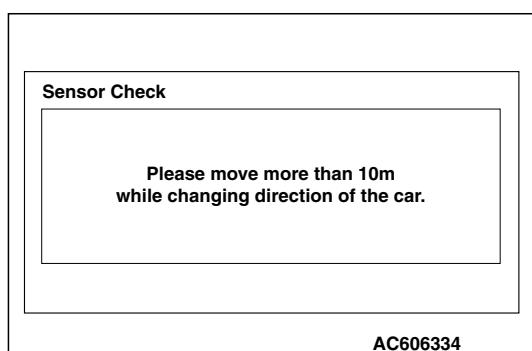
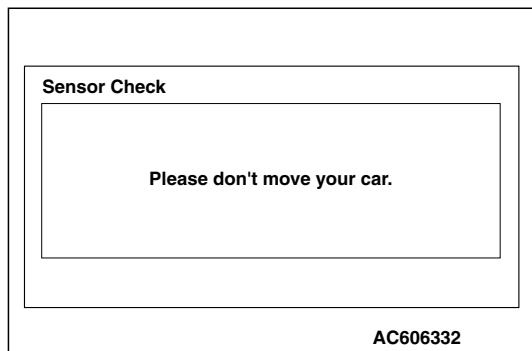
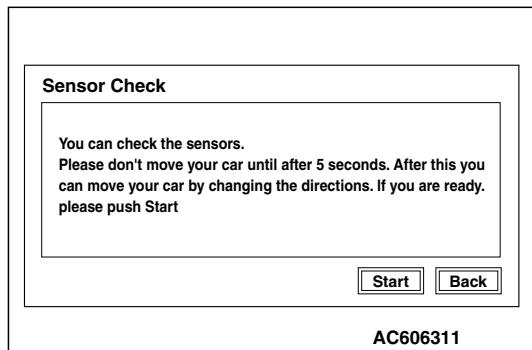
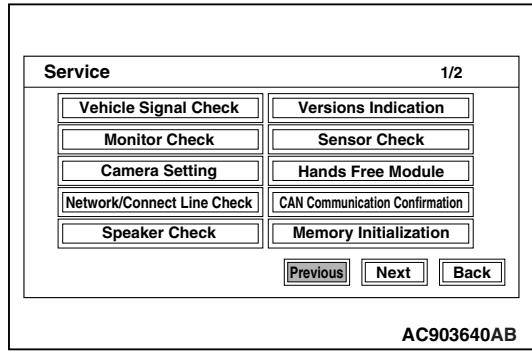
1. Select "Versions Indication" on "Service" screen.

2. Versions indication is displayed.

SENSOR CHECK

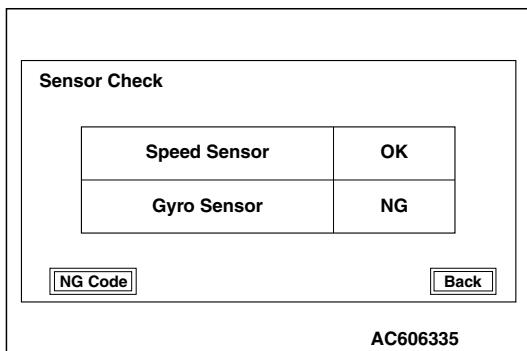
The speed sensor and gyro sensor will be checked, depending on the vehicle conditions such as driving condition, stationary condition and travel direction change.

1. Select "Sensor Check" on "Service" screen.



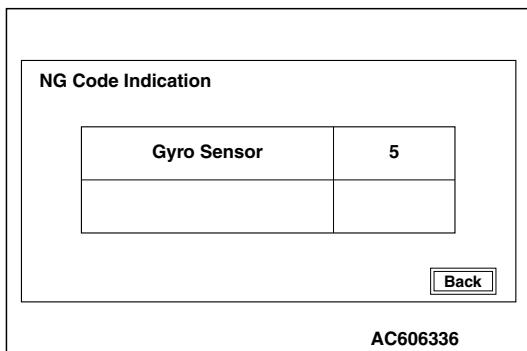
2. The sensor check with the vehicle stationary will be executed in accordance with the screen.

3. The sensor check with the vehicle in motion will be executed in accordance with the screen.



4. When the sensor checks are complete, the screen will display the check results.

NOTE:



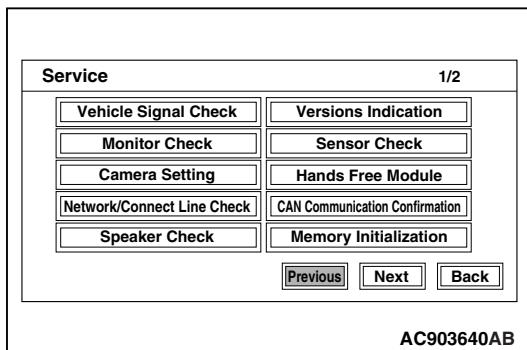
If there is "NG" or "N/A" as the check results, select "NG Code" on the "Sensor Check" screen. Then "NG code Indication" screen will show the NG code.

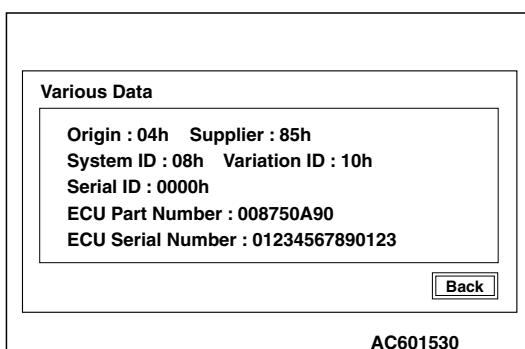
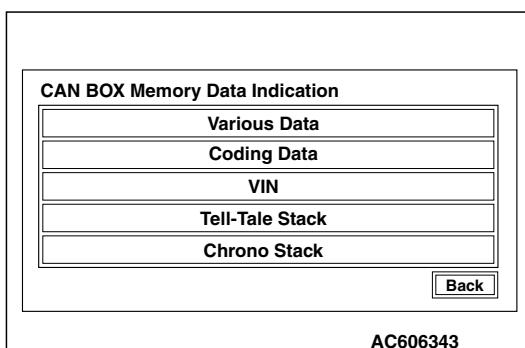
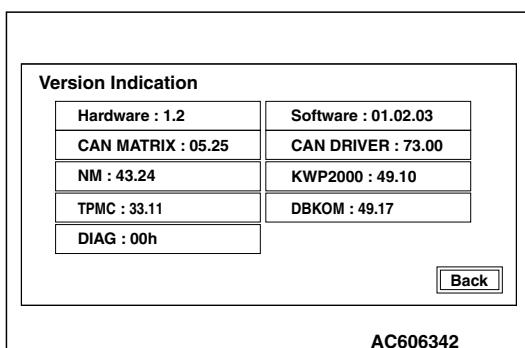
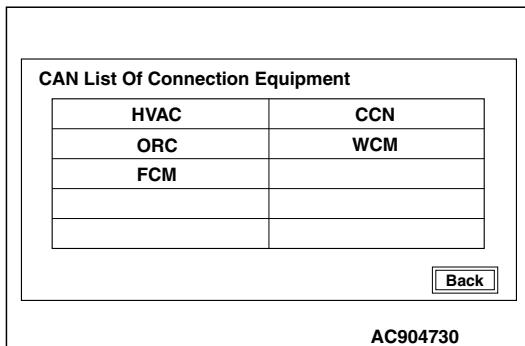
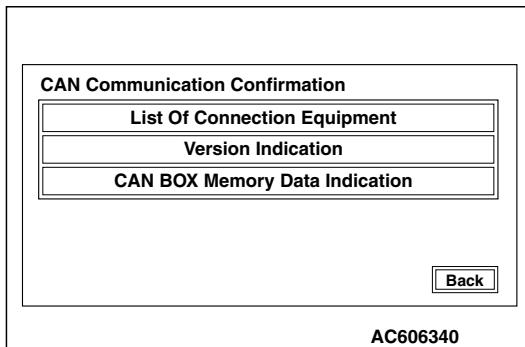
NG CODE REFERENCE TABLE FOR SENSOR CHECK

Sensor classification	NG Code No.	Error items
Gyro sensor	1	Offset error while the vehicle is stationary (lower limit error)
	2	Offset error while the vehicle is stationary (upper limit error)
	5	Output error during driving
Speed sensor	6	Output error while the vehicle is stationary

CAN COMMUNICATION CONFIRMATION

1. Select "CAN Communication Confirmation" on "Service" screen.





2. If "List Of Connection Equipment" is selected on "CAN Communication Confirmation" screen, the system will determine which equipment is installed according to the connected equipment reference table. Then the equipment which are connected to the CAN box unit will be displayed.

CAN BOX UNIT-CONNECTED EQUIPMENT REFERENCE TABLE

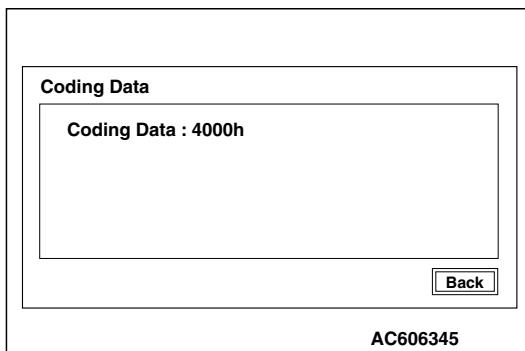
Screen indication	Equipment
HVAC	A/C-ECU
FCM	ETACS-ECU
ORC	SRS-ECU
CCN	Combination meter
WCM	Wireless control module

3. If "Version Indication" is selected on "CAN Communication Confirmation" screen, the version for each item is displayed.

4. If "CAN BOX Memory Data Indication" is selected on "CAN Communication Confirmation" screen, "CAN BOX Memory Data Indication" will be displayed.
5. If any item is selected on "CAN BOX Memory Data Indication" screen, its relevant information is displayed.

- Various Data

- Coding Data



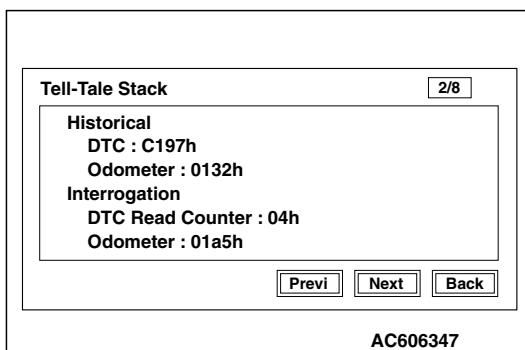
AC606345

- VIN



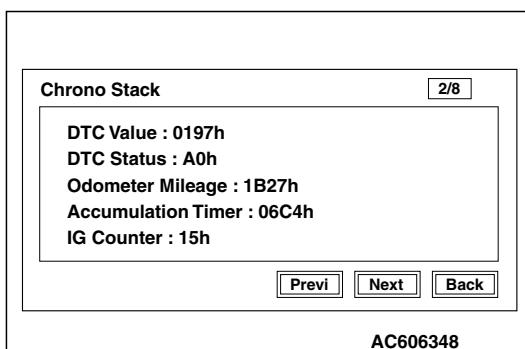
AC606346

- Tell-Tale Stack



AC606347

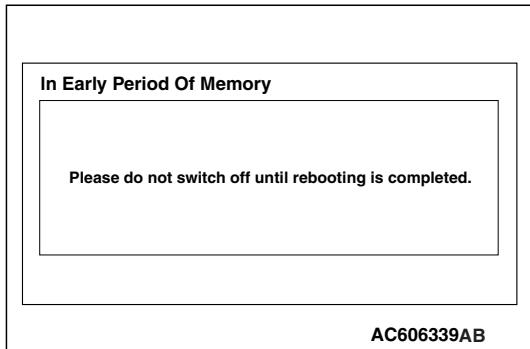
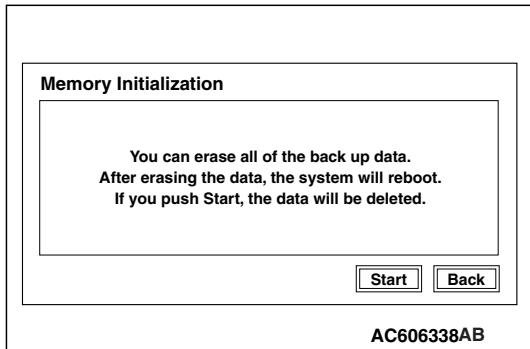
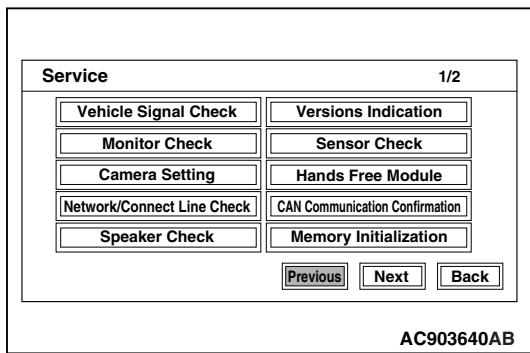
- Chrono Stack



AC606348

MEMORY INITIALIZATION

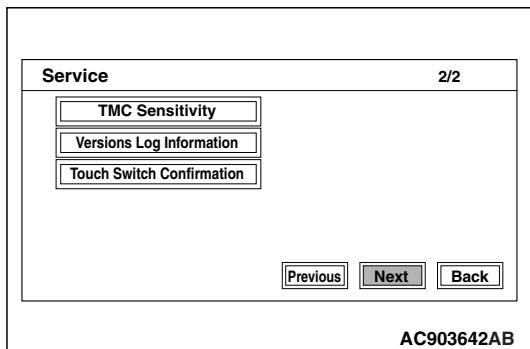
1. Select "Memory Initialization" on "Service" screen.



2. If you select "Start" on "Memory Initialization" screen, the settings such as registered locations and music server will be erased (initialized) from the memory.

NOTE: If the ignition switch is turned to "LOCK" (OFF) position during the initialization, the initialization will be suspended. If the ignition switch is turned to "ACC" or "ON" position, the initialization will be resumed.

3. After the memory initialization is complete, the navigation system will restart automatically.



TMC SENSITIVITY

1. Select "TMC sensitivity" on "Service" screen.

TMC information		TMC_Station
PI Code/DB Num.	E203/33	
PS Name	-SR P3-	
Frequency	108.0 MHz	
Service ID	FF	
S-Meter	FF	
Q-Factor	100%	
Status	FF	
TMC Search		TMC Manual Setting
Back		
AC611547AC		

TMC information		Found station list
Search station		<ul style="list-style-type: none"> -SR P3- NDR2 WDR2
Decision Back		
AC611548AB		

TMC Manual Setting		
Frequency	100.0	MHz
< >		
Set Back		
AC611549AB		

2. The information of TMC station is displayed.

NOTE: When the now-received information is from selected TMC station, "TMC_station" is displayed on the upper right of the screen. "-" is displayed when the information is not received.

3. Select "TMC Search" on the "TMC information" screen to search the TMC station that can be received, and update and display the contents of "Found station list".
4. Select "TMC station" displayed on the "Found station list" and press "decision" switch to update the received TMC station and return to the "TMC information" screen. The information of selected TMC station is displayed on the TMC information screen.
5. Select "TMC Manual Search" on the "TMC information" screen to set the frequency by "<" or ">" switch.
6. Update the received TMC station by "Set" switch and return to the "TMC information" screen. The information of selected TMC station is displayed on the TMC information screen.

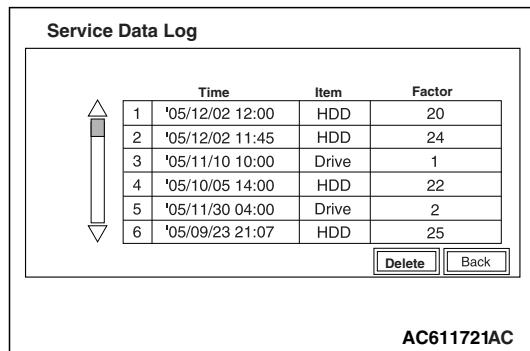
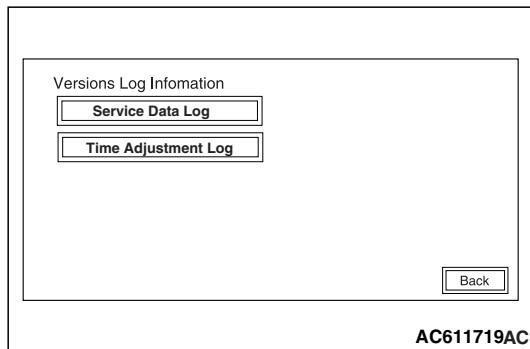
Service		2/2
<ul style="list-style-type: none"> TMC Sensitivity Versions Log Information Touch Switch Confirmation 		
Previous Next Back		
AC903642AB		

VERSIONS LOG INFORMATION

Displays logs for drive and HDD.

Service Data Log

1. Select "Versions Log Information" on "Service" screen.



2. Select "Service Data Log" on the "Versions Log Information" screen.

3. The logs are displayed from the latest one.

4. The log data is erased by pressing "Delete."

EACH LOG INFORMATION: FACTOR CODE TABLE

Item	Factor number	Produced log
Drive	20	Log concerning focus
	21	Log concerning disc type
	22	Log concerning disc
	25	Log concerning SEEK
	26	Log concerning servo start-up
	27	Log concerning power-On
	28	Log concerning loading / eject operation
	29	Log concerning pick-up operation
	30	Log concerning state of mechanism
HDD	52	Log concerning TOC reading
	1	Log concerning high temperature
Monitor	2	Log concerning low temperature
	1	Log concerning high temperature

Item	Factor number	Produced log
AMP	0	Log concerning connection
	15	Log concerning communication
SP ^{*1}	1,2,4,8	Log concerning number of speakers unexpected
CAR ^{*2}	0 -12, 128 -131, 133,160, 192,255	Log concerning vehicle model unexpected

*NOTE: ^{*1}: The log is displayed when the number of speakers is unexpected.*

*^{*2}: The log is displayed when the vehicle model is unexpected.*

Time Adjustment Log

5. Select "Time Adjustment Log" on the "Versions Log Information" screen.

6. The time adjustment logs are displayed.

As for Factor, the following two types are displayed.

CT: Automatic adjustment

MAN: Manual adjustment

Time Adjustment Information

	After	Factor	Before
1	'05/12/02 12:00	CT	'05/12/02 12:00
2	'05/12/02 11:45	CT	'05/12/02 11:00
3	'05/11/10 10:00	CT	'05/11/10 11:00
4	'05/10/05 14:00	CT	'05/10/05 14:10
5	'05/11/30 04:00	CT	'05/11/30 04:00
6	'05/09/23 21:07	CT	'05/09/23 21:07

Back

AC611720AC

TOUCH SWITCH CONFIRMATION

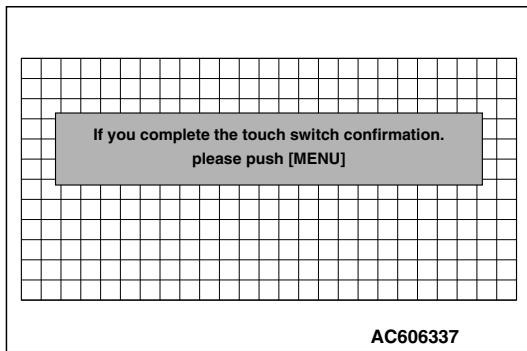
1. Select "Touch Switch Confirmation" on "Service" screen.

Service 2/2

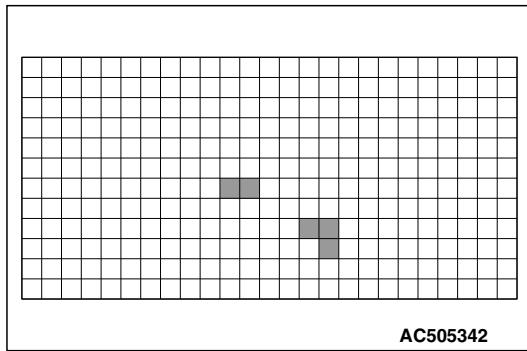
TMC Sensitivity
Versions Log Information
Touch Switch Confirmation

Previous Next Back

AC903642AB



2. If you touch the screen, the color of the dotted coordinate at the touched area will be changed.



DIAGNOSTIC FUNCTION

M1546001600402

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

CAUTION

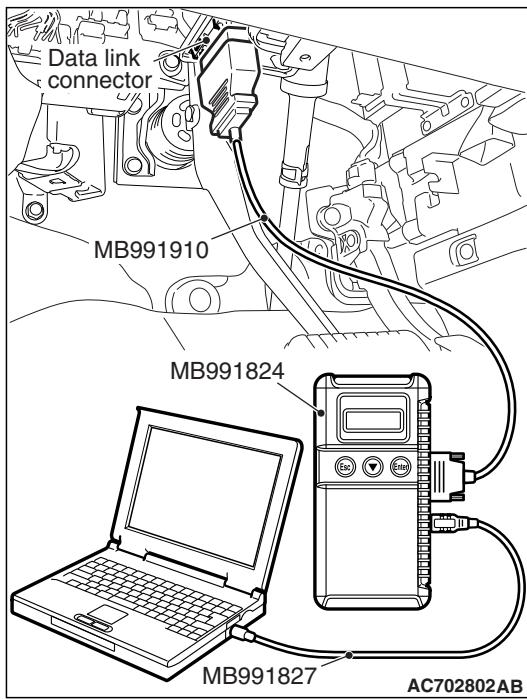
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.

7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.



HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "Meter" from "System List," and press the "OK" button.

NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.

6. Select "Diagnostic Trouble Code." to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

HOW TO DIAGNOSE THE CAN BUS LINES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "CAN bus diagnosis" from the start-up screen.
4. When the vehicle information is displayed, confirm that it matches the vehicle being diagnosed.
 - If they match, go to Step 8.
 - If not, go to Step 5.
5. Select the "view vehicle information" button.
6. Enter the vehicle information and select the "OK" button.
7. When the vehicle information is displayed, confirm again that it matches the vehicle being diagnosed.
 - If they match, go to Step 8.
 - If not, go to Step 5.
8. Select the "OK" button.
9. When the optional equipment screen is displayed, choose the one which the vehicle is fitted with, and then select the "OK" button.

CHECK OF FREEZE FRAME DATA

The freeze frame data can be checked by using scan tool.

When detecting fault and storing the diagnostic trouble code, the ECU connected to CAN bus line obtains the data before the determination of the diagnostic trouble code and the data when the diagnostic trouble code is determined, and then stores the ECU status of that time. By analyzing each data from scan tool, the troubleshooting can be performed more efficiently. The displayed items are as the table below.

Display item list

Item No.	Item name	Content	Unit
1	Odometer	Total driving distance after the diagnostic trouble code is generated	mile
2	Ignition cycle	Number of times the ignition switch is turned "ON" or "LOCK (OFF)" after the past failure transition	Number of counts is displayed.
4	Accumulated minute	Cumulative time for current malfunction of diagnostic trouble code	min

DIAGNOSTIC TROUBLE CODE CHART

M1546001700465

⚠ CAUTION

On troubleshooting, if the ignition switch is turned ON while disconnecting connector(s), diagnostic trouble code(s) associated with other system may be set. On completion, confirm all systems for diagnostic trouble code(s). If diagnostic trouble code(s) are set, erase them all.

DTC No.	Description	Reference page
B2226	AND [Audio visual Navigation (HDD) unit] error	P.54A-461
B2240	Communication error with CAN Box	P.54A-463
B2477	VIN not programmed	P.54A-465
U0019	Bus off (CAN-B)	P.54A-467
U0141	ETACS CAN timeout	P.54A-468
U0151	SRS-ABG CAN timeout	P.54A-470
U0154	OCM (occupant classification-ECU) CAN timeout	P.54A-472
U0155	Meter CAN timeout	P.54A-474
U0164	A/C CAN timeout	P.54A-476
U0168	WCM/KOS CAN timeout	P.54A-478
U0195	Satellite radio CAN timeout	P.54A-480
U1415	Coding not completed/Data fail	P.54A-482
U1417	Implausible coding data	P.54A-484

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC B2226: AND [Audio visual Navigation (HDD) unit] error

⚠ CAUTION

- If DTC B2226 is set, be sure to diagnose the CAN bus line.
- When replacing the CAN box unit or multivision display, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

TROUBLE JUDGMENT

When the CAN box unit receives the signal from the multivision display to indicate an abnormality occurred in the multivision display, the CAN box unit sets DTC B2226.

TROUBLESHOOTING HINT

- The CAN box unit may be defective
- The multivision display may be defective

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

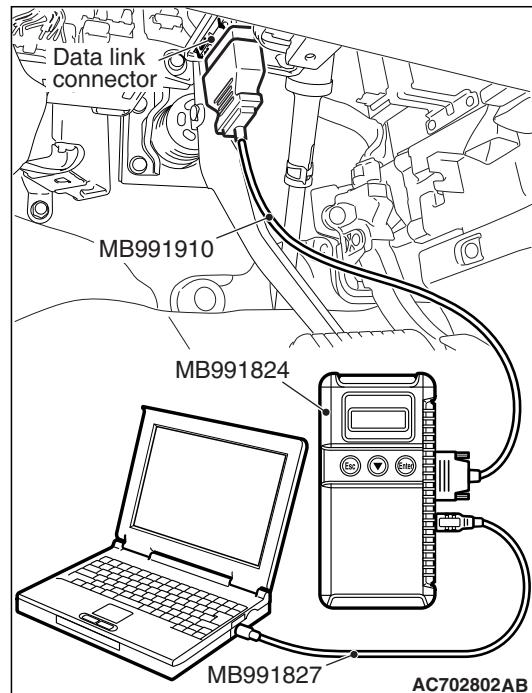
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Check that the multivision display operate.

Check that the FACTOR CODE is set to the service data log in the MMCS service mode "Versions Log Information." (Refer to [P.54A-443](#).)

Q: Is multivision display work normally?

YES : Go to Step 3.

NO : Diagnose the multivision display (Refer to Trouble symptom chart [P.54A-486](#)).

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Go to Step 4.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 4. Recheck for diagnostic trouble code.

Temporarily replace the multivision display, and check if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

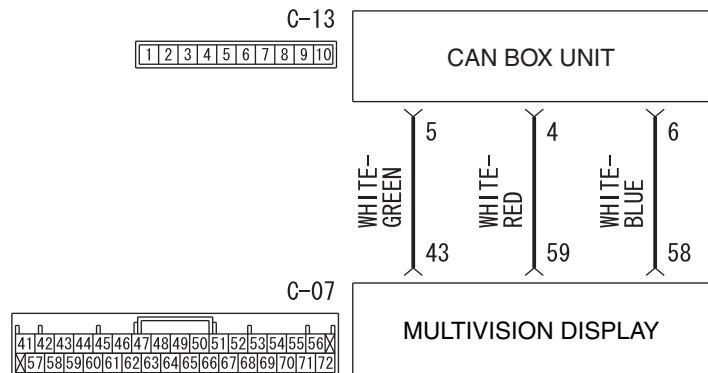
NO : Replace the multivision display.

DTC B2240: Communication error with CAN Box

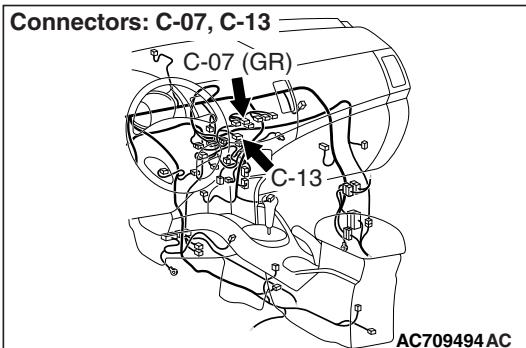
CAUTION

- If DTC B2240 is set, be sure to diagnose the CAN bus line.
- When replacing the multivision display, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

CAN Box Unit Communication Circuit



W9G54M015A

**TROUBLE JUDGMENT**

When the abnormality occurs in the transmission/reception data between the CAN box unit and multivision display, the CAN box unit sets DTC B2240.

PROBABLE CAUSES

- Multivision display may be malfunction
- CAN box unit may be malfunction
- Damaged wiring harness and connectors

DIAGNOSIS**Required Special Tools:**

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
- MB991223: Harness Set
- MB992006: Extra Fine Probe
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827 M.U.T.-III USB Cable
 - MB991910 M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Perform "Network/Connect Line Check" of the MMCS service mode.

Perform "Network/Connect Line Check" of the MMCS service mode, and check that the communication between the CAN box unit and the multivision display is normal. (Refer to [P.54A-443](#).)

NOTE: The communication is not possible, "CAN BOX" is not displayed.

Q: Is "CAN BOX OK" displayed?

YES : Go to Step 2.

NO : Go to Step 3.

STEP 2. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

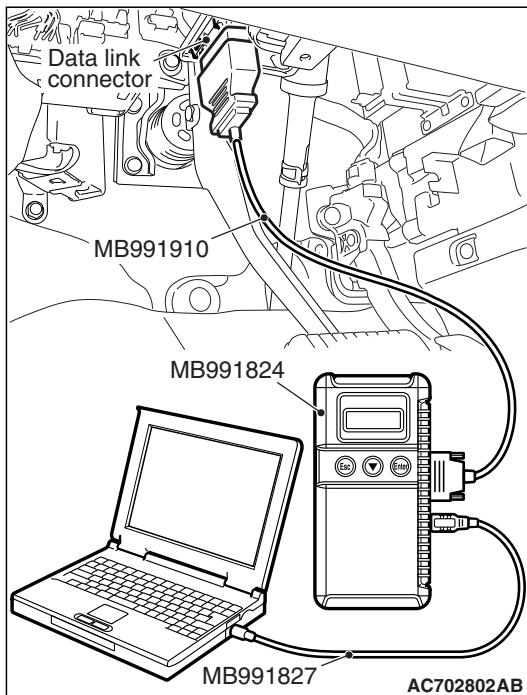
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Intermittent malfunction is suspected. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#).

NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 3. Check CAN box unit connector C-13 and multivision display connector C-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are CAN box unit connector C-13 and multivision display connector C-07 in good condition?

YES : Go to Step 4.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The steering remote control switch should work normally.

STEP 4. Check the wiring harness between CAN box unit connector C-13 (terminal 5, 4, 6) and multivision display connector C-07 (terminal 43, 59, 58).

Q: Is the wiring harness between CAN box unit connector C-13 (terminal 5, 4, 6) and multivision display connector C-07 (terminal 43, 59, 58) in good condition?

YES : Go to Step 5.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 5. Recheck for diagnostic trouble code.

Temporarily replace the multivision display, and check if the DTC is set to the CAN box unit.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : Replace the multivision display.

DTC B2477: VIN not programmed

CAUTION

- If DTC B2477 is set, be sure to diagnose the CAN bus line.
- When replacing the multivision display, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

TROUBLE JUDGMENT

With the ignition switch at the ON position, if the VIN code is not written to the CAN box unit, DTC B2477 is stored.

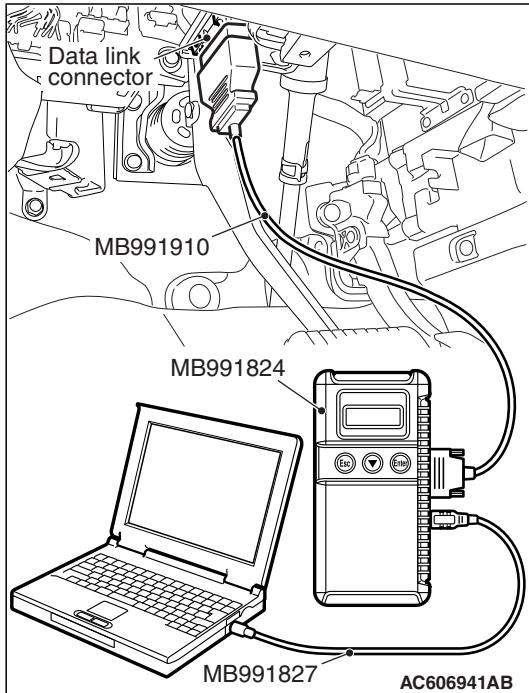
TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The ETACS-ECU may be defective.
- The CAN box unit may be defective.

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).

STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code

Check if the diagnostic trouble code relating to the coding error is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ETACS-ECU (Refer to [P.54A-732](#)), and then go to Step 3.

NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0019: Bus off (CAN-B)

⚠ CAUTION

- If DTC U0019 is set, be sure to diagnose the CAN bus line.
- When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

If the CAN-B circuit malfunction occurs, the CAN box unit sets DTC U0019.

JUDGMENT CRITERIA

With the ignition switch at the ON position and the system voltage at 10 – 16 volts (data from ETACS-ECU), if the CAN box unit becomes unable to transmit data normally due to the CAN-B bus circuit malfunction, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

The CAN bus line may be defective

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

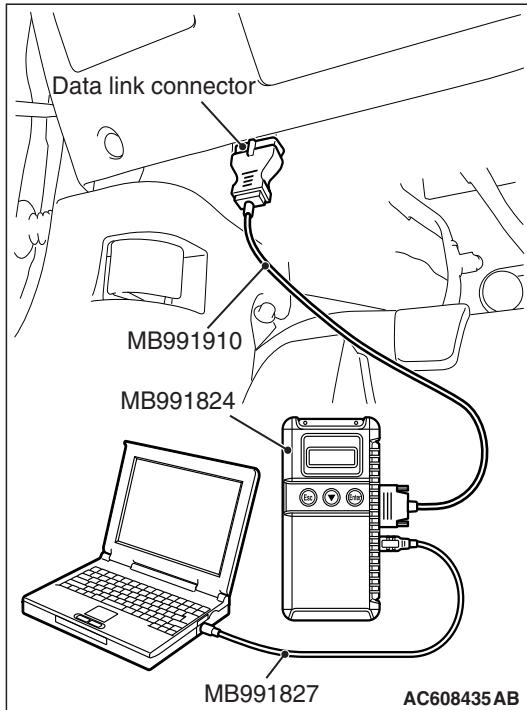
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-331](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Check whether the scan tool MB991958 can communicate with the CAN box unit.

Q: Is the check result normal?

YES : Erase the diagnostic trouble code. This diagnosis is complete.

NO : Check the power supply circuit of the CAN box unit, and repair if necessary.

DTC U0141: ETACS CAN timeout

⚠ CAUTION

If DTC U0141 is set, be sure to diagnose the CAN bus line.

⚠ CAUTION

When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

If the signal from ETACS-ECU cannot be received, the CAN box unit sets the DTC U0141.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with ETACS-ECU cannot be established for 2,500 ms or more, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective
- The CAN box unit may be defective
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tools:

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827 M.U.T.-III USB Cable
- MB991910 M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

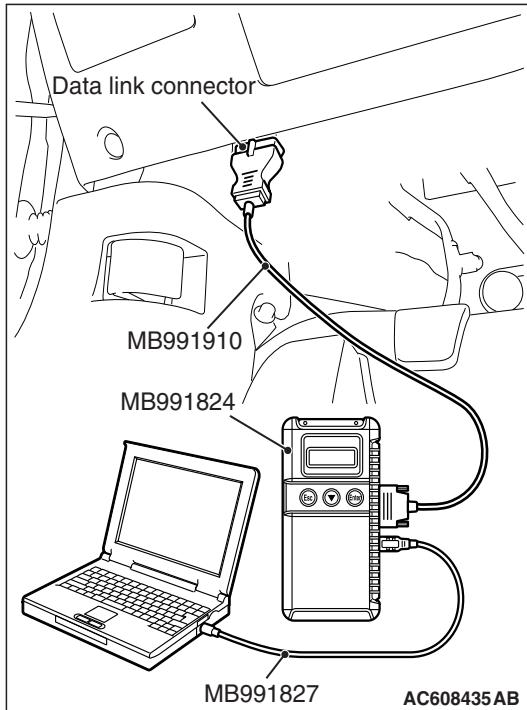
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check again if the DTC is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to [P.54A-732](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C diagnostic trouble code.

Check if DTC U0141 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the ETACS-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ETACS-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ETACS-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0151: SRS-ABG CAN timeout

⚠ CAUTION

- If DTC U0151 is set, be sure to diagnose the CAN bus line.
- When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

If the signal from SRS-ECU cannot be received, the CAN box unit sets DTC U0151.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10–16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with SRS-ECU cannot be established for 2,500 ms or more, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective
- The SRS-ECU may be defective
- The CAN box unit may be defective

DIAGNOSIS**Required Special Tools:**

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)

- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827 M.U.T.-III USB Cable
- MB991910 M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line**⚠ CAUTION**

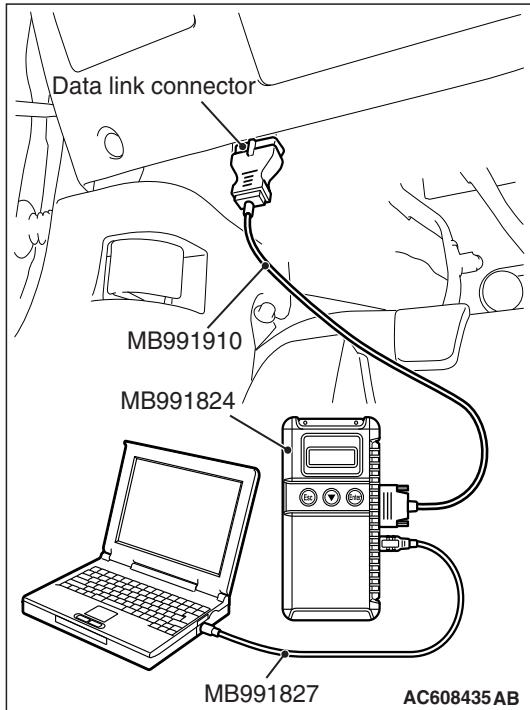
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the SRS-ECU diagnostic trouble code

Check again if the DTC is set to the SRS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Troubleshooting [P.52B-31](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0151 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the SRS-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the SRS-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the SRS-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0154: OCM (occupant classification-ECU) CAN timeout

⚠ CAUTION

If DTC U0154 is set, be sure to diagnose the CAN bus line.

⚠ CAUTION

When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

When the signals from occupant classification-ECU cannot be received, the CAN box unit sets DTC U0154.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with occupant classification-ECU cannot be established for 2,500 ms or more, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The CAN box unit may be defective.
- The occupant classification-ECU may be defective.

DIAGNOSIS

Required Special Tools:

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicles Communication Interface (V.C.I.)
 - MB991827 M.U.T.-III USB Cable
 - MB991910 M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

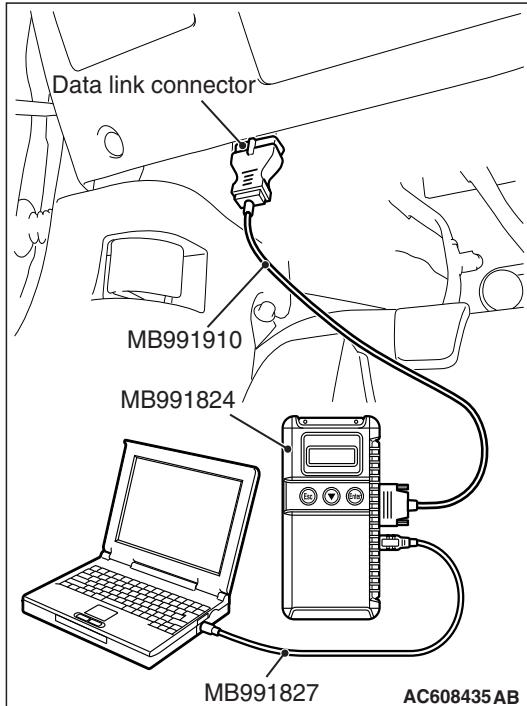
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the occupant classification-ECU diagnostic trouble code.

Check if DTC is set to the occupant classification-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Diagnosis [P.52B-344](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0154 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the occupant classification-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the occupant classification-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the occupant classification-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0155: Meter CAN timeout

⚠ CAUTION

- If DTC U0155 is set, be sure to diagnose the CAN bus line.
- When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

When the signals from combination meter cannot be received, the CAN box unit sets DTC U0155.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with combination meter cannot be established for 2,500 ms or more, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The CAN box unit may be defective.
- The combination meter may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)

- MB991824: V.C.I.
- MB991827 M.U.T.-III USB Cable
- MB991910 M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line**⚠ CAUTION**

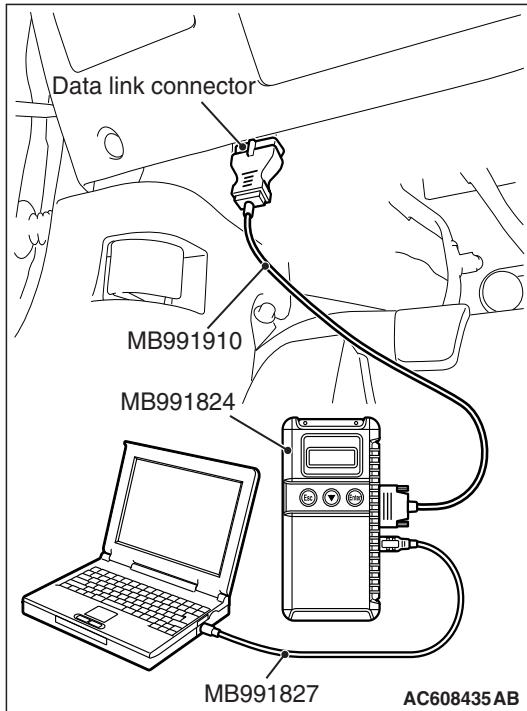
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958 read the combination meter diagnostic trouble code.

Check whether a combination meter DTCs are set or not.

- (1) Turn the ignition switch to the "ON" position.
- (2) Check for combination meter DTCs.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to combination meter, Diagnosis [P.54A-34](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0155 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the combination meter.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0164: A/C CAN timeout**CAUTION**

- If DTC U0164 is set, be sure to diagnose the CAN bus line.
- When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

If the signal from A/C-ECU cannot be received, the CAN box unit sets DTC U0164.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10–16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with A/C-ECU cannot be established for 2,500 ms or more, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The A/C-ECU may be defective.
- The CAN box unit may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)

- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827 M.U.T.-III USB Cable
- MB991910 M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

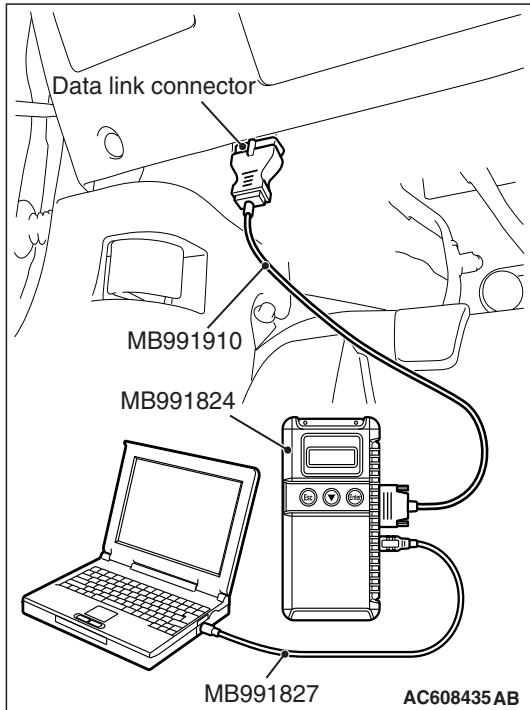
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-460](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if DTC is set to the A/C-ECU.

Q: Is the DTC set?

YES : Troubleshoot the A/C. (Refer to GROUP 55A, Manual A/C Diagnosis [P.55A-11](#) GROUP 55B, Auto A/C Diagnosis [P.55B-8](#).)

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the ETACS diagnostic trouble code.

Check if the DTC U0164 is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the A/C-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the A/C-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the A/C-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0168: WCM/KOS CAN timeout**⚠ CAUTION**

- If DTC U0168 is set, be sure to diagnose the CAN bus line.
- When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

If the signal from KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> cannot be received, the CAN box unit sets DTC U0168.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 V (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> cannot be established for 2,500 ms or more, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- Malfunction of CAN bus line may be defective.
- Malfunction of the KOS-ECU may be defective. <vehicles with KOS>
- Malfunction of the WCM may be defective. <vehicles with WCM>
- Malfunction of CAN box unit may be defective.

DIAGNOSIS

Required Special Tools:

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicles Communication Interface (V.C.I.)
 - MB991827 M.U.T.-III USB Cable
 - MB991910 M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

CAUTION

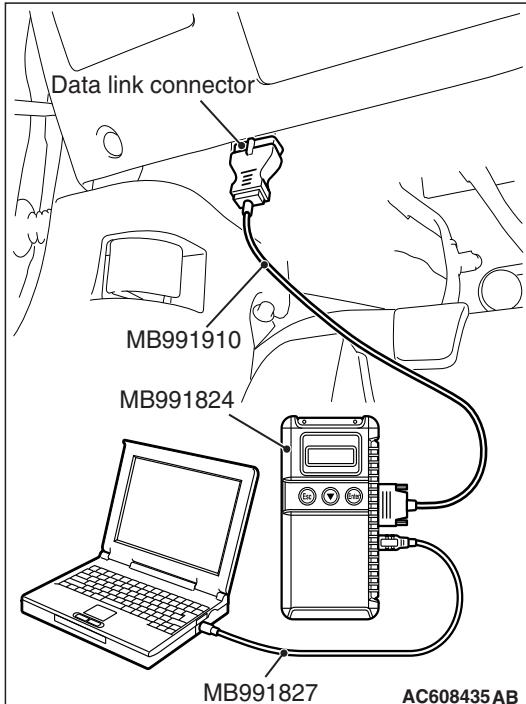
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-31](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> diagnostic trouble code.

Check again if the DTC is set to the KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM>.

Q: Is the DTC set?

YES : Troubleshoot the KOS or WCM (Refer to GROUP 42B, Diagnosis [P.42B-35](#) <KOS> or GROUP 42C, Diagnosis [P.42C-18](#) <WCM>).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the diagnostic trouble code.

Check if the DTC U0168 is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?**YES** : Replace the WCM or KOS-ECU.**NO** : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the WCM or KOS-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?**YES** : Replace the CAN box unit.**NO** : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the WCM or KOS-ECU and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0195: Satellite radio CAN timeout**⚠ CAUTION****If DTC U0195 is set in the CAN box unit, diagnose the CAN main bus line.****⚠ CAUTION****Whenever the CAN box unit is replaced, ensure that the communication circuit is normal. (Check that the voltage is 10 V or more.)****DIAGNOSTIC FUNCTION**

When the signals from satellite radio tuner cannot be received, the CAN box unit sets DTC U0195.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with satellite radio tuner cannot be established for 2,500 ms or more, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The CAN box unit may be defective.
- The satellite radio tuner may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958 Scan Tool (M.U.T.-III Sub Assembly)

- MB991824: V.C.I.
- MB991827 M.U.T.-III USB Cable
- MB991910 M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line**⚠ CAUTION**

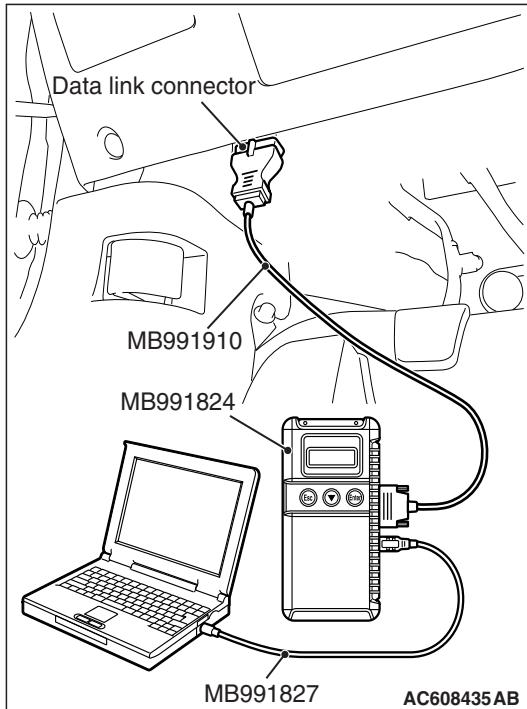
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958 read the satellite radio tuner diagnostic trouble code.

Check whether a satellite radio tuner DTCs are set or not.

- (1) Turn the ignition switch to the "ON" position.
- (2) Check for satellite radio tuner DTCs.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the satellite radio tuner. (Refer to [P.54A-658](#).)

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the SRS-ECU diagnostic trouble code.

Check if the DTC U0195 is set to the SRS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?**YES** : Replace the satellite radio tuner.**NO** : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the satellite radio tuner and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?**YES** : Replace the CAN box unit.**NO** : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the satellite radio tuner and the CAN box unit (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U1415: Coding not completed/Data fail**CAUTION**

- If DTC U1415 is set, be sure to diagnose the CAN bus line.
- When replacing the CAN box unit, always check that the communication circuit is normal. (Check that the voltage is 10 V or more.)

DIAGNOSTIC FUNCTION

If the vehicle information data is not registered to the CAN box unit, the CAN box unit sets DTC U1415.

JUDGMENT CRITERIA

With the global coding counter value "0," if all the global coding data (vehicle information) are not stored, the CAN box unit determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The CAN box unit may be defective.
- The ETACS-ECU may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable

- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

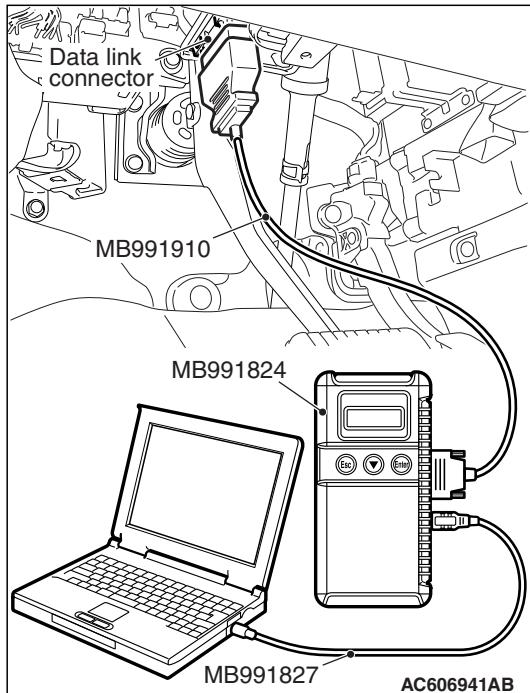
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code relating to the coding error is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ETACS-ECU (Refer to [P.54A-732](#)), and then go to Step 3.

NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U1417: Implausible coding data

⚠ CAUTION

- If diagnostic trouble code U1417 is set in CAN box unit, always diagnose the CAN bus lines. If there is any fault in the CAN bus lines, an incorrect diagnostic trouble code may be set. In this case, the set diagnostic trouble code is not highly reliable.
- Before replacing the CAN box unit, ensure that the communication circuit is normal. (Check that the voltage is 10 V or more.)
- When the diagnostic trouble code U1417 is set in CAN box unit, the diagnostic trouble code may also be set in ETACS-ECU. When the diagnostic trouble code is set in ETACS-ECU, carry out the diagnosis of the diagnostic trouble code for ETACS-ECU first.

CIRCUIT OPERATION

CAN box unit receives the vehicle information stored in the ETACS-ECU via CAN bus lines.

DTC SET CONDITIONS

CAN box unit communicates with ETACS-ECU via CAN bus lines. This diagnostic trouble code is set when the vehicle information received from the ETACS-ECU is invalid.

PROBABLE CAUSES

- Malfunction of ETACS-ECU
- ETACS-ECUs have been interchanged between two vehicles.
- CAN box unit malfunction
- External noise interference

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicle Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

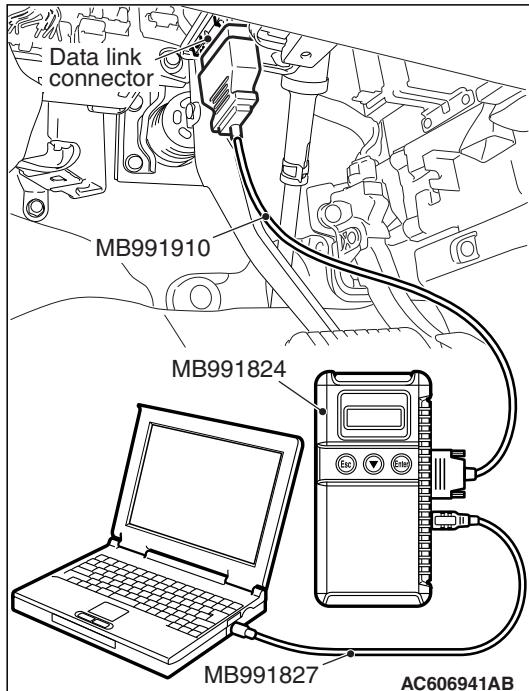
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code relating to the coding error is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ETACS-ECU (Refer to [P.54A-732](#)), and then go to Step 3.

NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the CAN box unit.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

TROUBLE SYMPTOM CHART

M1546001801658

Trouble symptom	Inspection Procedure No.	Reference page
No navigation screen is displayed.	1	P.54A-487
No sound is heard.	<Vehicles without audio amplifier>	2
	<Vehicles with audio amplifier>	P.54A-498
No sound is heard from one of the speakers.	<Vehicles without audio amplifier>	3
	<Vehicles with audio amplifier>	P.54A-518
The navigation system can be operated while the vehicle is driven.	4	P.54A-531
The screen is not normal in the navigation mode. (The displayed position of the vehicle mark deviates.)	5	P.54A-534
The AM/FM radio broadcasting cannot be received.	6	P.54A-537
GPS signal cannot be received.	7	P.54A-538
CD/DVD cannot be played.	8	P.54A-539
Image of a DVD is played, but no sound is played.	9	P.54A-541
Sound of a DVD can be played, but no image is played.	10	P.54A-542
The picture and sound of external input are not played.	11	P.54A-543
Check the CAN box unit power supply circuit.	12	P.54A-546

NOTE:

- For the troubleshooting of the USB box, refer to [P.54A-639.<Vehicles with USB box>](#)
- For the troubleshooting of the hands free module, refer to [P.54A-592.<Vehicles with hands free module>](#)
- For the troubleshooting of the steering wheel audio remote control switch, refer to [P.54A-563.<Vehicles with steering wheel audio remote control switch>](#)

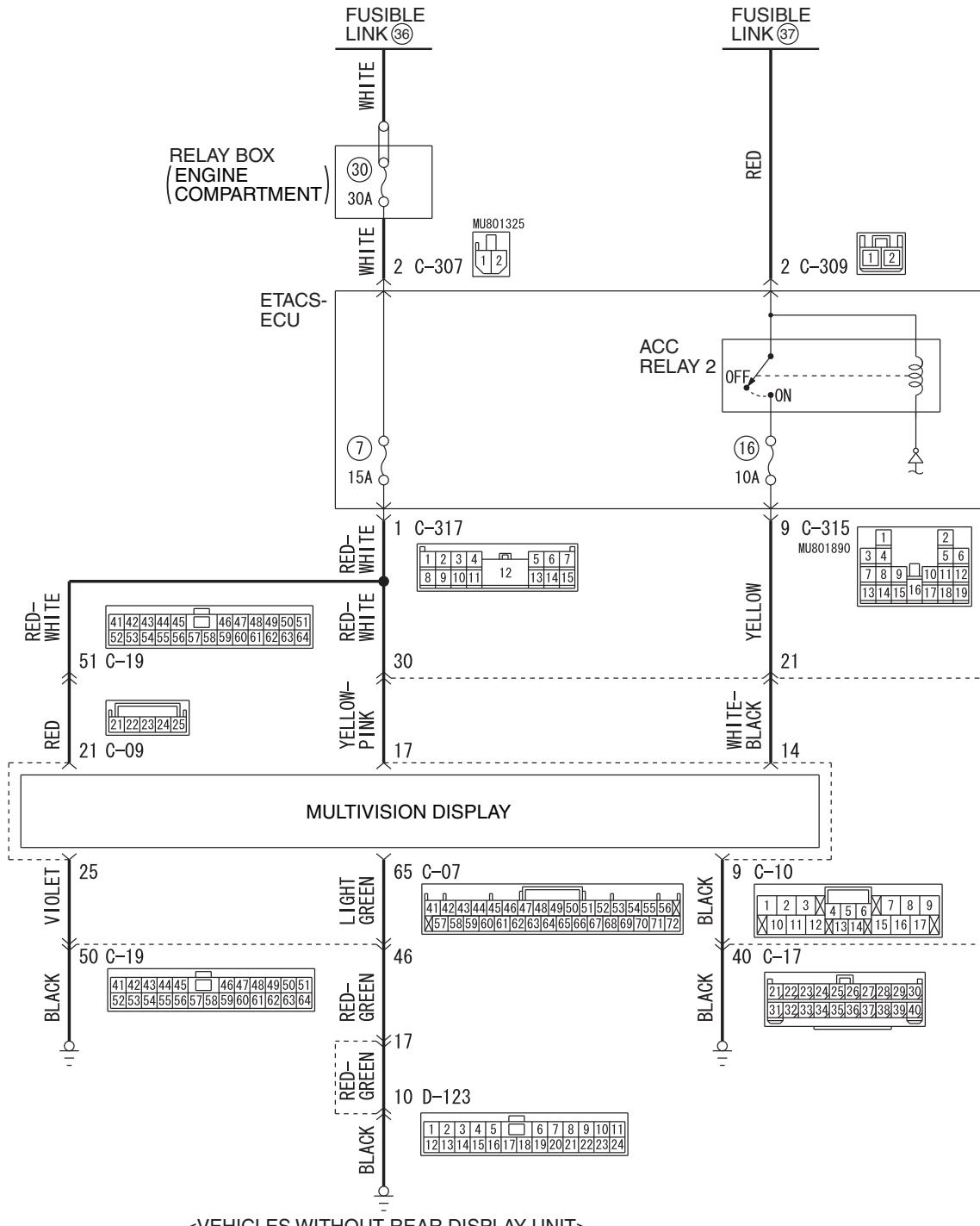
SYMPTOM PROCEDURES

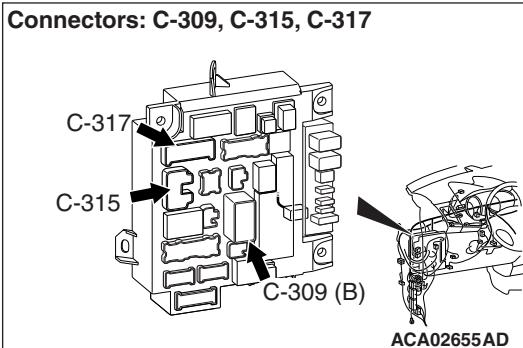
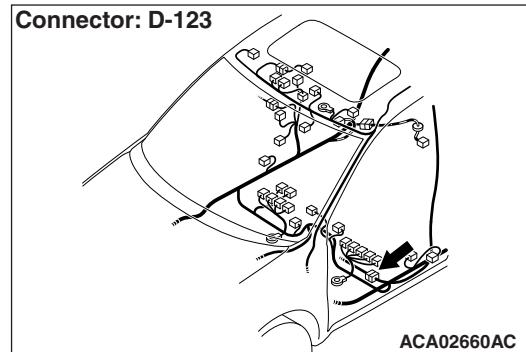
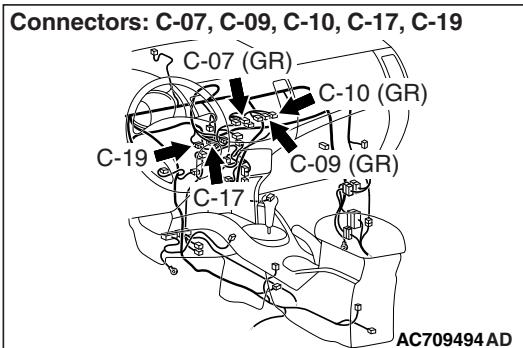
Inspection Procedure 1: No navigation screen is displayed.

CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

Multivision Display Power Supply Circuit





TECHNICAL DESCRIPTION (COMMENT)

When the ignition switch is turned to the ACC or ON position, if the screen is not displayed at all, the power supply circuit or multivision display may have a problem.

TROUBLESHOOTING HINTS

- Power supply circuit may be defective
- Multivision display may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A

STEP 1. Check multivision display connector C-10, C-07 and C-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-10, C-07 and C-09 in good condition?

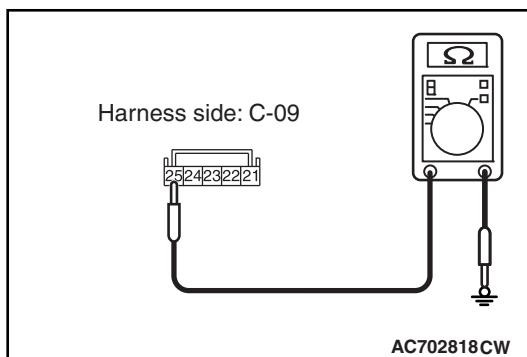
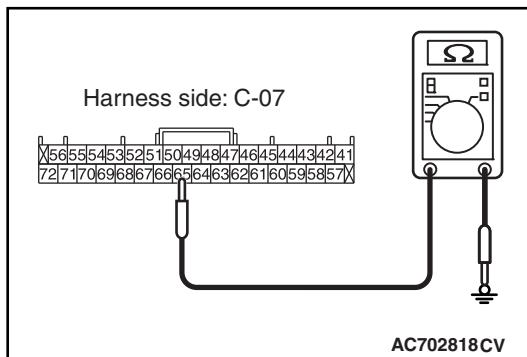
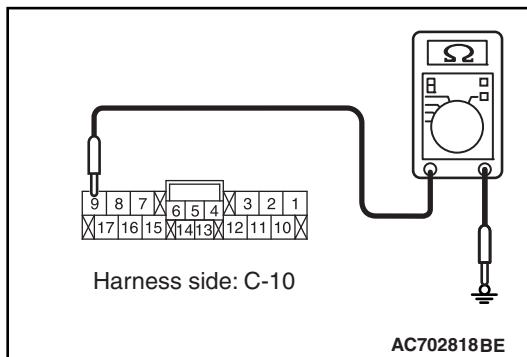
YES : Go to Step 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 2. Check the ground circuit to the multivision display connector. Measure the resistance at multivision display connector C-10, C-07 and C-09 <vehicles with rear display unit>.

- (1) Disconnect multivision display connector C-10, C-07 and C-09 <vehicles with rear display unit>, and measure the resistance available at the wiring harness side of the connector.
- (2) Measure the resistance between multivision display connector C-10 terminal 9 and ground.

OK: The resistance should be 2 ohms or less



- (3) Measure the resistance between multivision display connector C-07 terminal 65 and ground.

OK: The resistance should be 2 ohms or less

- (4) Measure the resistance between multivision display connector C-09 <vehicles with rear display unit> terminal 25 and ground.

OK: The resistance should be 2 ohms or less

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Go to Step 3.

STEP 3. Check the wiring harness between multivision display connector C-10 (terminal 9), C-07 (terminal 65) and C-09 <vehicles with rear display unit> (terminal 25) and ground.

- Check the ground wire for open circuit.

NOTE: Also check intermediate connector C-17, C-19 and D-123 <vehicles without rear display unit> for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17, C-19 and D-123 <vehicles without rear display unit> is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between multivision display connector C-10 (terminal 9) and ground in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code is set to the ETACS-ECU.

Q: Is the check result normal?

YES : Troubleshoot the ETACS-ECU. Refer to Diagnosis [P.54A-732](#).

NO : Go to Step 5.

STEP 5. Check ETACS-ECU connector C-317 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-317 in good condition?

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 6. Check the wiring harness between ETACS-ECU connector C-317 (terminal 1) and multivision display connector C-10 (terminal 17).

- Check the power supply line (battery supply) for open circuit and short circuit.

NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 1) and multivision display connector C-10 (terminal 17) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Check multivision display connector C-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-09 in good condition?

YES : Go to Step 8.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 8. Check the wiring harness between ETACS-ECU connector C-317 (terminal 1) and multivision display connector C-09 (terminal 21).

- Check the power supply line (battery supply) for open circuit and short circuit.

NOTE: Also check intermediate connector C-19 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-19 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 1) and multivision display connector C-09 (terminal 21) in good condition?

YES : Go to Step 9.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 9. Using scan tool MB991958, check data list.

Check the input signal of ACC relay.

- Turn the ignition switch to the ACC position.

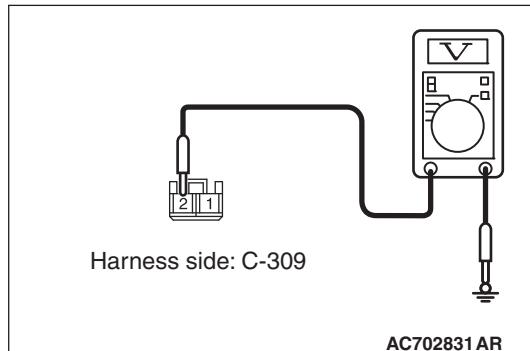
Item No.	Item name	Normal conditions
Item 288	ACC switch	ON

OK: Normal condition is displayed.**Q: Is the check result normal?****YES** : Go to Step 10.**NO** : Refer to Inspection Procedure 1 "The ignition switch (ACC) signal is not received [P.54A-786](#)."**STEP 10. Check ETACS-ECU connector C-309 for loose, corroded or damaged terminals, or terminals pushed back in the connector.****Q: Is ETACS-ECU connector C-309 in good condition?****YES** : Go to Step 11.**NO** : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection[P.00E-2](#). The steering remote control switch should work normally.**STEP 11. Check the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-309.**

(1) Disconnect the connector, and measure at the wiring harness-side connector.

(2) Turn the ignition switch to the "ACC" position.

(3) Measure the voltage between terminal 2 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?****YES** : Go to Step 13.**NO** : Go to Step 12.

STEP 12. Check the wiring harness between ETACS-ECU connector C-309 (terminal 2) and fusible link (37)

- Check the power supply line for open circuit and short circuit.

Q: Is the wiring harness between ETACS-ECU connector C-309 (terminal 2) and fusible link (37) in good condition?

YES : Go to Step 13.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 13. Check ETACS-ECU connector C-315 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-315 in good condition?

YES : Go to Step 14.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The steering remote control switch should work normally.

STEP 14. Check the wiring harness between multivision display connector C-10 (terminal 14) and ETACS-ECU connector C-315 (terminal 9).

- Check the power supply line for open circuit and short circuit.

NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between multivision display connector C-10 (terminal 14) and ETACS-ECU connector C-315 (terminal 9) in good condition?

YES : Go to Step 15.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 15. Retest the system

Check if the multivision display power is turned ON.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : Replace the multivision display.

Inspection Procedure 2: No sound is heard. <Vehicles without audio amplifier>

⚠ CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

COMMENTS ON TROUBLE SYMPTOM

If the audio sound is not output, the multivision display, audio amplifier, or power supply circuit of audio amplifier may have a problem, or the option coding information may be inconsistent.

PROBABLE CAUSES

- The multivision display may be defective
- The audio amplifier may be defective
- Option coding information inconsistency
- Damaged harness wires and connectors

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A

STEP 1. Check the multivision display operation.**Q: Check the sources from which the sound is not output.**

No sound only from radio : Perform Inspection Procedure 6 "The AM/FM radio broadcasting cannot be received." (Refer to [P.54A-537](#).)

No sound only when the CD is played : Perform Inspection Procedure 8 "CD/DVD cannot be Played." (Refer to [P.54A-539](#).)

No sound only when the DVD is played : Perform Inspection Procedure 8 "CD/DVD cannot be Played." (Refer to [P.54A-539](#).) or Inspection Procedure 9 "Image of a DVD is Played, but no Sound is Played." (Refer to [P.54A-541](#).)

No sound only when the music server is used : Go to Step 8.

No sound from any of the sources : Go to Step 2.

STEP 2. Check the ETACS-ECU coding data.

Use scan tool MB991958 to diagnose the CAN bus lines.

⚠ CAUTION

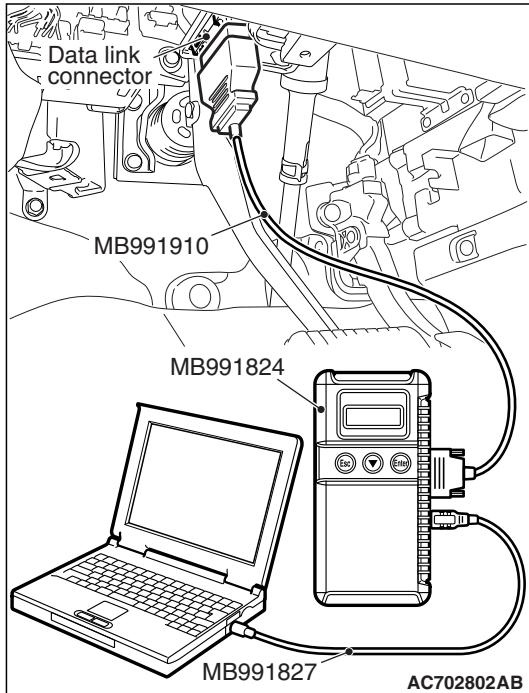
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to "ON" position.
- (3) Operate the scan tool MB991958 to read the ETACS-ECU option coding information (Refer to GROUP 00, Coding Table [P.00-44](#)).
- (4) Check that the "Number of speaker" is set to "6 speakers".

Q: Is the check result normal?

YES : Go to Step 3.

NO : Operate scan tool MB991958 to set the option coding "Number of speaker" to "6 speakers," and check the trouble symptom.



STEP 3. Check the MMCS service mode, CAN communication confirmation, and coding data.

- (1) Display the CAN Communication Confirmation and Coding Data of the MMCS service mode. (Refer to [P.54A-443](#))
- (2) Check if "6 SPEAKER (2 TWEETER)" is displayed as the number of installed speakers.

Q: Is the check result normal?

YES : Go to step 4.

NO : Go to step 5.

STEP 4. Check the service data log for the MMCS service mode.

With the service data log of MMCS service mode displayed, check if the service data log for SP (speaker) is displayed. (Refer to [P.54A-443](#))

Q: Is the service data log for SP (speaker) displayed?

YES : Go to step 5.

NO : Go to step 8.

STEP 5. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool MB991958 to diagnose the CAN bus lines.

- (1) Turn the ignition switch to "ON" position.
- (2) Diagnose the CAN bus line.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the CAN bus line.

STEP 6. Using scan tool MB991958, read the CAN box unit diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

Q: Is the DTC set?

YES : Troubleshoot the MMCS (Refer to [P.54A-460](#)).

NO : Go to Step 7.

STEP 7. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU – Troubleshooting [P.54A-732](#)).

NO : Go to Step 8.

STEP 8. Check the service data log for the MMCS service mode.

- (1) Display the service data log for the MMCS service mode.
(Refer to [P.54A-443](#))
- (2) Check if the service data log for drive and HDD is displayed.

Q: Is the service data log displayed?

YES (The service data log for drive is displayed.) :

Perform Inspection Procedure 8 "CD/DVD cannot be Played."(Refer to [P.54A-539](#).) or Inspection Procedure 9 "Image of a DVD is Played, but no Sound is Played." (Refer to [P.54A-541](#).) Go to Step 9.

YES (The service data log for HDD is displayed.) :

Abnormalities relating to high or low temperature may be present. Check if the multivision display can output the sound at the operable temperature. If it cannot output the sound, go to Step 9.

NO : Go to Step 9.

STEP 9. Perform "Network/Connect Line Check" in the MMCS service mode.

- (1) Display "Network/Connect Line Check" in the MMCS service mode. (Refer to [P.54A-443](#))
- (2) Check if "DVD Drive OK" is displayed.
- (3) Check if "HDD Drive OK" is displayed.

Q: Is the check result normal?

YES : Go to Step 11.

NO : Go to Step 10.

STEP 10. Retest the system

Check that the audio sound is output.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : Go to step 11.

STEP 11. Retest the system

Temporarily replace the multivision display and check if the sound is output.

Q: Is the check result normal?

YES : Replace the multivision display.

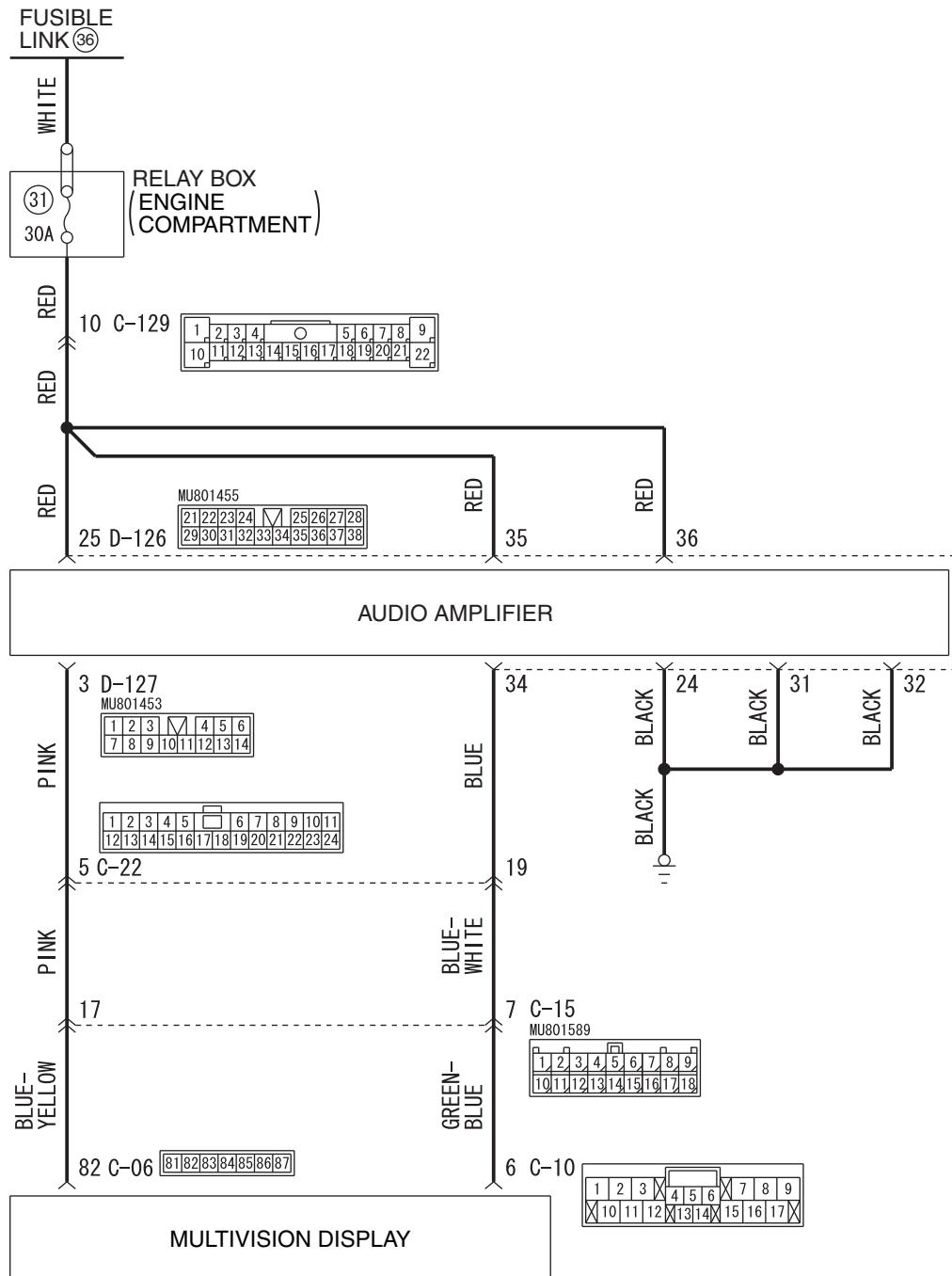
NO : Perform Inspection Procedure 3 "No sound is heard from one of the speakers. <Vehicles without audio amplifier>" (Refer to [P.54A-506.](#))

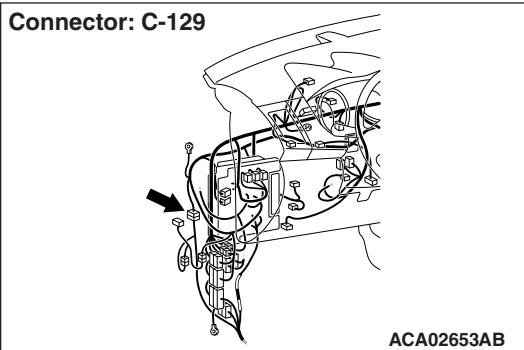
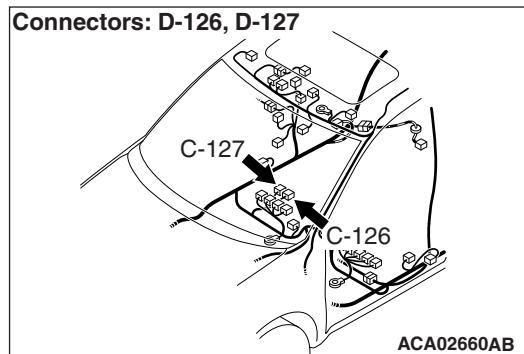
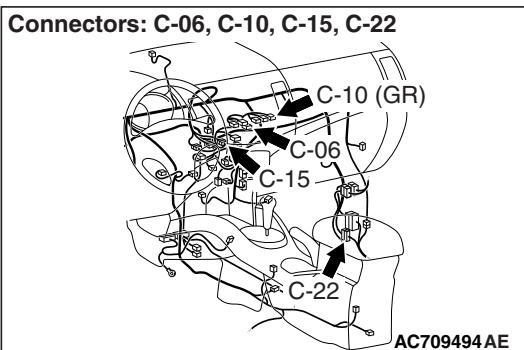
Inspection Procedure 2: No sound is heard. <Vehicles with audio amplifier>

CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

Multivision Display System Circuit





COMMENTS ON TROUBLE SYMPTOM

If the audio sound is not output, the multivision display, audio amplifier, or power supply circuit of audio amplifier may have a problem, or the option coding information may be inconsistent.

PROBABLE CAUSES

- Malfunctions of multivision display
- Malfunction of audio amplifier
- Option coding information inconsistency
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A

STEP 1. Check the multivision display operation.

Q: Check the sources from which the sound is not output.

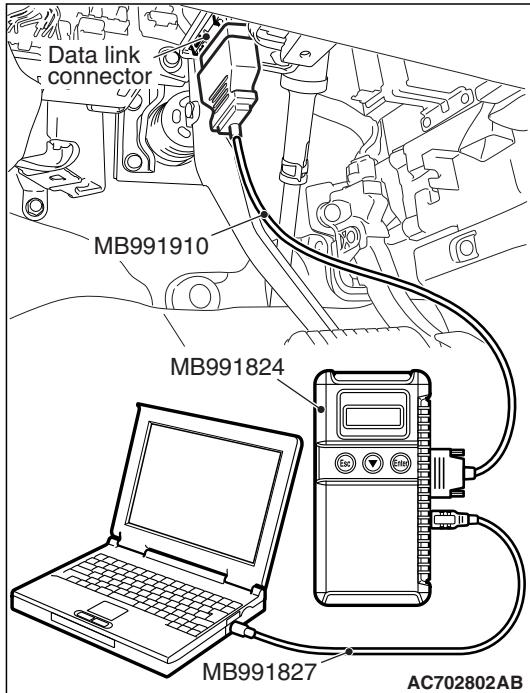
No sound only from radio : Perform Inspection Procedure 6 "The AM/FM radio broadcasting cannot be received." (Refer to [P.54A-537](#).)

No sound only when the CD is played : Perform Inspection Procedure 8 "CD/DVD cannot be Played." (Refer to [P.54A-539](#).)

No sound only when the DVD is played : Perform Inspection Procedure 8 "CD/DVD cannot be Played." (Refer to [P.54A-539](#).) or Inspection Procedure 9 "Image of a DVD is Played, but no Sound is Played." (Refer to [P.54A-541](#).)

No sound only when the music server is used : Go to Step 8.

No sound from any of the sources : Go to Step 2.

**STEP 2. Check the ETACS-ECU coding data.**

Use scan tool MB991958 to diagnose the CAN bus lines.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to "ON" position.
- (3) Operate the scan tool MB991958 to read the ETACS-ECU option coding information (Refer to GROUP 00, Coding Table [P.00-44](#)).
- (4) Check that the "Speaker" is set to "Premium."

Q: Is the check result normal?

YES : Go to Step 3.

NO : Operate scan tool MB991958 to set the option coding "Speaker" to "Premium," and check the trouble symptom.

STEP 3. Check the MMCS service mode, CAN communication confirmation, and coding data.

- (1) Display the CAN Communication Confirmation and Coding Data of the MMCS service mode. (Refer to [P.54A-443](#))
- (2) Check if PREMIUM is displayed.

Q: Is the check result normal?

YES : Go to step 4.

NO : Go to step 5.

STEP 4. Check the service data log for the MMCS service mode.

With the service data log of MMCS service mode displayed, check if the service data log for SP (speaker) is displayed. (Refer to [P.54A-443](#))

Q: Is the service data log for SP (speaker) displayed?

YES : Go to step 5.

NO : Go to step 8.

STEP 5. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool MB991958 to diagnose the CAN bus lines.

- (1) Turn the ignition switch to "ON" position.
- (2) Diagnose the CAN bus line.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Repair the CAN bus line.

STEP 6. Using scan tool MB991958, read the CAN box unit diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

Q: Is the DTC set?

YES : Troubleshoot the MMCS (Refer to [P.54A-460](#)).

NO : Go to Step 7.

STEP 7. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU – Troubleshooting [P.54A-732](#)).

NO : Go to Step 8.

STEP 8. Check the service data log for the MMCS service mode.

- (1) Display the service data log for the MMCS service mode.
(Refer to [P.54A-443](#))
- (2) Check if the service data log for drive and HDD is displayed.

Q: Is the service data log displayed?

YES (The service data log for drive is displayed.) :

Perform Inspection Procedure 8 "CD/DVD cannot be Played."(Refer to [P.54A-539](#).) or Inspection Procedure 9 "Image of a DVD is Played, but no Sound is Played." (Refer to [P.54A-541](#).) Go to Step 9.

YES (The service data log for HDD is displayed.) :

Abnormalities relating to high or low temperature may be present. Check if the multivision display can output the sound at the operable temperature. If it cannot output the sound, go to Step 9.

YES (The service data log for AMP is displayed.) : Go to Step 9.

NO : Go to Step 9.

STEP 9. Perform "Network/Connect Line Check" in the MMCS service mode.

- (1) Display "Network/Connect Line Check" in the MMCS service mode. (Refer to [P.54A-443](#))
- (2) Check if "DVD Drive OK" is displayed.
- (3) Check if "HDD Drive OK" is displayed.
- (4) Check if "Premium Audio OK" is displayed.

Q: Is the check result normal?

YES : Go to Step 18.

NO : Go to Step 10.

STEP 10. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 11.

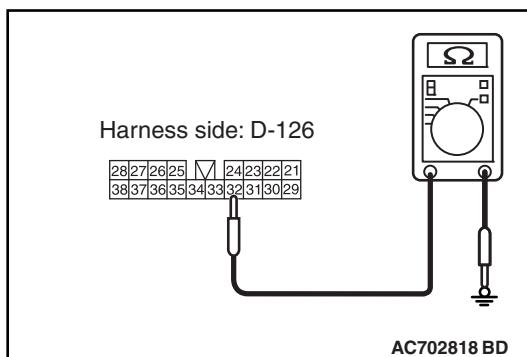
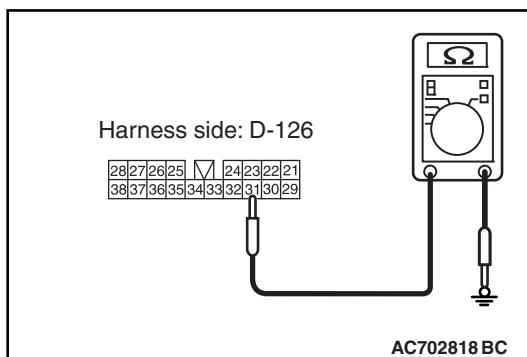
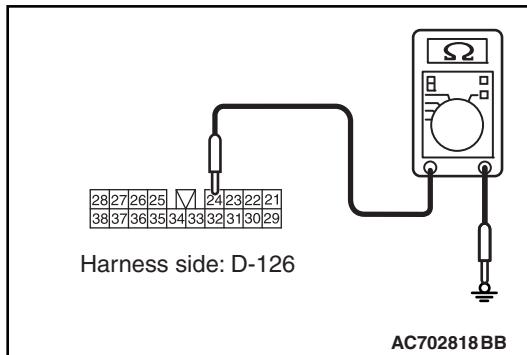
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 11. Check the ground circuit to the rear monitor.

Measure the resistance at audio amplifier connector D-126.

- (1) Disconnect audio amplifier connector D-126, and measure the resistance available at the wiring harness side of the connector.
- (2) Measure the resistance between terminal 24 and ground.

OK: The resistance should be 2 ohms or less



- (3) Measure the resistance between terminal 31 and ground.

OK: The resistance should be 2 ohms or less

- (4) Measure the resistance between terminal 32 and ground.

OK: The resistance should be 2 ohms or less

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 13.

NO : Go to Step 12.

STEP 12. Check the wiring harness between audio amplifier connector D-126 (terminal 24, 31, 32) and ground.

- Check the ground wire for open circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 24, 31, 32) and ground in good condition?

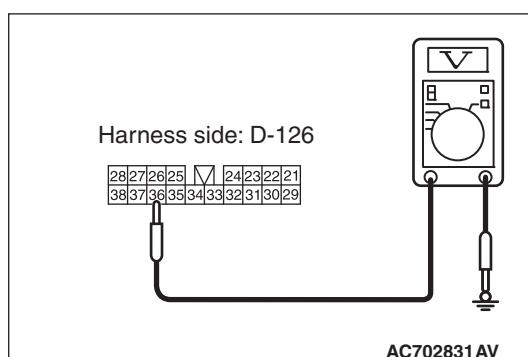
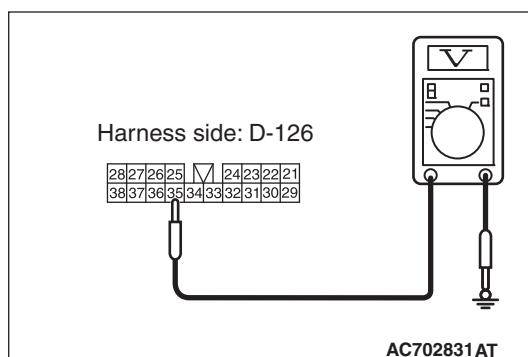
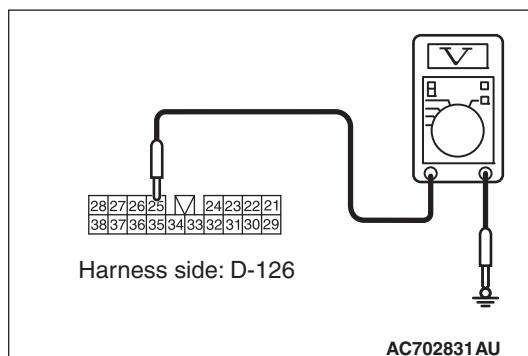
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 13. Check the power supply circuit to the ETACS-ECU. Measure the voltage at audio amplifier connector D-126.

- (1) Disconnect audio amplifier connector D-126, and measure the voltage available at the wiring harness-side connector.
- (2) Measure the voltage between terminal 25 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).



- (3) Measure the voltage between terminal 35 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

- (4) Measure the voltage between terminal 36 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 15.

NO : Go to Step 14.

STEP 14. Check the wiring harness between audio amplifier connector D-126 (terminal 25, 35, 36) and fusible link (36).

NOTE: Also check intermediate connector C-129 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-129 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the power supply line for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 25, 35, 36) and fusible link (36) in good condition?

YES : Go to Step 15.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 15. Check multivision display connector C-06, C-10 and audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Is multivision display connector C-06 and audio amplifier connector D-127 in good condition?**

YES : Go to Step 16.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 16. Check the wiring harness between multivision display connector C-06 (terminal 82) and audio amplifier connector D-127 (terminal 3)

NOTE: Also check intermediate connectors C-15 and C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 or C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication line for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-06 (terminal 82) and audio amplifier connector D-127 (terminal 3) in good condition?

YES : Go to Step 17.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 17. Check the wiring harness between multivision display connector C-10 (terminal 6) and audio amplifier connector D-126 (terminal 34)

NOTE: Also check intermediate connectors C-15 and C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 or C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication line for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 6) and audio amplifier connector D-126 (terminal 34) in good condition?

YES : Go to Step 18.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 18. Retest the system

Check that the audio sound is output.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : Go to step 19.

STEP 19. Retest the system

Temporarily replace the multivision display and check if the sound is output.

Q: Is the check result normal?

YES : Replace the multivision display.

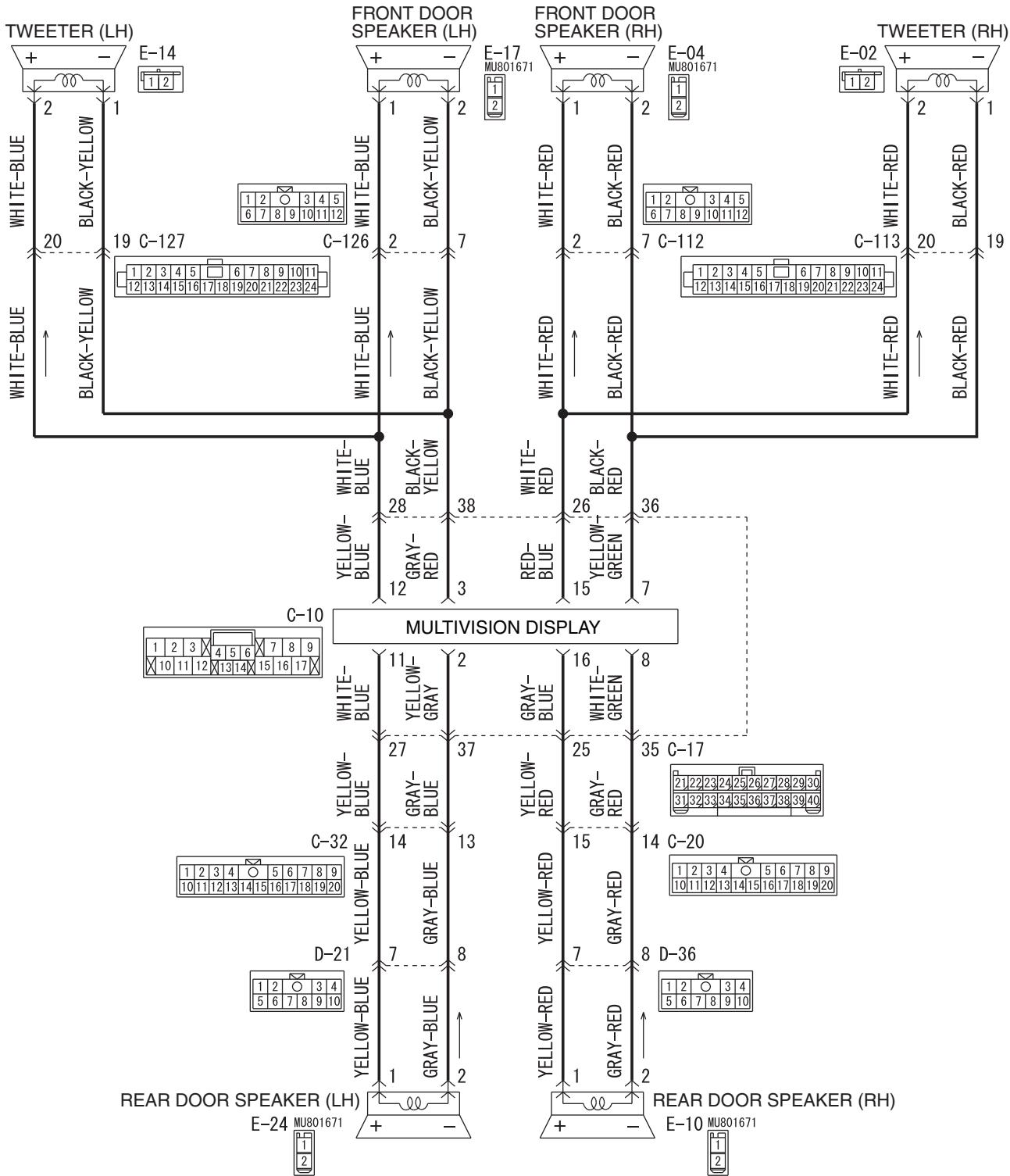
NO : Replace the audio amplifier.

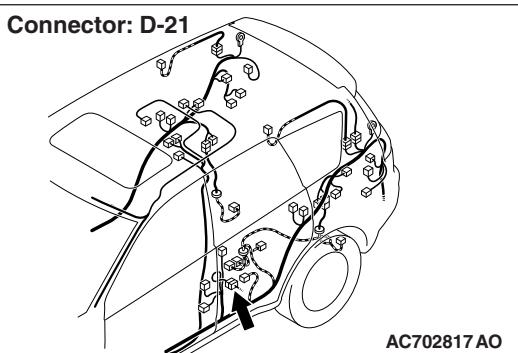
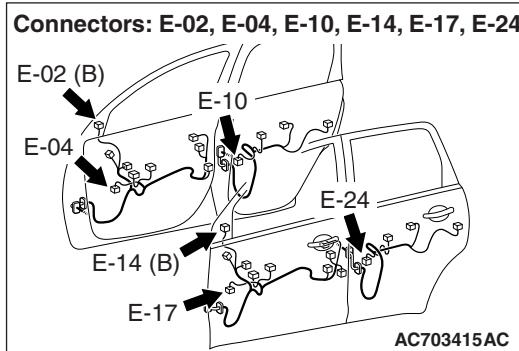
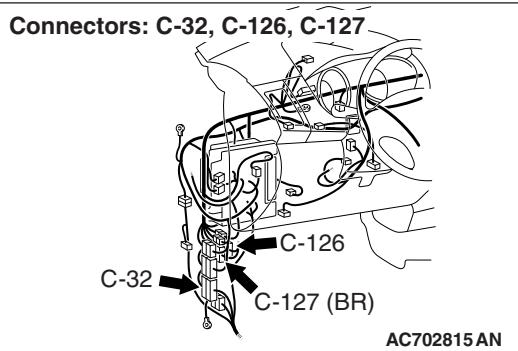
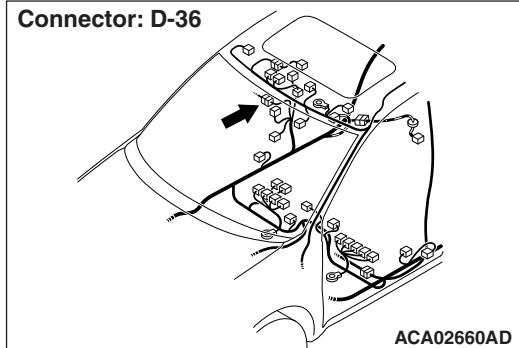
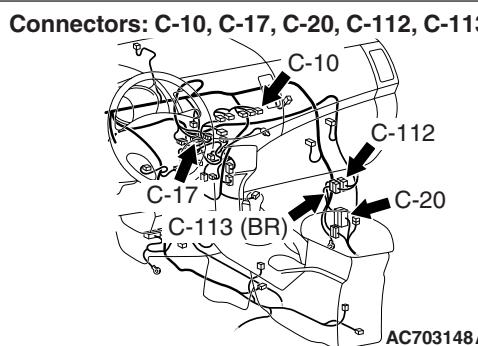
Inspection Procedure 3: No sound is heard from one of the speakers. <Vehicles without audio amplifier>

CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

Speaker System Circuit





COMMENTS ON TROUBLE SYMPTOM

If the sound is not heard from one of the speakers, the speaker, multivision display, communication line from the multivision display to the speaker may have a problem. Also, the option coding information may be inconsistent.

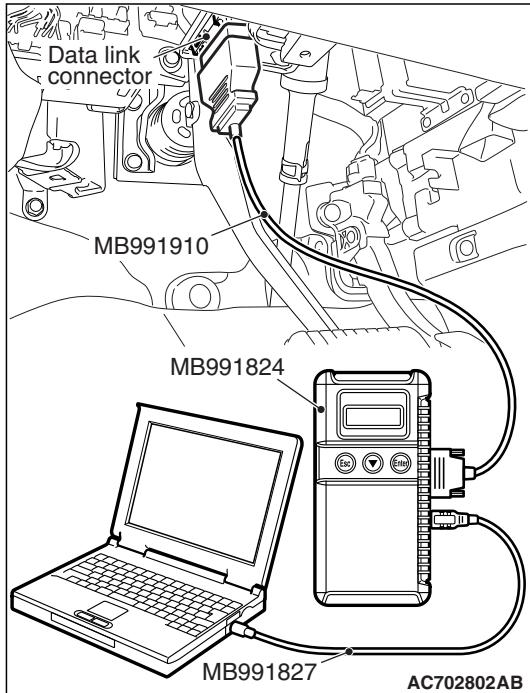
PROBABLE CAUSES

- Malfunction of speaker
- Malfunctions of multivision display
- Option coding information inconsistency
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A

**STEP 1. Check the ETACS-ECU coding data.**

Use scan tool MB991958 to diagnose the CAN bus lines.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to "ON" position.
- (3) Operate the scan tool MB991958 to read the ETACS-ECU option coding information (Refer to GROUP 00, Coding Table [P.00-44](#)).
- (4) Check that the "Number of speaker" is set to "6 speakers".

Q: Is the check result normal?

YES : Go to Step 2.

NO : Operate scan tool MB991958 to set the option coding "Number of speaker" to "6 speakers" and check the trouble symptom.

STEP 2. Check the MMCS service mode, CAN communication confirmation, and coding data.

- (1) Display the CAN Communication Confirmation and Coding Data of the MMCS service mode. (Refer to [P.54A-443](#))
- (2) Check if "6 SPEAKER (2 TWEETER)" is displayed as the number of installed speakers.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Go to Step 4.

STEP 3. Check the service data log for the MMCS service mode.

With the service data log of MMCS service mode displayed, check if the service data log for SP (speaker) is displayed. (Refer to [P.54A-443](#).)

Q: Is the service data log for SP (speaker) displayed?

YES : Go to step 4.

NO : Go to step 7.

STEP 4. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool MB991958 to diagnose the CAN bus lines.

- (1) Turn the ignition switch to "ON" position.
- (2) Diagnose the CAN bus line.

Q: Is the check result normal?

YES : Go to step 5.

NO : Repair the CAN bus line.

STEP 5. Using scan tool MB991958, read the CAN box unit diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

Q: Is the DTC set?

YES : Troubleshoot the MMCS (Refer to [P.54A-460](#)).

NO : Go to Step 6.

STEP 6. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU – Troubleshooting [P.54A-732](#)).

NO : Go to Step 7.

STEP 7. Checking with speaker test.

Perform the speaker test, and check which speaker does not output the sound. Refer to [P.54A-443](#).

Q: Is the check result normal?

YES <normal for all> : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO <abnormal for all> : Refer to Inspection Procedure 2 "No sound is heard" [P.54A-494](#).

NO <only front door speaker (RH) is abnormal> : Go to Step 8.

NO <only front door speaker (LH) is abnormal> : Go to Step 12.

NO <only rear door speaker (RH) is abnormal> : Go to Step 16.

NO <only rear door speaker (LH) is abnormal> : Go to Step 20.

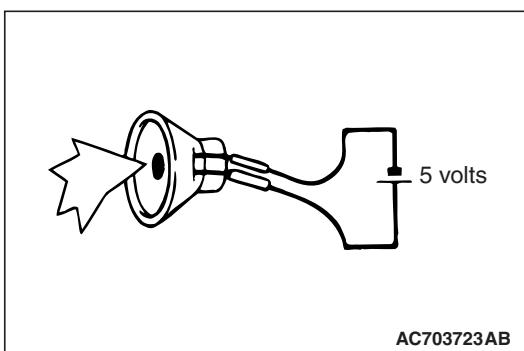
NO <only tweeter (RH) is abnormal> : Go to Step 24.

NO <only tweeter (LH) is abnormal> : Go to Step 28.

STEP 8. Check front door speaker (RH) connector E-04 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Is front door speaker (RH) connector E-04 in good condition?**

YES : Go to Step 9.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**STEP 9. Check the front door speaker (RH).**

- (1) Remove the front door speaker (RH). Refer to [P.54A-692](#).
- (2) Check that the front door speaker (RH) outputs the noise when the voltage of five volts is applied to the front door speaker (RH) connector terminal.

Q: Does the front door speaker (RH) output the noise?

YES : Go to Step 10.

NO : Replace the front door speaker (RH).

STEP 10. Check multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-10 in good condition?

YES : Go to Step 11.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 11. Check the wiring harness between multivision display connector C-10 (terminal 7, 15) and front door speaker (RH) connector E-04 (terminal 2, 1).

NOTE: Also check intermediate connectors C-17 and C-112 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 or C-112 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 7, 15) and front door speaker (RH) connector E-04 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 32.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 12. Check front door speaker (LH) connector E-17 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door speaker (LH) connector E-17 in good condition?

YES : Go to Step 13.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 13. Check the front door speaker (LH).

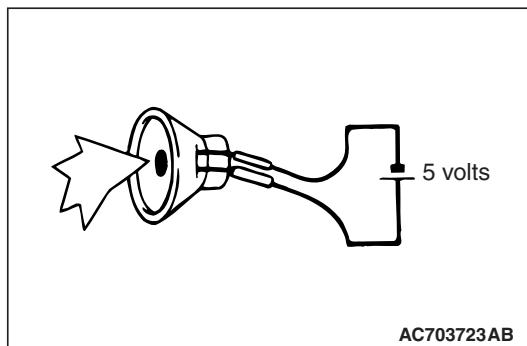
(1) Remove the front door speaker (LH). Refer to [P.54A-692](#).

(2) Check that the front door speaker (LH) outputs the noise when the voltage of five volts is applied to the front door speaker (LH) connector terminal.

Q: Does the front door speaker (LH) output the noise?

YES : Go to Step 14.

NO : Replace the front door speaker (LH).



STEP 14. Check multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-10 in good condition?

YES : Go to Step 15.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 15. Check the wiring harness between multivision display connector C-10 (terminal 3, 12) and front door speaker (LH) connector E-17 (terminal 2, 1).

NOTE: Also check intermediate connectors C-20 and C-126 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-20 or C-126 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 3, 12) and front door speaker (LH) connector E-17 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 32.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 16. Check rear door speaker (RH) connector E-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Is rear door speaker (RH) connector E-24 in good condition?**

YES : Go to Step 17.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

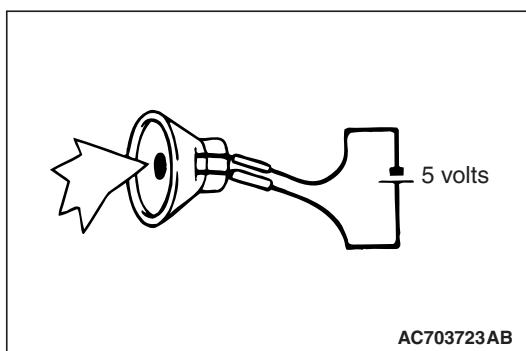
STEP 17. Check the rear door speaker (RH).

- (1) Remove the rear door speaker (RH). Refer to [P.54A-692](#).
- (2) Check that the rear door speaker (RH) outputs the noise when the voltage of five volts is applied to the rear door speaker (RH) connector terminal.

Q: Does the rear door speaker (RH) output the noise?

YES : Go to Step 18.

NO : Replace the rear door speaker (RH).



STEP 18. Check multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-10 in good condition?

YES : Go to Step 19.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 19. Check the wiring harness between multivision display connector C-10 (terminal 8, 16) and rear door speaker (RH) connector E-10 (terminal 2, 1).

NOTE: Also check intermediate connectors C-17, C-20 and D-36 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17, C-20 or D-36 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 8, 16) and rear door speaker (RH) connector E-10 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 32.

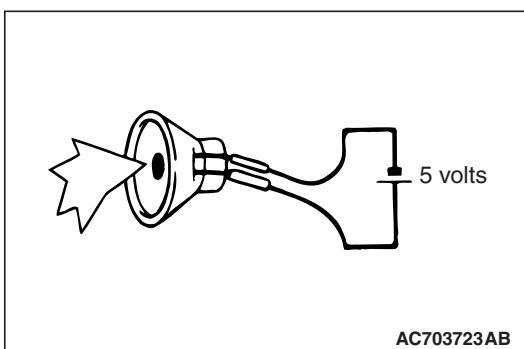
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 20. Check rear door speaker (LH) connector E-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door speaker (LH) connector E-24 in good condition?

YES : Go to Step 21.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**STEP 21. Check the rear door speaker (LH).**

- (1) Remove the rear door speaker (LH). Refer to [P.54A-692](#).
- (2) Check that the rear door speaker (LH) outputs the noise when the voltage of five volts is applied to the rear door speaker (LH) connector terminal.

Q: Does the rear door speaker (LH) output the noise?

YES : Go to Step 22.

NO : Replace the rear door speaker (LH).

STEP 22. Check multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-10 in good condition?

YES : Go to Step 23.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 23. Check the wiring harness between multivision display connector C-10 (terminal 2, 11) and rear door speaker (LH) connector E-24 (terminal 2, 1).

NOTE: Also check intermediate connectors C-17, C-32 and D-21 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17, C-32 or D-21 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 2, 11) and rear door speaker (LH) connector E-24 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 32.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 24. Check tweeter (RH) connector E-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (RH) connector E-02 in good condition?

YES : Go to Step 25.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 25. Check the tweeter (RH).

