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 module, always check that the communication circuit is normal.

DIAGNOSTIC FUNCTION

When the signals from occupant classification-ECU cannot be received, the hands free module sets DTC U0154.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The hands free module 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)

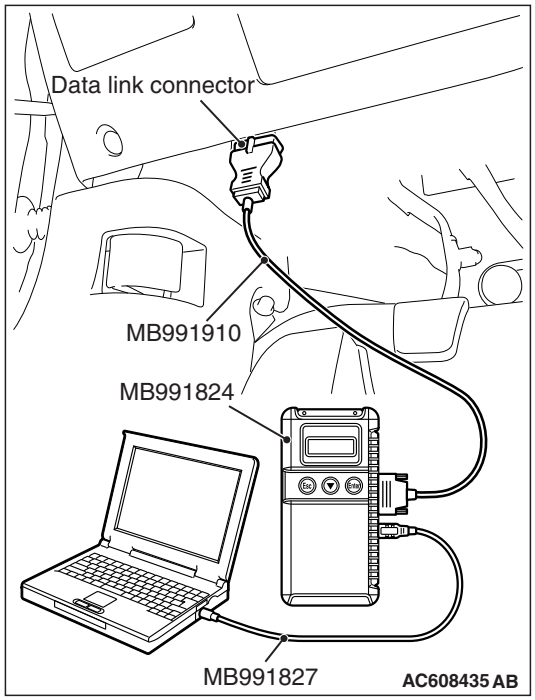
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-589."
(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-346).
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 hands free module.
(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 hands free module (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 hands free module.
(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 hands free module.
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 hands free module (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 hands free module, diagnose the CAN main bus line.

⚠ CAUTION
Whenever the ECU is replaced, ensure that the communication circuit is normal.

DIAGNOSTIC FUNCTION

If the signal from combination meter cannot be received, the hands free module sets the DTC U0155.

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.
- The hands free module 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

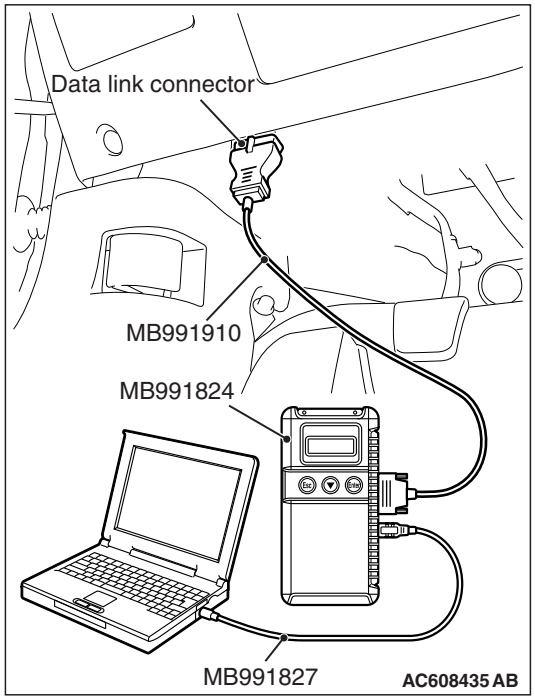
STEP 1. Using scan tool MB991958, diagnose the CAN bus line

⚠ 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-589."
(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.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to combination meter, Diagnosis P.54A-32).
NO : Go to Step 3.

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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 hands free module.
(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 hands free module (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 hands free module.
(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 hands free module.
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 hands free module (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 module, always check that the communication circuit is normal.**

TECHNICAL DESCRIPTION (COMMENT)
If the signal from A/C-ECU cannot be received, the hands free module sets the DTC U0164.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The A/C-ECU may be defective.
- The hands free module may be defective.

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DIAGNOSIS

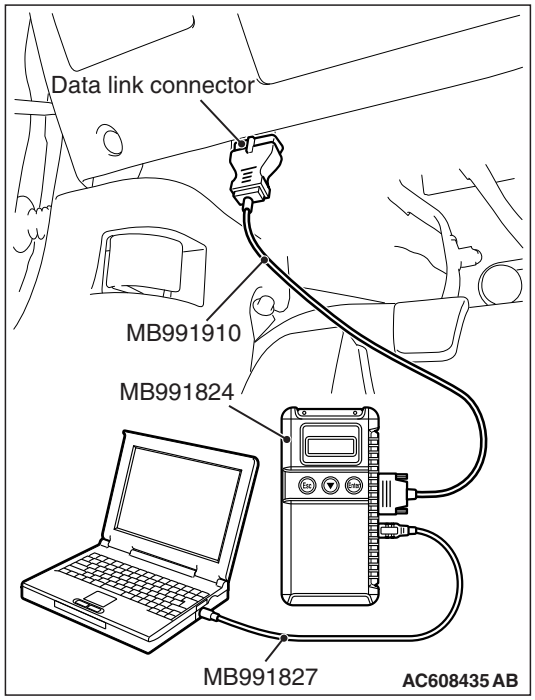
Required Special Tools:

- 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-589."
(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.

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STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the hands free module.
(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 hands free module (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 hands free module.
(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 hands free module.
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 hands free module (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0168: WCM/KOS CAN timeout

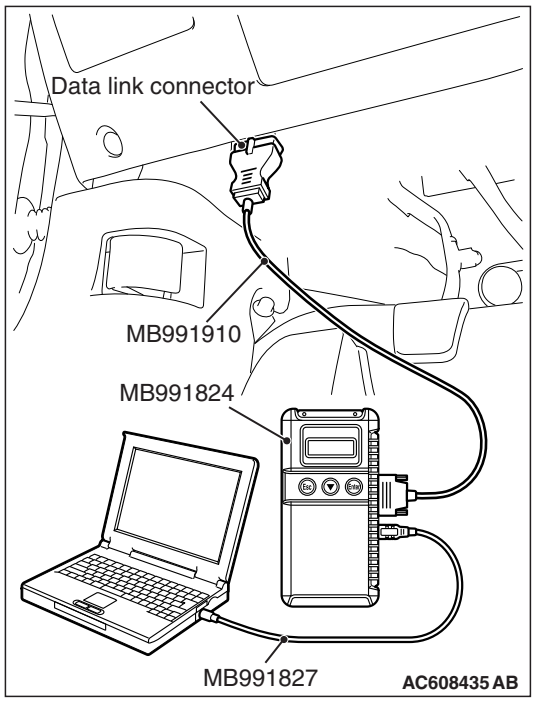
⚠ CAUTION
- **If DTC U0168 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

TECHNICAL DESCRIPTION (COMMENT)
If the signal from KOS-ECU <vehicles with KOS> or WCM <vehicles with WCM> cannot be received, the hands free module sets DTC U0168.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The KOS-ECU may be defective. <vehicles with KOS>
- The WCM may be defective. <vehicles with WCM>
- The hands free module 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-589."
(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-31 <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 hands free module.
(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 hands free module (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 hands free module.
(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 hands free module.
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 hands free module (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC No.U0184 AUDIO CAN timeout

⚠ CAUTION
- **If DTC U0184 is set, be sure to diagnose the CAN bus line.**
- **When replacing the module, always check that the communication circuit is normal.**

TECHNICAL DESCRIPTION (COMMENT)
If the signal from the radio and CD player cannot be received, the hands free module sets the diagnostic trouble code No. U0184.

TROUBLESHOOTING HINTS
- The radio and CD player may be defective.
- The hands free module 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)

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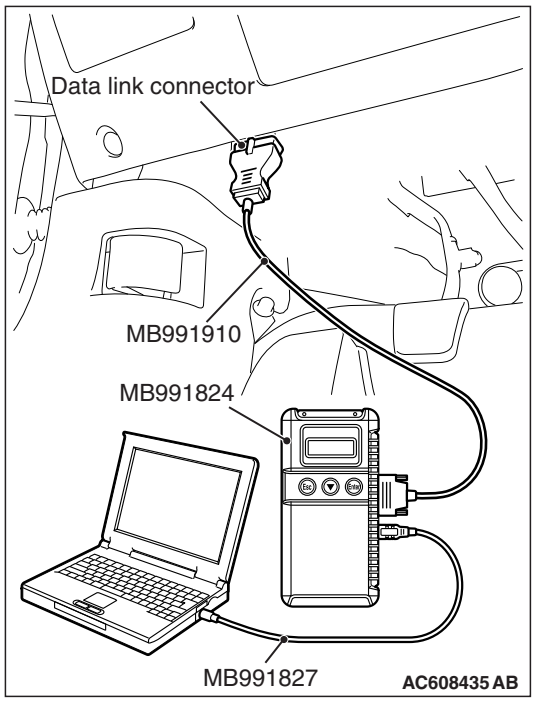


STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-589."
(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 or CD changer 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-338).
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 hands free module.
(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 hands free module (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 hands free module.
(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 hands free module.
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 hands free module (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0195: Satellite radio CAN timeout

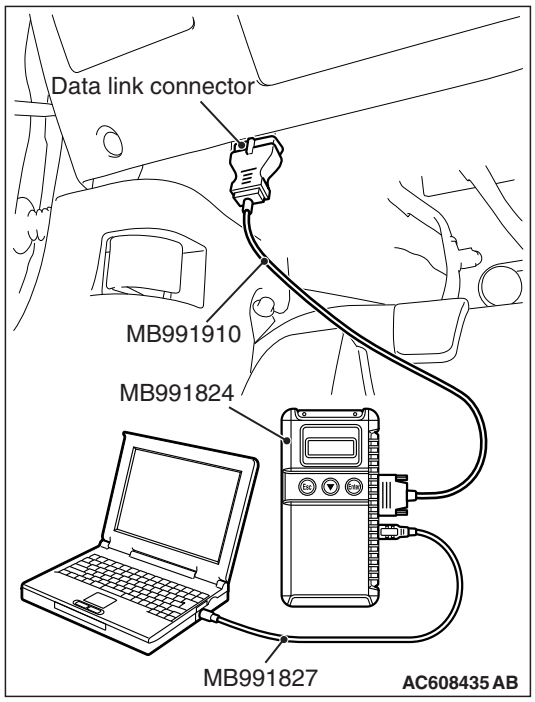
⚠ CAUTION
- **If DTC U0195 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
When the signals from satellite radio tuner cannot be received, the hands free module sets DTC U0195.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The hands free module 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-589."
(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.

Q: Is the DTC set?

YES : Diagnose the satellite radio tuner.
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 hands free module.
(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 hands free module (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 hands free module.
(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 hands free module.
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 hands free module (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0245 AND [Audio visual Navigation (HDD) unit] CAN timeout

⚠ CAUTION
- **If DTC U0245 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
When the signals from CAN box unit (multivision display) cannot be received, the hands free module sets the diagnostic trouble code No. U0245.

TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The hands free module 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)

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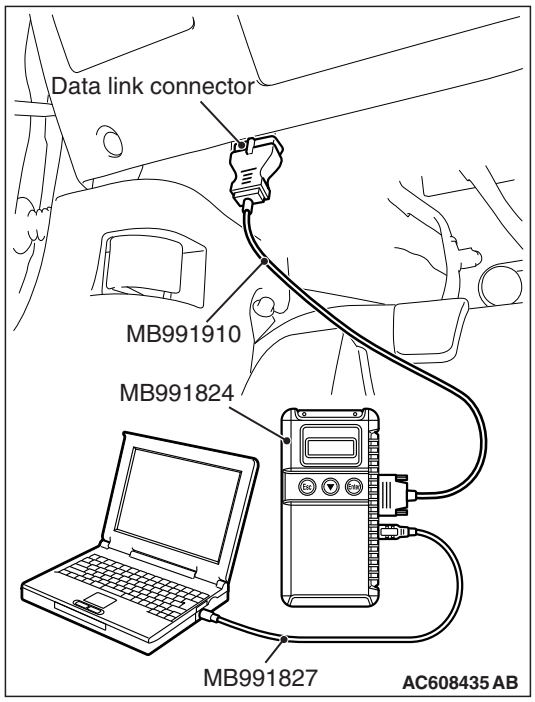


STEP 1. Using scan tool MB991958, diagnose the CAN bus line

⚠ 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-589."
(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 CAN box unit diagnostic trouble code

Check the DTC is set to the CAN box unit .

Q: Is the DTC set?

YES : Troubleshoot the CAN box unit (Refer to MMCS – Diagnostic Trouble Code Chart P.54A-467).
NO : Go to Step 3.

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

Check if the DTC U0245 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 hands free module.

(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 (multivision display).
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the CAN box unit (multivision display) and the hands free module (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 ETACS-ECU.

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

TROUBLE SYMPTOM CHART

M1546001800354

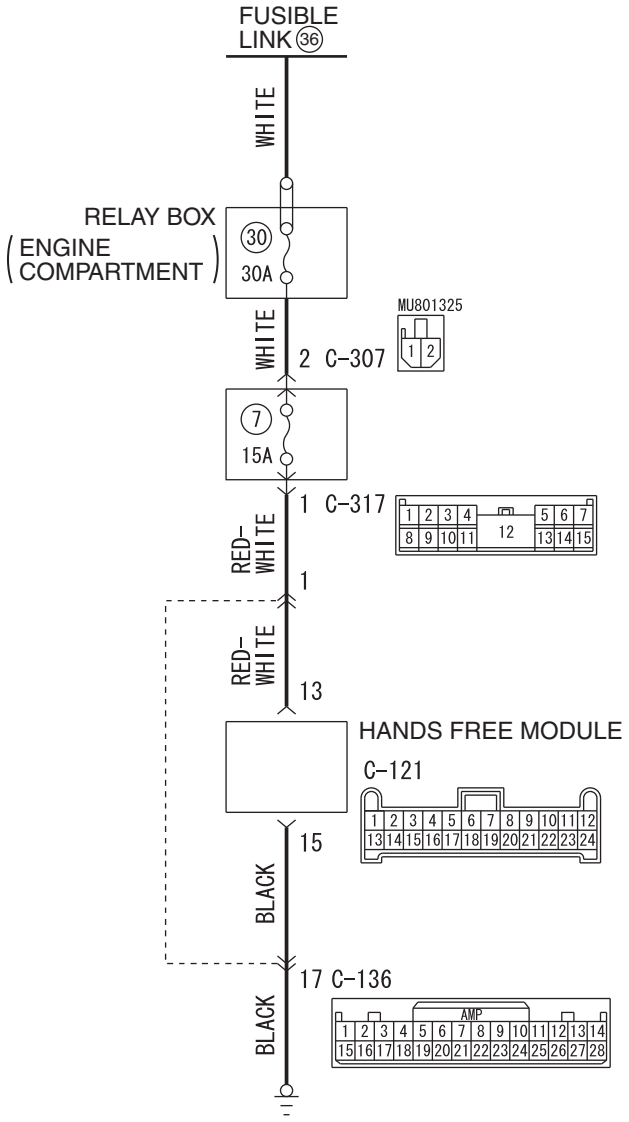
Trouble symptom	Inspection Procedure No.	Reference page
Hands-free cellular phone system does not work normally.	1	P.54A-623
During the conversation with the hands-free system, the speaker's voice cannot be heard by the other party.	2	P.54A-631
During the conversation with the Hands-free cellular phone system, the voice of other party cannot be heard.	3	P.54A-634
Even when the steering wheel voice control switch is operated, the conversation is not possible.	4	P.54A-635
The cellular phone is not recognized or the connection cannot be established.	5	P.54A-641
Check the hands-free module power supply circuit.	6	P.54A-642

SYMPTOM PROCEDURES

Inspection Procedure 1: Hands free cellular phone system does not work normally.

⚠ 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



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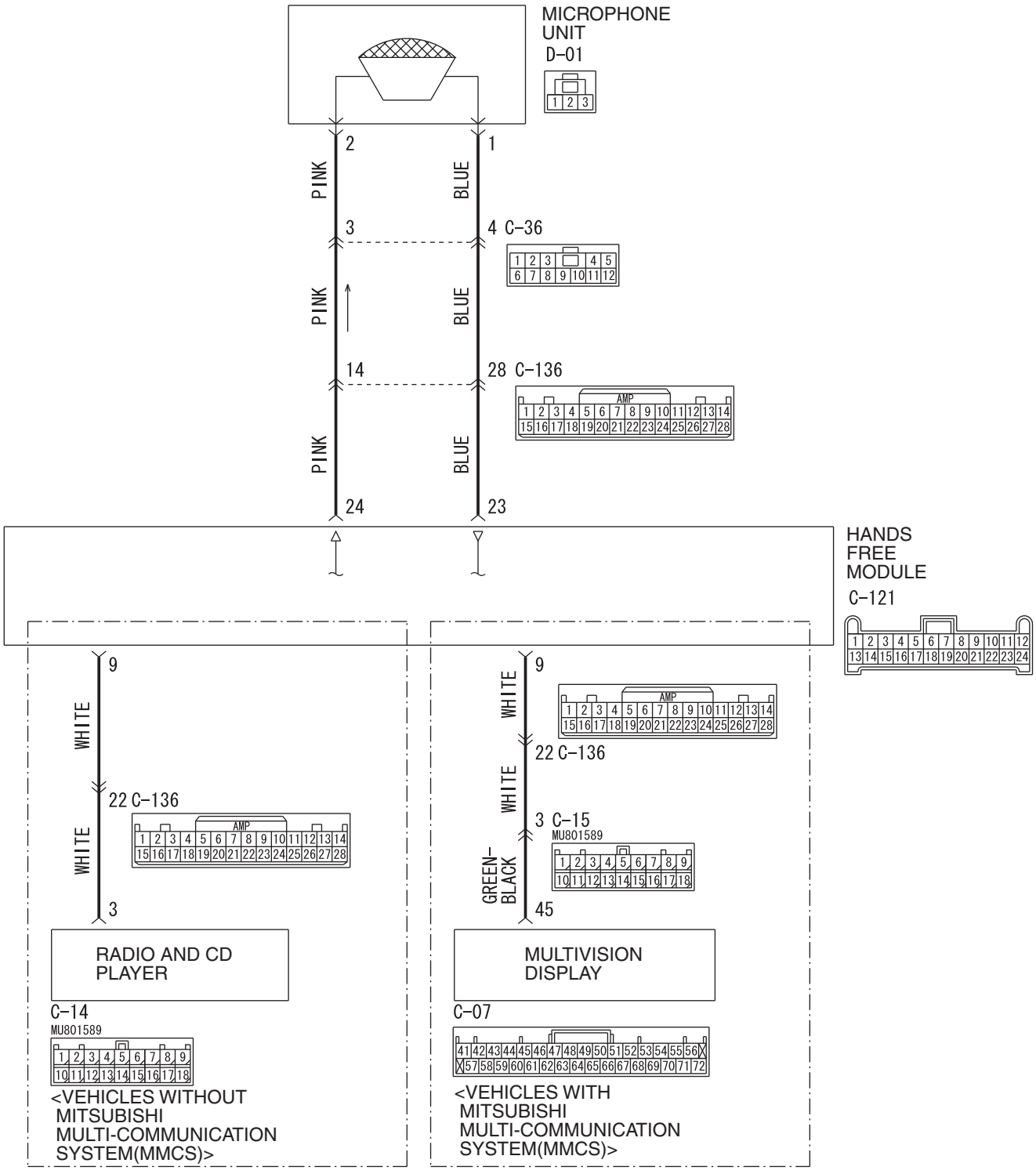
TSB Revision

Hands Free Cellular Phone System Circuit



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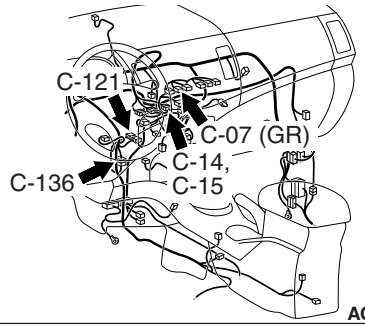
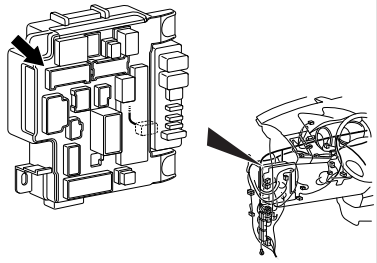
TSB Revision

Connectors: C-07, C-14, C-15, C-121, C-136



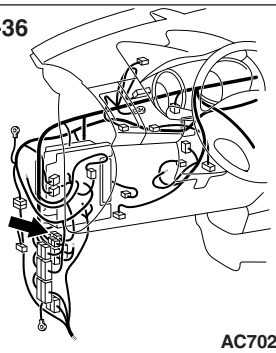
AC901076AR

Connector: C-317



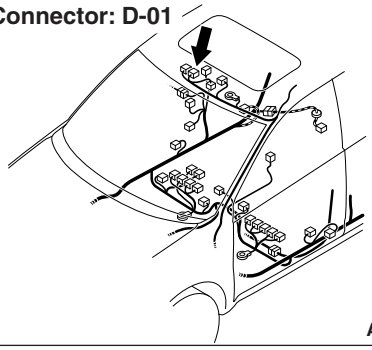
AC702828AL

Connector: C-36



AC702815AM

Connector: D-01



AC702816AH

FUNCTION

During the conversation with the hands-free cellular system, the signal of speaker's voice is transmitted from the microphone unit to the hands-free module. Then the signal is transmitted from the hands-free module to the cellular phone. The voice of other party is transmitted from the cellular phone to the hands-free module. Then, the voice is transmitted from the hands-free module to the radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS>, and output from the speaker.

TROUBLE JUDGMENT CONDITIONS

If the hands-free system cannot be used normally, the hands-free module, microphone unit, steering wheel voice control switch, or radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS> may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the hands-free module
- Malfunction of the microphone unit
- Malfunction of the steering wheel voice control switch
- Malfunction of the radio and CD player <vehicles without MMCS> 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: 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 cellular phone.
Check that the cellular phone can be used normally as a unit.

Q: Is it possible to use the cellular phone normally?

YES : Go to Step 2.
NO : Repair or replace the cellular phone.

STEP 2. Temporarily replace the cellular phone, and check the trouble symptom.
Temporarily register a separate Bluetooth®-supported cellular phone, and check that the hands-free cellular phone system operates normally.

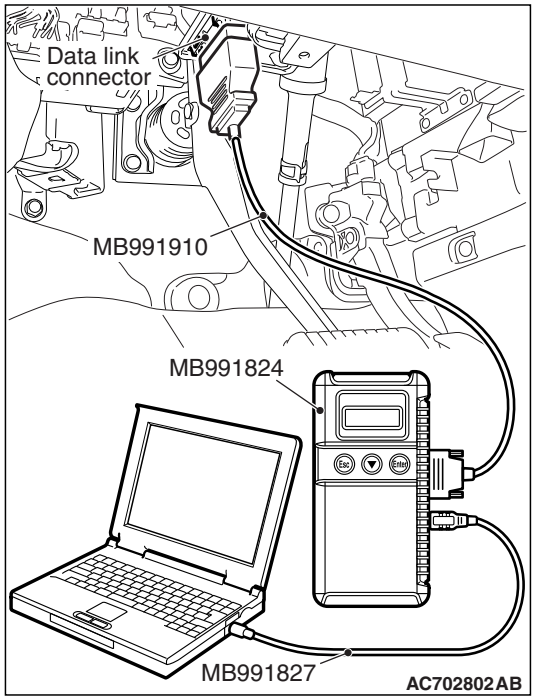
Q: Is the normal conversation possible with the hands-free system?

YES : Ask the customer to have the cellular phone repaired or replaced. Then, delete the temporarily registered cellular phone. Once the customer prepares the normally-working cellular phone, register the cellular phone to the hands-free module. (Refer to P.54A-645.)
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, diagnose the CAN bus line.
Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) ."
(1) Turn the ignition switch to "ON" position.
(2) Diagnose the CAN bus line.
(3) Turn the ignition switch to "LOCK" (OFF) position.

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

YES : Go to Step 4.
NO : Repair the CAN bus line. (Refer to GROUP 54C, Diagnosis P.54C-17.)



STEP 4. Check hands-free module connector C-121 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are hands-free module connector C-121 in good condition?

YES : Go to Step 5.

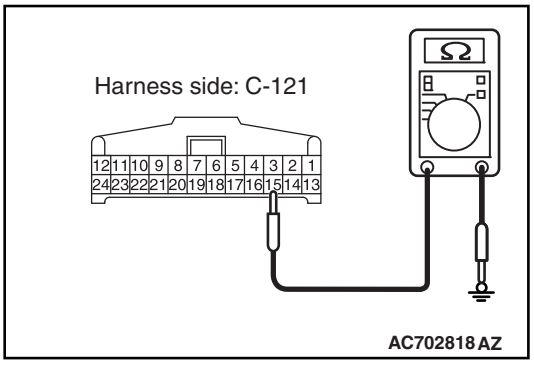
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 5. Check the ground circuit to the hands-free module. Measure the resistance at hands-free module connector C-121.

(1) Disconnect hands-free module connector C-121, and measure at the wiring harness side.

(2) Measure resistance between terminal 15 and ground.

OK: The resistance should be 2 ohm or less.



Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 7.

NO : Go to Step 6.

STEP 6. Check the wiring harness between hands-free module connector C-121 (terminal 15) and ground.

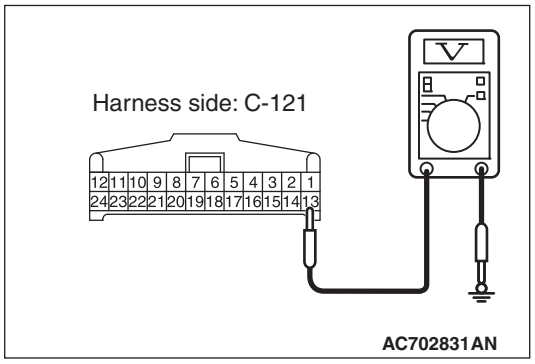
- Check the ground wires for open circuit.

NOTE: Also check intermediate connector C-136 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-136 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-121 (terminal 15) 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 7. Check the power supply circuit to the hands-free module. Measure the voltage at hands-free module connector C-121.

(1) Disconnect hands-free module connector C-121, and measure the voltage available at the hands-free module side of the connector.

(2) Measure the voltage between terminal 13 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 hands-free module connector C-121 (terminal 13) and ETACS-ECU connector C-317 (terminal 1).

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

NOTE: Also check intermediate connector C-136 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-136 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-121 (terminal 13) and ETACS-ECU connector C-317 (terminal 1) 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 microphone unit connector D-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is microphone unit connector D-01 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 hands-free module connector C-121 and microphone unit connector D-01.

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

(1) Disconnect hands-free module connector C-121 and microphone unit connector D-01, and check the wiring harness.

NOTE: Also check intermediate connector C-36, C-136 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-36, C-136 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection *P.00E-2**.*

(2) Check the wiring harness between hands-free module connector C-121 (terminal No.23) and microphone unit connector D-01 (terminal No.1)

(3) Check the wiring harness between hands-free module connector C-121 (terminal No.24) and microphone unit connector D-01 (terminal No.2)

Q: Is the wiring harness between hands-free module connector C-121 and microphone unit connector D-01 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 radio and CD player connector C-14 <vehicles without MMCS> or multivision display connector C-07 <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 without MMCS> or multivision display connector C-07 <vehicles with MMCS> 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 hands-free module connector C-121 and radio and CD player connector C-14 <vehicles without MMCS> or multivision display connector C-07 <vehicles with MMCS>.

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

(1) Disconnect hands-free module connector C-121 and radio and CD player connector C-14 <vehicles without MMCS> or multivision display connector C-07 <vehicles with MMCS>, and check the wiring harness.

NOTE: Also check intermediate connector C-15 <vehicles with MMCS>, C-136 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 <vehicles with MMCS>, C-136 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

(2) Check the wiring harness between hands-free module connector C-121 (terminal No.9) and radio and CD player connector C-14 (terminal No.3) <vehicles without MMCS>

(3) Check the wiring harness between hands-free module connector C-121 (terminal No.9) and multivision display connector C-07 (terminal No.45) <vehicles with MMCS>

Q: Is the wiring harness between hands-free module connector C-121 and radio and CD player connector C-14 <vehicles without MMCS> or multivision display connector C-07 <vehicles with MMCS> 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. Temporarily replace the microphone unit, and check the trouble symptom.

Check that the normal conversation is possible with the hands-free system.

Q: Is the normal conversation possible with the hands-free system?

YES : Replace the microphone unit.
NO : Go to Step 14.

STEP 14. Temporarily replace the hands-free module, and check the trouble symptom.

Check that the normal conversation is possible with the hands-free system.

Q: Is the normal conversation possible with the hands-free system?

YES : Replace the hands-free module.
NO : Replace the radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS>.

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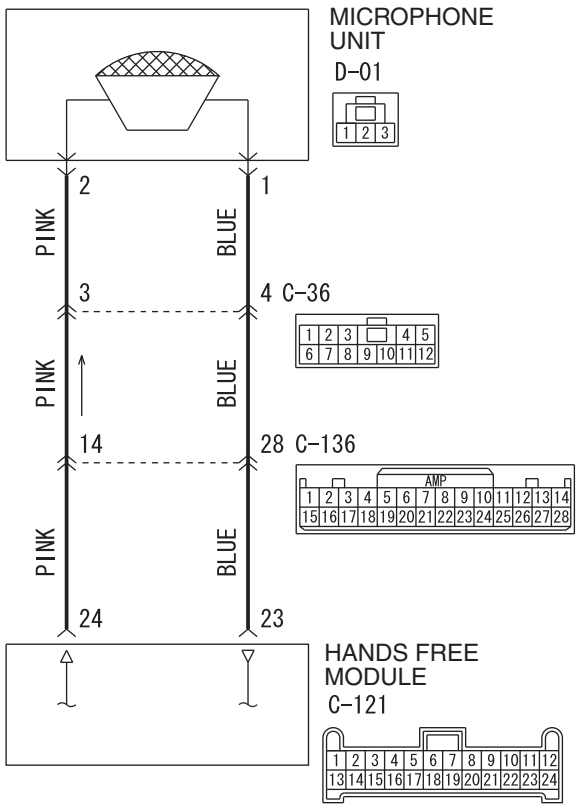
Inspection Procedure 2: During the conversation with the hands-free system, the speaker's voice cannot be heard by the other party.

⚠ CAUTION
Before replacing the module, ensure that the communication circuit is normal.

Hands Free Cellular Phone System Circuit



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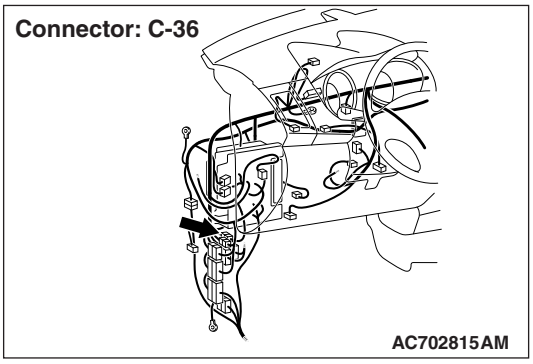

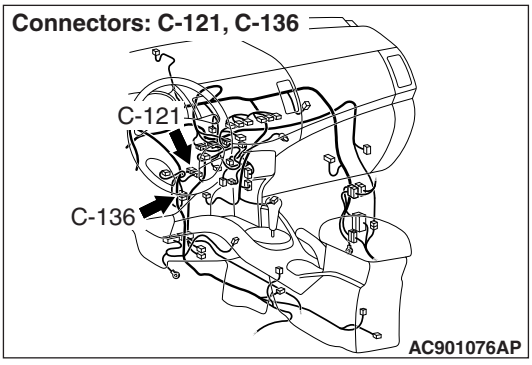

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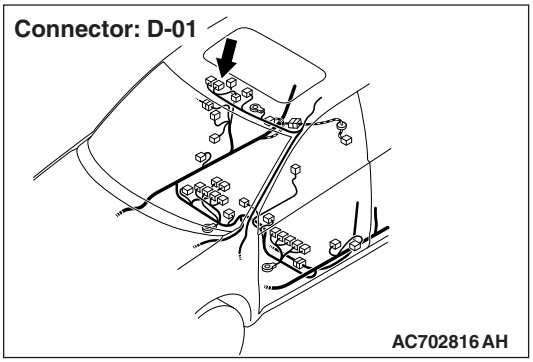


FUNCTION

During the conversation with the hands-free system, the signal of speaker's voice is transmitted from the microphone unit to the hands-free module. Then the signal is transmitted from the hands-free module to the cellular phone.

TROUBLE JUDGMENT CONDITIONS

During the conversation with the hands-free system, if the speaker's voice cannot be heard by the other party, the hands-free module or microphone unit may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the hands-free module
- Malfunction of the microphone unit
- Damaged harness wires and connectors

DIAGNOSIS

Required Special Tools:
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the cellular phone.

Check that the cellular phone can be used normally as a unit.

Q: Is it possible to use the cellular phone normally?

YES : Go to Step 2.
NO : Repair or replace the cellular phone.

STEP 2. Check hands-free module connector C-121 and microphone unit connector D-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are hands-free module connector C-121 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-121 and microphone unit connector D-01.

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

(1) Disconnect hands-free module connector C-121 and microphone unit connector D-01, and check the wiring harness.

NOTE: Also check intermediate connector C-36, C-136 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-36, C-136 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection *P.00E-2**.*

(2) Check the wiring harness between hands-free module connector C-121 (terminal No.23) and microphone unit connector D-01 (terminal No.1)

(3) Check the wiring harness between hands-free module connector C-121 (terminal No.24) and microphone unit connector D-01 (terminal No.2)

Q: Is the wiring harness between hands-free module connector C-121 and microphone unit connector D-01 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. Temporarily replace the microphone unit, and check the trouble symptom.

Check that the normal conversation is possible with the hands-free system.

Q: Is the normal conversation possible with the hands-free system?

YES : Replace the microphone unit.

NO : Replace the hands-free module.

Inspection Procedure 3: During the conversation with the Hands-free cellular phone system, the voice of other party cannot be heard.

⚠ CAUTION
Before replacing the module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

FUNCTION

During the conversation with the hands-free system, the voice signal of other party is transmitted from the cellular phone to the hands-free module. Then, the signal is transmitted from the hands-free module to the radio and CD player <vehicles without MMCS> or multivision display<vehicles with MMCS>, and then output from the speaker.

TROUBLE JUDGMENT CONDITIONS

During the conversation with the hands-free system, if the voice of other party cannot be heard, the hands-free module, or the radio and CD player <vehicles without MMCS> or multivision display<vehicles with MMCS> may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the hands-free module
- Malfunction of the radio and CD player <vehicles without MMCS> or multivision display<vehicles with MMCS>

DIAGNOSIS

STEP 1. Check the cellular phone.
Check that the cellular phone can be used normally as a unit.

Q: Is it possible to use the cellular phone normally?

YES : Go to Step 2.
NO : Repair or replace the cellular phone.

STEP 2. Check the radio and CD player <vehicles without MMCS> or multivision display<vehicles with MMCS>.
Check that the sound of radio and CD player <vehicles without MMCS> or multivision display<vehicles with MMCS> is output normally from the speaker.

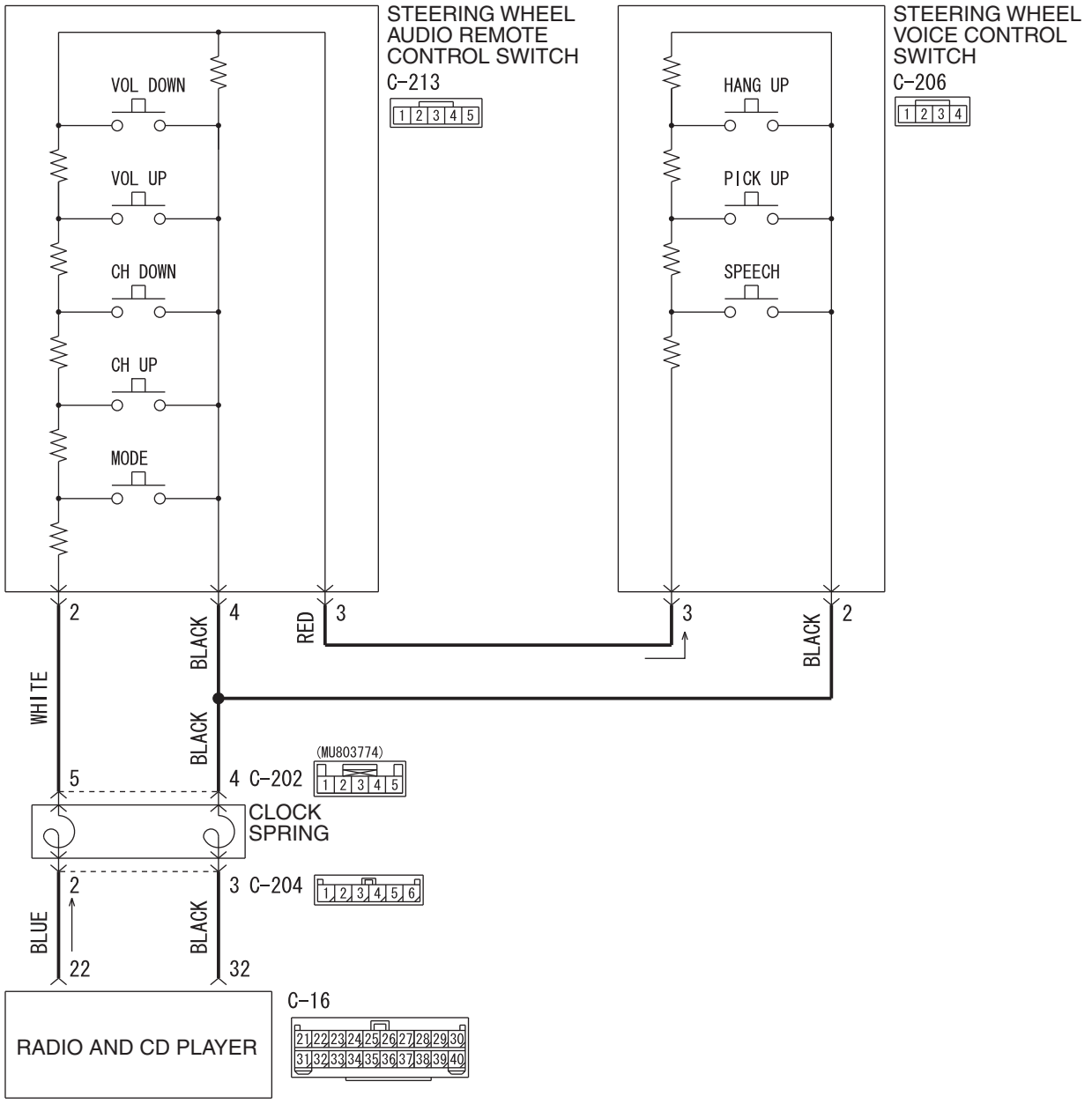
Q: Is the sound of radio and CD player <vehicles without MMCS> or multivision display<vehicles with MMCS> output normally from the speaker?

YES : Replace the hands-free module.
NO : Diagnose the radio and CD player <vehicles without MMCS> or multivision display<vehicles with MMCS>. Refer to P.54A-573 <vehicles without MMCS> or P.54A-577 <vehicles with MMCS>.

Inspection Procedure 4: Even when the steering wheel voice control switch is operated, the conversation is not possible.

⚠ CAUTION
Before replacing the module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Steering Wheel Voice Control Switch Circuit <Vehicles without MMCS>



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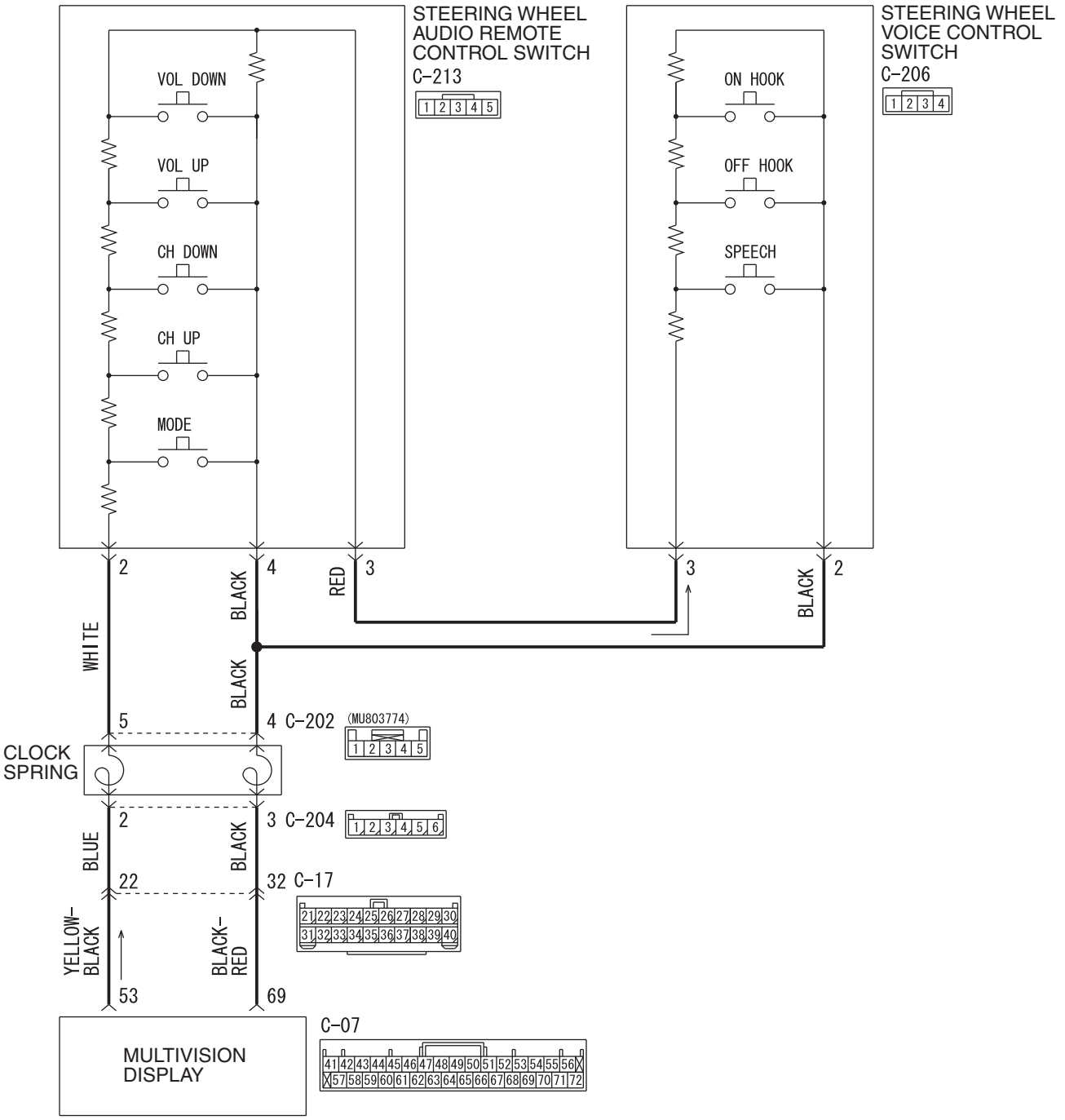
TSB Revision

Steering Wheel Voice Control Switch Circuit <Vehicles without MMCS>



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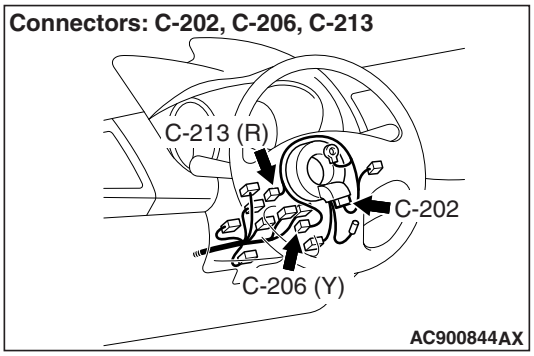


FUNCTION

When the steering wheel voice-control switch is operated, the switch signal is transmitted to the radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS>. Then, via the CAN communication, the signal is transmitted from the radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS> to the hands-free module.

TROUBLE JUDGMENT CONDITIONS

If the conversation is not possible even when the steering wheel voice control switch is operated, the steering wheel voice control switch or radio and CD player <vehicles without MMCS> or the multivision display <vehicles with MMCS> may be defective.

TROUBLESHOOTING HINTS

- Malfunction of the steering wheel voice control switch
- Malfunction of the hands free module
- Malfunction of the radio and CD player <vehicles without MMCS> 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: 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)

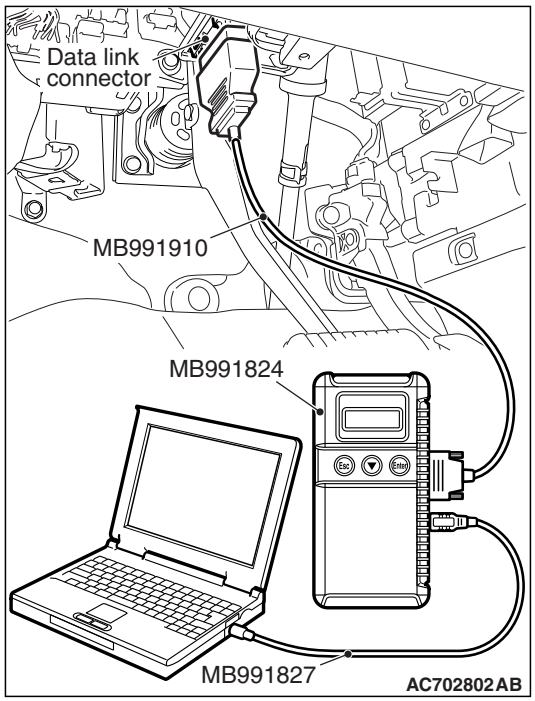
STEP 1. Check the steering audio switch.

Check that the radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS> can be operated normally using the steering audio switch.

Q: Is it possible to normally operate the radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS> using the steering audio switch?

YES : Go to Step 2.

NO : Diagnose the steering audio switch. Refer to P.54A-573 <vehicles without MMCS> or P.54A-577 <vehicles with MMCS>.)



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

Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) ."

(1) Turn the ignition switch to "ON" position.

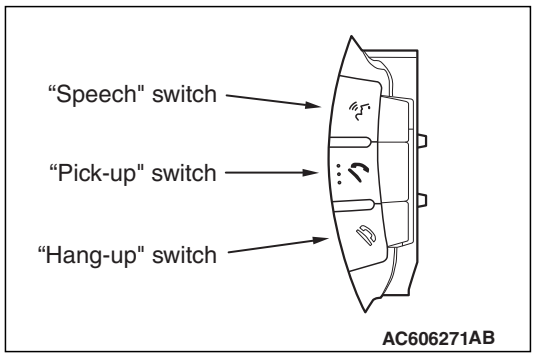
(2) Diagnose the CAN bus line.

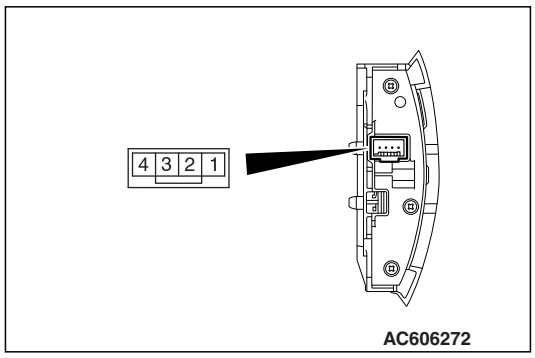
(3) Turn the ignition switch to "LOCK" (OFF) position.

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. Check the steering wheel voice control switch.

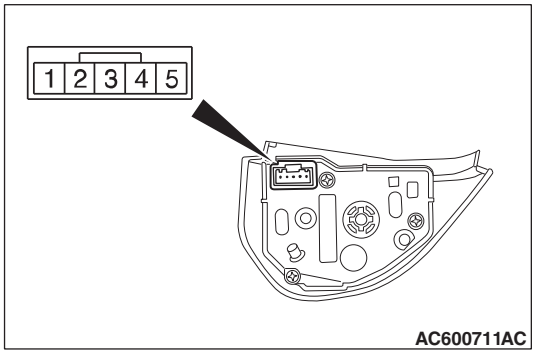
Remove the steering wheel voice control switch. Then check continuity between the switch terminals.

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

Q: Is the steering wheel voice control switch in good condition?

YES : Go to Step 4.

NO : Replace the steering wheel voice control switch.



STEP 4. Check the steering wheel audio remote control switch.

Remove the steering wheel audio remote control switch. Then check continuity between the switch terminals.