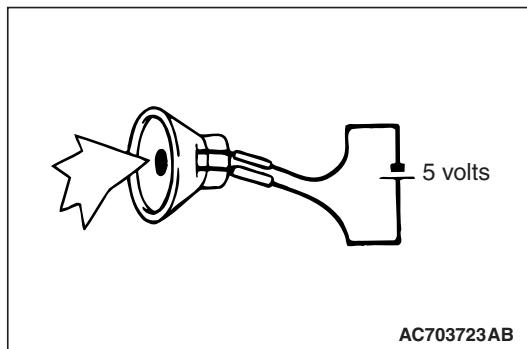
(1) Remove the tweeter (RH). Refer to [P.54A-692](#).

(2) Check that the tweeter (RH) outputs the noise when the voltage of five volts is applied to the tweeter (RH) connector terminal.

Q: Does the tweeter (RH) output the noise?

YES : Go to Step 26.

NO : Replace the tweeter (RH).



STEP 26. Check multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-10 in good condition?

YES : Go to Step 27.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 27. Check the wiring harness between multivision display connector C-10 (terminal 7, 15) and tweeter (RH) connector E-02 (terminal 1, 2).

NOTE: Also check intermediate connectors C-17 and C-113 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 or C-113 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 7, 15) and tweeter (RH) connector E-02 (terminal 1, 2) in good condition?

YES : Check the trouble symptom, and go to Step 32.

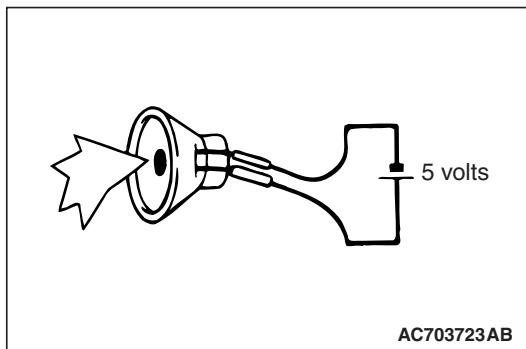
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 28. Check tweeter (LH) connector E-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (LH) connector E-14 in good condition?

YES : Go to Step 29.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).



STEP 29. Check the tweeter (LH).

(1) Remove the tweeter (LH). Refer to [P.54A-692](#).

(2) Check that the tweeter (LH) outputs the noise when the voltage of five volts is applied to the tweeter (LH) connector terminal.

Q: Does the tweeter (LH) output the noise?

YES : Go to Step 30.

NO : Replace the tweeter (LH).

STEP 30. Check multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-10 in good condition?

YES : Go to Step 31.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 31. Check the wiring harness between multivision display connector C-10 (terminal 3, 12) and tweeter (LH) connector E-14 (terminal 1, 2).

NOTE: Also check intermediate connectors C-17 and C-127 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 or C-127 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 3, 12) and tweeter (LH) connector E-14 (terminal 1, 2) in good condition?

YES : Check the trouble symptom, and go to Step 32.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 32. Replace the multivision display temporarily, and check the trouble symptom.

Replace the multivision display temporarily, and check that the sound is output from the speaker.

Q: Is the check result normal?

YES : Replace the multivision display.

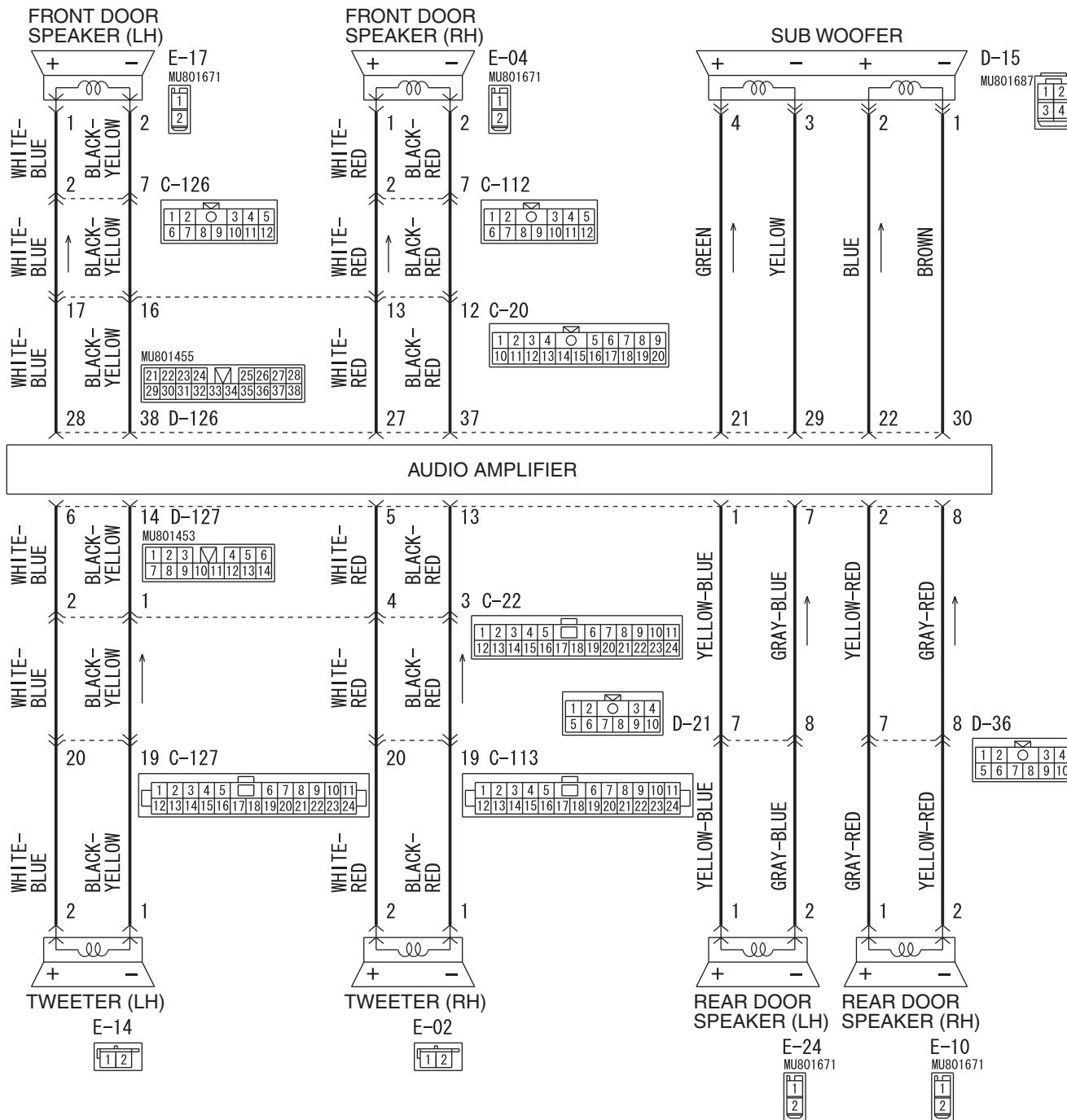
NO : Replace the speaker or tweeter of output not sound.

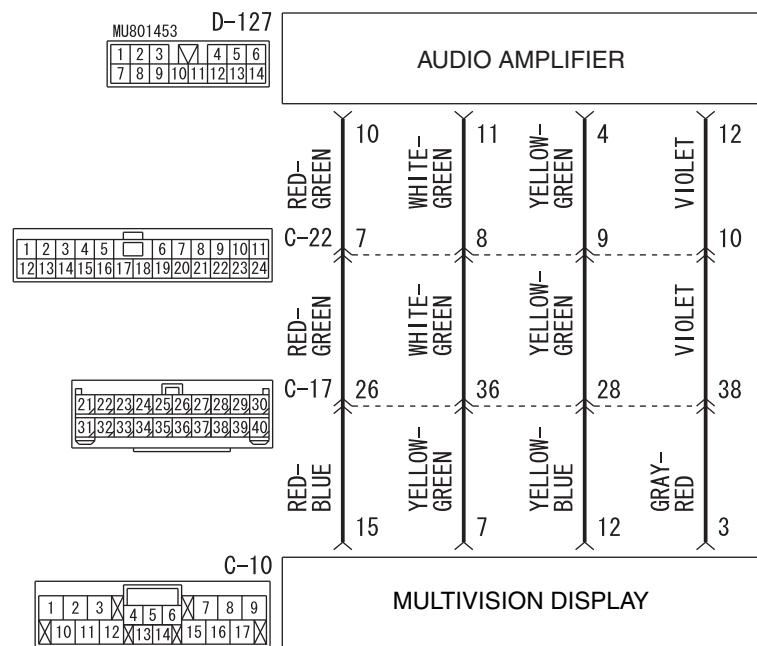
Inspection Procedure 3: No sound is heard from one of the speakers. <Vehicles with audio amplifier>

CAUTION

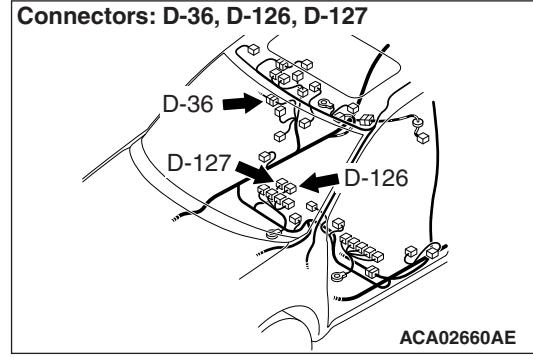
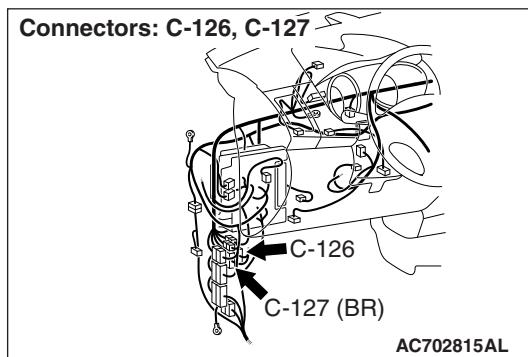
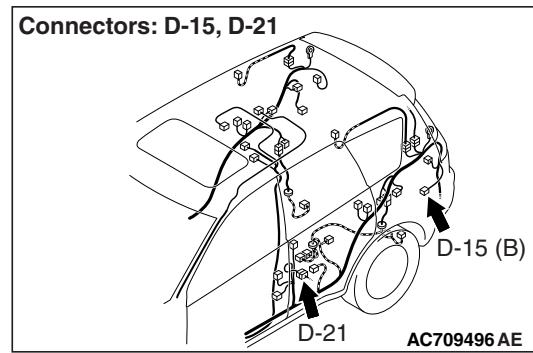
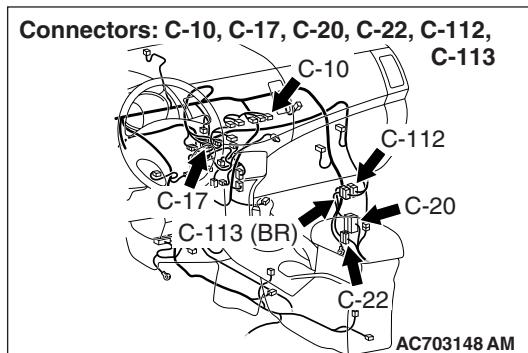
Before replacing the multivision display, or audio amplifier, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

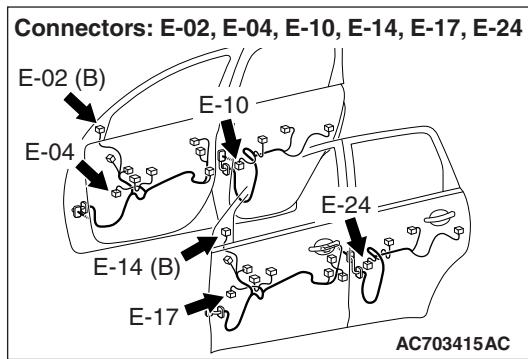
Speaker System Circuit





WAG54M032A





COMMENTS ON TROUBLE SYMPTOM

If the sound is not heard from one of the speakers, the speaker, multivision display, audio amplifier, communication line from the multivision display to the audio amplifier, or communication line from the audio amplifier to the speaker may have a problem. Also, the option coding information may be inconsistent.

PROBABLE CAUSES

- Malfunction of speaker
- Malfunctions of multivision display
- Malfunction of audio amplifier
- Option coding information inconsistency
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A

STEP 1. Check the ETACS-ECU coding data.

Use scan tool MB991958 to diagnose the CAN bus lines.

CAUTION

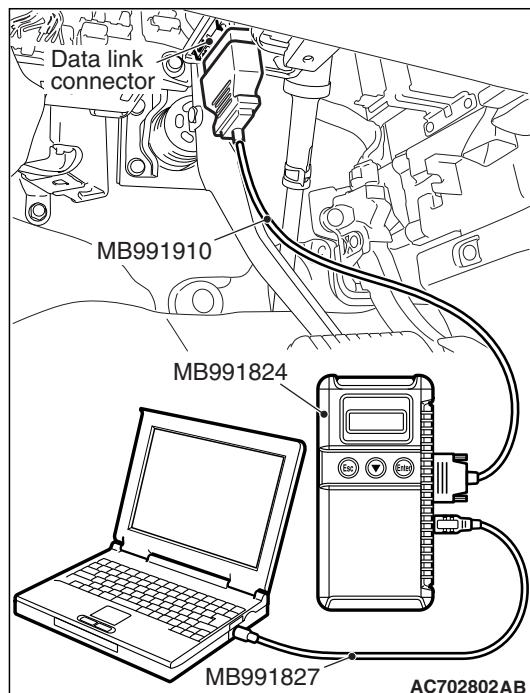
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-458](#)."
- (2) Turn the ignition switch to "ON" position.
- (3) Operate the scan tool MB991958 to read the ETACS-ECU option coding information (Refer to GROUP 00, Coding Table [P.00-44](#)).
- (4) Check that the "Number of speaker" is set to "Premium."

Q: Is the check result normal?

YES : Go to Step 2.

NO : Operate scan tool MB991958 to set the option coding "Number of speaker" to "Premium," and check the trouble symptom.



STEP 2. Check the MMCS service mode, CAN communication confirmation, and coding data.

- (1) Display the CAN Communication Confirmation and Coding Data of the MMCS service mode. (Refer to [P.54A-443](#))
- (2) Check if PREMIUM is displayed.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Go to Step 4.

STEP 3. Check the service data log for the MMCS service mode.

With the service data log of MMCS service mode displayed, check if the service data log for SP (speaker) is displayed. (Refer to [P.54A-443](#).)

Q: Is the service data log for SP (speaker) displayed?

YES : Go to step 4.

NO : Go to step 7.

STEP 4. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool MB991958 to diagnose the CAN bus lines.

- (1) Turn the ignition switch to "ON" position.
- (2) Diagnose the CAN bus line.

Q: Is the check result normal?

YES : Go to step 5.

NO : Repair the CAN bus line.

STEP 5. Using scan tool MB991958, read the CAN box unit diagnostic trouble code.

Check again if the DTC is set to the CAN box unit.

Q: Is the DTC set?

YES : Troubleshoot the MMCS (Refer to [P.54A-460](#)).

NO : Go to Step 6.

STEP 6. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check if the diagnostic trouble code is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to GROUP 54A – ETACS-ECU – Troubleshooting [P.54A-732](#)).

NO : Go to Step 7.

STEP 7. Checking with speaker test.

Perform the speaker test, and check which speaker does not output the sound. Refer to [P.54A-443](#).

Q: Is the check result normal?

YES <normal for all> : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO <abnormal for all> : Refer to Inspection Procedure 2 "No sound is heard" [P.54A-498](#).

NO <only front door speaker (RH) is abnormal> : Go to Step 8.

NO <only front door speaker (LH) is abnormal> : Go to Step 14.

NO <only rear door speaker (RH) is abnormal> : Go to Step 20.

NO <only rear door speaker (LH) is abnormal> : Go to Step 24.

NO <only tweeter (RH) is abnormal> : Go to Step 28.

NO <only tweeter (LH) is abnormal> : Go to Step 32.

NO <only subwoofer is abnormal> : Go to Step 36.

STEP 8. Check front door speaker (RH) connector E-04 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door speaker (RH) connector E-04 in good condition?

YES : Go to Step 9.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 9. Check the front door speaker (RH).

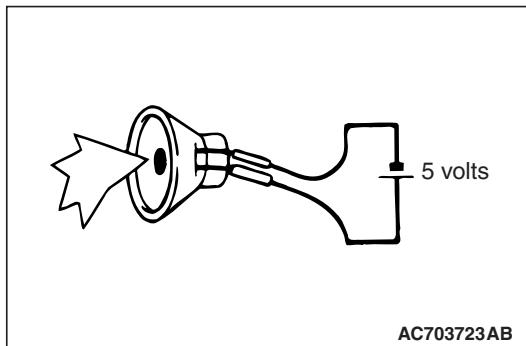
(1) Remove the front door speaker (RH). Refer to [P.54A-692](#).

(2) Check that the front door speaker (RH) outputs the noise when five volts are applied to the front door speaker (RH) connector terminal.

Q: Does the front door speaker (RH) output the noise?

YES : Go to Step 10.

NO : Replace the front door speaker (RH).



STEP 10. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 11.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 11. Check the wiring harness between audio amplifier connector D-126 (terminal 27, 37) and front door speaker (RH) connector E-04 (terminal 1, 2).

NOTE: Also check intermediate connectors C-20 and C-112 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-20 or C-112 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 27, 37) and front door speaker (RH) connector E-04 (terminal 1, 2) in good condition?

YES : Go to Step 12.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 12. Check multivision display connector C-10 and audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are multivision display connector C-10 and audio amplifier connector D-127 in good condition?

YES : Go to Step 13.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 13. Check the wiring harness between multivision display connector C-10 (terminal 7, 15) and audio amplifier connector D-127 (terminal 11, 10).

NOTE: Also check intermediate connectors C-17 and C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 or C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between multivision display connector C-10 (terminal 7, 15) and audio amplifier connector D-127 (terminal 11, 10) in good condition?

YES : Check the trouble symptom, and go to Step 40.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 14. Check front door speaker (LH) connector E-17 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door speaker (LH) connector E-17 in good condition?

YES : Go to Step 15.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

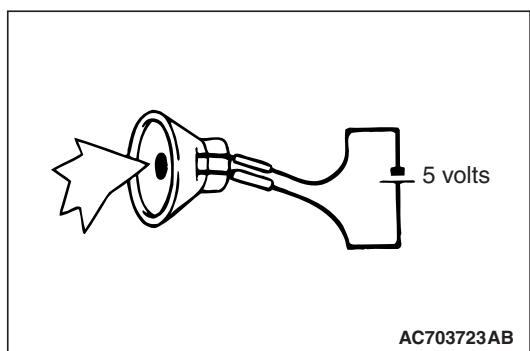
STEP 15. Check the front door speaker (LH).

- (1) Remove the front door speaker (LH). Refer to [P.54A-692](#).
- (2) Check that the front door speaker (LH) outputs the noise when five volts are applied to the front door speaker (LH) connector terminal.

Q: Does the front door speaker (LH) output the noise?

YES : Go to Step 16.

NO : Replace the front door speaker (LH).



STEP 16. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 17.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 17. Check the wiring harness between audio amplifier connector D-126 (terminal 28, 38) and front door speaker (LH) connector E-17 (terminal 1, 2).

NOTE: Also check intermediate connectors C-20 and C-126 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-20 or C-126 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 28, 38) and front door speaker (LH) connector E-17 (terminal 1, 2) in good condition?

YES : Go to Step 18.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 18. Check multivision display connector C-10 and audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Are multivision display connector C-10 and audio amplifier connector D-127 in good condition?**

YES : Go to Step 19.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 19. Check the wiring harness between multivision display connector C-10 (terminal 3, 12) and audio amplifier connector D-127 (terminal 12, 4)

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connectors C-17 and C-22 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 or C-22 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between multivision display connector C-10 (terminal 3, 12) and audio amplifier connector D-127 (terminal 12, 4) in good condition?

YES : Check the trouble symptom, and go to Step 40.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

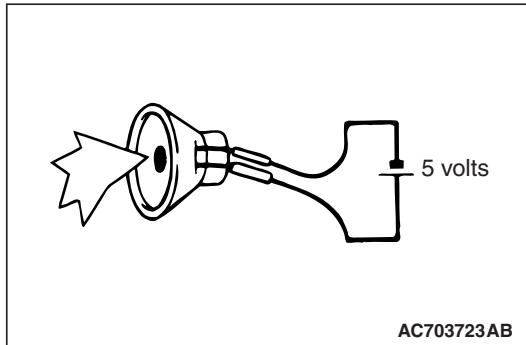
STEP 20. Check rear door speaker (RH) connector E-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door speaker (RH) connector E-10 in good condition?

YES : Go to Step 21.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

[P.00E-2](#).



STEP 21. Check the rear door speaker (RH).

(1) Remove the rear door speaker (RH). Refer to [P.54A-692](#).

(2) Check that the rear door speaker (RH) outputs the noise when five volts are applied to the rear door speaker (RH) connector terminal.

Q: Does the rear door speaker (RH) output the noise?

YES : Go to Step 22.

NO : Replace the rear door speaker (RH).

STEP 22. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 23.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

[P.00E-2](#).

STEP 23. Check the wiring harness between audio amplifier connector D-127 (terminal 2, 8) and rear door speaker (RH) connector E-10 (terminal 1, 2).

NOTE: Also check intermediate connector D-36 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-36 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 2, 8) and rear door speaker (RH) connector E-10 (terminal 1, 2) in good condition?

YES : Check the trouble symptom, and go to Step 40.

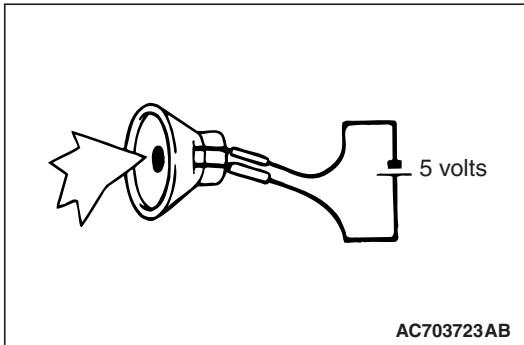
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 24. Check rear door speaker (LH) connector E-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door speaker (LH) connector E-24 in good condition?

YES : Go to Step 25.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).



STEP 25. Check the rear door speaker (LH).

(1) Remove the rear door speaker (LH). Refer to [P.54A-692](#).

(2) Check that the rear door speaker (LH) outputs the noise when five volts are applied to the rear door speaker (LH) connector terminal.

Q: Does the rear door speaker (LH) output the noise?

YES : Go to Step 26.

NO : Replace the rear door speaker (LH).

STEP 26. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 27.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 27. Check the wiring harness between audio amplifier connector D-127 (terminal 1, 7) and rear door speaker (LH) connector E-24 (terminal 1, 2).

NOTE: Also check intermediate connector D-21 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-21 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 1, 7) and rear door speaker (LH) connector E-24 (terminal 1, 2) in good condition?

YES : Check the trouble symptom, and go to Step 40.

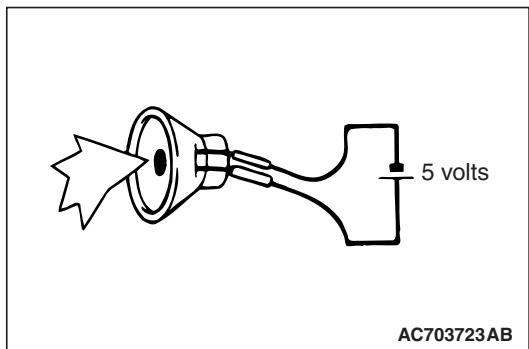
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 28. Check tweeter (RH) connector E-02 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (RH) connector E-02 in good condition?

YES : Go to Step 29.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).



STEP 29. Check the tweeter (RH).

(1) Remove the tweeter (RH). Refer to [P.54A-692](#).

(2) Check that the tweeter (RH) outputs the noise when five volts are applied to the tweeter (RH) connector terminal.

Q: Does the tweeter (RH) output the noise?

YES : Go to Step 30.

NO : Replace the tweeter (RH).

STEP 30. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 31.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 31. Check the wiring harness between audio amplifier connector D-127 (terminal 5, 13) and tweeter (RH) connector E-02 (terminal 2, 1).

NOTE: Also check intermediate connectors C-22 and C-113 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 or C-113 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 5, 13) and tweeter (RH) connector E-02 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 40.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 32. Check tweeter (LH) connector E-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is tweeter (LH) connector E-14 in good condition?

YES : Go to Step 33.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 33. Check the tweeter (LH).

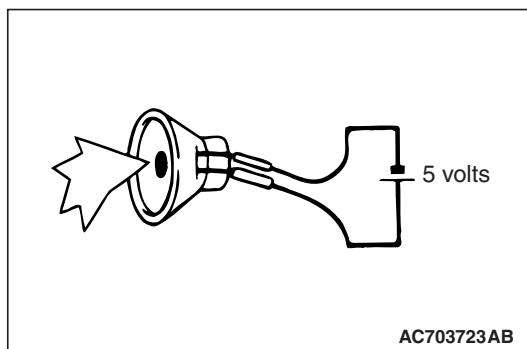
(1) Remove the tweeter (LH). Refer to [P.54A-692](#).

(2) Check that the tweeter (LH) outputs the noise when five volts are applied to the tweeter (LH) connector terminal.

Q: Does the tweeter (LH) output the noise?

YES : Go to Step 34.

NO : Replace the tweeter (LH).



STEP 34. Check audio amplifier connector D-127 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-127 in good condition?

YES : Go to Step 35.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 35. Check the wiring harness between audio amplifier connector D-127 (terminal 6, 14) and tweeter (LH) connector E-14 (terminal 2, 1).

NOTE: Also check intermediate connectors C-22 and C-127 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-22 or C-127 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-127 (terminal 6, 14) and tweeter (LH) connector E-14 (terminal 2, 1) in good condition?

YES : Check the trouble symptom, and go to Step 40.

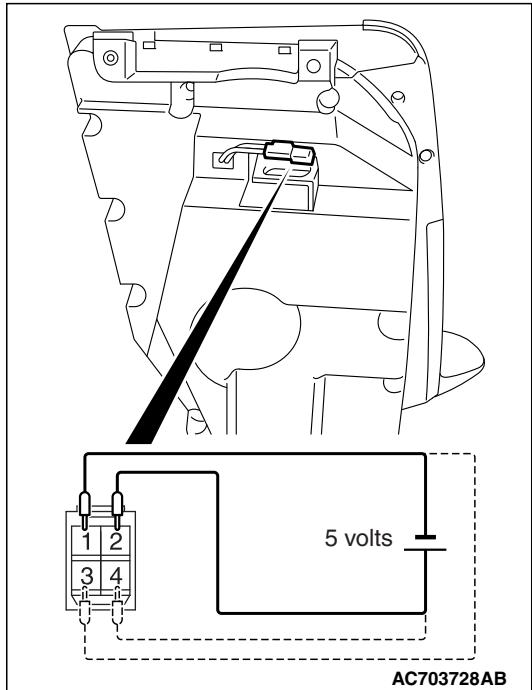
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 36. Check subwoofer connector D-15 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is subwoofer connector D-15 in good condition?

YES : Go to Step 37.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).



STEP 37. Check the Subwoofer.

(1) Remove the subwoofer. Refer to [P.54A-692](#).

(2) Check that the subwoofer outputs the noise when five volts are applied to the subwoofer connector terminal.

Q: Does the subwoofer output the noise?

YES : Go to Step 38.

NO : Replace the subwoofer.

STEP 38. Check audio amplifier connector D-126 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is audio amplifier connector D-126 in good condition?

YES : Go to Step 39.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 39. Check the wiring harness between audio amplifier connector D-126 (terminal 21, 22, 29, 30) and subwoofer connector D-15 (terminal 4, 2, 3, 1).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between audio amplifier connector D-126 (terminal 21, 22, 29, 30) and subwoofer connector D-15 (terminal 4, 2, 3, 1) in good condition?

YES : Check the trouble symptom, and go to Step 40.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 40. Replace the audio amplifier temporarily, and check the trouble symptom.

Replace the audio amplifier temporarily, and check that the sound is output from the speaker.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

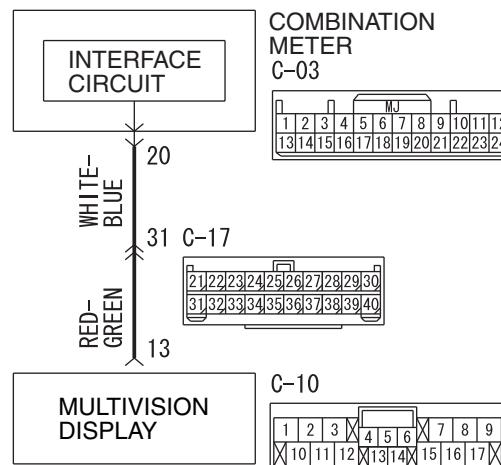
NO : Replace the multivision display.

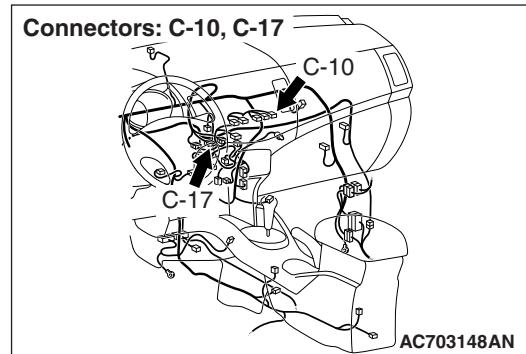
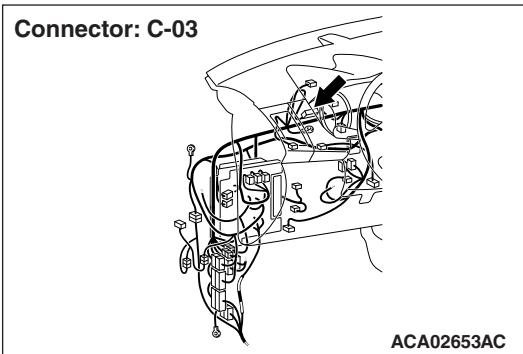
Inspection Procedure 4: The navigation system can be operated while the vehicle is driven.

CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

Multivision Display Communication Circuit





COMMENTS ON TROUBLE SYMPTOM

There is a failure in the wiring harness between the combination meter and the multivision display, the respective connector(s), the combination meter or the multivision display.

PROBABLE CAUSES

- Malfunctions of combination meter
- Malfunctions of multivision display
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Perform "Vehicle Signal Check" in the MMCS service mode.

Perform "Vehicle Signal Check" in the MMCS service mode to check whether vehicle speed signal is normal. (Refer to [P.54A-443](#).)

Q: Is the vehicle speed signal transmitted normally?

YES : Replace the multivision display.

NO : Go to Step 2.

STEP 2. Check the speed meter.

Check whether the speedometer works normally.

Q: Does the speed meter work normally?

YES : Go to Step 3.

NO : Diagnose the combination meter. Refer to [P.54A-34](#).

STEP 3. Check combination meter connector C-03 and multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is combination meter connector C-03 or multivision display connector C-10 in good condition?

YES : Go to Step 4.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 4. Check the wiring harness between combination meter connector C-03 (terminal 20) and multivision display connector C-10 (terminal 13).

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between combination meter connector C-03 (terminal 20) and multivision display connector C-10 (terminal 13) in good condition?

YES : Go to Step 5.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 5. Substitute a known good multivision display, and check the trouble symptom.

Check that no menus are active during driving.

Q: Is the check result normal?

YES : Replace the multivision display.

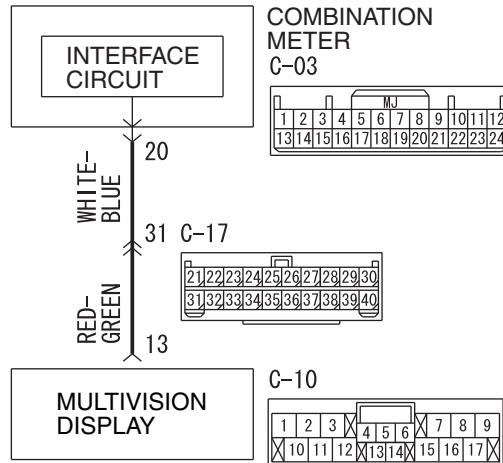
NO : Replace the combination meter.

Inspection Procedure 5: The screen is not normal in the navigation mode. (The displayed position of the vehicle mark deviates.)

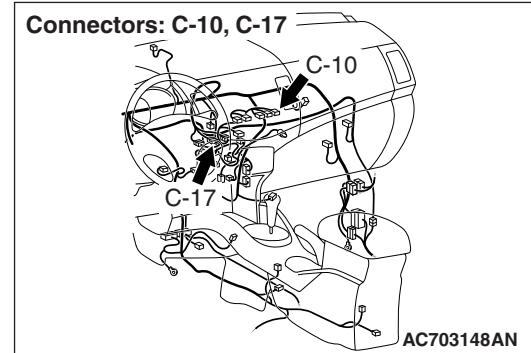
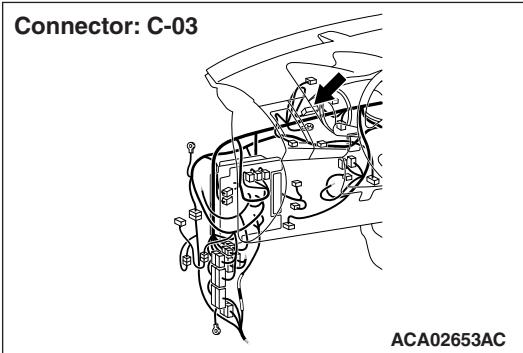
CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

Multivision Display Communication Circuit



W9G54M021A



COMMENTS ON TROUBLE SYMPTOM

There is a failure in the wiring harness between the combination meter and the multivision display, the GPS antenna, the respective connector(s), the combination meter or the multivision display.

PROBABLE CAUSES

- Malfunctions of GPS antenna
- Malfunctions of combination meter
- Malfunctions of multivision display
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Confirmation in MMCS service mode

Check the items below in the MMCS service mode. (Refer to [P.54A-443](#).)

- Perform "Network/Connect Line Check" in the MMCS service mode to check that the communication and wire connection with the GPS are in good condition.
- Perform "Vehicle Signal Check", and then check the status of the vehicle speed signal.
- Perform "Sensor Check", and then check the status of the vehicle speed sensor and the gyro sensor.

Q: Is the check result normal?

YES (OK for all) : Go to Step 6.

NO <GPS is not OK> : Go to Step 2.

NO <The vehicle speed sensor is not OK, or vehicle speed pulse does not increase after starting from a standstill> : Go to Step 3.

NO <Gyro sensor is not OK> : Go to Step 6.

STEP 2. GPS reception check

- (1) Start the multivision display.
- (2) Press the [INFO] button.
- (3) Select [Vehicle Position].
- (4) Check if the GPS signals are received.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Perform Inspection procedure 7 "GPS signal cannot be received." (Refer to [P.54A-538](#).) Then, go to Step 6.

STEP 3. Check the speedometer.

Check whether the speedometer works normally.

Q: Does the speedometer work normally?

YES : Go to Step 4.

NO : Diagnose the combination meter (Refer to Combination meter – Diagnosis [P.54A-69](#)).

STEP 4. Check combination meter connector C-03 and multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is combination meter connector C-03 or multivision display connector C-10 in good condition?

YES : Go to Step 5.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 5. Check the wiring harness between combination meter connector C-03 (terminal 20) and multivision display connector C-10 (terminal 13).

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between combination meter connector C-03 (terminal 20) and multivision display connector C-10 (terminal 13) in good condition?

YES : Go to Step 6.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 6. Substitute a known good multivision display, and check the trouble symptom.

Check whether the navigation screen is normal.

Q: Is the navigation screen normal?

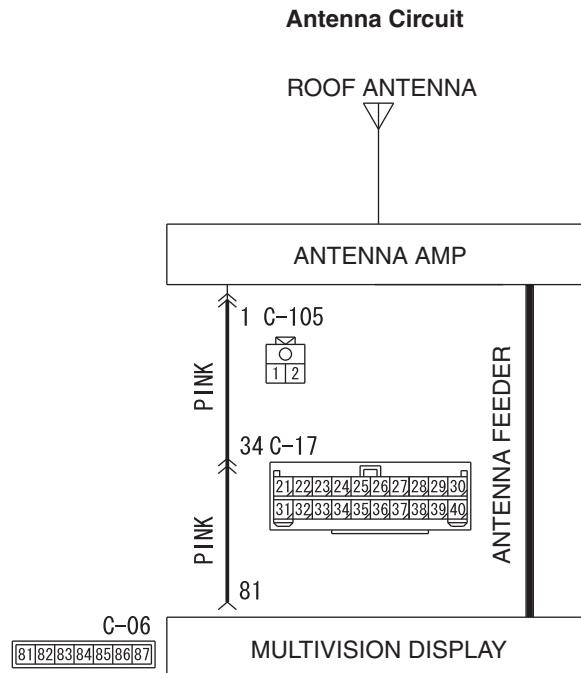
YES : Replace the multivision display.

NO : Replace the combination meter.

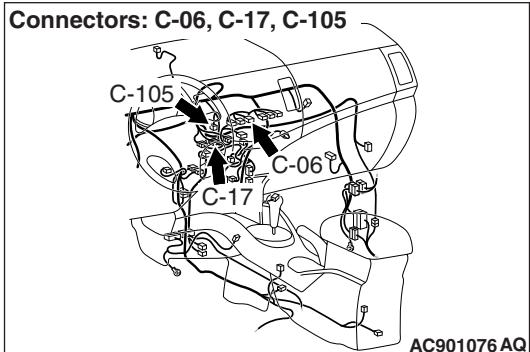
Inspection Procedure 6: The AM/FM Radio Broadcasting Cannot be Received.

CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)



WAG54M033A

**TECHNICAL DESCRIPTION (COMMENT)**

In case of AM/FM radio broadcasting cannot be received., the roof antenna (antenna rod, antenna base), antenna fender or multivision display may have a problem.

NOTE: The radio wave may not be received if the vehicle is placed in the area which is exposed to a special electric field. Thus, check that the radio broadcasting can be received using the radio of another vehicle before carrying out diagnosis.

TROUBLESHOOTING HINTS

- Malfunction of roof antenna (antenna rod, antenna base)
- Antenna feeder malfunction
- Malfunctions of multivision display
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS**STEP 1. Check the state of the antenna rod and antenna base.**

Q: Is the roof antenna assembled?

YES : Go to Step 2.

NO : Assemble antenna rod and antenna base.

STEP 2. Check to see if inspections are taking place in an area exposed to special electric fields.

Q: Is the reception area exposed to special electric fields?

YES : Go to Step 3.

NO : Go to Step 4.

STEP 3. Move the vehicle and check the radio.

Move the vehicle to a good reception area that is not exposed to special electric fields.

Q: Is the check result normal?

YES : Diagnosis complete.

NO : Go to Step 4.

STEP 4. Check damage in the roof antenna (the antenna rod, the antenna base).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace antenna rod or antenna base.

STEP 5. Check the connection of the antenna plug and multivision display.

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the antenna rod, antenna base and antenna fender.

STEP 6. Check multivision display connector C-06 and radio antenna connector C-105 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are multivision display connector C-06 and radio antenna connector C-105 in good condition?

YES : Go to Step 7.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 7. Check the wiring harness between multivision display connector C-06 (terminal 81) and radio antenna connector C-105 (terminal 1).

- Check the communication line for open circuit and short circuit.

NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between multivision display connector C-06 (terminal 81) and radio antenna connector C-105 (terminal 1) in good condition?

YES : Go to Step 8.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 8. Substitute a known good multivision display, and check the trouble symptom.

Q: Is the check result normal?

YES : Replace the multivision display.

NO : Either repair or replace the antenna rod and antenna base.

Inspection Procedure 7: GPS signal can not be received.

⚠ CAUTION

Whenever the multivision display is replaced, ensure that the power supply circuit and the grounding circuit are normal. (Check that the voltage is 10 V or more.)

COMMENTS ON TROUBLE SYMPTOM

The GPS antenna or the multivision display may be defective.

PROBABLE CAUSES

- The GPS antenna may be defective
- The multivision display may be defective

DIAGNOSIS

STEP 1. Confirmation in MMCS service mode

Perform "Network/Connect Line Check" in the MMCS service mode to check that the communication and wire connection with the GPS antenna are OK. (Refer to [P.54A-443](#).)

Q: Is the check result normal?

YES : Go to Step 2.

NO : Check that the GPS antenna is correctly connected to the multivision display, and go to Step 2.

STEP 2. Check for the vehicle's current position.

Check that the vehicle is parked on a well-ventilated place.

Q: Is the vehicle parked on a well-ventilated place?

YES : Go to Step 3.

NO : Move the vehicle to a well-ventilated area.

STEP 3. Confirming GPS signal reception

(1) Activate the multivision display.

(2) Press the [INFO] button.

(3) Select [Vehicle Position].

(4) Wait for 5 minutes, and then check whether GPS signal can be received.

Q: Can GPS signal be received?

YES : The diagnosis is complete. (There is no failure)

NO : Go to Step 4.

STEP 4. Substitute a known good multivision display, and check the trouble symptom.

(1) Temporarily replace the multivision display.

(2) Activate the multivision display.

(3) Press the [INFO] button.

(4) Select [Vehicle Position].

(5) Check if the GPS signals are being received after 5 minutes have elapsed.

Q: Is the check result normal?

YES : Replace the multivision display.

NO : Replace the GPS antenna.

Inspection Procedure 8: CD/DVD cannot be played.

CAUTION

Before replacing the multivision display, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

COMMENTS ON TROUBLE SYMPTOM

The CD/DVD or the multivision display may be defective.

PROBABLE CAUSES

- Defective DVD (video disk)
- The multivision display may be defective

DIAGNOSIS**STEP 1. Check the CD/DVD insertion surface.**

Check if the CD/DVD is inserted with its correct surface facing upward.

Q: Is the check result normal?

YES : Go to step 2.

NO : Confirm the disk face, and insert it again. (If the disk is single-sided, its label should face up)

STEP 2. Check the CD/DVD.

- Check that the DVD has the correct region code.
- Check if the CD corresponds with the multivision display.

Q: Is the check result normal?

YES : Go to step 3.

NO : Use the DVD with a correct region code. Or use the CD which corresponds with the multivision display.

STEP 3. Check the CD/DVD.

Check that the CD)/DVD is free of dirt or scratch.

Q: Is the check result normal?

YES : Go to step 4.

NO : Clean the disk, use a disk without scratches and burrs, or remove the burrs from the disk. Then, reinsert the disk.

STEP 4. Temporarily replace the CD/DVD with another one, and check the trouble symptom.

Check if another CD/DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : Replace the used CD/DVD.

NO : Go to step 5.

STEP 5. Check the service data log for the MMCS service mode.

(1) Display the service data log for the MMCS service mode. (Refer to [P.54A-443](#).)

(2) Check if the service data log for drive and HDD is displayed.

Q: Is the service data log displayed?

YES (The service data log for drive is displayed.) : Check for foreign materials or condensation. Repair if there is an abnormality, and then go to Step 6.

YES (The service data log for HDD is displayed.) :

Abnormalities relating to high or low temperature may be present. Check if the multivision display can be played at the operable temperature. If it cannot be played, go to Step 6.

NO : Go to step 6.

STEP 6. Perform "Network/Connect Line Check" in the MMCS service mode.

(1) Display "Network/Connect Line Check" in the MMCS service mode. (Refer to [P.54A-443](#).)

(2) Check if "DVD Drive OK" is displayed.

(3) Check if "HDD Drive OK" is displayed.

Q: Is the check result normal?

YES : Go to step 7.

NO : Replace the multivision display.

STEP 7. Retest the system.

Check if the CD/DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : The diagnosis is complete.

NO : Go to step 8.

STEP 8. Temporarily replace the multivision display, and check the trouble symptom.

After temporary replacement of the multivision display, check that the CD/DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : Replace the multivision display.

NO : Replace the CD/DVD.

Inspection Procedure 9: Image of a DVD is played, but no sound is played.**⚠ CAUTION**

Before replacing the ECU, ensure that the power supply circuit, the ground circuit, and the communication circuit are normal. (Check that the voltage is 10 V or more.)

COMMENTS ON TROUBLE SYMPTOM

The DVD or the multivision display may be defective.

PROBABLE CAUSES

- Defective DVD
- The multivision display may be defective

DIAGNOSIS**STEP 1. Check whether other sounds are emitted.**

Check whether sound other than DVD is emitted.

- (1) Check if the sound is output when the music server is used.
- (2) Check if the sound is output when the radio is used.
- (3) Check if the sound is output when a CD is used.

Q: Is sound other than DVD emitted?

YES : Go to Step 2.

NO : Diagnose the MMCS. (Refer to [P.54A-486](#).)

STEP 2. Check a DVD to be inserted.

Check if the sound is recorded in the DVD, using other DVD players.

Q: Is sound data recorded in the DVD?

YES : Go to Step 3.

NO : Use a DVD containing sound data.

STEP 3. Check the DVD.

Check that the DVD is free of dirt or scratch.

Q: Is the check result normal?

YES : Go to step 4.

NO : Clean the disk, use a disk without scratches and burrs, or remove the burrs from the disk. Then, reinsert the disk.

STEP 4. Temporarily replace the DVD with another DVD, and check the trouble symptom.
Check if the DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : Replace the used DVD.

NO : Go to step 5.

STEP 5. Check the service data log for the MMCS service mode.

- (1) Display the service data log for the MMCS service mode. (Refer to [P.54A-443](#).)
- (2) Check if the service data log for drive and HDD is displayed.

Q: Is the service data log displayed?

YES (The service data log for drive is displayed.) :
Check for foreign materials or condensation.
Repair if there is an abnormality, and then go to Step 6.

YES (The service data log for HDD is displayed.) :
Abnormalities relating to high or low temperature may be present. Check if the multivision display can be played at the operable temperature. If it cannot be played, go to Step 6.

NO : Go to step 6.

STEP 6. Perform "Network/Connect Line Check" in the MMCS service mode.

- (1) Display "Network/Connect Line Check" in the MMCS service mode. (Refer to [P.54A-443](#).)
- (2) Check if "DVD Drive OK" is displayed.
- (3) Check if "HDD Drive OK" is displayed.

Q: Is the check result normal?

YES : Go to step 7.

NO : Go to step 8.

STEP 7. Check the playing method.

Check whether the disk was played normally and not with special playback (fast rewind, fast forward, slow, pause). Also, check whether the mute mode was selected. After that, check if the DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : The procedure is complete.

NO : Go to step 8.

STEP 8. Temporarily replace the multivision display, and check the trouble symptom.

After temporary replacement of the multivision display, check that the DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : Replace the multivision display.

NO : Replace the DVD.

Inspection Procedure 10: Sound of a DVD can be played, but no image is played.**⚠ CAUTION**

Whenever the multivision display is replaced, ensure that the power supply circuit and the grounding circuit are normal. (Check that the voltage is 10 V or more.)

COMMENTS ON TROUBLE SYMPTOM

The DVD or the multivision display may be defective.

PROBABLE CAUSES

- Defective DVD
- The multivision display may be defective

DIAGNOSIS**STEP 1. Check the DVD.**

Check that the DVD is free of dirt or scratch.

Q: Is the check result normal?

YES : Go to step 2.

NO : Clean the disk, use a disk without scratches and burrs, or remove the burrs from the disk. Then, reinsert the disk.

STEP 2. Temporarily replace the DVD with another DVD, and check the trouble symptom.

Check if the new DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : Replace the used DVD.

NO : Go to step 3.

STEP 3. Check the service data log for the MMCS service mode.

- (1) Display the service data log for the MMCS service mode. (Refer to [P.54A-443](#).)
- (2) Check that the service data log for drive is displayed.
- (3) Check that the service data log for monitor is displayed.
- (4) Check that the service data log for HDD is displayed.

Q: Is the service data log displayed?

YES (The service data log for drive is displayed.) :

Check for foreign materials or condensation. Repair if there is an abnormality, and then go to Step 4.

YES (The service data log for monitor or HDD is displayed.) : Abnormalities relating to high or low temperature may be present. Check if the DVD image is displayed on the monitor within the temperature range where the navigation and menu screens can be displayed. If the image is not displayed, go to Step 4.

NO : Go to step 4.

STEP 4. Perform "Network/Connect Line Check" in the MMCS service mode.

- (1) Display "Network/Connect Line Check" in the MMCS service mode. (Refer to [P.54A-443](#).)
- (2) Check if "DVD Drive OK" is displayed.
- (3) Check if "HDD Drive OK" is displayed.

Q: Is the check result normal?

YES : Go to step 5.

NO : Replace the multivision display.

STEP 5. Temporarily replace the multivision display, and check the trouble symptom.

After temporary replacement of the multivision display, check if the DVD image is displayed.

Q: Is the check result normal?

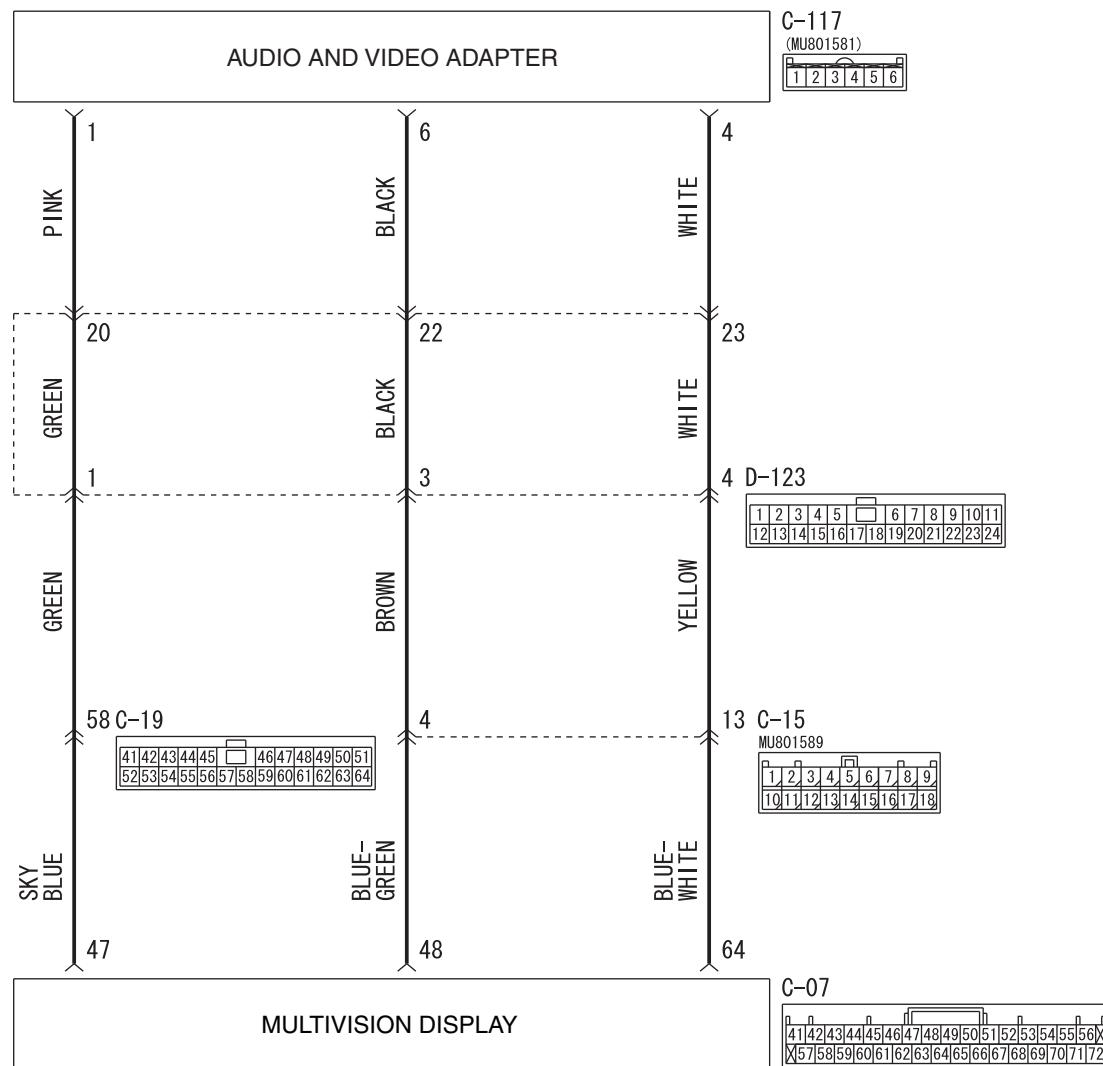
YES : Replace the multivision display.

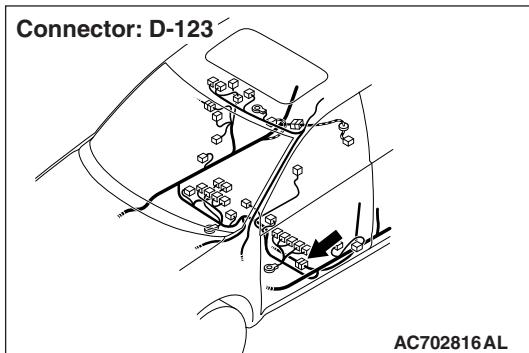
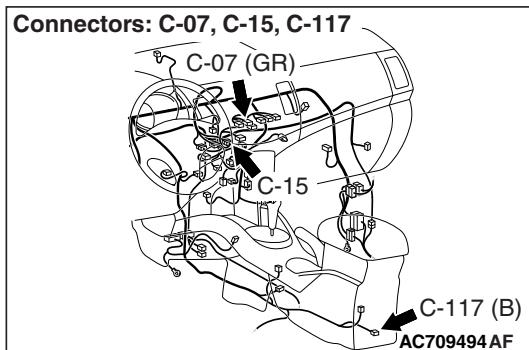
NO : Replace the DVD.