Switch Position	Tester Connection	Measurement Value
No push	2 –3	Approximately 3.1 kΩ

Q: Is the steering wheel audio remote control switch in good condition?

YES : Go to Step 5.

NO : Replace the steering wheel audio remote control switch.

STEP 5. Check steering wheel voice control switch connector C-206 and steering audio switch connector C-213 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are steering wheel voice control switch connector C-206 and steering audio switch connector C-213 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. The steering remote control switch should work normally.

STEP 6. Check the wiring harness between steering wheel voice control switch connector C-206 (terminal 3) and steering audio switch connector C-213 (terminal 3).

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

Q: Is the wiring harness between steering wheel voice control switch connector C-206 (terminal 3) and steering audio switch connector C-213 (terminal 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 the wiring harness between steering wheel voice control switch connector C-206 (terminal 2) and clock spring connector C-202 (terminal 4).

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

Q: Is the wiring harness between steering wheel voice control switch connector C-206 (terminal 2) and clock spring connector C-202 (terminal 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 that the hands-free cellular phone system works normally when the steering wheel voice control switch is operated.

Q: Check that the hands-free cellular phone system works normally when the steering wheel voice control switch is operated.

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 <vehicles without MMCS> or multivision display <vehicles with MMCS>.

Inspection Procedure 5: The cellular phone is not recognized or the connection cannot be established.

⚠ CAUTION
Before replacing the module, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

FUNCTION
With the hands-free system, the cellular phone and hands-free module communicate with each other by using Bluetooth.

TROUBLE JUDGMENT CONDITIONS
When the cellular phone cannot be recognized or the communication cannot be established, the cellular phone or hands-free module may be defective.

TROUBLESHOOTING HINTS
- Malfunction of the cellular phone
- Malfunction of the hands-free module

DIAGNOSIS

STEP 1. Check the cellular phone.
Check that the cellular phone can be used normally as a unit.

Q: Is it possible to use the cellular phone normally?
YES : Go to Step 2.
NO : Repair or replace the cellular phone.

STEP 2. Check the position of cellular phone.
Check that the function becomes normal when the cellular phone is moved closer to the hands-free module.

Q: Does the function become normal when the cellular phone is moved closer to the hands-free module?
YES : No action is necessary and testing is complete.
NO : Go to Step 3.

STEP 3. Check the registration method of cellular phone.
By referring to the operation manuals, check that the cellular phone was registered to the hands-free module by following the normal procedure.

Q: Was the cellular phone registered by following the normal procedure?
YES : Check the trouble symptom, and finish when it is normal. When the abnormality is present, go to Step 4.
NO : Register a cellular phone according to a regular procedure.

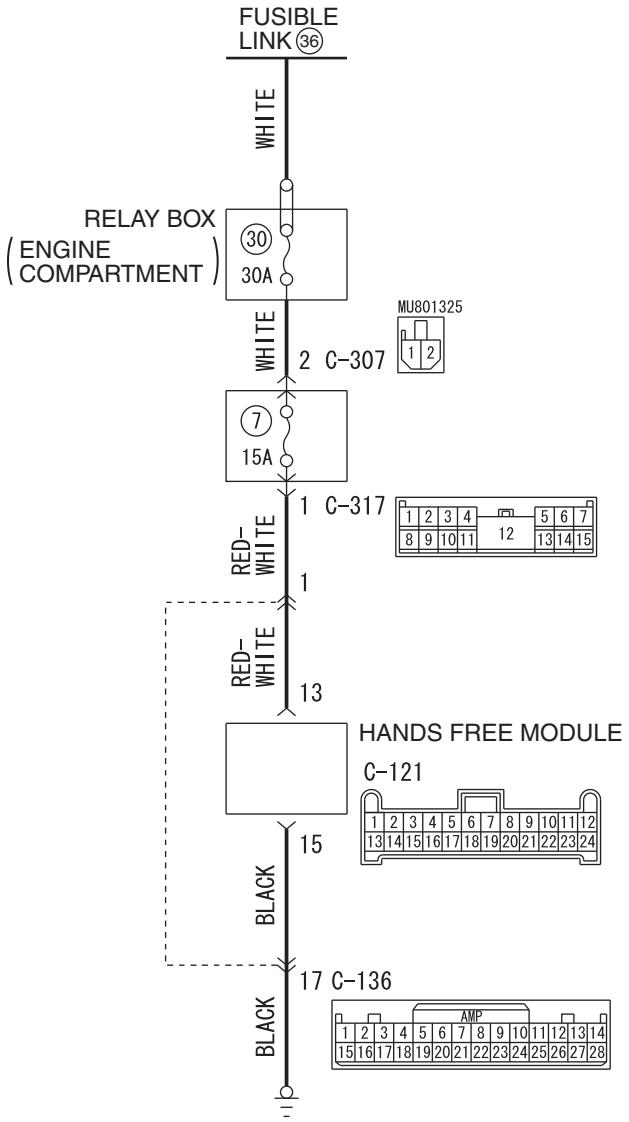
STEP 4. Temporarily replace the cellular phone, and check the trouble symptom.
Temporarily register a separate Bluetooth-supported cellular phone, and check that the hands-free system operates normally.

Q: Is the normal conversation possible with the hands-free system?
YES : Ask the customer to have the cellular phone repaired or replaced. Then, delete the temporarily registered cellular phone. Once the customer prepares the normally-working cellular phone, register the cellular phone to the hands-free module.
NO : Replace the hands-free module.

Inspection Procedure 6: 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



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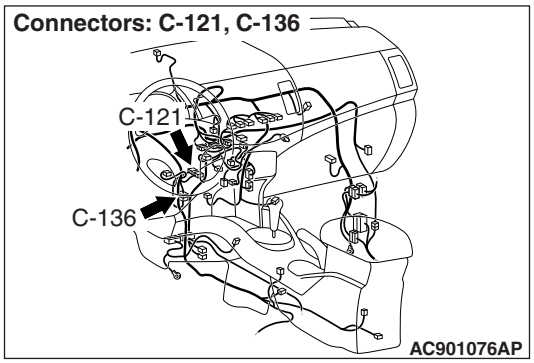
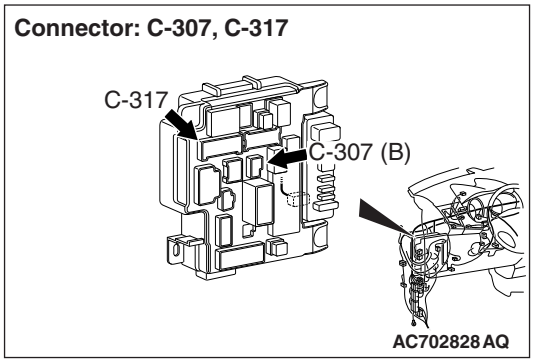




CIRCUIT OPERATION

The power supply to the hands-free module is provided by the fusible link (36).

TECHNICAL DESCRIPTION (COMMENT)

If the hands-free cellular phone system don't work, power supply and ground system to the hands-free module, or the hands free module itself may be defective.

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

DIAGNOSIS

Required Special Tools:

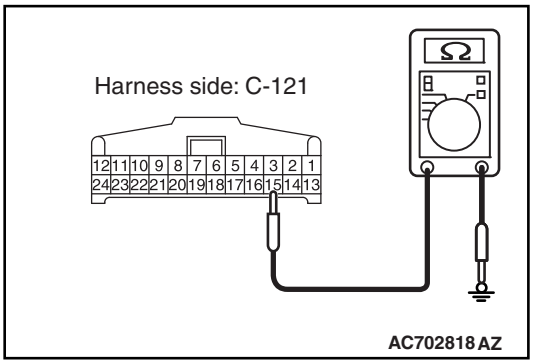
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check hands-free module connector C-121 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is hands-free module connector C-121 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-121.

(1) Disconnect hands-free module connector C-121, and measure at the wiring harness side.

(2) Measure the resistance value between terminal 15 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 hands-free module connector C-121 (terminal 15) and ground.

- Check the ground wires for open circuit.

NOTE: Also check intermediate connector C-136 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-136 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-121 (terminal 15) and ground in good condition?

YES : Replace the hands-free module. The system should communicate with the hands-free module normally.

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-121.

(1) Disconnect hands free module connector C-121, and measure the voltage available at the hands-free module side of the connector.

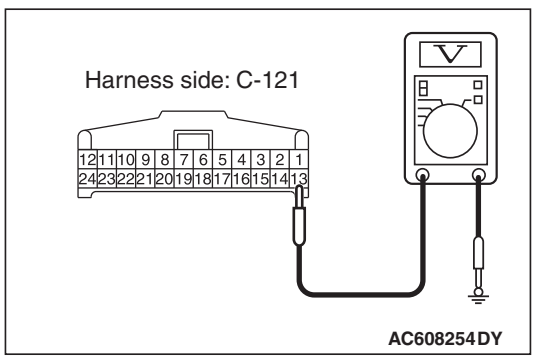
(2) Measure the voltage between terminal 13 and ground.

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 hands free module. The system should communicate with the hands-free module normally.

NO : Go to Step 5.



STEP 5. Check the wiring harness between hands-free module connector C-121 (terminal 13) and fusible link (36).

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

NOTE: Also check intermediate connector C-136 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-136 and ETACS-ECU connector C-307 or C-317 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between hands-free module connector C-121 (terminal 13) and fusible link (36) in good condition?

YES : Replace the hands-free module. The system should communicate with the hands-free module normally.

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.

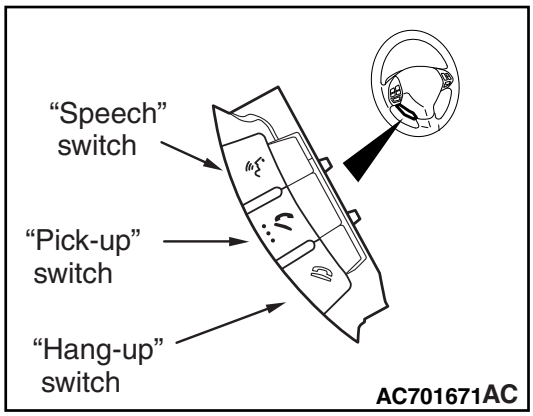
ON-VEHICLE SERVICE

PAIRING A CELLULAR PHONE OR DELETING A PHONE

M1544403700184

NOTE:

- *Several Bluetooth® cellular phones may not be compatible with the hands free module*
- *A maximum of seven Bluetooth® cellular phones can be registered.*
- *The hands free cellular phone system can not be used when a battery of Bluetooth® cellular phone was exhausted.*



PAIRING A CELLULAR PHONE

1. Shift the selector lever to "P" (parking) position <A/T or CVT> 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 "Do you want to Pair a phone, delete a phone or list paired phones?"
7. Say “Pair a phone.”
8. The voice guide will say "Please say a 4-digit pin number."
9. Say a 4 digit number. The 4 digit number will be registered as a pin number for the phone.
   - 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 pin number selection.

   NOTE:
   - *The pin number entered here is only used for the Bluetooth® connection certification. It is any 4-digit number the user would like to select.*

- *Remember the pin number as it needs to be keyed into the phone later in the pairing process.*
- *Depending on the selected Bluetooth® connection settings, entry of the paring code may be required each time the Bluetooth® cellular phone attempts to connect to the hands free cellular phone system. Refer to your cellular phone owner's manual for connection defaults and settings.*

10. The voice guide will say “Start pairing procedure on phone. See phone’s manual for instructions.” Refer to the owner’s manual for your cellular phone and enter into the phone the pin number that was registered in Step 9.
11. When the hands free cellular phone system finds a Bluetooth® cellular phone, the voice guide will say "Please say the name of the phone after the beep."
12. After you hear the beep, name the phone by saying a name of your preference.

    NOTE:
    - *When the hands free cellular phone system cannot recognize the Bluetooth® cellular phone, the pairing process will end and the system will beep and then return to normal status.*
    - *Try the pairing process again after reconfirming whether or not the Hands free cellular phone system supports your Bluetooth® compatible cellular phone.*
13. The voice guide will say "Assign a priority level between 1 and 7. 1 is the highest priority."
14. Say a number between 1 and 7 to set a priority level for the cellular phone.
    - If you selected a priority level that has already been set for a different phone, the hands free cellular phone system will ask you whether you wish to overwrite that priority level. To overwrite the priority level, answer "Yes." Answer "No" to return to the priority level selection in Step 13.
15. After the voice guide says "<phone tag> set to priority <priority>," the hands free cellular phone system will start the pairing process. Wait a moment for the pairing process to complete.
    - When the confirmation function is "ON", the hands free cellular phone system will confirm the assigned phone name and priority again. Answer "Yes" to go to next step, or answer "No" to return to the priority level selection in Step 13.
16. When the pairing process is completed, the voice guide will say "Pairing Complete." The hands free cellular phone system will then beep and the voice recognition mode will be deactivated.

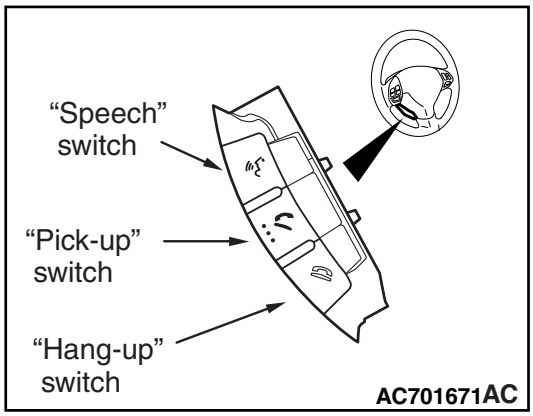
DELETING A PHONE

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 “Do you want to Pair a phone, delete a phone or list paired phones?”
6. Say “Delete a phone.”
7. After the voice guide says "Please say," it will read out each priority number and phone name pair in order, starting with the phone that has the highest priority level (from 1 to 7). After it completes reading all pairs, the voice guide will say "or all."
8. Say the priority number of the phone that you want to delete from the hands free cellular phone system. If you want to delete all paired phones from the hands free cellular phone system, say "All."
9. For confirmation purposes, the voice guide will say "Removing <phone tag> (all) is this correct?" Answer "Yes" to delete the phone(s). If you answer "No," the voice guide will ask "Which phone please?" Say again the priority number of the phone that you want to delete from the hands free cellular phone system.
10. When the phone deletion process is completed, the voice guide will say "Deleted." The hands free cellular phone system will then beep and the voice recognition mode will be deactivated.
    - If the phone deletion process fails for some reason, the voice guide will say "Delete failed." The hands free cellular phone system will then beep and the voice recognition mode will be deactivated. Start over again from Step 1.

ERASE THE PASSCODE

M1544403800192

The 4-digit passcode set by security function can be erased by operating the hang-up switch.



1. Turn the ignition switch to the "ON" or "ACC" position, and check if the radio and CD player or the multivision display is activated.
2. Check that the hands free cellular phone system is not in voice recognition mode.
3. Press and hold the hang-up switch for approximately 2 seconds (1.5 seconds or more).
4. Within approximately 10 seconds after performing step 3, press and hold the hang-up switch for approximately 2 seconds (1.5 seconds or more) twice again.

NOTE: Even if the passcode is erased, guidance such as voice guide is not provided.

5. After the operation, check if the lock with the passcode is unlocked. If the lock is not unlocked, repeat from step 2.

SERVICE DATA

M1544401300072

Item No.	Scan tool display	Check condition	Normal condition
1	VR switch	When the "Speech" switch is pushed	ON
2	On hook switch	When the "Hang-up" switch is pushed	ON
3	Off hook switch	When the "Pick-up" switch is pushed	ON

ACTUATOR TEST TABLE

M1544404000058

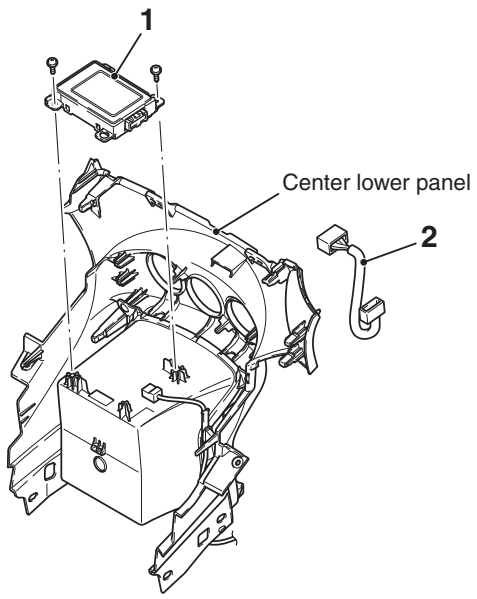
The following actuators can be forcibly operated using scan tool.

Item No.	Item name	Test item	Driven component
1	VR switch	"Speech" switch short press	Perform the operation when the "Speech" switch is pressed shortly. (Start the voice recognition mode)
2	On hook switch	"Hang-up" switch short press	Perform the operation when the "Hang-up" switch is pressed shortly. (Hangs up the phone while the call is in progress)
3	Off hook switch	"Pick-up" switch short press	Perform the operation when the "Pick-up" switch is pressed shortly. (Take incoming calls)

REMOVAL AND INSTALLATION

M1544401000349

HANDS FREE MODULE



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Hands free module removal steps

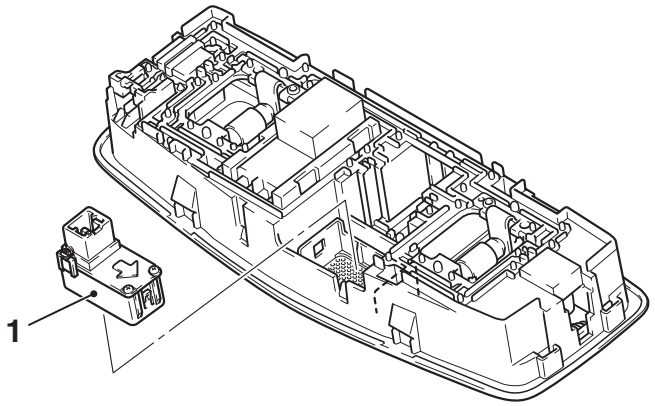
- Radio and CD player <vehicles without MMCS> or multivision display <vehicles with MMCS> (Refer to P.54A-432 <vehicles without MMCS> or P.54A-568 <vehicles with MMCS>.)

Hands free module removal steps (Continued)

1. Hands free module
2. Sub harness

TSB Revision

MICROPHONE UNIT



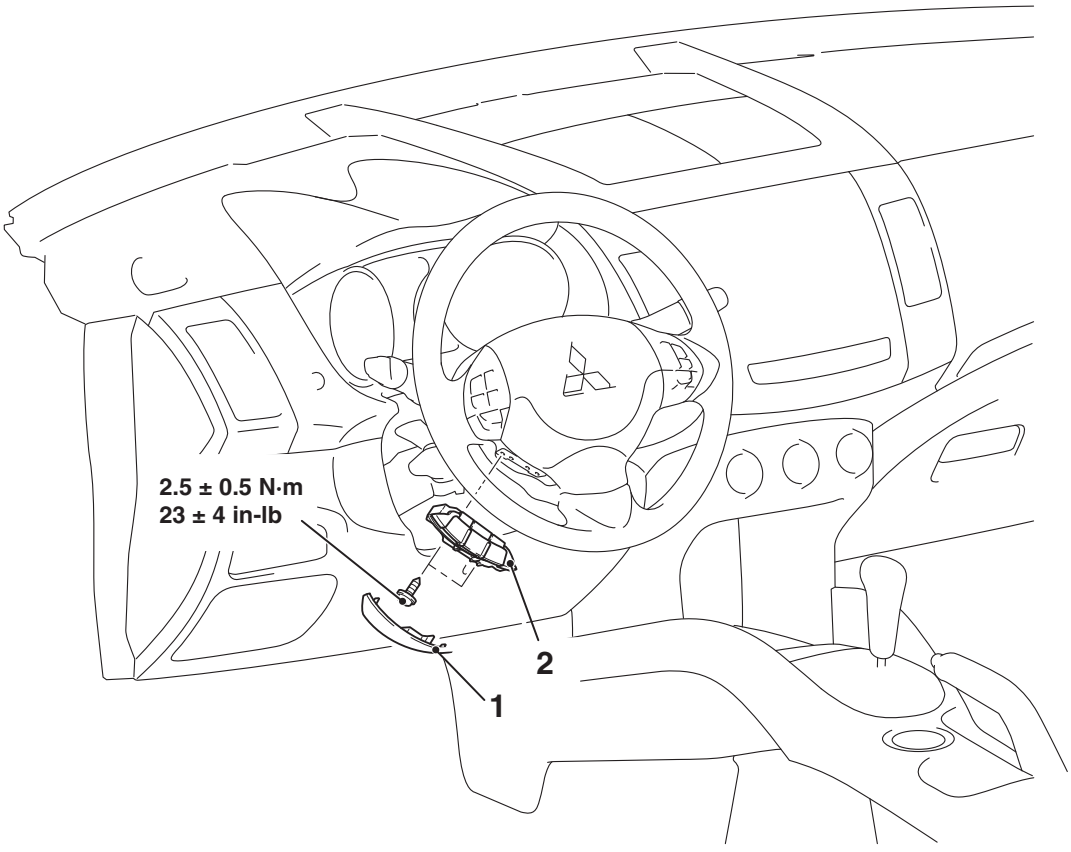
AC606269AC

Microphone unit removal steps

- Front dome light assembly (Refer to GROUP 52A, Headlining P.52A-15.)

1. Microphone unit

STEERING WHEEL VOICE CONTROL SWITCH



AC703567AB

Steering wheel voice control switch removal step

1. Steering wheel voice control switch cover
2. Steering wheel voice control switch

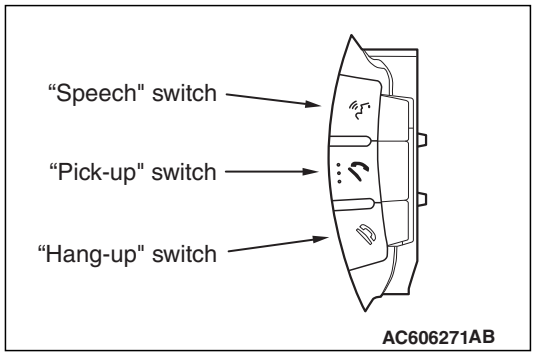
TSB Revision

STEERING WHEEL VOICE-CONTROL SWITCH CONTINUITY CHECK

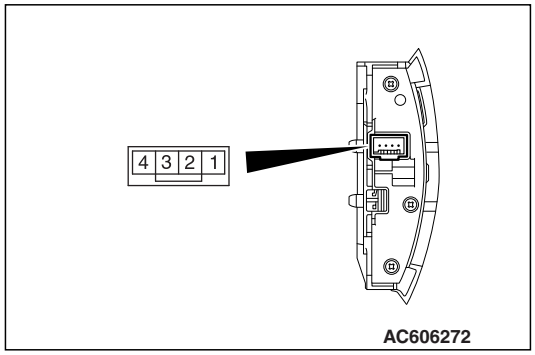
M1544401100313

STEERING WHEEL VOICE CONTROL SWITCH CHECK

Use an ohmmeter to measure the resistance value between the terminal.



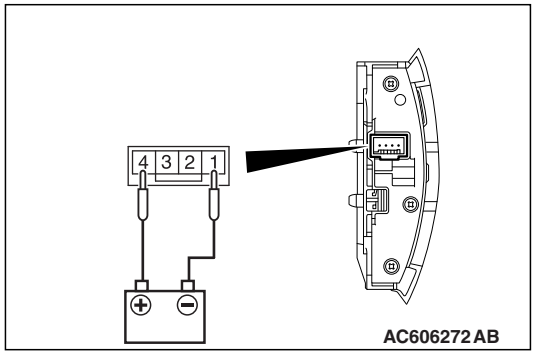
Switch position	Tester connection	Measurement value
No push	2 –3	Approximately 74 kΩ
"Speech" switch		Approximately 1.5 kΩ
"Pick-up" switch		Approximately 3.3 kΩ
"Hang-up" switch		Approximately 6.0 kΩ



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.



SATELLITE RADIO TUNER

GENERAL INFORMATION

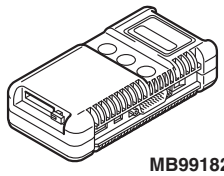
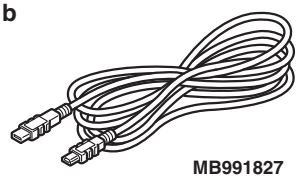
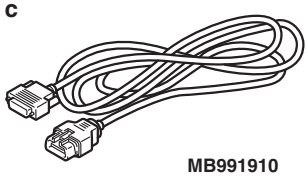
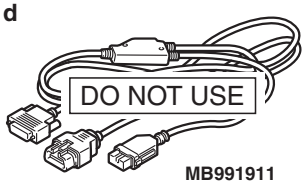
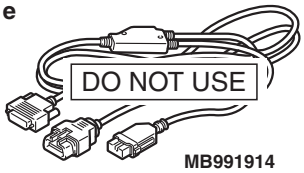
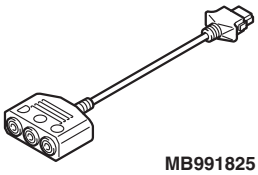
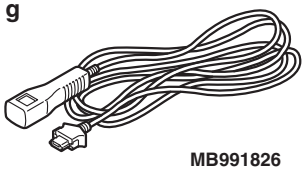
M1544000100420

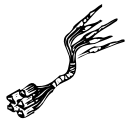
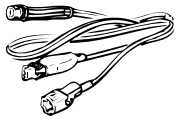
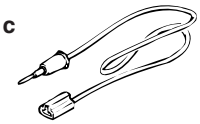
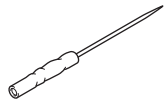
SATELLITE RADIO

- The satellite radio is a broadcast technology that offers a clear digital sound directly by using satellites.
- 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 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub-assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable 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. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ 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.

Tool	Tool number and name	Supersession	Application
a  b  c  d MB991223	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	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-334.)

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1544016500030

Refer to GROUP 00 –Troubleshooting contents P.00-7.

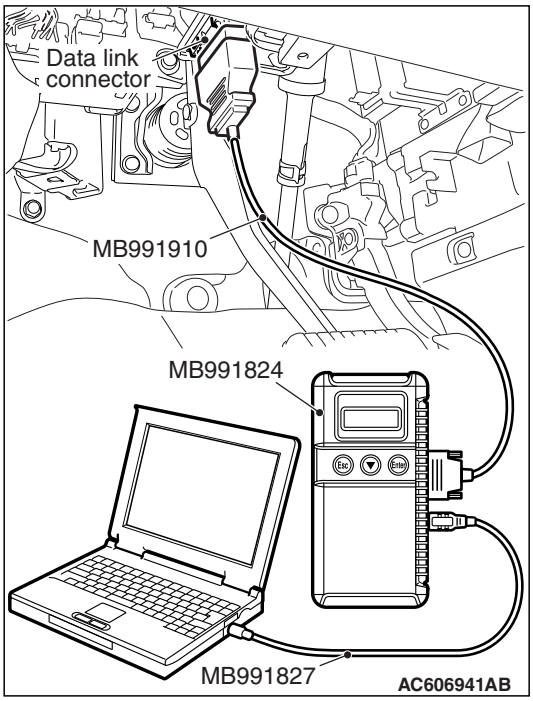
DIAGNOSIS FUNCTION

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

M1544012900360

Diagnostic trouble code number	Trouble content	Reference page
B2222	Radio receiver Internal fail	P.54A-655
U0019	Bus off (CAN-B)	P.54A-657
U0141	ETACS CAN timeout	P.54A-658
U0151	SRS-ABG CAN timeout	P.54A-660
U0154	OCM (occupant classification-ECU) CAN timeout	P.54A-662
U0155	Meter CAN timeout	P.54A-664
U0164	A/C CAN timeout	P.54A-666
U0168	WCM CAN timeout	P.54A-668
U0184	Audio CAN timeout	P.54A-670
U0197	Hands free module CAN timeout	P.54A-672

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.

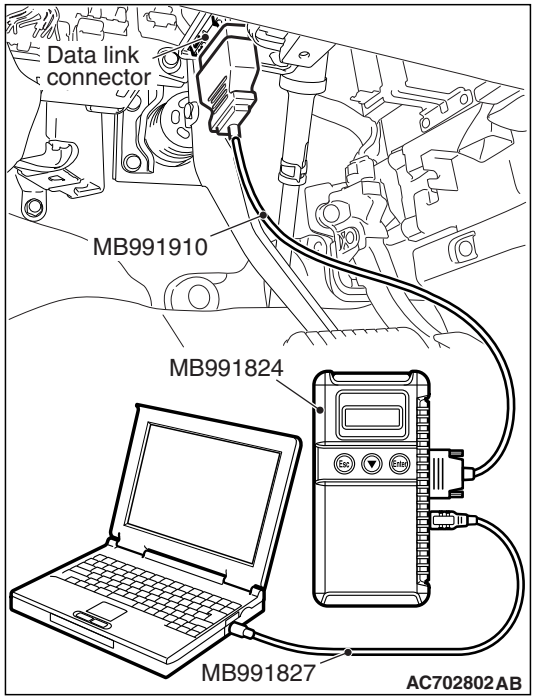
PROBABLE CAUSES

- 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-652."
(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)

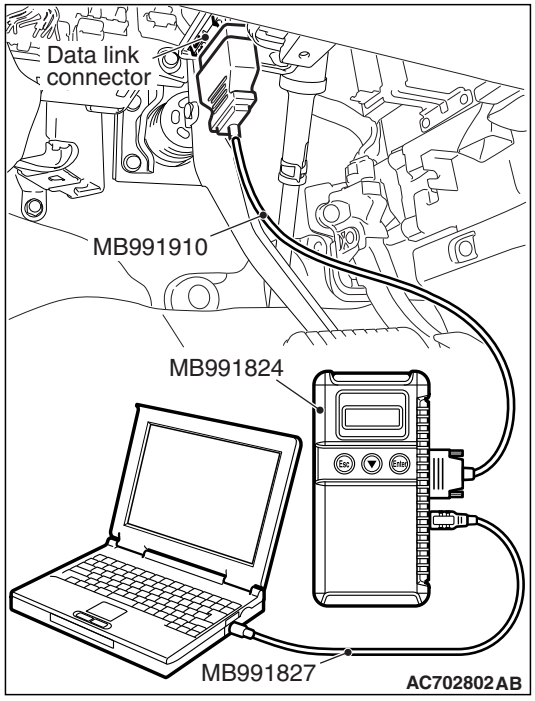
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.
Use scan tool MB991958 to diagnose the CAN bus lines.

⚠ 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-652."
(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.

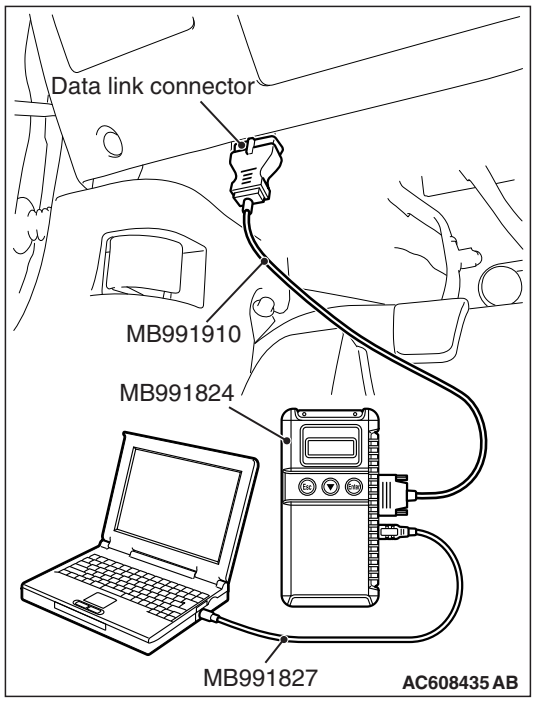
TROUBLESHOOTING HINTS

- 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-652."
(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-742).
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-ECU 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

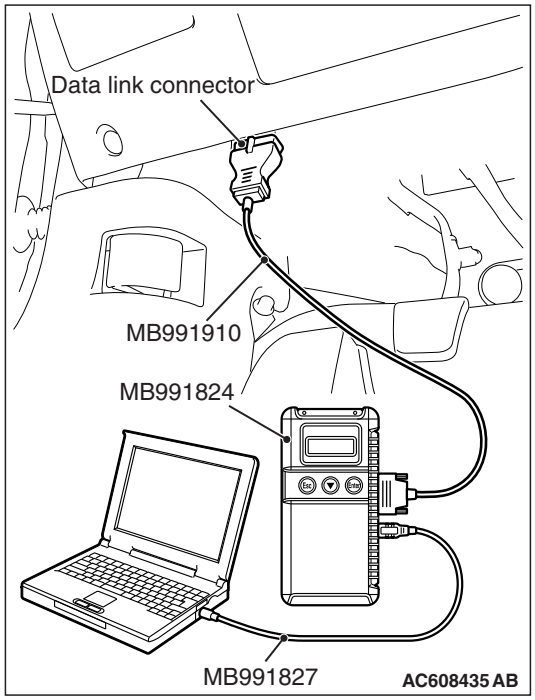
Required Special Tools:

- 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-652."
(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-32).
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

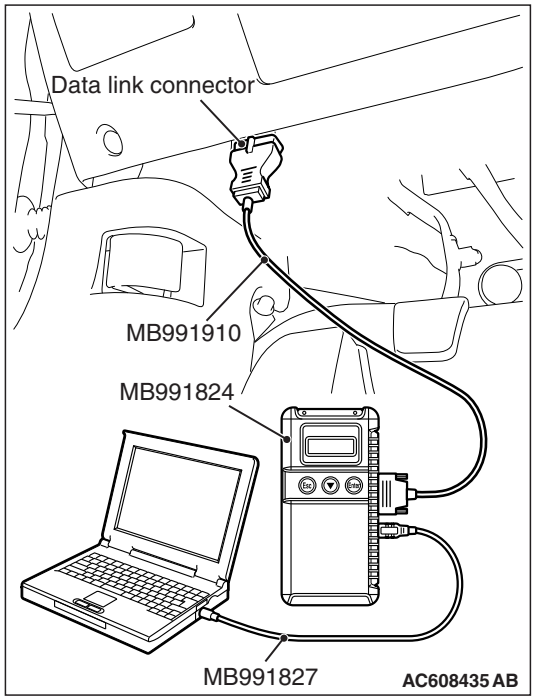
Required Special Tools:

- 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-652."
(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-346).
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.

TSB Revision

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.

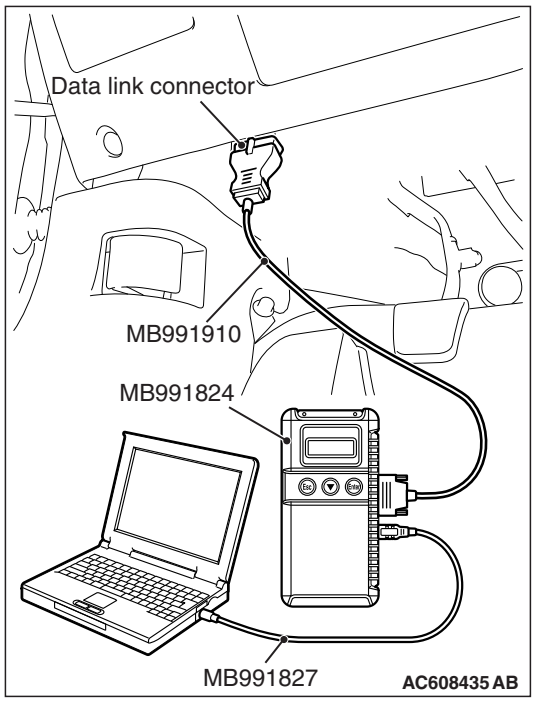
TROUBLESHOOTING HINTS
- The CAN bus line may be defective.
- The satellite radio tuner may be defective.
- The combination meter may be defective.

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-652."
(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-32).

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

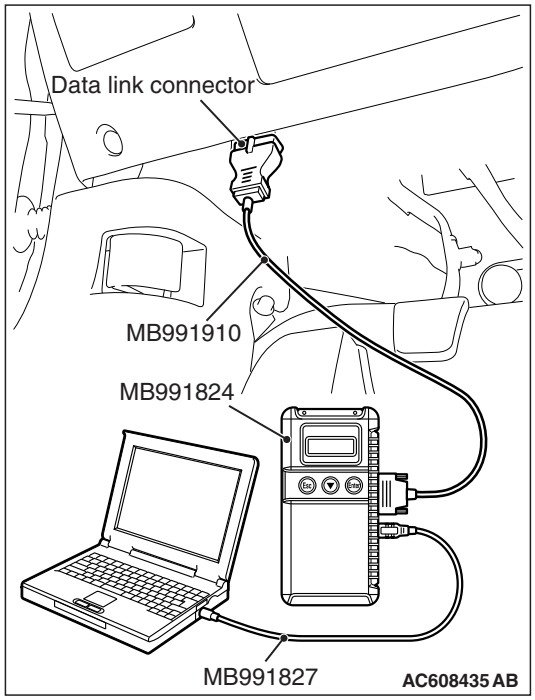
Required Special Tools:

- 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-652."
(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.

TSB Revision

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.

TSB Revision

DIAGNOSIS

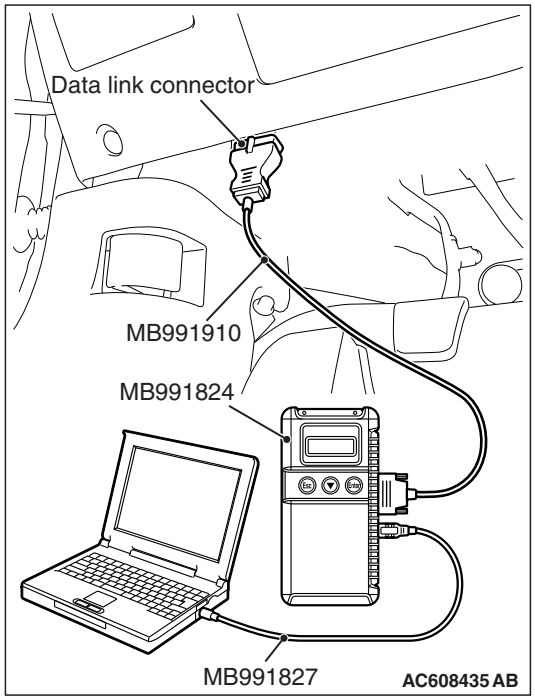
Required Special Tools:

- 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-652."
(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-31 <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.

TSB Revision

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.

TSB Revision

DIAGNOSIS

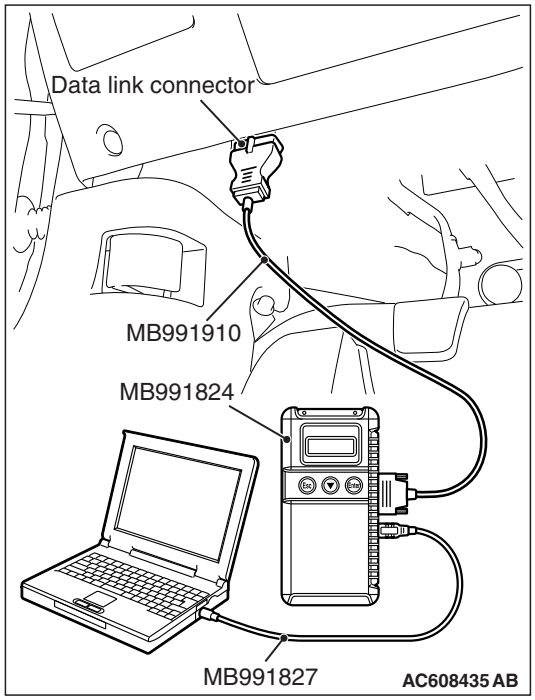
Required Special Tools:

- 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-652."
(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-338).
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.

TSB Revision

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).

DTC U0197: Hands free module CAN timeout

⚠ CAUTION
- **If DTC U0197 is set, be sure to diagnose the CAN bus line.**
- **When replacing the ECU, always check that the communication circuit is normal.**

DIAGNOSTIC FUNCTION
When the signals from hands free module cannot be received, the satellite radio tuner sets DTC U0197.

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 hands free module 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 hands free module may be defective.

DIAGNOSIS

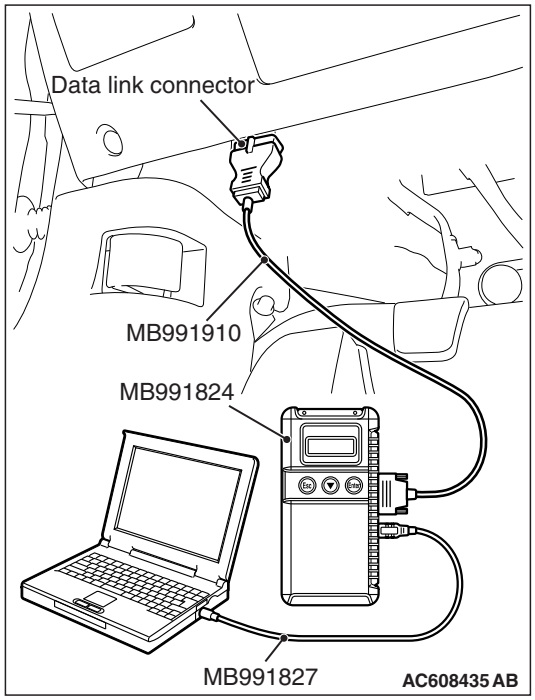
Required Special Tools:

- 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-652."
(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 hands free module diagnostic trouble code.

Check again if the DTC is set to the hands free module.

Q: Is the DTC set?

YES : Troubleshoot the hands free cellular phone system. (Refer to P.54A-592.)
NO : Go to Step 3.

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

Check if the DTC U0197 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 hands free module.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the hands free module 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 hands free module and the satellite radio tuner (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

TROUBLE SYMPTOM CHART

M1544016400044

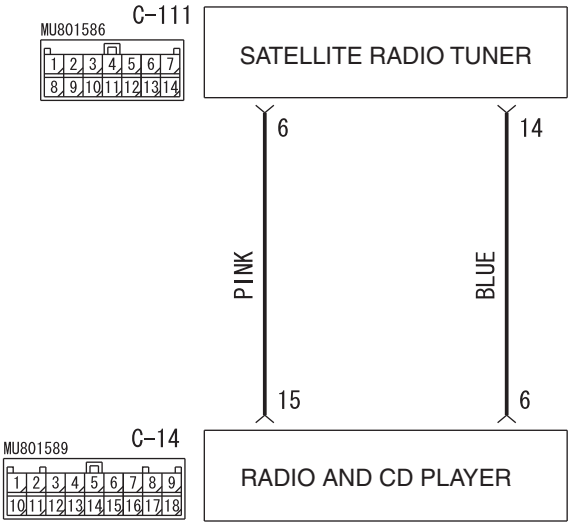
Trouble symptom	Inspection Procedure No.	Reference page
A satellite radio cannot be received.	1	P.54A-675
Check the satellite radio tuner power supply circuit.	2	P.54A-680
The error code "ANTENNA ERROR" is displayed on the display.	3	P.54A-683

SYMPTOM PROCEDURES

Inspection Procedure 1: A satellite radio cannot be received.

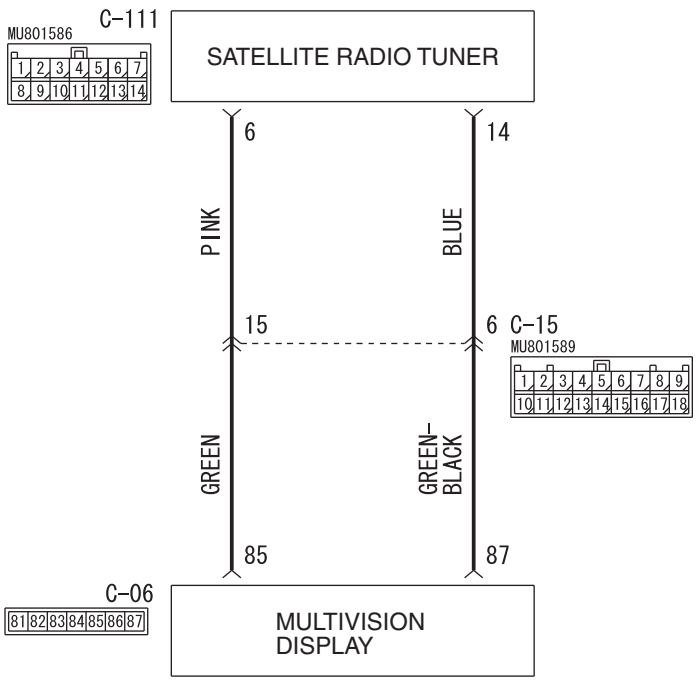
⚠ CAUTION
Before replacing the satellite radio tuner, antenna feeder cable, radio and CD player <vehicles with radio and CD player> or multivision display <vehicles with MMCS>, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Satellite Radio Tuner Communication Circuit <Vehicles with Radio and CD Changer>



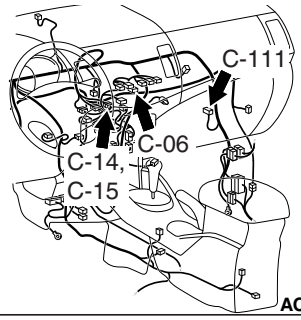
WAG54M038A

Satellite Radio Tuner Communication Circuit <Vehicles with MMCS>



WAG54M039A

Connectors: C-06, C-14, C-15, C-111



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

TSB Revision

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?

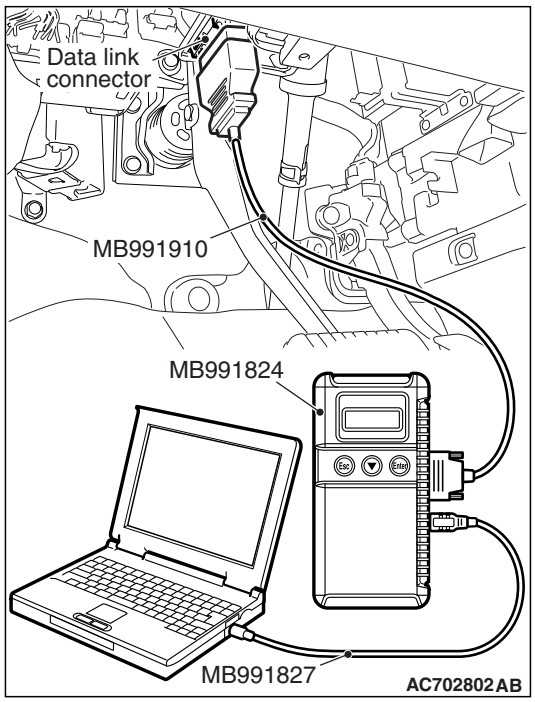
YES : Go to Step 2.

NO : Diagnose the radio and CD player <vehicles with radio and CD player> or the multivision display <vehicles with MMCS>. Refer to P.54A-371 <vehicles with radio and CD player> or P.54A-493 <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-738."
(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.

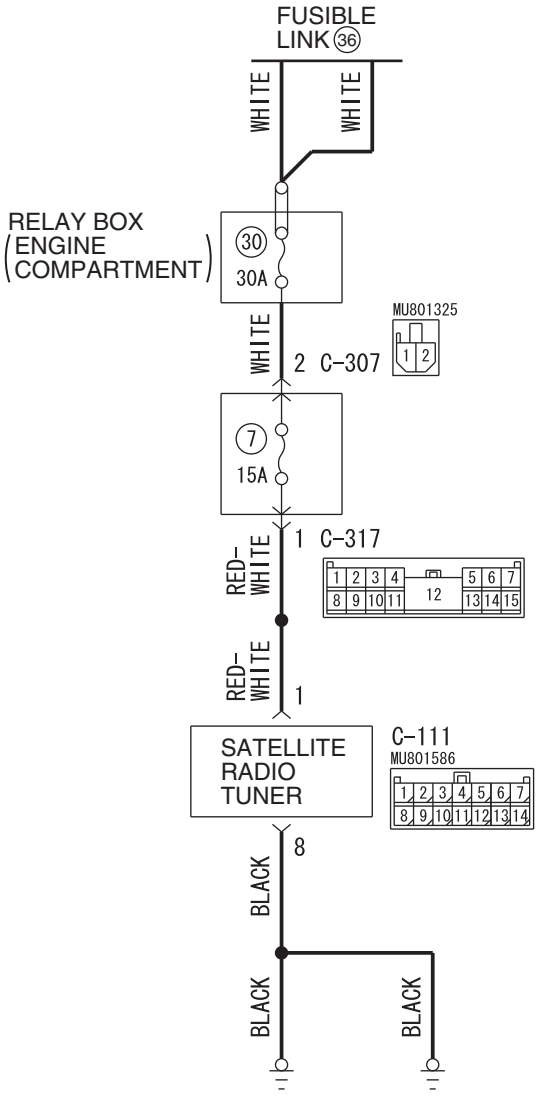
Q: Can a satellite radio be received?