Inspection Procedure 11: The picture and sound of external input are not played.**CAUTION**

Whenever the multivision display is replaced, ensure that the power supply circuit and the grounding circuit are normal. (Check that the voltage is 10 V or more.)

Audio Adapter Communication Circuit





COMMENTS ON TROUBLE SYMPTOM

The wiring harness between audio and video adapter and multivision display, audio and video adapter, or multivision display may have a problem.

NOTE: Problem of the device to be connected and the connection problem between the audio and video adapter and the device is suspected. Thus, check the operation condition and connecting method of the devices to be connected to the multivision display and audio and video adapter before diagnosis.

PROBABLE CAUSES

- The multivision display may be defective
- The audio and video adaptor may be defective
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check of DVD picture

Check that the DVD picture is displayed normally.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Perform the troubleshooting related to the MMCS (Refer to [P.54A-486](#)).

STEP 2. Check the audio and video adapter.

Inspect the audio and video adapter.(Refer to [P.54A-560](#))

Q: Is the check result normal?

YES : Go to Step 3.

NO : Replace the audio and video adapter.

STEP 3. Check multivision display connector C-07 and audio and video adaptor connector C-117 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are multivision display connector C-07 and audio and video adaptor connector C-117 in good condition?

YES : Go to Step 4.

NO : Repair the connector concerned.

STEP 4. Check the wiring harness between multivision display connector C-07 (terminal 47, 48, 64) and audio and video adaptor connector C-117 (terminal 1, 6, 4).

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connectors D-123 and C-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-123 or C-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between multivision display connector C-07 (terminal 47, 48, 64) and audio and video adaptor connector C-117 (terminal 1, 6, 4) in good condition?

YES : Go to Step 5.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 5. Retest the system

Check that the external input is normal.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

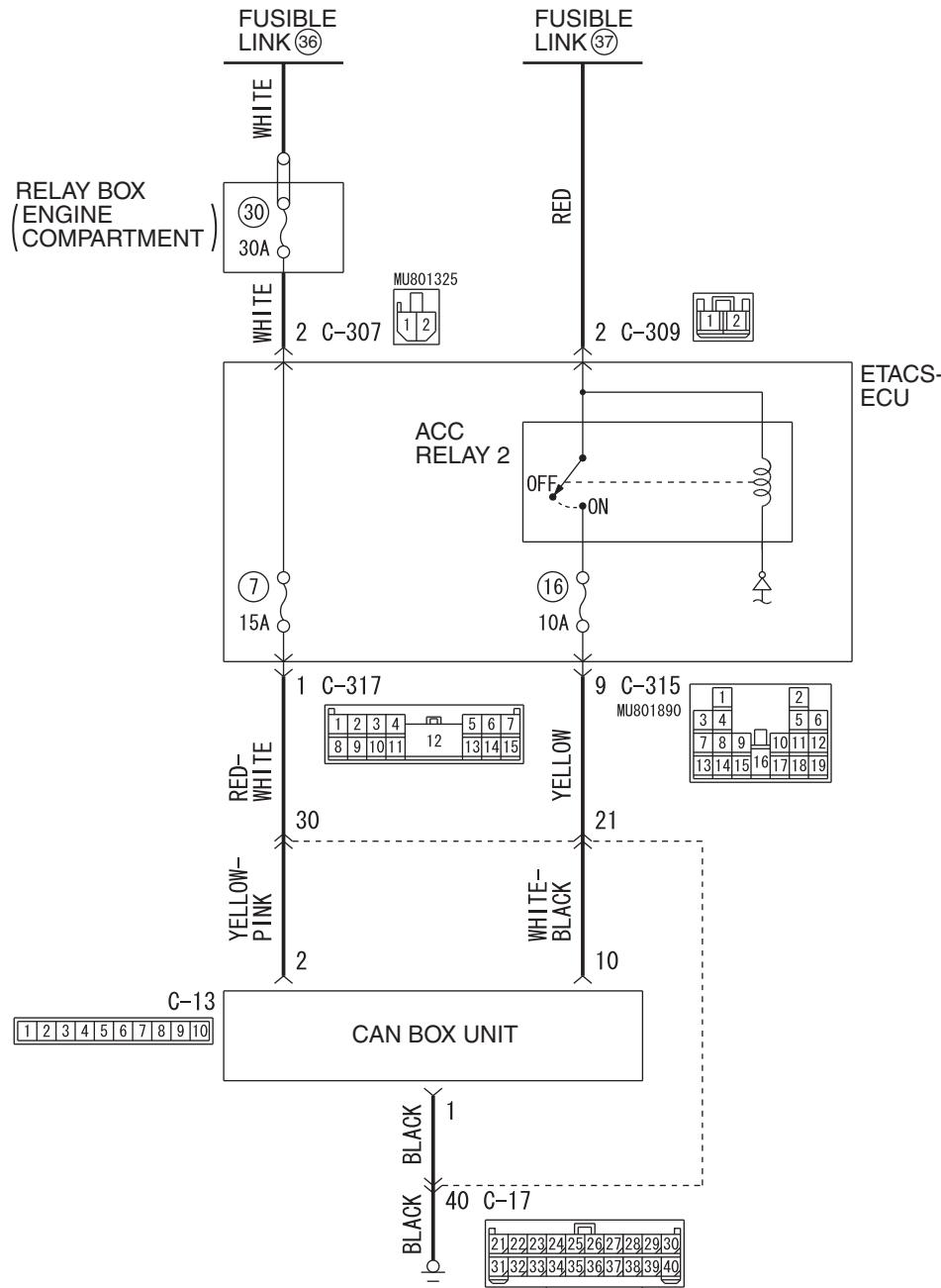
NO : Replace the audio and video adaptor.

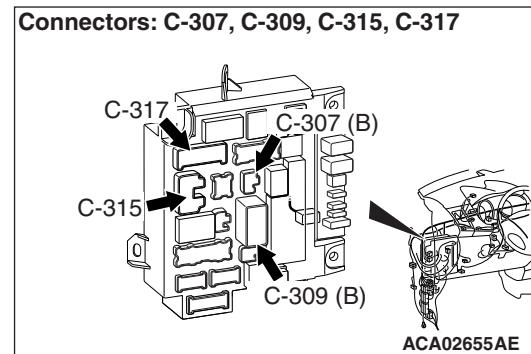
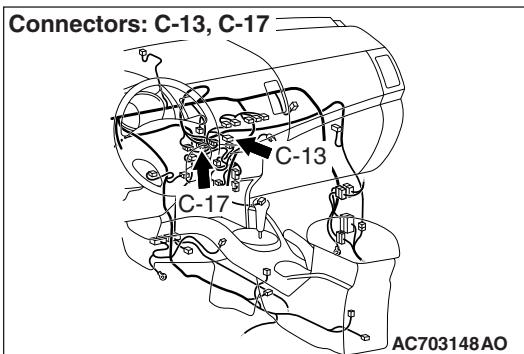
Inspection Procedure 12: Check the CAN box unit power supply circuit.

⚠ CAUTION

Whenever the CAN box unit is replaced, ensure that the power supply circuit and the grounding circuit are normal. (Check that the voltage is 10 V or more.)

CAN Box Unit Power Supply Circuit





TECHNICAL DESCRIPTION (COMMENT)

If the CAN box unit functions do not work at all, the CAN box unit power supply system, ground system, or CAN box unit may have a problem.

TROUBLESHOOTING HINTS

- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The CAN box unit may be defective

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check CAN box unit connectors C-13 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is CAN box unit connectors C-13 in good condition?

YES : Go to Step 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection

[P.00E-2.](#)

STEP 2. Check the ground circuit to the CAN box unit.

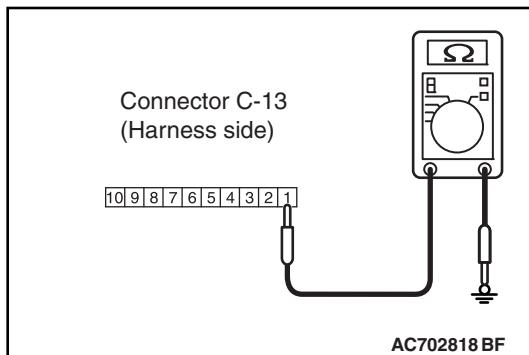
Measure the resistance at CAN box unit connectors C-13.

- (1) Disconnect CAN box unit connector C-13 and measure the resistance available at the wiring harness side of the connector.
- (2) Measure the resistance value between CAN box unit connector C-13 terminal 1 and ground.
 - The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Go to Step 3.



STEP 3. Check the wiring harness between CAN box unit connector C-13 (terminal 1) and the ground.

- Check the ground wires for open circuit.

Q: Is the wiring harness between CAN box unit connector C-13 (terminal 1) and the ground in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Check the battery power supply circuit to the CAN box unit. Measure the voltage at CAN box unit connectors C-13.

(1) Disconnect CAN box unit connectors C-13 measure the voltage available at the wiring harness side of the connector.

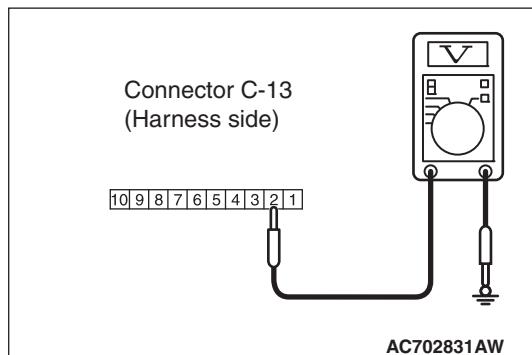
(2) Measure the voltage between CAN box unit connector C-13 terminal 2 and ground.

- **OK: The voltage should measure approximately 12 volts (battery positive voltage).**

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 6.

NO : Go to Step 5.

**STEP 5. Check the wiring harness between CAN box unit connector C-13 (terminal 2) and fusible link (36).**

- Check the power supply line for open circuit and short circuit.

NOTE: Also check intermediate connector C-17 and ETACS-ECU connectors C-307 and C-317 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 and ETACS-ECU connector C-307 or C-317 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between CAN box unit connector C-13 (terminal 2) and fusible link (36) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The system should communicate with the CAN box unit normally.

STEP 6. Using scan tool MB991958, check data list.

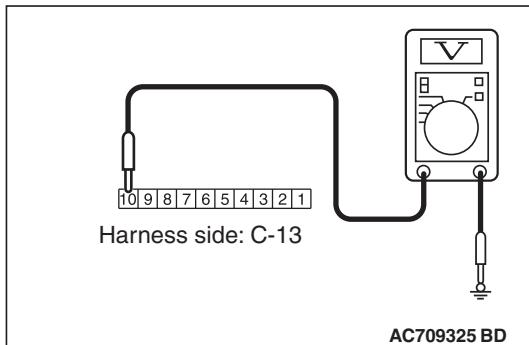
Check the input signal of ACC relay.

- Turn the ignition switch to the ACC position.

Item No.	Item name	Normal conditions
Item 288	ACC switch	ON

OK: Normal condition is displayed.**Q: Is the check result normal?****YES** : Go to Step 7.**NO** : Refer to GROUP 54A, ETACS, Diagnosis – Inspection Procedure 1 "The ignition switch (ACC) signal is not received [P.54A-786](#)."**STEP 7. Check the battery power supply circuit to the CAN box unit. Measure the voltage at CAN box unit connector C-13.**

- (1) Disconnect CAN box unit connectors C-13 measure the voltage available at the wiring harness side of the connector.
- (2) Measure the voltage between CAN box unit connector C-13 terminal 10 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?****YES** : Replace the CAN box unit.**NO** : Go to Step 8.**STEP 8. Voltage measurement at C-309 ETACS-ECU connector. Check the battery power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-309.**

- (1) Disconnect the connector, and measure at the wiring harness-side connector.
- (2) Measure the voltage between C-309 ETACS-ECU connector terminal 2 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).**Q: Is the measured voltage approximately 12 volts (battery positive voltage)?****YES** : Go to Step 9.**NO** : Go to Step 11.

STEP 9. Check ETACS-ECU connector C-315 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-315 in good condition?

YES : Go to Step 10.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 10. Check the wiring harness between CAN box unit connectors C-13 (terminal 10) and ETACS-ECU connector C-315 (terminal 9).

NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the power supply lines (battery power supply) for open circuit and short circuit.

Q: Is the wiring harness between CAN box unit connectors C-13 (terminal 10) and ETACS-ECU connector C-315 (terminal 9) in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 11. Check ETACS-ECU connector C-309 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-309 in good condition?

YES : Go to Step 12.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 12. Check the wiring harness between ETACS-ECU connector C-309 (terminal 2) and fusible link (37).

- Check the power supply lines (battery power supply) for open circuit and short circuit.

Q: Is the check result normal?

YES : Replace the ETACS-ECU.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

ETACS CUSTOMIZATION FUNCTION

M1546023000743

The following ETACS functions can be customized by selecting "Equipment" on the "Settings" screen of the multivision display.

Group name	Setting item	Setting value
Keyless Entry System	Turn Signal Lights Answerback	Lock:Once Unlock:Twice (initial condition) Lock:Once Unlock:Off Lock:Off Unlock:Twice Lock:Twice Unlock:Once Lock:Off Unlock:Once Lock:Twice Unlock:Off Lock:Off Unlock:Off
	Horn Answerback Sounds at Keyless Entry Lock <vehicles without auto light>	Off One Button Push Two Button Pushes (initial condition)
	Horn Answerback Sounds at Keyless Entry Lock <vehicles with auto light>	Off One Button Push One Button Push at Daytime Two Button Pushes (initial condition)
	Duration of Horn Answerback Sounds	Short (initial condition) Long

Group name	Setting item	Setting value
Keyless Operation System	Turn Signal Lights Answerback	Lock:Once Unlock:Twice (initial condition) Lock:Once Unlock:Off Lock:Off Unlock:Twice Lock:Twice Unlock:Once Lock:Off Unlock:Once Lock:Twice Unlock:Off Lock:Off Unlock:Off
	Horn Answerback Sounds at Keyless Entry Lock <vehicles without auto light>	Off One Button Push Two Button Pushes (initial condition)
	Horn Answerback Sounds at Keyless Entry Lock <vehicles with auto light>	Off One Button Push One Button Push at Daytime Two Button Pushes (initial condition)
	Duration of Horn Answerback Sounds	Short (initial condition) Long
	Door Entry and Engine Start Function	Both Function On (initial condition) Door Entry Function On Engine Start Function On Both Function Off
	Keyless Operation Answerback Beep Sounds	Off Sound at Keyless Operation (initial condition) Sound at Keyless Entry Sound at both Keyless Entry and Keyless Operation
	Time for Remote Unlock Inactivation after Locking	Off 3 seconds (initial condition) 5 seconds

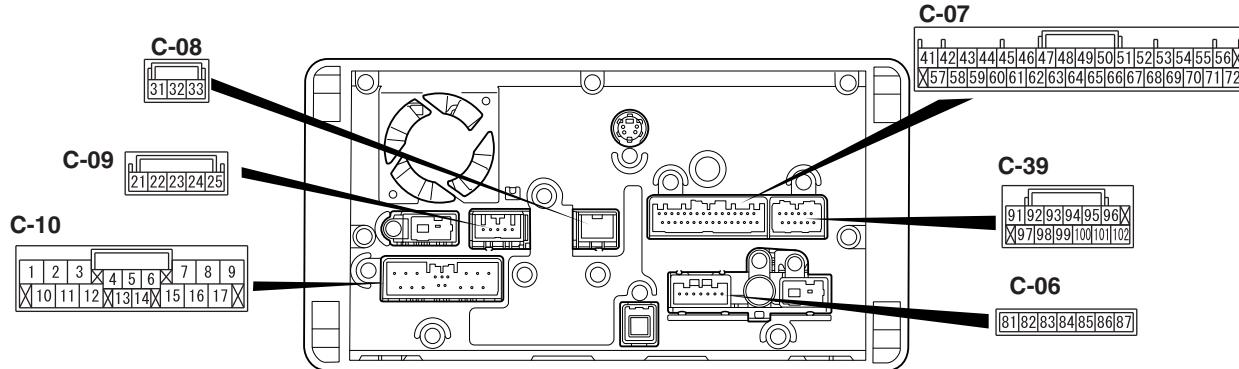
Group name	Setting item	Setting value
Wipers	Windshield Wipers Intermittent Operation <Vehicles without auto light >	4 seconds
		Variable
		Variable & Speed Sensitive (initial condition)
	Windshield Wipers Intermittent Operation <Vehicles with auto light >	4 seconds
		Variable
		Variable & Speed Sensitive
	Wipers Linked to Washer	Variable & Rain Sensitive (initial condition)
		Off
		On (initial condition)
	Comfort Washer	On with Delayed Finishing Wipe
		Off
Rear Wiper	Rear Wiper Intermittent Interval	On (initial condition)
		0 seconds
		4 seconds
		8 seconds (initial condition)
	Rear Wiper Continuous Operation	16 seconds
		Off
	Rear Wiper Activated when in Reverse	On (initial condition)
		When Rear Wiper is ON
		When Front or Rear Wiper is ON (initial condition)

Group name	Setting item	Setting value
Exterior Lights/Interior Lights	Headlight Auto-cutout Function	Off On (initial condition)
	Sensitivity for Auto Light <vehicles with auto light>	Early Somewhat Early Normal (initial condition) Somewhat Late Late
	Headlights ON when exiting Vehicle	Off 15 seconds 30 seconds (initial condition) 60 seconds 180 seconds
	Exterior Lights ON with Remote Unlock	Off Parking lights (initial condition) Head lights
	Interior Light Auto-cutout Time	Off 3 minutes 30 minutes (initial condition) 60 minutes
	Duration Dome Light Remains On after Door is Closed	0 seconds 7.5 seconds 15 seconds 30 seconds (initial condition) 60 seconds 120 seconds 180 seconds
Theft Alarm	Sensitivity for Theft sensor <Vehicles with theft-alarm sensor>	Level 1 High (initial condition) Level 2 Level 3 Level 4 Low
	Panic Alarm	Off On (initial condition)
Turn Signal	Operation in Key Position	Ignition Switch On or Accessory Ignition Switch On (initial condition)
	Lane-change Signals (Flash Three Times with 1 Touch)	Off On (initial condition)
	Activation Time for Lane-change Signals	Short (initial condition) Long

Group name	Setting item	Setting value
Power Door Locks	Automatic Relocking after Unlocked by Remote	30 seconds (initial condition)
		60 seconds
		120 seconds
		180 seconds
	Unlock Operation	All Doors
		Only Driver Door (initial condition)
	Automatic Unlock	Off (initial condition)
		When Transmission Shifted to Park
		When Ignition switch turned to Lock
Others	Auto Cut of ACC Power	No Auto Cut
		Auto Cut after 30 minutes (initial condition)
		Auto Cut after 60 minutes

MAIN UNIT TERMINAL VOLTAGE

M1546003300805

MULTIVISION DISPLAY

AC611894AI

C-06

Terminal No.	Signal symbol	Check condition	Terminal voltage
81	ANTENNA POWER ON	Ignition switch: ACC position	Battery positive voltage (DC)
82	AMP POWER ON	Ignition switch: ACC position	1 volt or less
83	IE-BUS (+)	Ignition switch: ACC position	More than 120mV
84	IE-BUS (-)	Ignition switch: ACC position	More than 120mV
85	SIRIUS-L	When the satellite radio tuner operation	1.2 Vrms (AC)
86	S-GND(SIRIUS-L/R)	Always	1 volt or less
87	SIRIUS-L	When the satellite radio tuner operation	1.2 Vrms (AC)

C-07

Terminal No.	Signal symbol	Check condition	Terminal voltage
43	CAN-BOX DATA RX	Ignition switch: ACC position	2 - Battery positive voltage(pulse)
45	HFM SIGNAL (+)	When the hands free module or USB box operation	1.2 Vrms (AC)
46	HFM SIGNAL (-)	When the hands free module or USB box operation	1 volt or less
47	VIDEO2-IN	When the image is input	1Vp-p (AC)
48	VIDEO2-R	When the sound is input	1.2Vrms (AC)
49	SEIELD (VIDEO2-L/R)	Always	1 volt or less
53	AUDIO REMOTE	Ignition switch: ACC position	3.3V (DC)
58	CAN-BOX DATA CLK	Ignition switch: ACC position	1 - 5V (pulse)
59	CAN-BOX DATA TX	Ignition switch: ACC position	5V (DC)
61	HFM SIGNAL (+)-L	When the hands free module or USB box operation	1.2 Vrms (AC)
63	SEIELD (VIDEO2-IN)	Always	1 volt or less
64	VIDEO2-L	When the sound is input	1.2Vrms (AC)
65	VIDEO2 DETECT	Always	1 volt or less
69	SEIELD (STEERING REMO)	Always	1 volt or less

C-08

Terminal No.	Signal symbol	Check condition	Terminal voltage
32	REAR SIGNAL	When the image is output	1 Vp-p (AC)
33	SHIELD	Always	1 V or less

C-09

Terminal No.	Signal symbol	Check condition	Terminal voltage
21	BATTERY (+)	Always	Battery positive voltage
24	PS-R	<ul style="list-style-type: none"> • Selector lever : R position • Ignition switch: ON position 	Hi : 5Mid : OpenLo : 0
25	GND	Always	1 volt or less

C-10

Terminal No.	Signal symbol	Check condition	Terminal voltage
2	SPEAKER RL (-)	When the sound is output	0 - Battery positive voltage (AC)
3	SPEAKER FL (-)	When the sound is output	0 - Battery positive voltage (AC)
6	AMP DATA	Ignition switch: ON	Battery positive voltage (DC)
7	SPEAKER FR (-)	When the sound is output	0 - Battery positive voltage (AC)
8	SPEAKER RR (-)	When the sound is output	0 - Battery positive voltage (AC)
9	MAIN GND	Always	1 volt or less
10	ILLUMINATION (+)	Taillight switch: ON	Battery positive voltage (DC)
11	SPEAKER RL (+)	When the sound is output	0 - Battery positive voltage (AC)
12	SPEAKER FL (+)	When the sound is output	0 - Battery positive voltage (AC)
13	VSS	Ignition switch: ON	0 - Battery positive voltage (pulse)
14	ACCESSORY (+)	Ignition switch: ACC position	Battery positive voltage (DC)
15	SPEAKER FR (+)	When the sound is output	0 - Battery positive voltage (AC)
16	SPEAKER RR (+)	When the sound is output	0 - Battery positive voltage (AC)
17	BATTERY (+)	Always	Battery positive voltage (DC)

C-39

Terminal No.	Signal symbol	Check condition	Terminal voltage
91	VCC (RC 6.5v)	Selector lever : R position Ignition switch: ON position	5.8 – 7.0V (DC)
92	GND	Always	1 volt or less
93	CAMERA SIGNAL	Selector lever : R position Ignition switch: ON position	1Vp-p (AC)
95	SEIELD (CAMERA)	Always	1 volt or less
96	CAMERA DETECT	Selector lever: R position Ignition switch: ON position	0 - 5V (DC)

CAN BOX UNIT



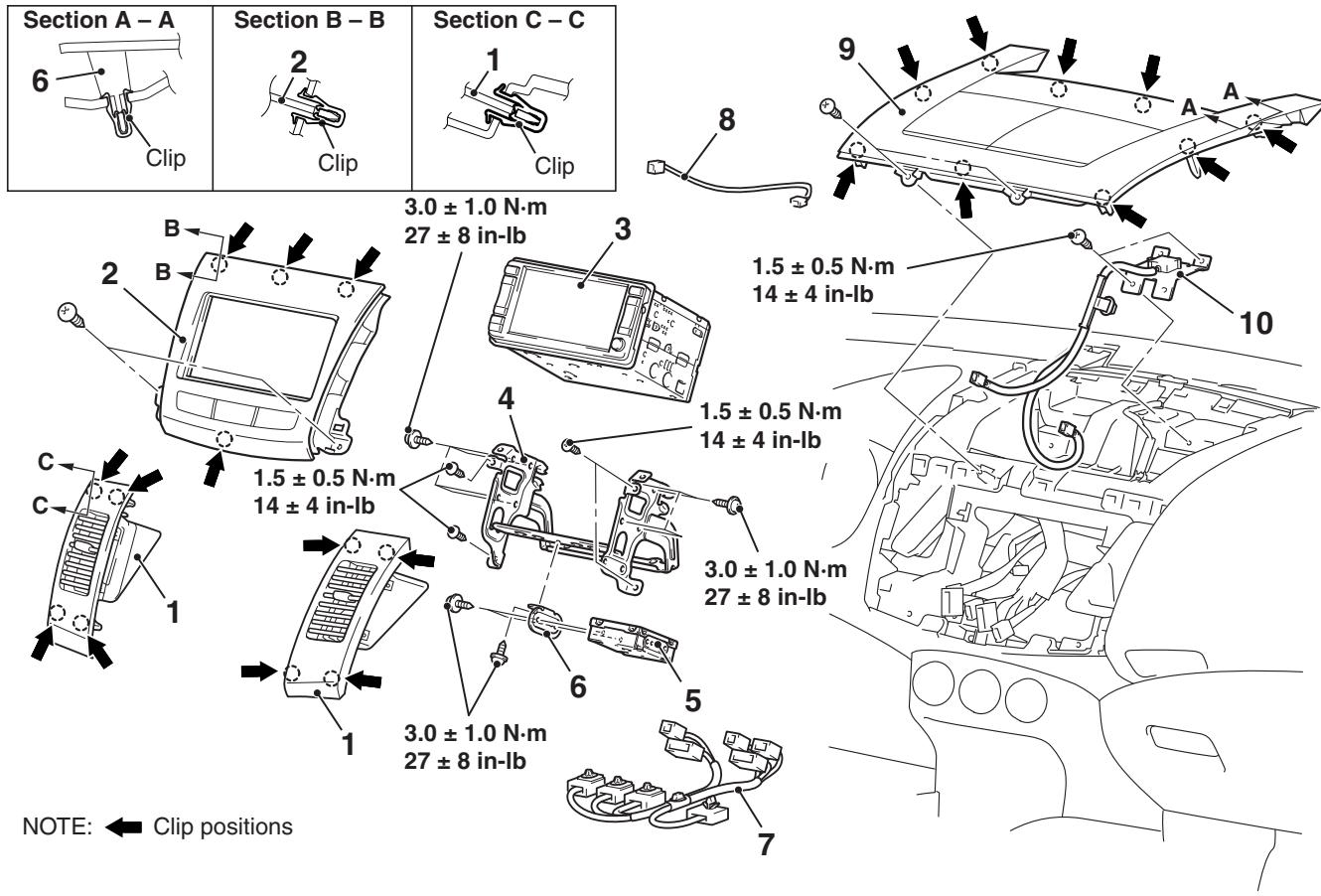
AC611333AK

C-13

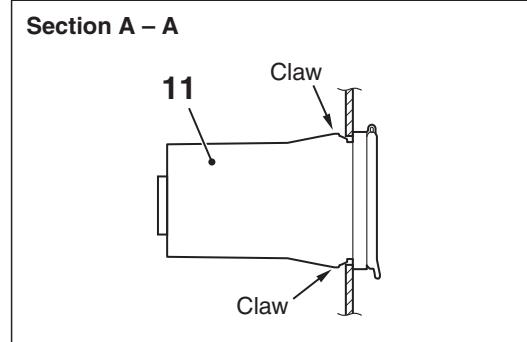
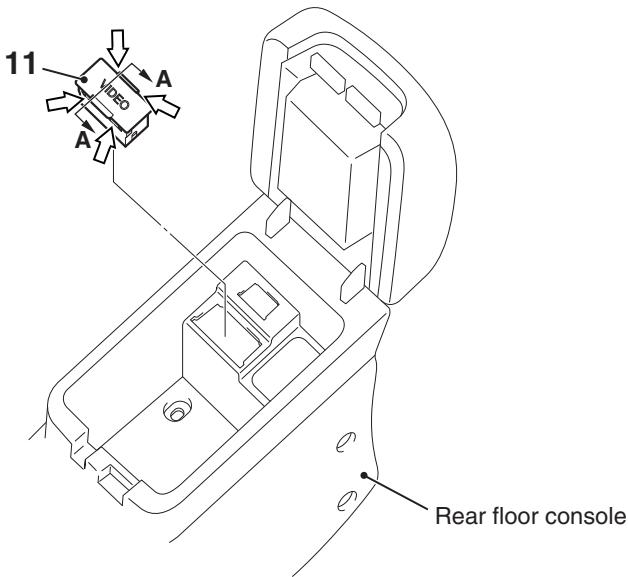
Terminal No.	Signal symbol	Check condition	Terminal voltage
1	GND	Always	1 volt or less
2	BATTERY (+)	Always	Battery positive voltage (DC)
4	TX (AND)	Ignition switch: ACC position	5V (DC)
5	RX (AND)	Ignition switch: ACC position	2 - Battery positive voltage (DC)
6	CAN-BOX DATA CLK	Ignition switch: ACC position	1 - 5V (pulse)
8	CAN-H	—	—
9	CAN-L	—	—
10	ACCESSORY (+)	Ignition switch: ACC position	Battery positive voltage (DC)

REMOVAL AND INSTALLATION

M1546001000790



AC703775AD



NOTE
← :Claw positions
AC900455AM

Multivision Display Removal Steps

1. Center outlet
2. Center panel assembly
3. Multivision display
4. Multivision display bracket
5. CAN box unit
6. CAN box unit bracket

Multivision Display Removal Steps (Continued)

7. Navigation harness
8. TMC cable

GPS Antenna Removal Steps

1. Center outlet
2. Center panel assembly

GPS Antenna Removal Steps

9. Center upper box
10. GPS antenna

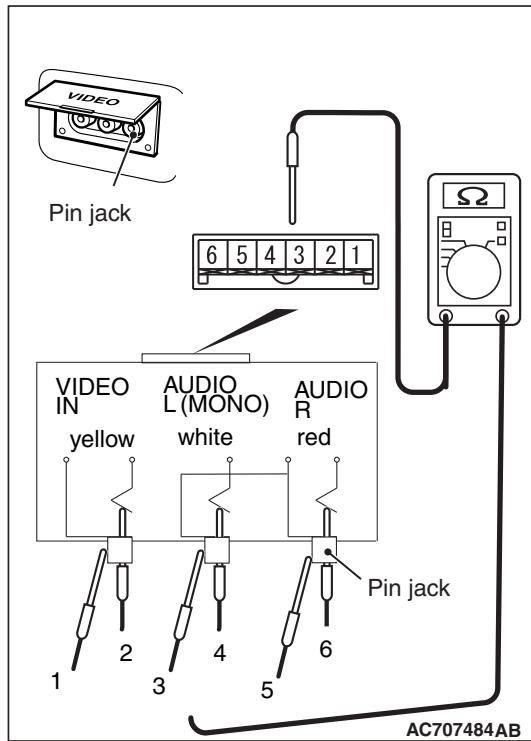
Audio And Video Adaptor**Removal Steps**

- Rear floor console assembly (Refer to GROUP 52A – Rear Floor Console Assembly [P.52A-8.](#).)
- 11. Audio and video adaptor

INSPECTION**AUDIO AND VIDEO ADAPTER CHECK**

M1546023200048

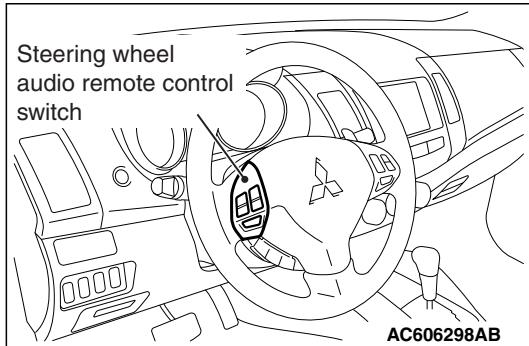
1. Remove the audio and video adapter.(Refer to [P.54A-559.](#))
2. Check that continuity exists between the terminal and the pin jack of audio and video adapter.



The connecting position of pin jack side circuit tester	Terminal number	Measurement value
1	2	Continuity exists. (2 Ω or less)
2	1	
3	5	
4	4	
5	5	
6	6	

STEERING WHEEL AUDIO REMOTE CONTROL SWITCH

GENERAL INFORMATION

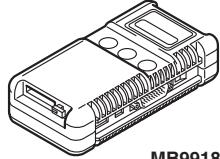
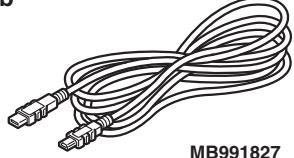
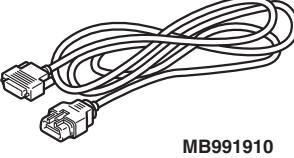
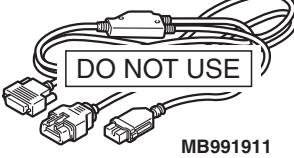
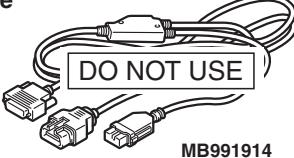
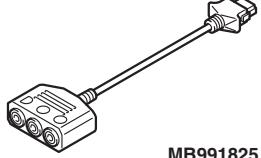
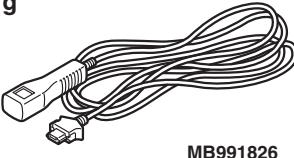


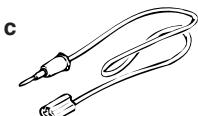
M1544000100657

The concentrated switch has been established onto the steering wheel spoke for allowing the remote control of audio.

SPECIAL TOOLS

M1544000600715

Tool	Tool number and name	Supersession	Application
a  MB991824	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826	MB991824-KIT <i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i>	⚠ CAUTION M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle. CAN bus diagnostics or service data check.
b  MB991827	M.U.T.-III sub assembly		
c  MB991910	a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable		
d  MB991911	c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system)		
e  MB991914	e. M.U.T.-III main harness C (for Chrysler models only)		
f  MB991825	f. M.U.T.-III measurement adapter		
g  MB991826 MB991958	g. M.U.T.-III trigger harness		

Tool	Tool number and name	Supersession	Application
   	<p>MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe</p>	General service tools	<p>Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector.</p> <p>a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection</p>

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 – Troubleshooting contents [P.00-7](#).

M1544004800647

TROUBLE SYMPTOM CHART

M1544004902576

Trouble symptom		Inspection Procedure No.	Reference page
Steering remote control switch does not function.	<Vehicles with radio and CD player>	1	P.54A-564
	<Vehicles with MMCS>	2	P.54A-568
The illumination of the steering remote control switch does not come on.		3	P.54A-572

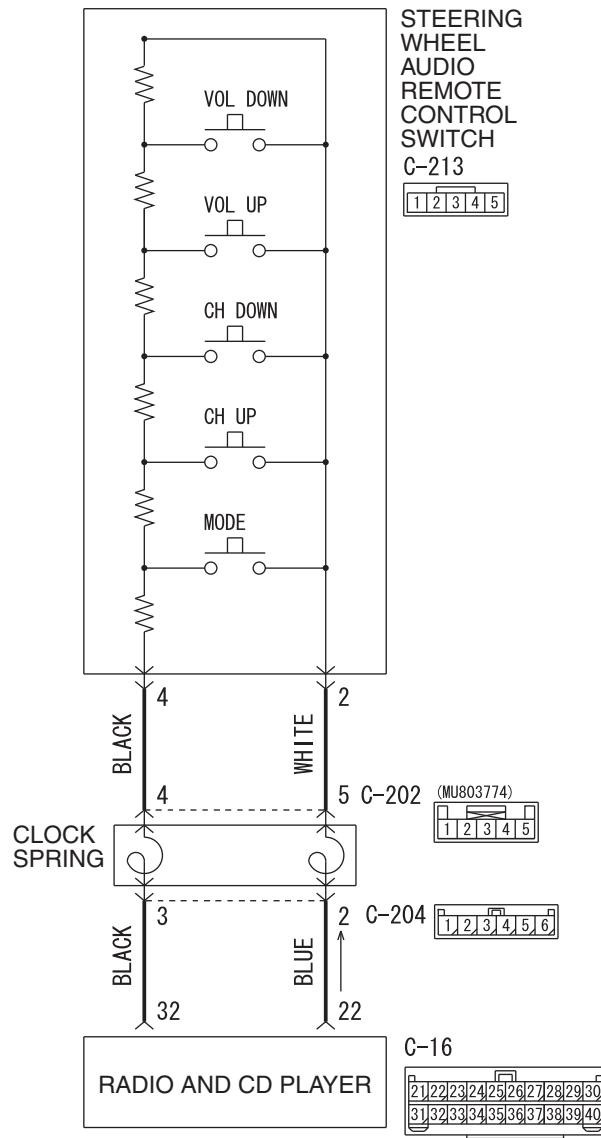
SYMPTOM PROCEDURES

Inspection Procedure 1: steering wheel audio remote control switch does not function. <vehicles with radio and CD player>

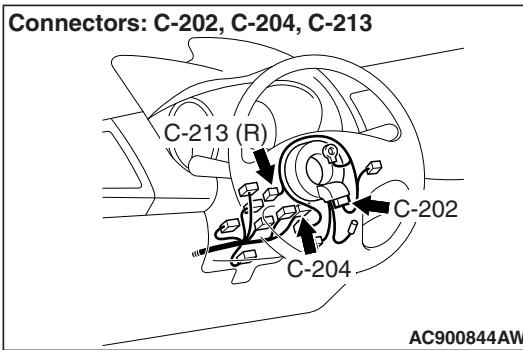
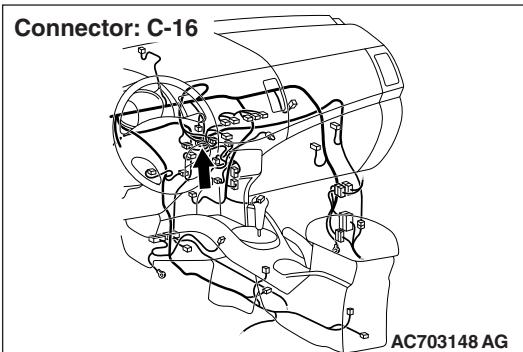
CAUTION

Before replacing the radio and CD player or steering wheel audio remote control switch , ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Steering Audio Switch Circuit



W9G54M023A



TECHNICAL DESCRIPTION (COMMENT)

The power supply circuit to the steering wheel audio remote control switch, the steering wheel audio remote control switch, the radio and CD player, or the clock spring may be defective.

TROUBLESHOOTING HINTS

- Malfunction of steering wheel audio remote control switch
- Malfunctions of radio and CD player
- Malfunction of the clock spring
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, check data list.

Check whether the service data below are normal.

- (1) Turn the ignition switch to "ON" position.
- (2) Operate each switch of the steering wheel audio remote control. Check whether the normal conditions listed below are displayed. (Refer to [P.54A-423](#).)

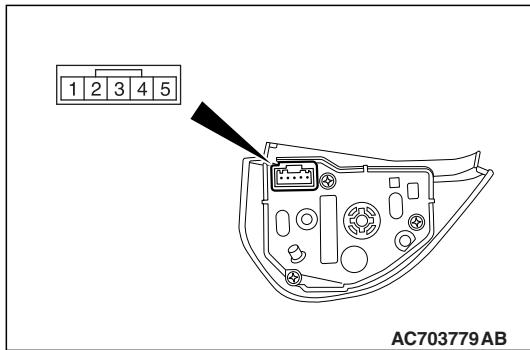
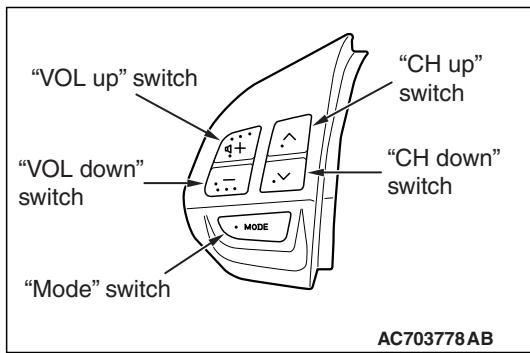
Item No.	Item name	Normal condition
Item 1	RADIO remote SW (SEEK-)	ON
Item 2	RADIO remote SW (SEEK+)	ON
Item 3	RADIO remote SW (MODE)	ON
Item 4	RADIO remote SW (VOL-)	ON
Item 5	RADIO remote SW (VOL+)	ON

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Replace the radio and CD player.

NO : Go to Step 2.

**STEP 2. Check the remote controlled radio switch.**

Remove the remote controlled radio switch. Then check continuity between the steering wheel audio remote control switch terminals.

Switch Position	Tester Connection	Measurement Value
No push	2 – 4	Approximately 71 kΩ
Mode		Approximately 270 Ω
CH up		Approximately 740 Ω
CH down		Approximately 1.3 kΩ
VOL up		Approximately 2.1 kΩ
VOL down		Approximately 3.1 kΩ

Q: Is the remote controlled radio switch in good condition?

YES : Go to Step 3.

NO : Replace the steering wheel audio remote control switch.

STEP 3. Check clock spring connector C-202 and C-204 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Are clock spring connector C-202 and C-204 in good condition?**

YES : Go to Step 4.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 4. Check the clock spring.

Check whether the clock spring is in good condition. Refer to GROUP 52B, Air bag module and clock spring [P.52B-447](#).

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the clock spring.

STEP 5. Check radio and CD player connector C-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Is radio and CD player connector C-16 in good condition?**

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 6. Check the wiring harness between radio and CD player connector C-16 (terminal 22, 32) and clock spring connector C-204 (terminal 2, 3).

- Check the communication lines for open and short circuit.

Q: Is the wiring harness between radio and CD player connector C-16 (terminal 22, 32) and clock spring connector C-204 (terminal 2, 3) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Check steering wheel audio remote control switch connector C-213 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is steering wheel audio remote control switch connector C-213 in good condition?

YES : Go to Step 8.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The steering wheel audio remote control switch should work normally.

STEP 8. Check the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 2, 4) and clock spring connector C-202 (terminal 5, 4).

- Check the communication lines for open and short circuit.

Q: Is the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 2, 4) and clock spring connector C-202 (terminal 5, 4) in good condition?

YES : Go to Step 9.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 9. Retest the system

Check whether you can operate the radio and CD player by using the steering wheel audio remote control switch.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

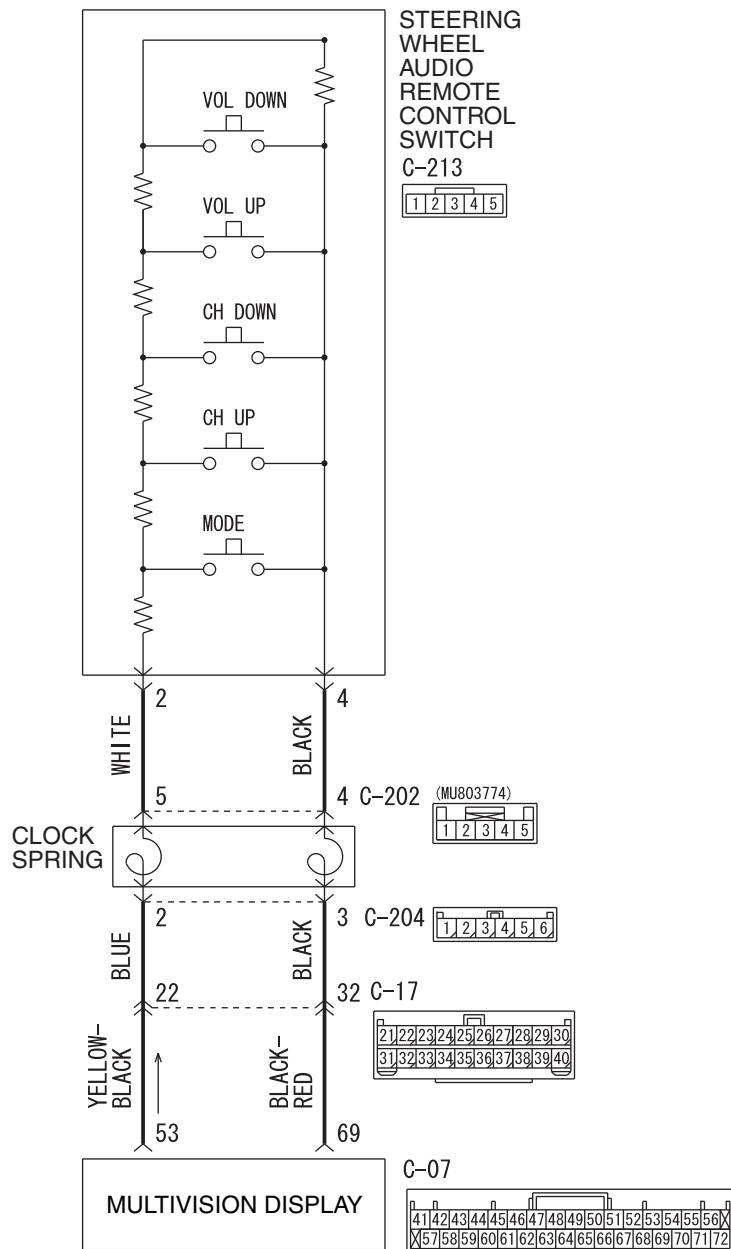
NO : Replace the radio and CD player.

Inspection Procedure 2: steering wheel audio remote control switch does not function. <vehicles with MMCS>

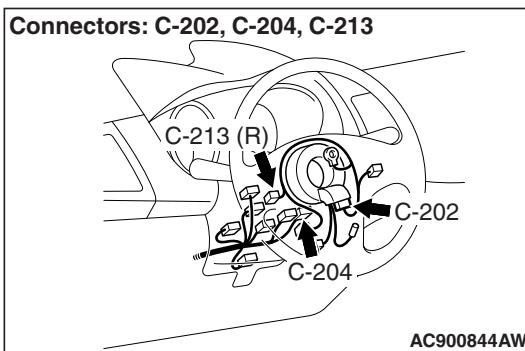
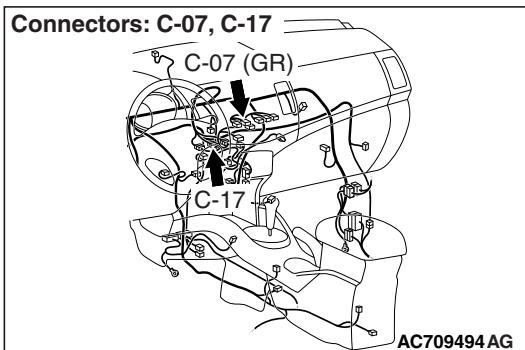
CAUTION

Before replacing the multivision display or steering wheel audio remote control switch, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Steering Audio Switch Circuit



W9G54M024A



TECHNICAL DESCRIPTION (COMMENT)

The power supply circuit to the steering wheel audio remote control switch, the multivision display, or the clock spring may be defective.

TROUBLESHOOTING HINTS

- Malfunction of steering wheel audio remote control switch
- Malfunctions of multivision display
- Malfunction of the clock spring
- Damaged harness wires and connectors

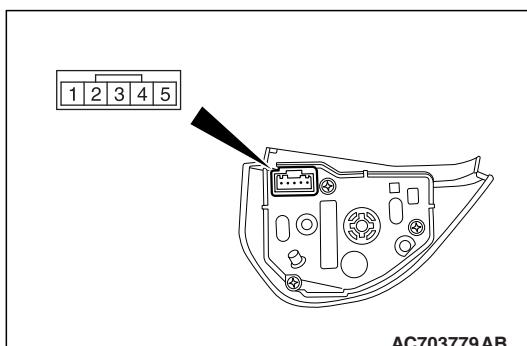
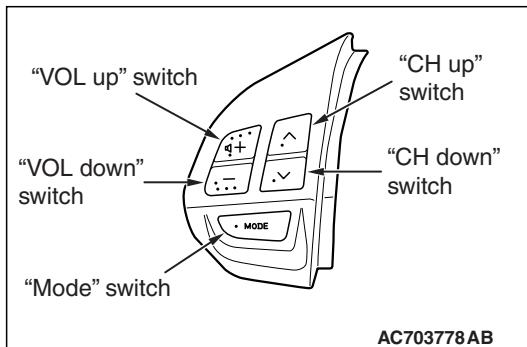
DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the remote controlled radio switch.

Remove the remote controlled radio switch. Then check continuity between the switch terminals.



Switch Position	Tester Connection	Measurement Value
No push	2 – 4	Approximately 71 kΩ
Mode		Approximately 270 Ω
CH up		Approximately 740 Ω
CH down		Approximately 1.3 kΩ
VOL up		Approximately 2.1 kΩ
VOL down		Approximately 3.1 kΩ

Q: Is the remote controlled radio switch in good condition?

YES : Go to Step 2.

NO : Replace the steering wheel audio remote control switch.

STEP 2. Check clock spring connector C-202 and C-204 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are clock spring connector C-202 and C-204 in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The steering wheel audio remote control switch should work normally.

STEP 3. Check the clock spring.

Check whether the clock spring is in good condition. Refer to GROUP 52B, Air bag module and clock spring [P.52B-447](#).

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the clock spring.

STEP 4. Check multivision display connector C-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-07 in good condition?

YES : Go to Step 5.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The steering wheel audio remote control switch should work normally.

STEP 5. Check the wiring harness between multivision display connector C-07 (terminal 53, 69) and clock spring connector C-204 (terminal 2, 3).

NOTE: Also check intermediate connector C-17 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-17 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

- Check the communication lines for open and short circuit.

Q: Is the wiring harness between multivision display connector C-07 (terminal 53, 69) and clock spring connector C-204 (terminal 2, 3) in good condition?

YES : Go to Step 6.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 6. Check steering wheel audio remote control switch connector C-213 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is steering wheel audio remote control switch connector C-213 in good condition?

YES : Go to Step 7.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#). The steering wheel audio remote control switch should work normally.

STEP 7. Check the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 2, 4) and clock spring connector C-202 (terminal 5, 4).

- Check the communication lines for open and short circuit.

Q: Is the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 2, 4) and clock spring connector C-202 (terminal 5, 4) in good condition?

YES : Go to Step 8.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 8. Retest the system

Check whether you can operate the multivision display by using the steering wheel audio remote control switch.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

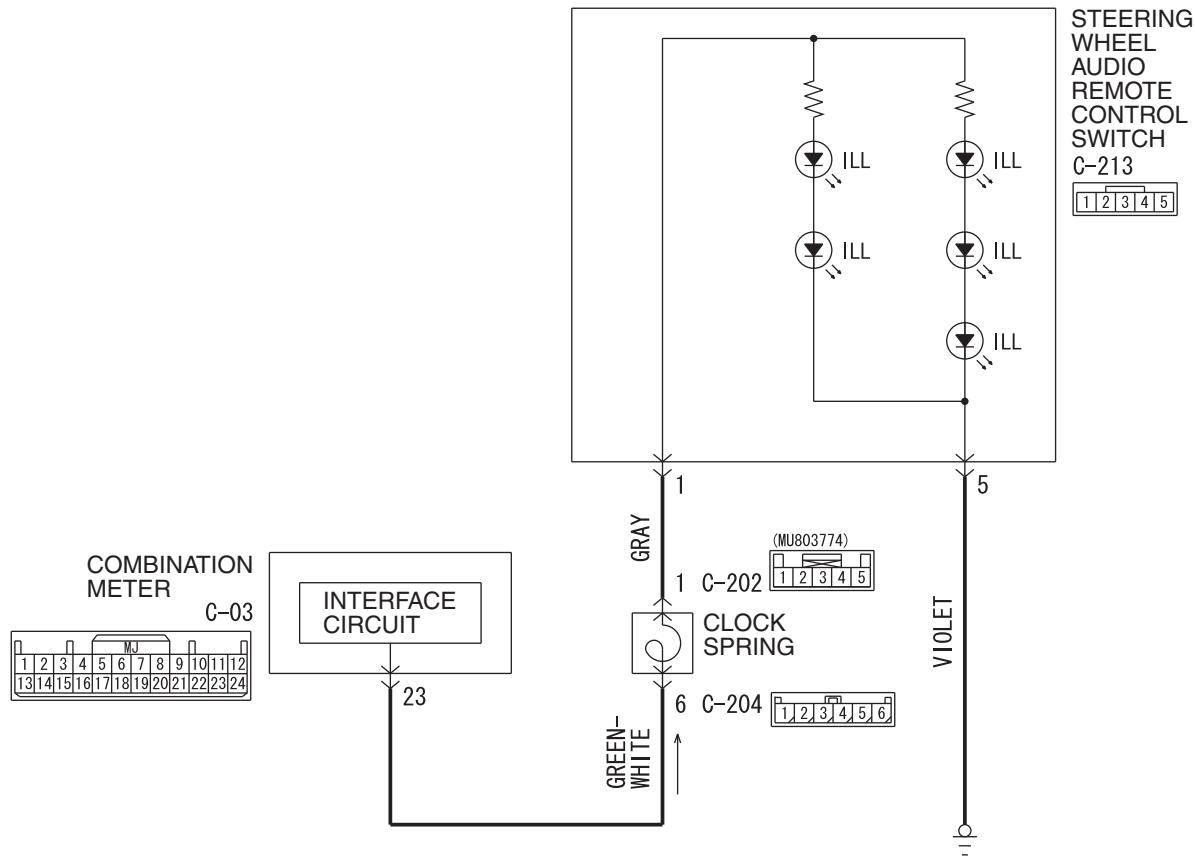
NO : Replace the multivision display.