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.

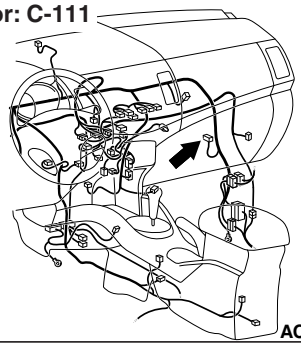
Satellite Radio Tuner Supply Circuit



W8G54M133A

TSB Revision

Connector: C-111



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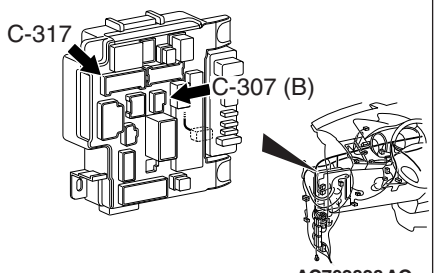
Connector: C-307, C-317



AC702828 AQ

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:

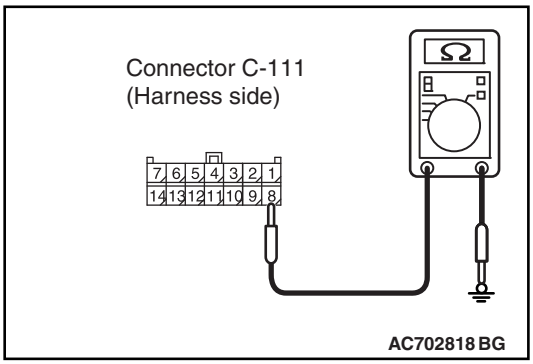
- MB991223: Harness Set
- MB992006: Extra Fine Probe

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.

STEP 3. Check the wiring harness between satellite radio tuner connector C-111 (terminal 8) and ground.

- Check the ground wire for open circuit.

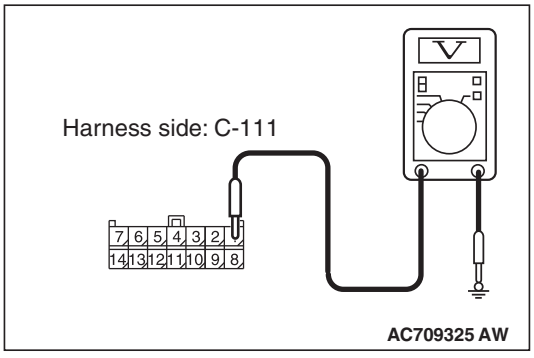
Q: Is the wiring harness between satellite radio tuner connector C-111 (terminal 8) and ground in good condition?

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: Battery positive voltage



Q: Is the measured voltage battery positive voltage?

YES : Go to Step 6.
NO : Go to Step 5.

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

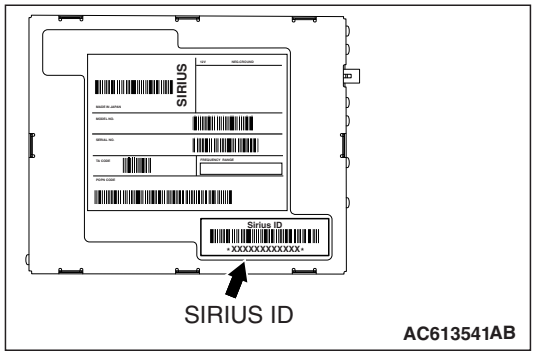
HOW TO READ SIRIUS ID

M1544018300032

READ THE SIRIUS ID DIRECTLY FROM THE SATELLITE RADIO TUNER.

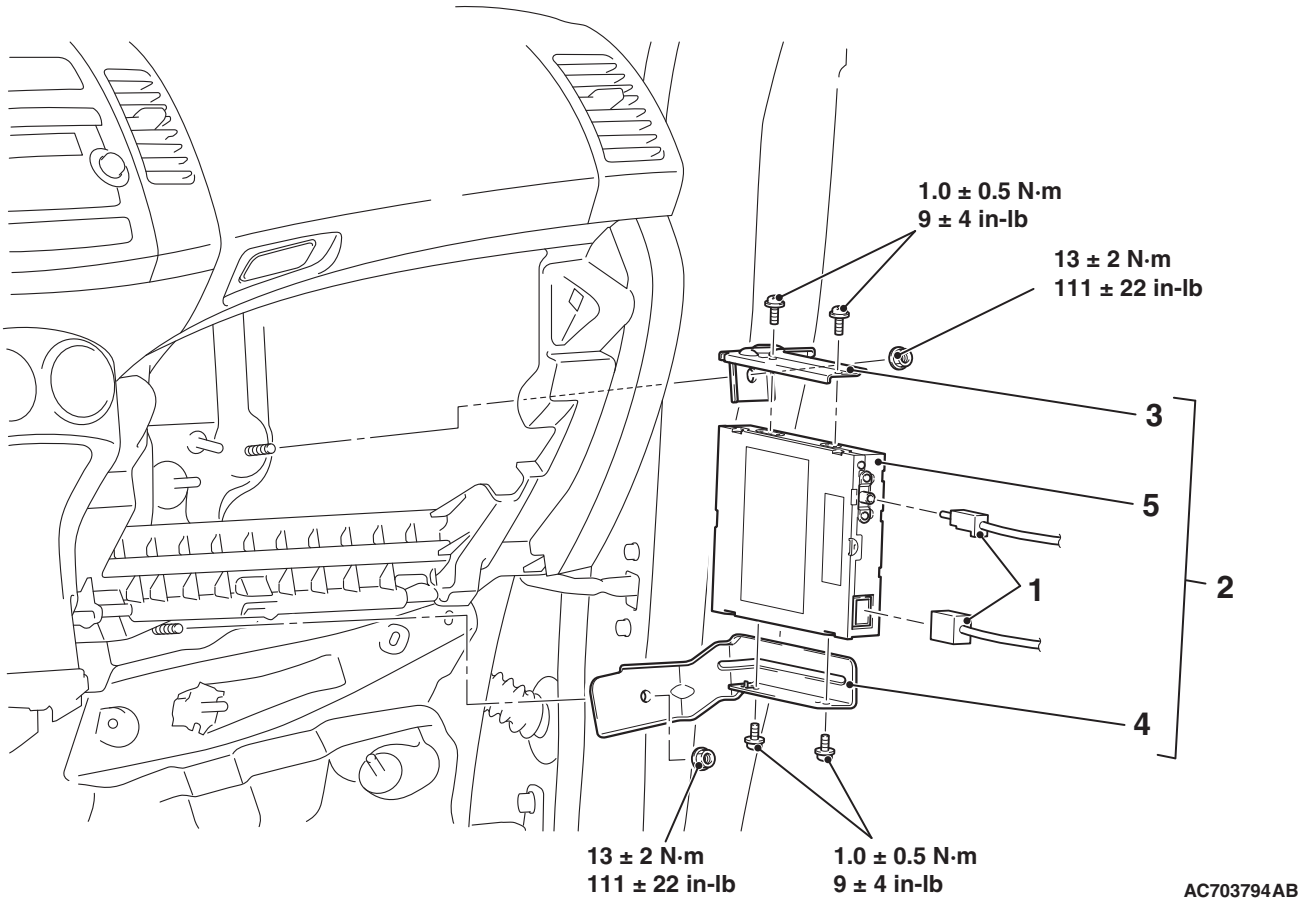
When the SIRIUS ID (12 digits) cannot be displayed by operation of the audio visual navigation unit or the radio and CD changer, the ID can be read from the satellite radio tuner directly.

1. Remove the satellite radio tuner. Refer to P.54A-685.
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

TSB Revision

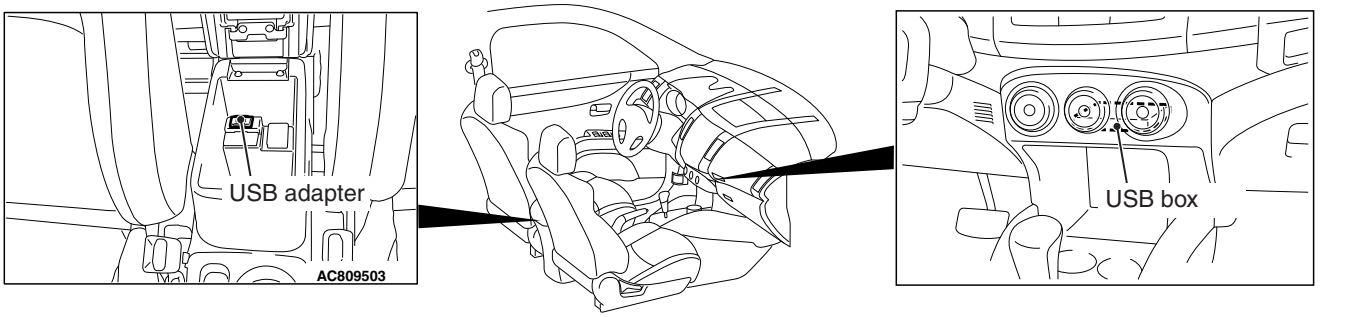
USB ADAPTER

GENERAL INFORMATION

M1549100200010

The USB* adapter transfers the music data from the iPod® and USB memory to the radio and CD player via the USB box, and the data can be played by the "USB mode" of the radio and CD player. <Vehicles with USB adapter>

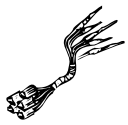
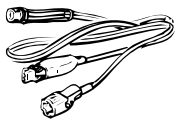
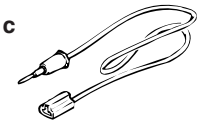
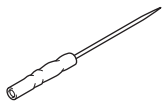
*NOTE: *:Universal serial bus*



AC900397AC

SPECIAL TOOLS

M1549100300017

Tool	Tool number and name	Supersession	Application
a  b  c  d DO NOT USE MB991223	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	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1549100400014

Refer to GROUP 00, Troubleshooting contents P.00-7.

TSB Revision

TROUBLE SYMPTOM CHART

M1549100500011

Trouble symptom	Reference page
The USB adapter data cannot be replayed.	P.54A-494

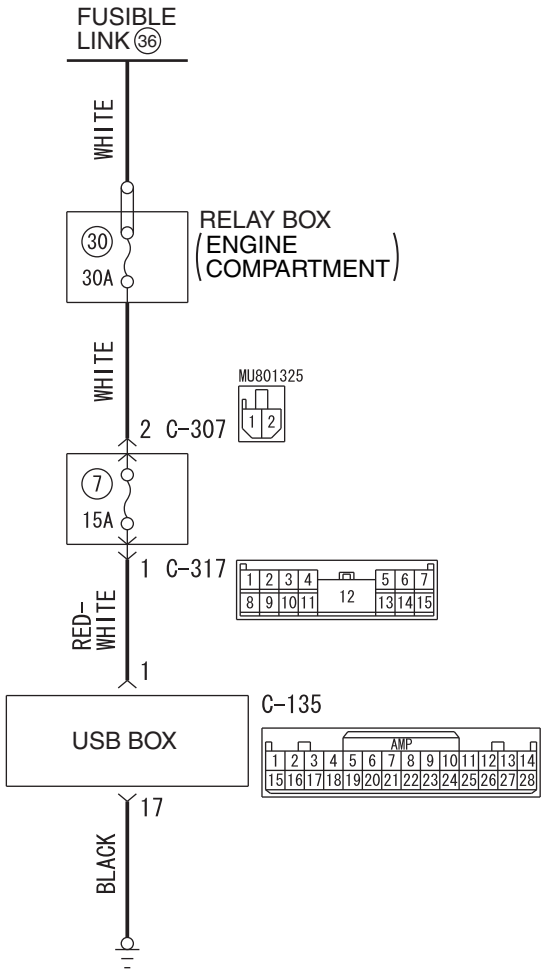
SYMPTOM PROCEDURES

The USB adapter data cannot be replayed.

⚠ CAUTION

Before replacing the USB box, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

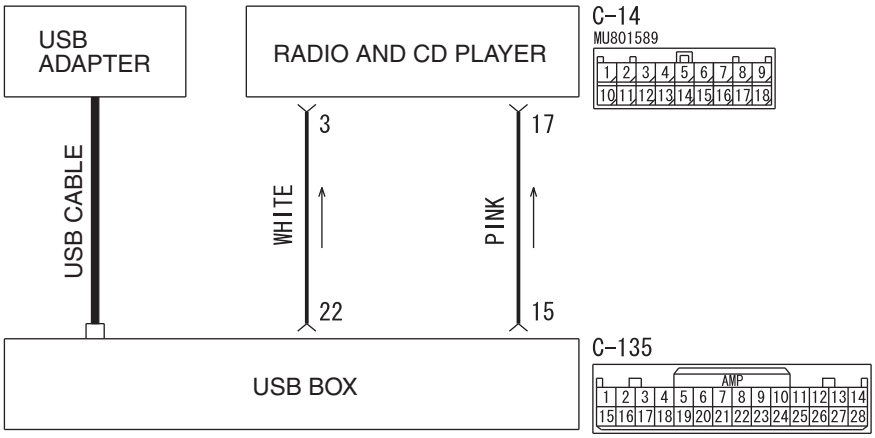
USB Box Power Supply Circuit



WAG54M040A

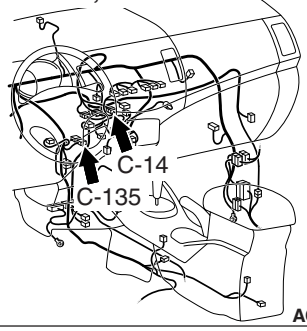
TSB Revision

USB Box Communication Circuit



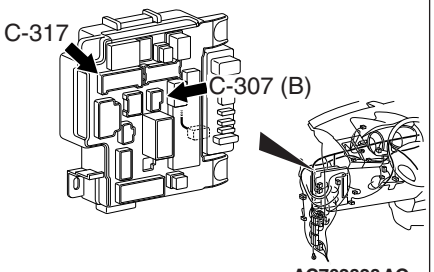
WAG54M041A

Connectors: C-14, C-135



AC901076AS

Connector: C-307, C-317



AC702828AQ

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

TSB Revision

DIAGNOSIS

Required Special Tools:
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the audio unit operation.
Check if the audio unit 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-371).

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-433)

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.

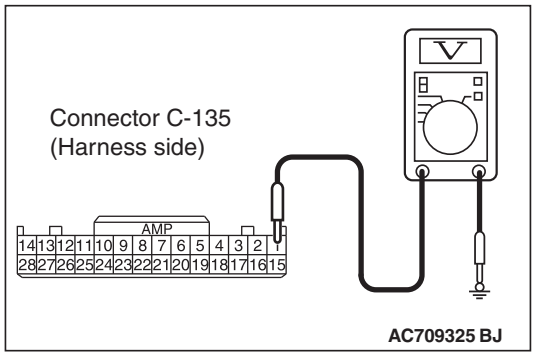
Q: Is the check result normal?

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) Turn the ignition switch to the "ON" position.
(3) 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.

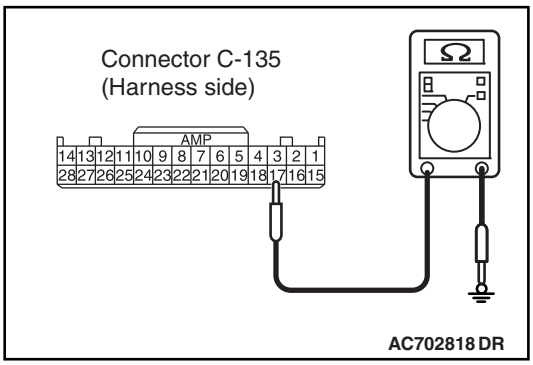
STEP 9. Check the ground circuit to the USB box. Measure the resistance at USB box connector C-135.

(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 and ground.

- Check the earth wires for open circuit.

Q: Is the wiring harness between USB box connector C-135 (terminal 17) and 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 the defective connector.

STEP 12. Check the wiring harness between radio and CD player connector C-14 (terminal 3, 17) and USB box connector C-135 (terminal 22, 15).

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

Q: Is the wiring harness between radio and CD player connector C-14 (terminal 3, 17) and USB box connector C-135 (terminal 22, 15) in good condition?

YES : Go to Step 13.

NO : Repair the wiring harness.

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.

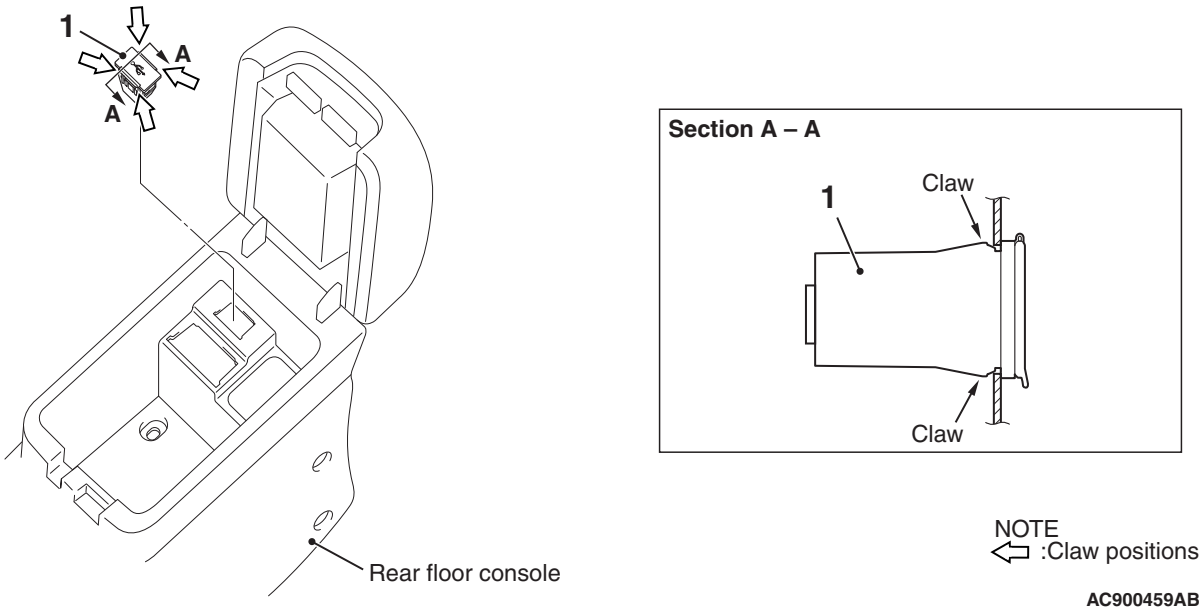
Q: Is the check result normal?

YES : Replace the USB box.

NO : Replace the radio and CD player.

REMOVAL AND INSTALLATION

M1549100800012



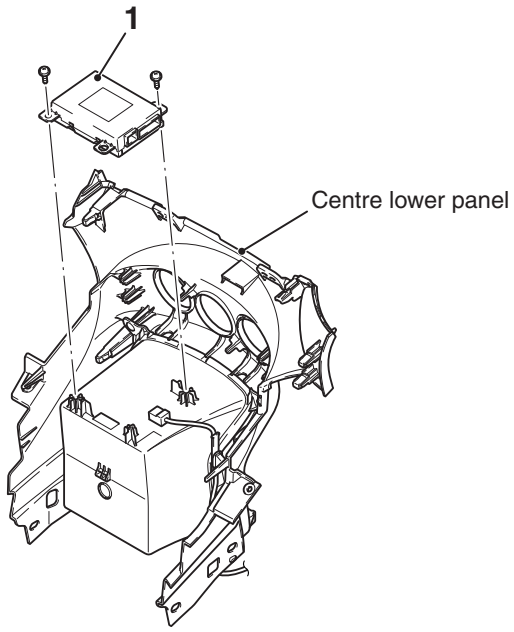
Removal Steps

- Rear floor console assembly (Refer to GROUP 52A –Rear Floor Console assembly P.52A-8.)

1. USB adaptor

REMOVAL AND INSTALLATION

M1549100900019



Removal steps

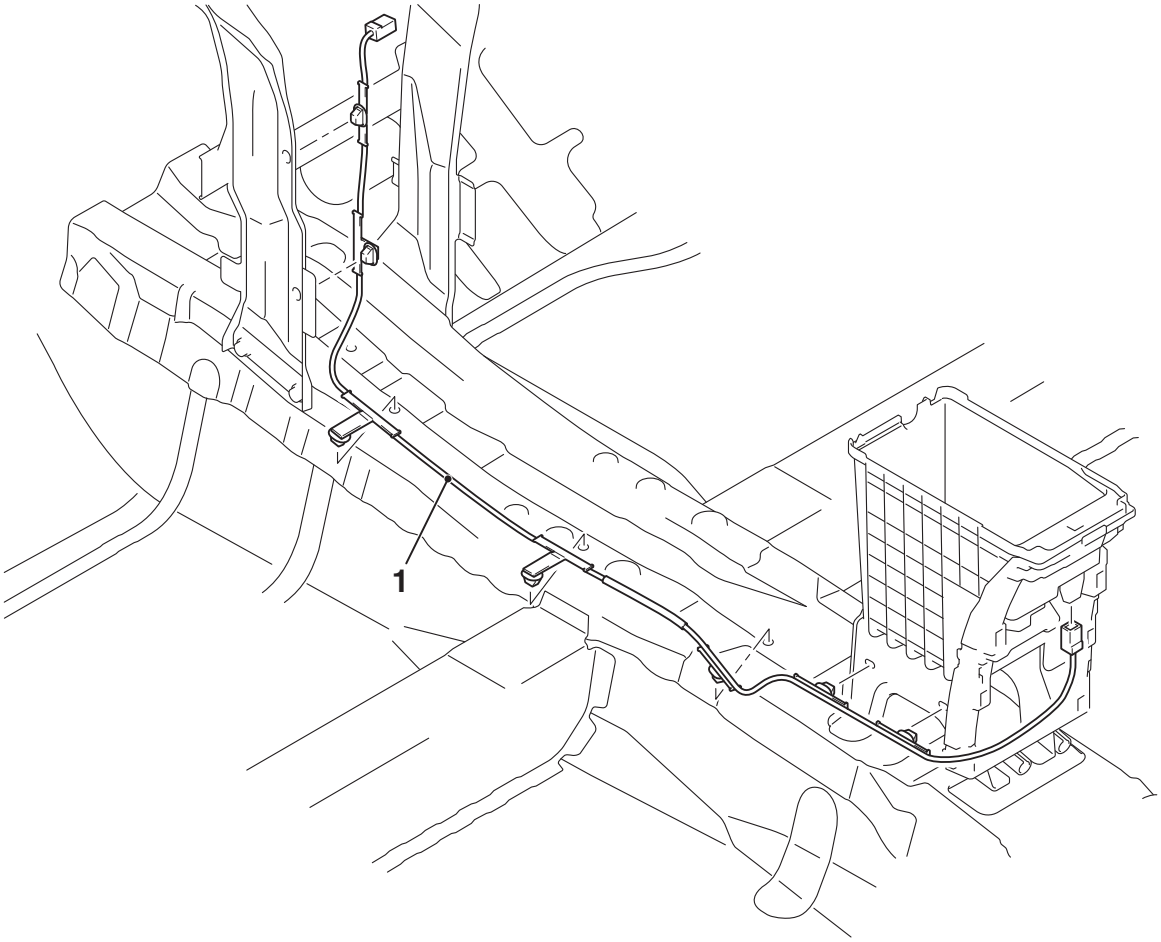
- Radio and CD player (Refer to P.54A-432)

1. USB box

TSB Revision

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.)

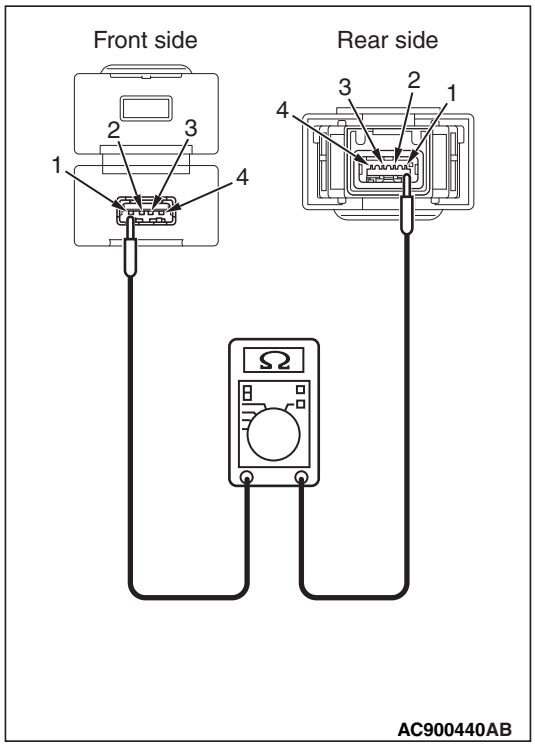
1. USB cable

TSB Revision

USB ADAPTER INSPECTION

M1549101100016

1. Remove the USB adapter. (Refer to P.54A-692)
2. Check that the continuity exists between the front side terminals of USB adapter and rear side terminals of USB adapter.

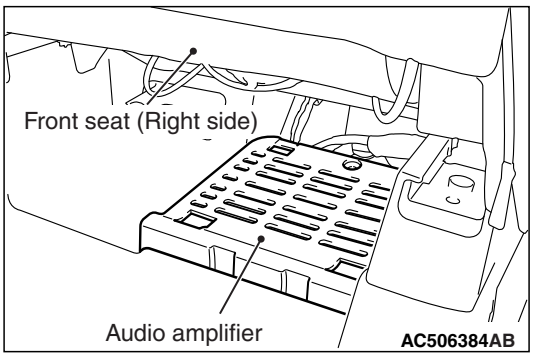


Front side terminal	Rear side terminal	Measurement value
1	1	Continuity exists (2 Ω or less)
2	2	
3	3	
4	4	

AMPLIFIER

GENERAL INFORMATION

M1544000100787

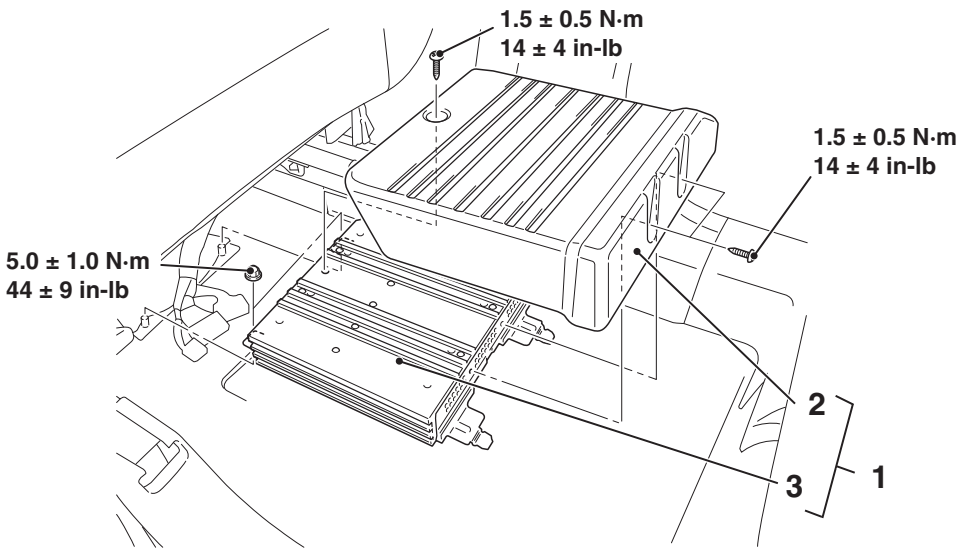


A 8-ch high-power audio amplifier with integrated DSP (total maximum output of 710 W) has been combined with the Rockford Fosgate® premium sound system.

TSB Revision

REMOVAL AND INSTALLATION

M1544004100466



AC808448AC

Removal Steps
1. Audio amplifier assembly

Removal Steps (Continued)
2. Audio amplifier cover
3. Audio amplifier

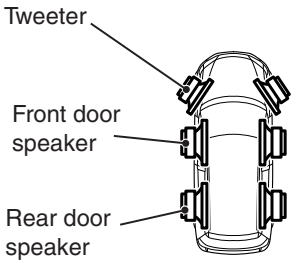
SPEAKER

GENERAL INFORMATION

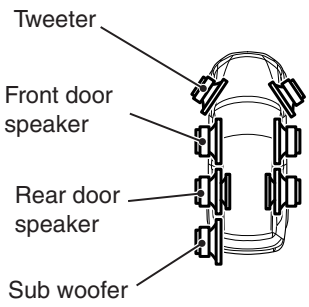
M1544000100798

The following two types of speakers are available.

<6 speakers>



<9 speakers>



AC709465

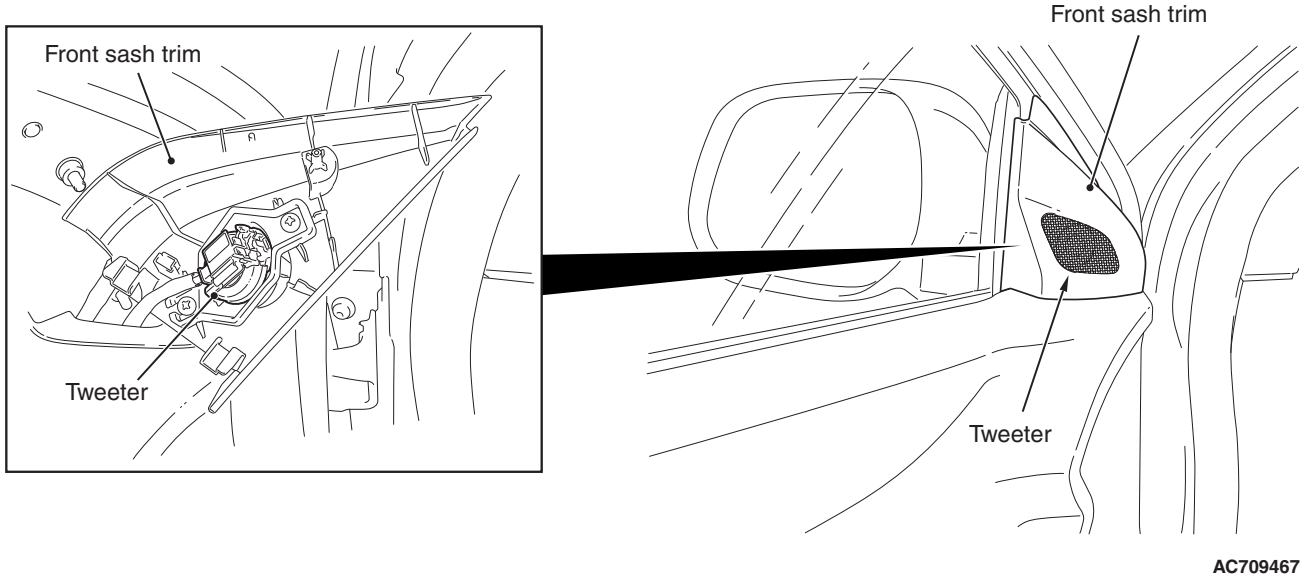
- Six speakers (tweeter: 3.5 cm, front door: 16 cm, rear door: 16 cm)
- Nine speakers (tweeter: 3.5 cm, front door: 16 cm, rear door: 2-way coaxial 16 cm, subwoofer: 25 cm) Rockford Fosgate® premium sound system

TSB Revision

Specifications

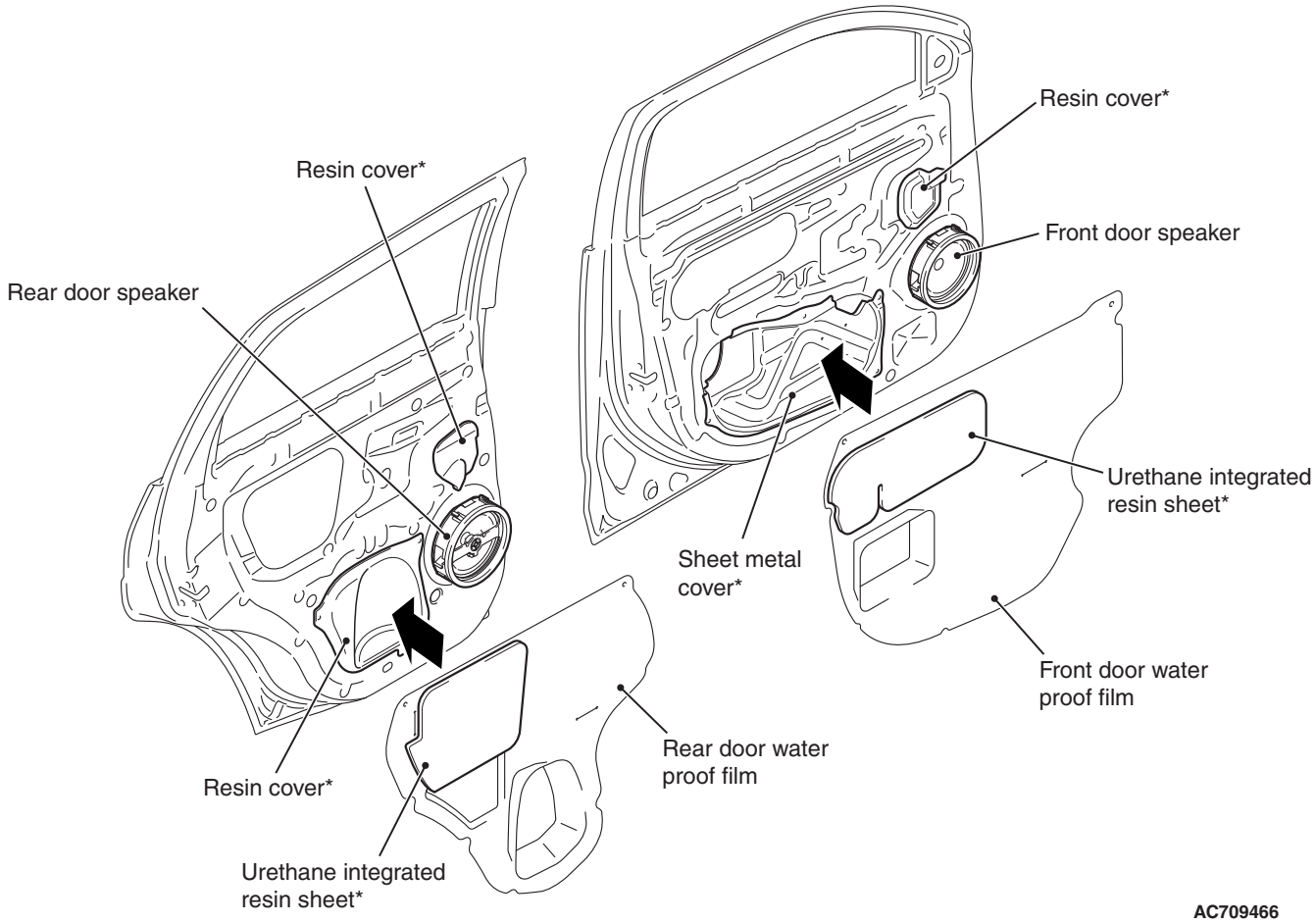
Item	Vehicles with 6 speakers		Vehicles with 9 speakers (Rockford Fosgate® premium sound system)	
	Allowable input power	Rated input power	Allowable input power	Rated input power
Front tweeter	25W	3W	50W	25W
Front door speaker	35W	15W	75W	50W
Rear door speaker	35W	15W	80W	50W
Subwoofer	–	–	150W/150W	75W/75W

TWEETER



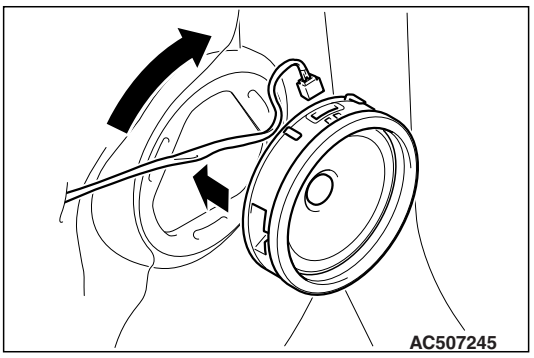
The tweeters are incorporated in the front sash trim. Also, two types of tweeters, the balance dome tweeter vehicles with six speakers and soft dome tweeter Rockford Fosgate® premium sound system, are available. The soft dome tweeter can play clearer treble with less distortion compared to the balance dome tweeter.

DOOR SPEAKER



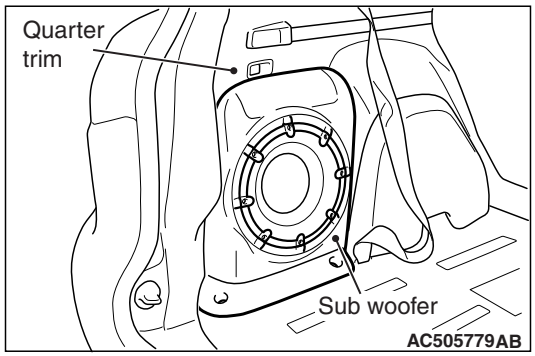
NOTE: The parts with "" are installed exclusively to the vehicles with Rockford Fosgate® premium sound system.*

For the front door speaker, two types of speakers, 16-cm paper cone speaker vehicles with 6 speakers and PP (polypropylene) cone speaker Rockford Fosgate® premium sound system, are available. For the rear door speaker, two types of speakers, 16-cm paper cone speaker vehicles with 6 speakers and PP (polypropylene) cone 2-way coaxial speaker Rockford Fosgate® premium sound system, are available. Compared to the paper cone speakers, the PP (polypropylene) cone speakers can playback crisper bass. The door opening of the vehicles with Rockford Fosgate® premium sound system is blocked by using the sheet metal cover and the urethane integrated resin sheet (resin cover and water proof film) to make the door into a speaker box, thus improving the sound quality. As an advantage of the sheet metal cover, the rigidity of the areas around the speaker has been increased, and the higher sound pressure, suppression of high harmonic, and suppression of dumping are achieved to improve sound quality.



The one-touch installable speaker (with 3 tabs, fixed by rotating) has been adopted to improve serviceability.

SUB WOOFER <VEHICLES WITH ROCKFORD FOSGATE® PREMIUM SOUND SYSTEM>



The Rockford Fosgate® 25-cm dual voice coil subwoofer has been installed to the passenger seat-side lower quarter trim in the luggage room, enabling the playback of dynamic deep bass.

ON-VEHICLE SERVICE

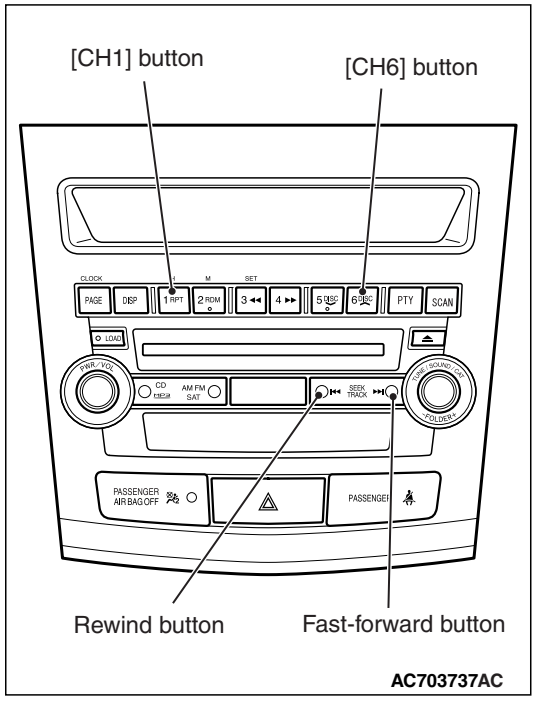
SPEAKER TEST

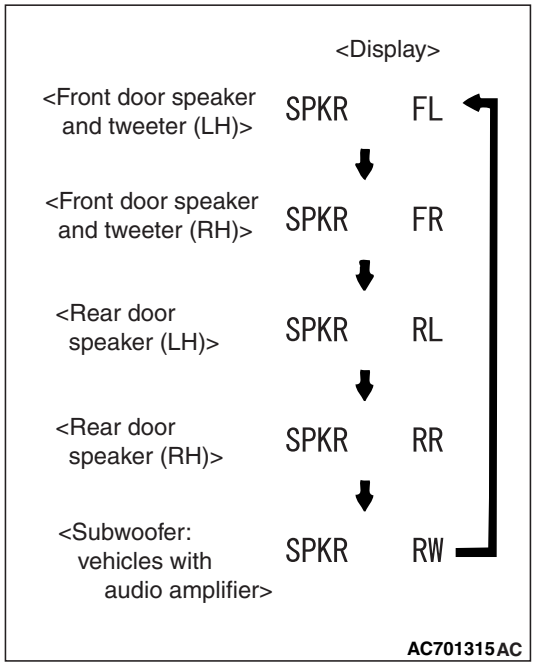
M1544100500492

SPEAKER CONNECTION CHECK MODE <VEHICLES WITHOUT MMCS>

Enter the speaker connection check 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 or CD changer.
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) [CH6] button





3. Check that the speaker, which is displayed on the center panel display, sounds (If the [CH6] button is pressed, the speaker will be changed).

NOTE: The display of "FL", "FR", "RL", "RR","RW"blinks.

4. If a button other than the [CH6] button is pressed, or the ignition switch is turned to "LOCK" (OFF) position, you will exit from the speaker connection check mode.

BUZZ NOISE CHECK MODE

Inserting a CD during the speaker connection check mode shifts the mode to the buzz noise check mode, and the buzz noise sound of each speaker can be checked.
As with the speaker connection check mode, press the [CH6] button to switch the output speaker of the buzz noise check sound.
Check that the buzz noise sound is output from the output speaker of buzz noise check sound.

NOTE: "SPKR" is displayed as "BUZZ" during buzz noise check mode.

<VEHICLES WITH MMCS>

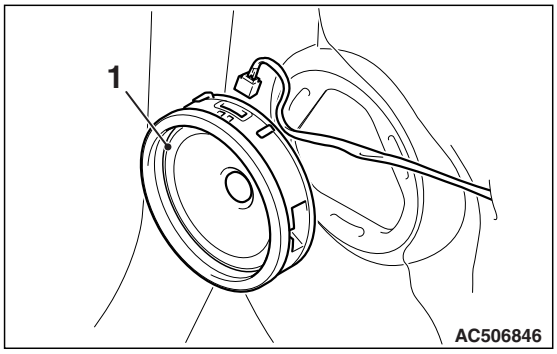
Refer to P.54A-452.

REMOVAL AND INSTALLATION

M1544100300379

FRONT OR REAR DOOR SPEAKER

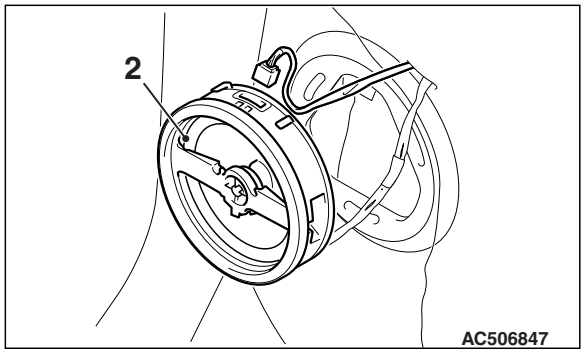
Pre-removal Operation
Learning of the power window fully closed position (Refer to GROUP 42A –Door, On-vehicle service P.42A-134).



Front Door Speaker Removal Steps

- Front door trim (Refer to GROUP 52A, Door Trims P.52A-11.)

<<A>> 1. Front door speaker



AC507216 AB

Rear Door Speaker Removal Steps

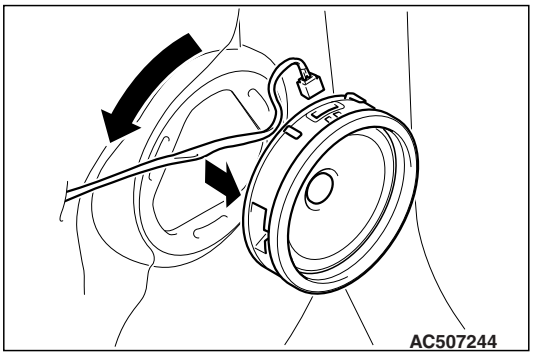
- Rear door trim (Refer to GROUP 52A, Door Trims P.52A-11.)

<<A>> 2. Rear door speaker

REMOVAL SERVICE POINT

<<A>> FRONT DOOR SPEAKER/REAR DOOR SPEAKER REMOVAL

Disconnect the connector, and remove by twisting as shown in the figure.



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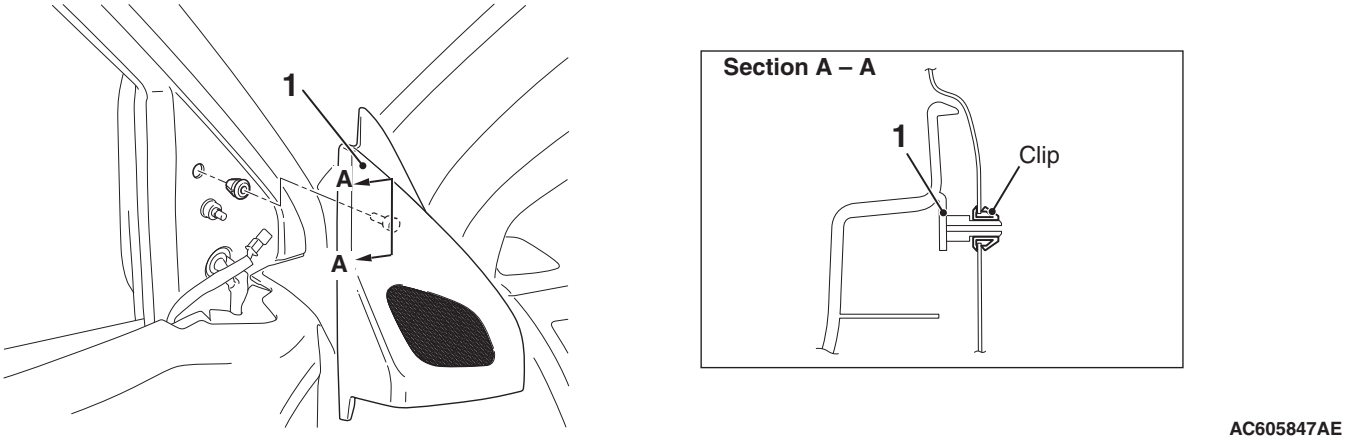
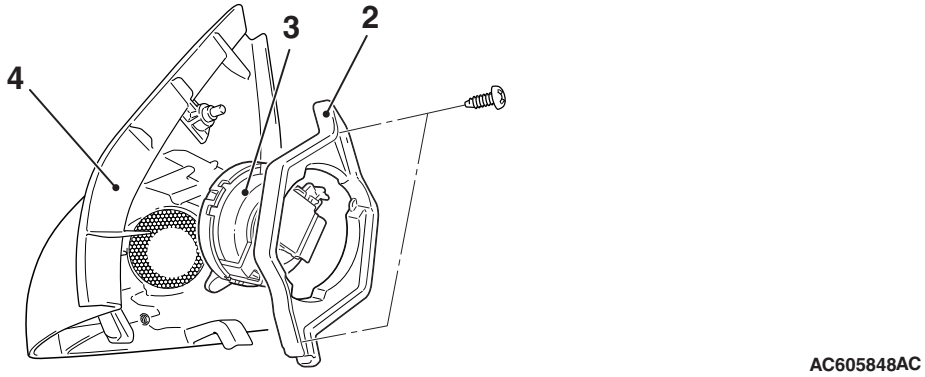
TWEETER





Removal Steps

>>A<< 1. Front door sash trim assembly
2. Tweeter bracket

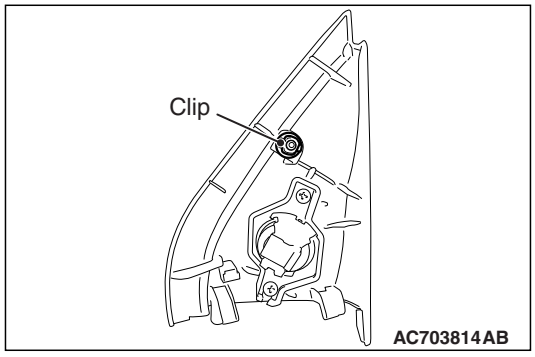
Removal Steps (Continued)

3. Tweeter
4. Front door sash trim

INSTALLATION SERVICE POINT

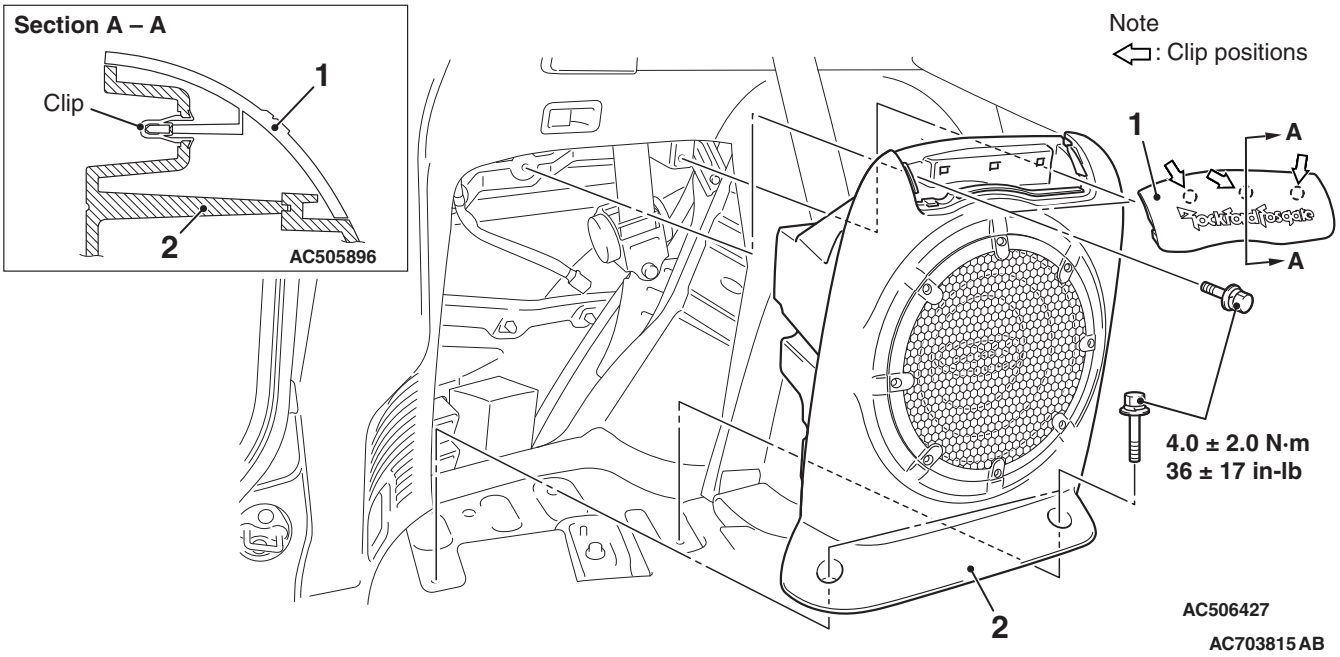
>>A<< FRONT DOOR SASH TRIM ASSEMBLY INSTALLATION

Mount with the clip attached.