Inspection Procedure 3: The illumination of the steering wheel audio remote control switch does not come on.

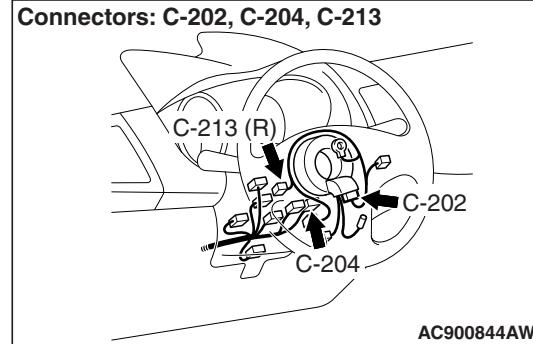
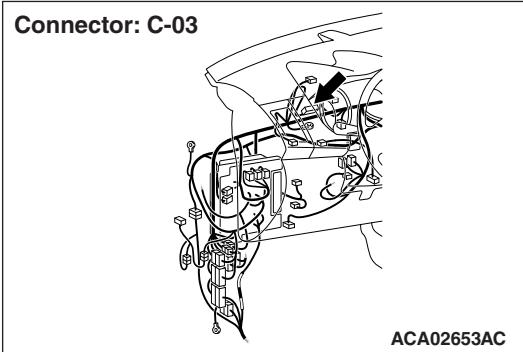
CAUTION

Before replacing the radio and CD player or steering wheel audio remote control switch, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Steering Audio Switch Illumination Circuit



W9G54M025A



TECHNICAL DESCRIPTION (COMMENT)

The power supply circuit to the steering wheel audio remote control switch, the steering wheel audio remote control switch, the combination meter, or the clock spring may be defective.

TROUBLESHOOTING HINTS

- Malfunction of steering wheel audio remote control switch
- Malfunctions of combination meter
- Malfunction of the clock spring
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the combination meter.

Check whether the combination meter works normally.

Q: Does the combination meter operate normally?

YES : Go to Step 2.

NO : Diagnose the combination meter. (Refer to [P.54A-34.](#))

STEP 2. Check steering wheel audio remote control switch connector C-213 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is steering wheel audio remote control switch connector C-213 in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2.](#)

STEP 3. Check the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 5) and ground.

- Check the ground wire for open circuit .

Q: Is the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 5) and ground in good condition?

YES : Go to Step 4.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Check clock spring connectors C-202 and C-204 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are clock spring connectors C-202 and C-204 in good condition?

YES : Go to Step 5.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2.](#)

STEP 5. Check the clock spring.

Check whether the clock spring is in good condition (Refer to GROUP 52B, Air bag module and clock spring [P.52B-447](#)).

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the clock spring.

STEP 6. Check the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 1) and clock spring connector C-202 (terminal 1).

- Check the power supply lines for open and short circuit.

Q: Is the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 1) and clock spring connector C-202 (terminal 1) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Check combination meter connector C-03 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is combination meter connector C-03 in good condition?

YES : Go to Step 8.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 8. Check the wiring harness between combination meter connector C-03 (terminal 23) and clock spring connector C-204 (terminal 6).

- Check the power supply lines for open and short circuit.

Q: Is the wiring harness between combination meter connector C-03 (terminal 23) and clock spring connector C-204 (terminal 6) in good condition?

YES : Go to Step 9.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 9. Retest the system

Check whether the illumination of the steering wheel audio remote control switch comes on normally.

Q: Doe the illumination of the steering wheel audio remote control switch comes on normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

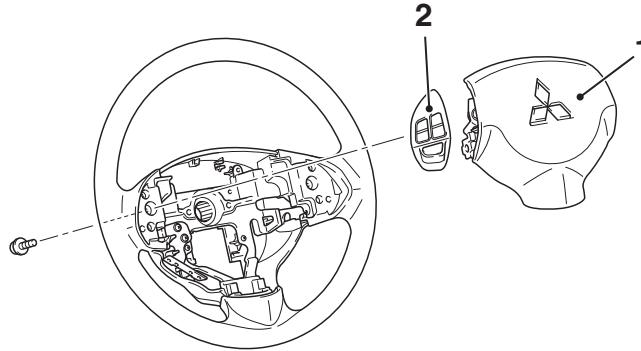
NO : Replace the steering wheel audio remote control switch.

REMOVAL AND INSTALLATION

M1544015600238

⚠ WARNING

- *Before removing the air bag module, refer to GROUP 52B, Service Precautions ([P.52B-25](#)) and Air Bag Module and Clock Spring ([P.52B-439](#)).*
- *When removing and installing the steering wheel, do not let it bump against the air bag module.*



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Removal Steps

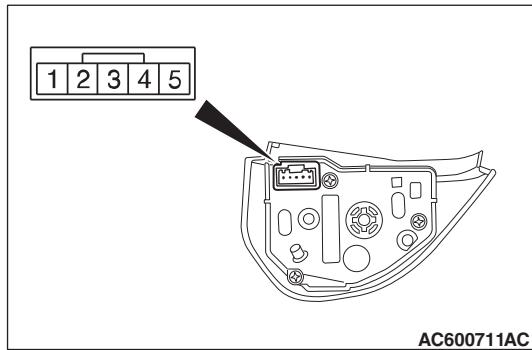
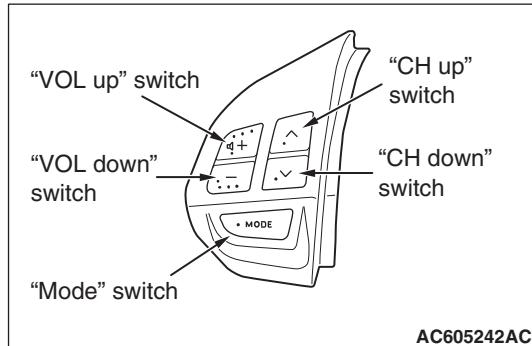
1. Air bag module (Refer to GROUP 52B, Air Bag Module and Clock Spring [P.52B-439](#).)
2. Steering wheel audio remote control switch

STEERING WHEEL AUDIO REMOTE CONTROL
SWITCH INSPECTION

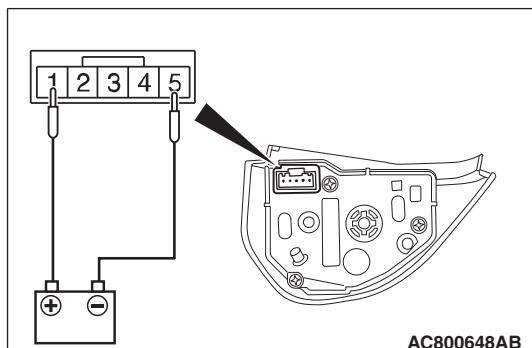
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STEERING WHEEL AUDIO REMOTE CONTROL
SWITCH CHECK

Use an ohmmeter to measure the resistance value between the terminal.



Switch Position	Tester Connection	Measurement Value
No push	2 – 3	Approximately 3.1 kΩ
	2 – 4	Approximately 71 kΩ
"Mode" switch		Approximately 270 Ω
"CH up" switch		Approximately 740 Ω
"CH down" switch		Approximately 1.3 kΩ
"VOL up" switch		Approximately 2.1 kΩ
"VOL down" switch		Approximately 3.1 kΩ



ILLUMINATION CHECK

Apply the battery voltage of steering wheel audio remote control switch connector terminal No. 1 and 5, and check if the steering wheel audio remote control switch illuminates.

NOTE: Make sure that the polarity is correct.

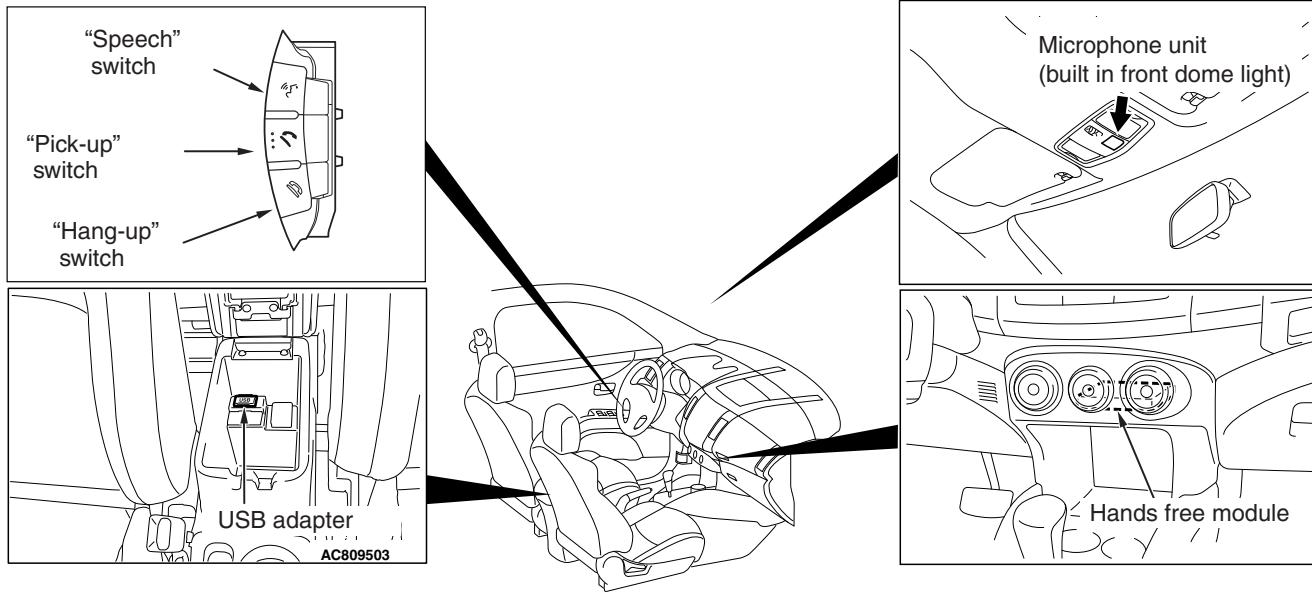
HANDS FREE MODULE

GENERAL INFORMATION

The hands free module enables handsfree talking and playing music by bluetooth® connection with bluetooth® device (mobile phone or music player). In addition, music can be played by connecting the USB-compatible device to the USB adapter.

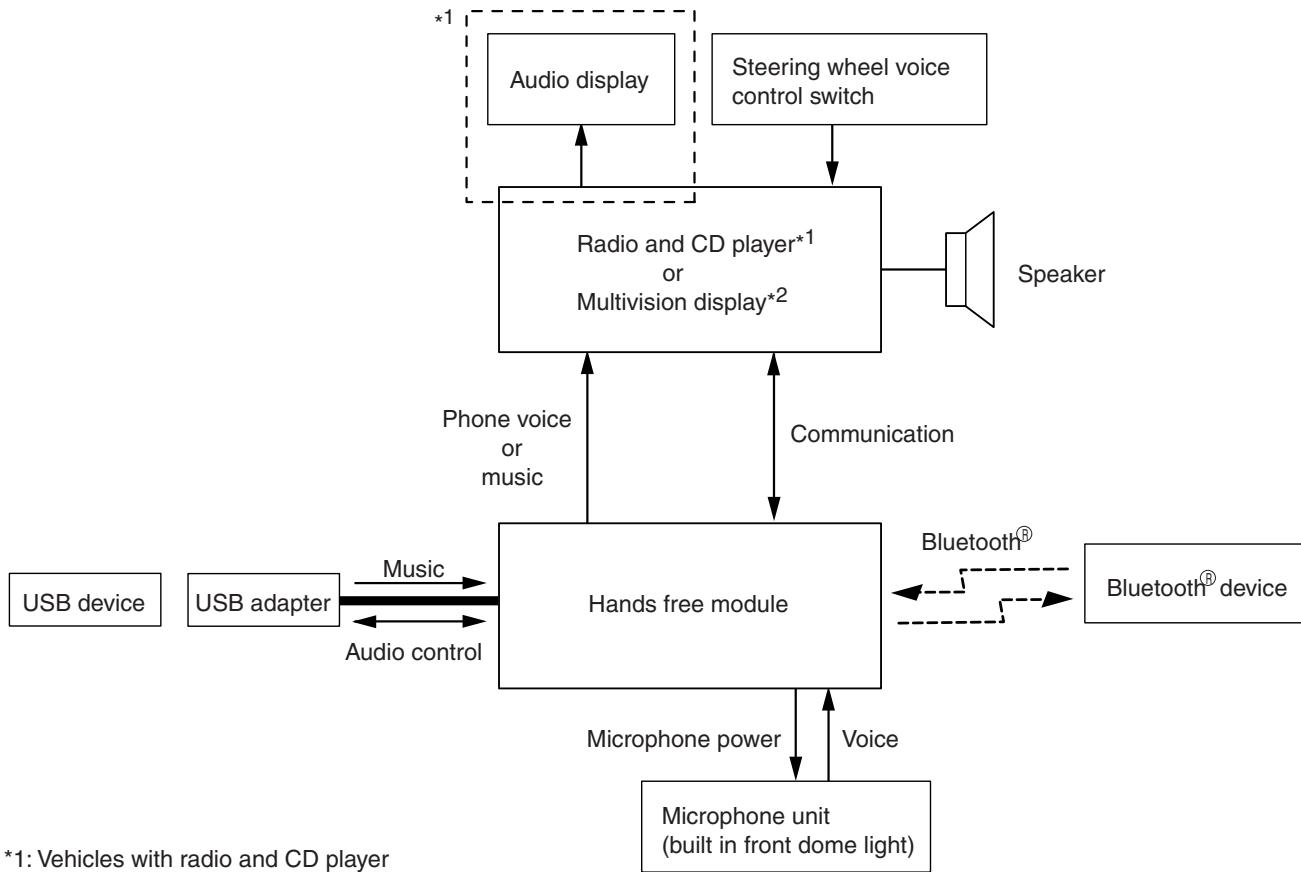
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Construction diagram



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System block diagram



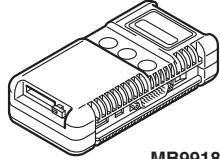
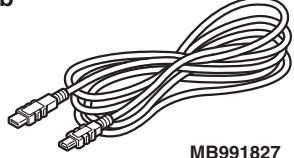
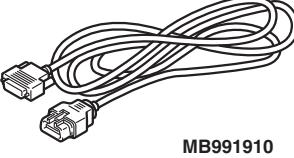
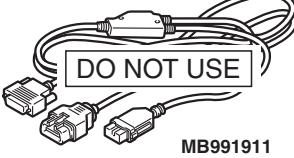
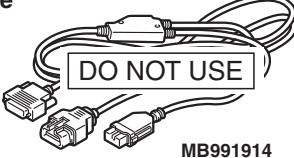
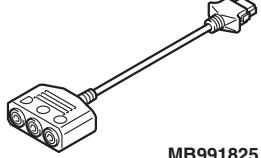
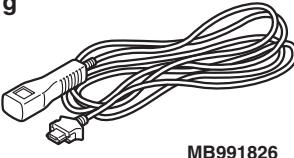
*1: Vehicles with radio and CD player

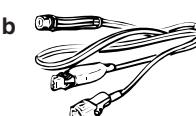
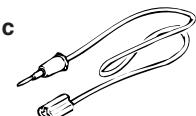
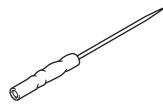
*2: Vehicles with MMCS

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SPECIAL TOOLS

M1544403500102

Tool	Tool number and name	Supersession	Application
a  MB991824	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826	MB991824-KIT <i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i>	⚠ CAUTION M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle. CAN bus diagnostics, diagnostic trouble code or data list check.
b  MB991827	M.U.T.-III sub-assembly		
c  MB991910	a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable		
d  MB991911	c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system)		
e  MB991914	e. M.U.T.-III main harness C (for Chrysler models only)		
f  MB991825	f. M.U.T.-III measurement adapter		
g  MB991826 MB991958	g. M.U.T.-III trigger harness		

Tool	Tool number and name	Supersession	Application
   	<p>MB991223</p> <p>a. MB991219</p> <p>b. MB991220</p> <p>c. MB991221</p> <p>d. MB991222</p> <p>Harness set</p> <p>a. Check harness</p> <p>b. LED harness</p> <p>c. LED harness adapter</p> <p>d. Probe</p>	General service tool (jumper)	<p>Continuity check and voltage measurement at harness wire or connector</p> <p>a. For checking connector pin contact pressure</p> <p>b. For checking power supply circuit</p> <p>c. For checking power supply circuit</p> <p>d. For connecting a locally sourced tester</p>
	<p>MB992006</p> <p>Extra fine probe</p>	—	Continuity check and voltage measurement at harness wire or connector

DIAGNOSIS

INTRODUCTION TO DIAGNOSIS

Prior to the troubleshooting, check if the causes below can be the case. If any, take actions according to the solution method.

Pairing of the bluetooth®device (mobile phone or music player) and hands free module cannot be made.

The hands free module does not recognize the bluetooth®device (mobile phone or music player).

Cause	SOLUTION
The power of the bluetooth®device is off.	With the power of the bluetooth®device turned on, check the trouble symptom again.
In addition to the bluetooth®device to be recognized, two or more bluetooth®device exist in the vehicle.	<ul style="list-style-type: none">With the voice operation, select the device to be connected.Select the device to be connected on the multivision display. <Vehicles with MMCS>
Power supply abnormality in the hands free module, or communication error between the radio and CD player or multivision display, and hands free module.	Turn the ignition switch to the "ON" position and check if iPod connected to the USB adapter or USB device can be played. If the music cannot be played, the power supply of hands free module or the communication between the radio and CD player or multivision display, and hands free module may have a problem. Perform the Inspection procedure 2: The USB adapter data cannot be replayed. (Refer to P.54A-598 <Vehicles with radio and CD player> or P.54A-601 <Vehicles with MMCS>.) If the diagnosis mode of hands free module can be made an entry, the module status can be checked by the hands free module self-check, however, if the power supply of hands free module, or the communication with the radio and CD player or multivision display may have a problem, the module status can not be checked.(Refer to P.54A-584 <Vehicles with radio and CD player> or P.54A-586 <Vehicles with MMCS>.)

Calling cannot be made using the hands free cellular phone function.

Bluetooth®The music player cannot be replayed.

The music data received from the USB adapter cannot be replayed.

Cause	SOLUTION
The Bluetooth® connection is not made between the hands free module and bluetooth®device.	Connect the bluetooth®device to the hands free module via Bluetooth®.
The vehicle is not located in the communication area of the cellular phone.	Check the radio wave condition of the cellular phone shown on the display, or check the radio wave condition shown on the cellular phone itself.
AUDIO communication error between the hands free module and the radio and CD player or multivision display.	Check if the data of music file sent to the hands free module can be replayed. If there are no problems, the communication between the hands free module and the radio and CD player or multivision display may have a problem.

The voice recognition operation cannot be performed.

The communication voice cannot be heard by the other party.

Cause	SOLUTION
During the conversation, the microphone unit is set to mute.	During the conversation, press the speech switch and set to mute off by voice recognition. Perform Inspection Procedure 3: When the speech switch is pressed, the voice information is output, but the voice recognition is not performed. (Refer to P.54A-604 .)
The hands free module cannot recognize the speech voice because of noise or others.	Minimize the noise by turning off the A/C, closing the window, and stopping the engine, and then clearly speak up near the microphone unit. Or, customize the voice recognition using the speaker enrollment function.
The microphone unit, or the connection has a problem.	The microphone unit may have a problem. Perform Inspection Procedure 3: When the speech switch is pressed, the voice information is output, but the voice recognition is not performed. (Refer to P.54A-604 .) The connection with the microphone unit can be checked by the microphone check result on the diagnosis mode. (Refer to P.54A-584 <Vehicles with radio and CD player> or P.54A-586 <Vehicles with MMCS>.)
The speech switch, or the connection has a problem.	If the voice information is not output when the speech switch is operated, the steering wheel voice control switch has a problem. Perform the Inspection Procedure 4: When the speech switch is pressed, the voice information is not output. (Refer to P.54A-607 <Vehicles with radio and CD player> or P.54A-611 <Vehicles with MMCS>.)

A call cannot be received when the pick-up switch (Steering wheel voice control switch) is pressed.

The voice information cannot be output from the speaker.

Cause	SOLUTION
The Bluetooth® connection is not made between the hands free module and cellular phone.	Connect the cellular phone to the hands free module via Bluetooth®.
The pick-up switch (Steering wheel voice control switch), or the connection has a problem.	If the voice information is not output when the speech switch is operated, the steering wheel voice control switch has a problem. Perform the Inspection Procedure 4: When the speech switch is pressed, the voice information is not output. (Refer to P.54A-607 <Vehicles with radio and CD player> or P.54A-611 <Vehicles with MMCS>.)

Voice guide "Unable to obtain vehicle speed. Please try again or contact your dealer for service" is sent from the speaker.

Cause	SOLUTION
The hands free module cannot receive the vehicle speed signal from the radio and CD player or multivision display.	If the vehicle speed signal the hands free module receives has a problem, the vehicle speed signal of radio and CD player or multivision display, or the hands free module may have a problem. Perform the Inspection Procedure 8: Voice guide "Unable to obtain vehicle speed. Please try again or contact your dealer for service" is sent from the speaker. (Refer to P.54A-621 <Vehicles with radio and CD player> or P.54A-623 <Vehicles with MMCS>.)

STANDARD FLOW OF DIAGNOSTIC
TROUBLESHOOTING

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Refer to GROUP 00, Troubleshooting contents [P.00-7](#).

DIAGNOSIS FUNCTION

M1544403100182

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

CAUTION

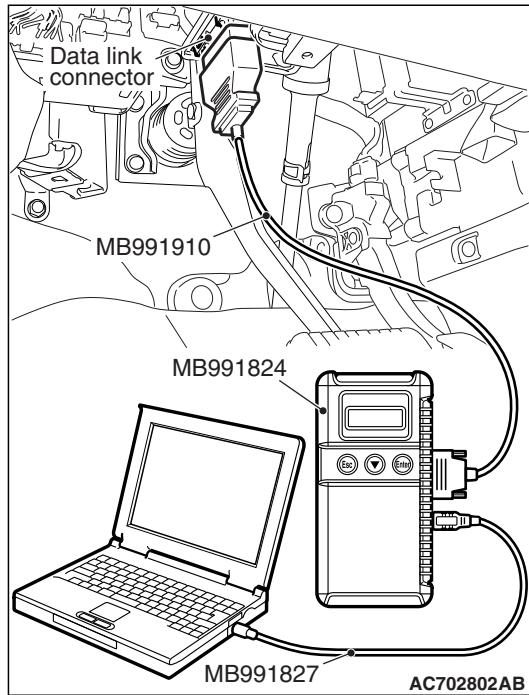
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.

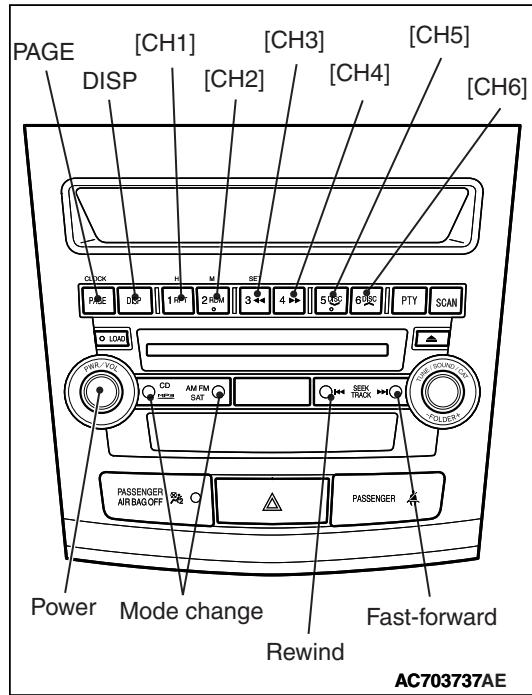
7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.



DIAGNOSIS MODE <VEHICLES WITH RADIO AND CD PLAYER>

M1544404800032



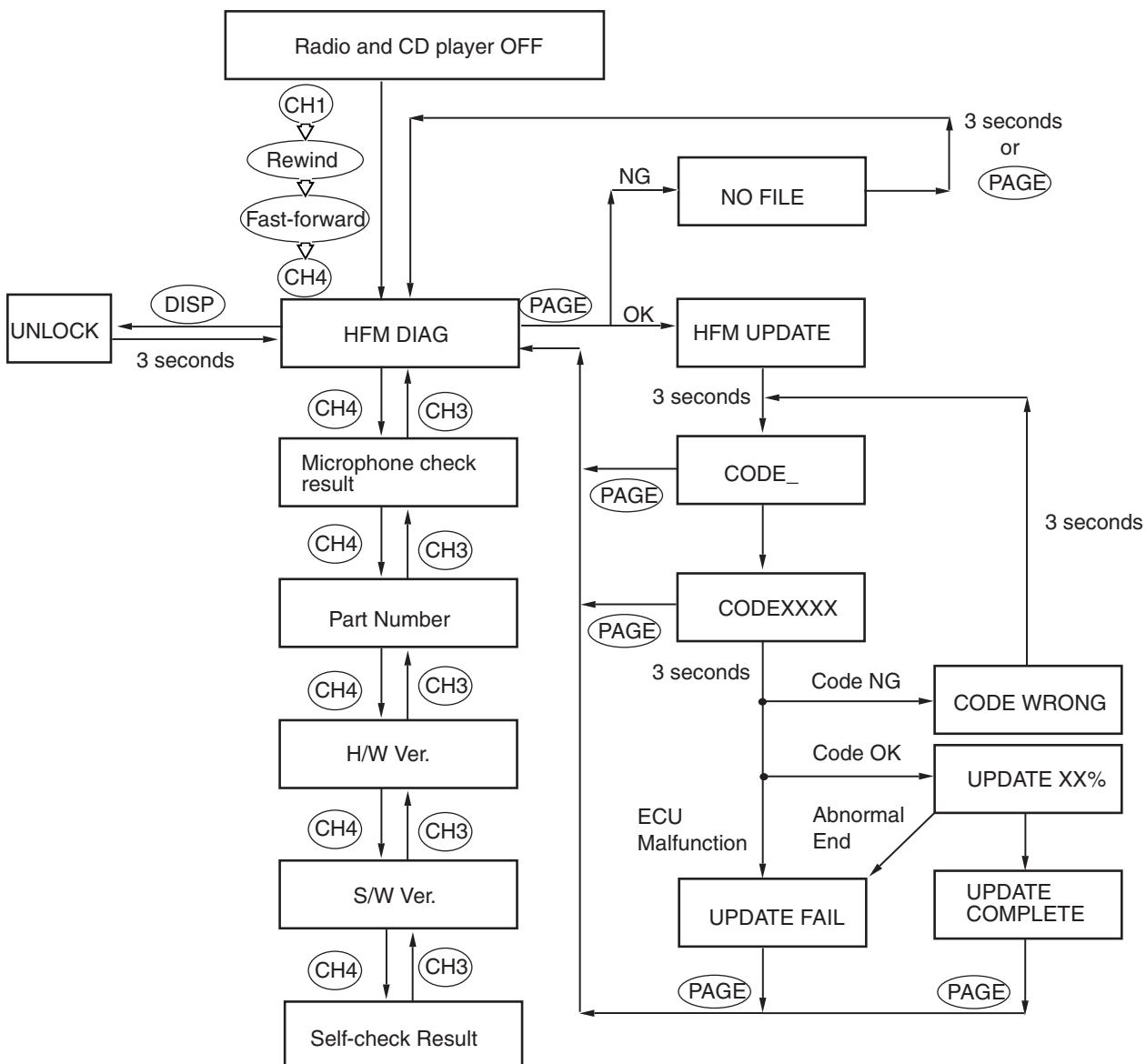
Enter the diagnosis mode according to the following steps:

1. Turn the Ignition switch to the "ACC" or "ON" position and switch off the radio and CD player.
2. Press the following buttons in that order within sixty seconds from step (1).
 - (1) [CH1] button.
 - (2) Rewind button.
 - (3) Fast-forward button.
 - (4) [CH4] button.

NOTE:

- When the "Power" button of the radio and CD player is pressed during the diagnosis mode, the diagnosis mode will be cancelled, thus switching off the radio and CD player. However, if the "Power" button is pressed while the hands free module is being updated, the update will not be cancelled.
- When the "Mode change" button (FM/AM, CD) is pressed during diagnosis mode except the hands free module update, the diagnosis mode will be cancelled and relevant operation will be carried out.
- When an invalid button is pressed during diagnosis mode except the hands free module update, the diagnosis mode will be cancelled, thus switching off the radio and CD player.
- During the diagnosis mode, voice which is input through the microphone unit is played through a relevant loudspeaker.

3. "HFM DIAG" is displayed.



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Description in the illustrations	Actual display	Condition
UNLOCK	UNLOCK	Four-digit password, which has been set by the security function, will be erased.
HFM DIAG	HFM DIAG	Displayed when the diagnosis mode is being entered.
Result of microphone check	MIC Short	Displayed when the line between the microphone and the hands free module is short-circuited.
	MIC Open	Displayed when the line between the microphone and the hands free module is open-circuited.
	MIC OK	Normal status (the line between the microphone and the hands free module is not open/short-circuited)
Part number	PN XXXXXXXX	Eight-digit part number is displayed.
H/W Ver.	H/W XX	Two-digit hardware version is displayed.

Description in the illustrations	Actual display	Condition
S/W Ver.	S/W XXXXXX	Seven-digit software version is displayed.
Self-check result	HFM OK	Displayed when the hands free module is not defective.
	HFM Error	Displayed when the hands free module is suspected to be defective. <i>NOTE: Turn the ignition switch to the "OFF" position once when "ERROR" is displayed. Enter the diagnosis mode by turning the ignition switch to the "ON" position again. If the self-check result shows "ERROR" again, the hands free module is determined to be defective.</i>
NO FILE	NO file	A USB device stores no data.
HFM UPDATE	HFM Update	Displayed when the hands free module update file is found, at the transition to the hands free module update mode, in the USB memory that is connected to the USB adapter.
CODE_	CODE_	Input four-digit code for update. Use the "CH" button when a code is input.
CODE XXXX	Code XXXX	XXXX after Code shows the numbers from 1 to 6, corresponding to the buttons "CH1" to "CH6".
CODE WRONG	Code wrong	The code, which has been input, is wrong.
UPDATING XX%	Updating XX%	Displayed when updating is carried out.
UPDATING COMPLETE	Update complete	The updating mode is complete.
UPDATE FAIL	Update fail	Displayed when the update of the hands free module fails.

DIAGNOSIS MODE <VEHICLES WITH MMCS>

M1544404800021

As a diagnosis mode for the hands free module, version information of the hands free module and diagnostic results of the hands free module and the microphone unit can be displayed by the service mode of the multivision display.

HOW TO INITIATE THE SERVICE MODE

Refer to MMCS - Service mode.

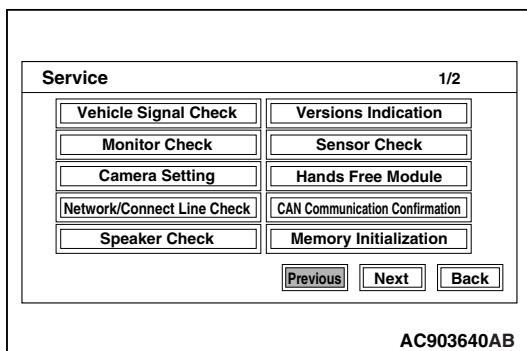
HOW TO TERMINATE THE SERVICE MODE

Refer to MMCS - Service mode.

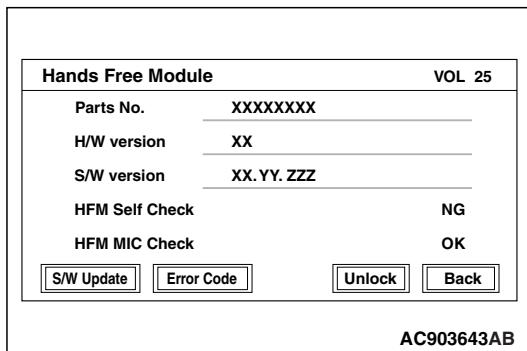
HANDS FREE MODULE

NOTE:

- While the hands free module is in diagnosis mode, connection with the Bluetooth® device is shut down.
- While the hands free module is in diagnosis mode, the sound input to the microphone unit is output directly through the speaker.



1. Select "hands free module" on "Service" screen.



2. "Hands Free Module" screen is displayed.

SPECIFICATION OF DISPLAY ITEM

Displayed name	Detail
VOL	The volume of the sound input to the microphone unit and output through the speaker while the hands free module is in diagnosis mode. (The sound volume can be changed by operating the multivision display.)
Parts No	The part number of the hands free module is displayed in 8 digits.
H/W version	The hardware version information of the hands free module is displayed in 2 digits.

Displayed name	Detail
S/W version	The software version information of the hands free module is displayed in 7 digits.
HFM Self Check	<p>The hands free module state is displayed.</p> <ul style="list-style-type: none"> • "OK": Normal (There is no abnormality in the hands free module.) • "NG": Abnormal (The hands free module may have a problem.) <p><i>NOTE: If "NG" is displayed, turn the ignition switch to the "OFF" position once. Then, turn the ignition switch to the "ON" position, and enter into the diagnosis mode. When the HFM Self Check display is NG again, the hands free module is determined to be defective.</i></p>
HFM MIC Check	<p>Displays the communication condition of the hands free module and the microphone unit.</p> <ul style="list-style-type: none"> • "OK": Normal (There is no short circuit or open circuit in the line between the microphone unit and the hands free module.) • "NG (Short)": This message is displayed when the line between the microphone unit and the hands free module is shorted. • "NG (Open)": (This message is displayed when there is an open circuit in the line between the microphone unit and the hands free module.)

DISPLAY BUTTON AND FUNCTION

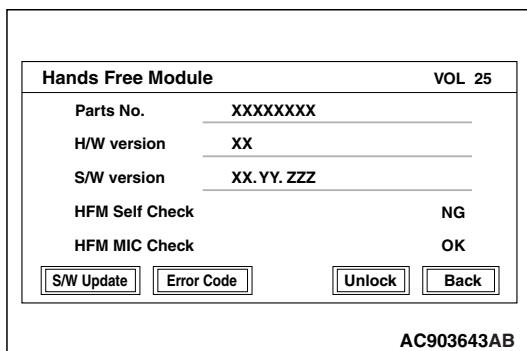
Display button	Detail
S/W Update	Execution button for software update of the hands free module (Displayed only when the update is possible.)
Error Code	Error Code screen is displayed. (This button is displayed in gray when "HFM Self Check" is "OK.")
Unlock	Forcibly unlocks the 4-digit passcode that was set by the security function. (When the module is not locked by passcode, the "Unlock" button is displayed in gray.)
Back	Returns to "Service" screen.

SOFTWARE UPDATE (S/W Update)

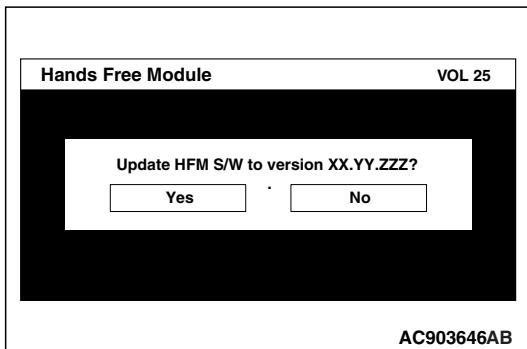
The software of the hands free module can be updated.

NOTE:

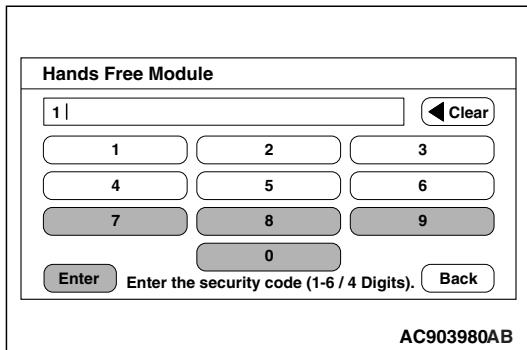
- "S/W Update" is displayed when an USB that contains files to update the hands free module is connected.
- When the software update cannot continue because of improper removal of the USB during the update or of an incorrect update code, the display returns to the "Hands Free Module" screen. At this time, warning is not displayed.



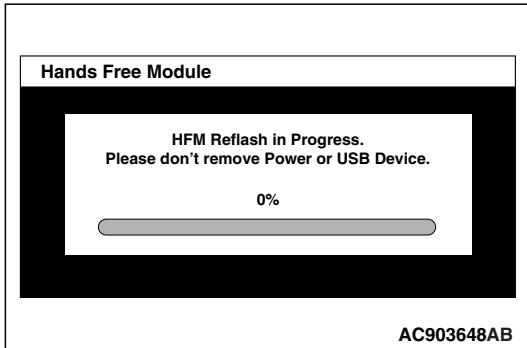
1. Press "S/W Update."



2. Select "Yes." (When "No" is selected, the display returns to the "Hands Free Module" screen.)



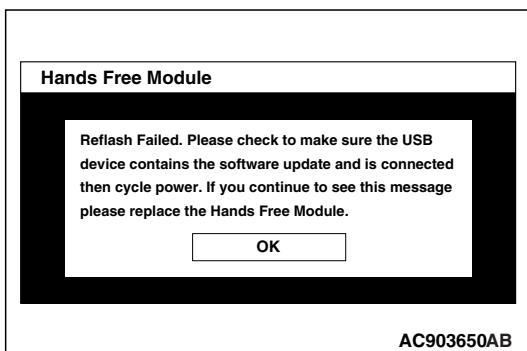
3. Input the 4-digit code for update. ("Enter" is displayed in gray until the 4-digit code is input.)



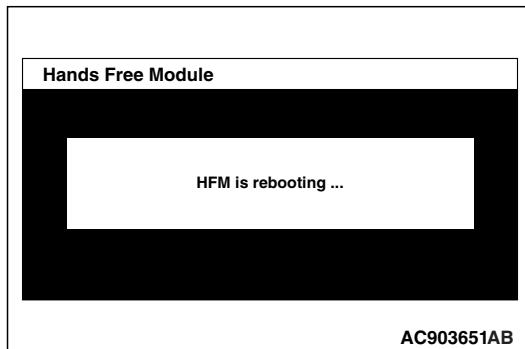
4. Update starts if the 4-digit code is normal.

NOTE:

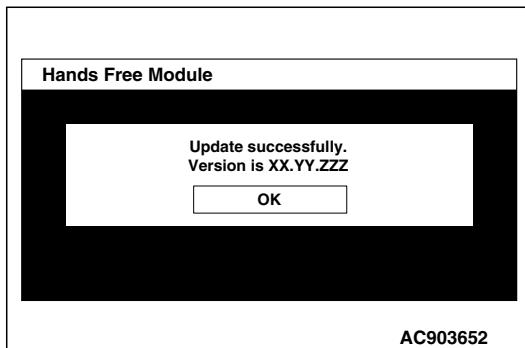
- When the input code is normal, the speaker will not output the sound input to the microphone unit until the display returns to the "Hands Free Module" screen.



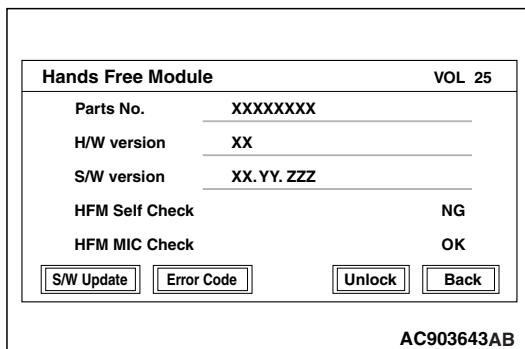
- When the data rewriting operation is failed, the error screen is displayed.



5. The "Reboot" screen is displayed when the update is completed successfully.



6. After the hands free module is rebooted, the "Update successfully." screen is displayed. When "OK" is selected, the display returns to the "Hands Free Module" screen.



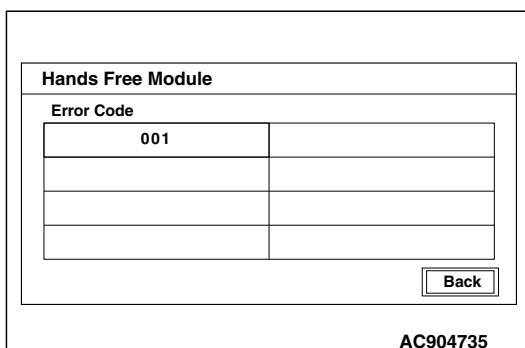
ERROR CODE

The error code is displayed to show the internal state of the module.

NOTE: This code shows the internal state of the hands free module. Do not determine that the module is defective even when an error code is displayed. Be sure to diagnose the module before replacing it.

1. Press "Error Code."

NOTE: "Error Code" is displayed when the "HFM Self Check" is "NG."



2. When "Back" is selected, the display returns to the "Hands Free Module" screen.

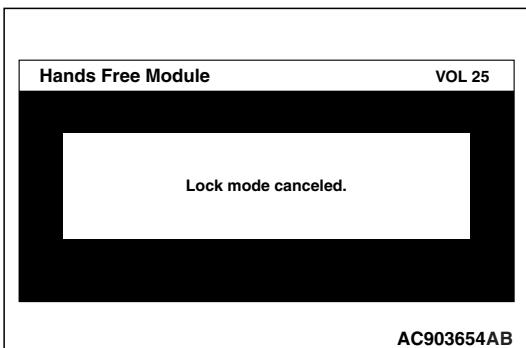
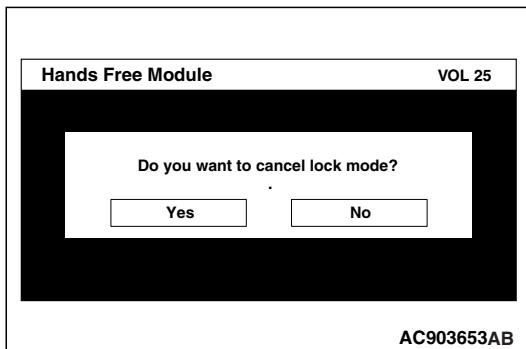
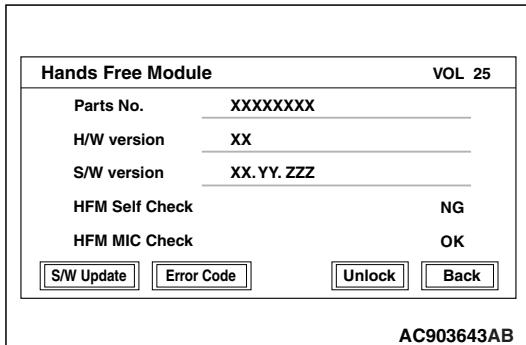
UNLOCK

Forcibly unlocks the 4-digit passcode that was set by the security function.

NOTE: When the module is not locked by passcode, the "Unlock" button is displayed in gray.

1. Press "Unlock."

NOTE: "Error Code" is displayed when the "HFM Self Check" is "NG."



2. When "Yes" is selected, "Lock mode canceled" will be displayed and the passcode lock will be unlocked.

NOTE: When "No" is selected, the display returns to the "Hands Free Module" screen.

3. The display returns to the "Hands Free Module" screen after 4 seconds.

TROUBLE SYMPTOM CHART

M1546001801313

NOTE: Some Bluetooth® devices may not be compatible with the hands free module

Inspection Procedure No.	Trouble symptom	Reference page
1	Check the hands free module power supply circuit.	P.54A-593
2	The USB adapter data cannot be replayed.	<Vehicles with radio and CD player>
		<Vehicles with MMCS>
3	When the speech switch is pressed, the voice information is output, but the voice recognition is not performed.	P.54A-604
4	When the speech switch is pressed, the voice information is not output.	<Vehicles with radio and CD player>
		<Vehicles with MMCS>
5	DIAGNOSIS MODE cannot be made an entry.	P.54A-614
6	DIAGNOSIS MODE cannot be made an entry. Mobile Phone item is not displayed on the INFOR screen of MMCS.	P.54A-616
7	Steering wheel voice control switch illumination does not come on.	P.54A-618
8	Voice guide "Unable to obtain vehicle speed. Please try again or contact your dealer for service" is sent from the speaker.	<Vehicles with radio and CD player>
		<Vehicles with MMCS>
		P.54A-623

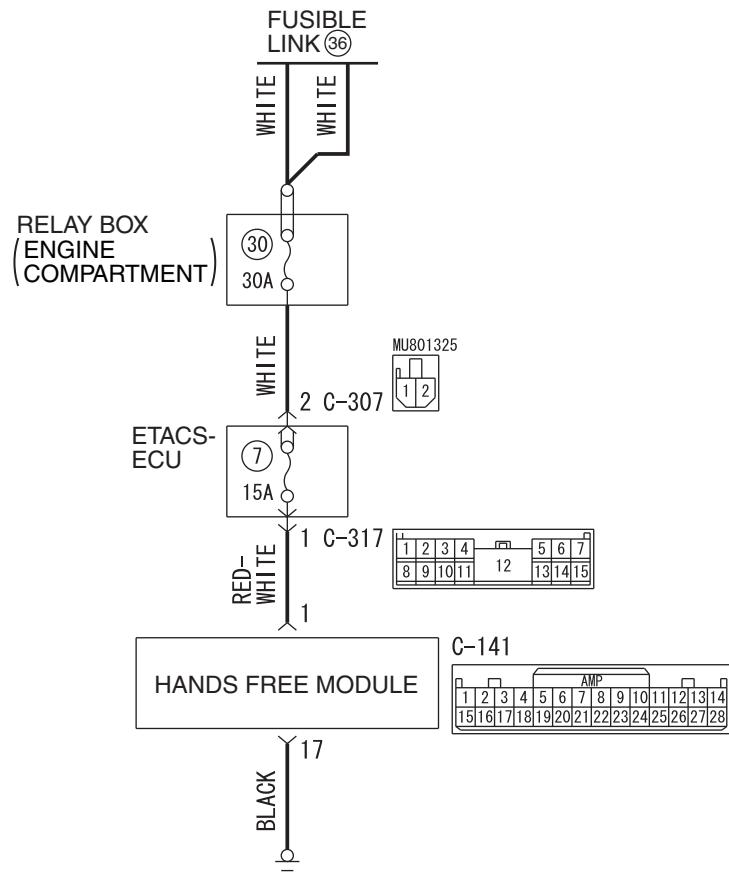
SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Check the hands free module power supply circuit.

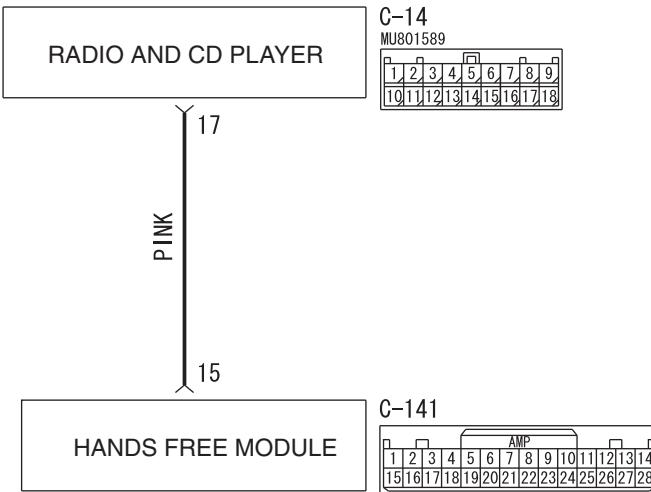
CAUTION

Before replacing the module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Hands Free Module Power Supply Circuit

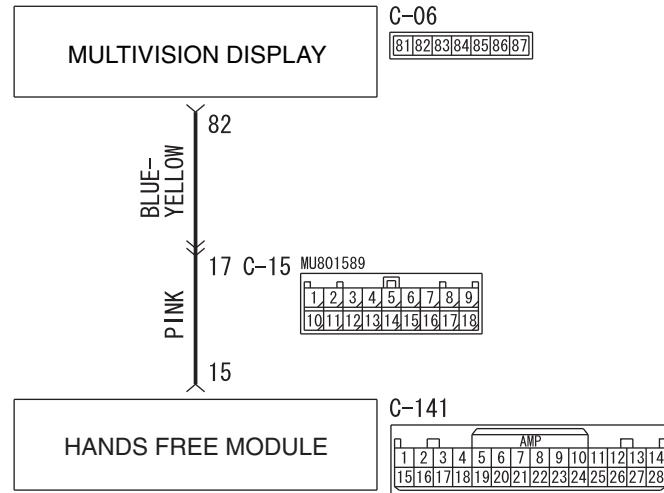


Hands Free Module Communication Circuit <Vehicles with Radio and CD Player>

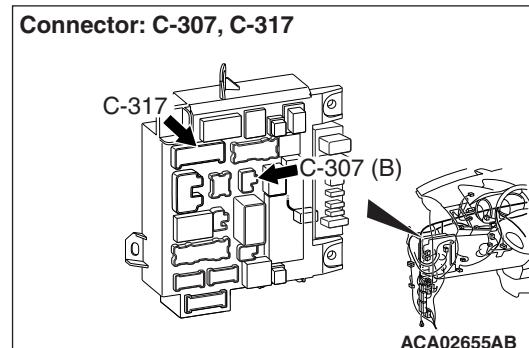
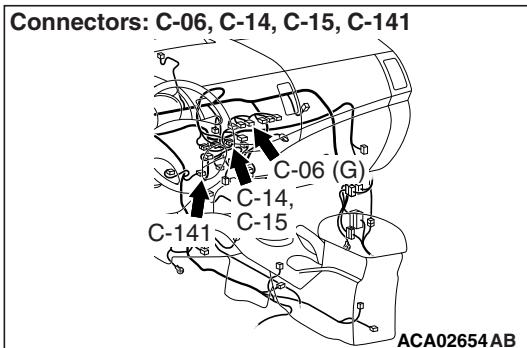


WAG54X087A

Hands Free Module Communication Circuit <Vehicles with MMCS>



WBG54M006A



TECHNICAL DESCRIPTION (COMMENT)

- The power supply to the hands free module is provided by the fusible link No.36.
- The ACC signal is received hands free module C-141 terminal (terminal 15) from radio and CD player connector C-14 terminal (terminal 17).
<Vehicles with radio and CD player>
- The ACC signal is received hands free module C-141 terminal (terminal 15) from multivision display connector C-06 terminal (terminal 82).<Vehicles with MMCS>

TROUBLESHOOTING HINTS

- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The hands free module may be defective
- The radio and CD player may be defective.
<Vehicles with radio and CD player>
- The multivision display may be defective. <Vehicles with MMCS>

DIAGNOSIS**Required Special Tools:**

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check hands free module connector C-141 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: IS hands free module connector C-141 in good condition?

YES : Go to Step 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 2. Check the ground circuit to the hands free module. Measure the resistance at hands free module connector C-141.

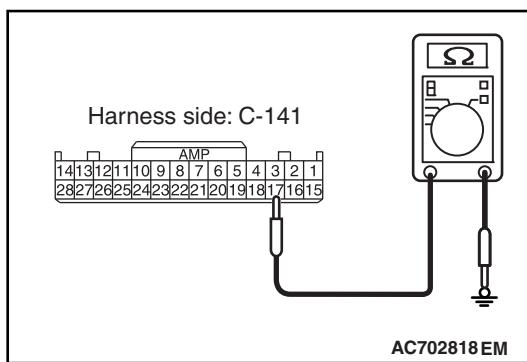
- (1) Disconnect hands free module connector C-141, and measure at the wiring harness side.
- (2) Measure resistance between terminal 17 and ground.

OK: The resistance should be 2 ohm or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Go to Step 3.



STEP 3. Check the wiring harness between hands free module connector C-141 (terminal 17) and ground.

- Check the body ground wires for open circuit.

Q: Is the wiring harness between hands free module connector C-141 (terminal 17) and ground in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

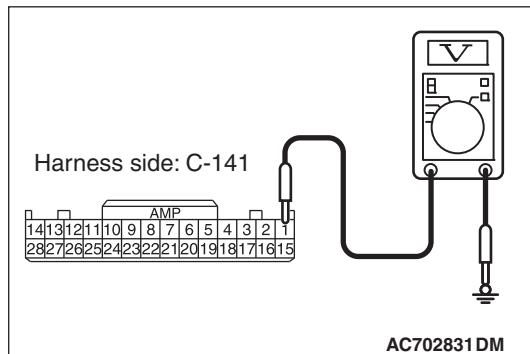
STEP 4. Check the power supply circuit to the hands free module. Measure the voltage at hands free module connector C-141.

- (1) Disconnect hands free module connector C-141, and measure the voltage available at the wiring harness side of the connector.
- (2) Measure the voltage between terminal 1 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 6.
NO : Go to Step 5.



STEP 5. Check the wiring harness between hands free module connector C-141 (terminal 1) and fusible link (36).

- Check the power supply line for open circuit and short circuit.

NOTE: Also check ETACS-ECU connector C-307, C-317 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If ETACS-ECU connector C-307, C-317 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between hands free module connector C-141 (terminal 1) and fusible link (36) in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 6. Check the power supply circuit to the hands free module. Measure the voltage at hands free module connector C-141.

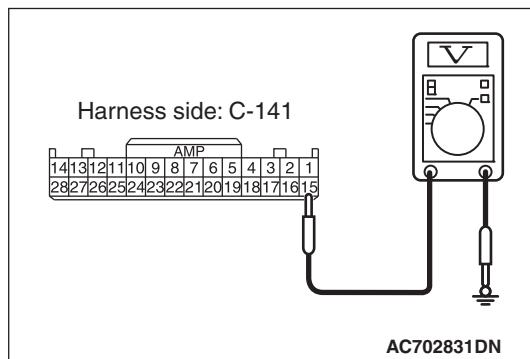
- (1) Disconnect hands free module connector C-141, and measure the voltage available at the wiring harness side of the connector.
- (2) Turn the ignition switch to "ACC" position.
- (3) Measure the voltage between terminal 15 and ground.

OK: 1 voltage or less.

Q: Is the measured voltage 1 voltage or less?

YES : Replace the hands free module.

NO : Go to Step 7.



STEP 7. Check radio and CD player connector C-14 <Vehicles with radio and CD player> or multivision display connector C-06 <Vehicles with MMCS> for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Is radio and CD player connector C-14 <Vehicles with radio and CD player> or multivision display connector C-06 <Vehicles with MMCS> in good condition?**

YES : Go to Step 8.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 8. Check the wiring harness between hands free module connector C-141 terminal (terminal 15) and radio and CD player connector C-14 terminal (terminal 17) <vehicles with radio and CD player> or multivision display connector C-06 terminal (terminal 82) <vehicles with MMCS>.

- Check the signal line for open circuit and short circuit.

NOTE: Also check intermediate connector C-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2. <Vehicles with MMCS>

Q: Is the check result normal?

YES : Replace the radio and CD player or multivision display

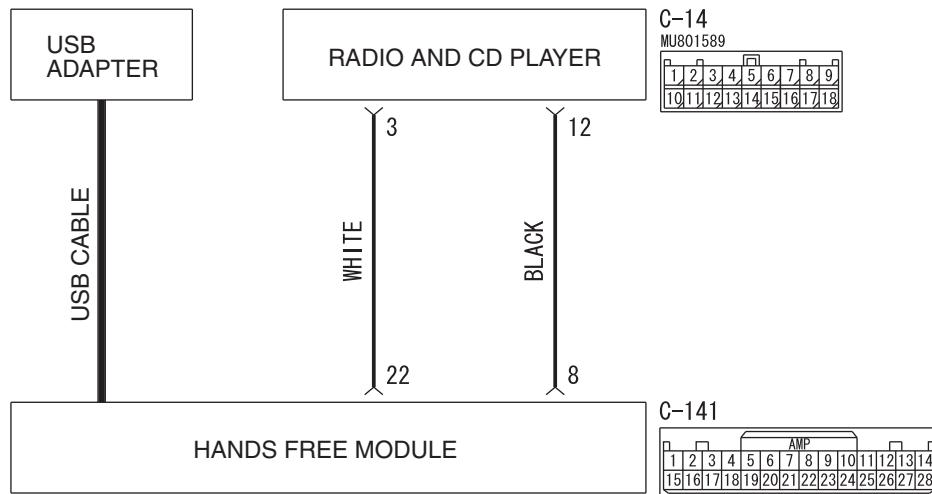
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

INSPECTION PROCEDURE 2: The USB adapter data cannot be replayed. <Vehicles with radio and CD player>

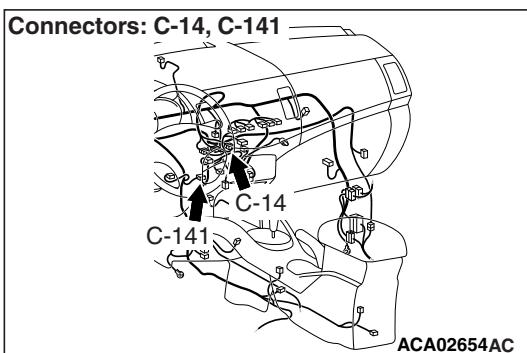
⚠ CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Hands Free Module Communication Circuit



WAG54X089A



NOTE: Before troubleshooting, check that the music file (the customer tried to replay) can be replayed.

TROUBLESHOOTING HINTS

- The radio and CD player may be defective.
- The hands free module may be defective.
- The USB adapter may be defective.
- The USB cable may be defective.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

TECHNICAL DESCRIPTION (COMMENT)

If the sound replay is impossible with the USB mode, the USB adapter, USB cable, hands free module, or radio and CD player may be defective, or a communication error between the radio and CD player and hands free module may have occurred.

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the radio and CD player operation.

Check if the radio and CD player work normally and the sound is output.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Troubleshoot the radio and CD player (Refer to [P.54A-363](#)).

STEP 2. Check the diagnosis mode

Check if the hands free module can be switched to the diagnosis mode.(Refer to [P.54A-584](#).)

Q: Is the check result normal?

YES : Go to Step 3.

NO : Perform Inspection Procedure 5 "DIAGNOSIS MODE cannot be made an entry."(Refer to [P.54A-614](#).)

STEP 3. Check the USB adapter.

Check that the continuity exists between the front side terminals of USB adapter and rear side terminals of USB adapter. (Refer to [P.54A-635](#))

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the USB adapter.

STEP 4. Check the USB cable.

Check that the USB cable is connected to the USB adapter or hands free module normally. Or check the USB cable for damage such as bend.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace or repair the USB cable.

STEP 5. Check hands free module connector C-141 and radio and CD player C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are hands free module connector C-141 and radio and CD player C-16 in good condition?

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 6. Check the wiring harness between hands free module connector C-141 (terminal 22, 8) and radio and CD player connector C-14 (terminal 3, 12).

- Check the signal lines for open circuit and short circuit.

Q: Is the wiring harness between hands free module connector C-141 (terminal 22, 8) and radio and CD player C-14 (terminal 3, 12) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Replace the hands free module temporarily, and check the trouble symptom.

Replace the hands free module temporarily, and check that the sound is output from the speaker.

Q: Is the check result normal?

YES : Replace the hands free module.

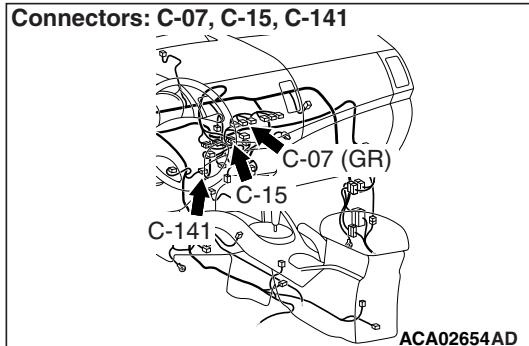
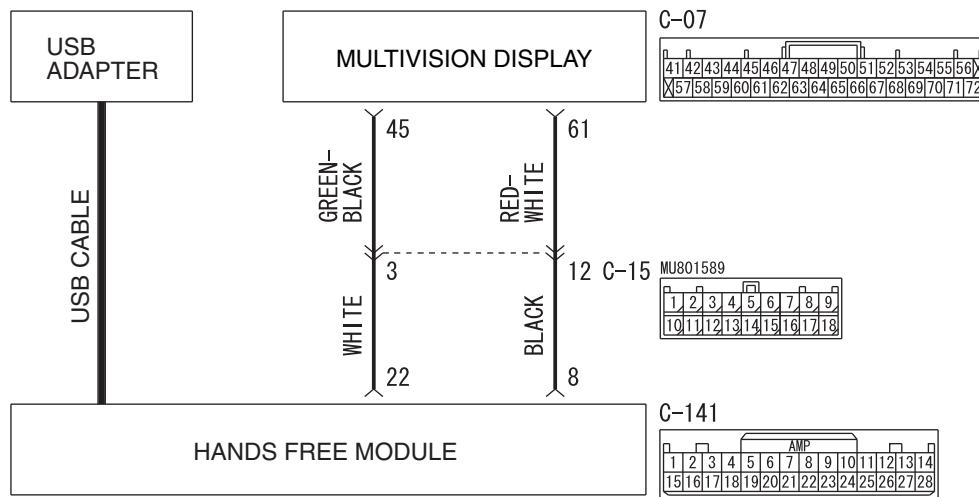
NO : Replace the radio and CD player.

INSPECTION PROCEDURE 2: The USB adapter data cannot be replayed. <Vehicles with MMCS>

CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Hands Free Module Communication Circuit



STEP 1. Check the multivision display operation.

Check if the multivision display work normally and the sound is output.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Troubleshoot the MMCS (Refer to [P.54A-486](#).)

STEP 2. Check the multivision display operation.

Display the INFOR screen, and check that the "Mobile Phone" item is displayed.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Perform Inspection Procedure 6: "DIAGNOSIS MODE cannot be made an entry. Mobile Phone item is not displayed on the INFOR screen of MMCS." (Refer to [P.54A-616](#).)

STEP 3. Check the USB adapter.

Check that the continuity exists between the front side terminals of USB adapter and rear side terminals of USB adapter. (Refer to [P.54A-635](#))

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the USB adapter.

STEP 4. Check the USB cable.

Check that the USB cable is connected to the USB adapter or hands free module normally. Or check the USB cable for damage such as bend.

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace or repair the USB cable.

STEP 5. Check hands free module connector C-141 and multivision display C-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are hands free module connector C-141 and multivision display connector C-07 in good condition?

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 6. Check the wiring harness between hands free module connector C-141 (terminal 22, 8) and multivision display connector C-07 (terminal 45, 61).

- Check the signal lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between hands free module connector C-141 (terminal 22, 8) and multivision display connector C-07 (terminal 45, 61) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Replace the hands free module temporarily, and check the trouble symptom.

Replace the hands free module temporarily, and check that the sound is output from the speaker.

Q: Is the check result normal?

YES : Replace the hands free module.

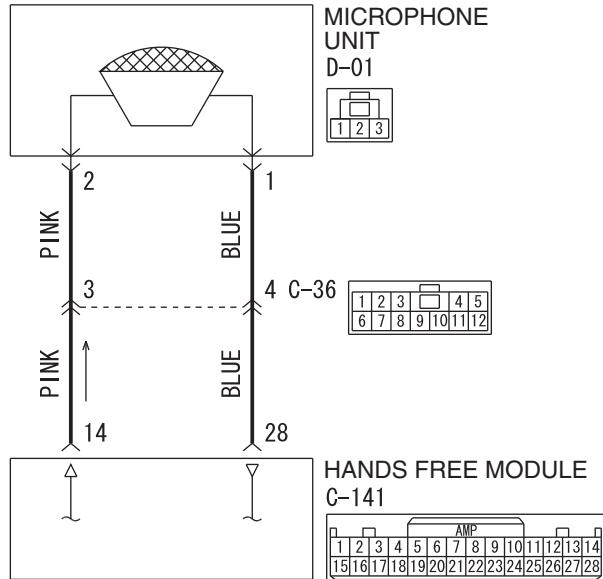
NO : Replace the multivision display.

INSPECTION PROCEDURE 3: When the speech switch is pressed, the voice information is output, but the voice recognition is not performed.

CAUTION

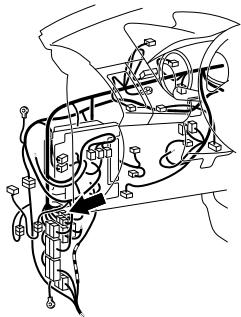
Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Microphone Unit Circuit



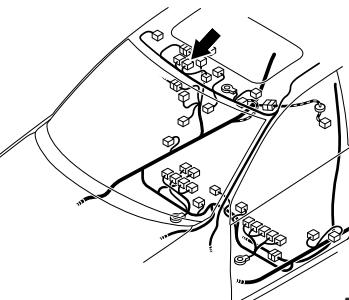
WAG54X091A

Connector: C-36



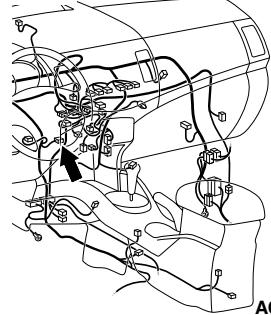
AC901075BQ

Connector: D-01



AC901079BC

Connector: C-141



ACA02654AE

TECHNICAL DESCRIPTION (COMMENT)

When the speech switch is pushed, if the voice information is sent but voice recognition is not executed, the microphone unit, hands free module or the communication between the microphone unit and hands free module may have a problem.

TROUBLESHOOTING HINTS

- The hands free module may be defective.
- The microphone unit may be defective.

- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the diagnosis mode

- Check if the microphone check result "MIC OK" is displayed on the diagnosis mode of hands free module. (Refer to [P.54A-584.](#)) <Vehicles with radio and CD player>
- Display the "Hands Free Module" screen on the diagnosis mode of hands free module and check if the items of "HFM Self Check" and "HFM MIC Check" are shown "OK." (Refer to [P.54A-586.](#)) <Vehicles with MMCS>

Q: Is the check result normal?

YES : Go to Step 4.
NO : Go to Step 2.

STEP 2. Check hands free module connector C-141 and microphone unit D-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are hands free module connector C-141 and microphone unit connector D-01 in good condition?

YES : Go to Step 3.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2.](#)

STEP 3. Check the wiring harness between hands free module connector C-141 (terminal 14, 28) and microphone unit connector D-01 (terminal 2, 1).

- Check the signal lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-36 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-36 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2.](#)

Q: Is the wiring harness between hands free module connector C-141 (terminal 14, 28) and microphone unit connector D-01 (terminal 2, 1) in good condition?

YES : Go to Step 4.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Replace the microphone unit temporarily, and check the trouble symptom.

Q: Is the check result normal?

YES : Replace the microphone unit.

NO : Go to Step 5.

STEP 5. Replace the hands free module temporarily, and check the trouble symptom.

Q: Is the check result normal?

YES : Replace the hands free module.

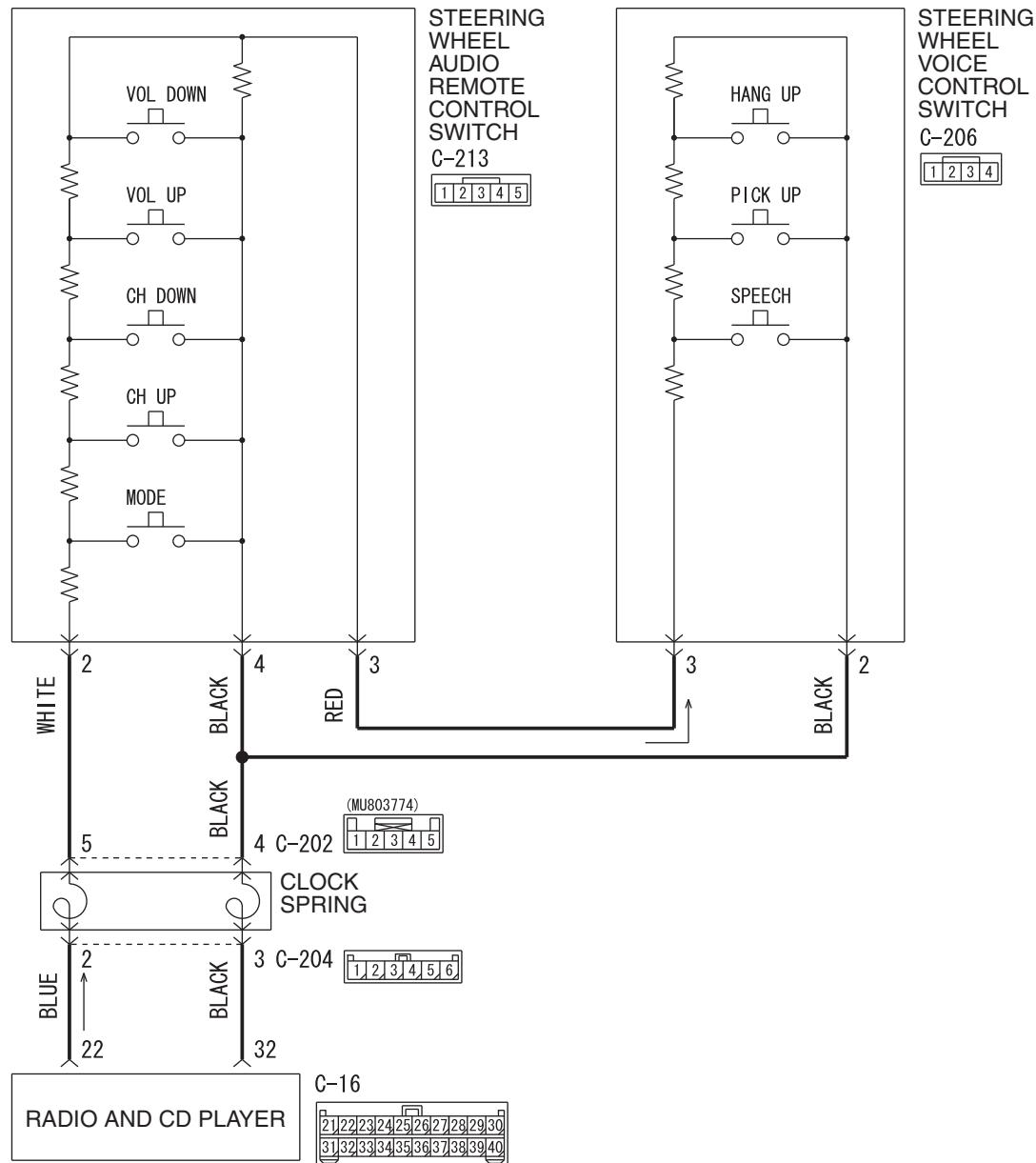
NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

INSPECTION PROCEDURE 4: When the speech switch is pressed, the voice information is not output.
<Vehicles with radio and CD player>

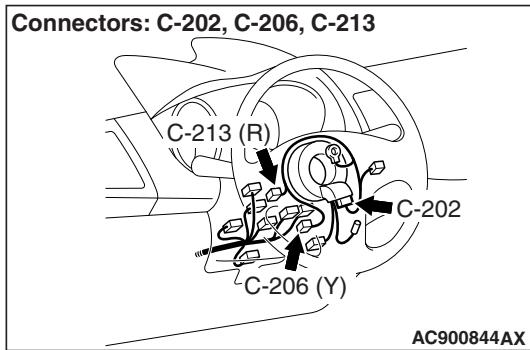
CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Steering Wheel Voice Control Switch Circuit



WAG54X092A



TECHNICAL DESCRIPTION (COMMENT)

If the voice information is not sent when the speech switch is pushed, the communication between the radio and CD player, and the hands free module, or the communication between the radio and CD player, and the steering wheel voice control switch, the hands free module, or the steering wheel voice control switch may have a problem.

TROUBLESHOOTING HINTS

- The radio and CD player may be defective.
- The steering wheel audio remote control switch may be defective.
- The steering wheel voice control switch may be defective.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the diagnosis mode

Check if the hands free module can be switched to the diagnosis mode.(Refer to [P.54A-584](#).)

Q: Is the check result normal?

YES : Go to Step 2.

NO : Perform Inspection Procedure 5 "DIAGNOSIS MODE cannot be made an entry."(Refer to [P.54A-614](#).)

STEP 2. Operation check of the steering wheel audio remote control switch

Check that the radio and CD player can be operated by the steering wheel audio remote control switch.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Troubleshoot the steering wheel audio remote control switch. (Refer to [P.54A-564](#))

STEP 3. Check the steering wheel voice control switch.

Check the continuity of the steering wheel voice control switch. (Refer to steering wheel voice control switch inspection.

[P.54A-634](#))

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the steering wheel voice control switch.

STEP 4. Check the steering wheel audio remote control switch.

Check the continuity of the steering wheel audio remote control switch. (Refer to steering wheel audio remote control switch inspection [P.54A-634.](#))

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the steering wheel audio remote control switch.

STEP 5. Check the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 3) and steering wheel voice control switch connector C-206 (terminal 3).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 3) and steering wheel voice control switch connector C-206 (terminal 3) in good condition?

YES : Go to Step 6.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 6. Check clock spring connector C-202 for loose, corroded or damaged terminals, or terminals pushed back in the connector

Q: Is clock spring connector C-202 in good condition?

YES : Go to Step 7.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2.](#)

STEP 7. Check the harness wire between clock spring connector C-202 (terminal 4) and steering wheel voice control switch connector C-206 (terminal 2).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between clock spring connector C-202 (terminal 4) and steering wheel voice control switch connector C-206 (terminal 2) in good condition?

YES : Go to Step 8.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 8. Temporarily replace the steering wheel voice control switch, and check the trouble symptom.

Q: Is the check result normal?

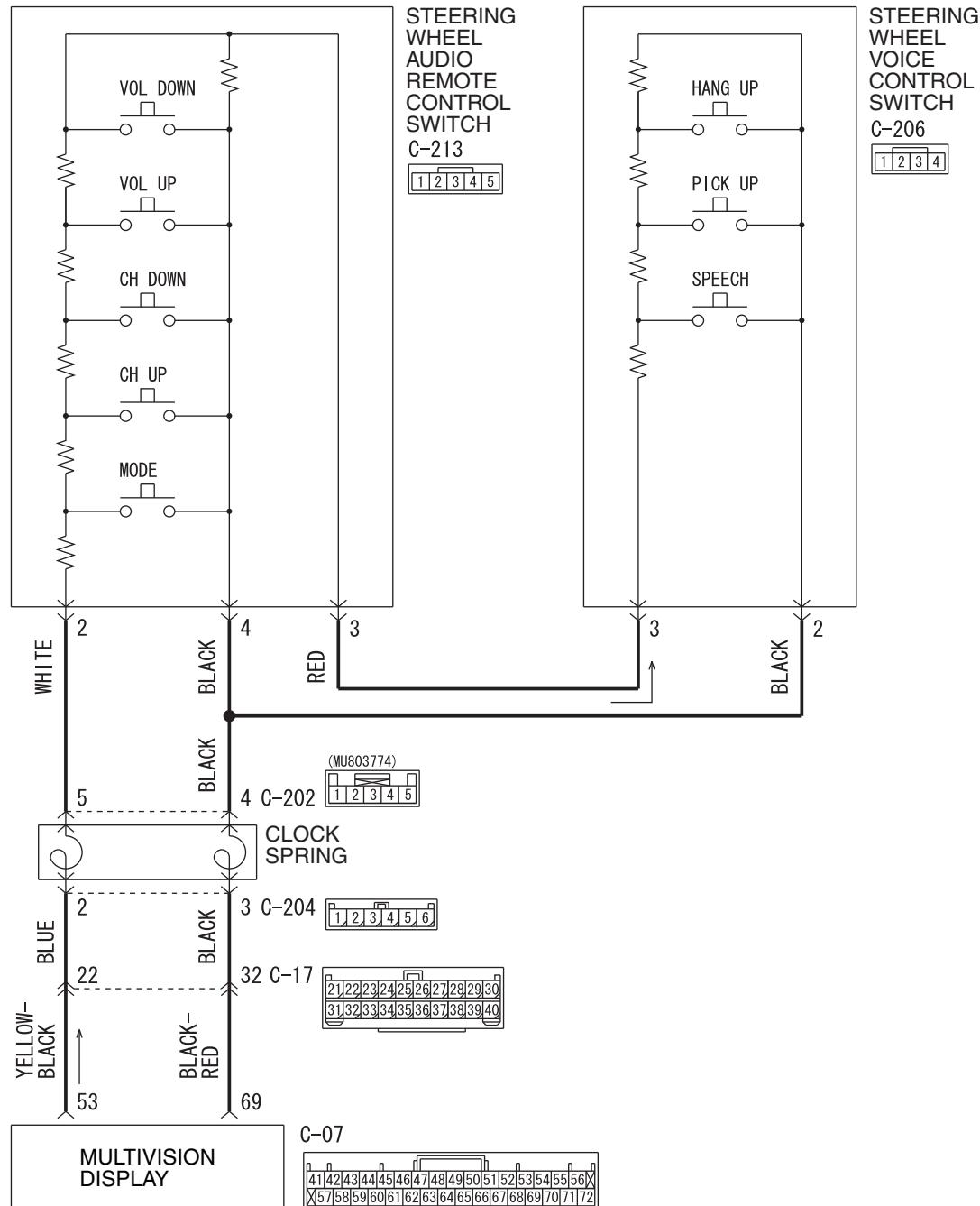
YES : Replace the steering wheel voice control switch.

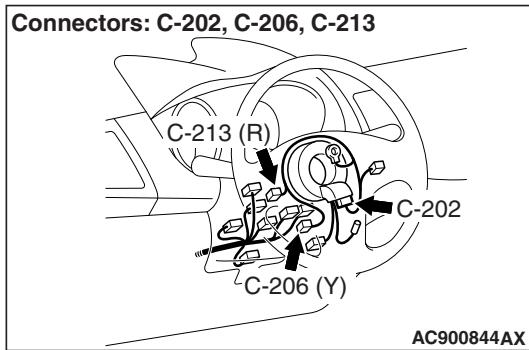
NO : Replace the radio and CD player.

**INSPECTION PROCEDURE 4: When the speech switch is pressed, the voice information is not output.
<Vehicles with MMCS>****CAUTION**

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Steering Wheel Voice Control Switch Circuit





TECHNICAL DESCRIPTION (COMMENT)

If the voice information is not sent when the speech switch is pushed, the communication between the multivision display, and the hands free module, or the communication between the multivision display, and the steering wheel voice control switch, the hands free module, or the steering wheel voice control switch may have a problem.

TROUBLESHOOTING HINTS

- The multivision display may be defective.
- The steering wheel audio remote control switch may be defective.
- The steering wheel voice control switch may be defective.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the multivision display operation.

Display the INFOR screen, and check that the "Mobile Phone" item is displayed.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Perform Inspection Procedure 6: "DIAGNOSIS MODE cannot be made an entry. Mobile Phone item is not displayed on the INFOR screen of MMCS." of the troubleshooting (Refer to [P.54A-616](#)).

STEP 2. Operation check of the steering wheel audio remote control switch

Check that the multivision display can be operated by the steering wheel audio remote control switch.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Troubleshoot the steering wheel audio remote control switch. (Refer to [P.54A-568](#).)

STEP 3. Check the steering wheel voice control switch.

Check the continuity of the steering wheel voice control switch. (Refer to steering wheel voice control switch inspection. [P.54A-634](#))

Q: Is the check result normal?

YES : Go to Step 4.

NO : Replace the steering wheel voice control switch.

STEP 4. Check the steering wheel audio remote control switch.

Check the continuity of the steering wheel audio remote control switch. (Refer to steering wheel audio remote control switch inspection.)

Q: Is the check result normal?

YES : Go to Step 5.

NO : Replace the steering wheel audio remote control switch.

STEP 5. Check the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 3) and steering wheel voice control switch connector C-206 (terminal 3).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between steering wheel audio remote control switch connector C-213 (terminal 3) and steering wheel voice control switch connector C-206 (terminal 3) in good condition?

YES : Go to Step 6.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 6. Check clock spring connector C-202 for loose, corroded or damaged terminals, or terminals pushed back in the connector

Q: Is clock spring connector C-202 in good condition?

YES : Go to Step 7.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 7. Check the harness wire between clock spring connector C-202 (terminal 4) and steering wheel voice control switch connector C-206 (terminal 2).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between clock spring connector C-202 (terminal 4) and steering wheel voice control switch connector C-206 (terminal 2) in good condition?

YES : Go to Step 8.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 8. Temporarily replace the steering wheel voice control switch, and check the trouble symptom.

Q: Is the check result normal?

YES : Replace the steering wheel voice control switch.

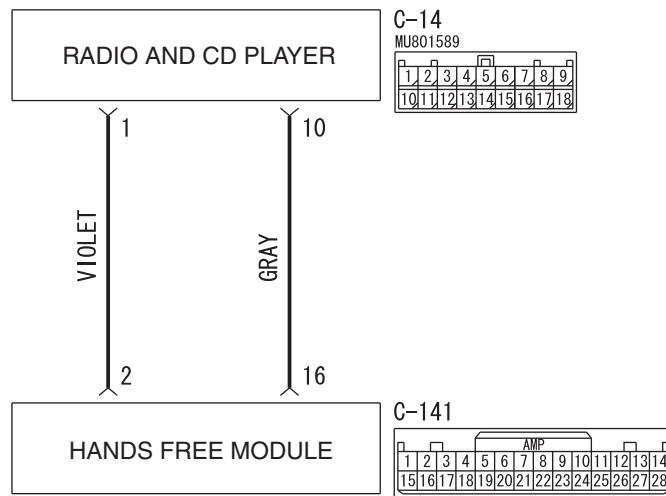
NO : Replace the multivision display.

INSPECTION PROCEDURE 5: DIAGNOSIS MODE cannot be made an entry. <Vehicles with radio and CD player>

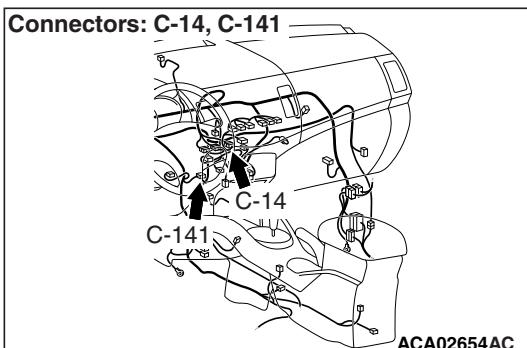
CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Hands Free Module Communication Circuit



WAG54X094A



TECHNICAL DESCRIPTION (COMMENT)

If the diagnosis mode cannot be made an entry, the hands free module, the communication between the hands free module, and the radio and CD player, or the power supply system of hands free module may have a problem.

TROUBLESHOOTING HINTS

- The hands free module may be defective.
- The radio and CD player may be defective.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector.

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the radio and CD player operation.

Check if the radio and CD player work normally and the sound is output.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Troubleshoot the radio and CD player. (Refer to [P.54A-363](#).)

STEP 2. Check hands free module connector C-141 and radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector

Q: Are hands free module connector C-141 and radio and CD player connector C-14 in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 3. Check the wiring harness between hands free module connector C-141 (terminal 2, 16) and radio and CD player connector C-14 (terminal 1, 10).

- Check the signal lines for open circuit and short circuit.

Q: Is the wiring harness between hands free module connector C-141 (terminal 2, 16) and radio and CD player connector C-121 (terminal 1, 10) in good condition?

YES : Go to step 4.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Check if the power supply circuit of hands free ECU have a problem.

Perform the inspection Procedure 1 "Check the hands free module power supply circuit." of the troubleshooting. (Refer to [P.54A-593](#).)

Q: Is the check result normal?

YES : Go to step 5.

NO : Repair according to the troubleshooting for reference.

STEP 5. Replace the hands free module temporarily, and check the trouble symptom.

Q: Is the check result normal?

YES : Replace the hands free module.

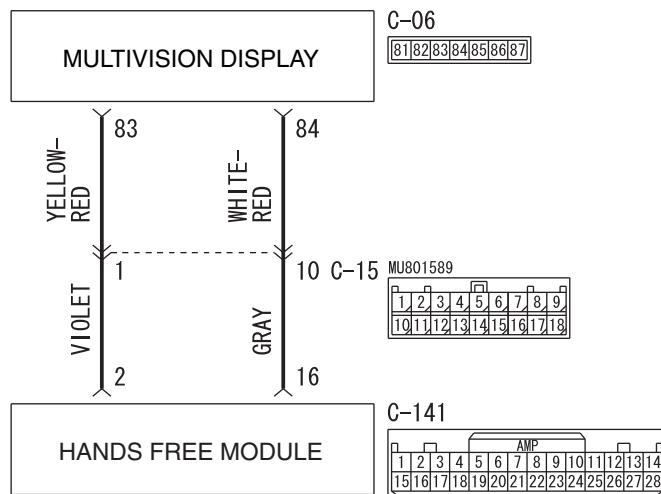
NO : Replace the radio and CD player.

INSPECTION PROCEDURE 6: DIAGNOSIS MODE cannot be made an entry. Mobile Phone item is not displayed on the INFOR screen of MMCS. <Vehicles with MMCS>

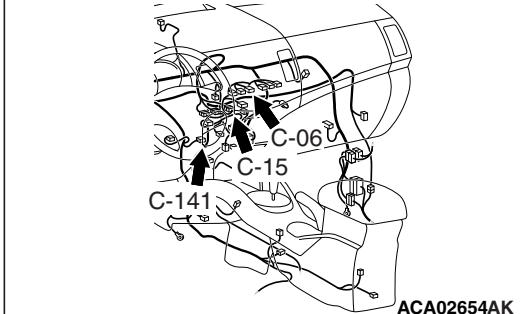
⚠ CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Hands Free Module Communication Circuit



Connectors: C-06, C-15, C-141



WAG54X095A

TECHNICAL DESCRIPTION (COMMENT)

If the diagnosis mode cannot be made an entry, the hands free module, the communication between the hands free module, and the multivision display, or the power supply system of hands free module may have a problem.

TROUBLESHOOTING HINTS

- The hands free module may be defective.
- The multivision display may be defective.
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the multivision display operation.

Check if the multivision display work normally and the sound is output.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Troubleshoot the MMCS. (Refer to [P.54A-486.](#))

STEP 2. Check hands free module connector C-141 and multivision display connector C-06 for loose, corroded or damaged terminals, or terminals pushed back in the connector

Q: Are hands free module connector C-141 and multivision display connector C-06 in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2.](#)

STEP 3. Check the wiring harness between hands free module connector C-141 (terminal 16, 2) and multivision display connector C-06 (terminal 84, 83).

- Check the signal lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between hands free module connector C-141 (terminal 16, 2) and multivision display connector C-06 (terminal 84, 83) in good condition?

YES : Go to Step 4.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Check if the power supply circuit of hands free ECU have a problem.

Perform the inspection Procedure 1 "Check the hands free module power supply circuit." of the troubleshooting. (Refer to [P.54A-593.](#))

Q: Is the check result normal?

YES : Go to Step 5.

NO : Repair according to the troubleshooting for reference.

STEP 5. Replace the hands free module temporarily, and check the trouble symptom.

Q: Is the check result normal?

YES : Replace the hands free module.

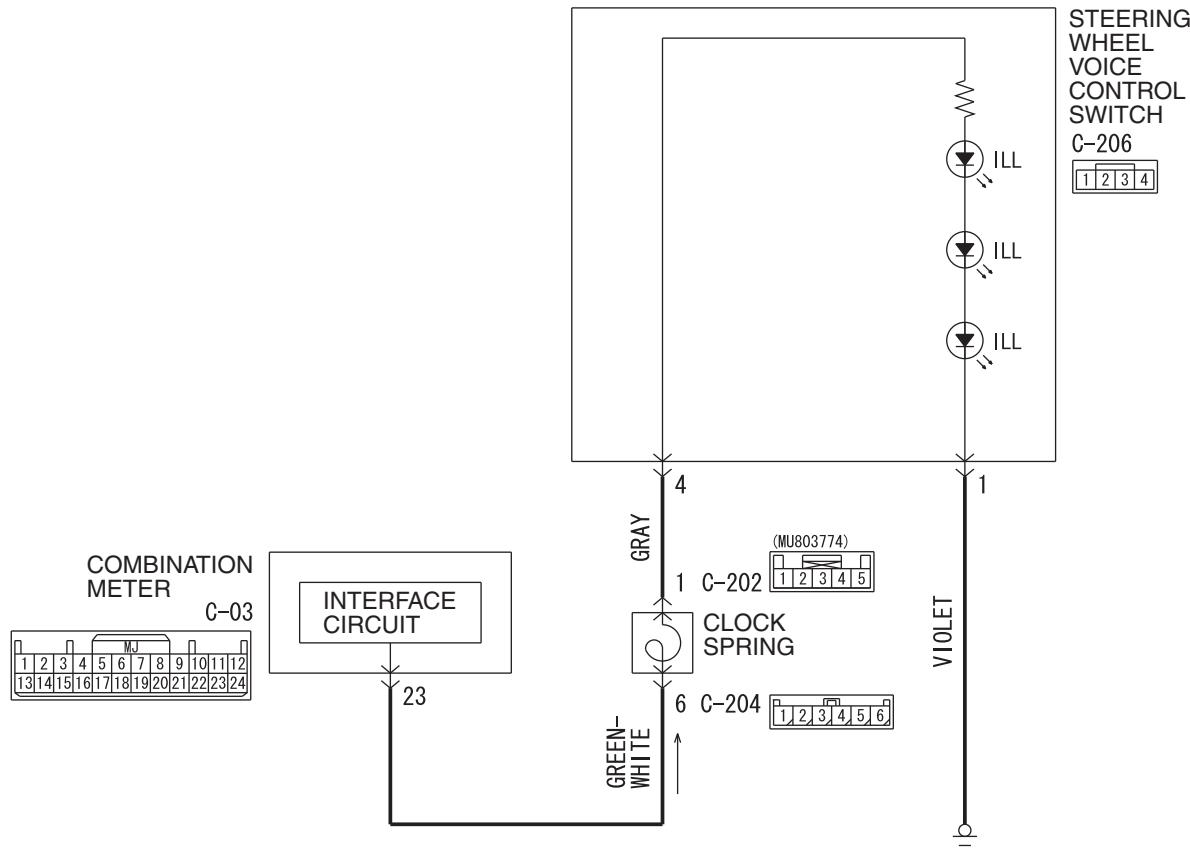
NO : Replace the multivision display.

INSPECTION PROCEDURE 7: Steering wheel voice control switch illumination does not come on.

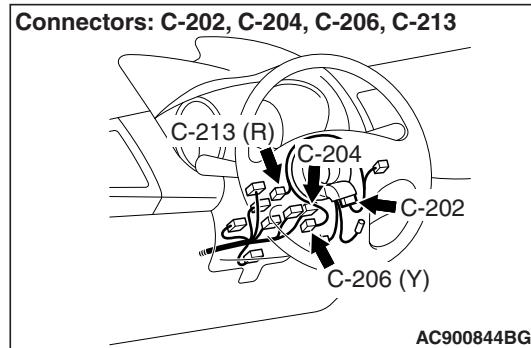
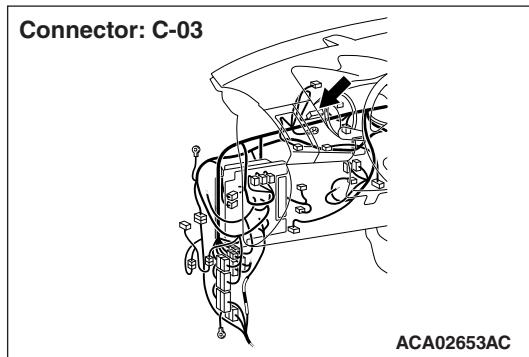
CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Steering Wheel Voice Control Switch Illumination Circuit



WAG54X096A

**TECHNICAL DESCRIPTION (COMMENT)**

The power supply circuit to the steering wheel voice control switch, the steering wheel voice control switch, the combination meter, or the clock spring may be defective.

TROUBLESHOOTING HINTS

- The steering wheel voice control switch may be defective.
- The combination meter may be defective.

- The clock spring may be defective.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the combination meter.

Check whether the illumination of combination meter works normally.

Q: Does the combination meter operate normally?

YES : Go to Step 2.

NO : Diagnose the combination meter. (Refer to [P.54A-69](#).)

STEP 2. Check steering wheel voice control switch connector C-206 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is steering wheel voice control switch connector C-206 in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 3. Check the wiring harness between steering wheel voice control switch connector C-206 (terminal 1) and ground.

- Check the ground wire for open circuit .

Q: Is the wiring harness between steering wheel voice control switch connector C-206 (terminal 1) and ground in good condition?

YES : Go to Step 4.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Check clock spring connectors C-202 and C-204 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are clock spring connectors C-202 and C-204 in good condition?

YES : Go to Step 5.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 5. Check the clock spring.

Check whether the clock spring is in good condition (Refer to GROUP 52B, Air bag module and clock spring [P.52B-447](#)).

Q: Is the check result normal?

YES : Go to Step 6.

NO : Replace the clock spring.

STEP 6. Check the wiring harness between steering wheel voice control switch connector C-206 (terminal 4) and clock spring connector C-202 (terminal 4).

- Check the power supply lines for open and short circuit.

Q: Is the wiring harness between steering wheel voice control switch connector C-206 (terminal 1) and clock spring connector C-202 (terminal 1) in good condition?

YES : Go to Step 7.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 7. Check combination meter connector C-03 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is combination meter connector C-03 in good condition?

YES : Go to Step 8.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 8. Check the wiring harness between combination meter connector C-03 (terminal 23) and clock spring connector C-204 (terminal 6).

- Check the power supply lines for open and short circuit.

Q: Is the wiring harness between combination meter connector C-03 (terminal 23) and clock spring connector C-204 (terminal 6) in good condition?

YES : Go to Step 9.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 9. Retest the system

Check whether the illumination of the steering wheel voice control switch comes on normally.

Q: Doe the illumination of the steering wheel voice control switch comes on normally?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : Replace the steering wheel voice control switch.

Inspection Procedure 8: Voice guide "Unable to obtain vehicle speed. Please try again or contact your dealer for service" is sent from the speaker. <Vehicles with radio and CD player>

⚠ CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

If the voice guide "Unable to obtain vehicle speed. Please try again or contact your dealer for service" is sent from the speaker, the vehicle speed signal of hands free module has a problem. At this time, the hands free module, and the vehicle speed signal of radio and CD player may have a problem.

TROUBLESHOOTING HINTS

- The hands free module may be defective.
- The radio and CD player may be defective.
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

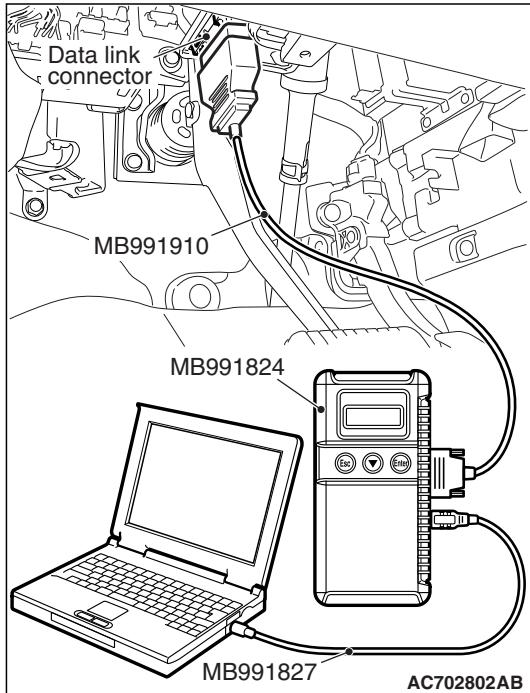
STEP 1. Check the combination meter.

Check whether the speed meter works normally. (Refer to [P.54A-105](#).)

Q: Is the check result normal?

YES : Go to Step 2.

NO : Diagnose the combination meter (Refer to Combination meter – Troubleshooting [P.54A-69](#)).



STEP 2. Using scan tool MB991958, diagnose the CAN bus line.
⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-583](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 3.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).

STEP 3. Using scan tool MB991958, read the radio and CD player diagnostic trouble code.

Check if DTC is set to the radio and CD player.

Q: Is the DTC set?

YES : Troubleshoot the radio and CD player (Refer to [P.54A-333](#)).

NO : Go to Step 4.

STEP 4. Check the diagnosis mode

Check if the hands free module can be switched to the diagnosis mode. (Refer to [P.54A-584](#).)

Q: Is the check result normal?

YES : Go to Step 5.

NO : Perform Inspection Procedure 5: "DIAGNOSIS MODE cannot be made an entry."(Refer to [P.54A-614](#).)

STEP 5. Replace the hands free module temporarily, and check the trouble symptom.

Q: Is the check result normal?

YES : Replace the hands free module.

NO : Replace the radio and CD player.

Inspection Procedure 8: Voice guide "Unable to obtain vehicle speed. Please try again or contact your dealer for service" is sent from the speaker. <Vehicles with MMCS>

⚠ CAUTION

Before replacing the hands free module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

If the voice guide "Unable to obtain vehicle speed. Please try again or contact your dealer for service" is sent from the speaker, the vehicle speed signal of hands free module has a problem. At this time, the hands free module, and the vehicle speed signal of multivision display may have a problem.

PROBABLE CAUSES

- The hands free module may be defective.
- The multivision display may be defective.
- Damaged harness wires and connectors

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Check the combination meter.

Check whether the speed meter works normally. (Refer to [P.54A-105.](#))

Q: Is the check result normal?

YES : Go to Step 2.

NO : Diagnose the combination meter (Refer to Combination meter – Troubleshooting [P.54A-69.](#))

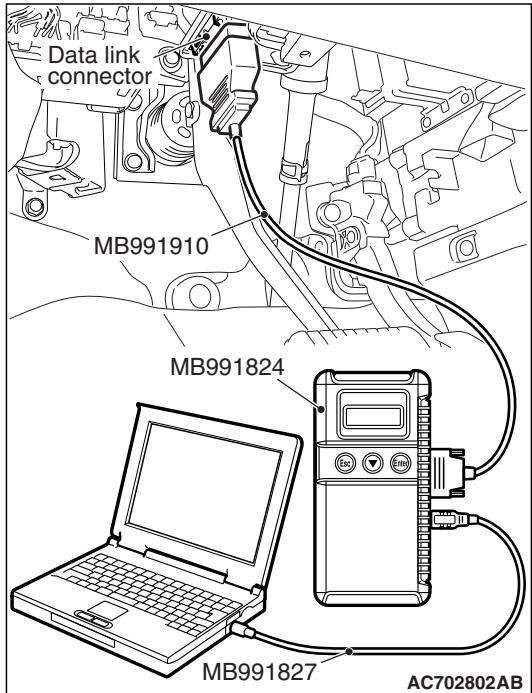
STEP 2. Check the multivision operation

check if the own vehicle mark is dislocated while driving.

Q: Is the check result normal?

YES : Go to Step 3.

NO : Diagnose the MMCS (Refer to [P.54A-486.](#))



STEP 3. Using scan tool MB991958, read the CAN box unit diagnostic trouble code.**⚠ CAUTION**

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-583](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Troubleshoot the MMCS (Refer to Diagnostic Trouble Code Chart [P.54A-460](#)).

NO : Go to Step 4.

STEP 4. Check the diagnosis mode

Check if the hands free module can be switched to the diagnosis mode.(Refer to [P.54A-586](#).)

Q: Is the check result normal?

YES : Go to Step 5.

NO : Perform Inspection Procedure 6: "DIAGNOSIS MODE cannot be made an entry. Mobile Phone item is not displayed on the INFOR screen of MMCS." (Refer to [P.54A-616](#).)

STEP 5. Replace the hands free module temporarily, and check the trouble symptom.**Q: Is the check result normal?**

YES : Replace the hands free module.

NO : Replace the multivision display.

ON-VEHICLE SERVICE

PAIRING A DEVICE OR DELETING A DEVICE

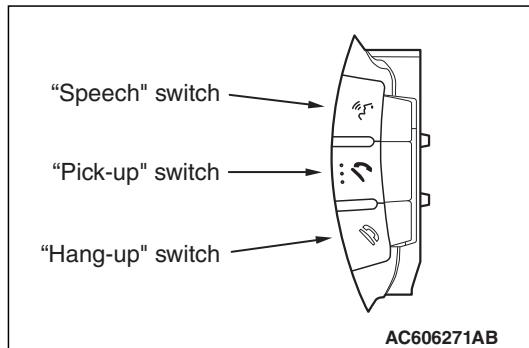
M1544405500012

NOTE:

- Some bluetooth® devices (mobile phone or music player) may not be compatible with the hands free module.

- A maximum of seven bluetooth® devices can be registered.
- This system can not be used when a battery of bluetooth® devices was exhausted.

PAIRING A DEVICE



1. Shift the selector lever to P (parking) position and pull the parking brake lever.
2. Turn the ignition switch to "ACC" or "ON" position.
3. Press the "Speech" switch.
4. Say "Setup."
5. Say "Pairing options."
6. The voice guide will say "Select one of the following: pair, edit, delete, or list?"
7. Say "Pair."
8. The voice guide will say "Please say a 4-digit pairing code."
9. Say a 4 digit number. The 4 digit number will be registered as a pairing code for the device.

- When the confirmation function is on, the system will confirm whether the number said is acceptable. Answer "Yes" to go Step 10. Say "No" to return to pairing code selection.

NOTE:

- The pairing code entered here is only used for the Bluetooth® connection certification. It is any 4-digit number the user would like to select.
- Remember the pairing code as it needs to be keyed into the device later in the pairing process.
- Depending on the connection settings of the bluetooth® device, this code may have to be entered each time you connect the bluetooth® device to the hands free module. For the default connection settings, refer to the instructions for device.

10. The voice guide will say "Start pairing procedure on device. See device manual for instructions." Refer to the owner's manual for your device and enter into the device the pairing code that was registered in Step 9.
11. When this system finds a Bluetooth® device, the voice guide will say "Please say the name of the device after the beep."
12. After you hear the beep, name the device by saying a name of your preference.

NOTE: When the confirmation function is on, after repeating the device tag you have said, the voice guide will ask "Is this correct?" Answer "Yes". To change the device tag, answer "No" and then say the device tag again.
13. The voice guide will say "Pairing complete," after which a beep will be played and the pairing process will end.

DELETING A DEVICE

1. Turn the ignition switch to "ACC" or "ON" position.
2. Press the Speech switch.
3. Say "Setup."
4. Say "Pairing options"
5. The voice guide will say "Select one of the following: pair, edit, delete, or list".
6. Say "Delete."
7. After the voice guide says "Please say," the numbers of the devices and device tags of corresponding devices will be read out in order, starting with the device that has been most recently connected. After it completes reading all pairs, the voice guide will say "or all."
Say the number of the device that you want to delete from the system.
If you want to delete all paired devices from the system, say "All."
8. For confirmation purposes, the voice guide will say "Deleting (device tag) (number). Is this correct?" or "Deleting all devices, Is this correct?"
9. Answer "Yes" to delete the devices.
Answer "No" the system will return to Step 4.
10. The voice guide will say "Deleted", and then the system will end the device deletion process.
 - If the device deletion process fails for some reason, the voice guide will say "Delete failed." and then the system will cancel deleting the device.

PAIRING THE BLUETOOTH® DEVICE

As for vehicles with MMCS, "pairing" registration of the Bluetooth® device and deletion of paired device from hands free module can be done by touch panel operation on the multivision display.

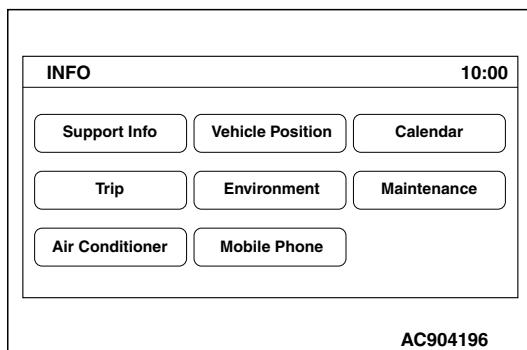
NOTE:

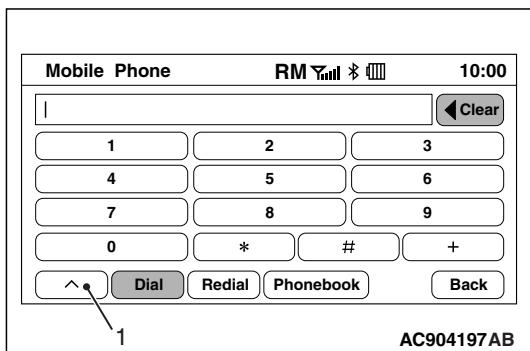
M1544405500023

- Some Bluetooth® devices (cellular phone and music player) may not be compatible with the hands free module.
- A maximum of seven Bluetooth® devices can be registered.
- This system cannot be used when a battery of Bluetooth® devices was exhausted.