TSB Revision

WOOFER



Removal Steps

1. Woofer cover
2. Woofer

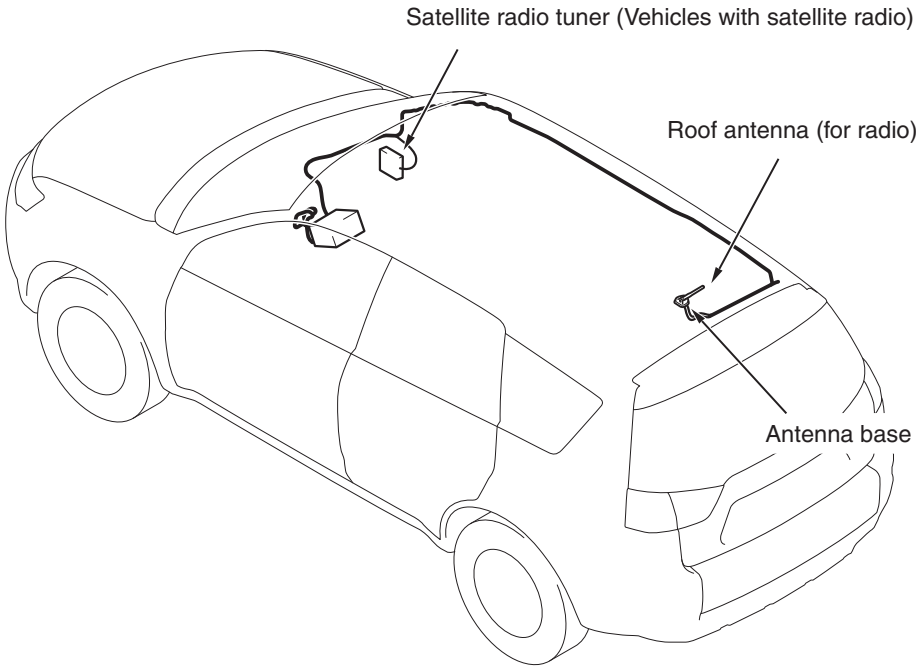
ANTENNA

GENERAL INFORMATION

M1544000100475

The roof antenna has been adopted for the radio. The antenna base incorporates the radio amplifier. When the satellite radio tuner is installed, the antenna base that also corresponds to the satellite radio is installed.

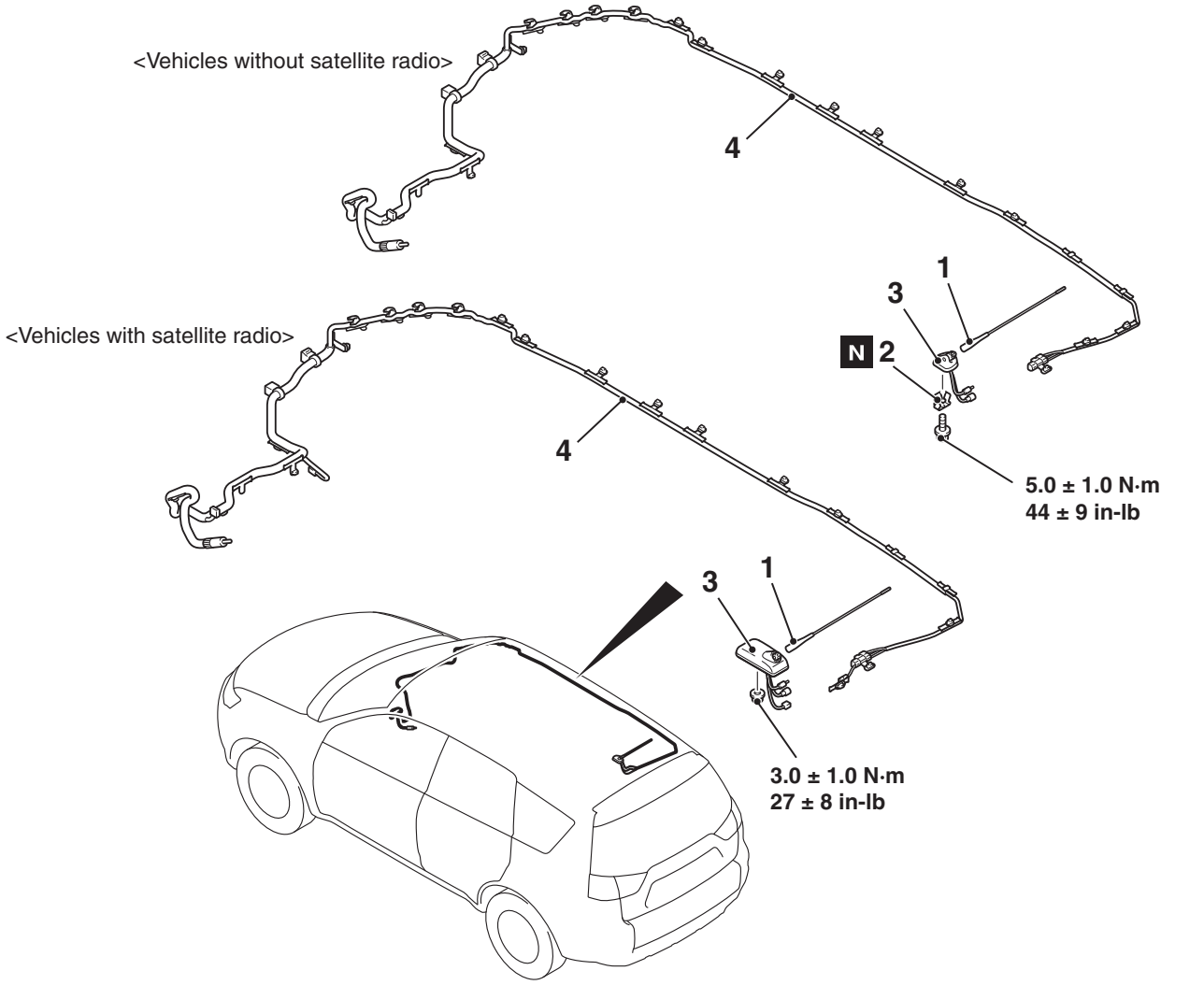
CONSTRUCTION DIAGRAM



AC709450AB

REMOVAL AND INSTALLATION

M1544200200573



AC712098AB

Removal Steps

1. Antenna rod
   - Headlining (Refer to GROUP 52A, Headlining P.52A-15)
2. Antenna base (antenna spring) <Vehicles without satellite radio>
3. Antenna base

Removal Steps (Continued)

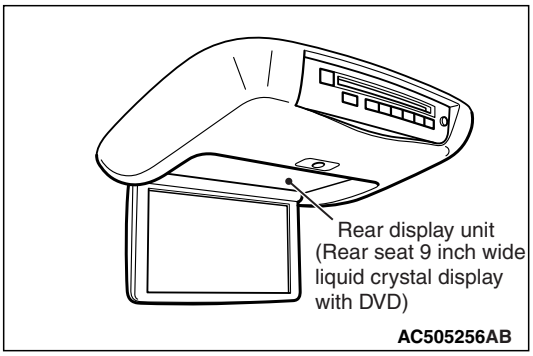
- Instrument panel assembly (Refer to GROUP 52A, Instrument panel assembly P.52A-2).
4. Antenna feeder cable

TSB Revision

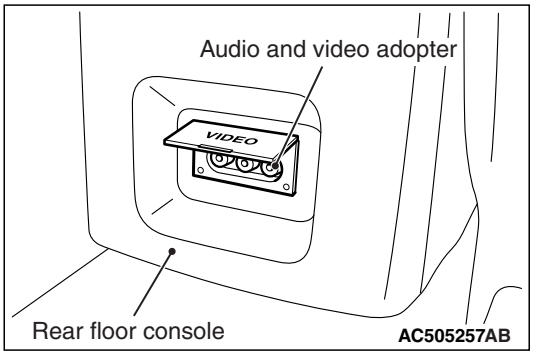
REAR DISPLAY

GENERAL INFORMATION

M1544000100806

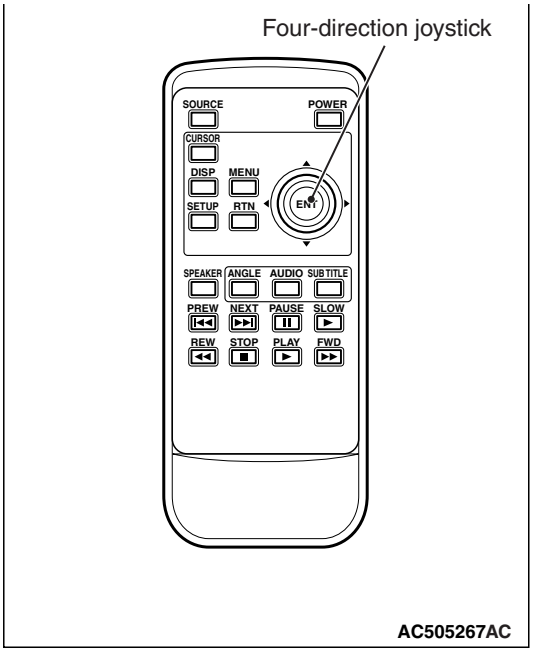


A rear display unit (rear seat 9-inch wide LCD display with DVD) has been adopted for rear passengers to enjoy DVD, CD, video games, video, or others. The display has been installed to the center of the roof, between the first row seats and second row seats.



In order to connect video equipment such as video computer and video player, the external connection jacks (audio and video adapter) has been installed to the backside of the rear floor console.

GENERAL OPERATION OF WIRELESS REMOTE CONTROLLER FOR REAR DISPLAY



Button operation	General operation
POWER	Turns ON/OFF the rear display power supply.
SOURCE	Switches the rear display source between video display and infrared sound output.
CURSOR	Calls up the OSD operation screen.
DISP	Calls up the picture quality/wide mode setting screen.
MENU	Calls up the MENU screen of DISC
SEP UP	Calls up the DVD mechanical SETUP MENU.
JOY Direction	Four-direction joystick
JOY ENTER	Enabled
RTN	Return
ANGLE	Changes the angle.
AUDIO	DVD-VIDEO →Changes the language to be played. Other than DVD-VIDEO →Changes the sound mode (L/R/L+R).
SUB TITLE	Changes the subtitle language.
PREW	Skips to the beginning of current Chapter/Track/File.
NEXT	Skips to the beginning of next Chapter/Track/File.
PAUSE	Pauses the playback.
SLOW	Plays the video in 1/8 of normal speed. (Only for DVD-Video/Video-CD)
REW	Performs the Fast Rewind operation.
STOP	Stops the playback.
PLAY	Plays the media.
FWD	Performs the Fast Forward operation.
SPEAKER	Switches the audio output to external speakers ON/OFF.

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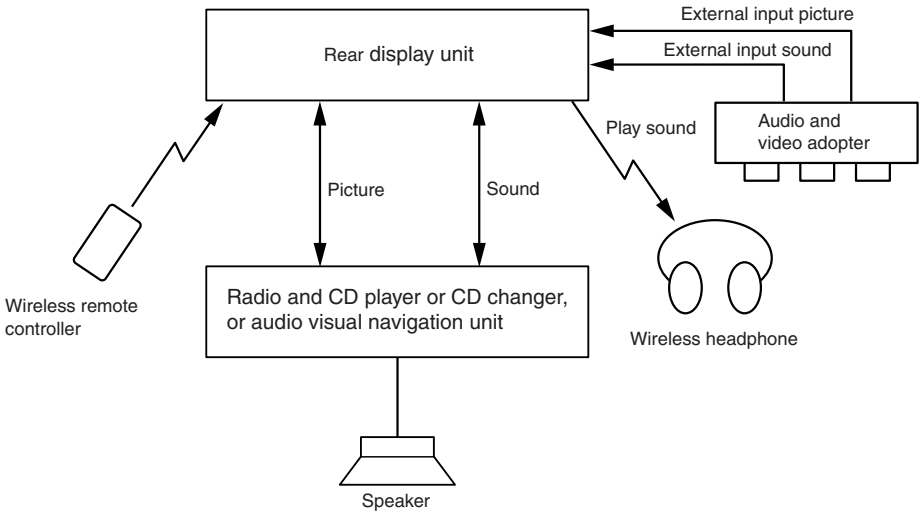
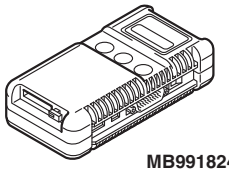
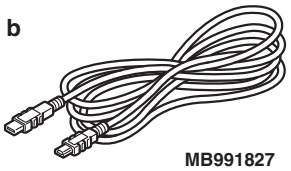
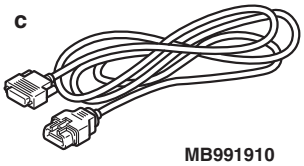
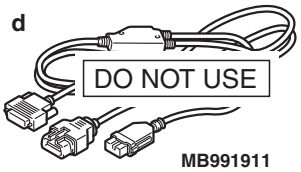
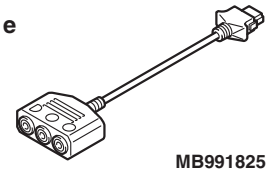
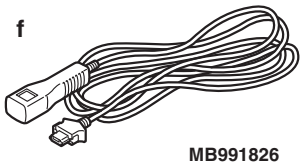
SYSTEM BLOCK DIAGRAM

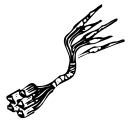
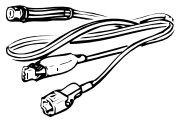
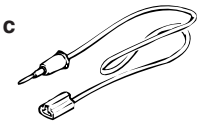
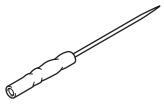


AC709471AB

SPECIAL TOOLS

M1546400200034

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991825 f  MB991826 MB991955	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable 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. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ 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.

Tool	Tool number and name	Supersession	Application
a  b  c  d MB991223	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	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.

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1546402200063

Refer to GROUP 00 –Troubleshooting contents P.00-7.

TROUBLE SYMPTOM CHART

M1546401700281

Trouble symptom	Inspection Procedure No.	Reference page
The rear display does not display at all.	1	P.54A-710
The rear display DVD player does not play the inserted DVD.	2	P.54A-715
The rear display displays the DVD picture, but the sound is not played.	3	P.54A-716
The rear display plays the DVD sound, but the picture is not displayed.	4	P.54A-717
The rear display not displays the navigation system picture.	5	P.54A-718
The picture and sound of external input are not played.	6	P.54A-722
The rear display sound is not output from the speaker.	7	P.54A-724
No sound is output from the wireless headphone.	8	P.54A-727
The rear display does not change to nighttime brightness when the headlight is illuminated.	9	P.54A-728

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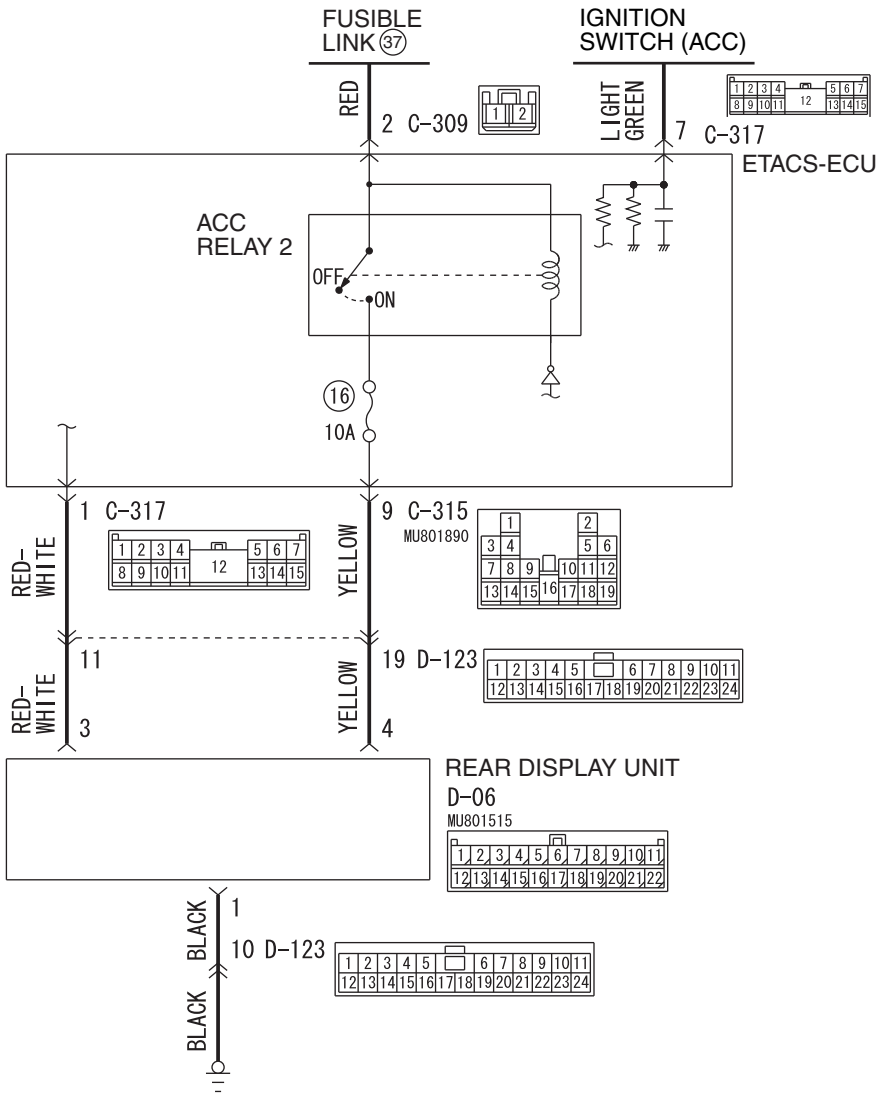
SYMPTOM PROCEDURES

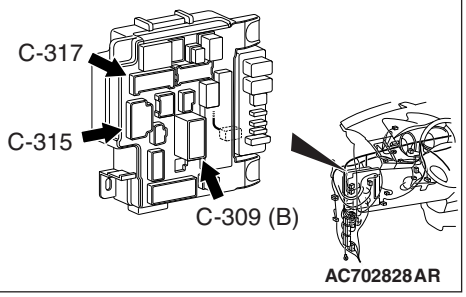
Inspection Procedure 1: The rear display unit does not display at all.

Rear Display Unit Power Supply Circuit



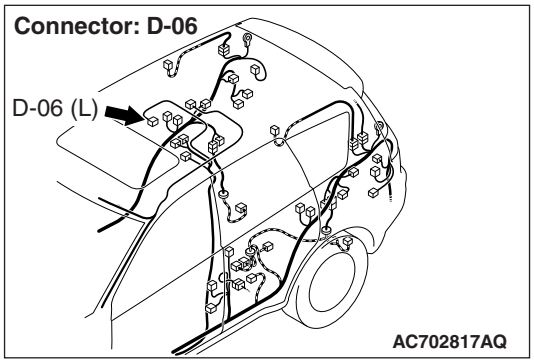
AC703796AC
D7G54M015A00

Connectors: C-309, C-315, C-317



AC702828AR

Connector: D-06



AC702817AQ

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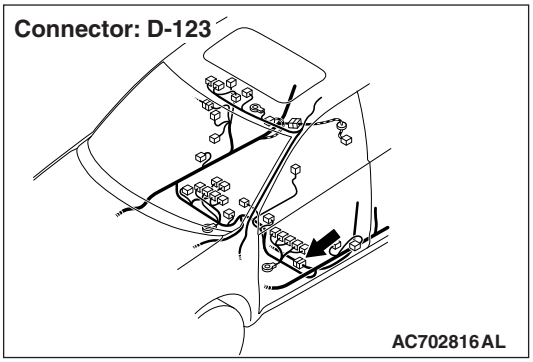


PROBABLE CAUSES

- Damaged wiring harness or connector.
- Malfunction of rear display unit.

COMMENTS ON TROUBLE SYMPTOM

The cause is probably a faulty rear display unit power supply circuit system.

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, 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 : Troubleshoot the ETACS-ECU (Refer to GROUP 54A, ETACS, Diagnosis P.54A-742), and then go to Step 2.

NO : Go to Step 2.

STEP 2. Check ETACS-ECU connector C-317 and rear display unit connector D-06 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-317 and rear display unit connector D-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 ETACS-ECU connector C-317 (terminal 1) and rear display unit connector D-06 (terminal 3).

NOTE: Also check intermediate connector D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-123 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.

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 1) and rear display unit connector D-06 (terminal 3) 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. Using scan tool MB991958, check data list of ETACS.

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 5.

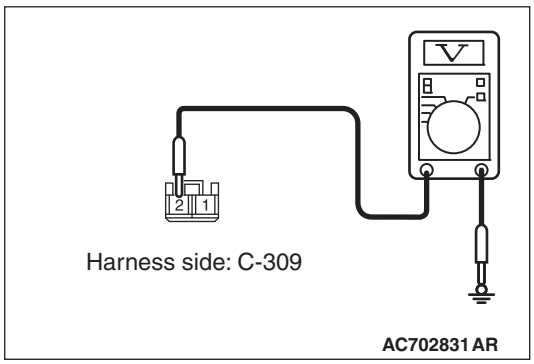
NO : Refer to Inspection Procedure 1 "The ignition switch (ACC) signal is not received" P.54A-797.

STEP 5. 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 6.

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



STEP 6. Check the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-309.

(1) Disconnect ETACS-ECU connector C-309, and measure the voltage available at the wiring harness-side connector.
(2) Turn the ignition switch to the "ON" 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 8.
NO : Go to Step 7.

STEP 7. 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 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. 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 9.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

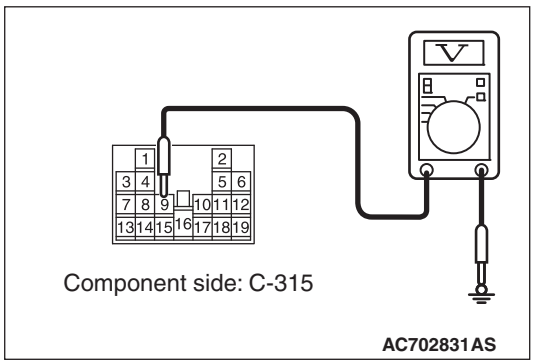
STEP 9. Check the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-315.

(1) Disconnect the connector, and measure at the ETACS-ECU side connector.
(2) Turn the ignition switch to the "ACC" position.
(3) Measure voltage between terminal 9 and ground.

OK: Battery positive voltage

Q: Is the measured voltage battery positive voltage?

YES : Go to Step 10.
NO : Replace the ETACS-ECU.



Component side: C-315
AC702831AS

STEP 10. Check the wiring harness between ETACS-ECU connector C-315 (terminal 9) and rear display unit connector D-06 (terminal 4).

NOTE: Also check intermediate connector D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-123 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the power supply lines (ACC power supply) for open circuit and short circuit.

Q: Is the wiring harness between ETACS-ECU connector C-315 (terminal 9) and rear display unit connector D-06 (terminal 4) 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.

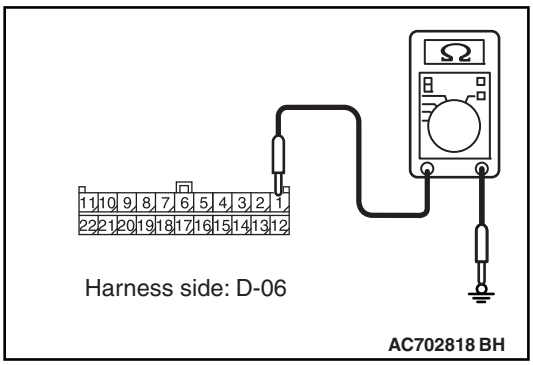
STEP 11. Check the ground circuit to the rear display unit. Measure the resistance at rear display unit connector D-06.

(1) Disconnect rear display unit connector D-06, and measure the resistance available at the wiring harness side of the connector.
(2) Measure the resistance between terminal 1 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.



Harness side: D-06
AC702818BH

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STEP 12. Check the wiring harness between rear display unit connector D-06 (terminal 1) and ground.

NOTE: Also check intermediate connector D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-123 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

- Check the ground wires for open circuit.

Q: Is the wiring harness between rear display unit connector D-06 (terminal 1) 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 if the rear display unit displays normally.

Q: Does the rear display unit display 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 rear display unit.

Inspection Procedure 2: The rear display DVD player does not play the inserted DVD.

COMMENTS ON TROUBLE SYMPTOM

The DVD or the rear display unit may be defective.

PROBABLE CAUSES

- Defective DVD
- Malfunctions of rear display unit

DIAGNOSIS

STEP 1. Confirm the DVD.

Confirm that the DVD complies with the market specifications.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Use the DVD video disc made for the domestic use.

STEP 2. Confirm that the DVD is inserted with its correct side facing up.
Confirm that the DVD is inserted with its correct side facing up.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Check the correct disc insertion direction, then reinsert the disc (if it is a single-sided disc, insert with the label facing upward).

STEP 3. Confirm the DVD video disk.
Confirm that the DVD is not contaminated or scratched.

Q: Is the check result normal?

YES : Go to Step 4.
NO : Clean the disk or use a clean disk.

STEP 4. Retest the system
Check that the DVD is played normally when it is inserted.

Q: Is the check result normal?

YES : The procedure is complete.
NO : Replace the rear display unit.

Inspection Procedure 3: The rear display displays the DVD picture, but the sound is not played.

COMMENTS ON TROUBLE SYMPTOM

The DVD or the rear display unit may be defective.

PROBABLE CAUSES

- Defective DVD
- Malfunctions of rear display unit

DIAGNOSIS

STEP 1. Confirm the DVD.
Check that the played DVD contains sound.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Use the DVD which contains sound.

STEP 2. Check of played back scene
Check that the played scene contains sound.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Play the scene with sounds, and check.

STEP 3. Check of playing method
Check whether the disc was played normally and not with special playback (fast rewind, fast forward, slow, pause).

Q: Is the check result normal?

YES : Go to Step 4.
NO : Check with the normal playback.

STEP 4. Check of rear display CD sound
Play a CD with the rear display to check if the CD sound is output.

Q: Is the check result normal?
YES : Replace the rear display unit.
NO : Go to Step 5.

STEP 5. Retest the system
Check whether the DVD sound is played.

Q: Is the check result normal?
YES : The procedure is complete.
NO : Replace the rear display unit.

Inspection Procedure 4: The rear display plays the DVD sound, but the picture is not displayed.

COMMENTS ON TROUBLE SYMPTOM
The DVD or the rear display unit may be defective.

PROBABLE CAUSES
- Defective DVD
- Malfunctions of rear display unit

DIAGNOSIS

STEP 1. Confirm the DVD video disk.
Confirm that the DVD is not contaminated or scratched.

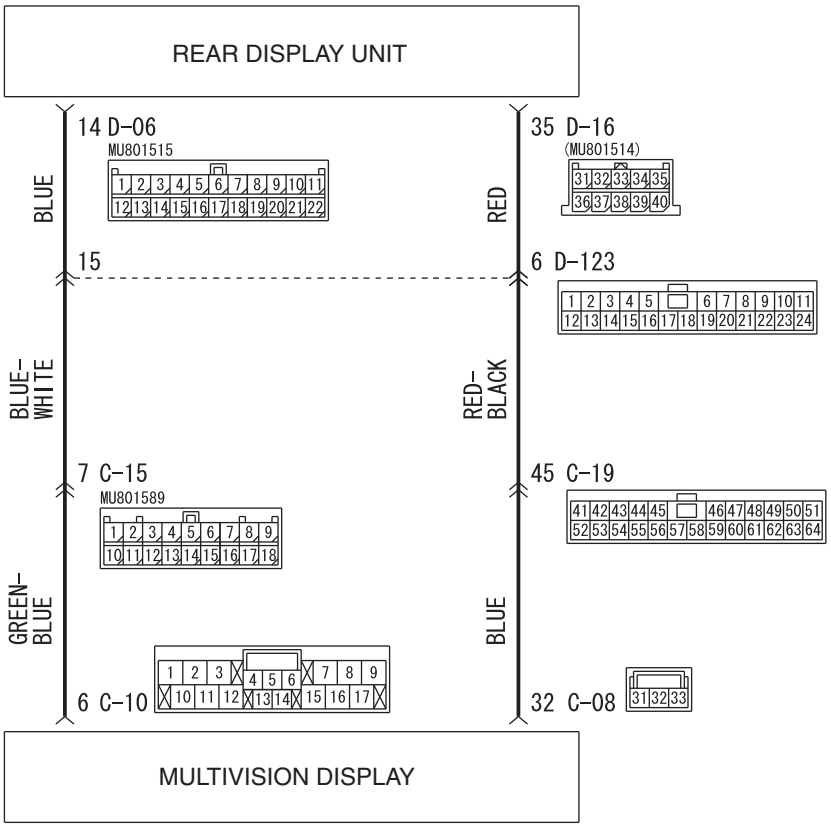
Q: Is the check result normal?
YES : Go to Step 2.
NO : Clean the disk or use a clean disk.

STEP 2. Retest the system
Check whether the picture is displayed when a DVD is played.

Q: Is the check result normal?
YES : The procedure is complete.
NO : Go to Step 1.

Inspection Procedure 5: The rear display does not display the navigation system picture. <vehicle with MMCS>

Audio Communication Circuit



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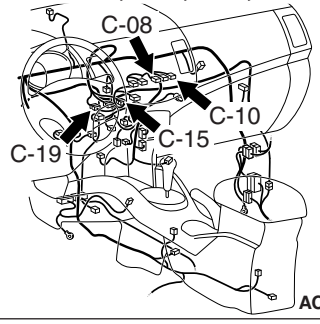
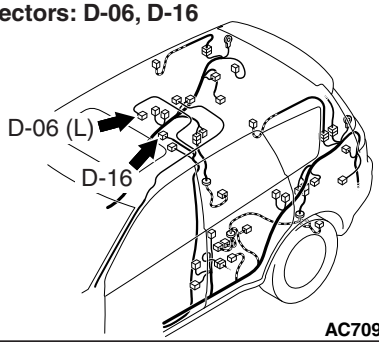
Connectors: C-08, C-10, C-15, C-19



AC703148 AT

Connectors: D-06, D-16



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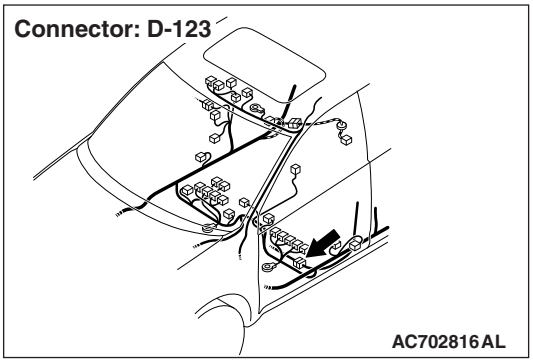
TSB Revision



PROBABLE CAUSES

- The multivision display may be defective
- The rear display unit may be defective
- Damaged harness wires and connectors

COMMENTS ON TROUBLE SYMPTOM

The wiring harness between the rear display unit and the multivision display, the rear display unit or the multivision display may have a problem.

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 MMCS navigation screen.

Check whether the MMCS navigation screen is displayed normally.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Diagnose the MMCS. Refer to P.54A-493.

STEP 2. Check the communication and wire connection in the MMCS service mode.

Perform "Network/Connect Line Check" in the MMCS service mode to check that the communication and wire connection with the rear display unit* are OK. Refer to P.54A-452.

*NOTE: *: Is displayed as "Rear Seat Display" in the service mode.*

Q: Is the check result normal?

YES : Go to Step 3.
NO : Go to Step 5.

STEP 3. Check rear display unit connector D-16 and multivision display connector C-08 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear display unit connector D-16 and multivision display connector C-08 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 rear display unit connector D-16 (terminal 35) and multivision display connector C-08 (terminal 32).

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

NOTE: Also check intermediate connectors C-19 and D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-19 or D-123 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between rear display unit connector D-16 (terminal 35) and multivision display connector C-08 (terminal 32) 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. Check rear display unit connector D-06 and multivision display connector C-10 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear display unit connector D-06 and multivision display connector C-10 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 rear display unit connector D-06 (terminal 14) and multivision display connector C-10 (terminal 6).

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

NOTE: Also check intermediate connectors C-15 and D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 or D-123 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between rear display unit connector D-06 (terminal 14) and multivision display connector C-10 (terminal 6) 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. Substitute a known good rear display unit, and check the trouble symptom.

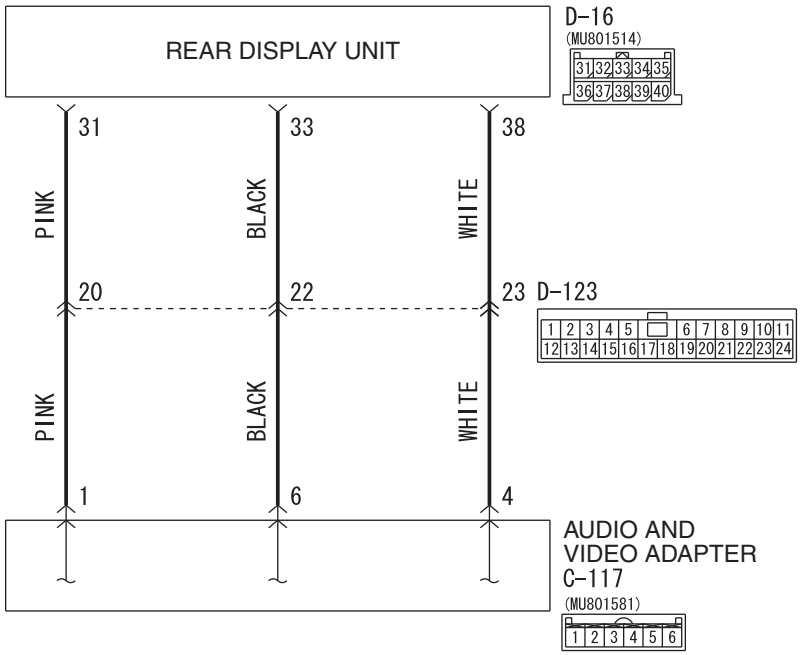
Check whether image sent from the MMCS is displayed on the rear display unit normally.

Q: Is the check result normal?

YES : Replace the rear display unit.
NO : Replace the multivision display.

Inspection Procedure 6: The picture and sound of external input are not played.

Audio and Video Adapter Communication Circuit



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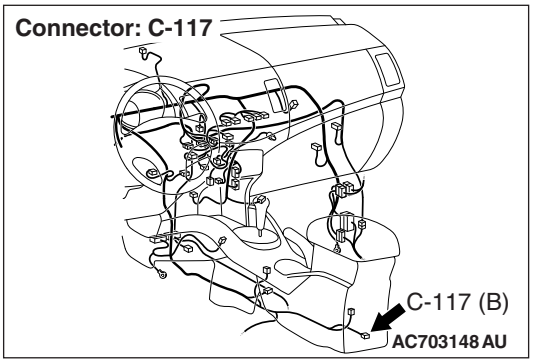
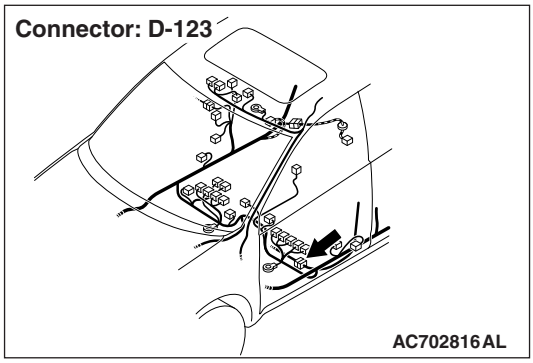
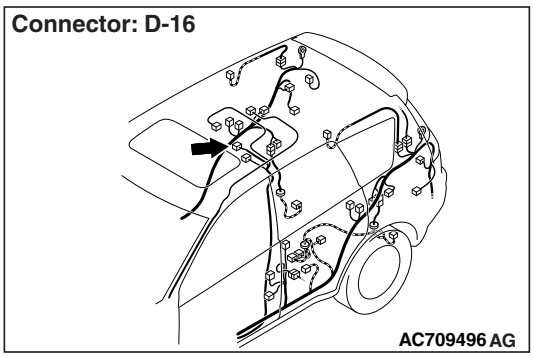






COMMENTS ON TROUBLE SYMPTOM

The wiring harness between the rear display unit and the audio and video adapter, the rear display unit or the audio and video adapter may have a problem.

PROBABLE CAUSES

- The rear display unit may be defective
- The audio and video adapter may be defective
- Damaged harness wires and connectors

TSB Revision

DIAGNOSIS

Required Special Tools:
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check of rear display unit DVD picture.
Check that the DVD picture is displayed normally when the rear display unit DVD player is used.

Q: Is the check result normal?

YES : Go to Step 2.
NO : Perform the troubleshooting related to the rear display unit DVD video. Refer to P.54A-709.

STEP 2. Check rear display unit connector D-16 and audio and video adaptor connector C-117 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear display unit connector D-16 and audio and video adaptor connector C-117 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 rear display unit connector D-16 (terminal 31, 33, 38) and audio and video adaptor connector C-117 (terminal 1, 6, 4).

NOTE: Also check intermediate connector D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-123 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 rear display unit connector D-16 (terminal 31, 33, 38) and audio and video adaptor connector C-117 (terminal 1, 6, 4) in good condition?

YES : Replace the audio and video adapter, then 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. Retest the system

Check that the external input is normal.

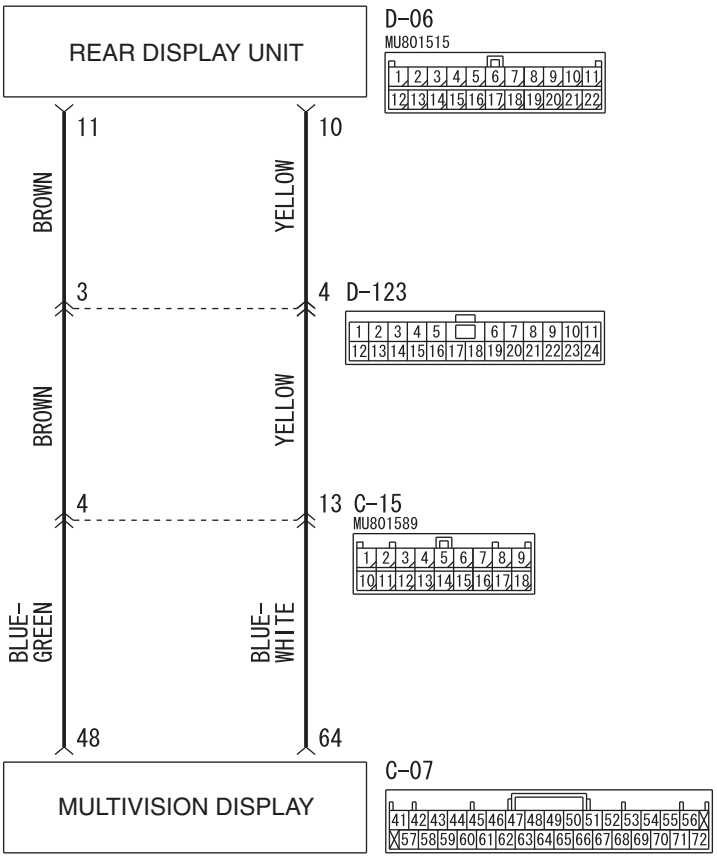
Q: Is the check result normal?

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 rear display unit.

Inspection Procedure 7: The rear display unit sound is not output from the speaker.

Audio Communication Circuit <Vehicles with MMCS>



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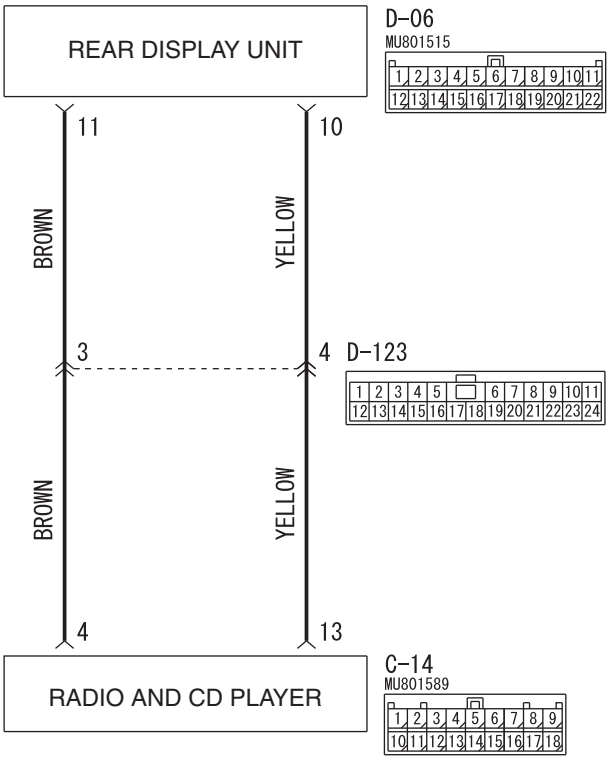
TSB Revision

Audio Communication Circuit <Vehicles without MMCS>



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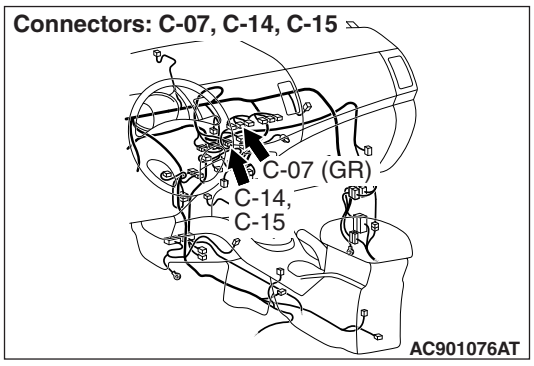
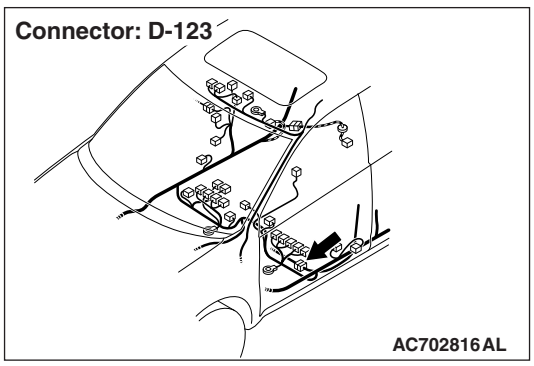
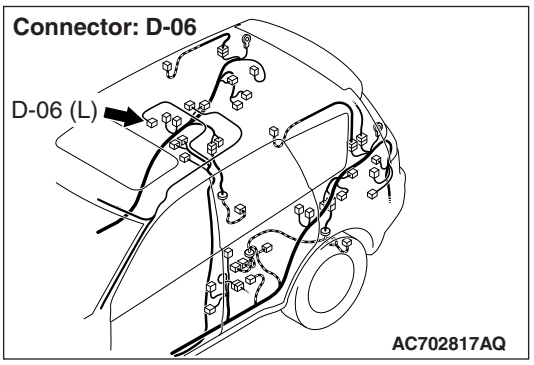






COMMENTS ON TROUBLE SYMPTOM

The wiring harness between the radio and CD player and the rear display unit, the multivision display, the radio and CD player, the rear display unit may have a problem.

PROBABLE CAUSES

- The rear display unit may be defective
- The radio and CD player may be defective
- The multivision display may be defective
- Damaged harness wires and connectors

TSB Revision

DIAGNOSIS

Required Special Tools:
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check rear display unit connector D-06 and multivision display connector C-07 or radio and CD player connector C-14 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear display unit connector D-06 and multivision display connector C-07 or radio and CD player connector C-14 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 wiring harness between rear display unit connector D-06 (terminal 10, 11) and multivision display connector C-07 (terminal 64, 48) or radio and CD player connector C-14 (terminal 13, 4).

NOTE: Also check intermediate connectors C-15 <vehicles with MMCS> and D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-15 <vehicles with MMCS> or D-123 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 rear display unit connector D-06 (terminal 10, 11) and multivision display connector C-106 (terminal 64, 48) or radio and CD player connector C-14 (terminal 13, 4) in good condition?

YES : Go to Step 3.

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 3. Retest the system

Check if the rear display unit 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 rear display unit.

Inspection Procedure 8: No sound is output from the wireless headphone.

COMMENTS ON TROUBLE SYMPTOM

The wireless headphone, the rear display unit may have a problem.

PROBABLE CAUSES

- The rear display unit may be defective
- The wireless headphone may be defective
- Damaged harness wires and connectors

DIAGNOSIS

STEP 1. Speaker check

When the speaker sound is set to the rear display output, check whether the rear display sound is output from the speakers.

Q: Is the check result normal?

YES : Go to Step 2.

NO : Refer to Inspection Procedure 7 "The rear display sound is not output from the speaker P.54A-724."

STEP 2. Wireless headphone battery check

Replace the wireless headphone battery, and check the wireless headphone sound.

Q: Is the check result normal?

YES : The procedure is complete.

NO : Go to Step 3.

STEP 3. Replace the wireless headphone temporarily, and check the trouble symptom.

Replace the wireless headphone temporarily, and check if sound is output from the wireless headphone.