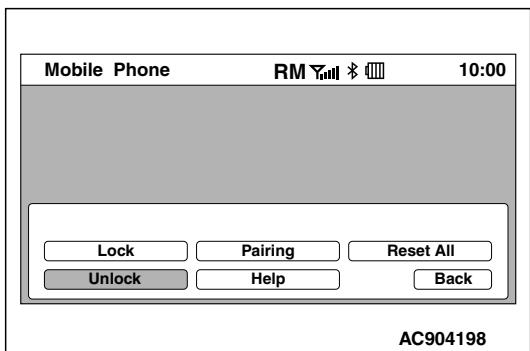
DISPLAY THE PAIRING LIST SCREEN.**OPERATION ON THE MOBILE PHONE SCREEN**

1. Display the INFOR screen, and select "Mobile Phone."

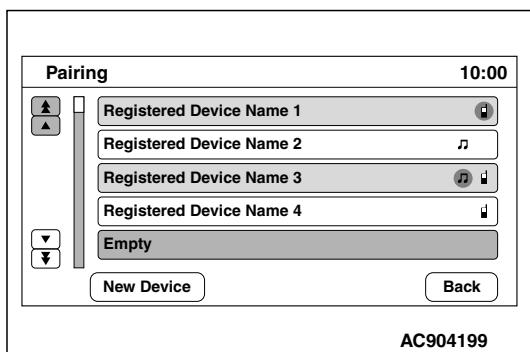




2. Select "1" in the illustration on the Mobile Phone screen.

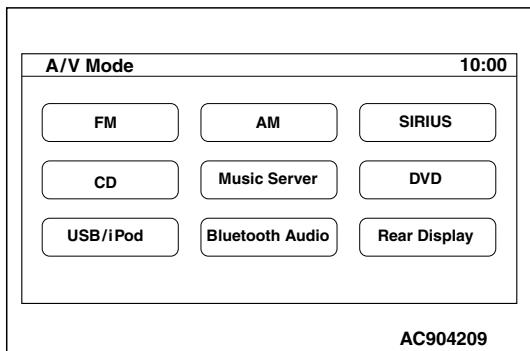


3. Select "Pairing."



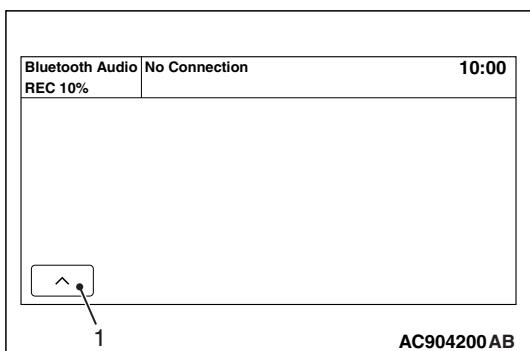
4. The pairing list screen is displayed.

OPERATION ON THE A/V MODE SCREEN

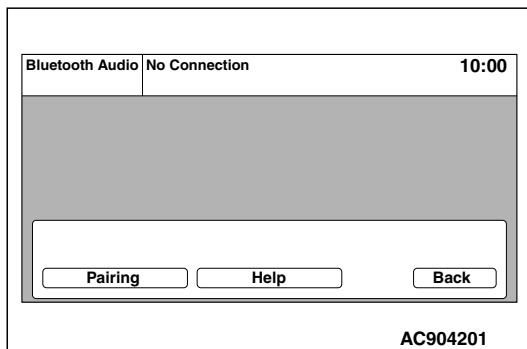


1. Display the A/V mode screen, and select "Bluetooth Audio."

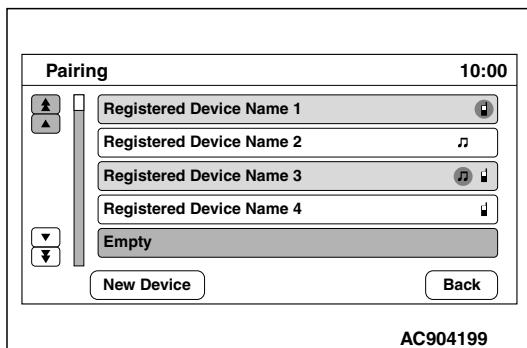
NOTE: When there are no active connections between the Bluetooth® Audio and the hands free module, "There are no active connections." is displayed.



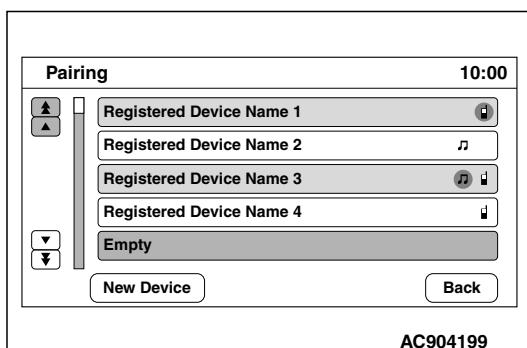
2. Select "1" in the illustration on the Bluetooth Audio screen.



3. Select "Pairing."

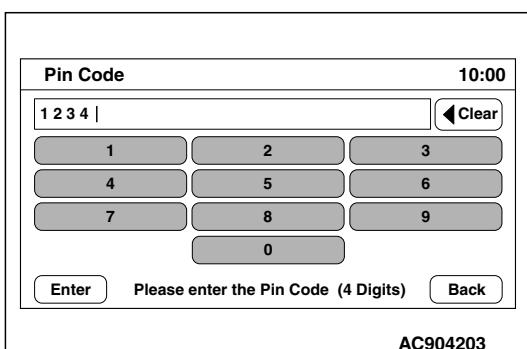


4. The pairing list screen is displayed.



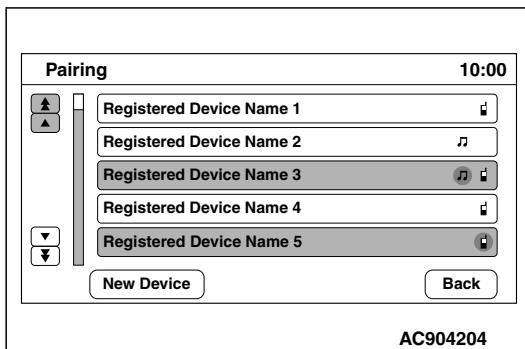
PAIRING OPERATION OF BLUETOOTH® DEVICE

1. Shift the selector lever to P (parking) position and pull the parking brake lever.
2. Display the pairing list screen, and select "New Device."
NOTE: When the vehicle is being driven, or when the vehicle is driven during the pairing operation, "This function is disabled while driving." is displayed for 4 seconds, and the display returns to the pairing list screen.



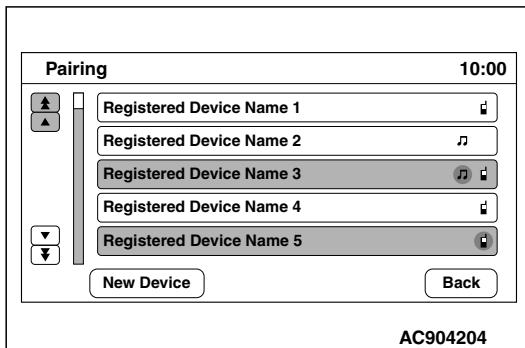
3. Enter the 4-digit code on the Pin code screen, and select "Enter."
4. "Begin Pairing procedure on device. See device's manual for instructions." is displayed on the screen.
5. Refer to the owner's manual for your device and enter into the device the pin code.

NOTE: When "Cancel" is selected or the pairing is failed, the display returns to the pairing list screen.



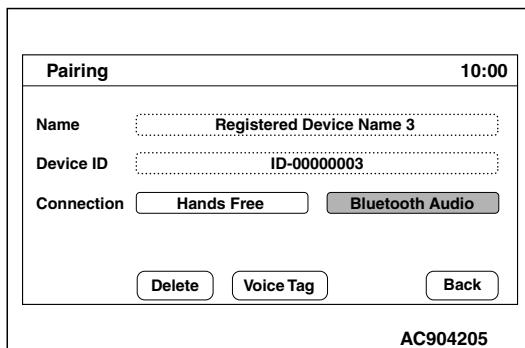
- When the pairing is completed, the display returns to the pairing list screen.

NOTE: When 7 Bluetooth® devices are already paired to the hands free module, "Maximum device paired. Please delete a paired device before pairing a new device." is displayed.

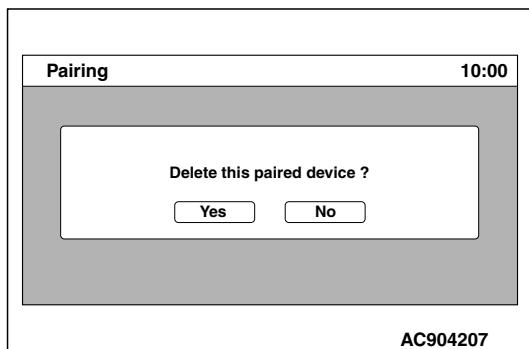


DELETE OPERATION OF BLUETOOTH® DEVICE

- Display the pairing list screen, and select the "Bluetooth® device" to be deleted.

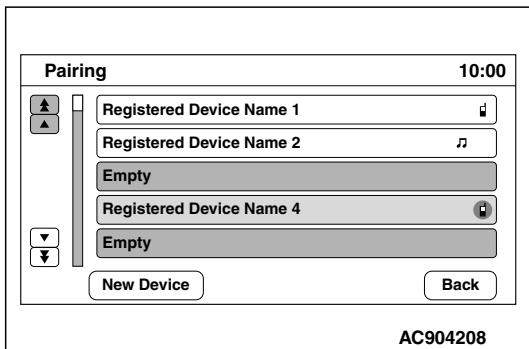


- Select "Delete."



3. When "Yes" is selected, the Bluetooth® device is deleted and the display returns to the pairing list screen.

ERASE THE PASSWORD



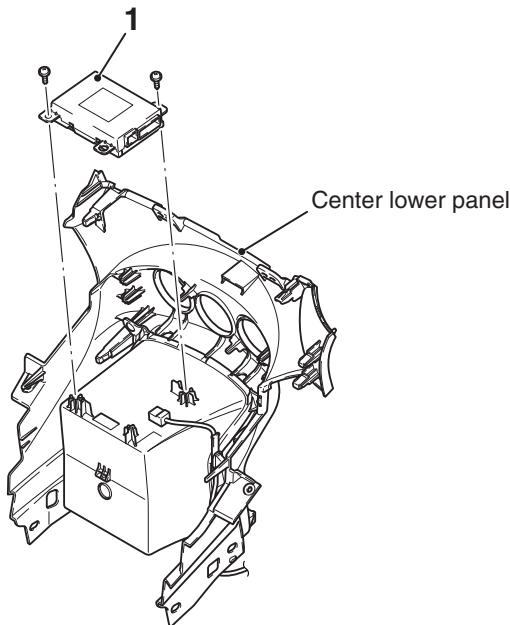
M1544403800299

The 4-digit password set by security function can be erased by the diagnosis mode. Perform the "UNLOCK" operation of the diagnosis mode. (Refer to [P.54A-584](#) <Vehicles with radio and CD player>, [P.54A-586](#) <Vehicles with MMCS>.)

REMOVAL AND INSTALLATION

M1544405400082

<HANDS FREE MODULE>



AC900436AB

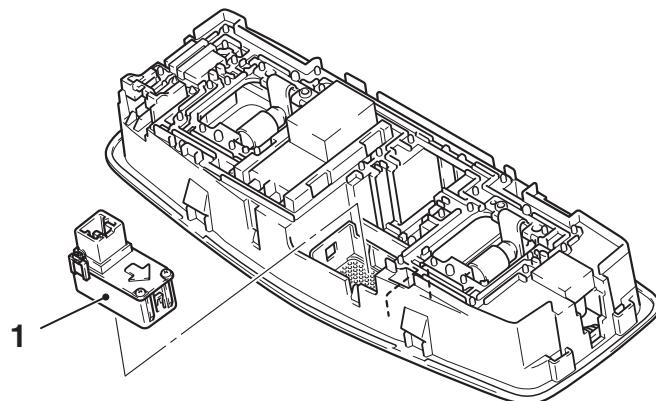
Removal steps

- Radio and CD player or multivision display (Refer to [P.54A-423](#) <Vehicles with radio and CD player> or [P.54A-559](#) <Vehicles with MMCS>)
 1. Hands free module

REMOVAL AND INSTALLATION

M1546023300164

<MICROPHONE UNIT>



AC606269AD

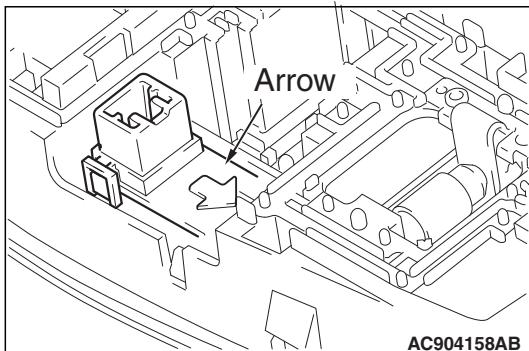
Removal steps

- Front dome light assembly (Refer to GROUP 52A, Headlining [P.52A-15.](#))
>>A<< 1. Microphone unit

INSTALLATION SERVICE POINT

>>A<< MICROPHONE UNIT INSTALLATION

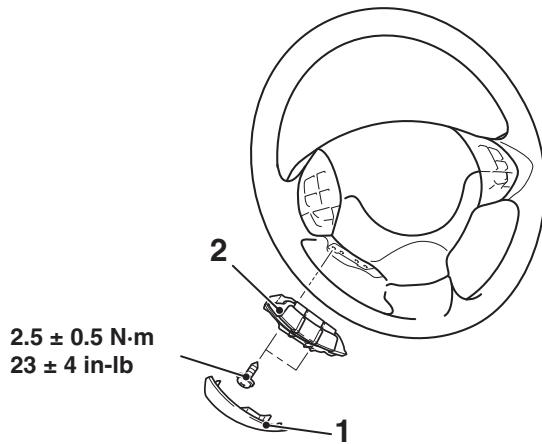
Install the microphone unit so that the arrow face toward the driver's seat.



REMOVAL AND INSTALLATION

<STEERING WHEEL VOICE CONTROL SWITCH>

M1546024200137



Removal steps

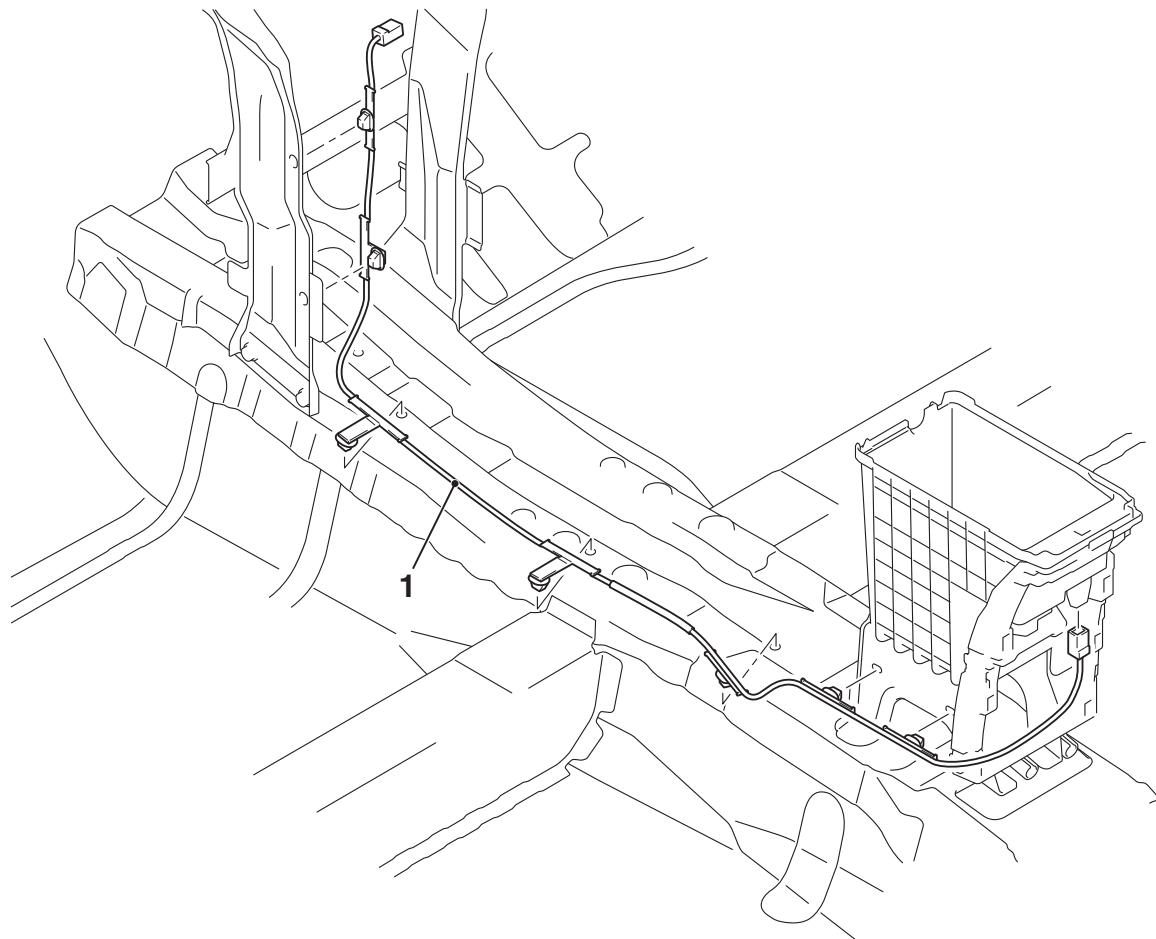
1. Steering wheel voice control switch cover
2. Steering wheel voice control switch

AC802108AD

REMOVAL AND INSTALLATION

M1549101300162

<USB CABLE>



AC809507AB

Removal steps

- Rear floor console assembly (Refer to GROUP 52A – Rear Floor Console Assembly [P.52A-8](#).)

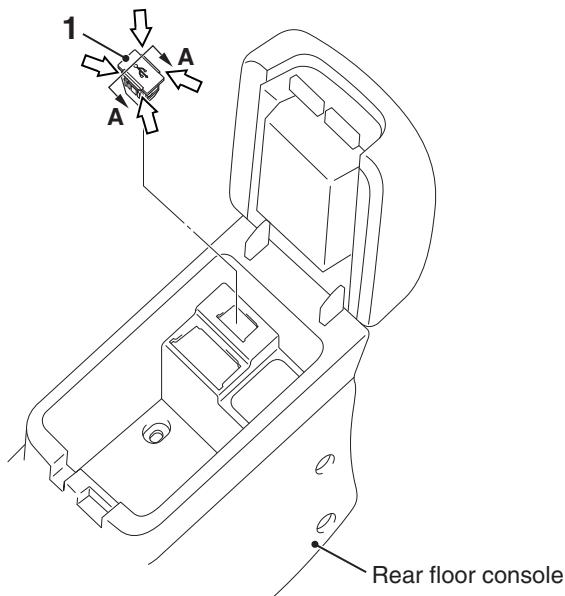
Removal steps (Continued)

- Center lower panel (Refer to GROUP 52A – Instrument Panel Assembly [P.52A-2](#).)
 1. USB cable

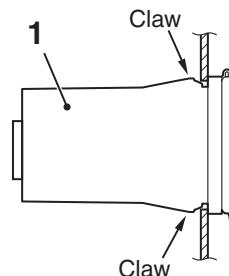
REMOVAL AND INSTALLATION

M1549100800164

<USB ADAPTER>



Section A – A



NOTE
← :Claw positions

AC900459AB

Removal Steps

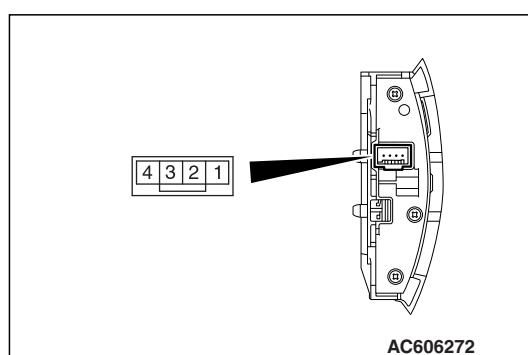
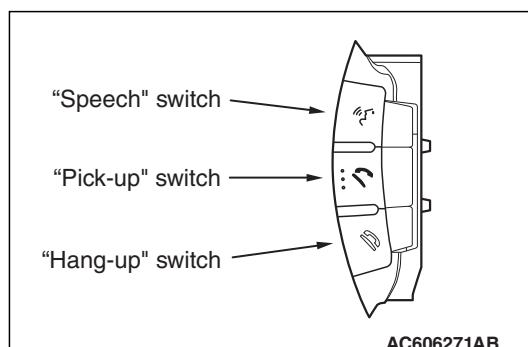
- Rear floor console assembly (Refer to GROUP 52A – Rear Floor Console assembly P.52A-8.)
- 1. USB adapter

INSPECTION

STEERING WHEEL VOICE-CONTROL SWITCH
CONTINUITY CHECK

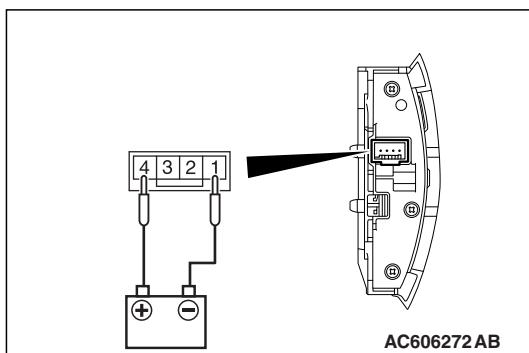
M1544401100391

Use an ohmmeter to measure the resistance value between the terminal.



Switch position	Tester connection	Measurement value
No push	2 – 3	Approximately 74 kΩ
"Speech" switch		Approximately 1.5 kΩ
"Pick-up" switch		Approximately 3.3 kΩ
"Hang-up" switch		Approximately 6.0 kΩ

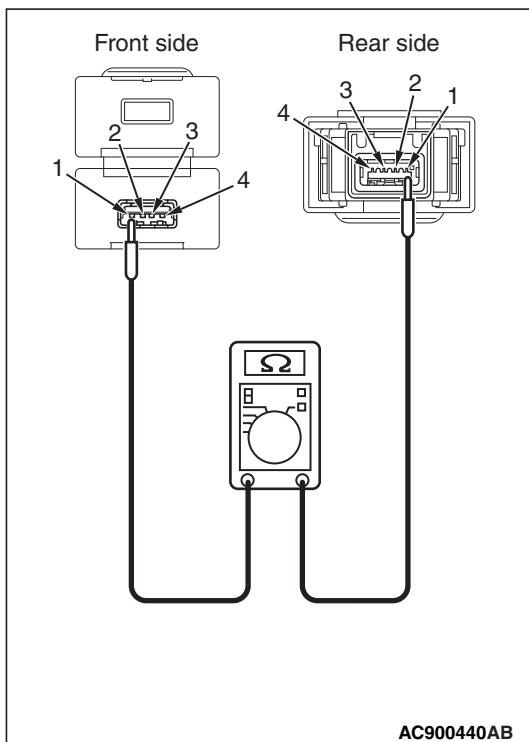
ILLUMINATION CHECK



Apply the battery voltage of steering wheel voice control switch connector terminal No. 4 and 1, and check if the steering wheel audio remote control switch illuminates.

NOTE: Make sure that the polarity is correct.

USB ADAPTER INSPECTION



M1549101100072

1. Remove the USB adapter. (Refer to [P.54A-634](#))
2. Check that the continuity exists between the front side terminals of USB adapter and rear side terminals of USB adapter.

Front side terminal	Rear side terminal	Measurement value
1	1	Continuity exists (2 Ω or less)
2	2	
3	3	
4	4	

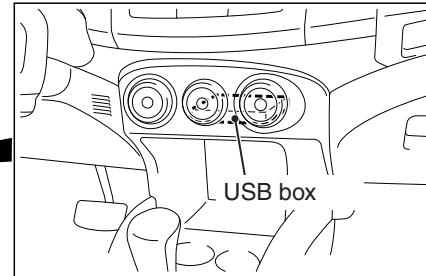
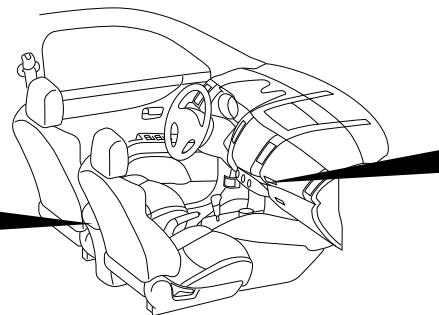
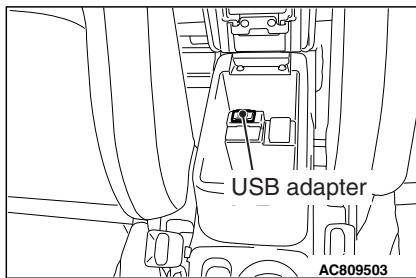
USB BOX

GENERAL INFORMATION

M1549100200087

The USB* adapter transfers the music data from the iPod® and USB memory to the radio and CD player or the multivision display via the USB box, and the data can be played by the "USB mode".

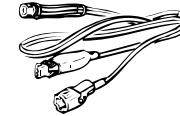
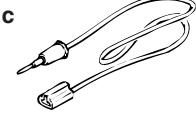
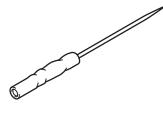
NOTE: *Universal serial bus



AC900397AC

SPECIAL TOOLS

M1549100300017

Tool	Tool number and name	Supersession	Application
   	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Check harness b. LED harness c. LED harness adapter d. Probe	General service tool (jumper) a. For checking connector pin contact pressure b. For checking power supply circuit c. For checking power supply circuit d. For connecting a locally sourced tester	Continuity check and voltage measurement at harness wire or connector a. For checking connector pin contact pressure b. For checking power supply circuit c. For checking power supply circuit d. For connecting a locally sourced tester
	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00, Troubleshooting contents [P.00-7](#).

M1549100400014

DIAGNOSIS MODE <VEHICLES WITH RADIO AND CD PLAYER>

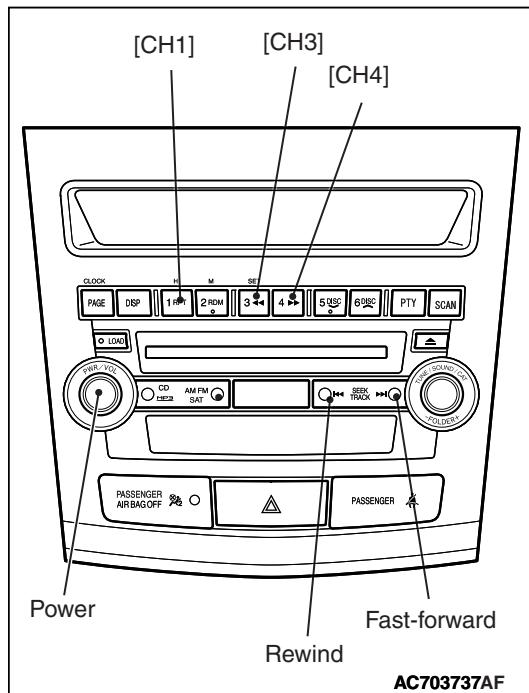
M1549101600152

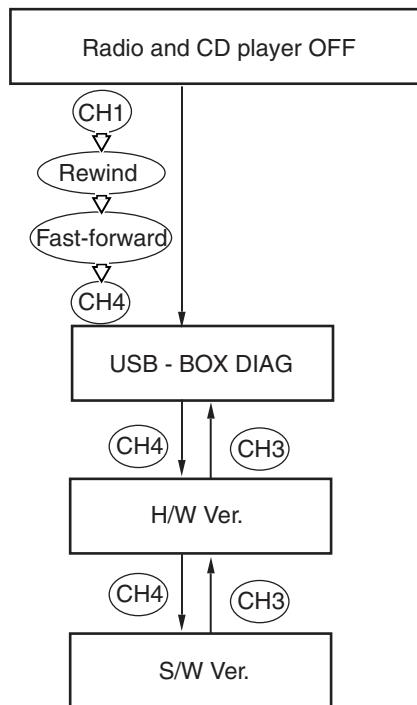
Enter the diagnosis mode according to the following steps:

1. Turn the Ignition switch to the "ACC" or "ON" position and switch off the radio and CD player.
2. Press the following buttons in that order within sixty seconds from step (1).
 - (1) [CH1] button.
 - (2) Rewind button.
 - (3) Fast-forward button.
 - (4) [CH4] button.

NOTE: When the "Power" button of the radio and CD player is pressed during the diagnosis mode, the diagnosis mode will be cancelled, thus switching off the radio and CD player.

3. "USB - BOX DIAG" is displayed.





AC905418AB

Description in the illustrations	Actual display	Condition
USB - BOX DIAG	USB - BOX DIAG	Displayed when the diagnosis mode is being entered.
H/W Ver.	H/W XX	Two-digit hardware version is displayed.
S/W Ver.	S/W XXXXXXX	Seven-digit software version is displayed.

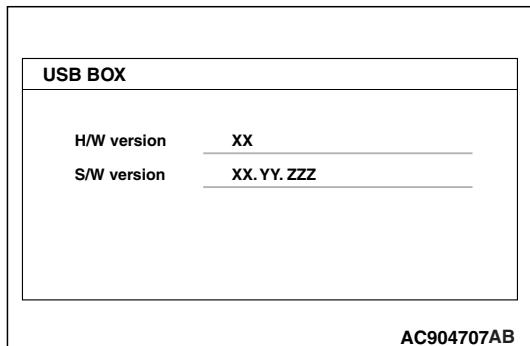
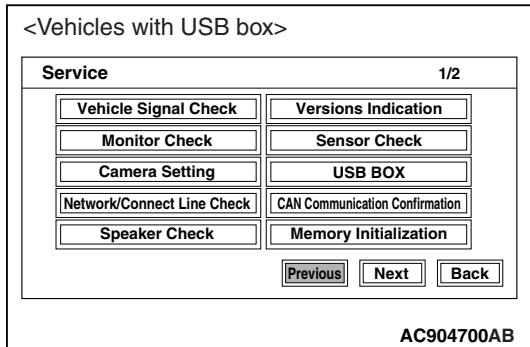
DIAGNOSIS MODE <VEHICLES WITH MMCS>

M1549101600163

HOW TO INITIATE THE SERVICE MODE

Refer to MMCS - Service mode [P.54A-443](#).

HOW TO TERMINATE THE SERVICE MODE

Refer to MMCS - Service mode [P.54A-443](#).

1. Select "USB BOX" on "Service" screen.

NOTE:

- *H/W version: The hardware version information of the USB box is displayed in 2 digits.*
- *S/W version: The software version information of the USB box is displayed in 7 digits.*

TROUBLE SYMPTOM CHART

M1549100500077

Trouble symptom		Reference page
The USB adapter data cannot be replayed.	Vehicles with radio and CD player	P.54A-487
	Vehicles with MMCS	P.54A-487

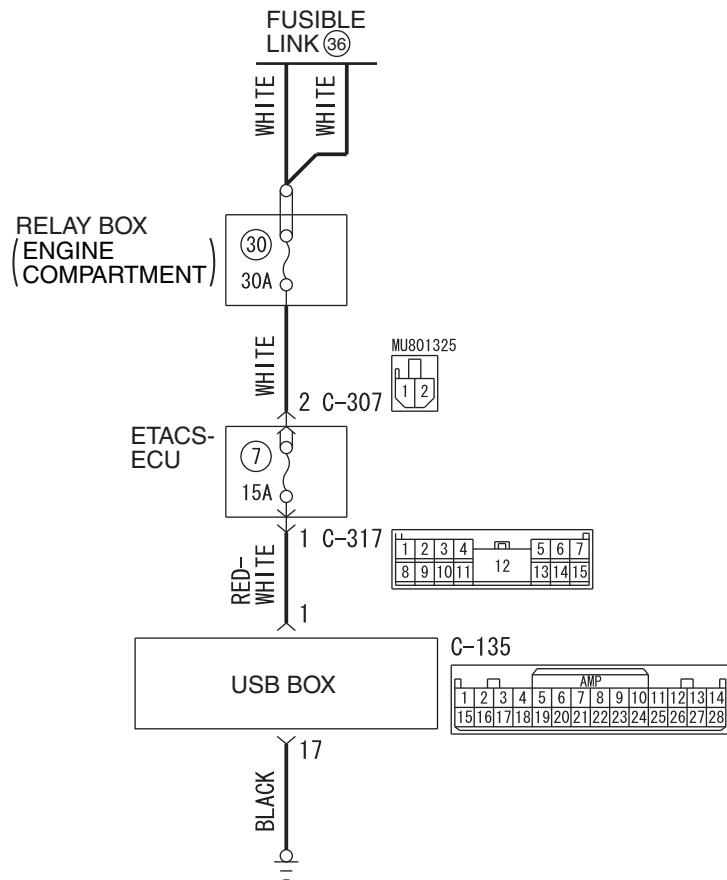
SYMPTOM PROCEDURES

The USB adapter data cannot be replayed. <Vehicles with radio and CD player>

! CAUTION

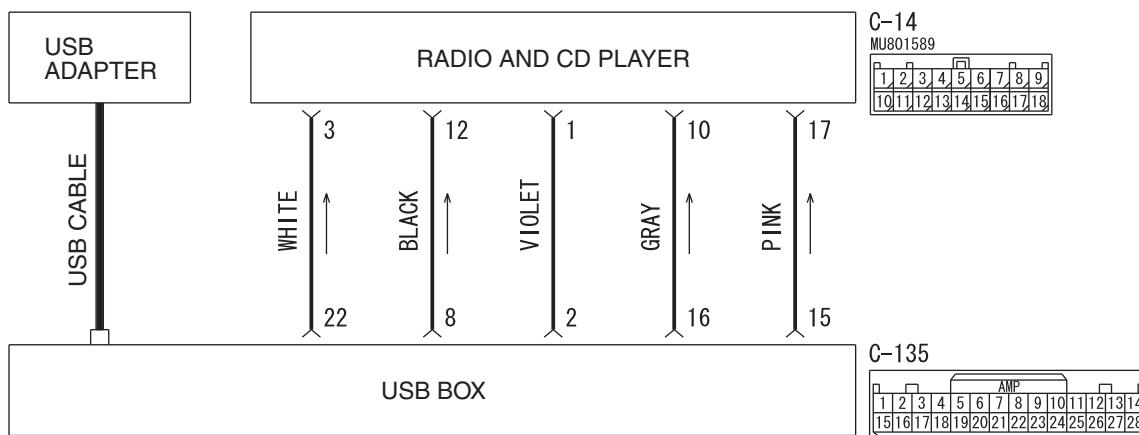
Before replacing the USB box, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

USB Box Power Supply Circuit



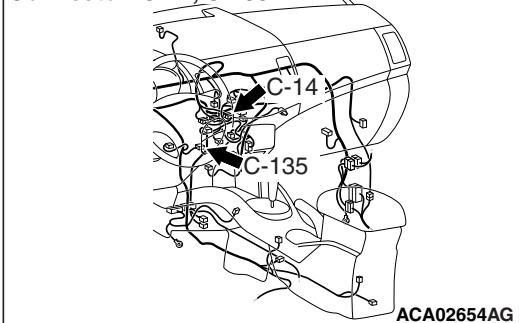
WAG54X097A

USB Box Communication Circuit

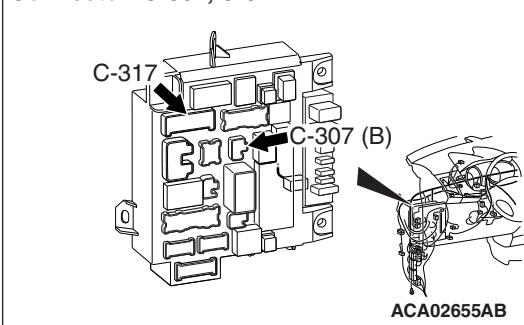


WBG54M008A

Connector: C-14, C-135



Connector: C-307, C-317



COMMENTS ON TROUBLE SYMPTOM

If the sound replay is impossible with the USB mode, the USB adapter, USB cable, USB box, or radio and CD player may be defective, or a communication error between the audio unit and USB box may have occurred.

NOTE: "LSI ERROR" is displayed on the audio display when the USB box has an internal error. In this case, the USB box has an internal error.

PROBABLE CAUSES

- The radio and CD player may be defective.
- The USB box may be defective.
- The USB adapter may be defective.
- The USB cable may be defective.
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the radio and CD player operation.

Check if the radio and CD player work normally and the sound is output.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Troubleshoot the radio and CD player (Refer to [P.54A-363](#)).

Step 2. Check the external sounds input mode.

Check if the audio unit is switched to the "USB mode".

Q: Is the check result normal?

YES : Go to Step 3.

NO : Switch to the external sounds input mode.

STEP 3. Check the audio display

Check if the audio display is displayed the "LSI ERROR".

Q: Is the check result normal?

YES : Go to Step 13.

NO : Go to Step 4.

STEP 4. Check the USB adapter.

Check if the USB adapter works normally.(Refer to [P.54A-425](#))

Q: Is the check result normal?

YES : Go to step 5.

NO : Replace the USB adapter.

STEP 5. Check the USB cable.

Check that the USB cable is connected to the USB adapter or USB box normally. Or check the USB cable for damage such as bend.

Q: Is the check result normal?

YES : Go to step 6.

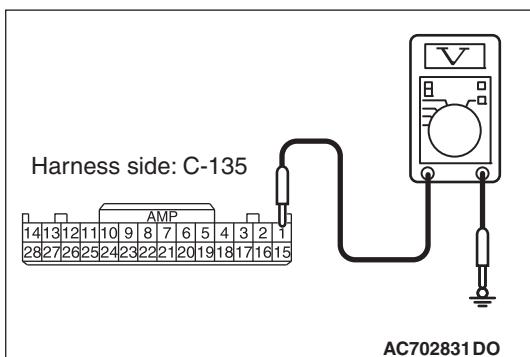
NO : Replace or repair the USB cable.

STEP 6. Check USB box connector C-135 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is USB box connector C-135 in good condition?

YES : Go to step 7.

NO : Repair the defective connector.



STEP 7. Check the power supply circuit to the USB box. Measure the voltage at USB box connector C-135.

- (1) Disconnect USB box connector C-135, and measure the voltage available at the wiring harness-side connector.
- (2) Measure the voltage between terminal 1 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 9.
NO : Go to Step 8.

STEP 8. Check the wiring harness between USB box connector C-135 (terminal 1) and fusible link (36).

- Check the power supply line for open circuit and short circuit.

NOTE: Also check ETACS-ECU connector C-307, C-317 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If ETACS-ECU connector C-307, C-317 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: USB box connector C-135 (terminal 1) and fusible link (36) in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

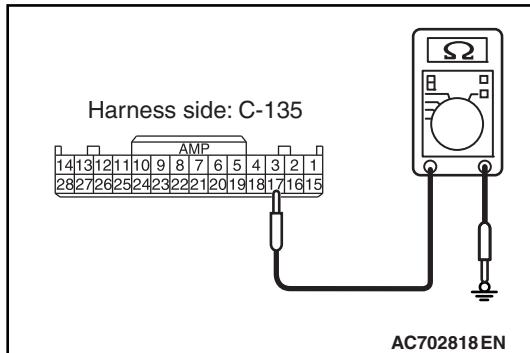
STEP 9. Check the ground circuit to the USB box. Measure the resistance at USB box connector C-135.

- (1) Disconnect USB box connector C-135, and measure the resistance available at the wiring harness side of the connector.
- (2) Measure the resistance between terminal 17 and ground.

OK: The resistance should be 2 ohms or less

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 11.
NO : Go to Step 10.



STEP 10. Check the wiring harness between USB box connector C-135 (terminal 17) and ground.

- Check the ground wires for open circuit.

Q: Is the wiring harness between USB box connector C-135 (terminal 17) and ground in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 11. Check radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**Q: Is radio and CD player connector C-14 in good condition?**

YES : Go to step 12.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 12. Check the wiring harness between radio and CD player connector C-14 (terminal 17, 12, 3, 10, 1) and USB box connector C-135 (terminal 15, 8, 22, 16, 2).

- Check the communication line for open circuit and short circuit.

Q: Is the wiring harness between radio and CD player connector C-14 (terminal 17, 12, 3, 10, 1) and USB box connector C-135 (terminal 15, 8, 22, 16, 2) in good condition?

YES : Go to Step 13.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 13. Replace the USB box temporarily, and check the trouble symptom.

Replace the USB box temporarily, and check that the sound is output from the speaker.

Q: Is the check result normal?

YES : Replace the USB box.

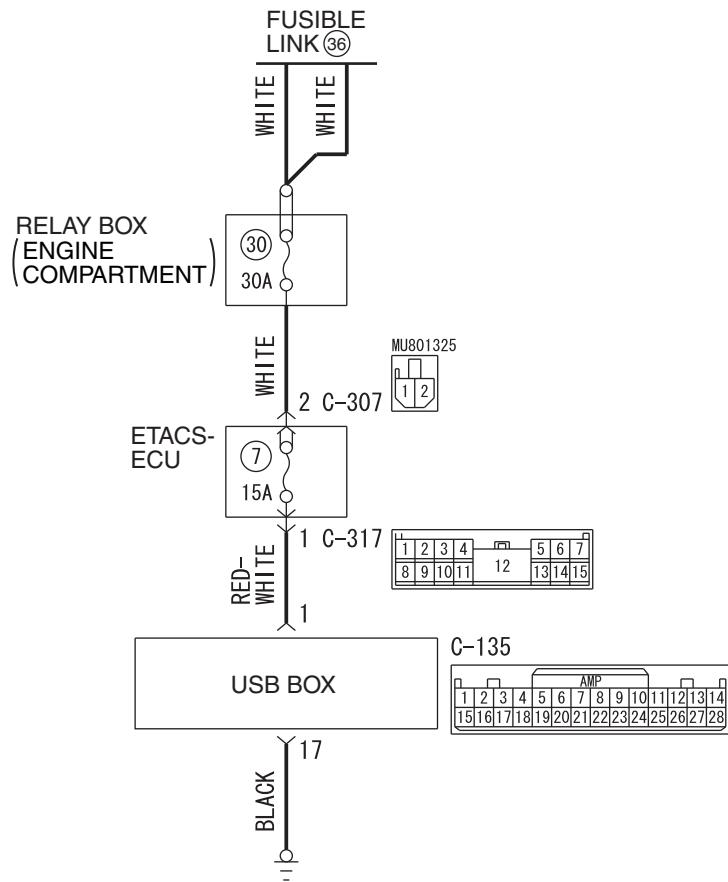
NO : Replace the radio and CD player.

The USB adapter data cannot be replayed. <Vehicles with MMCS>

CAUTION

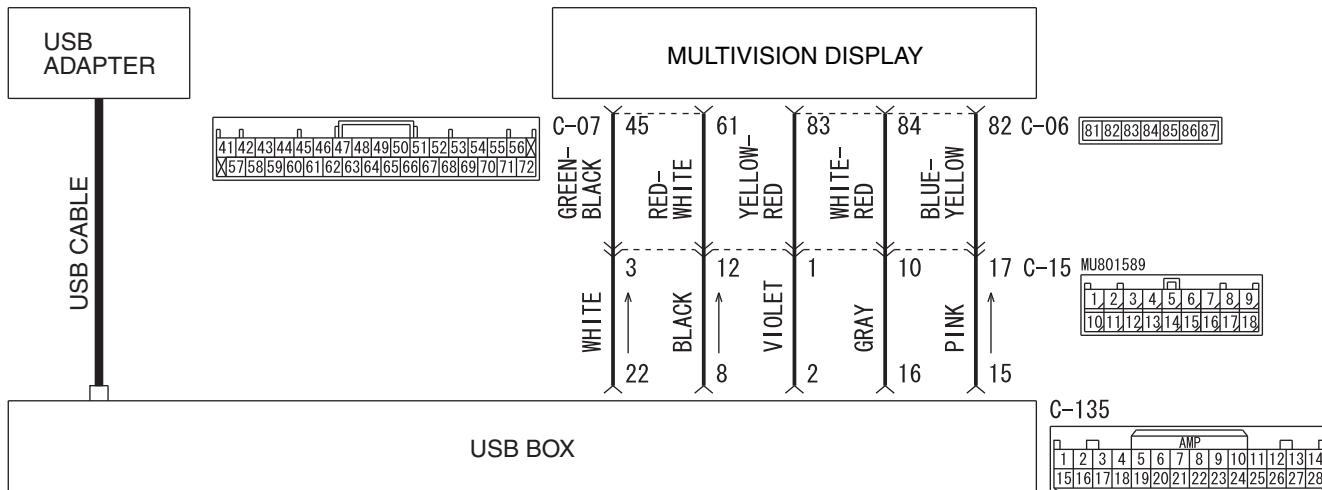
Before replacing the USB box, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

USB Box Power Supply Circuit



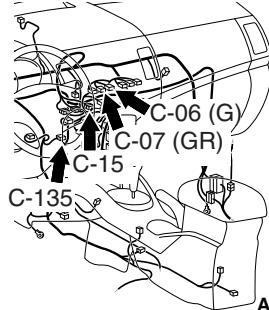
WAG54X097A

USB Box Communication Circuit

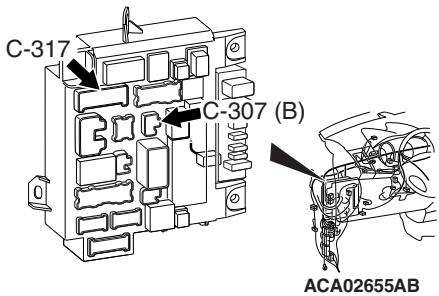


WBG54M007A

Connectors: C-06, C-07, C-15, C-135



Connector: C-307, C-317



COMMENTS ON TROUBLE SYMPTOM

If the sound replay is impossible with the USB/iPod mode, the USB adapter, USB cable, USB box, or multivision display may be defective, or a communication error between the multivision display and USB box may have occurred.

PROBABLE CAUSES

- The multivision display may be defective.
- The USB box may be defective.
- The USB adapter may be defective.
- The USB cable may be defective.
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the multivision display operation.

Check if the multivision display work normally and the sound is output.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Troubleshoot the MMCS (Refer to [P.54A-486](#)).

STEP 2. Check the multivision display operation.

Display the A/V Mode screen, and check that the "USB/iPod" item is displayed.

Q: Is the check result normal?

YES : Go to Step 8.

NO : Go to Step 3.

STEP 3. Check USB box connector C-135 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is hands USB box connector C-135 in good condition?

YES : Go to Step 4.

NO : Repair the defective connector.

STEP 4. Check the power supply circuit to the USB box.

Measure the voltage at USB box connector C-135.

(1) Disconnect USB box connector C-135, and measure the voltage available at the wiring harness side of the connector.

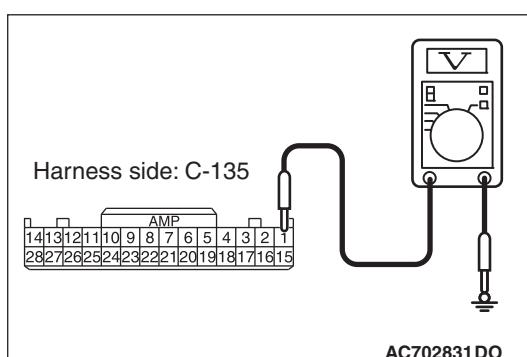
(2) Measure the voltage between terminal 1 and ground.

OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 6.

NO : Go to Step 5.



STEP 5. Check the wiring harness between USB box connector C-135 (terminal 1) and fusible link (36).

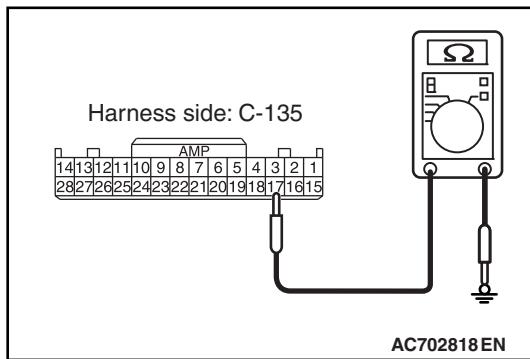
- Check the power supply lines (battery power supply) for open circuit and short circuit.

NOTE: Also check ETACS-ECU connector C-307, C-317 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If ETACS-ECU connector C-307, C-317 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between hands-free module connector C-135 (terminal 1) and fusible link (36) in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

**STEP 6. Check the ground circuit to the USB box. Measure the resistance at hands USB box connector C-135.**

- (1) Disconnect USB box connector C-135, and measure at the wiring harness side.
- (2) Measure resistance between terminal 17 and ground.

OK: The resistance should be 2 ohm or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 8.

NO : Go to Step 7.

STEP 7. Check the wiring harness between USB box connector C-135 (terminal 17) and ground.

- Check the body ground wires for open circuit.

Q: Is the wiring harness between USB box connector C-135 (terminal 17) and ground in good condition?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction P.00-15).

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 8. Check multivision display connector C-07, C-06 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is multivision display connector C-07, C-06 in good condition?

YES : Go to Step 9.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 9. Check the wiring harness between multivision display connector C-07 (terminal 61, 45) and USB box connector C-135 (terminal 8, 22).

- Check the communication line for open circuit and short circuit.

NOTE: Also check intermediate connector C-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between multivision display connector C-07 (terminal 61, 45) and USB box connector C-135 (terminal 8, 22) in good condition?

YES : Go to Step 10.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 10. Check the wiring harness between multivision display connector C-06 (terminal 84, 83, 82) and USB box connector C-135 (terminal 16, 2, 15).

- Check the communication line for open circuit and short circuit.

NOTE: Also check intermediate connector C-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between multivision display connector C-06 (terminal 84, 83, 82) and USB box connector C-135 (terminal 16, 2, 15) in good condition?

YES : Go to Step 11.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 11. Check the USB adapter.

Check that the continuity exists between the front side terminals of USB adapter and rear side terminals of USB adapter.

Q: Is the check result normal?

YES : Go to Step 12.

NO : Replace the USB adapter.

STEP 12. Check the USB cable.

Check that the USB cable is connected to the USB adapter or USB box normally. Or check the USB cable for damage such as bend.

Q: Is the check result normal?

YES : Go to Step 13.

NO : Replace or repair the USB cable.

STEP 13. Replace the USB box temporarily, and check the trouble symptom.

Replace the USB box temporarily, and check that the sound is output from the speaker.

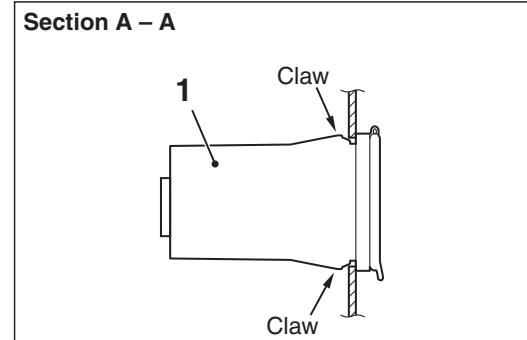
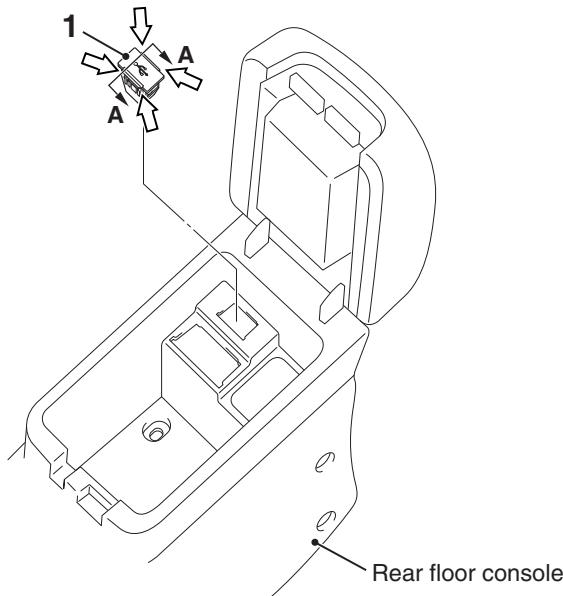
Q: Is the check result normal?

YES : Replace the USB box.

NO : Replace the multivision display.