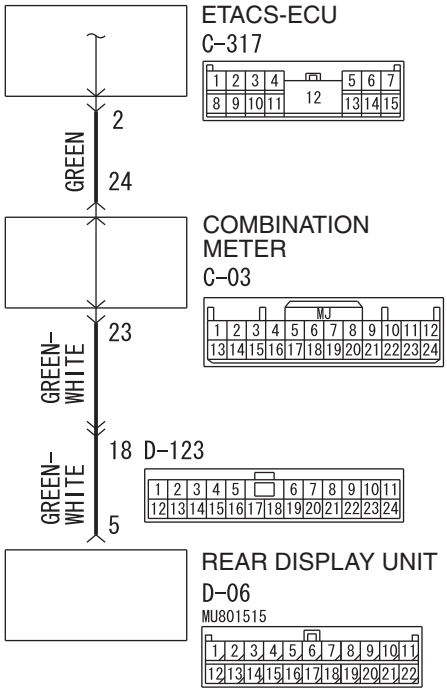
Q: Is the check result normal?

YES : Replace the wireless headphone.

NO : Replace the rear display unit.

Inspection Procedure 9: The rear display does not change to nighttime brightness when the headlights are illuminated.

Rear Display Unit Communication Circuit



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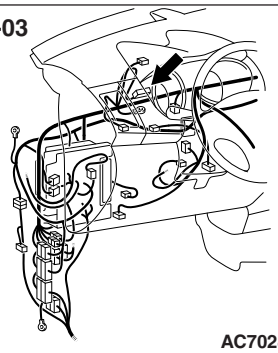
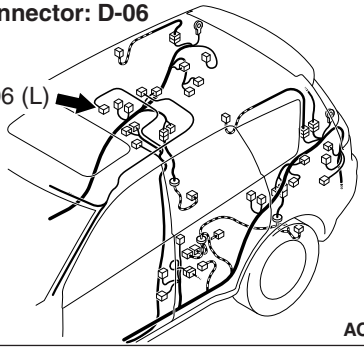
D7G54M018A00

Connector: C-03



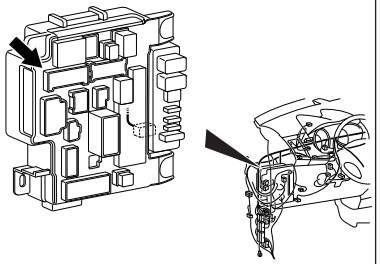
AC702815AD

Connector: D-06



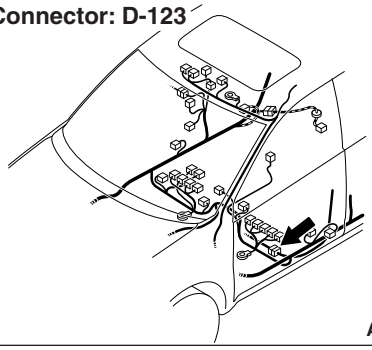
AC702817AQ

Connector: C-317



AC702828AL

Connector: D-123



AC702816AL

TSB Revision

COMMENTS ON TROUBLE SYMPTOM

The wiring harness between the ETACS-ECU and the rear display unit, the ETACS-ECU or the multivision display may have a problem.

PROBABLE CAUSES

- The rear display unit may be defective
- The ETACS-ECU may be defective
- 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, read the combination meter diagnostic trouble code.

Check if DTC is set to the combination meter.

Q: Is the DTC set?

YES : Diagnose the combination meter (Refer to P.54A-32). On completion, go to Step 2.

NO : Go to Step 2.

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

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

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to P.54A-742), and then go to Step 3.

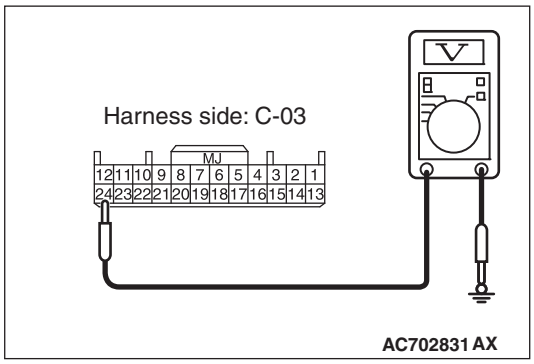
NO : Go to Step 3.

STEP 3. 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 4.

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



STEP 4. Check the power supply circuit to the combination meter. Measure the voltage at combination meter connector C-03.

(1) Disconnect combination meter connector C-03, and measure the voltage available at the wiring harness-side connector.
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Measure the voltage terminal No.24 and the body 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 ETACS-ECU connector C-317 (terminal 2) and combination meter connector C-03 (terminal 24).

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

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 2) and combination meter connector C-03 (terminal 24) in good condition?

YES : Replace the ETACS-ECU, then 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 the wiring harness between combination meter connector C-03 (terminal 23) and rear display unit connector D-06 (terminal 5).

NOTE: Also check intermediate connector D-123 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-123 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 combination meter connector C-03 (terminal 23) and rear display unit connector D-06 (terminal 5) in good condition?

YES : Replace the rear display unit.
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.

TSB Revision

MAIN UNIT TERMINAL VOLTAGE

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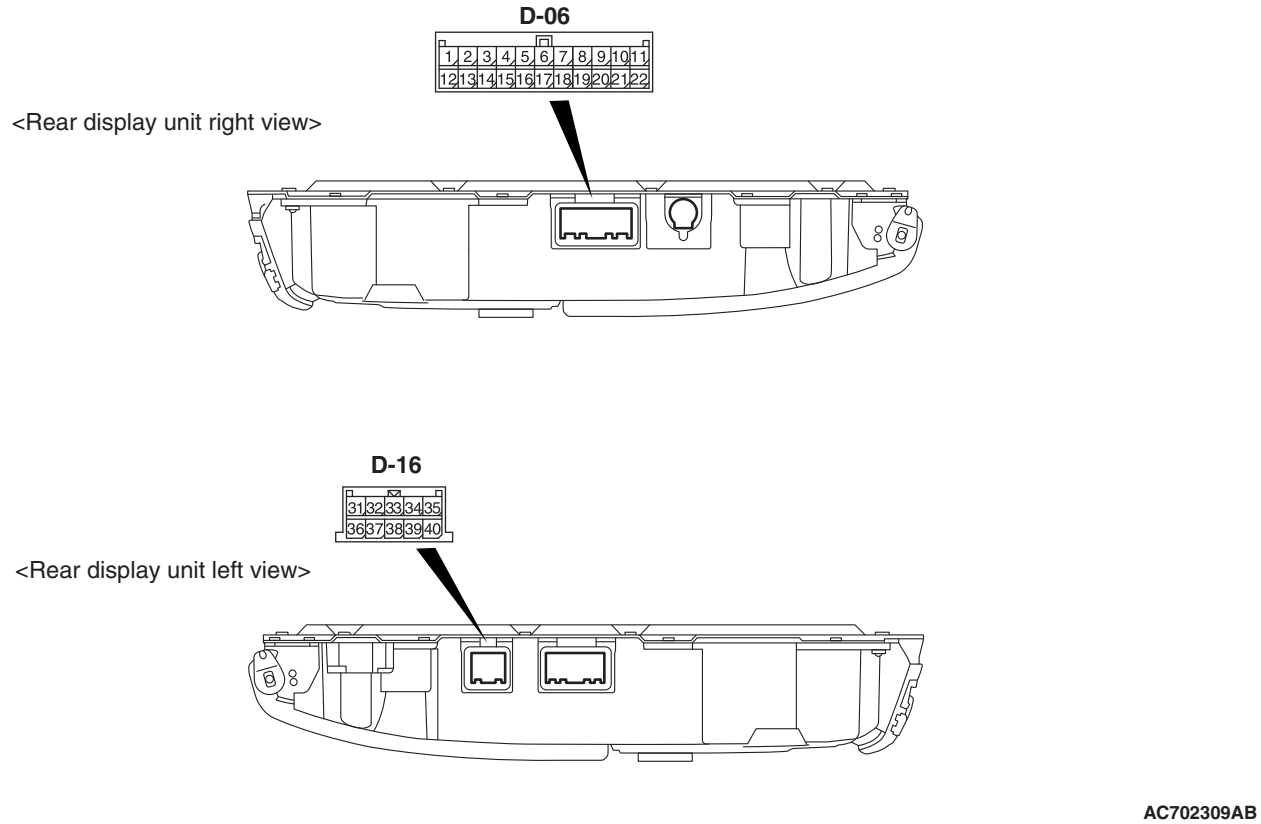


AC702309AB

D-06

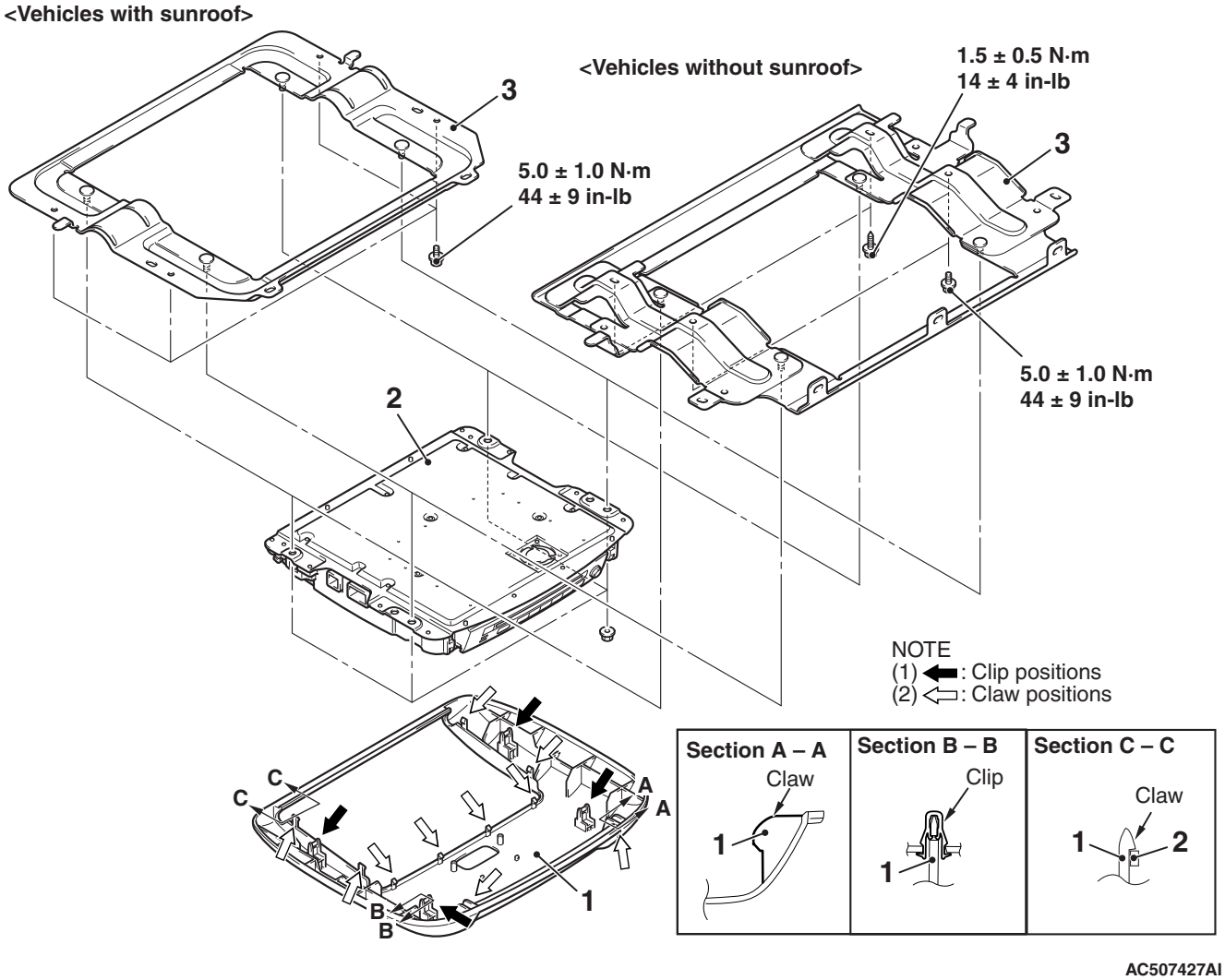
Terminal No.	Signal symbol	Terminal voltage (V)
1	GND	–
3	+B	Battery positive voltage
4	ACC+	Battery positive voltage
5	ILL+	0 - battery positive voltage
8	VIDEO-OUT	0 - 1 Vp-p (AC)
10	AUDIO-L-OUT	0 - battery positive voltage (AC)
11	AUDIO-R-OUT	0 - battery positive voltage (AC)
14	SWITCH-OUT	0 - 5 V
20	VIDEO-OUT-SHIELD	–
22	AUDIO-OUT-SHIELD	–

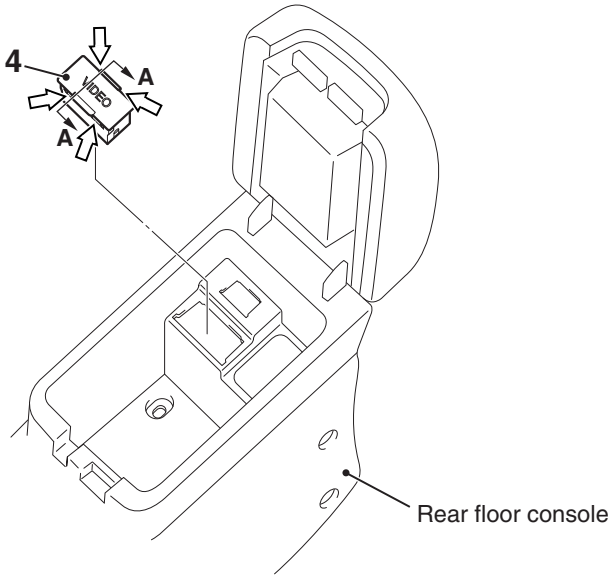
D-16

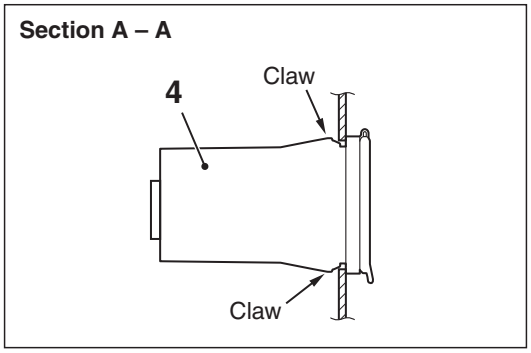
Terminal No.	Signal symbol	Terminal voltage (V)
31	VTR-VIDEO-IN	0 - 1 Vp-p (AC)
33	VTR-AUDIO-R-IN	0 - battery positive voltage (AC)
35	VIDEO-IN	0 - 1 Vp-p (AC)
36	VTR-VIDEO-SHIELD-GND	–
37	VTR-AUDIO-SHIELD-GND	–
38	VTR-AUDIO-L-IN	0-battery positive voltage (AC)
40	VIDEO-IN-SHIELD	–

REMOVAL AND INSTALLATION

M1546700200176







NOTE
⇦ :Claw positions
AC900455AC

Rear display unit Removal Steps

1. Bezel
2. Rear display unit
   - Headlining (Refer to GROUP 52A P.52A-15.)
3. Bracket

Audio And Video Adaptor Removal Steps

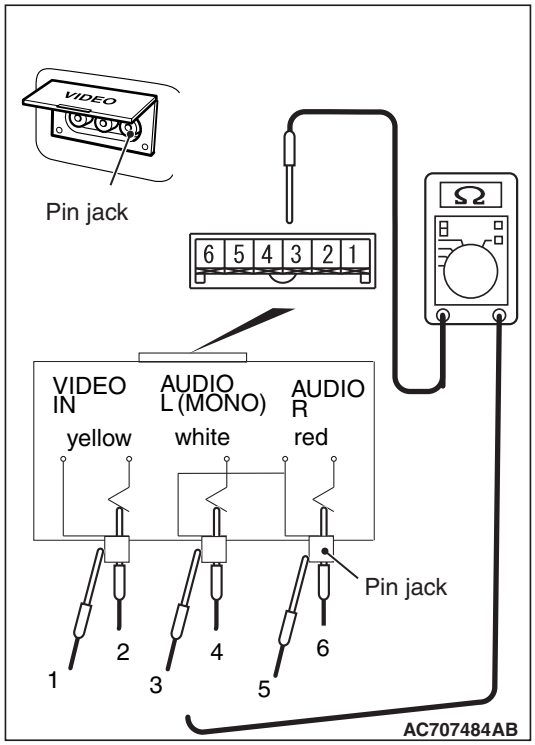
- Rear floor console assembly (Refer to GROUP 52A –Rear Floor Console Assembly P.52A-8.)
4. Audio and video adaptor

INSPECTION

AUDIO AND VIDEO ADAPTER CHECK

M1546023200037

1. Remove the audio and video adapter.(Refer to P.54A-732.)
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	

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DEFOGGER

TROUBLESHOOTING

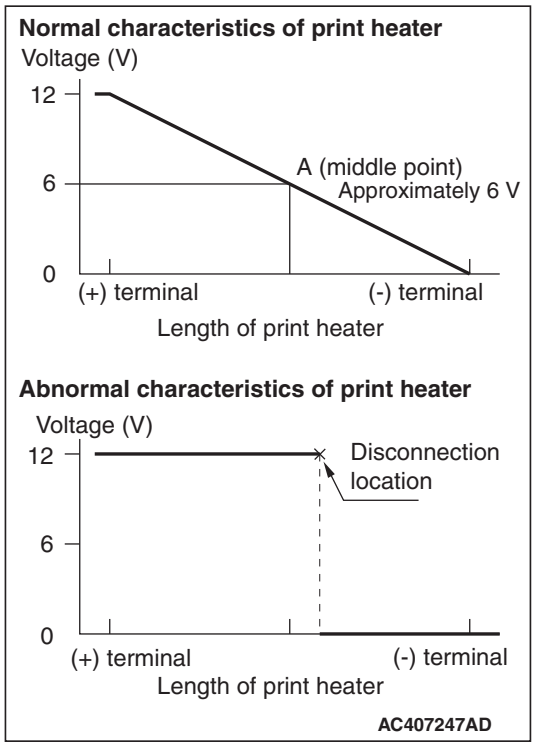
M1540500200185

Refer to GROUP 55B –Troubleshooting P.55B-12.

ON-VEHICLE SERVICE

PRINTED HEATER CHECK

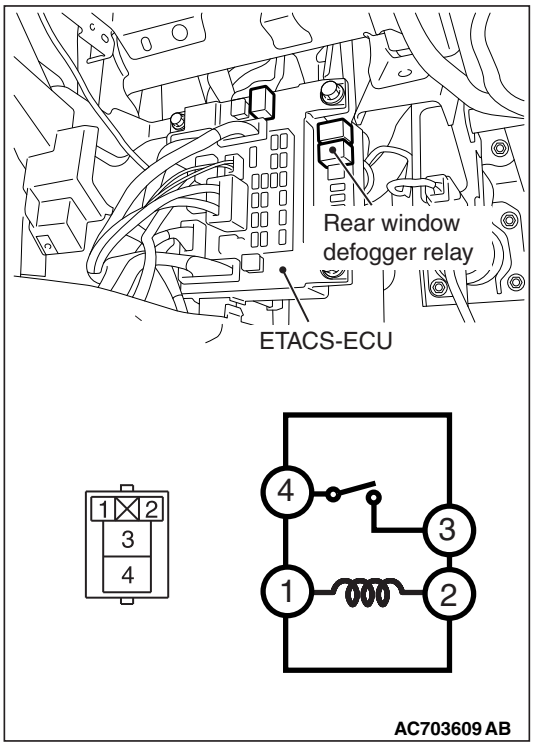
M1540500500335



1. Let the engine run (2,000 r/min), and check the printed heater with the battery fully charged.
2. With the defogger switch "ON," use the circuit tester to measure the voltage of each printed heater at the rear window glass center A point. If approximately 6 V is indicated, it is judged good.
3. If the voltage of 12 V is indicated at the A point, there is an open circuit between the A point and negative terminal. Therefore, by moving the test bar slowly to the negative side, search and determine the location where the voltage changes suddenly (0 V). The location of voltage change indicates the open circuit position.
4. Also, if the voltage indicates 0 V at the A point, there is an open circuit between the A point and positive terminal. Therefore, search and determine the location of voltage change (12 V) using the above mentioned method.
5. If a malfunction such as open circuit occurs, replace the liftgate window glass.(Refer to GROUP 42A, Liftgate Window Glass P.42A-24.)

REAR WINDOW DEFOGGER RELAY CHECK

M1540500600213



Battery voltage	Terminal number	Normal condition
At no energization	3 –4	No continuity
With current supply [terminal 1 (+), terminal 2 (–)]		Continuity exists (2 Ω or less)

REAR WINDOW DEFOGGER SWITCH

REMOVAL AND INSTALLATION

M1540600300015

Refer to GROUP 55A –A/C control panel P.55A-118.

ETACS

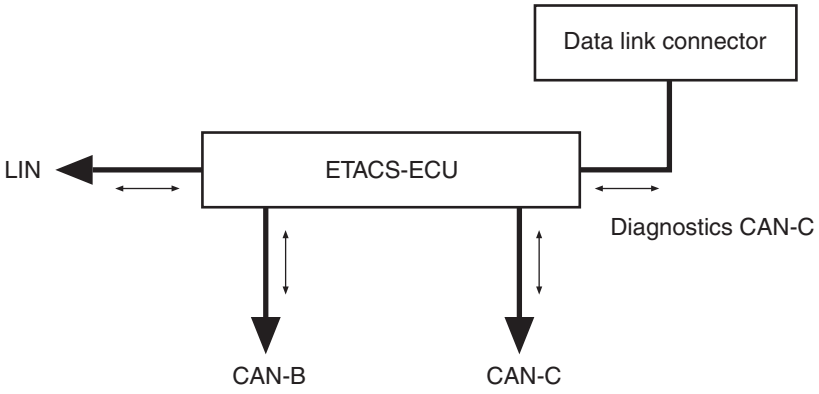
GENERAL INFORMATION

M1545000100036

ETACS*-ECU has three main functions (gateway function, coding function and body electrical equipment control function).

*NOTE: *: ETACS (Electronic Time and Alarm Control System)*

GATEWAY FUNCTION



AC703405 AB

As a central ECU for the on-vehicle communication network system established in the vehicle, the gateway function is integrated into ETACS-ECU. The gateway function offers the following functions:

- Data transfer among four networks*
  Transfers the data flowing in a network to another network in real time.
  *NOTE: *: CAN-C (power train network), CAN-B (middle-speed body network), LIN (low-speed body network), diagnostics CAN-C (diagnosis exclusive network)*
- Diagnosis of each network communication line
  Detects and stores an open circuit and short circuit of communication line.
- Communication error diagnosis of network ECUs
  Detects and stores the ECU that is not properly transmitting data.

CODING FUNCTION

By writing the coding data such as vehicle model, destination, and equipment level to ECUs, the functions of ECUs can be changed. There are two types of coding method, the local coding and global coding.

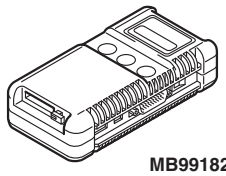
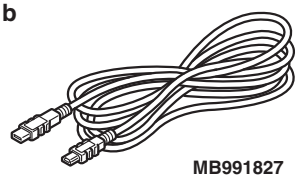
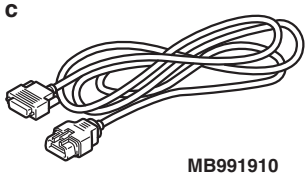
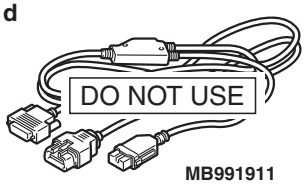
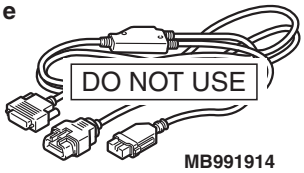
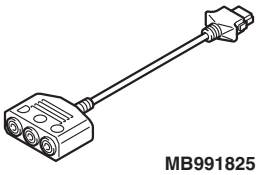
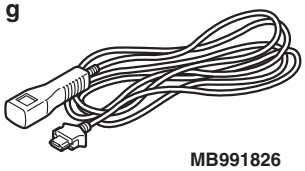
BODY ELECTRICAL EQUIPMENT CONTROL FUNCTION

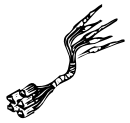
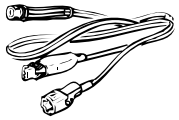
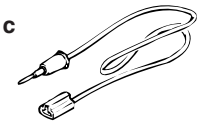
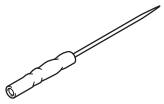
This function controls the following electrical equipment.

- Exterior lights
- Wiper, washer
- Central door locking system
- Interior light
- Keyless entry, keyless operation system
- Theft alarm system

SPECIAL TOOL

M1545000600183

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable 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. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ 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.** ETACS-ECU check (Diagnostic trouble code, service data)

Tool	Tool number and name	Supersession	Application
a  b  c  d MB991223	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	MB992006 Extra fine probe	–	Making voltage and resistance measurement during troubleshooting

TROUBLESHOOTING

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1545000900140

Refer to GROUP 00 –Troubleshooting contents
P.00-7.

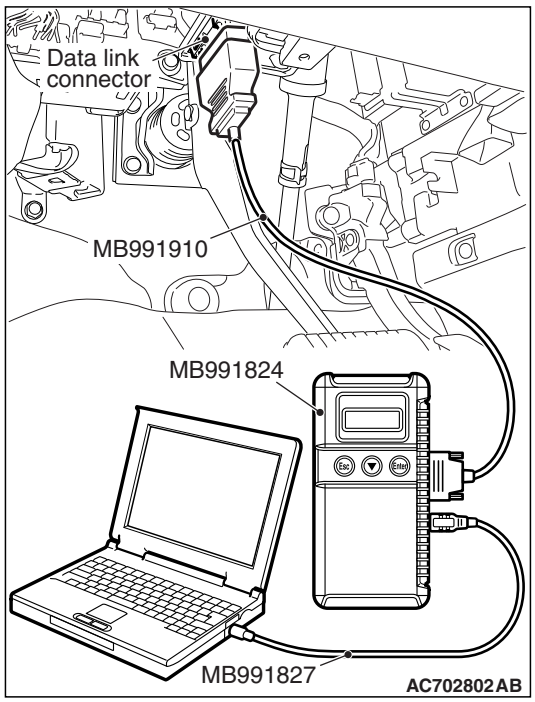
DIAGNOSTIC FUNCTION

M1545001000151

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

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)



⚠ 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: 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)

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 "ETACS" 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: 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)

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 the scan tool (GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

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

DISPLAY ITEM LIST

Item No.	Item name	Content	Unit
01	Odometer	Total driving distance after the diagnostic trouble code is generated	mile*1
02	Ignition cycle	Number of times the ignition switch is turned "ON" or "LOCK (OFF)" after the past failure transition	Number of counts is displayed.
03	Elapsed time after failure	Total elapsed time after a diagnostic trouble code is generated	min*2
04	Current trouble accumulative time	Cumulative time for current malfunction of diagnostic trouble code	min

NOTE:

- **1: If a failure occurs to both the ABS-ECU and ETACS-ECU, 0000 mile or FFFF mile is displayed to the scan tool MB991958.*
- **2: Total elapsed time can be stored up to 65,534 minutes (45.5 days). The display of scan tool is fixed to 65,534 minutes after 65,534 minutes have elapsed. Or, if the battery is disconnected, the total elapsed time cannot be measured properly. Thus, 65,535 minutes (null value) is displayed. Because it is calculated based on the ETACS-ECU information, the correct display may not be shown if the ETACS-ECU has had a time-out.*

DIAGNOSTIC TROUBLE CODE CHART

M1545001100794

Diagnostic trouble code number	Trouble content	Reference page
U0001	Bus off (CAN-C)	P.54A-744
U0019	Bus off (CAN-B)	
U0100	Engine control module CAN timeout	P.54A-745
U0101	Transaxle control module CAN timeout	P.54A-747
U0114	AWD-ECU CAN timeout	P.54A-749
U0121	ABS-ECU or ASC-ECU CAN timeout	P.54A-751
U0126	Steering wheel sensor CAN timeout	P.54A-753
U0151	SRS-ECU CAN timeout	P.54A-755
U0154	Occupant classification-ECU CAN timeout	P.54A-757
U0155	Combination meter CAN timeout	P.54A-759
U0164	A/C-ECU CAN timeout	P.54A-761
U0168	WCM or KOS-ECU CAN timeout	P.54A-763
U0184	Audio CAN timeout	P.54A-765
U0195	Satellite radio tuner CAN timeout	P.54A-767
U0197	Hands free module CAN timeout	P.54A-769
U0245	CAN box unit CAN timeout	P.54A-771
U1108	Excess CAN-B ECU detection	P.54A-773
U1120	Bus line (CAN-C) low input	P.54A-775
U1121	Bus line (CAN-C) high input	
U0169	Sunroof LIN timeout <Vehicles with sunroof>	Refer to GROUP 54B, Diagnosis P.54B-6.
U0215	P/W SW (DR) LIN timeout	
U0231	Lighting control sensor LIN timeout <Vehicles with auto light function>	
U1109	Column SW LIN timeout	
U150B	Column SW checksum error	
U1006	Theft-alarm siren LIN timeout <Vehicles with theft-alarm sensor>	
U1007	Theft-alarm sensor LIN timeout <Vehicles with theft-alarm sensor>	
U150C	P/W SW (DR) checksum error	
U1511	Sun roof checksum error <Vehicles with sunroof>	
U1512	Lighting control sensor checksum error <Vehicles with auto light function>	
U1514	Bit error (LIN)	
U1515	No-Bus activity error (LIN)	
U0331*	ECU internal error	P.54A-776

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Diagnostic trouble code number	Trouble content	Reference page
B1034	Ambient air temperature sensor system (short circuit)	Refer to GROUP 55A, Manual A/C Diagnosis P.55A-11.
B1035	Ambient air temperature sensor system (open circuit)	
B120A	Theft alarm siren error	Refer to P.54A-856.
B120B	Theft alarm sensor error	
B120C	Theft alarm siren flat battery	
B16A0	Taillight (RH) circuit open <Open circuit in the position light (RH) circuit, rear side marker light (RH) circuit and the taillight (RH) circuit>	Refer to P.54A-232.
B16A1	Taillight (LH) circuit open <Open circuit in the position light (LH) circuit, rear side marker light (LH) circuit, taillight (LH) circuit and the license plate light circuit>	
B16A2	Blown turn-signal light (LH) bulb	Refer to P.54A-132.
B16A3	Turn-signal light (LH) short circuit	
B16A4	Blown turn-signal light (RH) bulb	
B16A5	Turn-signal light (RH) short circuit	
B16A6	Turn-signal fuse blown	Refer to P.54A-313.
B16A7	Taillight (RH) circuit short <Short circuit in the position light (RH) circuit, rear side marker light (RH) circuit or the taillight (RH) circuit>	Refer to P.54A-232.
B16A8	Taillight (LH) circuit short <Short circuit in the position light (LH) circuit, rear side marker light (LH) circuit, taillight (LH) circuit or the license plate light circuit>	
B1761*	Chassis number not recorded	P.54A-777
B210A	+B power supply (low input)	P.54A-778
B210B	+B power supply (high input)	
B222C*	Coding incomplete	P.54A-782
B2206*	Chassis number does not match	P.54A-783
B2215*	ECU internal error	P.54A-784
B2350	Lighting switch	Refer to P.54A-326.
B2351	Washer switch	
B2353	Ignition power supply (low input)	P.54A-785
B2354	Ignition power supply (high input)	

*NOTE: *: If diagnostic trouble codes No. U0331, B1761, B2206, B2215, or B222C is set, there may be an error with the coding data stored in the ETACS-ECU.*

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC U0001: Bus off (CAN-C)
DTC U0019: Bus off (CAN-B)

⚠ CAUTION
- **If DTC U0001 or U0019 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT

When the ETACS-ECU is returned from the bus off state, or when the bus off error is indicated to the ETACS-ECU state, the DTC U0001 (CAN-C) or U0019 (CAN-B) is stored.

TECHNICAL DESCRIPTION (COMMENT)

The ETACS-ECU may have a malfunction, or the ETACS-ECU power supply or ground circuit may have a problem.

TROUBLESHOOTING HINTS

- The ETACS-ECU 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:
- 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)

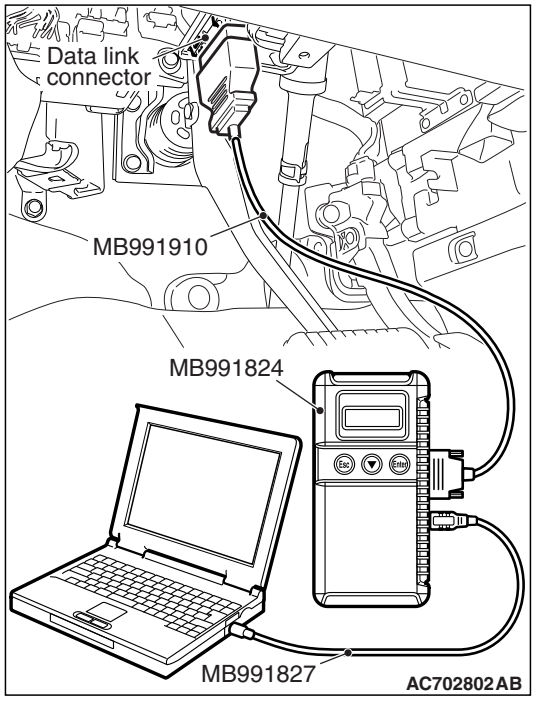
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-738."
(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. Recheck for diagnostic trouble code.
Check again if the DTC is set to the ETACS-ECU.
(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 (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0100: Engine control module CAN timeout

⚠ CAUTION
- **If DTC U0100 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

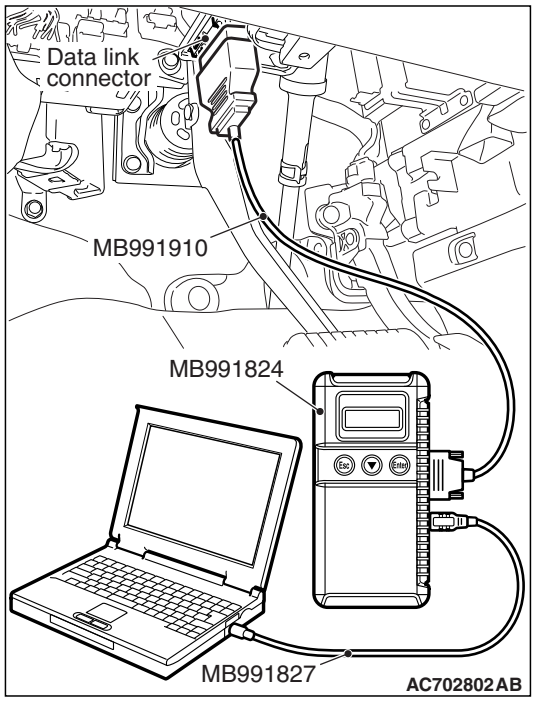
TROUBLE JUDGMENT
If the signal from engine control module cannot be received, the ETACS-ECU sets DTC U0100.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the engine control module cannot be established for 0.6 second or more, the ETACS-ECU 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 Engine control module may be defective.
- The ETACS-ECU 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-738."
(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 engine control module diagnostic trouble code.
Check if DTC is set to the engine control module.

Q: Is the DTC set?

YES : Troubleshoot the engine. (Refer to GROUP 13A, Diagnostic Trouble Code Chart P.13A-49 <2.4 L engine> or GROUP 13B, Diagnostic Trouble Code Chart P.13B-51 <3.0 L engine>.)
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the transaxle control module diagnostic trouble code.
Check if DTC U0100 is set to the transaxle control module.

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

DTC U0101: Transaxle control module CAN timeout

⚠ CAUTION
- **If DTC U0101 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from transaxle control module cannot be received, the ETACS-ECU sets the DTC U0101.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the transaxle control module cannot be established for 0.6 second or more, the ETACS-ECU 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 transaxle control module may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

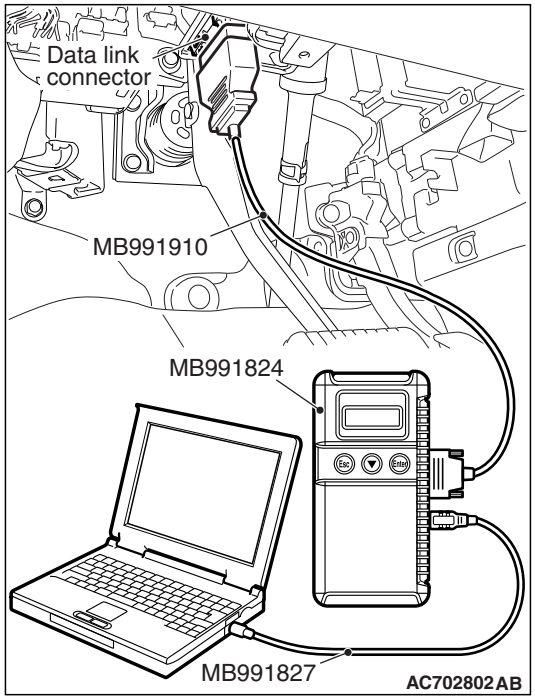
Required Special Tools:

- 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-738."
(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 transaxle control module diagnostic trouble code.

Check if DTC is set to the transaxle control module.

Q: Is the DTC set?

YES : Troubleshoot the automatic transaxle. (Refer to GROUP 23A, Diagnosis P.23A-28 <CVT> or GROUP 23C, Automatic Transaxle Diagnosis P.23C-26 <A/T>.)
NO : Go to Step 3.

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

Check if the DTC U0101 is set to the engine control module.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

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STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the ETACS-ECU.
(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 transaxle control module.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the transaxle control module and the ETACS-ECU. (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 ETACS-ECU.
(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 transaxle control module and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0114: AWD-ECU CAN timeout

⚠ CAUTION
- **If DTC U0114 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from AWD-ECU cannot be received, the ETACS-ECU sets DTC U0114.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the AWD-ECU cannot be established for 0.6 second or more, the ETACS-ECU 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 AWD-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

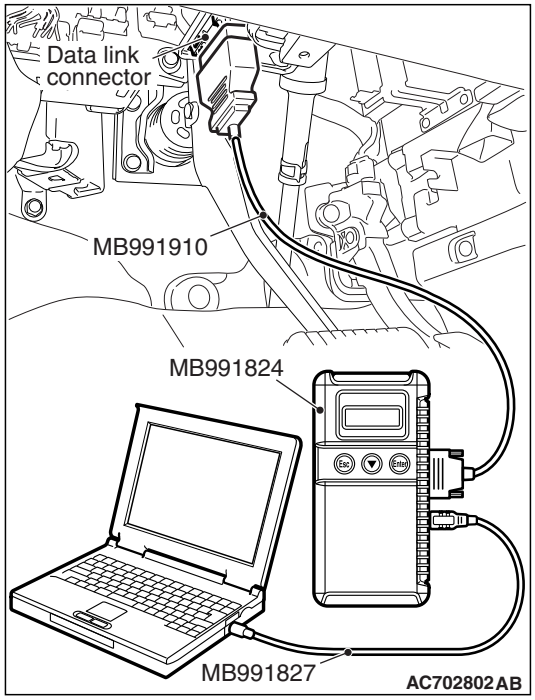
Required Special Tools:

- 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-738."
(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 AWD-ECU diagnostic trouble code

Check if DTC is set to the AWD-ECU.

Q: Is the DTC set?

YES : Troubleshoot the electronic control AWD. (Refer to GROUP 27C, Troubleshooting P.27C-11.)
NO : Go to Step 3.

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

Check if the DTC U0114 is set to the combination.

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

DTC U0121: ABS-ECU or ASC-ECU CAN timeout

⚠ CAUTION
- **If DTC U0121 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from ABS-ECU or ASC-ECU cannot be received, the ETACS-ECU sets DTC U0121.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the ABS-ECU or ASC-ECU cannot be established for 0.6 second or more, the ETACS-ECU 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 ABS-ECU may be defective.
- The ASC-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

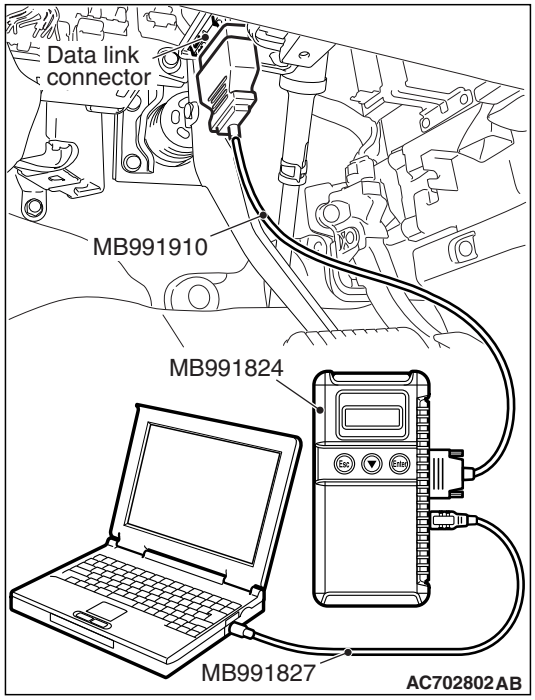
Required Special Tools:

- 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-738."
(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, check for any ABS or ASC diagnostic trouble code.

Check if DTC is set to the ABS-ECU or ASC-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ABS or ASC. (Refer to GROUP 35B, Diagnosis P.35B-15 <ABS> or GROUP 35C, Diagnosis P.35C-24 <ASC>.)
NO : Go to Step 3.

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

Check if the DTC U0121 is set to the transaxle control module 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 ETACS-ECU.
(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 ABS-ECU or ASC-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ABS-ECU or ASC-ECU and the ETACS-ECU. (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 ETACS-ECU.
(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 ABS-ECU or ASC-ECU and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0126: Steering wheel sensor CAN timeout

⚠ CAUTION
- **If DTC U0126 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from steering wheel sensor cannot be received, the ETACS-ECU sets DTC U0126.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the steering wheel sensor cannot be established for 0.6 second or more, the ETACS-ECU 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 steering wheel sensor may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

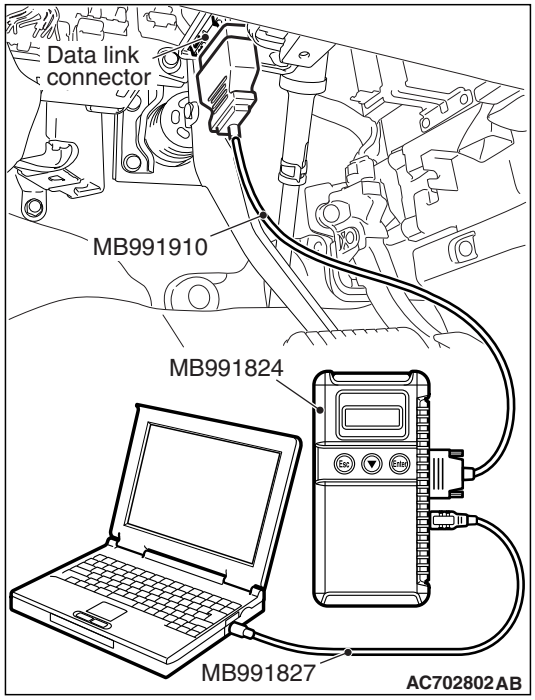
Required Special Tools:

- 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-738."
(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 steering wheel sensor diagnostic trouble code.

Check if DTC is set to the steering wheel sensor.

Q: Is the DTC set?

YES : Troubleshoot the steering wheel sensor (Refer to GROUP 35C, Diagnosis P.35C-24).
NO : Go to Step 3.

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

Check if the DTC U0126 is set to the ASC-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 ETACS-ECU.
(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 steering wheel sensor.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the steering wheel sensor and the ETACS-ECU (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 ETACS-ECU.
(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 steering wheel sensor and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC U0151: SRS-ECU CAN timeout

⚠ CAUTION
- **If DTC U0151 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from SRS-ECU cannot be received, the ETACS-ECU sets DTC U0151.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the SRS-ECU cannot be established for 0.6 second or more, the ETACS-ECU 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 SRS-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

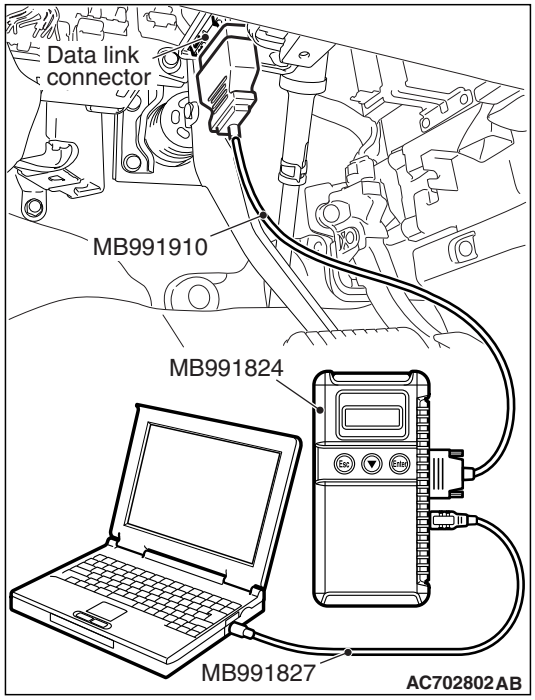
Required Special Tools:

- 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-738."
(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 if DTC is set to the SRS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the SRS. (Refer to GROUP 52B, Diagnosis P.52B-32.)
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 ETACS-ECU.
(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 ETACS-ECU. (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 ETACS-ECU.
(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 SRS-ECU and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0154: Occupant classification-ECU CAN timeout

⚠ CAUTION
- **If DTC U0154 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from occupant classification-ECU cannot be received, the ETACS-ECU sets DTC U0154.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the occupant classification-ECU cannot be established for 0.6 second or more, the ETACS-ECU 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 occupant classification-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

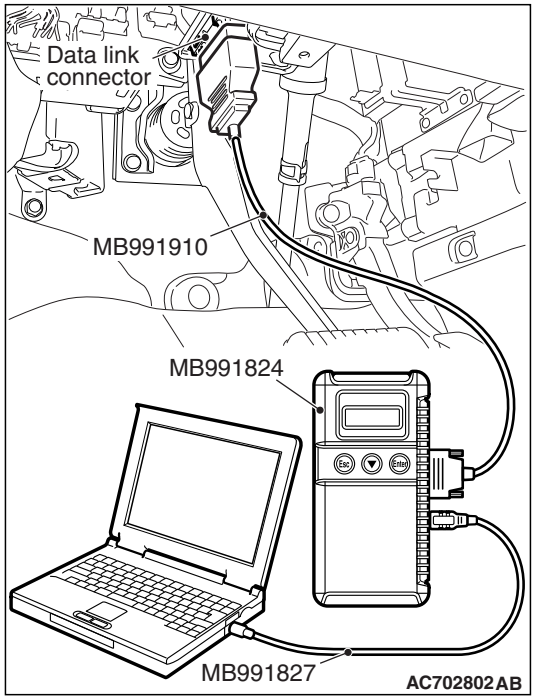
Required Special Tools:

- 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-738."
(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 if DTC is set to the SRS.

Q: Is the DTC set?

YES : Troubleshoot the SRS. (Refer to GROUP 52B, Diagnosis P.52B-346.)
NO : Go to Step 3.

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

Check if the DTC U0154 is set to the combination meter.

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 ETACS-ECU.
(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 ETACS-ECU. (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 ETACS-ECU.
(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 occupant classification-ECU and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0155: Combination meter CAN timeout

⚠ CAUTION
- **If DTC U0155 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from combination meter cannot be received, the ETACS-ECU sets DTC U0155.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the combination meter cannot be established for 0.6 second or more, the ETACS-ECU 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.

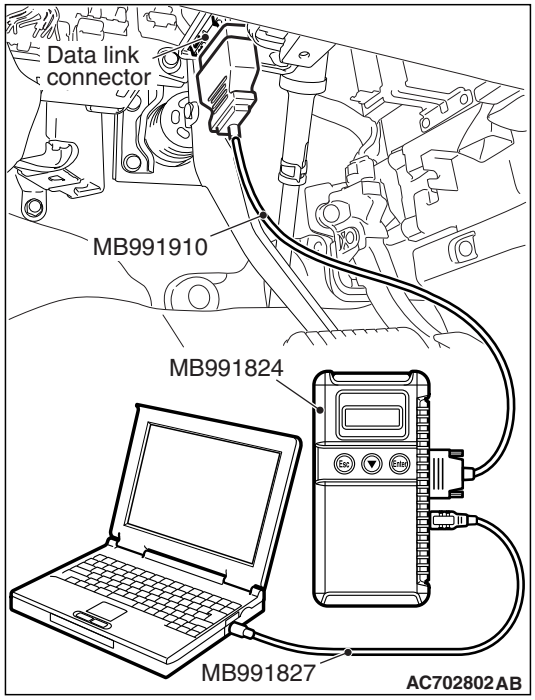
TROUBLESHOOTING HINTS
- The combination meter may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

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-738."
(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 if DTC is set to the combination meter.

Q: Is the DTC set?

YES : Troubleshoot the combination meter. (Refer to P.54A-32.)
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 ETACS-ECU.
(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 ETACS-ECU. (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 ETACS-ECU.
(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 combination meter and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0164: A/C-ECU CAN timeout

⚠ CAUTION
- **If DTC U0164 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from A/C-ECU cannot be received, the ETACS-ECU sets DTC U0164.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the A/C-ECU cannot be established for 0.6 second or more, the ETACS-ECU 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.

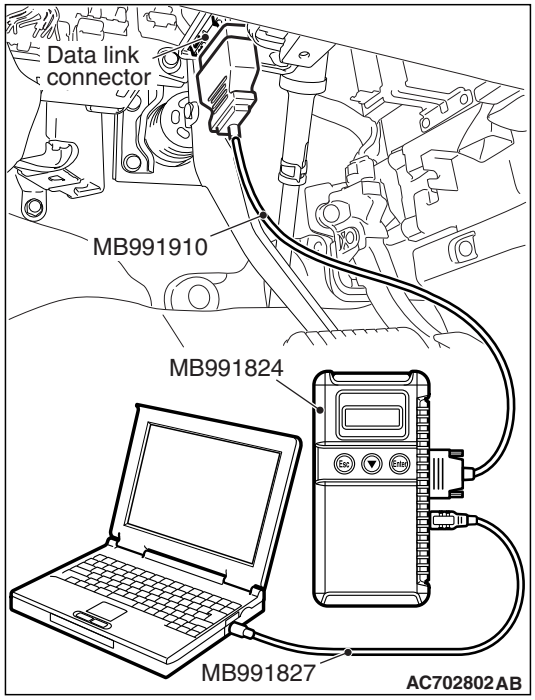
TROUBLESHOOTING HINTS
- The A/C-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

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-738."
(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 combination meter diagnostic trouble code.

Check if the DTC U0164 is set to the combination meter.

Q: Is the DTC set?

YES : Go to Step 4.
NO : Go to Step 5.

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STEP 4. Recheck for diagnostic trouble code.
Check again if the DTC is set to the ETACS-ECU.
(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 ETACS-ECU. (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 ETACS-ECU.
(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 A/C-ECU and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0168: WCM or KOS-ECU CAN timeout

⚠ CAUTION
- **If DTC U0168 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from WCM or KOS-ECU cannot be received, the ETACS-ECU sets DTC U0168.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the WCM or KOS-ECU cannot be established for 0.6 second or more, the ETACS-ECU 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.

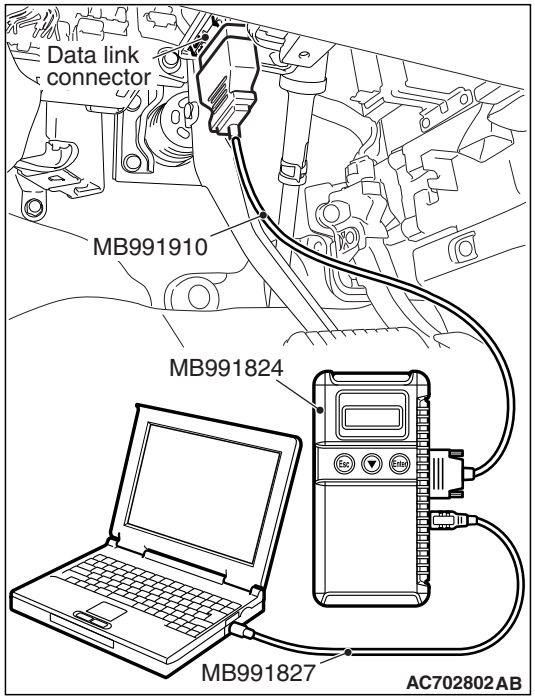
TROUBLESHOOTING HINTS
- The WCM may be defective.
- The KOS-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

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-738."
(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 WCM or KOS-ECU diagnostic trouble code.

Check if DTC is set to the WCM or KOS-ECU.

Q: Is the DTC set?

YES : Troubleshoot the WCM or KOS. (Refer to GROUP 42B, Diagnosis P.42B-31 <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 combination meter.

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 ETACS-ECU.
(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 ETACS-ECU. (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 ETACS-ECU.
(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 WCM or KOS-ECU and the ETACS-ECU. (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 ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from radio and CD player or CD changer cannot be received, the ETACS-ECU 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 or CD changer cannot be established for 0.6 second or more, the ETACS-ECU 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 or CD changer may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

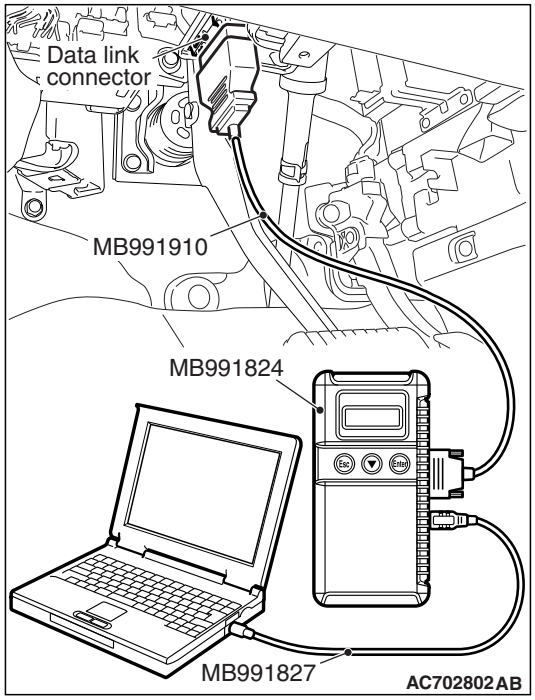
Required Special Tools:

- 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-738."
(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 audio diagnostic trouble code.

Check if DTC is set to the audio.

Q: Is the DTC set?

YES : Troubleshoot the audio. (Refer to P.54A-338.)
NO : Go to Step 3.

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

Check if the DTC U0184 is set to the combination meter.

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 ETACS-ECU.
(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 or CD changer.
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 or CD changer and the ETACS-ECU. (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 ETACS-ECU.
(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 radio and CD player or CD changer and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0195: Satellite radio tuner CAN timeout

⚠ CAUTION
- **If DTC U0195 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from satellite radio tuner cannot be received, the ETACS-ECU sets DTC U0195.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the satellite radio tuner cannot be established for 0.6 second or more, the ETACS-ECU 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 satellite radio tuner may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

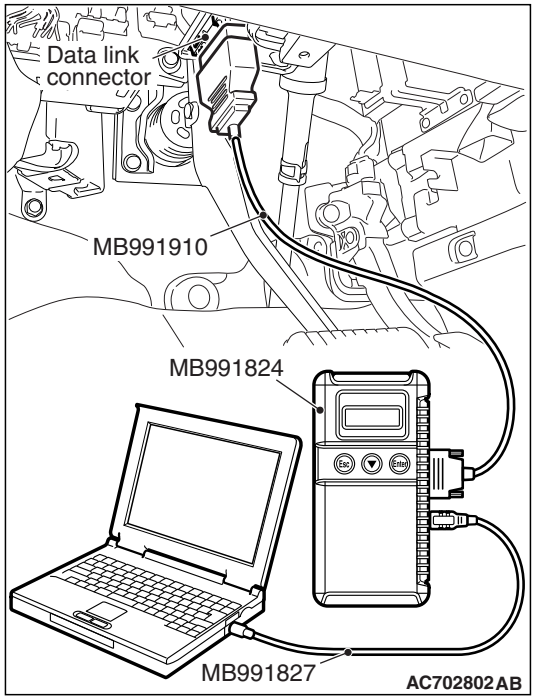
Required Special Tools:

- 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-738."
(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 if DTC is set to the satellite radio tuner.

Q: Is the DTC set?

YES : Troubleshoot the satellite radio. (Refer to P.54A-674.)
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 ETACS-ECU.
(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 ETACS-ECU. (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 ETACS-ECU.
(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 satellite radio tuner and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0197: Hands free module CAN timeout

⚠ CAUTION
- **If DTC U0197 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from hands free module cannot be received, the ETACS-ECU sets DTC U0197.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the hands free module cannot be established for 0.6 second or more, the ETACS-ECU 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 hands free module may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

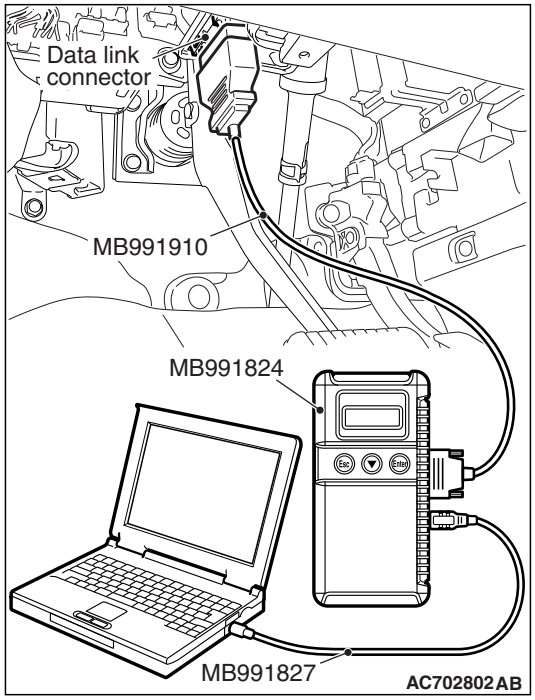
Required Special Tools:

- 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-738."
(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 hands free module diagnostic trouble code.

Check if DTC is set to the hands free module.

Q: Is the DTC set?

YES : Troubleshoot the hands free telephone system. (Refer to P.54A-592.)
NO : Go to Step 3.

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

Check if the DTC U0197 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 ETACS-ECU.
(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 hands free module.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the hands free module and the ETACS-ECU. (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 ETACS-ECU.
(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 hands free module and the ETACS-ECU. (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15)

DTC U0245: CAN box unit CAN timeout

⚠ CAUTION
- **If DTC U0245 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from CAN box unit (MMCS) cannot be received, the ETACS-ECU sets DTC U0245.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the CAN box unit (MMCS) cannot be established for 0.6 second or more, the ETACS-ECU 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 CAN box unit may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

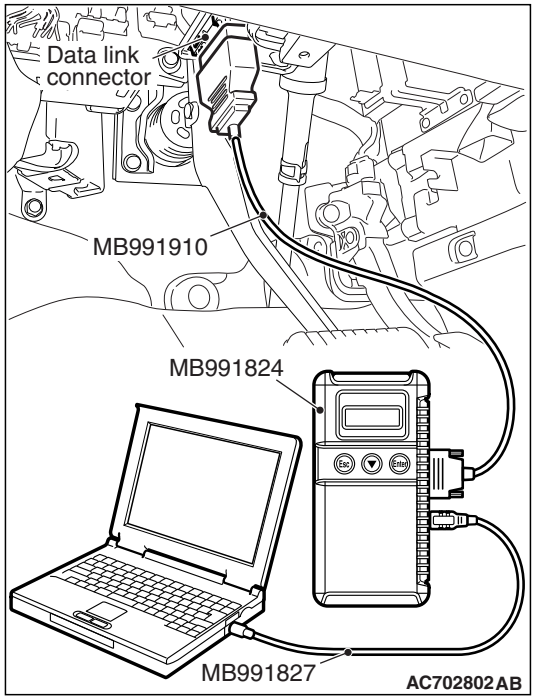
Required Special Tools:

- 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-738."
(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 MMCS diagnostic trouble code.

Check if DTC is set to the MMCS.

Q: Is the DTC set?

YES : Troubleshoot the MMCS. (Refer to P.54A-467.)
NO : Go to Step 3.

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

Check if the DTC U0245 is set to the combination meter.

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

DTC U1108: Excess CAN-B ECU Detection

⚠ CAUTION
If the DTC U1108 is set to the ETACS-ECU, always diagnose the CAN bus line.

TROUBLE JUDGMENT

If the ETACS-ECU receives the signal from the CAN-B line ECU which does not exist in the written variant code information, the ETACS-ECU sets DTC U1108.

TROUBLESHOOTING HINTS

- The ETACS-ECU 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)

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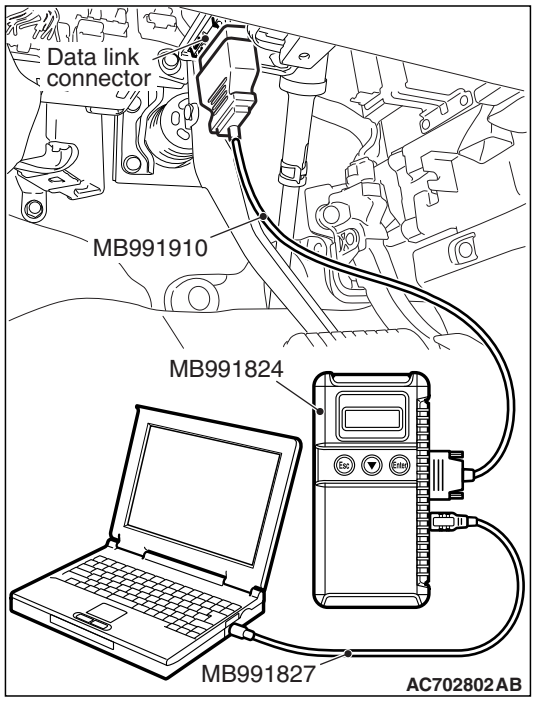


STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-738."
(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. Variant code check.

Check the variant code written to the ETACS-ECU, and check whether it matches the ECU connected to the CAN-B line.

Q: Is the check result normal?

YES : Go to Step 3.
NO : Make a correction so that the ECU connected to the CAN-B line matches with the variant code information, and then go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

Check again if the DTC is set to the ETACS-ECU.
(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 : This diagnosis is complete.

DTC U1120: Bus line (CAN-C) low input
DTC U1121: Bus line (CAN-C) high input

TROUBLE JUDGMENT

When the CAN bus line voltage is in the following states, the ETACS-ECU set the DTC.

- If the CAN bus line voltage is 0.3 volt or less, DTC U1120 is set.
- If the CAN bus line voltage is 4.7 volts or more, DTC U1121 is set.

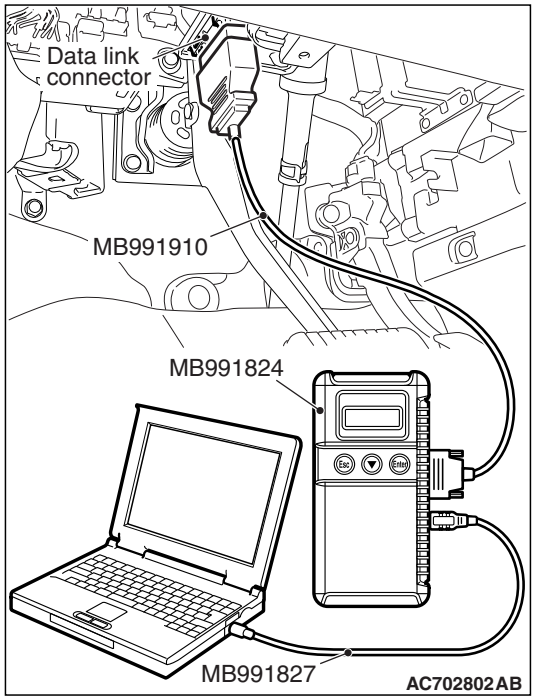
TROUBLESHOOTING HINTS

- The CAN bus line 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-738."
(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. Recheck for diagnostic trouble code.

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

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DTC U0331: ECU internal error

TROUBLE JUDGMENT

If the ETACS-ECU error counter value is detected to be "255," DTC U0331 is set, and the ETACS-ECU is reset. The DTC U0331 exists only as past trouble.

TROUBLESHOOTING HINTS

- The ETACS-ECU 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)

Recheck for diagnostic trouble code.

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

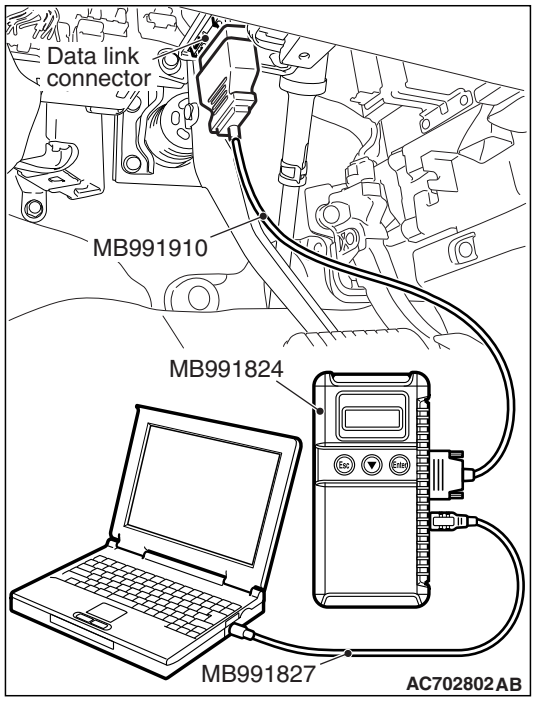
⚠ CAUTION

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-738."
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if DTC is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace the ETACS-ECU.
NO : The diagnosis is complete.



DTC B1761: Chassis number not recorded

TROUBLE JUDGMENT

If the chassis number is not written to the ETACS-ECU, the ETACS-ECU sets DTC B1761.

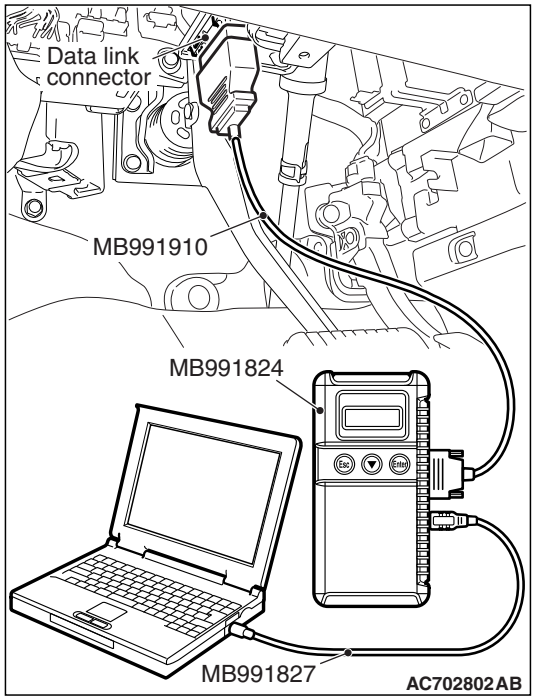
TROUBLESHOOTING HINTS

- Chassis number not recorded
- The ETACS-ECU 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)



Recheck for diagnostic trouble code.

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

⚠ 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-738."
(2) Turn the ignition switch to the "ON" position.
(3) Erase the DTC.
(4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(5) Check if DTC is set.
(6) Turn the ignition switch to the "LOCK" (OFF) position.

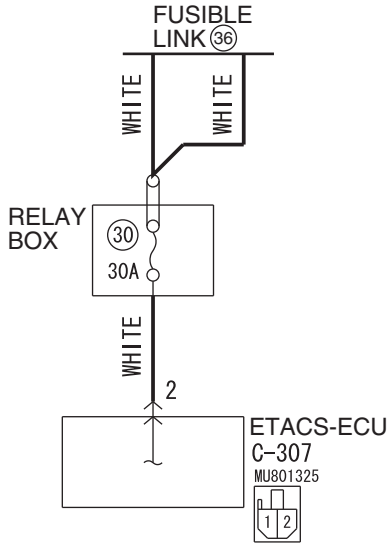
Q: Is the DTC set?

YES : Replace with the coded ETACS-ECU.
NO : The diagnosis is complete.

DTC B210A: +B power supply (low input)
DTC B210B: +B power supply (high input)

⚠ CAUTION
Before replacing the ECU, ensure that the input and output signal circuits are normal.

ETACS-ECU Power Supply Circuit



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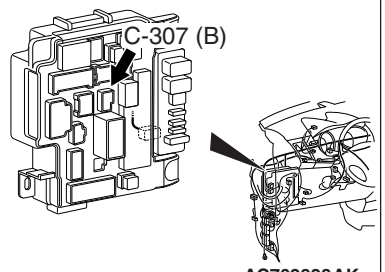
Connector: C-307



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TROUBLE JUDGMENT

The ETACS-ECU sets DTC B210A if the power supply fuse voltage decreases to the specified value or less, and sets DTC B210B if the power supply fuse voltage increases to the specified value or more. However, when the status returns to normal, the ETACS-ECU automatically erases DTCs B210A and B210B.

TECHNICAL DESCRIPTION (COMMENT)

The power supply fuse or the ETACS-ECU may have a problem.

TROUBLESHOOTING HINTS

- The power supply fuse may be defective.
- The ETACS-ECU may be defective.
- The battery may be defective.
- The generator 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 (Vehicles with CAN communication system)

STEP 1. Power supply fuse check.

Q: Is the fuse in good condition?

YES : Go to Step 3.
NO : Go to Step 2.

STEP 2. Wiring harness check between C-307 ETACS-ECU connector and fuse No. 30.

Check the power supply line for short circuit.

Q: Is the check result normal?

YES : Replace the fuse No.30.
NO : A short circuit may be present in the power supply circuit. Repair the wiring harness between ETACS-ECU connector C-307 terminal No. 2 and fuse No. 30, and replace fuse No. 30.

STEP 3. Battery check

Refer to P.54A-8.

Q: Is the battery in good condition?

YES : Go to Step 4.
NO : Charge or replace the battery.

STEP 4. Charging system check

Refer to GROUP 16 –Output Current Test P.16-8.

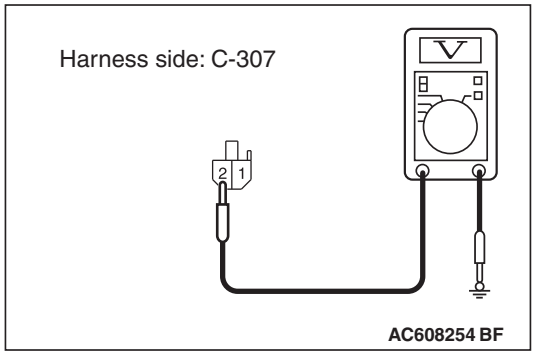
Q: Is the charging system in good condition?

YES : Go to Step 5.
NO : Repair or replace the charging system component(s).

STEP 5. Check ETACS-ECU connector C-307 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-307 in good condition?

YES : Go to Step 6.
NO : Repair or replace the component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.



STEP 6. Check the battery power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-307.

(1) Disconnect ETACS-ECU connector C-307 and measure the voltage available at the wiring harness side of the connector.
(2) Turn the ignition switch to the "LOCK" (OFF) position.
(3) Measure the voltage between terminal 2 and ground.
- The voltage should measure approximately 12 volts (battery positive voltage).

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

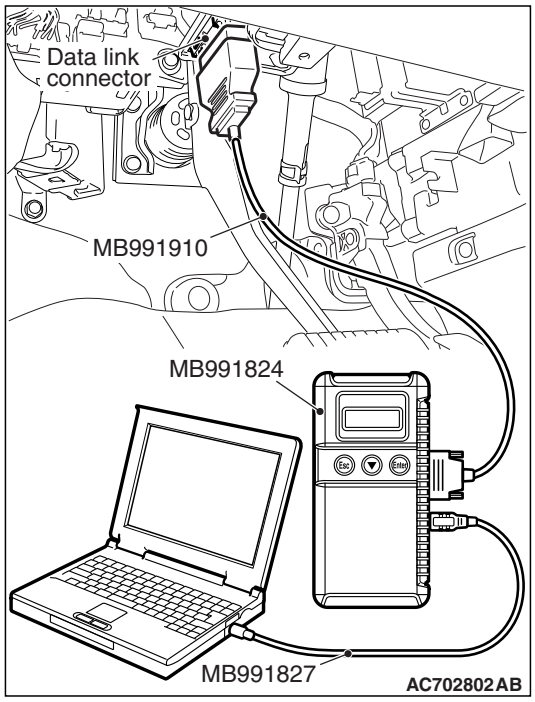
YES : Go to Step 8.
NO : Go to Step 7.

STEP 7. Check the wiring harness between ETACS-ECU connector C-307 (terminal 2) and the fusible link (36).

Check the power supply line for open circuit.

Q: Is the wiring harness between ETACS-ECU connector C-307 (terminal 2) and the 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.



STEP 8. Using scan tool MB991958, check data list.

Check the power supply fuse voltage.

⚠ 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-738."

(2) Check the ETACS data list.

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

Item No.	Item name	Normal condition
Item 253	Voltage sensing of IOD Line	Approximately 12 volts (battery positive voltage)

Q: Does the scan tool MB991958 display the item "voltage sensing of IOD Line" is normal condition?

YES : Go to Step 9.

NO : Replace the ETACS-ECU.

STEP 9. Recheck for diagnostic trouble code.

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

(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 (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

DTC B222C: Coding incomplete

TROUBLE JUDGMENT

If the ETACS-ECU is in the initial state or the variant coding is incomplete, the ETACS-ECU sets DTC B222C.

TROUBLESHOOTING HINTS

- Variant code not written
- The ETACS-ECU 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)

Recheck for diagnostic trouble code.

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

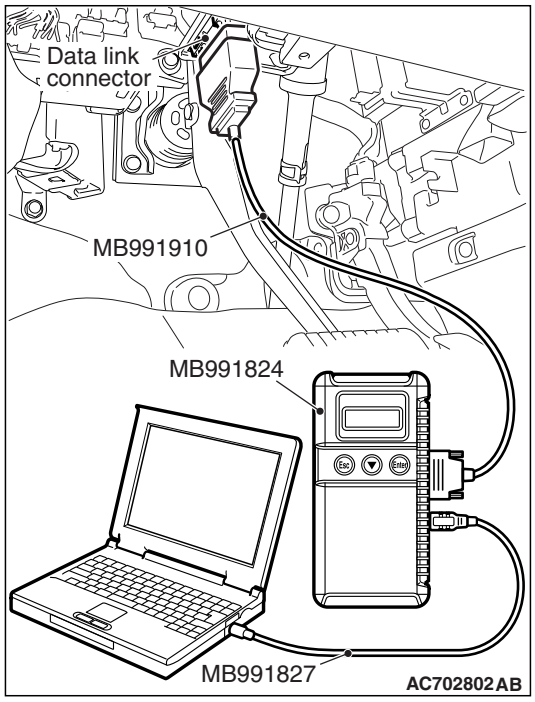
⚠ CAUTION

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-738."
(2) Turn the ignition switch to the "ON" position.
(3) Perform the variant coding to the ETACS-ECU.
(4) Erase the DTC.
(5) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
(6) Check if DTC is set.
(7) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Replace with the coded ETACS-ECU.
NO : The diagnosis is complete.



DTC B2206: Chassis number does not match

⚠ CAUTION
If DTC B2206 is set, always diagnose the CAN bus line.

TROUBLE JUDGMENT
If the registered chassis number is different from the chassis number transmitted on the CAN bus lines, the ETACS-ECU sets DTC B2206.

JUDGMENT CRITERIA
If the chassis number registered to ETACS-ECU and the chassis number on CAN bus lines do not match, the ETACS-ECU determines that a problem has occurred.

TROUBLESHOOTING HINTS
- Chassis number not written
- The ETACS-ECU may be defective.
- The engine control module may be defective.
- The CAN bus line 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)

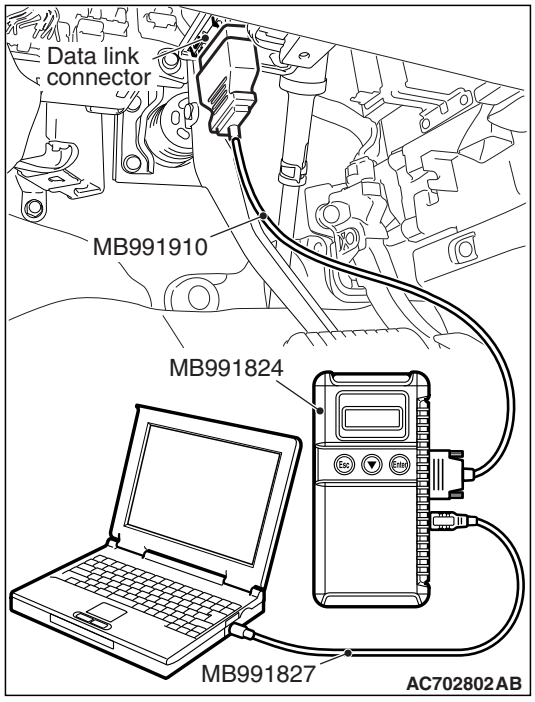
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-738."
(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 engine control module diagnostic trouble code.
Check if DTC is set to the engine control module.

Q: Is the DTC set?

YES : Troubleshoot the engine. (Refer to GROUP 13A, Diagnostic Trouble Code Chart P.13A-49 <2.4 L engine> or GROUP 13B, Diagnostic Trouble Code Chart P.13B-51 <3.0 L engine>.)
NO : Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.
Check again if the DTC is set to the ETACS-ECU.
(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 with the coded ETACS-ECU.
NO : The diagnosis is complete.

DTC B2215: ECU internal error

TROUBLE JUDGMENT

When the ETACS-ECU internal error count reaches "255," DTC B2215 is set.

TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective.

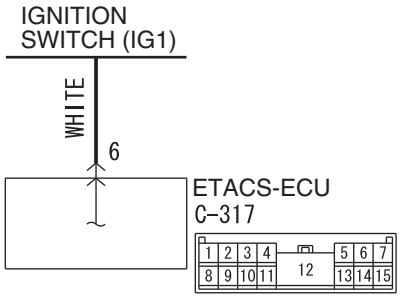
DIAGNOSIS

Replace the ETACS-ECU.

DTC B2353: Ignition power supply (low input)
DTC B2354: Ignition power supply (high input)

⚠ CAUTION
Before replacing the ECU, ensure that the input and output signal circuits are normal.

Ignition Switch (IG1) Input Circuit



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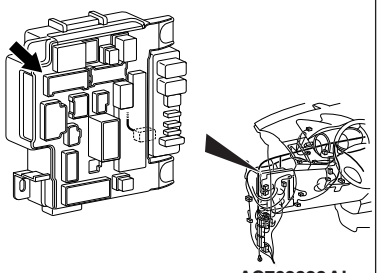
Connector: C-317



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TROUBLE JUDGMENT

These DTCs are set when the ignition power supply voltage decreases to the specified value or less (DTC B2353) or increases to the specified value or more (DTC B2354). However, when the status returns to normal, the DTCs B2353 and B2354 are automatically erased.

TECHNICAL DESCRIPTION (COMMENT)

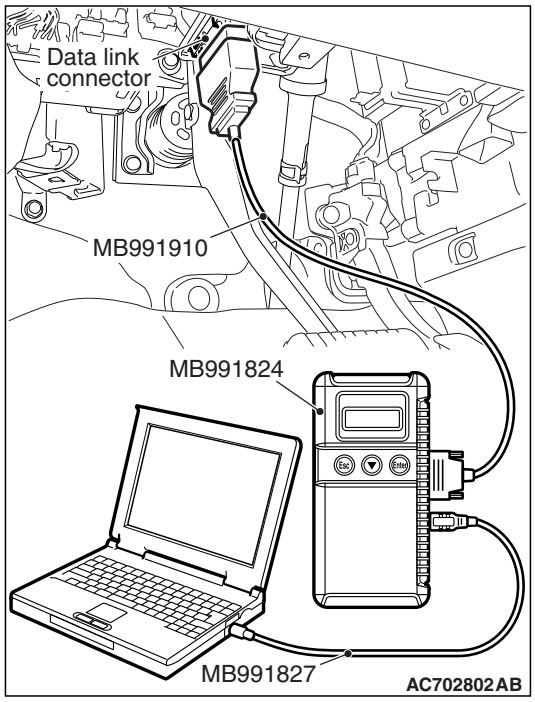
The power supply circuit or the ETACS-ECU may have a problem.

TROUBLESHOOTING HINTS

- The power supply circuit may be defective.
- The battery may be defective.
- The generator may be defective.
- The ETACS-ECU may be defective.
- The ignition 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
- 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, check data list.
Check the ignition power supply voltage.

⚠ 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-738."
(2) Check the ETACS data list.
- Turn the ignition switch to the "ON" position.

Item No.	Item name	Normal condition
Item 254	IG voltage	Approximately 12 volts (battery positive voltage)

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

Q: Does the scan tool MB991958 display the item "IG voltage" is normal condition?
YES : Go to Step 4.
NO : Go to Step 2.

STEP 2. Battery check
Refer to GROUP 54A –Battery Test P.54A-8.

Q: Is the battery in good condition?
YES : Go to Step 3.
NO : Charge or replace the battery. Then go to Step 3.

STEP 3. Charging system check
Refer to GROUP 16 –Charging System P.16-7.

Q: Is the charging system in good condition?
YES : Refer to GROUP 54A, Diagnosis - Inspection Procedure 2 "ETACS-ECU does not receive any signal from the ignition switch (IG1)" P.54A-800.
NO : Repair or replace the charging system component(s).

STEP 4. Recheck for diagnostic trouble .
Check again if the DTC is set to the ETACS-ECU.
(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 (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

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DATA LIST REFERENCE TABLE

M1545001300204

NOTE: For some information result read out by the ECU, the specific items may not be displayed.

Item No.	Display on scan tool	Check condition	Normal condition
1	CAN-H voltage (CAN-C)	–	2.0-4.5 V
2	CAN-L voltage (CAN-C)	–	0.5-3.0 V
200	Original VIN writing status	When writing status is normal	Comp/Unperformed or Comp and locked
		When writing status is abnormal	ECU internal Err
201	Current VIN writing status	When writing status is normal	Comp/Unperformed
		When writing status is abnormal	ECU internal Err
202	Internal error	When no error is present	No error
		When an error is present	EEPROM error or Boot loader Err or EEPROM/Boot or ADC Error or ADC/EEPROM error or ADC/Boot error or ADC/Boot/EEPROM or PLL Error or PLL/EEPROM error or PLL/EEPROM error or PLL/Boot/EEPROM or PLL/ADC error or PLL/ADC/EEPROM or PLL/ADC/Boot or PLL/ADC/Boot/ROM
203	Process error	When no error is present	No error
		When an error is present	Interrupt error or Switch error or Sequence error or Stck pointer Err or Dispatch call Er or Other error
204	Coding counter	–	0-255 times
205	Coding counter Option	–	0-255 times
206	Headlight LO ON duty	When low-beam headlights are on	100 %
		When low-beam headlights are off	0 %
207	Fan control relay ON duty	When the fan is in operation	100 %
		When the fan is stopped	0 %
208	Dome light ON duty	When the room light is turned from ON to OFF	When the light is dimmed from 100% (when ON) to 0%

TSB Revision

Item No.	Display on scan tool	Check condition	Normal condition
209	Gate light ON duty	When the liftgate is opened	100 %
		When the liftgate is closed	0 %
210	IG key illumination	When the door is opened	100 %
		When the door is closed	0 %
211	Headlight Hi	When high-beam headlights are on	ON
		When high-beam headlights are off	OFF
212	Front fog light	When fog lights are on	ON
		When fog lights are off	OFF
213	Horn theft horn	When the theft alarm is operating	ON
		When the theft alarm is not operating	OFF
215	Security indicator	When the theft alarm is operating	ON
		When the theft alarm is not operating	OFF
216	IG1-2 fuel pump	Ignition switch: ON position	ON
		Ignition switch: Other than ON	OFF
218	Taillight	When taillights and position lights are on	ON
		When taillights and position lights are off	OFF
219	Turn RH/LH light	When turn-signal lights are on	ON
		When turn-signal lights are off	OFF
220	Blower fan	Ignition switch: ON position	ON
		Ignition switch: Other than ON	OFF
221	Defogger	1. Engine: ON (2000 r/min) 2. Defogger switch: ON	ON
		Other than above	OFF
222	Interior light cut	When the interior light is ON	ON
		When the light is turned off by the activation of interior light automatic cut function	OFF
224	Door lock	When locking is performed by the central door lock	ON
		Other than above	OFF
227	Door unlock	When unlocking is performed by the central door lock	ON
		Other than above	OFF

Item No.	Display on scan tool	Check condition	Normal condition
228	Dr door unlock	When unlocking is performed by the central door lock	ON
		Other than above	OFF
230	Trunk/gate opener	Liftgate lock release handle: ON	ON
		Other than above	OFF
232	ACC Relay	Ignition switch: ACC or ON	ON
		Ignition switch: Other than ACC or ON	OFF
233	Fan Lo	When the fan is in Lo operation	ON
		When the fan is stopped	OFF
234	Fan Hi	When the fan is in Hi operation	ON
		When the fan is stopped	OFF
235	Front wiper ACT	When the windshield wiper is in operation	ON
		Other than above	OFF
236	Front wiper Lo/Hi	When the windshield wiper is in high-speed operation	ON
		Other than above	OFF
237	Front washer	The windshield washer is in operation	ON
		Other than above	OFF
238	Rear washer	When rear washer is in operation	ON
		Other than above	OFF
239	Rear wiper	When rear wiper is in operation	ON
		Other than above	OFF
240	Power window	Ignition switch: ON position	ON
		Ignition switch: OFF position	ON →OFF (30 seconds after)
252	Ambient temperature sensor	Ignition switch: ON position	0-5 V
253	Voltage sensing of IOD Line	Always	Battery positive voltage
254	IG voltage	Ignition switch: ON position	Battery positive voltage
256	Dr door ajar switch	Driver's door: Open	Open
		Driver's door: Closed	Close
257	As door ajar switch	Front passenger's door: Open	Open
		Front passenger's door: Closed	Close
258	RR door ajar switch	Rear right door: Open	Open
		Rear right door: Closed	Close
259	RR door ajar switch	Rear left door: Open	Open
		Rear left door: Closed	Close

Item No.	Display on scan tool	Check condition	Normal condition
260	Trunk/gate trunk ajar switch	Liftgate: Open	Open
		Liftgate: Closed	Close
264	Handle lock switch	When the ignition key is inserted into the ignition key cylinder	Key in
		When the ignition key is removed from the ignition key cylinder	Key out
265	Hazard switch	While the hazard switch is pressed	ON
		Other than above	OFF
266	Hood switch	Hood: Open	ON
		Hood: Closed	OFF
268	Trunk/gate opener switch	Not used	OFF
270	Dr door lock switch	When the driver's door is locked	Lock
		Other than above	Not lock
271	Dr door unlock switch	When the driver's door is unlocked	Unlock
		Other than above	Not Unlock
272	As door unlock switch	When the front passenger's door is unlocked	Unlock
		Other than above	Not Unlock
273	Except Dr/As door unlock switch	Not used	OFF
274	Door key lock switch	Not used	OFF
275	Dr door key unlock switch	Not used	OFF
276	Door key unlock switch	Not used	OFF
277	Power lock switch	Not used	OFF
278	Power unlock switch	Not used	OFF
279	Brake fluid switch	When the brake fluid level is normal	ON
		When the brake fluid level is low	OFF
281	ASC/TCL OFF switch	ASC OFF switch: During ON operation	ON
		Other than above	OFF
287	Starter switch	Ignition switch: START position	ON
		Ignition switch: Other than the START position	OFF
288	ACC switch	Ignition switch: ACC or ON	ON
		Ignition switch: Other than ACC and ON	OFF
289	Backup light or shift reveres SW	The shift lever is in the reverse position.	ON
		Other than above	OFF

Item No.	Display on scan tool	Check condition	Normal condition
290	Brake switch	Brake pedal depressed	ON
		Other than above	OFF
291	Front wiper auto stop switch	When the windshield wiper is in operation	ON
		Other than above	OFF
292	Rear wiper auto stop switch	When rear wiper is in operation	ON
		Other than above	OFF
293	Process error information	–	–
294	Process error	–	0-255 times
340	Headlight switch(tail)	Lighting switch: Position light position	ON
		Other than above	OFF
341	Headlight switch	Lighting switch: Headlight position	ON
		Other than above	OFF
342	Headlight switch(Dimmer)	Lighting switch: During dimmer switch operation	ON
		Other than above	OFF
343	Turn switch left	Turn-signal light switch: LH position	ON
		Other than above	OFF
344	Turn switch right	Turn-signal light switch: RH position	ON
		Other than above	OFF
345	Fog light ON	Fog light switch: During ON operation	ON
		Other than above	OFF
346	Fog light OFF	Fog light switch: During OFF operation	ON
		Other than above	OFF
347	Switch type	–	LHD
348	Headlight switch(auto)	Lighting switch: AUTO position	ON
		Other than above	OFF
349	Headlight cleaner	Not used	OFF
350	Headlight switch(flasher)	Lighting switch: During dimmer switch operation	ON
		Other than above	OFF
351	Column ECU sleep	Ignition switch: Other than ON or START position	OK
		Ignition switch: ON or START position	NG
352	Front wiper(INT)	Wiper switch: INT position	ON
		Other than above	OFF

Item No.	Display on scan tool	Check condition	Normal condition
353	Front wiper(LO)	Wiper switch: LO position	ON
		Other than above	OFF
354	Front wiper(HI)	Wiper switch: HI position	ON
		Other than above	OFF
355	Front wiper(washer)	Wiper switch: During washer operation	ON
		Other than above	OFF
356	Rear wiper	Wiper switch: Rear wiper	ON
		Other than above	OFF
357	Rear wiper(washer)	Wiper switch: During rear washer operation	ON
		Other than above	OFF
358	Front wiper(MIST)	Wiper switch: During MIST operation	ON
		Other than above	OFF
359	Front wiper(interval volume)	Variable intermittent wiper control switch is switched from (+) to (-).	The value changes from 0 (+) to 254 (-).
360	Wiper switch lever fail	When normal	No fail
		When abnormality is present	Fail
361	Turn/Light switch lever fail	When normal	No fail
		When abnormality is present	Fail

TROUBLE SYMPTOM CHART

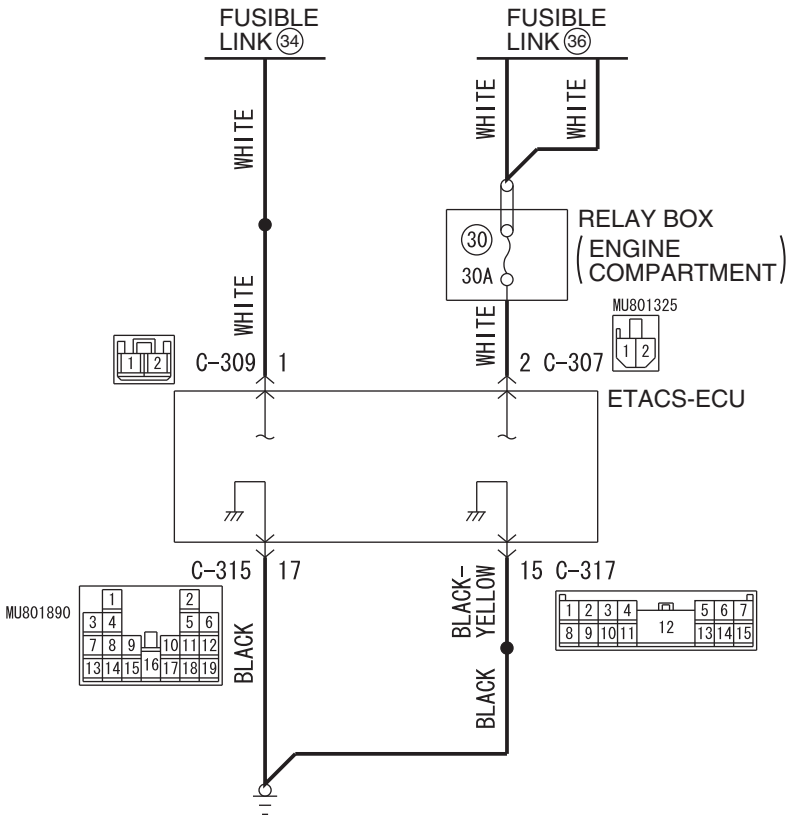
M1545001200218

Trouble symptom	Reference page
Malfunction of ETACS-ECU power supply circuit	P.54A-793

SYMPTOM PROCEDURES

Malfunction of ETACS-ECU power supply circuit

ETACS-ECU Power Supply Circuit



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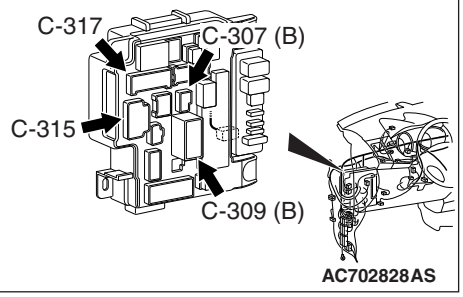
Connectors: C-307, C-309, C-315, C-317



AC702828AS

TECHNICAL DESCRIPTION (COMMENT)

If the ETACS-ECU functions do not work at all, the ETACS-ECU power supply system, ground system, or ETACS-ECU 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 ETACS-ECU may be defective

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

TSB Revision

STEP 1. Check ETACS-ECU connectors C-315 and C-317 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-315 and C-317 in good condition?

YES : Go to Step 2.

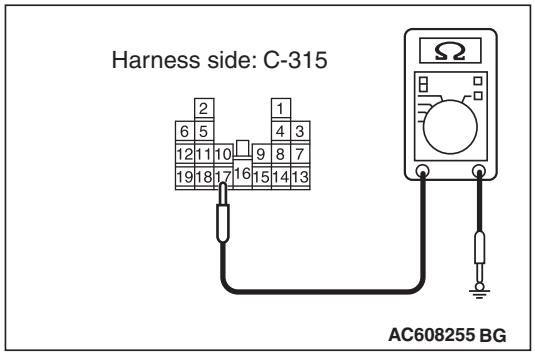
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 2. Check the ground circuit to the ETACS-ECU. Measure the resistance at ETACS-ECU connectors C-315 and C-317.

(1) Disconnect ETACS-ECU connector C-315 and C-317 and measure the resistance available at the wiring harness side of the connector.

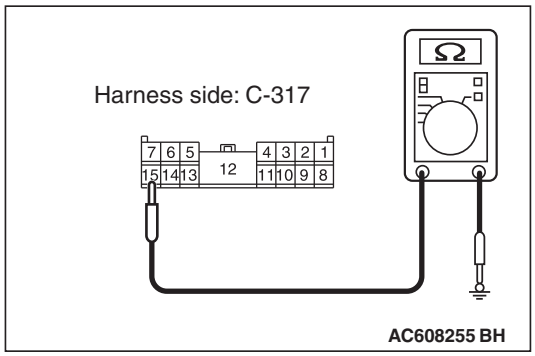
(2) Measure the resistance value between ETACS-ECU connector C-315 terminal 17 and ground.

- The resistance should be 2 ohms or less.



(3) Measure the resistance value between ETACS-ECU connector C-317 terminal 15 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 ETACS-ECU connector C-315 (terminal 17) or C-317 (terminal 15) and the ground.

- Check the ground wires for open circuit.

Q: Is the wiring harness between ETACS-ECU connector C-315 (terminal 17) or C-317 (terminal 15) 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.

TSB Revision

STEP 4. Check ETACS-ECU connectors C-307 and C-309 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connectors C-307 and C-309 in good condition?

YES : Go to Step 5.

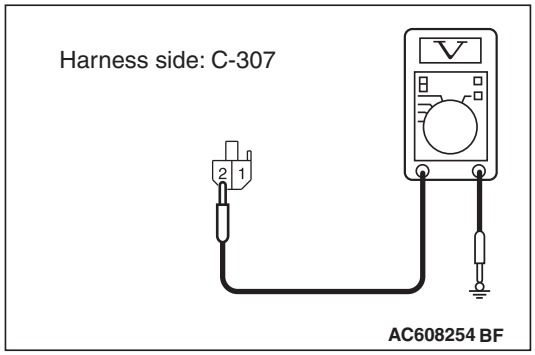
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

STEP 5. Check the battery power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connectors C-307 and C-309.