REMOVAL AND INSTALLATION

M1549100800012



NOTE
← :Claw positions

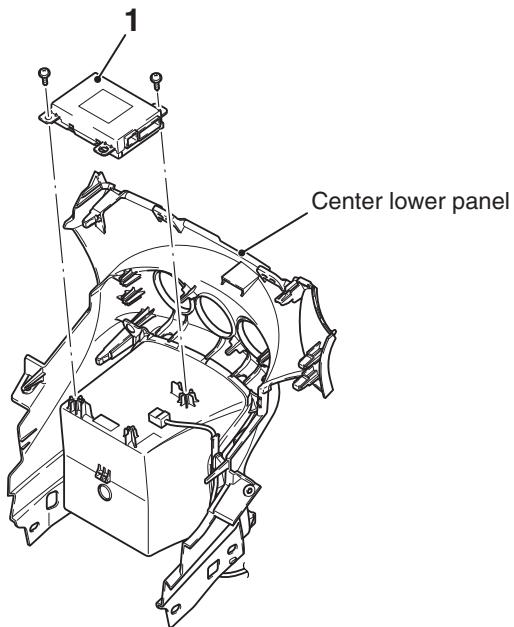
AC900459AB

Removal Steps

- Rear floor console assembly (Refer to GROUP 52A – Rear Floor Console assembly [P.52A-8.](#))
- 1. USB adaptor

REMOVAL AND INSTALLATION

M1549100900183



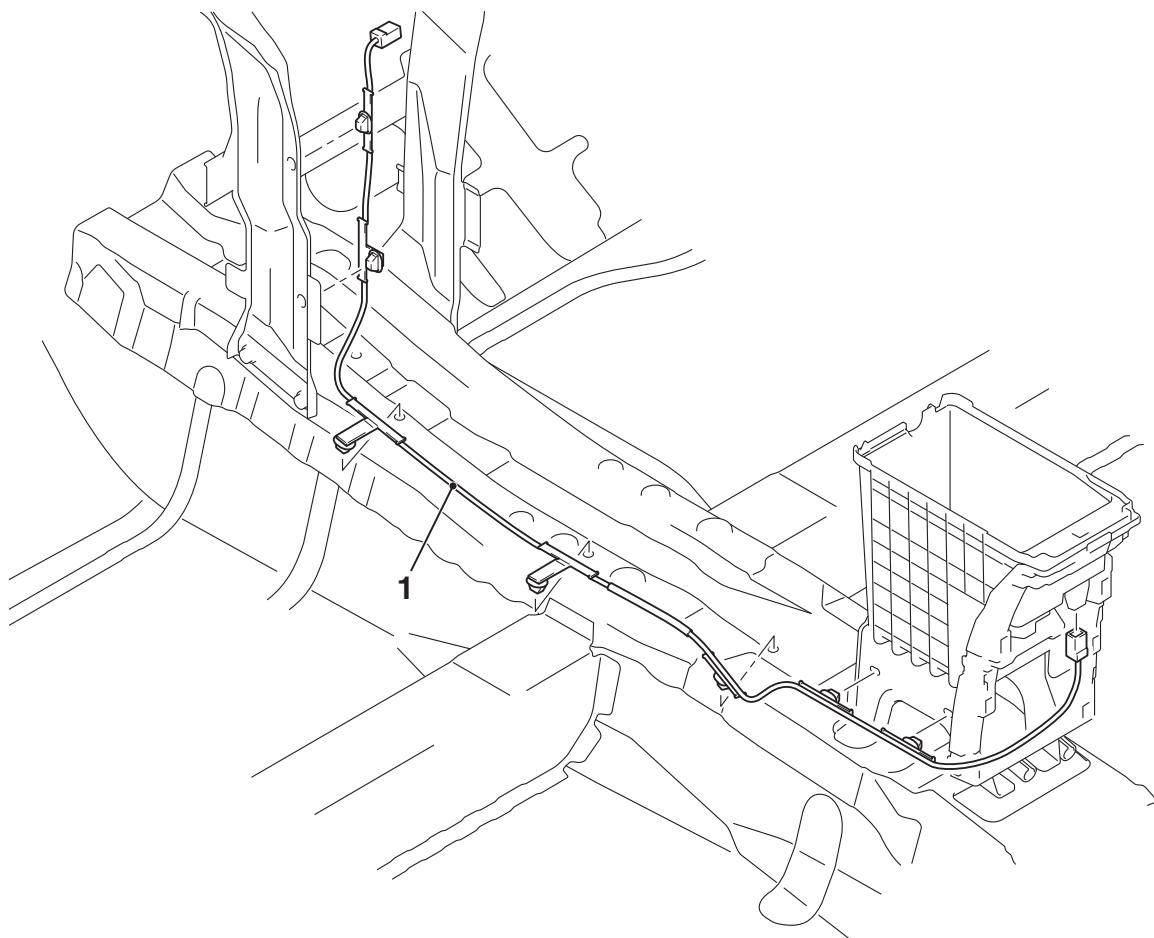
AC900436AB

Removal steps

- Radio and CD player or multivision display (Refer to [P.54A-423](#) <Vehicles with radio and CD player> or [P.54A-559](#) <Vehicles with MMCS>)
 1. USB box

REMOVAL AND INSTALLATION

M1549101300010



AC809507AB

Removal steps

- Rear floor console assembly (Refer to GROUP 52A – Rear Floor Console Assembly [P.52A-8](#).)

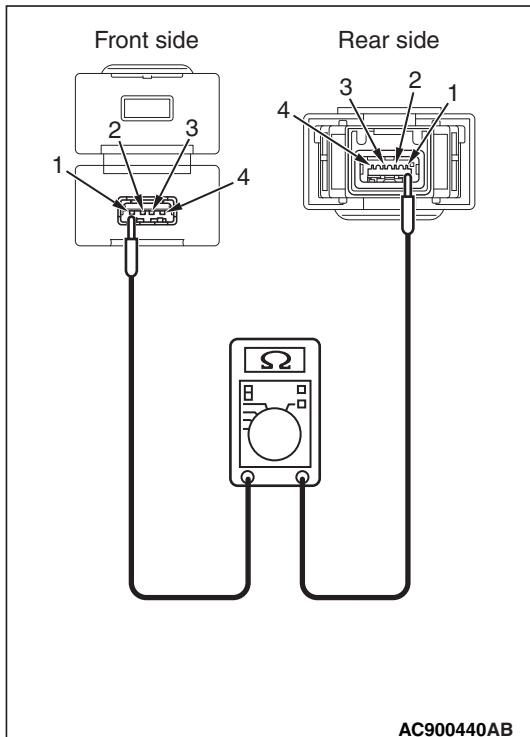
Removal steps (Continued)

- Center lower panel (Refer to GROUP 52A – Instrument Panel Assembly [P.52A-2](#).)
 1. USB cable

USB ADAPTER INSPECTION

M1549101100016

1. Remove the USB adapter. (Refer to [P.54A-650](#))
2. Check that the continuity exists between the front side terminals of USB adapter and rear side terminals of USB adapter.



Front side terminal	Rear side terminal	Measurement value
1	1	Continuity exists (2 Ω or less)
2	2	
3	3	
4	4	

SATELLITE RADIO TUNER

GENERAL INFORMATION

SATELLITE RADIO

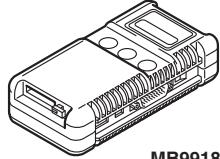
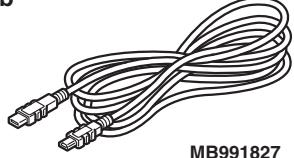
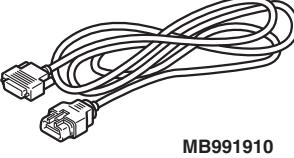
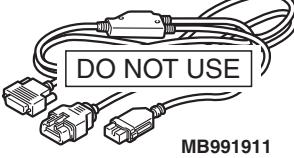
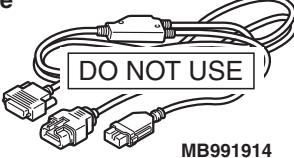
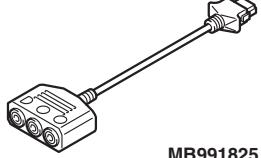
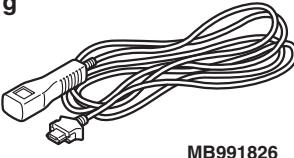
- The satellite radio is a broadcast technology that offers a clear digital sound directly by using satellites.

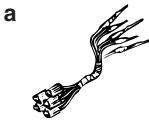
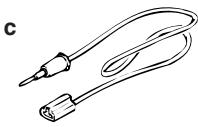
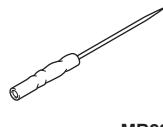
M1544000100420

- The registered service provider is SIRIUS™ satellite radio.
- This service offers listeners more than 100 programs such as news, sports, music, and entertainment.

SPECIAL TOOLS

M1544000600726

Tool	Tool number and name	Supersession	Application
a  MB991824	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826	MB991824-KIT <i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i>	⚠ CAUTION M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle. CAN bus diagnostics or diagnostic trouble code check.
b  MB991827	M.U.T.-III sub-assembly		
c  MB991910	a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable		
d  MB991911	c. M.U.T.-III main harness A (Vehicles with CAN communication system) d. M.U.T.-III main harness B (Vehicles without CAN communication system)		
e  MB991914	e. M.U.T.-III main harness C (for Chrysler models only)		
f  MB991825	f. M.U.T.-III measurement adapter		
g  MB991826 MB991958	g. M.U.T.-III trigger harness		

Tool	Tool number and name	Supersession	Application
   	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Check harness b. LED harness c. LED harness adapter d. Probe	General service tool (jumper)	Continuity check and voltage measurement at harness wire or connector a. For checking connector pin contact pressure b. For checking power supply circuit c. For checking power supply circuit d. For connecting a locally sourced tester
	MB992006 Extra fine probe	—	Continuity check and voltage measurement at harness wire or connector

DIAGNOSIS

INTRODUCTION TO SATELLITE RADIO DIAGNOSIS

M1544004700372

ERROR CODE (SIRIUS SATELLITE RADIO)

The display displays the error codes if an abnormality related to the satellite radio is detected. (Refer to [P.54A-328](#).)

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1544016500030

Refer to GROUP 00 – Troubleshooting contents [P.00-7](#).

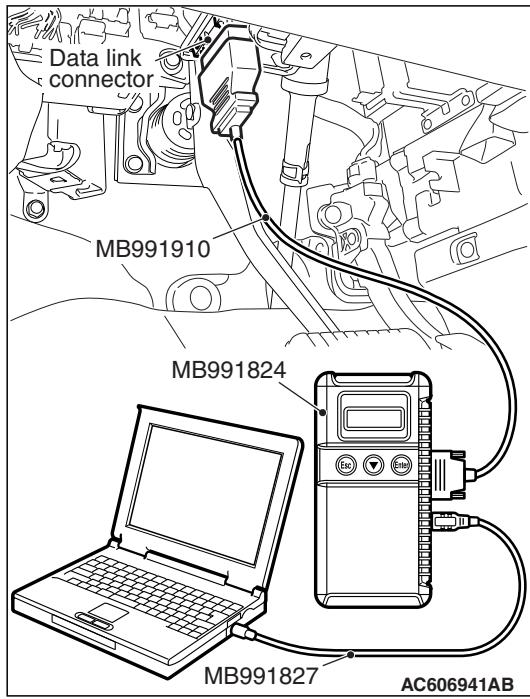
DIAGNOSIS FUNCTION

M1544013200397

HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)


CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824.
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

NOTE: When special tool MB991824 is energized, special tool MB991824 indicator light will be illuminated in a green color.

7. Start the M.U.T.-III system on the personal computer.

NOTE: Disconnecting scan tool MB991958 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.

HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

NOTE: If the battery voltage is low, diagnostic trouble codes will not be set. Check the battery if scan tool MB991958 does not display.

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "Meter" from "System List," and press the "OK" button.

NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.

6. Select "Diagnostic Trouble Code." to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

HOW TO DIAGNOSE THE CAN BUS LINES

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicles Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "CAN bus diagnosis" from the start-up screen.
4. When the vehicle information is displayed, confirm that it matches the vehicle being diagnosed.
 - If they match, go to Step 8.
 - If not, go to Step 5.
5. Select the "view vehicle information" button.
6. Enter the vehicle information and select the "OK" button.
7. When the vehicle information is displayed, confirm again that it matches the vehicle being diagnosed.
 - If they match, go to Step 8.
 - If not, go to Step 5.
8. Select the "OK" button.
9. When the optional equipment screen is displayed, choose the one which the vehicle is fitted with, and then select the "OK" button.

CHECK OF FREEZE FRAME DATA

The freeze frame data can be checked by using scan tool.

When detecting fault and storing the diagnostic trouble code, the ECU connected to CAN bus line obtains the data before the determination of the diagnostic trouble code and the data when the diagnostic trouble code is determined, and then stores the ECU status of that time. By analyzing each data from scan tool, the troubleshooting can be performed more efficiently. The displayed items are as the table below.

Display item list

Item No.	Item name	Content	Unit
1	Odometer	Total driving distance after the diagnostic trouble code is generated	mile
2	Ignition cycle	Number of times the ignition switch is turned "ON" or "LOCK (OFF)" after the past failure transition	Number of counts is displayed.
4	Accumulated minute	Cumulative time for current malfunction of diagnostic trouble code	min

DIAGNOSTIC TROUBLE CODE CHART

M1544012900575

Diagnostic trouble code number	Trouble content	Reference page
B2222	Radio receiver Internal fail	P.54A-658
U0019	Bus off (CAN-B)	P.54A-659
U0141	ETACS CAN timeout	P.54A-661
U0151	SRS-ABG CAN timeout	P.54A-663
U0154	OCM (occupant classification-ECU) CAN timeout	P.54A-665
U0155	Meter CAN timeout	P.54A-667
U0164	A/C CAN timeout	P.54A-669
U0168	WCM CAN timeout	P.54A-671
U0184	Audio CAN timeout	P.54A-673

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC B2222: Radio receiver internal fail

⚠ CAUTION

If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be set. Prior to this diagnosis, always diagnose the CAN bus lines.

⚠ CAUTION

Before replacing the satellite radio tuner, be sure to check that the power supply circuit, ground circuit, and communication circuit are normal.

TROUBLE JUDGMENT

When the ignition switch is ON and the system voltage is from 10 V to 16 V (data from ETACS-ECU), if the satellite radio tuner receives abnormal status by signal conditioning 10 times consecutively, DTC B2222 is stored.

COMMENTS ON TROUBLE SYMPTOM

The satellite radio tuner or CAN bus line may have a problem.

PROBABLE CAUSES

- The satellite radio tuner may be defective.
- The CAN bus line may be defective

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicles Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool MB991958 to diagnose the CAN bus lines.

⚠ CAUTION

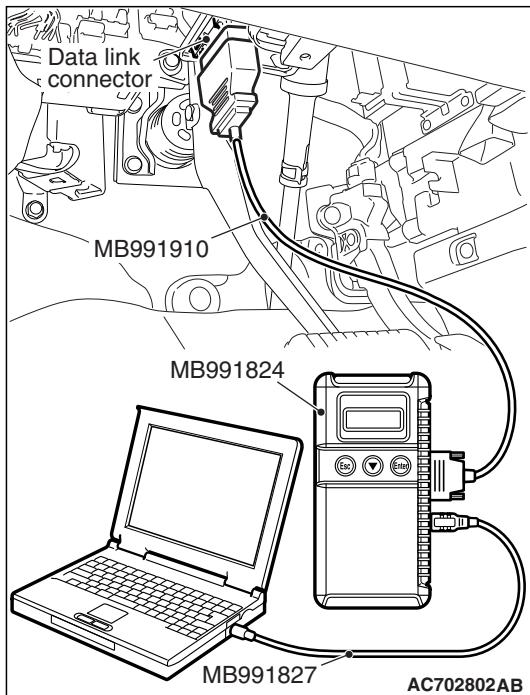
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to "ON" position.
- (3) Diagnose the CAN bus line.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#).) On completion, go to Step 2.



STEP 2. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if the DTC is set.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0019: Bus off (CAN-B)**⚠ CAUTION**

If DTC U0019 is set, be sure to diagnose the CAN bus line.

⚠ CAUTION

When replacing the ECU, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

If the CAN-B circuit malfunction occurs, the satellite radio tuner sets DTC U0019.

JUDGMENT CRITERIA

With the ignition switch at the ON position and the system voltage at 10 – 16 volts (data from ETACS-ECU), if the Satellite radio tuner becomes unable to transmit data normally due to the CAN-B bus circuit malfunction, the satellite radio tuner determines that a problem has occurred.

TROUBLESHOOTING HINTS

The satellite radio tuner, power supply for the satellite radio tuner, ground circuit, or CAN bus line may have a problem.

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

Use scan tool MB991958 to diagnose the CAN bus lines.

CAUTION

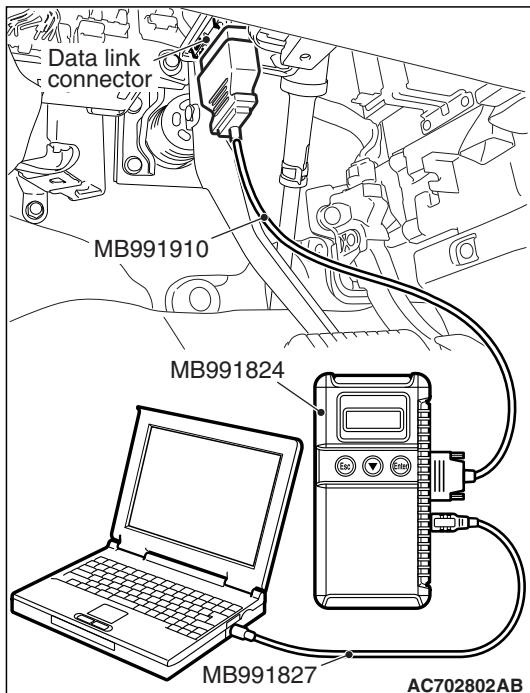
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to "ON" position.
- (3) Diagnose the CAN bus line.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#).) On completion, go to Step 2.

**STEP 2. Check whether the scan tool MB991958 can communicate with the satellite radio tuner.****Q: Is the check result normal?**

YES : Erase the diagnostic trouble code. This diagnosis is complete.

NO : Check the power supply circuit of the satellite radio tuner, and repair if necessary.

DTC U0141: ETACS CAN timeout

CAUTION

If DTC U0141 is set, be sure to diagnose the CAN bus line.

CAUTION

When replacing the ECU, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

If the signal from ETACS-ECU cannot be received, the satellite radio tuner sets the DTC U0141.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse(IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with ETACS-ECU cannot be established for 2,500 ms or more, the satellite radio tuner determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective
- The satellite radio tuner may be defective
- The ETACS-ECU may be defective

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**CAUTION**

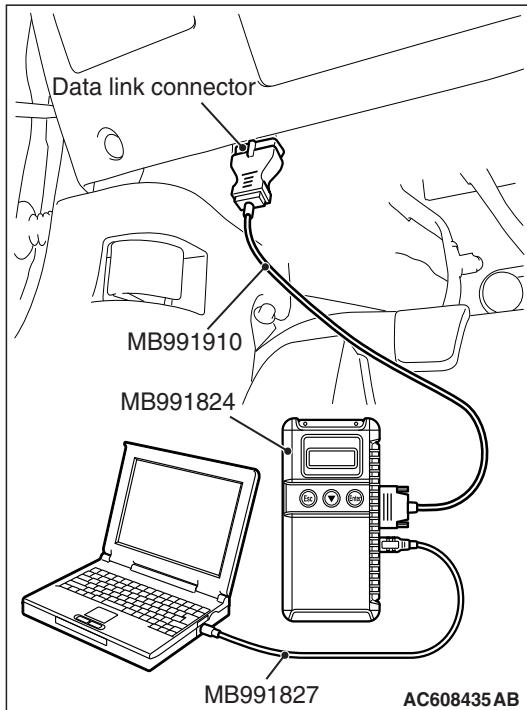
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the ETACS-ECU diagnostic trouble code.

Check again if the DTC is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to [P.54A-732](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C diagnostic trouble code.

Check if DTC U0141 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the ETACS-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ETACS-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ETACS-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0151: SRS-ABG CAN timeout

CAUTION

- If DTC U0151 is set, be sure to diagnose the CAN bus line.
- When replacing the satellite radio tuner, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

If the signal from SRS-ECU cannot be received, the satellite radio tuner sets DTC U0151.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10–16 volts (data from ETACS-ECU), power supply fuse (IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with SRS-ECU cannot be established for 2,500 ms or more, the satellite radio tuner determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective
- The satellite radio tuner may be defective
- The SRS-ECU may be defective

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line**CAUTION**

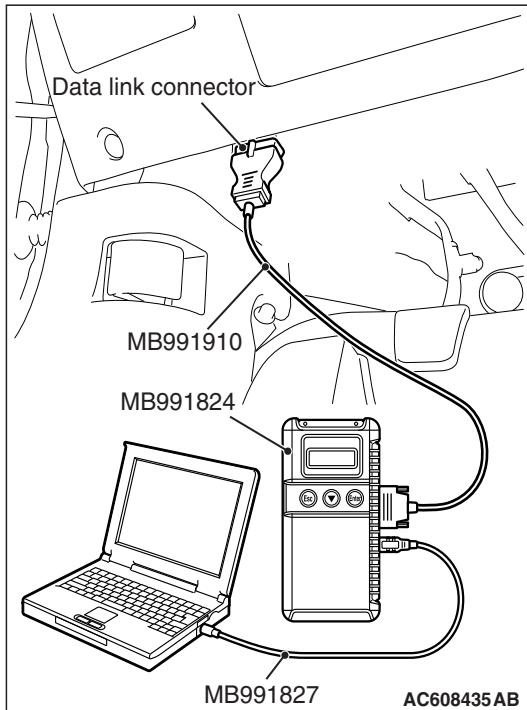
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the SRS-ECU diagnostic trouble code

Check again if the DTC is set to the SRS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Troubleshooting [P.52B-31](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0151 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the SRS-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the SRS-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the SRS-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0154: OCM (occupant classification-ECU) CAN timeout

⚠ CAUTION

If DTC U0154 is set, be sure to diagnose the CAN bus line.

⚠ CAUTION

When replacing the ECU, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

When the signals from occupant classification-ECU cannot be received, the satellite radio tuner sets DTC U0154.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse (IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with occupant classification-ECU cannot be established for 2,500 ms or more, the satellite radio tuner determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The satellite radio tuner may be defective.
- The occupant classification-ECU may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicles Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**⚠ CAUTION**

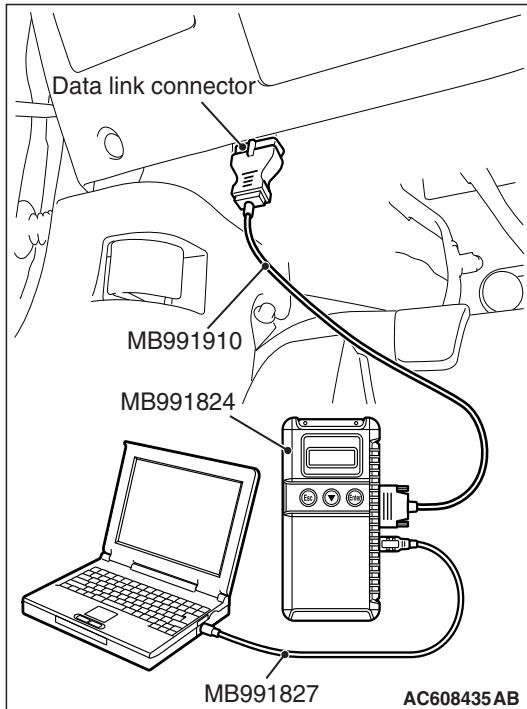
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the occupant classification-ECU diagnostic trouble code.

Check if DTC is set to the occupant classification-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS (Refer to GROUP 52B, Diagnosis [P.52B-344](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0154 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the occupant classification-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the occupant classification-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the occupant classification-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0155: Meter CAN timeout

CAUTION

If DTC U0155 is set in the satellite radio tuner, diagnose the CAN main bus line.

CAUTION

Whenever the satellite radio tuner is replaced, ensure that the communication circuit is normal.

DIAGNOSTIC FUNCTION

When the signals from combination meter cannot be received, the satellite radio tuner sets DTC U0155.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10 – 16 volts (data from ETACS-ECU), power supply fuse (IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communications with combination meter cannot be established for 2,500 ms or more, the satellite radio tuner determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The satellite radio tuner may be defective.
- The combination meter may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: V.C.I.
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A

STEP 1. Using scan tool MB991958, diagnose the CAN bus line**CAUTION**

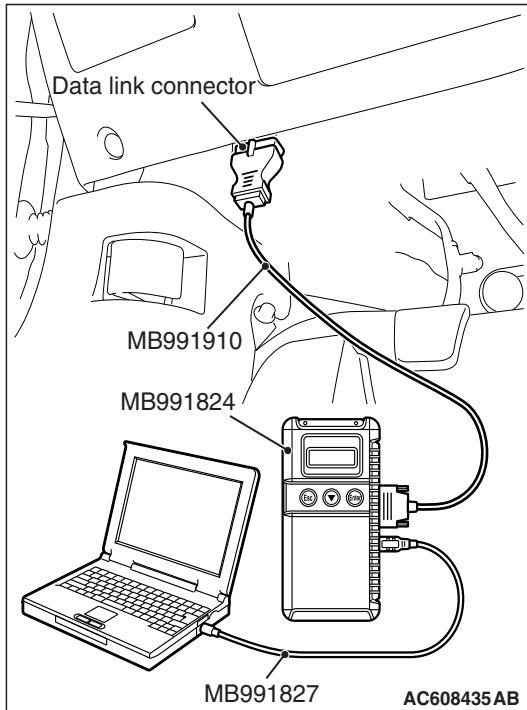
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958 read the combination meter diagnostic trouble code.

Check whether a combination meter DTCs are set or not.

- (1) Turn the ignition switch to the "ON" position.
- (2) Check for combination meter DTCs.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the check result satisfactory?

YES : Go to Step 3.

NO : Diagnose the combination meter (Refer to combination meter, Diagnosis [P.54A-34](#)).

STEP 3. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if the DTC U0155 is set to the A/C-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the combination meter.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the combination meter and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0164: A/C CAN timeout

CAUTION

- If DTC U0164 is set, be sure to diagnose the CAN bus line.
- When replacing the ECU, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

If the signal from A/C-ECU cannot be received, the satellite radio tuner sets DTC U0164.

JUDGMENT CRITERIA

With the ignition switch in the ON position, system voltage between 10–16 volts (data from ETACS-ECU), power supply fuse (IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with A/C-ECU cannot be established for 2,500 ms or more, the satellite radio tuner determines that a problem has occurred.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The A/C-ECU may be defective.
- The satellite radio tuner may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicles Communication Interface (V.C.I.)
- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.**CAUTION**

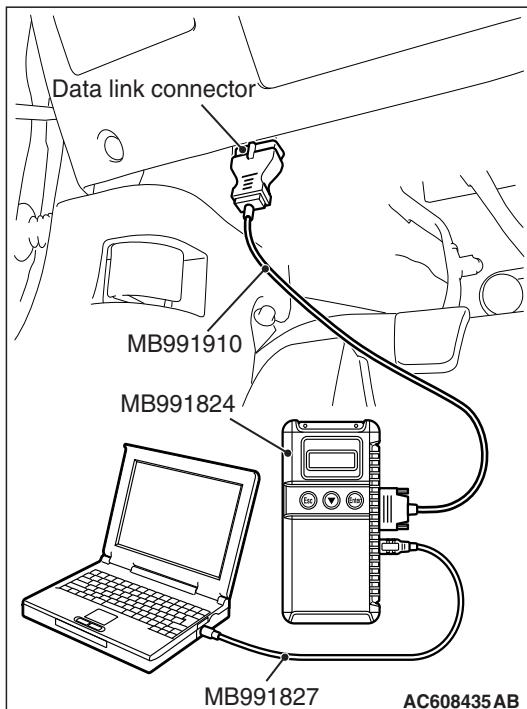
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the A/C-ECU diagnostic trouble code.

Check if DTC is set to the A/C-ECU.

Q: Is the DTC set?

YES : Troubleshoot the A/C. (Refer to GROUP 55A, Manual A/C Diagnosis [P.55A-11](#) GROUP 55B, Auto A/C Diagnosis [P.55B-8](#).)

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the ETACS diagnostic trouble code.

Check if the DTC U0164 is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the A/C-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the A/C-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

(1) Erase the DTC.

(2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.

(3) Check if DTC is set.

(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the A/C-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0168: WCM/KOS CAN timeout**⚠ CAUTION**

- If DTC U0168 is set, be sure to diagnose the CAN bus line.
- When replacing the ECU, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

If the signal from KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> cannot be received, the satellite radio tuner sets DTC U0168.

JUDGMENT CRITERIA

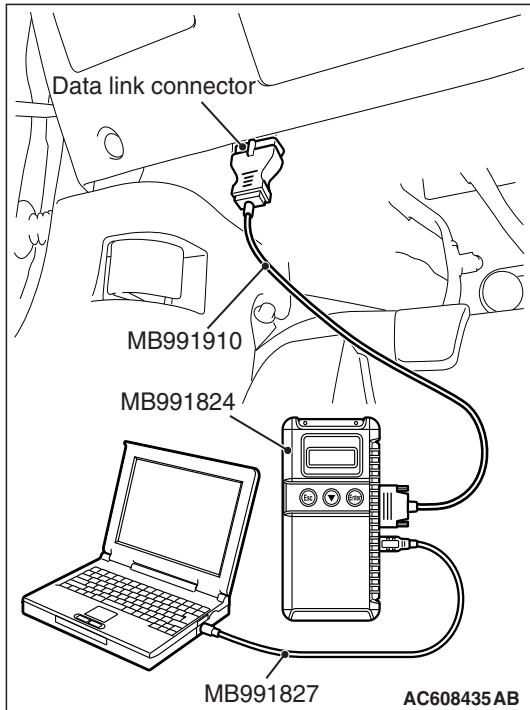
With the ignition switch in the ON position, system voltage between 10 – 16 V (data from ETACS-ECU), power supply fuse (IOD fuse) is OK, or odometer value is 80.5 km (50 miles) or more, and the communication with KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> cannot be established for 2,500 ms or more, the satellite radio tuner determines that a problem has occurred.

TROUBLESHOOTING HINTS

- Malfunction of CAN bus line may be defective.
- Malfunction of the KOS-ECU may be defective. <vehicles with KOS>
- Malfunction of the WCM may be defective. <vehicles with WCM>
- Malfunction of satellite radio tuner may be defective.

DIAGNOSIS**Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicles Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)



STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).

STEP 2. Using scan tool MB991958, read the KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> diagnostic trouble code.

Check again if the DTC is set to the KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM>.

Q: Is the DTC set?

YES : Troubleshoot the KOS or WCM (Refer to GROUP 42B, Diagnosis [P.42B-35](#) <KOS> or GROUP 42C, Diagnosis [P.42C-18](#) <WCM>).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the diagnostic trouble code.

Check if the DTC U0168 is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the WCM or KOS-ECU.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the WCM or KOS-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the WCM or KOS-ECU and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

DTC U0184: Audio CAN timeout**⚠ CAUTION**

- If DTC U0184 is set to the satellite radio tuner, always diagnose the CAN bus line.
- Before replacing the satellite radio tuner, ensure that the communication circuit is normal.

TROUBLE JUDGMENT

If the signal from radio and CD player cannot be received, the satellite radio tuner sets DTC U0184.

JUDGMENT CRITERIA

After the following statuses continue to be true for 5 seconds, if the communication with the radio and CD player cannot be established for 0.6 second or more, the satellite radio tuner determines that a problem has occurred.

- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse (IOD fuse), or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10–16 volts.

TROUBLESHOOTING HINTS

- The radio and CD player may be defective.
- The satellite radio tuner may be defective.
- The CAN bus may be defective.

DIAGNOSIS

Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: Vehicle Communication Interface (V.C.I.)
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

CAUTION

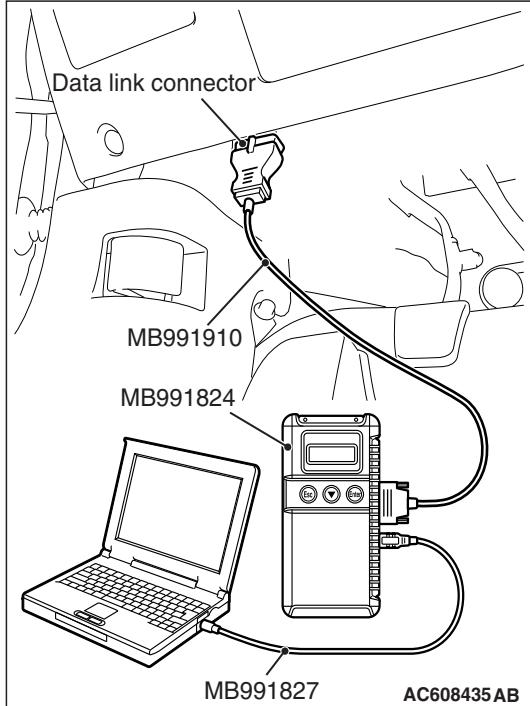
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.54A-655](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 2.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 2. Using scan tool MB991958, read the radio and CD player diagnostic trouble code.

Check if DTC is set to the radio and CD player.

Q: Is the DTC set?

YES : Troubleshoot the radio and CD player (Refer to [P.54A-333](#)).

NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the ETACS diagnostic trouble code.

Check if the DTC U0184 is set to the ETACS-ECU.

Q: Is the DTC set?

YES : Go to Step 4.

NO : Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the radio and CD player.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the radio and CD player and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

STEP 5. Recheck for diagnostic trouble code.

Check again if the DTC is set to the satellite radio tuner.

- (1) Erase the DTC.
- (2) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (3) Check if DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the satellite radio tuner.

NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the radio and CD player and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction [P.00-15](#)).

TROUBLE SYMPTOM CHART

M1544016400044

Trouble symptom	Inspection Procedure No.	Reference page
A satellite radio cannot be received.	1	P.54A-676
Check the satellite radio tuner power supply circuit.	2	P.54A-681
The error code "ANTENNA ERROR" is displayed on the display.	3	P.54A-684

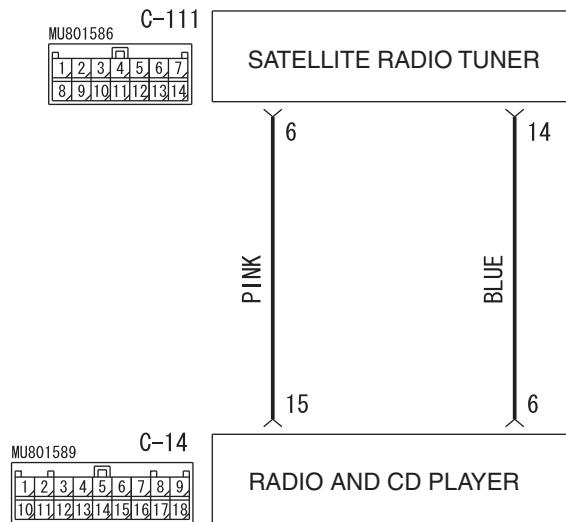
SYMPTOM PROCEDURES

Inspection Procedure 1: A satellite radio cannot be received.

⚠ CAUTION

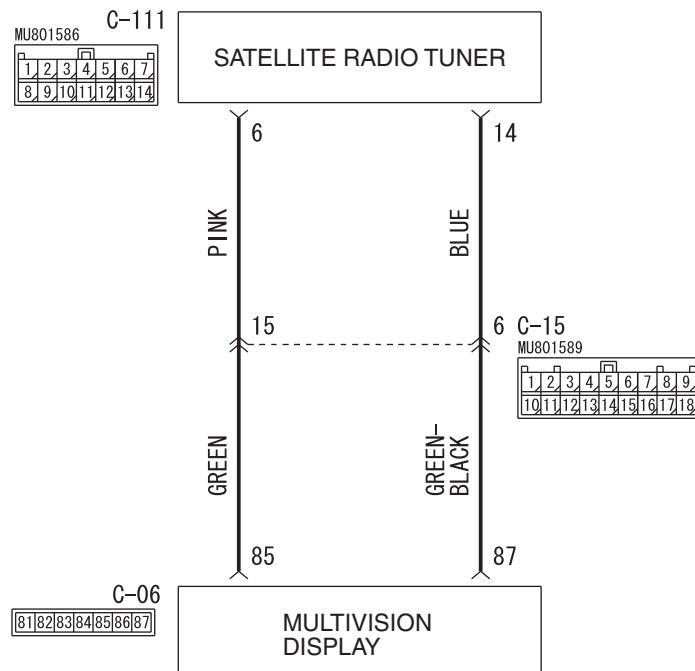
Before replacing the satellite radio tuner, antenna feeder cable, radio and CD player <vehicles with radio and CD player> or multivision display <vehicles with MMCS>, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Satellite Radio Tuner Communication Circuit <Vehicles with Radio and CD Changer>

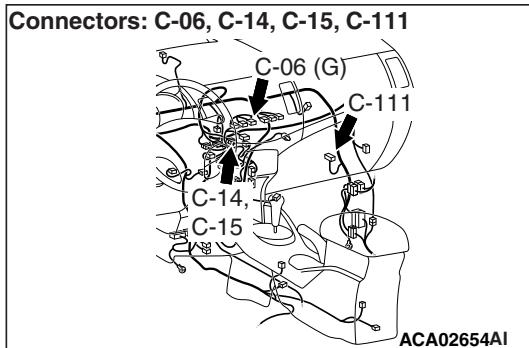


WAG54M038A

Satellite Radio Tuner Communication Circuit <Vehicles with MMCS>



WAG54M039A



COMMENTS ON TROUBLE SYMPTOM

There may be a failure in the wiring harness from the satellite radio tuner to the radio and CD player <vehicles with radio and CD player> or multivision display <vehicles with MMCS>, its respective connector(s), the satellite radio tuner, the radio and CD player <vehicles with radio and CD player> or the multivision display <vehicles with MMCS>.

PROBABLE CAUSES

- Malfunctions of satellite radio tuner
- Malfunctions of radio and CD player <vehicles with radio and CD player> or multivision display <vehicles with MMCS>
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
- MB991824: Vehicle Communication Interface (V.C.I.)

- MB991827: M.U.T.-III USB Cable
- MB991910: M.U.T.-III Main Harness A

STEP1. Check whether AM or FM broadcast frequency is received.

Check whether AM or FM broadcast frequency is received.

Q: Is AM or FM broadcast frequency received?

YES : Go to Step 2.

NO : Diagnose the radio and CD player <vehicles with radio and CD player> or the multivision display <vehicles with MMCS>. Refer to [P.54A-363](#) <vehicles with radio and CD player> or [P.54A-486](#) <vehicles with MMCS>.

STEP 2. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to GROUP 54A, ETACS, Diagnosis, "How to connect the Scan Tool (M.U.T.-III) [P.54A-729](#)."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

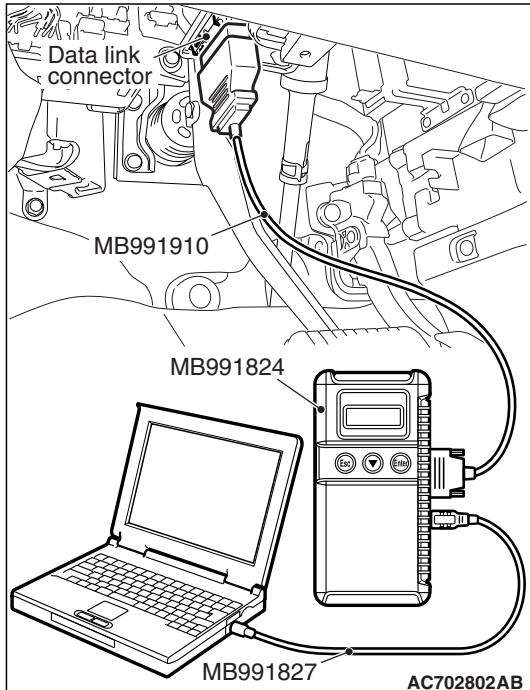
Q: Is the CAN bus line found to be normal?

YES <vehicles with radio and CD player> : Go to Step 3.

YES <vehicles with MMCS> : Go to Step 6.

NO <vehicles with radio and CD player or MMCS> :

Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis [P.54C-17](#)).



STEP 3. Check satellite radio tuner connector C-111 and radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is satellite radio tuner connector C-111 or radio and CD player connector C-14 in good condition?

YES : Go to Step 4.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 4. Check the wiring harness between satellite radio tuner connector C-111 (terminal 6, 14) and radio and CD player connector C-14 (terminal 15, 6).

- Check the communication lines for open circuit and short circuit.

Q: Is the wiring harness between satellite radio tuner connector C-111 (terminal 6, 14) and radio and CD player connector C-14 (terminal 15, 6) in good condition?

YES : Go to Step 5.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP5. Substitute a known good radio and CD player, and check the trouble symptom.

Check whether satellite radio broadcast can be received.

Q: Can a satellite radio be received?

YES : Replace the radio and CD player.

NO : Replace the satellite radio tuner.

STEP 6. Check satellite radio tuner connector C-111 and multivision display connector C-06 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is satellite radio tuner connector C-111 or multivision display connector C-06 in good condition?

YES : Go to Step 7.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

STEP 7. Check the wiring harness between satellite radio tuner connector C-111 (terminal 6, 14) and multivision display connector C-06 (terminal 85, 87).

- Check the communication lines for open circuit and short circuit.

NOTE: Also check intermediate connector C-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).

Q: Is the wiring harness between satellite radio tuner connector C-111 (terminal 6, 14) and multivision display connector C-06 (terminal 85, 87) in good condition?

YES : Go to Step 8.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP8. Substitute a known good multivision display, and check the trouble symptom.

Check whether satellite radio broadcast can be received.

Q: Can a satellite radio be received?

YES : Replace the multivision display.

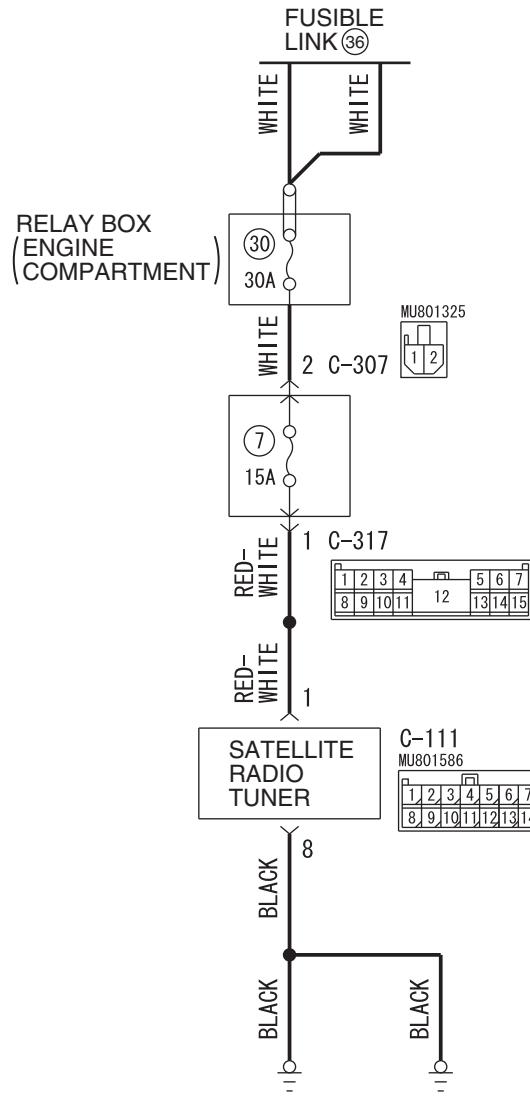
NO : Replace the satellite radio tuner.

Inspection Procedure 2: Check the satellite radio tuner power supply circuit.

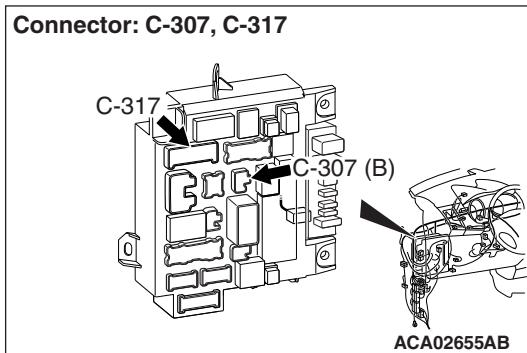
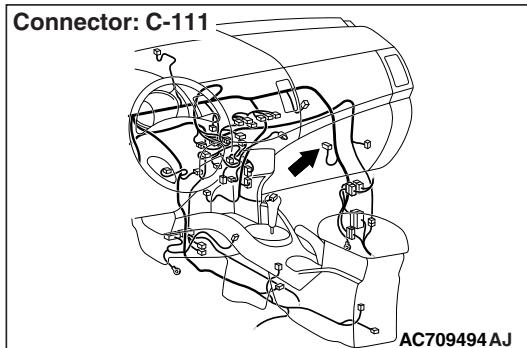
! CAUTION

Before replacing the satellite radio tuner, antenna feeder cable, radio and CD player <vehicles with radio and CD player> or audio visual navigation unit <vehicles with MMCS>, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Satellite Radio Tuner Supply Circuit



W8G54M133A



TECHNICAL DESCRIPTION (COMMENT)

If the satellite radio tuner functions do not work at all, the satellite radio tuner power supply system, ground system, or satellite radio tuner may have a problem.

TROUBLESHOOTING HINTS

- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The satellite radio tuner may be defective

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check satellite radio tuner connectors C-111 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is satellite radio tuner connectors C-111 in good condition?

YES : Go to Step 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 2. Check the ground circuit to the satellite radio tuner. Measure the resistance at satellite radio tuner connectors C-111.

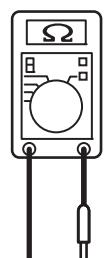
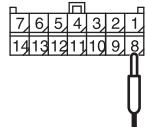
- (1) Disconnect satellite radio tuner connector C-111 and measure the resistance available at the wiring harness side of the connector.
- (2) Measure the resistance value between satellite radio tuner connector C-111 terminal 8 and ground.
 - The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Go to Step 3.

Connector C-111
(Harness side)



AC702818 BG

STEP 3. Check the wiring harness between satellite radio tuner connector C-111 (terminal 8) and ground.

- Check the ground wire for open circuit.

Q: Is the wiring harness between satellite radio tuner connector C-111 (terminal 8) and ground in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

STEP 4. Check the power supply circuit to the satellite radio tuner. Measure the voltage at satellite radio tuner connector C-111.

- (1) Disconnect the connector, and measure at the wiring harness-side connector.
- (2) Measure the voltage between terminal 1 and ground.

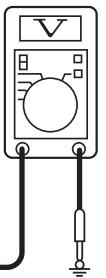
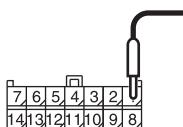
OK: The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 6.

NO : Go to Step 5.

Harness side: C-111



AC709325 AW

STEP 5. Check the wiring harness between satellite radio tuner connector C-111 (terminal 1) and fusible link (36).

- Check the power supply line for open circuit and short circuit.

NOTE: Also check ETACS-ECU connectors C-307 and C-317 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If ETACS-ECU connector C-307 or C-317 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between satellite radio tuner connector C-111 (terminal 1) and fusible link (36) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The system should communicate with the satellite radio tuner normally.

STEP 6. Retest the system

Check if the satellite radio tuner works normally.

Q: Is the check result normal?

YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points – How to Cope with Intermittent Malfunction [P.00-15](#)).

NO : Replace the satellite radio tuner.

Inspection Procedure 3: The error code "ANTENNA ERROR" is displayed on the display.**TECHNICAL DESCRIPTION (COMMENT)**

When there is a failure in the antenna base, antenna rod, or there is an open circuit or improper connection in the antenna feeder, and the satellite radio tuner cannot receive normal voltage value or current value, the error code "ANTENNA ERROR" is displayed on the display.

TROUBLESHOOTING HINTS

- Malfunction of the antenna rod.
- Malfunction of the antenna base.
- Malfunction of the antenna feeder cable.
- Malfunction of the satellite radio tuner.

DIAGNOSIS

STEP 1. Check if the antenna base or antenna rod are damaged.**Q: Are the antenna base or antenna rod damaged?**

YES : Replace the antenna base or antenna rod.

NO : Go to Step 2.

STEP 2. Check the connection between the antenna base and the antenna feeder.

Q: Is the connection between the antenna base and the antenna feeder normal?

YES : Go to Step 3.

NO : Repair the connection.

STEP 3. Check if the antenna feeder is damaged.

Q: Is the antenna feeder damaged or bent?

YES : Repair or replace the antenna feeder.

NO : Go to Step 4.

STEP 4. Check the connection between the antenna feeder cable and the satellite radio tuner.

Q: Is the connection between the antenna feeder and the satellite radio tuner normal?

YES : Go to Step 5.

NO : Repair the connection.

STEP 5. Temporarily replace the antenna base, and check if "ANTENNA ERROR" is displayed on the display.

Q: Is "ANTENNA ERROR" displayed on the display?

YES : Replace the satellite radio tuner.

NO : Replace the antenna base.

ON-VEHICLE SERVICE

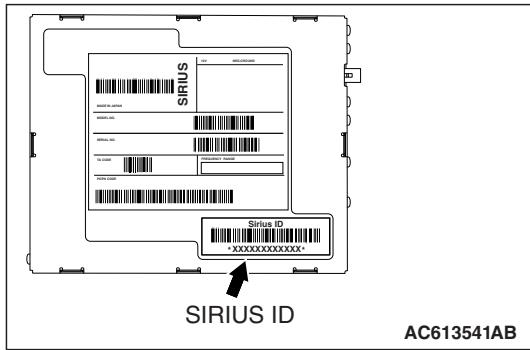
HOW TO READ SIRIUS ID

M1544018300032

**READ THE SIRIUS ID DIRECTLY FROM THE
SATELLITE RADIO TUNER.**

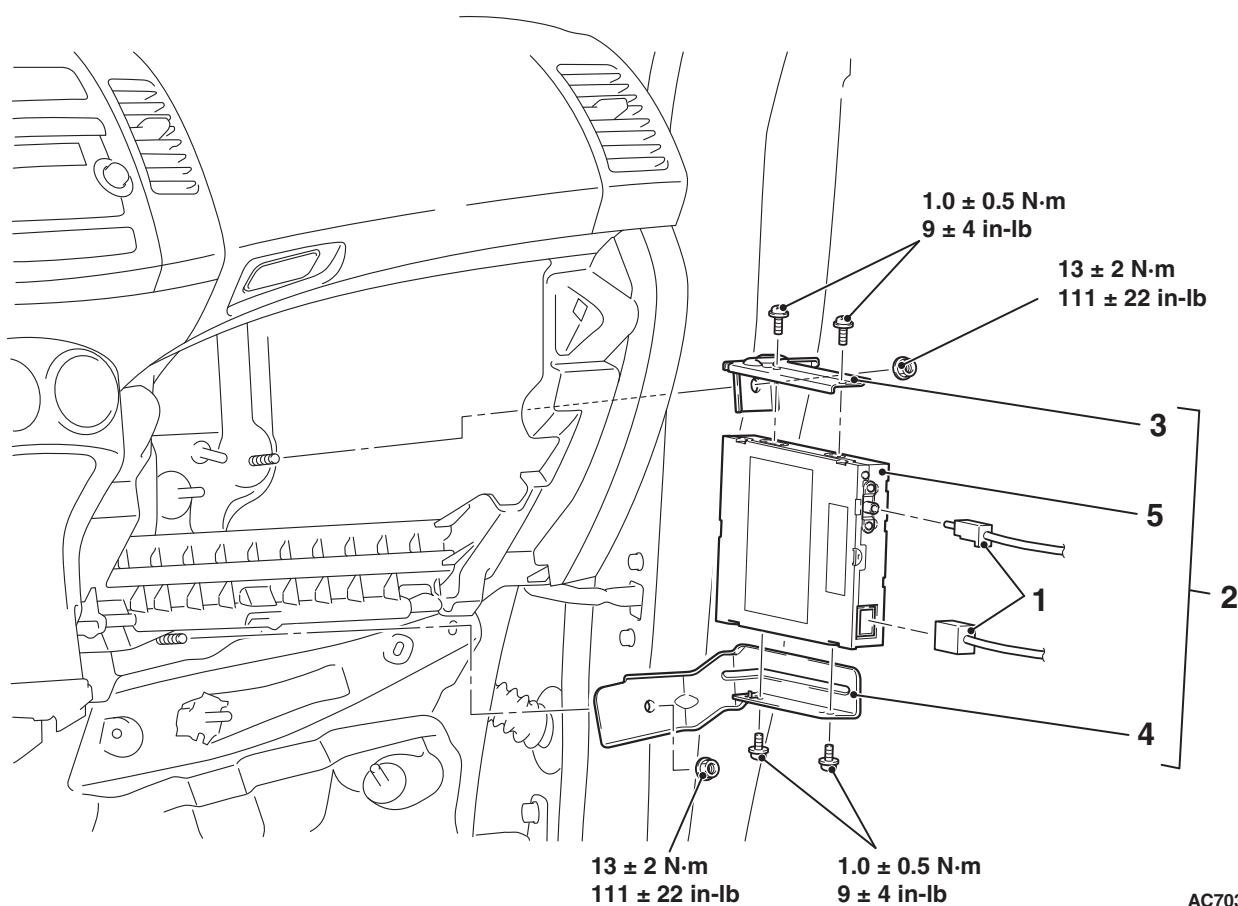
When the SIRIUS ID (12 digits) cannot be displayed by operation of the audio visual navigation unit or the radio and CD changer, the ID can be read from the satellite radio tuner directly.

1. Remove the satellite radio tuner. Refer to [P.54A-687](#).
2. Read the SIRIUS ID (12 digits) from the satellite radio tuner.



REMOVAL AND INSTALLATION

M1544016100032

**Removal Steps**

- Bottom cover (passenger side)
(Refer to GROUP 52A – Instrument panel assembly [P.52A-2](#)).
- Grove box (Refer to GROUP 52A – Instrument panel assembly [P.52A-2](#)).

Removal Steps (Continued)

1. Satellite radio tuner connector
2. Satellite radio tuner assembly
3. Satellite radio tuner bracket (upper)
4. Satellite radio tuner bracket (lower)
5. Satellite radio tuner