(1) Disconnect ETACS-ECU connectors C-307 and C-309 measure the voltage available at the wiring harness side of the connector.

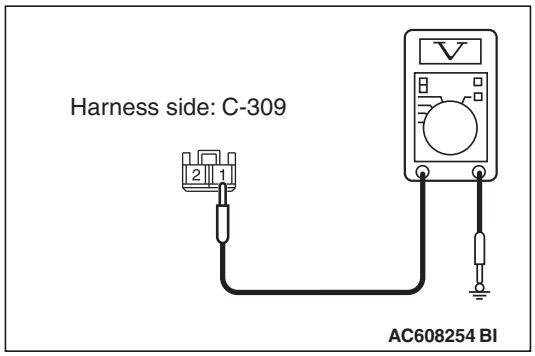
(2) Measure the voltage between ETACS-ECU connector C-307 terminal 2 and ground.

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



(3) Measure the voltage between ETACS-ECU connector C-309 terminal 1 and ground.

- 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 7.

NO : Go to Step 6.

STEP 6. Check the wiring harness between ETACS-ECU connector C-309 (terminal 1) or C-307 (terminal 2) and the fusible link (34) or (36).

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

Q: Is the wiring harness between ETACS-ECU connector C-309 (terminal 1) or C-307 (terminal 2) and the fusible link (34) or (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 ETACS-ECU normally.

TSB Revision

STEP 7. Retest the system

Check that the ETACS-ECU functions work normally.

Q: Is the check result satisfactory?

YES : The procedure is complete. (If no malfunctions are found in all steps, an 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 : Replace the ETACS-ECU.

TROUBLE SYMPTOM CHART FOR INPUT SIGNAL

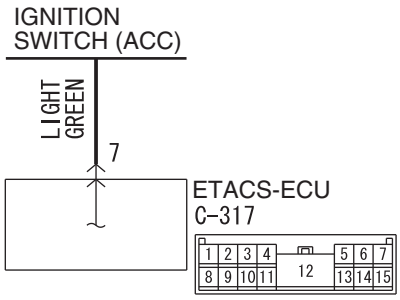
M1545004900368

Trouble symptom	Inspection Procedure No.	Reference page
ETACS-ECU does not receive any signal from the ignition switch (ACC).	1	P.54A-797
ETACS-ECU does not receive any signal from the ignition switch (IG1).	2	P.54A-800
ETACS-ECU does not receive any signal from the key reminder switch.	3	P.54A-803
ETACS-ECU cannot receive the signal of front door lock actuator (LH) or front door lock actuator (RH).	4	P.54A-806
ETACS-ECU does not receive any signal from the front door switch (LH).	5	P.54A-813
ETACS-ECU does not receive any signal from the front door switch (RH).	6	P.54A-816
ETACS-ECU does not receive any signal from the rear door switch (LH).	7	P.54A-818
ETACS-ECU does not receive any signal from the rear door switch (RH).	8	P.54A-820
ETACS-ECU does not receive any signal from the liftgate switch.	9	P.54A-823
ETACS-ECU does not receive any signal from the hood switch.	10	P.54A-826
ETACS-ECU does not receive any signal from the hazard warning light switch.	11	P.54A-832
ETACS-ECU does not receive any signal from the column switch signal.	12	P.54A-834

INPUT SIGNAL PROCEDURES

Inspection Procedure 1: ETACS-ECU does not receive any signal from the ignition switch (ACC).

Ignition Switch (ACC) Input Circuit



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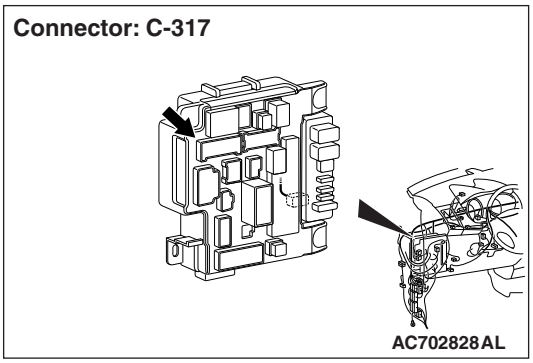
Connector: C-317



TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the ignition switch (ACC) input signal, or the ACC relay inside the ETACS-ECU does not operate, the ignition switch (ACC) signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective
- The ignition 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:

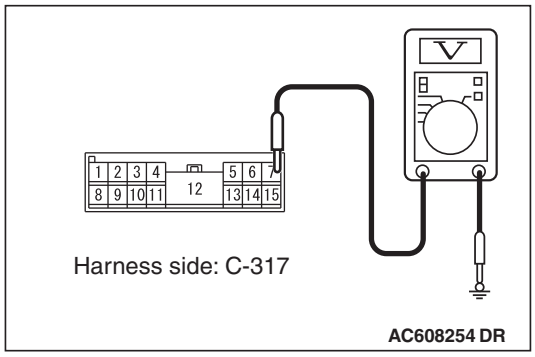
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check 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 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Check that the input signal of ignition switch (ACC) is normal.



STEP 2. Check the ignition switch (ACC) line of the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-317.

(1) Measure by backprobing without disconnecting the connector.
(2) Turn the ignition switch to the "ACC" position.
(3) Measure the voltage between the terminal No.7 and the ground.
- 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 5.
NO : Go to Step 3.

STEP 3. Check the ignition switch.

Remove the ignition switch. Then check continuity between the switch terminal.

Ignition key position	Terminal number	Normal condition
LOCK	1 –2, 1 –4, 1 –5, 1 –6	No continuity
ACC	1 –6	Continuity exists (2 ohms or less)
ON	1 –2 –4 –6	Continuity exists (2 ohms or less)
START	1 –2 –5	Continuity exists (2 ohms or less)

Q: Is the ignition switch in good condition?

YES : Go to Step 4.
NO : Replace the ignition switch. Check that the input signal of ignition switch (ACC) is normal.

STEP 4. Check the wiring harness between ETACS-ECU connector C-317 (terminal 7) and the ignition switch (ACC).
Check the power supply line (ACC) for open circuit and short circuit.

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 7) and ignition switch (ACC) 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. Check that the input signal of ignition switch (ACC) is normal.

STEP 5. Using scan tool MB991958, check data list.

- Ignition switch: ACC

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

OK: Normal condition is displayed.

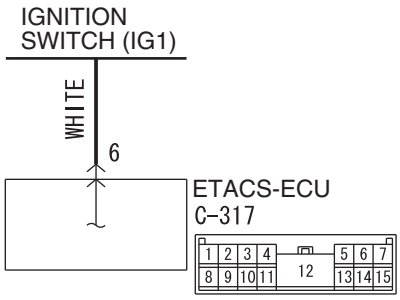
Q: Is the check result normal?

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 : Refer to Inspection Procedure 2 "Defective power supply system of the ignition switch" P.54A-19

Inspection Procedure 2: ETACS-ECU does not receive any signal from the ignition switch (IG1).

Ignition Switch (IG1) Input Circuit



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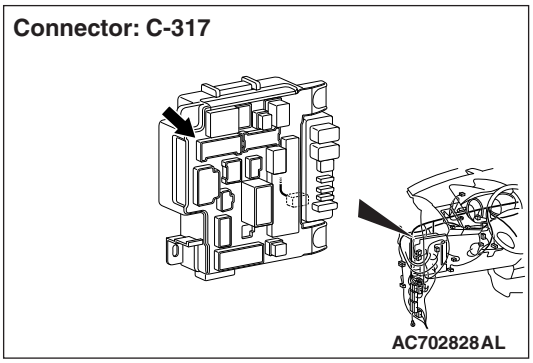


TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the ignition switch (IG1) input signal, or the IG1 relay inside the ETACS-ECU does not operate, the ignition switch (IG1) signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The ignition switch may be defective
- The ETACS-ECU may be defective
- The fuse 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:

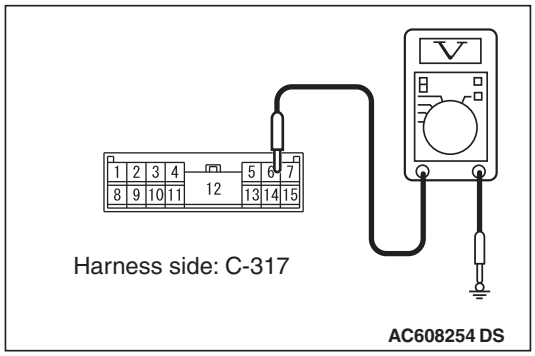
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check 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 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Check that the input signal of ignition switch (IG1) is normal.



STEP 2. Check the ignition switch (IG1) line of the power supply circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-317.

(1) Measure by backprobing without disconnecting the connector.
(2) Turn the ignition switch to the "ON" position.
(3) Measure the voltage between the terminal No.6 and the ground.
- 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 5.
NO : Go to Step 3.

STEP 3. Check the ignition switch.

Remove the ignition switch. Then check continuity between the switch terminal.

Ignition key position	Terminal number	Normal condition
LOCK	1 –2, 1 –4, 1 –5, 1 –6	No continuity
ACC	1 –6	Continuity exists (2 ohms or less)
ON	1 –2 –4 –6	Continuity exists (2 ohms or less)
START	1 –2 –5	Continuity exists (2 ohms or less)

Q: Is the ignition switch in good condition?

YES : Go to Step 4.
NO : Replace the ignition switch. Check that the input signal of ignition switch (IG1) is normal.

STEP 4. Check the wiring harness between ETACS-ECU connector C-317 (terminal 6) and the ignition switch (IG1).

Check the power supply line (IG1) for open circuit and short circuit.

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 6) and ignition switch (IG1) 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. Check that the input signal of ignition switch (IG1) is normal.

STEP 5. Using scan tool MB991958, check data list.

- Ignition switch: ON

Item No.	Item name	Normal condition
Item 254	IG voltage	12V

OK: Normal condition is displayed.

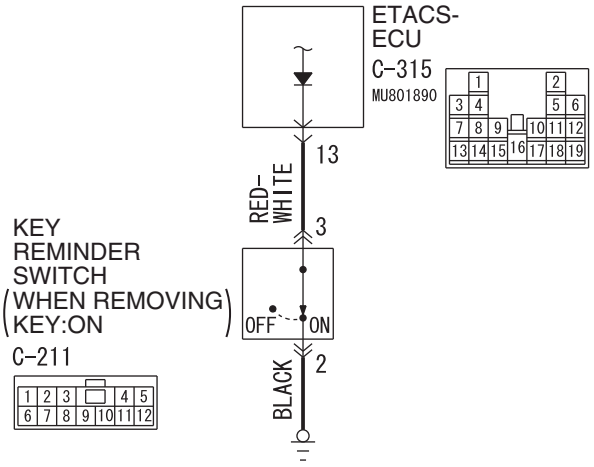
Q: Is the check result normal?

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 : Refer to Inspection Procedure 2 "Defective power supply system of the ignition switch" P.54A-19

Inspection Procedure 3: ETACS-ECU does not receive any signal from the key reminder switch.

Key Reminder Switch Input Circuit



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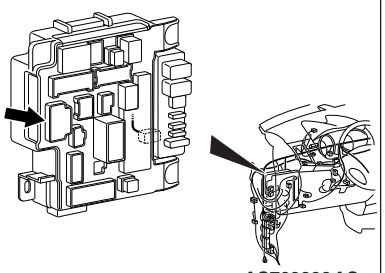
Connector: C-211

AC702922AB

Connector: C-315



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COMMENTS ON TROUBLE SYMPTOM

The key reminder switch input signal is used for the operation judgment of the functions below. If the signal is abnormal, these functions will not work.

- Ignition key reminder function
- Central door locking
- Keyless entry system
- KOS
- Ignition key cylinder illumination light
- Interior light

TROUBLESHOOTING HINTS

- The key reminder switch may be defective
- The ETACS-ECU 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 key reminder switch connector C-211 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is key reminder switch connector C-211 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. Check that the input signal of key reminder switch is normal.

STEP 2. Check the key reminder switch.

Disconnect key reminder switch connector C-211. Then check continuity between terminals.

Ignition key	Tester connection	Specified condition
Removed	2 –3	Less than 2 ohms
Inserted	2 –3	Open circuit

Q: Is the key reminder switch in good condition?

YES : Go to Step 3.

NO : Replace the key reminder switch. Check that the input signal of key reminder switch is normal.

STEP 3. Check the ground circuit to the key reminder switch. Measure the resistance at key reminder switch connector C-211.

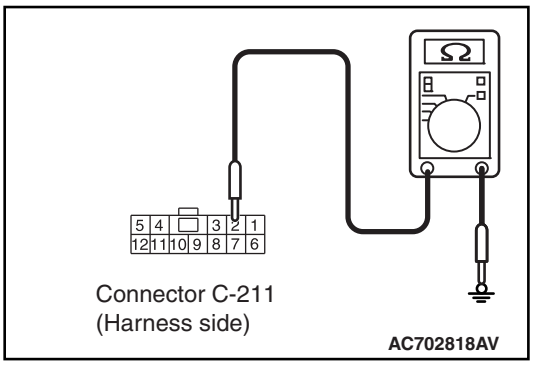
(1) Disconnect key reminder switch connector C-211 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 2 and ground.
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 5.

NO : Go to Step 4.



STEP 4. Check the wiring harness between key reminder switch connector C-211 (terminal 2) and ground.
Check the ground wires for open circuit.

Q: Is the wiring harness between key reminder switch connector C-211 (terminal 2) 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. Check that the input signal of key reminder switch is normal.

STEP 5. 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 6.
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Check that the input signal of key reminder switch is normal.

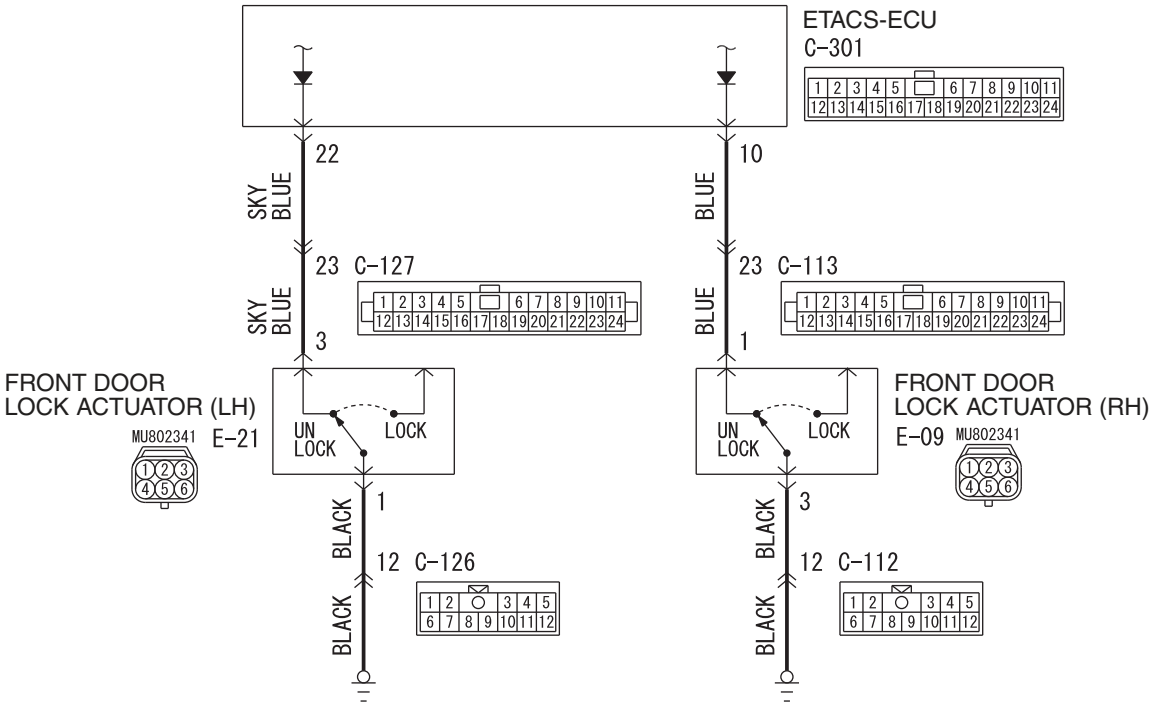
STEP 6. Check the wiring harness between key reminder switch connector C-211 (terminal 3) and ETACS-ECU connector C-315 (terminal 13).
Check the output lines for open circuit and short circuit.

Q: Is the wiring harness between key reminder switch connector C-211 (terminal 3) and ETACS-ECU connector C-315 (terminal 13) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of key reminder switch is normal.
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. Check that the input signal of key reminder switch is normal.

Inspection Procedure 4: ETACS-ECU cannot receive the signal of front door lock actuator (LH) or front door lock actuator (RH).

Door Look Actuator Input Circuit



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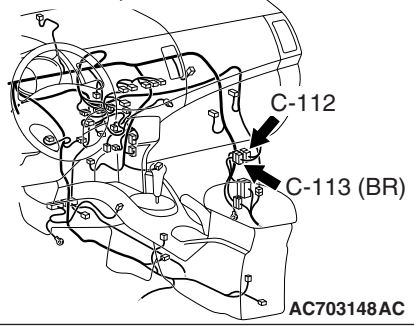
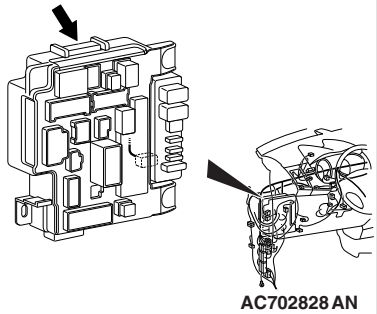
D7G54M058A00

Connectors: C-112, C-113



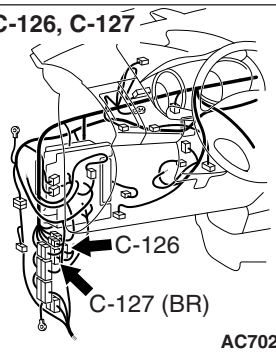
AC703148AC

Connector: C-301



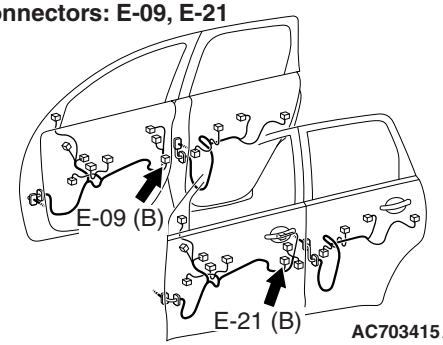
AC702828AN

Connectors: C-126, C-127



AC702815AL

Connectors: E-09, E-21



AC703415AB

TSB Revision

COMMENTS ON TROUBLE SYMPTOM

The front door lock actuator (LH) or front door lock actuator (RH) <vehicles with KOS> input signal is used for the operation judgment of the functions below. If the signal is abnormal, these functions will not work normally.

- Key reminder function
- Central door locking
- KOS
- Keyless entry system
- Interior light

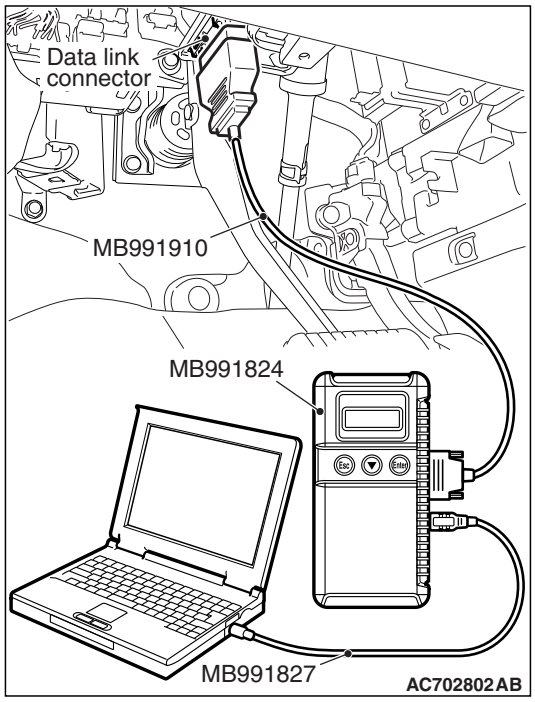
PROBABLE CAUSES

- The front door lock actuator (LH) may be defective
- The front door lock actuator (RH) may be defective <vehicles with KOS>
- The ETACS-ECU 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. Using scan tool MB991958, check data list.

Check the input signals from the front door lock actuators.

⚠ 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-738."

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

(3) Check the ETACS data list.

- Set the driver's door to "UNLOCK."

Item No.	Item name	Normal condition
Item 271	Dr door unlock switch	Unlock

- Set the front passenger's door to "UNLOCK." <vehicles with KOS>

Item No.	Item name	Normal condition
Item 272	As door unlock switch	Unlock

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

Q: Are normal conditions displayed on the "Dr door unlock switch" and "As door unlock switch"?

YES <Normal conditions are displayed for all the items> : No action is necessary and testing is complete.

NO <Normal condition is not displayed for item No.271> : Go to Step 2.

NO <Normal condition is not displayed for item No.272> : Go to Step 8.

STEP 2. Check front door lock actuator (LH) connector E-21 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door lock actuator (LH) connector E-21 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. Check that the input signal of front door lock actuator (LH) is normal.

STEP 3. Check the front door lock actuator (LH).
Disconnect front door lock actuator (LH) connector E-21. Then check continuity between the terminals.

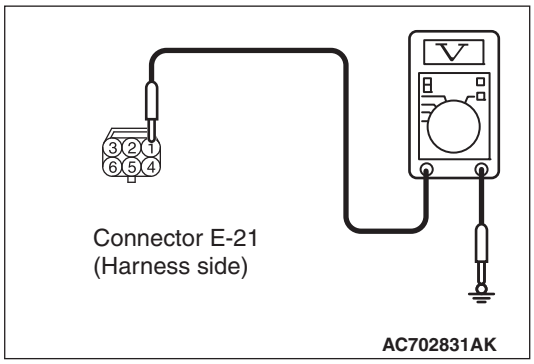
Lever position	Tester connection	Specified condition
UNLOCK	1 –2	Less than 2 ohms
LOCK	1 –2	Open circuit

Q: Is the front door lock actuator (LH) in good condition?

YES : Go to Step 4.
NO : Replace the front door lock actuator (LH). Check that the input signal of front door lock actuator (LH) is normal.

STEP 4. Check the ground circuit to the front door lock actuator (LH). Measure the resistance at front door lock actuator (LH) connector E-21.

(1) Disconnect front door lock actuator (LH) connector E-21 and measure the resistance available at the wiring harness side of the connector.
(2) Measure the resistance value between 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 6.
NO : Go to Step 5.

STEP 5. Check the wiring harness between front door lock actuator (LH) connector E-21 (terminal 1) and ground.
Check the ground wires for open circuit.

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

Q: Is the wiring harness between front door lock actuator (LH) connector E-21 (terminal 1) 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. Check that the input signal of front door lock actuator (LH) is normal.

STEP 6. Check ETACS-ECU connector C-301 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-301 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. Check that the input signal of front door lock actuator (LH) is normal.

STEP 7. Check the wiring harness between front door lock actuator (LH) connector E-21 (terminal 3) and ETACS-ECU connector C-301 (terminal 22).

Check the input lines for open circuit and short circuit.

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

Q: Is the wiring harness between front door lock actuator (LH) connector E-21 (terminal 3) and ETACS-ECU connector C-301 (terminal 22) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of front door lock actuator (LH) is normal.

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. Check that the input signal of front door lock actuator (LH) is normal.

STEP 8. Check front door lock actuator (RH) connector E-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door lock actuator (RH) connector E-09 in good condition?

YES : Go to Step 9.

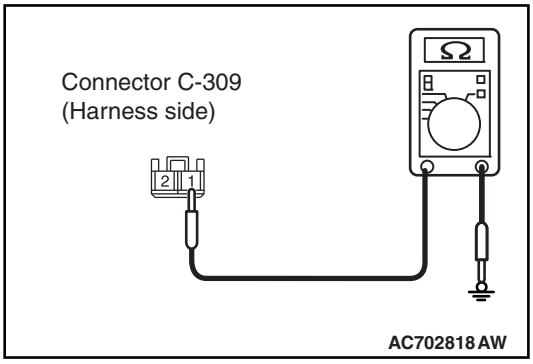
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2. Check that the input signal of front door lock actuator (RH) is normal.

STEP 9. Check the front door lock actuator (RH).
Disconnect front door lock actuator (RH) connector E-09. Then check continuity between the terminals.

Lever position	Tester connection	Specified condition
UNLOCK	2 –3	Less than 2 ohms
LOCK	2 –3	Open circuit

Q: Is the front door lock actuator (RH) in good condition?
YES : Go to Step 10.
NO : Replace the front door lock actuator (RH). Check that the input signal of front door lock actuator (RH) is normal.

STEP 10. Check the ground circuit to the front door lock actuator (RH). Measure the resistance at front door lock actuator (RH) connector E-09.
(1) Disconnect front door lock actuator (RH) connector E-09 and measure the resistance available at the wiring harness side of the connector.
(2) Measure the resistance value between terminal 3 and ground.
- The resistance should be 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?
YES : Go to Step 12.
NO : Go to Step 11.

STEP 11. Check the wiring harness between front door lock actuator (RH) connector E-09 (terminal 3) and ground.
Check the ground wires for open circuit.

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

Q: Is the wiring harness between front door lock actuator (RH) connector E-09 (terminal 3) 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. Check that the input signal of front door lock actuator (RH) is normal.

STEP 12. Check ETACS-ECU connector C-301 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-301 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. Check that the input signal of front door lock actuator (RH) is normal.

STEP 13. Check the wiring harness between front door lock actuator (RH) connector E-09 (terminal 1) and ETACS-ECU connector C-301 (terminal 10).

Check the input lines for open circuit and short circuit.

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

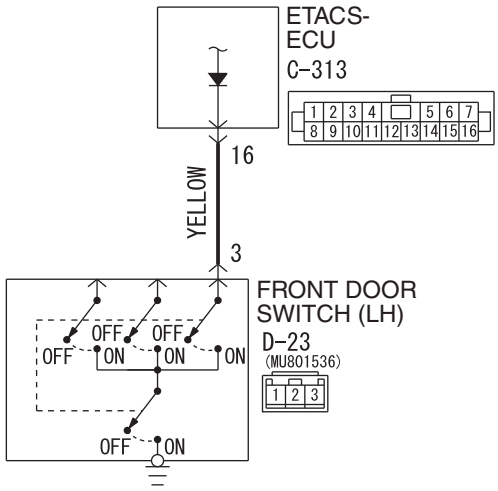
Q: Is the wiring harness between front door lock actuator (RH) connector E-09 (terminal 1) and ETACS-ECU connector C-301 (terminal 10) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of front door lock actuator (RH) is normal.

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. Check that the input signal of front door lock actuator (RH) is normal.

Inspection Procedure 5: ETACS-ECU does not receive any signal from the front door switch (LH).

Front Door Switch (LH) Input Circuit



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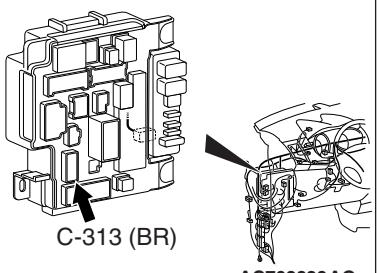
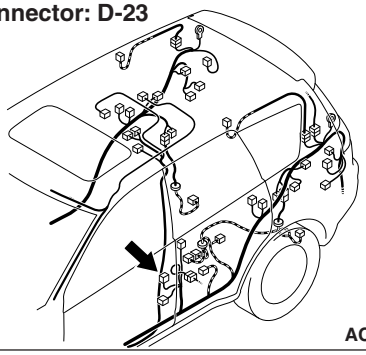
D7G54M059A00

Connector: C-313



AC702828AO

Connector: D-23



AC702817AL

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the front door switch (LH) input signal, the front door switch (LH) signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The front door switch (LH) may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

TSB Revision

DIAGNOSIS

Required Special Tools:
- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check front door switch (LH) connector D-23 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door switch (LH) connector D-23 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. Check that the input signal of front door switch (LH) is normal.

STEP 2. Check the front door switch (LH).

Remove the front door switch (LH). Then check the continuity between the switch terminals and the switch body.

Switch position	Tester connection	Specified condition
Released	3 –switch body	Less than 2 ohms
Pressed	3 –switch body	Open circuit

Q: Is the driver's door switch in good condition?

YES : Go to Step 3.

NO : Replace the front door switch (LH). Check that the input signal of front door switch (LH) is normal.

STEP 3. Measure at the lower metal part of the front door switch (LH) in order to check the ground circuit to the front door switch (LH).

NOTE: Check that the front door switch (LH) is grounded to the vehicle body by means of its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and the ground.
- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Check the fit of the switch, and repair if necessary. Check that the input signal of front door switch (LH) is normal.

STEP 4. Check ETACS-ECU connector C-313 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-313 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. Check that the input signal of front door switch (LH) is normal.

STEP 5. Check the wiring harness between driver's door switch connector D-23 (terminal 3) and ETACS-ECU connector C-313 (terminal 16).

Check the input lines for open circuit and short circuit.

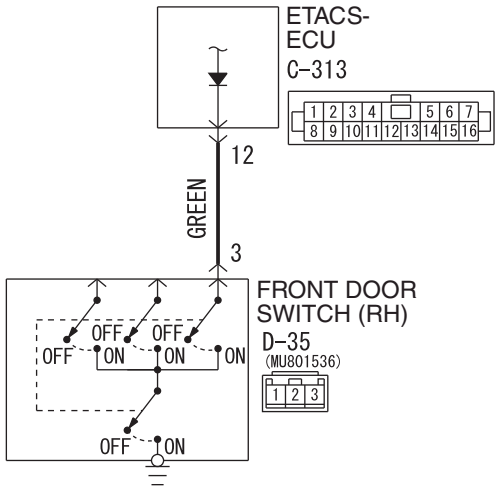
Q: Is the wiring harness between driver's door switch connector D-23 (terminal 3) and ETACS-ECU connector C-313 (terminal 16) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of front door switch (LH) is normal.

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. Check that the input signal of front door switch (LH) is normal.

Inspection Procedure 6: ETACS-ECU does not receive any signal from the front door switch (RH).

Front Door Switch (RH) Input Circuit



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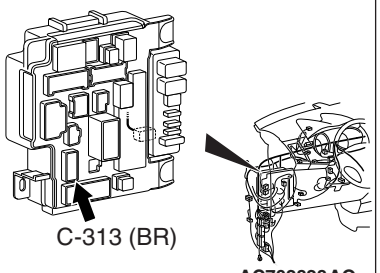
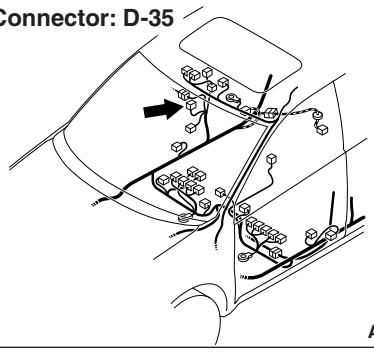
D7G54M060A00

Connector: C-313



AC702828AO

Connector: D-35



AC702816AF

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the front door switch (RH) input signal, the front door switch (RH) signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The front door switch (RH) may be defective
- The ETACS-ECU 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

TSB Revision

STEP 1. Check front door switch (RH) connector D-35 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door switch (RH) connector D-35 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. Check that the input signal of front door switch (RH) is normal.

STEP 2. Check the front door switch (RH).

Remove the front door switch (RH). Then check the continuity between the switch terminals and the switch body.

Switch position	Tester connection	Specified condition
Released	3 –switch body	Less than 2 ohms
Pressed	3 –switch body	Open circuit

Q: Is the front door switch (RH) in good condition?

YES : Go to Step 3.

NO : Replace the front door switch (RH). Check that the input signal of front door switch (RH) is normal.

STEP 3. Measure at the lower metal part of the front door switch (RH) in order to check the ground circuit to the front door switch (RH).

NOTE: Check that the front door switch (RH) is grounded to the vehicle body by means of its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and the ground.

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Check the fit of the switch, and repair if necessary. Check that the input signal of front door switch (RH) is normal.

STEP 4. Check ETACS-ECU connector C-313 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-313 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. Check that the input signal of front door switch (RH) is normal.

STEP 5. Check the wiring harness between front door switch (RH) connector D-35 (terminal 3) and ETACS-ECU connector C-313 (terminal 12).

Check the input lines for open circuit and short circuit.

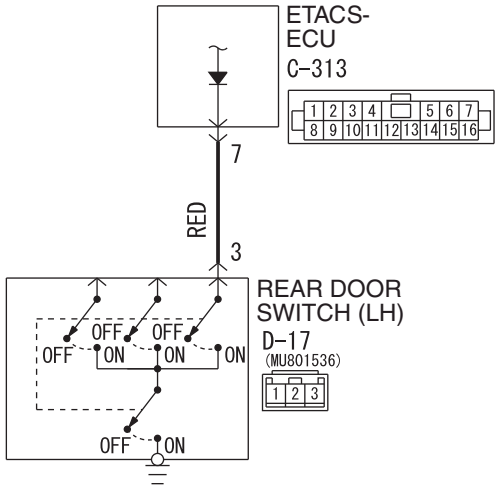
Q: Is the wiring harness between driver's door switch connector D-35 (terminal 3) and ETACS-ECU connector C-313 (terminal 12) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of front door switch (RH) is normal.

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. Check that the input signal of front door switch (RH) is normal.

Inspection Procedure 7: ETACS-ECU does not receive any signal from the rear door switch (LH).

Rear Door Switch (LH) Input Circuit



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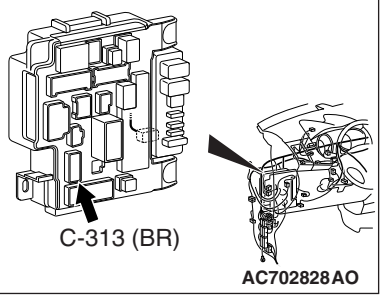
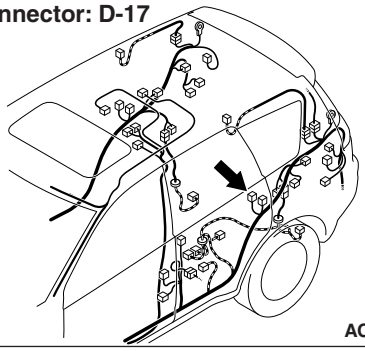
D7G54M061A00

Connector: C-313



AC702828AO

Connector: D-17



AC702817AM

TSB Revision

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the rear door switch (LH) input signal, the rear door switch (LH) signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The rear door switch (LH) may be defective
- The ETACS-ECU 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 rear door switch (LH) connector D-17 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door switch (LH) connector D-17 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. Check that the input signal of rear door switch (LH) is normal.

STEP 2. Check the rear door switch (LH).

Remove the rear door switch (LH). Then check the continuity between the switch terminals and the switch body.

Switch position	Tester connection	Specified condition
Released	3 –switch body	Less than 2 ohms
Pressed	3 –switch body	Open circuit

Q: Is the rear door switch in good condition?

YES : Go to Step 3.

NO : Replace the rear door switch (LH). Check that the input signal of rear door switch (LH) is normal.

STEP 3. Measure at the lower metal part of the rear door switch (LH) in order to check the ground circuit to the rear door switch (LH).

NOTE: Check that the rear door switch (LH) is grounded to the vehicle body by means of its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and the ground.

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Check the fit of the switch, and repair if necessary. Check that the input signal of rear door switch (LH) is normal.

STEP 4. Check ETACS-ECU connector C-313 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-313 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. Check that the input signal of rear door switch (LH) is normal.

STEP 5. Check the wiring harness between driver's door switch connector D-17 (terminal 3) and ETACS-ECU connector C-313 (terminal 7).

Check the input lines for open circuit and short circuit.

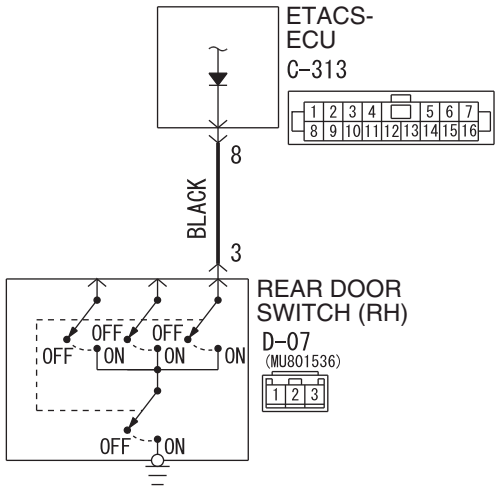
Q: Is the wiring harness between rear door switch connector D-17 (terminal 3) and ETACS-ECU connector C-313 (terminal 7) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of rear door switch (LH) is normal.

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. Check that the input signal of rear door switch (LH) is normal.

Inspection Procedure 8: ETACS-ECU does not receive any signal from the rear door switch (RH).

Rear Door Switch (RH) Input Circuit



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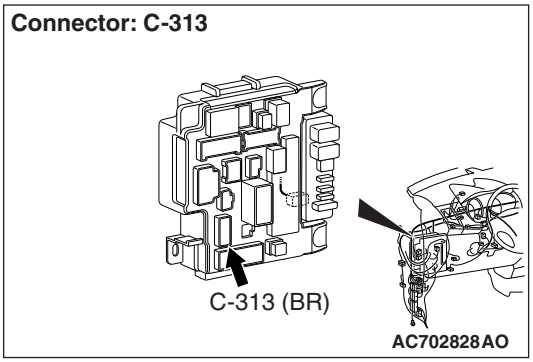
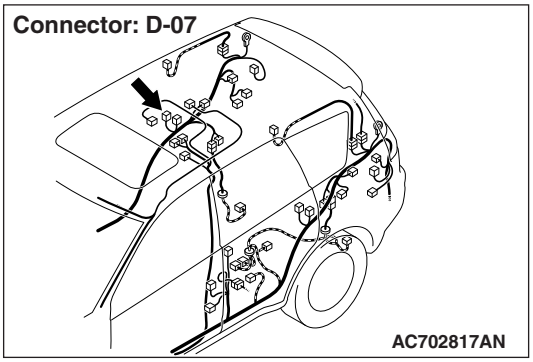
TSB Revision





TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the rear door switch (RH) input signal, the rear door switch (RH) signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The rear door switch (RH) may be defective
- The ETACS-ECU 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 rear door switch (RH) connector D-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door switch (RH) connector D-07 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. Check that the input signal of rear door switch (RH) is normal.

STEP 2. Check the rear door switch (RH).

Remove the rear door switch (RH). Then check the continuity between the switch terminals and the switch body.

Switch position	Tester connection	Specified condition
Released	3 –switch body	Less than 2 ohms
Pressed	3 –switch body	Open circuit

Q: Is the rear door switch in good condition?

YES : Go to Step 3.

NO : Replace the rear door switch (RH). Check that the input signal of rear door switch (RH) is normal.

TSB Revision

STEP 3. Measure at the lower metal part of the rear door switch (RH) in order to check the ground circuit to the rear door switch (RH).

NOTE: Check that the rear door switch (RH) is grounded to the vehicle body by means of its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and the ground.

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Check the fit of the switch, and repair if necessary. Check that the input signal of rear door switch (RH) is normal.

STEP 4. Check ETACS-ECU connector C-313 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-313 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. Check that the input signal of rear door switch (RH) is normal.

STEP 5. Check the wiring harness between driver's door switch connector D-07 (terminal 3) and ETACS-ECU connector C-313 (terminal 8).

Check the input lines for open circuit and short circuit.

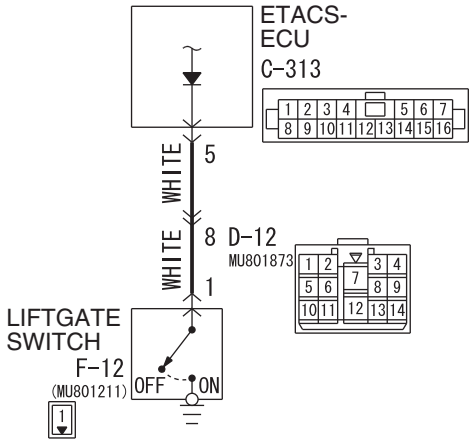
Q: Is the wiring harness between rear door switch connector D-07 (terminal 3) and ETACS-ECU connector C-313 (terminal 8) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of rear door switch (RH) is normal.

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. Check that the input signal of rear door switch (RH) is normal.

Inspection Procedure 9: ETACS-ECU does not receive any signal from the liftgate switch.

Liftgate Switch Input Circuit



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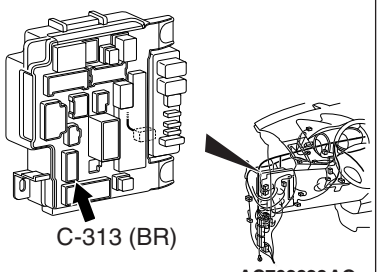
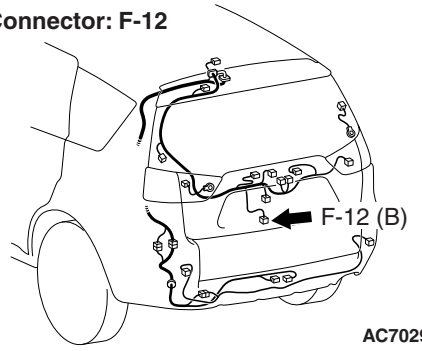
Connector: C-313



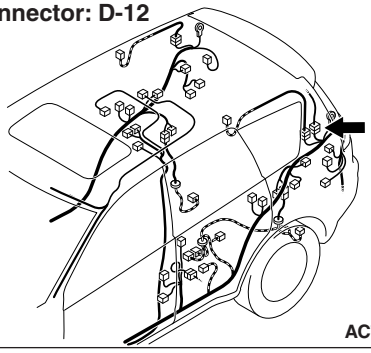
AC702828AO

Connector: F-12



AC702963AD

Connector: D-12



AC702817AF

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the liftgate switch input signal, the liftgate switch signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The liftgate switch may be defective
- The ETACS-ECU 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 liftgate switch connector F-12 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is liftgate switch connector F-12 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. Check that the input signal of liftgate switch is normal.

STEP 2. Check the liftgate switch.

Remove the liftgate switch. Then check the continuity between the switch terminals and the switch body.

Switch position	Tester connection	Specified condition
Released	1 –switch body	Less than 2 ohms
Pressed	1 –switch body	Open circuit

Q: Is the liftgate switch in good condition?

YES : Go to Step 3.

NO : Replace the liftgate switch. Check that the input signal of liftgate switch is normal.

STEP 3. Measure at the lower metal part of the liftgate switch in order to check the ground circuit to the liftgate switch.

NOTE: Check that the liftgate switch is grounded to the vehicle body by means of its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and ground.

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Check the fit of the switch, and repair if necessary. Check that the input signal of liftgate switch is normal.

STEP 4. Check ETACS-ECU connector C-313 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-313 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. Check that the input signal of liftgate switch is normal.

STEP 5. Check the wiring harness between liftgate switch connector F-12 (terminal 1) and ETACS-ECU connector C-313 (terminal 5).

Check the input lines for open circuit and short circuit.

NOTE: Also check intermediate connector D-12 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-12 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

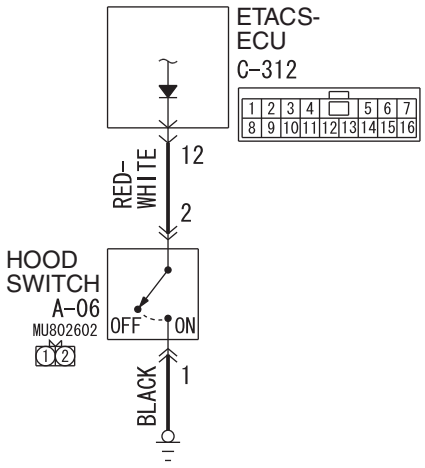
Q: Is the wiring harness between liftgate switch connector F-12 (terminal 1) and ETACS-ECU connector C-313 (terminal 5) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of liftgate switch is normal.

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. Check that the input signal of liftgate switch is normal.

Inspection Procedure 10: ETACS-ECU does not receive any signal from the hood switch.

Hood Switch Input Circuit



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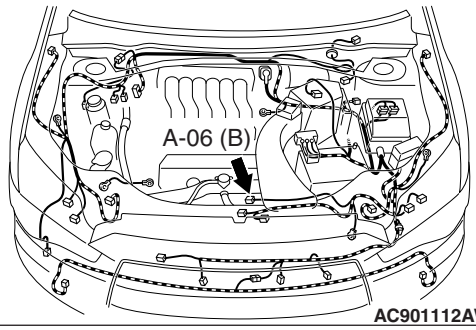
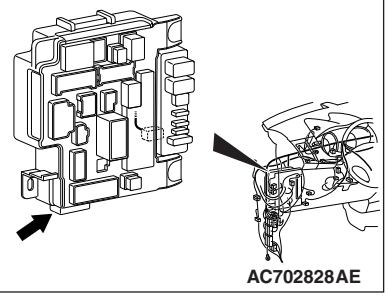
Connector: A-06



AC901112AW

Connector: C-312



AC702828AE

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the hood switch input signal, the hood switch signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The hood switch may be defective
- The ETACS-ECU 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 hood switch connector A-06 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is hood switch connector A-06 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. Check that the input signal of hood switch is normal.

STEP 2. Check the hood switch.

Remove the hood switch. Then check continuity between the switch terminals.

Switch position	Tester connection	Specified condition
Released	1 –2	Less than 2 ohms
Pressed	1 –2	Open circuit

Q: Is the hood switch in good condition?

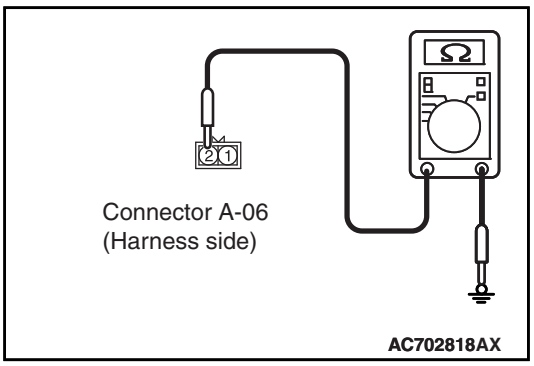
YES : Go to Step 3.

NO : Replace the hood switch. Check that the input signal of hood switch is normal.

STEP 3. Check the ground circuit to the hood switch. Test at hood switch connector A-06.

(1) Disconnect hood switch connector A-06 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 2 and ground.
- The resistance should equal 2 ohms or less.



Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 5.

NO : Go to Step 4.

STEP 4. Check the wiring harness between hood switch connector A-06 (terminal 1) and ground.
Check the ground wires for open circuit.

Q: Is the wiring harness between hood switch connector A-06 (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. Check that the input signal of hood switch is normal.

STEP 5. Check ETACS-ECU connector C-312 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-312 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. Check that the input signal of hood switch is normal.

STEP 6. Check the wiring harness between driver's door switch connector A-06 (terminal 2) and ETACS-ECU connector C-312 (terminal 12).
Check the input lines for open circuit and short circuit.

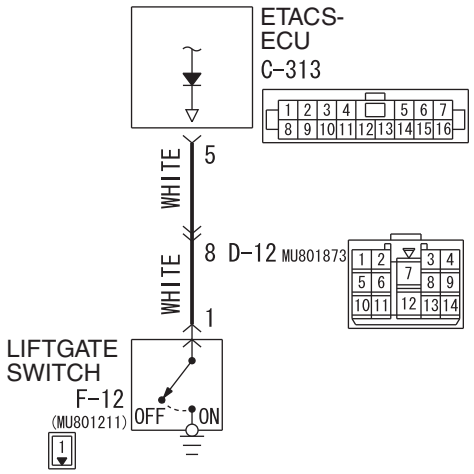
Q: Is the wiring harness between driver's door switch connector A-06 (terminal 2) and ETACS-ECU connector C-312 (terminal 12) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of hood switch is normal.

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. Check that the input signal of hood switch is normal.

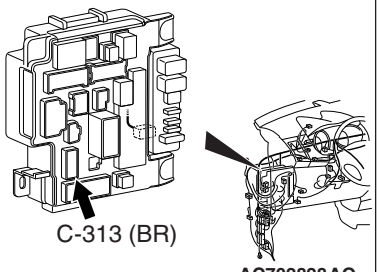
Inspection Procedure 11: ETACS-ECU does not receive any signal from the liftgate switch.

Liftgate Switch Input Circuit



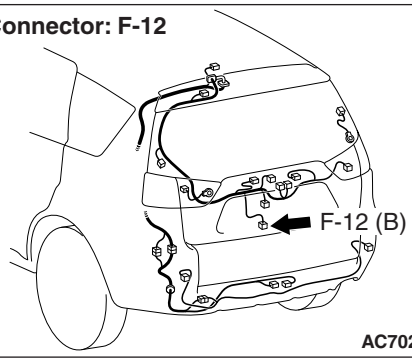
AC703438AB
D7G54M063A00

Connector: C-313



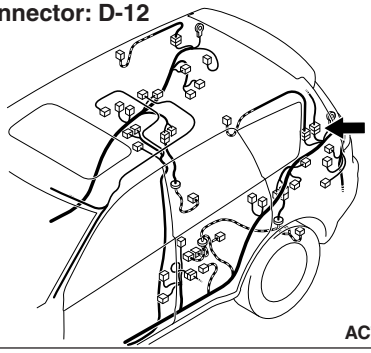
AC702828AO

Connector: F-12



AC702963AD

Connector: D-12



AC702817AF

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the liftgate switch input signal, the liftgate switch signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The liftgate switch may be defective
- The ETACS-ECU 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

TSB Revision

STEP 1. Check liftgate switch connector F-12 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is liftgate switch connector F-12 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. Check that the input signal of liftgate switch is normal.

STEP 2. Check the liftgate switch.

Remove the liftgate switch. Then check the continuity between the switch terminals and the switch body.

Switch position	Tester connection	Specified condition
Released	1 –switch body	Less than 2 ohms
Pressed	1 –switch body	Open circuit

Q: Is the liftgate switch in good condition?

YES : Go to Step 3.

NO : Replace the liftgate switch. Check that the input signal of liftgate switch is normal.

STEP 3. Measure at the lower metal part of the liftgate switch in order to check the ground circuit to the liftgate switch.

NOTE: Check that the liftgate switch is grounded to the vehicle body by means of its mounting screw.

Remove the cap, and measure the resistance value between the lower metal part and ground.

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 4.

NO : Check the fit of the switch, and repair if necessary. Check that the input signal of liftgate switch is normal.

STEP 4. Check ETACS-ECU connector C-313 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-313 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. Check that the input signal of liftgate switch is normal.

STEP 5. Check the wiring harness between liftgate switch connector F-12 (terminal 1) and ETACS-ECU connector C-313 (terminal 5).

Check the input lines for open circuit and short circuit.

NOTE: Also check intermediate connector D-12 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector D-12 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

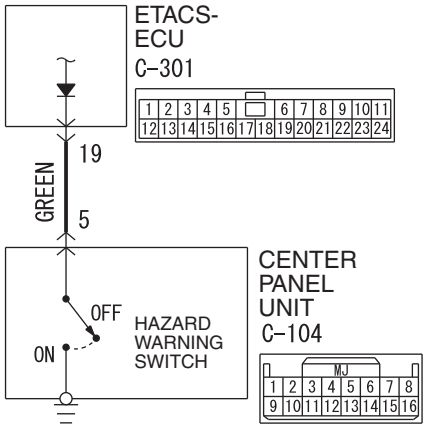
Q: Is the wiring harness between liftgate switch connector F-12 (terminal 1) and ETACS-ECU connector C-313 (terminal 5) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of liftgate switch is normal.

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. Check that the input signal of liftgate switch is normal.

Inspection Procedure 11: ETACS-ECU does not receive any signal from the hazard warning light switch.

Hazard Warning Switch Input Circuit



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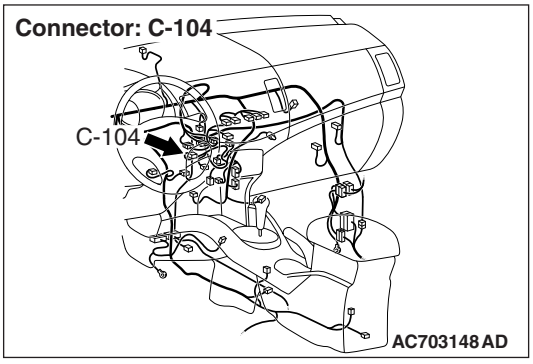
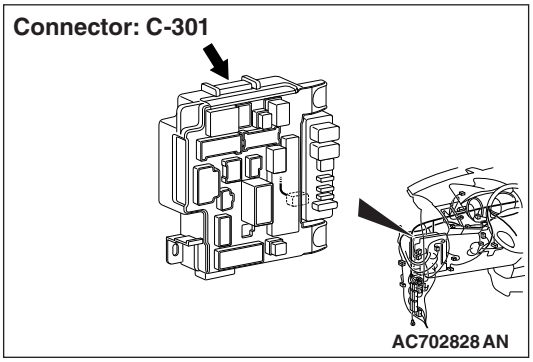




TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the hazard warning light switch input signal, the hazard warning light switch signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The center panel unit may be defective
- The ETACS-ECU 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

TSB Revision

STEP 1. Check center panel unit connector C-104 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is center panel unit connector C-104 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. Check that the input signal of hazard warning light switch is normal.

STEP 2. Check the hazard warning light switch.

Remove the center panel unit. Then check continuity between the switch terminal and switch body.

Switch position	Tester connection	Specified condition
Released	5 –switch body	Open circuit
Pressed	5 –switch body	Less than 2 ohms

Q: Is the hazard warning light switch in good condition?

YES : Go to Step 3.

NO : Replace the center panel unit. Check that the input signal of hazard warning light switch is normal.

STEP 3. Check ETACS-ECU connector C-301 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-301 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. Check that the input signal of hazard warning light switch is normal.

STEP 4. Check the wiring harness between center panel unit connector C-104 (terminal 5) and ETACS-ECU connector C-301 (terminal 19).

Check the input lines for open circuit and short circuit.

Q: Is the wiring harness between center panel unit connector C-104 (terminal 5) and ETACS-ECU connector C-301 (terminal 19) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of hazard warning light switch is normal.

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. Check that the input signal of hazard warning light switch is normal.

Inspection Procedure 12: ETACS-ECU does not receive any signal from the column switch signal.

TECHNICAL DESCRIPTION (COMMENT)

The ETACS-ECU receives the column switch signal via the LIN communication. If there is an abnormality to column switch or LIN bus line, the lights and wiper/washer do not work normally.

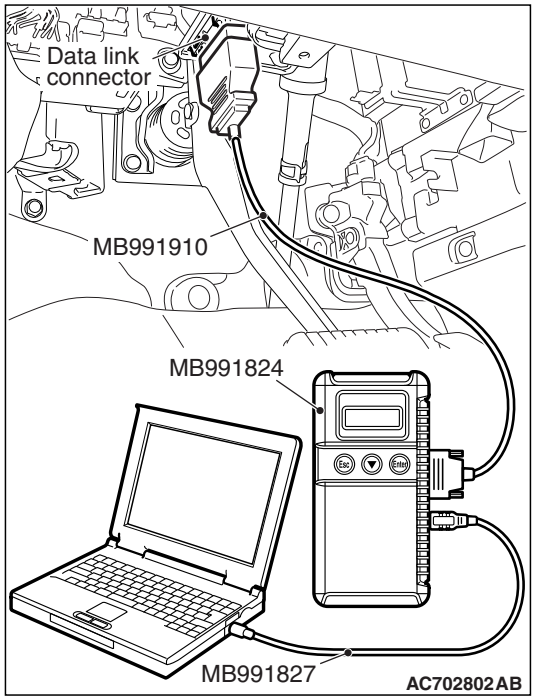
TROUBLESHOOTING HINTS

- The column switch may be defective
- The LIN bus line 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, read the ETACS diagnostic trouble code.

Check the DTC is set to the ETACS-ECU.

⚠ 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-738."
(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 : Troubleshoot the ETACS-ECU (Refer to P.54A-742).
NO : Go to Step 2.

STEP 2. Column switch check

- Check the continuity for windshield wiper and windshield washer switch. Refer to P.54A-326.
- Check the continuity for column switch (switch body part). Refer to P.54A-326.

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 column switch.

ON-VEHICLE SERVICE

CUSTOMIZATION FUNCTION

M1545002500836

Using the ETACS system of scan tool MB991958, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
ACC power auto cut	Time to ACC power cut-off when the ignition switch is in the ACC position	Disable	No function
		30 min	30 minutes (initial condition)
		60 min	60 minutes
Turn power source	Adjustment of turn-signal light operation condition	ACC or IG1	Operable with ACC or ON position
		IG1	Operable with ON position (initial condition)
Comfort flasher	With/without comfort flasher function	Disable	Without function
		Enable	With function (initial condition)
Comfort flasher switch time	Switch operation time to activate the comfort flasher function	Normal	0.4 second (initial condition)
		Long	0.8 second
Hazard answer back	Adjustment of the number of keyless hazard warning light answer back flashes	Lock:1, Unlock:2	LOCK: Flashes once, UNLOCK: Flashes twice (initial condition)
		Lock:1, Unlock:0	LOCK: Flashes once, UNLOCK: No flash
		Lock:0, Unlock:2	LOCK: No flash, UNLOCK: Flash twice
		Lock:2, Unlock:1	LOCK: Flash twice, UNLOCK: Flash once
		Lock:2, Unlock:0	LOCK: Flash twice, UNLOCK: No flash
		Lock:0, Unlock:1	LOCK: No flash, UNLOCK: Flash once
		Lock:0, Unlock:0	Without function

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Front wiper operation	Adjustment of the intermittent windshield wiper operation <vehicles without auto light>	Normal INT	Intermittent wiper interval is fixed to 4 seconds.
		Variable INT	Intermittent wiper interval is calculated only by the wiper volume control.
		Speed Sensitive	Intermittent wiper interval is calculated according to the intermittent wiper volume control and vehicle speed (initial condition).
	Adjustment of the intermittent windshield wiper operation <vehicles with auto light>	Normal INT	Intermittent wiper interval is fixed to 4 seconds.
		Variable INT	Intermittent wiper interval is calculated only by the wiper volume control.
		Speed Sensitive	Intermittent wiper interval is calculated according to the intermittent wiper volume control and vehicle speed.
		Rain Sensitive	Intermittent wiper interval is calculated according to the intermittent wiper volume control and lighting control sensor (initial condition).
Front wiper washer	Disabling or enabling washer-linked wiper function	Only Washer	No function
		Washer & Wiper	With function: Without delayed finishing wipe function (Initial condition)
		With after wipe	With function: With delayed finishing wipe function
Intelligent washer	With/without intelligent washer function	Disable	No function
		Enable	With function (initial condition)
Intermittent time of rear wiper	Adjustment of rear wiper interval	0 sec	No wiper interval
		4 sec	4 seconds
		8 sec	8 seconds (initial condition)
		16 sec	16 seconds
Rear wiper low speed mode	Disabling or enabling rear wiper continuous operation	Disabled	Without function (initial condition)
		Enabled	With function
Rear wiper (linked activated when in reverse	Adjustment of automatic rear window wiper operation with reverse gear engaged	Enable(R wip.ON)	Operates only when the rear wiper switch is ON.
		Enable(R/F wip.)	Operates only when the front or rear wiper switch is ON (initial condition).

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Sensitivity for auto light	Lighting control sensor sensitivity (illumination intensity) <vehicles with auto light>	Level 1 bright	High-high ambient brightness
		Level 2 bright	High ambient brightness
		Level 3	Standard ambient brightness (initial condition)
		Level 4 dark	Low ambient brightness
		Level 5 dark	Low-low ambient brightness
Dome light delay timer with door	Adjustment of interior light delay shutdown time	0 sec	0 second (no delay shutdown time)
		7.5 sec	7.5 seconds
		15 sec	15 seconds
		30 sec	30 seconds (initial condition)
		60 sec	60 seconds
		120 sec	120 seconds
		180 sec	180 seconds
Headlight auto cut customize	Adjustment of headlight automatic shutdown function	Disable	Without function
		Enable (C-spec.).	With function (initial condition)
Welcome light	Disabling or enabling welcome light function	Disabled	No function
		Small light	Tail light illuminates. (initial condition)
		Head light	Headlight illuminates.
Coming home light	Disabling or enabling coming home light function	Disabled	No function
		15 sec	Headlight illuminates for 15 seconds.
		30sec	Headlight illuminates for 30 seconds. (initial condition)
		60 sec	Headlight illuminates for 60 seconds.
		180 sec	Headlight illuminates for 180 seconds.
Interior light auto cut timer	Adjustment of interior light automatic shutdown function operation time	Disabled	Without function
		3 min	3 minutes
		30 min	30 minutes (initial condition)
		60 min	60 minutes
Door unlock mode	Adjustment of power door locks with selective unlocking	All doors unlock	Without function: The first operation of keyless entry system or unlock operation by KOS unlocks all doors.
		Dr door unlock	With function: The first operation of keyless entry system or unlock operation by KOS unlocks the driver's door only, and the second unlock operation within 2 seconds after that unlocks all doors. (initial condition)

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Auto door unlock	Adjustment of the auto door unlock function	Disabled	Without function (initial condition)
		Always (P pos)	With function: Operates when the shift lever or the selector lever is moved to the P position.
		P/W unlock (P)	With function: Operates when the shift lever or the selector lever is moved to the P position with the power window lock switch in the OFF position.
		Always(Lock pos)	With function: Operates when the ignition switch is moved to the LOCK (OFF) position.
		P/W unlock(Lock)	With function: Operates when the ignition switch is turned to the LOCK (OFF) position with the power window lock switch in the OFF position.
Duration of horn chirp	Horn sounding time during horn answer back	Short	0.01 second (initial condition)
		Long	0.02 second
Sensitivity for theft sensor	Sensitivity level setting of theft-alarm sensor <Vehicles with theft-alarm sensor>	Level 1	100% sensitivity of theft-alarm sensor (initial condition)
		Level 2	90% sensitivity of theft-alarm sensor
		Level 3	80% sensitivity of theft-alarm sensor
		Level 4	70% sensitivity of theft-alarm sensor
Horn chirp by keyless	Horn chirp by keyless entry system <vehicles without auto light>	Not sound horn	No horn answerback function
		Lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed once.
		W lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed twice. (initial condition)
	Horn chirp by keyless entry system <vehicles with auto light>	Not sound horn	No horn answerback function
		Lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed once.
		Lock/auto ON	During daytime, while the lighting switch is in the AUTO position, the horn sounds once when the lock is pressed once.
		W lock any time	The horn sounds when the lock button of keyless entry transmitter is pressed twice. (initial condition)

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Tone alarm answer back	Adjusts the tone alarm answer back function.	Not sound tone alarm	Without function
		At keyless	Sounds when the keyless entry system is activated.
		At F.A.S.T.*	Sounds when KOS is activated (initial condition).
		At Both	Sounds when the keyless entry system or KOS is activated.
Timer lock timer	Timer lock period adjustment	30 sec	30 seconds (initial condition)
		60 sec	60 seconds
		120 sec	120 seconds
		180 sec	180 seconds
Panic alarm switch	With/without panic alarm function	Disable	Without function
		Enable	With function (initial condition)
F.A.S.T.* key detect out fm window	With/without KOS key exterior detection function	Enable	Without function (initial condition)
		Disable	With function
F.A.S.T.* feature	KOS function adjustment	Both enable	All KOS functions are enabled (initial condition).
		DoorEntry enable	Only door entry function is enabled.
		ENG strt enable	Only engine starting function is enabled.
		Both disabled	All KOS functions are disabled.
F.A.S.T.* unlock disable time	Adjusts the door unlock inhibition period after door lock is activated.	0 sec	0 second
		3 sec	3 seconds (initial condition)
		5 sec	5 seconds

*NOTE: *: F.A.S.T. (Free-hand Advanced Security Transmitter)*

ETACS-ECU

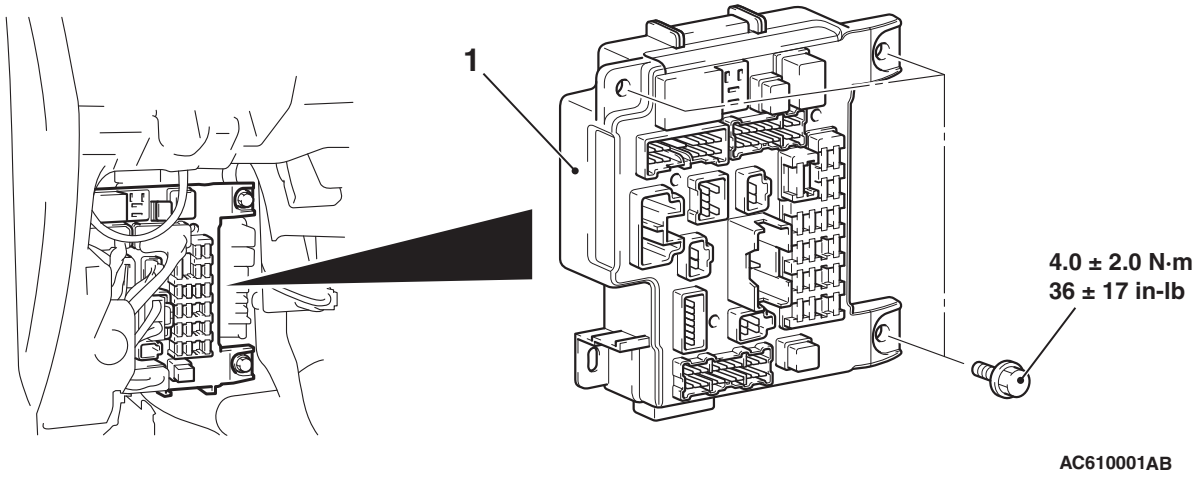
REMOVAL AND INSTALLATION

M1545004700319

⚠ CAUTION

When the ETACS-ECU is replaced, chassis number writing and coding must be performed. When diagnostic trouble code No.B1761 "Chassis No. not programmed" or No.B222C "Coding not completed" is set to the ETACS-ECU, perform chassis number writing and coding. Refer to the "M.U.T.-III Owner's Manual" and perform coding.

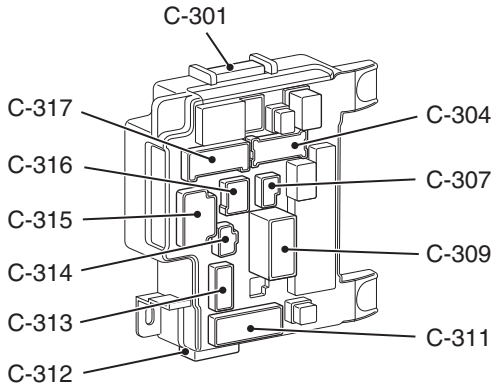
Pre-removal and Post-installation Operation
- Side lower panel assembly (Refer to GROUP 52A, Instrument Panel Assembly P.52A-2).



Removal Step
1. ETACS-ECU

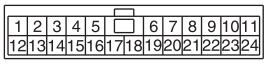
CHECK WITH TERMINAL VOLTAGE

M1545004800424



AC507027AB

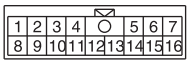
CONNECTOR: C-301



AC507030AB

Terminal No.	Check item	Check condition	Normal condition
1	–	–	–
2	Input from power window main switch or front power window sub switch (central door lock switch)	Central door lock switch: Locked	1 V or less
3–9	–	–	–
10	Input from front passenger's door lock actuator (unlock)	Front passenger's door lock: Unlocked	1 V or less
11	–	–	–
12	Output to defogger switch	Defogger switch: ON	1 V or less
13	Theft-alarm system communication signal input	Theft-alarm system activated	Pulse signal
14–18	–	–	–
19	Input from hazard warning light switch	Hazard warning light switch: ON	1 V or less
20	–	–	–
21	Input from windshield wiper backup switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	1 V or less
22	Input from driver's door lock actuator (unlock)	Driver's door lock: Unlocked	1 V or less
23, 24	–	–	–

CONNECTOR: C-304



AC507031AB

Terminal No.	Check item	Check condition	Normal condition
1	Stop light switch power supply	Stop light switch: ON	Battery positive voltage
2	Input from transmission range switch (R)	Ignition switch: ON and selector lever: R	Battery positive voltage
3	Output to position light (LH)	When position light is illuminated	Battery positive voltage
4	Theft-alarm siren power supply	Always	Battery positive voltage
5	Output to windshield wiper (HI)	When windshield wipers are operating at high speed	Battery positive voltage
6	Output to windshield wiper (LO)	When windshield wipers are operating at low speed	Battery positive voltage
7	Output position light (RH)	When position light illuminated	Battery positive voltage
8	Input from windshield wiper auto stop switch	When windshield wipers are operating	Battery positive voltage
9	Output to front and side turn-signal light (LH)	When front and side turn-signal light (LH) is illuminated	Battery positive voltage
10	Output to engine control module (IG1)	Ignition switch: ON	Battery positive voltage
11	Input from engine control module (fuel control)	Engine: Started	1 V or less
12	Output to windshield wiper (ACC)	Ignition switch: ACC	Battery positive voltage
13	Output to windshield washer	When windshield washer is operating	Battery positive voltage
14	Output to rear washer output	When rear washer is operating	Battery positive voltage
15	Output to engine control module (START)	Ignition switch: START	Battery positive voltage
16	Output to front and side turn-signal light (RH)	When front and side turn-signal light (RH) is illuminated	Battery positive voltage

CONNECTOR: C-307

AC507032AB

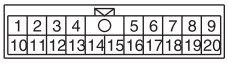
Terminal No.	Check item	Check condition	Normal condition
1	Fuel pump power supply	Ignition switch: ON	Battery positive voltage
2	Battery power supply	Always	Battery positive voltage

CONNECTOR: C-309

AC507033AB

Terminal No.	Check item	Check condition	Normal condition
1	Battery power supply	Always	Battery positive voltage
2	Battery power supply	Always	Battery positive voltage

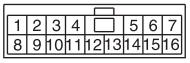
CONNECTOR: C-311



AC507035AB

Terminal No.	Check item	Check condition	Normal condition
1	Output to liftgate lock actuator	When liftgate is locked	Battery positive voltage
2	Backup light power supply	When backup light is illuminated	Battery positive voltage
3	Input from luggage compartment light	When luggage compartment light is illuminated	1 V or less
4	Output to rear wiper motor	When rear wiper is operating	Battery positive voltage
5	Output to rear wiper	When rear wiper is operating	Battery positive voltage
6	Output to rear door lock actuator (unlock)	When rear door is unlocked	Battery positive voltage
7	–	–	–
8	Input from rear wiper auto stop switch	When rear wiper is operating	Battery positive voltage
9	Output to rear door lock actuator (lock)	When rear door is locked	Battery positive voltage
10	Output to taillight (LH) and side maker light (LH) and license plate light	When taillight (LH) and side maker light (LH) and license plate light are illuminated	Battery positive voltage
11	–	–	–
12	Rear power window motor power supply	Ignition switch: ON	Battery positive voltage
13	Output to taillight (RH) and side maker light (RH) and glove box light	When taillight (RH) and side maker light (RH) and glove box light are illuminated	Battery positive voltage
14, 15	–	–	–
16	Output to accessory socket 1	Ignition switch: ACC	Battery positive voltage
17	Output to luggage compartment light	When luggage compartment light is illuminated	Battery positive voltage
18	Output to rear turn-signal light (LH)	When rear turn-signal light (LH) is illuminated	Battery positive voltage
19	Output to rear turn-signal light (RH)	When rear turn-signal light (RH) is illuminated	Battery positive voltage
20	–	–	–

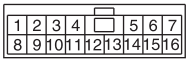
CONNECTOR: C-312



AC507034AB

Terminal No.	Check item	Check condition	Normal condition
1	Input from brake fluid level switch	Brake fluid level switch: ON	1 V or less
2	Output to radiator fan relay	When radiator fan is operating	1 V or less
3	–	–	–
4	Output to fog lights	Fog light switch: ON	1 V or less
5	–	–	–
6	Output to headlight (LO)	Headlight switch: ON	1 V or less
7	Input from ambient temperature sensor	Always	0.2 –2.72 V
8	Output to condenser fan relay	When condenser fan is operating	1 V or less
9	Output to fan control relay	When fan control is operating	1 V or less
10	Output to daytime running light	Ignition switch: ON	1 V or less
11	Output to horn	When horn sounds	1 V or less
12	Input from Hood switch	Hood switch: ON (hood open)	1 V or less
13	Output to Headlight (HI)	Dimmer switch: ON	1 V or less
14	Ground (ambient temperature sensor)	Always	1 V or less
15	Output to theft-alarm horn output	When theft-alarm function is operating (with horn sound)	1 V or less
16	Input from stoplight switch	Stoplight switch: ON	Battery positive voltage

CONNECTOR: C-313



AC703446AB

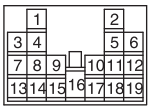
Terminal No.	Check item	Check condition	Normal condition
1	–	–	–
2	Ignition switch (IG1) power supply	Ignition switch: ON	Battery positive voltage
3	–	–	–
4	Ignition switch (IG1) power supply	Ignition switch: ON	Battery positive voltage
5	Input from liftgate switch	Liftgate switch: ON (liftgate open)	1 V or less
6	–	–	–
7	Input from rear door switch (LH)	Rear door switch (LH): ON (door open)	1 V or less
8	Input from rear door switch (RH)	Rear door switch (RH): ON (door open)	1 V or less
9–11	–	–	–
12	Input from front door switch (RH)	Front door switch (RH): ON (door open)	1 V or less
13	–	–	–
14	Input from liftgate lock release handle	Liftgate lock release handle: ON	1 V or less
15	Input from ASC off switch	ASC off switch: ON	1 V or less
16	Input from front door switch (LH)	Front door switch (LH): ON (door open)	1 V or less

CONNECTOR: C-314

AC507037AB

Terminal No.	Check item	Check condition	Normal condition
1	Output to fuel pump	Engine: Started	Battery positive voltage
2	–	–	–

CONNECTOR: C-315



AC507029AB

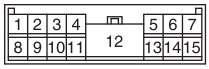
Terminal No.	Check item	Check condition	Normal condition
1	–	–	–
2	Output to front door lock actuator (LH) (unlock)	When front door (LH) is unlocked	Battery positive voltage
3	–	–	–
4	Battery power supply	Always	Battery positive voltage
5	Output to front door lock actuator (RH) (unlock)	When front door (RH) is unlocked	Battery positive voltage
6	Output to central door locking (for locking the doors)	When the door lock actuators lock the doors	Battery positive voltage
7	Ignition switch (START) power supply	Ignition switch: START	Battery positive voltage
8	Power window motor power supply	Ignition switch: ON	Battery positive voltage
9	Ignition switch (ACC) power supply	Ignition switch: ACC	Battery positive voltage
10	Power window main switch power supply	Ignition switch: ON	Battery positive voltage
11	Output to accessory socket 2	Ignition switch: ACC	Battery positive voltage
12	Output to accessory socket 3	Ignition switch: ACC	Battery positive voltage
13	Input from key reminder switch	Key reminder switch: ON (ignition key removed)	1 V or less
14	–	–	–
15	Input from power window main switch or front power window sub switch (central door lock switch)	Central door lock switch: Unlocked	1 V or less
16	Output to blower motor	Blower motor in operation	Battery positive voltage
17	Ground (signal)	Always	1 V or less
18	Output to ignition key cylinder illumination light	When ignition key cylinder illumination is ON	Battery positive voltage
19	Input from horn switch	Horn switch: ON	1 V or less

CONNECTOR: C-316

AC507038AB

Terminal No.	Check item	Check condition	Normal condition
1	–	–	–
2	Sunroof motor assembly power supply	Always	Battery positive voltage
3, 4	–	–	–
5	Input from dome light	When dome light is illuminated	1 V or less
6	Output to dome light output	When dome light is illuminated	Battery positive voltage

CONNECTOR: C-317



AC507028AB

Terminal No.	Check item	Check condition	Normal condition
1	Battery power supply	Always	Battery positive voltage
2	Battery power supply	Always	Battery positive voltage
3, 4	–	–	–
5	Ignition switch (IG1) power supply	Ignition switch: ON	Battery positive voltage
6	Input from ignition switch (IG1)	Ignition switch: ON	Battery positive voltage
7	Input from ignition switch (ACC)	Ignition switch: ACC	Battery positive voltage
8	–	–	–
9	Output to theft-alarm indicator light	When theft-alarm indicator light is illuminated	1 V or less
10	Battery power supply	Always	Battery positive voltage
11–14	–	–	–
15	Ground	Always	1 V or less

THEFT ALARM

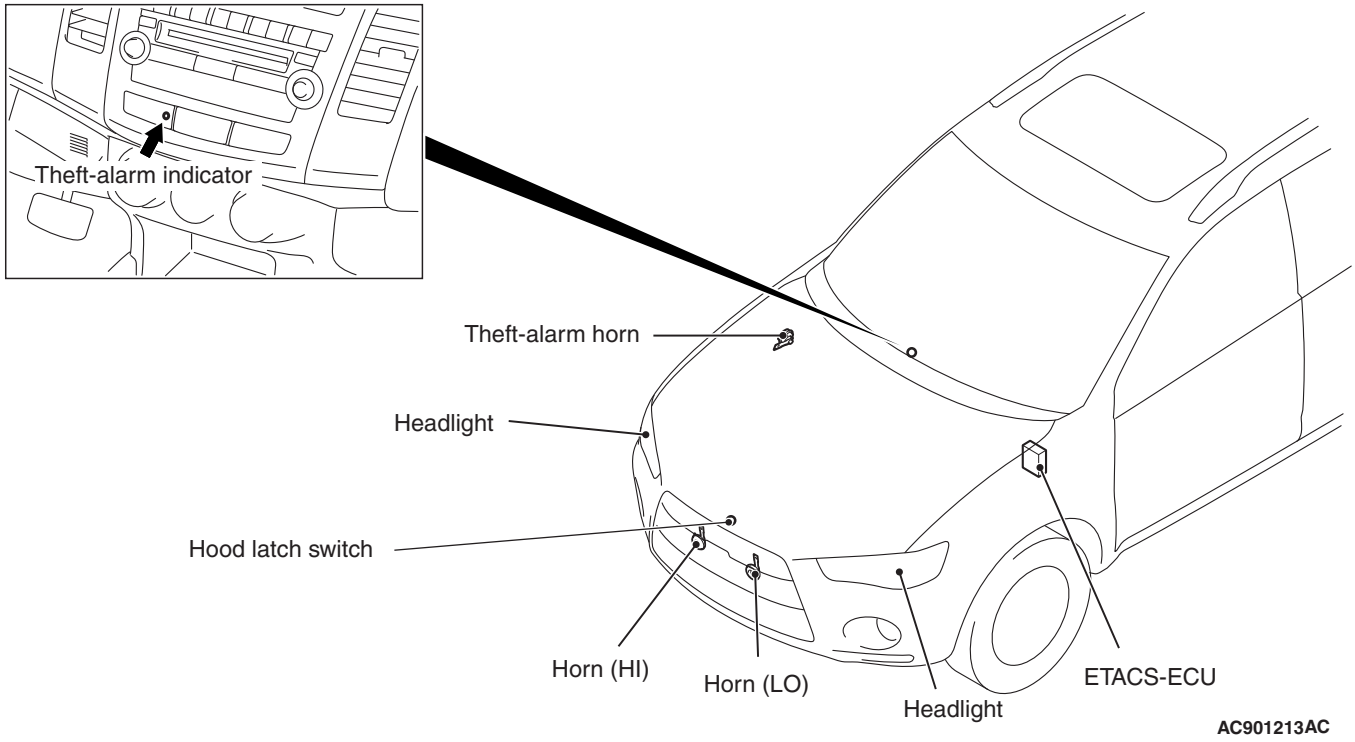
GENERAL INFORMATION

M1547000100300

<VEHICLES WITHOUT THEFT-ALARM SENSOR>

When the doors are locked using the keyless entry function or KOS (excluding locking using the key cylinder or others), the improper opening of door or hood causes the ETACS-ECU function and control to give off an alarm with the flashing of head lights and the intermittent sounding of horn. Also, the ETACS-ECU warns that the theft-alarm system is being set by flashing the theft-alarm indicator.

CONSTRUCTION DIAGRAM



<VEHICLES WITH THEFT-ALARM SENSOR>

The theft alarm with the theft alarm sensor and theft alarm siren has been adopted.

- The alarm for door/hood tampering and the alarm for vehicle invasion, jack-up, or power line cutoff to the ETACS-ECU/theft alarm siren are established.
- The theft alarm sensor is connected to the ETACS-ECU via the LIN* bus line.
- The theft alarm siren is connected to the ETACS-ECU by the LIN* bus line via the LIN cut-off control unit. (With the "Exterior protection" status, the horn does not sound.)

*NOTE: *:Local Interconnect Network*

theft alarm sensor

- The ultrasonic wave sensor is incorporated to judge whether it is invasion or not from the change of reflected ultrasonic wave.
- The inclination sensor is incorporated to determine that it is an irregular action if the vehicle is raised for 3-degree angle or more at the rate of 1-degree angle or more per minute.

NOTE: The sensor sensitivity can be adjusted by the M.U.T.-III.

TSB Revision

LIN cutoff control unit

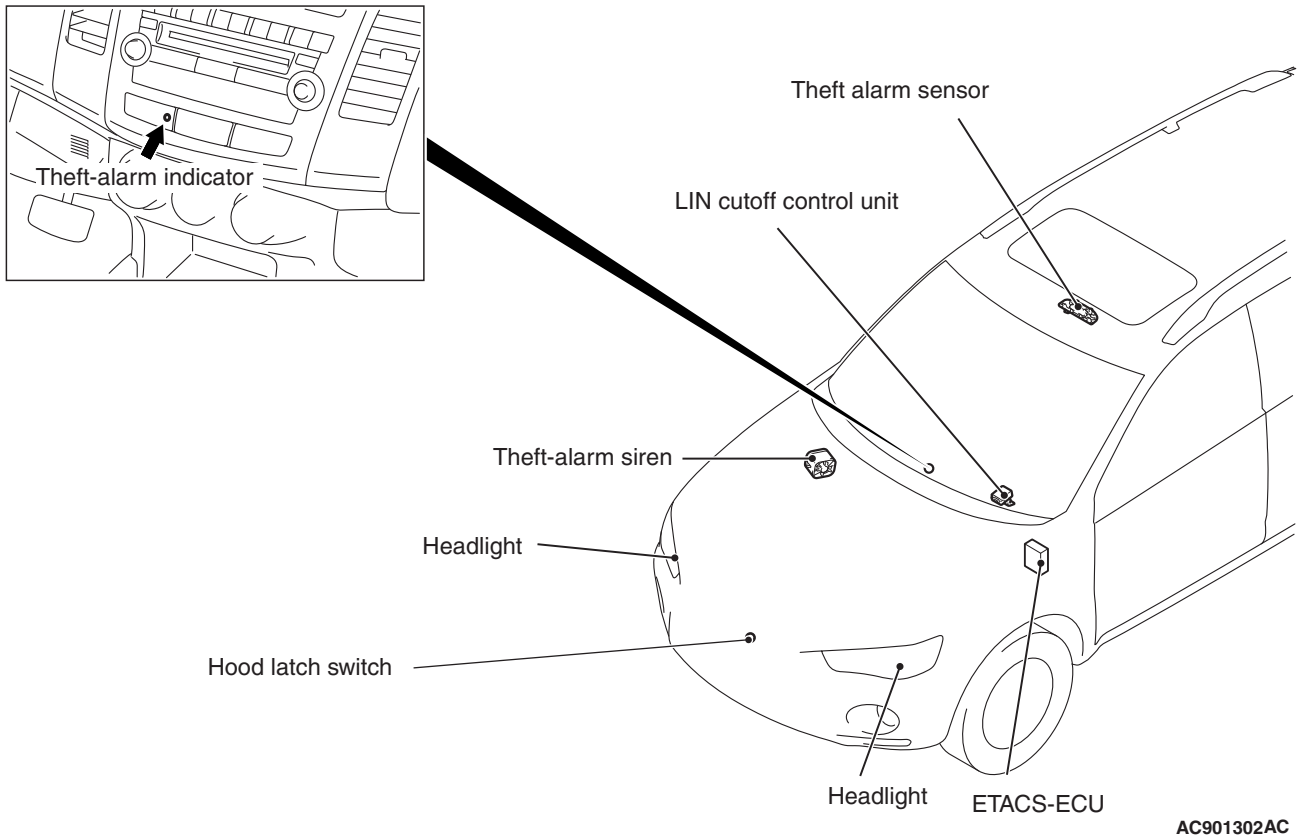
- With the "Ready to be triggered" status, the LIN communication between the theft alarm siren and ETACS-ECU is cut off to suppress the occurrence of the dark current.
- With the "Ready to be triggered" status, if the ETACS-ECU detects invasion or irregular action by the theft alarm sensor or tampering by the door switch or hood switch, the LIN communication is reactivated.

theft alarm siren

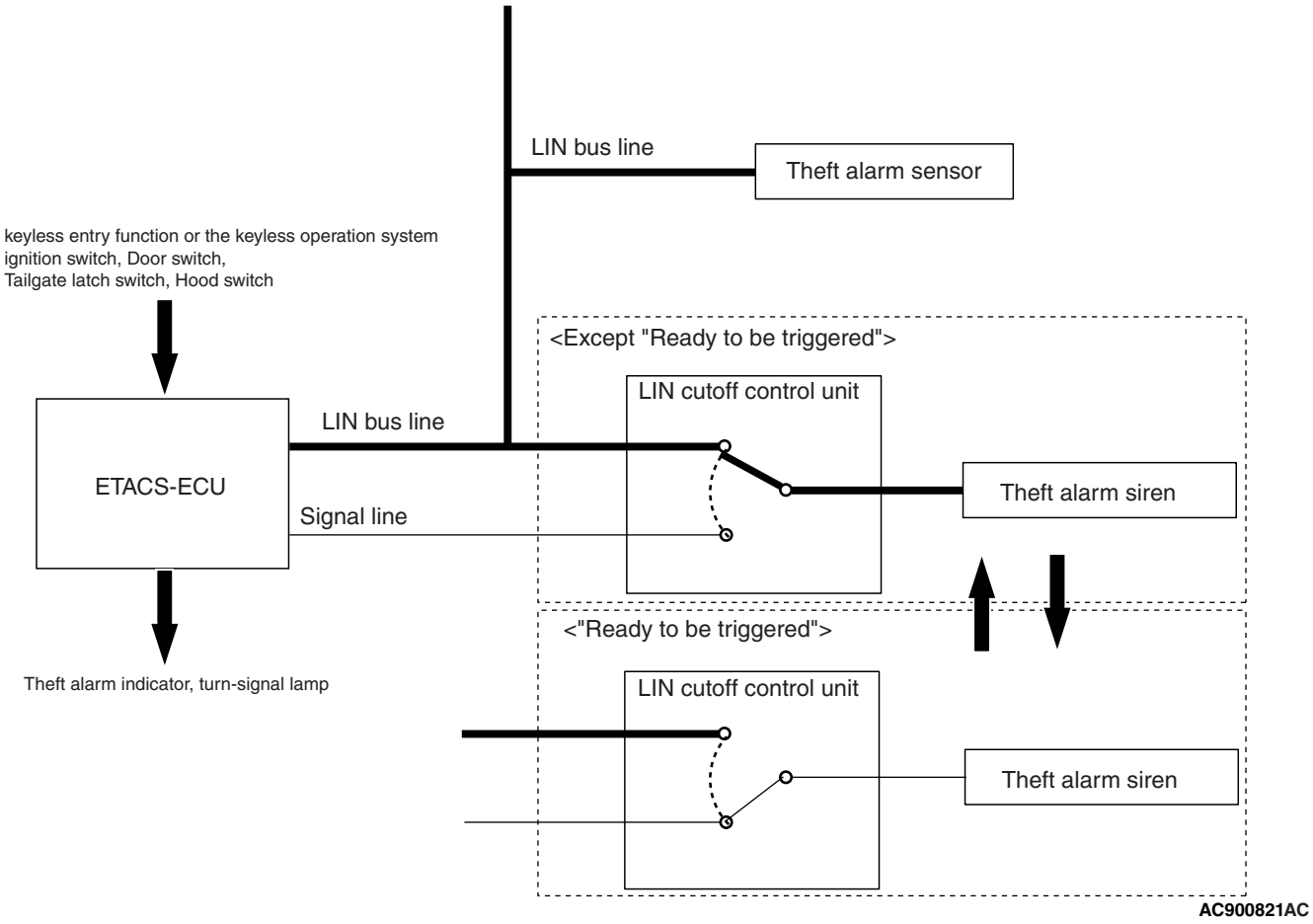
- If the ETACS-ECU detects irregular action, it sends a sounding request signal to the theft alarm siren by the LIN communication.
- When the theft alarm is in the "Ready to be triggered" status, if the signal transmission to the theft alarm siren is cut off due to an abnormality in the power supply to the ETACS-ECU, the occurrence of irregular action is detected and the alarm sounds automatically* without the sounding request signal from the ETACS-ECU.

*NOTE: *: The theft alarm siren incorporates a rechargeable battery.*

CONSTRUCTION DIAGRAM

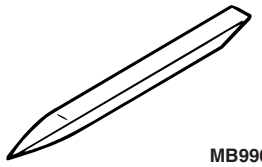
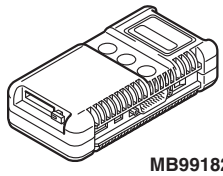
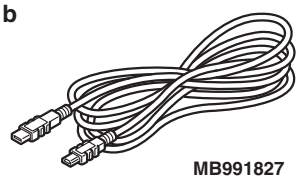
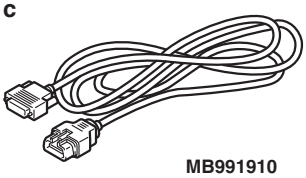
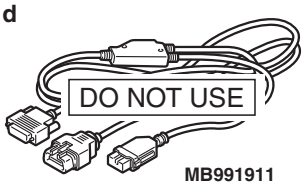
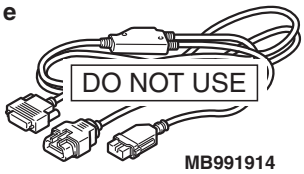
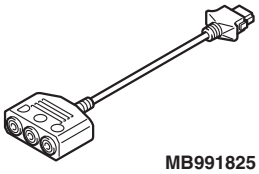
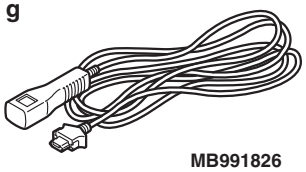


SYSTEM BLOCK DIAGRAM



SPECIAL TOOLS

M1547000600394

Tool	Tool number and name	Supersession	Application
 MB990784	MB990784 Ornament remover	General service tool	Removal of center air outlet, center panel.
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable 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. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ 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.** Reading diagnostic trouble code

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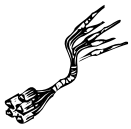
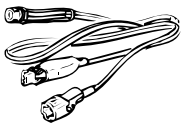
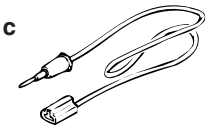
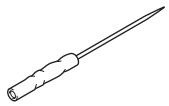
Tool	Tool number and name	Supersession	Application
a  b  c  d MB991223	MB991223 a. MB991219 b. MB991220 c. MB991221 d. MB991222 Harness set a. Test harness b. LED harness c. LED harness adaptor d. Probe	General service tool	Continuity check and voltage measurement at harness wire or connector. a. Connector pin contact pressure inspection b. Power circuit inspection c. Power circuit inspection d. Commercial tester connection
 MB992006	MB992006 Extra fine probe	–	Continuity check and voltage measurement at harness wire or connector.

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1547001200139

Refer to GROUP 00 –Contents of troubleshooting P.00-7.

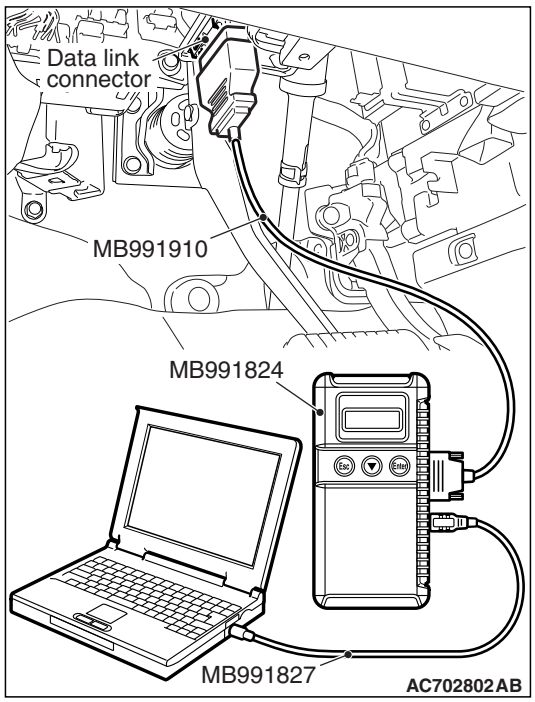
DIAGNOSTIC FUNCTION

M1547001300084

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

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)



⚠ 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: 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)

⚠ 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.

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 "ETACS" 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: 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)

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.

DIAGNOSIS CODE CHART

M1547001400047

DTC No.	Description	Reference page
B120A	Theft alarm siren error	P.54A-857
B120B	Theft alarm sensor error	P.54A-858
B120C	Theft alarm siren Flat Battery	P.54A-860
U1006	Theft alarm siren LIN timeout	Refer to GROUP 54B - Diagnosis code chart P.54B-23
U1007	Theft alarm sensor LIN timeout	Refer to GROUP 54B - Diagnosis code chart P.54B-30

DIAGNOSTIC TROUBLE CODE PROCEDURES <VEHICLES WITH THEFT ALARM SENSOR>

DTC B120A Theft alarm siren error

⚠ CAUTION
Before replacing the ECU or sensor, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

DIAGNOSTIC FUNCTION

- The theft alarm siren communicates with the ETACS-ECU by the LIN via the LIN cutoff control unit. The diagnosis code No. B120A is set if the communication data between the EATCS-ECU and theft alarm siren has an error when the relay inside the LIN cutoff control unit is ON (alarm is not activated.)

PROBABLE CAUSES

Malfunction of theft alarm siren

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, read the ETACS-ECU diagnostic trouble code.

Check if DTC is set to the ETACS-ECU.

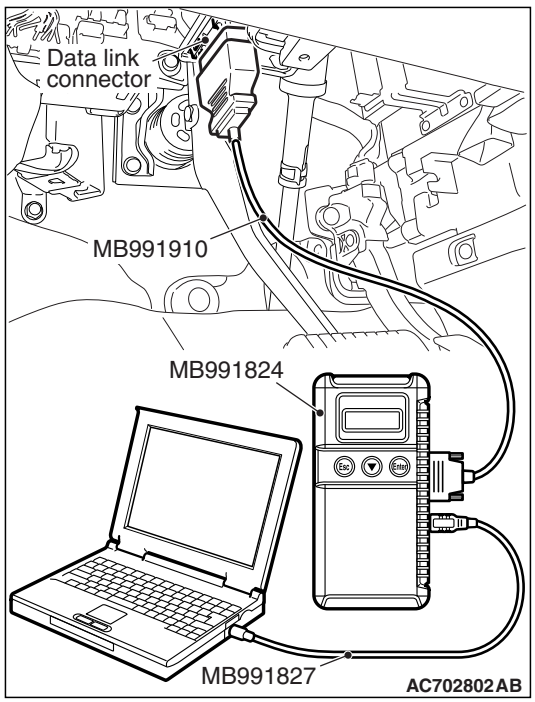
⚠ CAUTION
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.54A-854."

(1) Turn the ignition switch to the "ON" position.
(2) Check whether the ETACS-ECU DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to P.54A-742).
NO : Go to Step 2.



STEP 2. Theft alarm siren operation check

(1) With the windows of the vehicle opened, activate the theft alarm.
(2) Put the arm from the outside to the inside of the vehicle.
(3) Check that the theft alarm siren sounds.

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 3.

STEP 3. Check the customize function.

Check if the theft alarm siren operates when the sensitivity of the theft alarm sensor is set to "Level 1".

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 Theft alarm siren.

DTC B120B Theft alarm sensor error

⚠ CAUTION
Before replacing the ECU or sensor, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

DIAGNOSTIC FUNCTION

The theft alarm sensor communicates with the ETACS-ECU via the LIN bus line. If the diagnosis code No. B120B is set, the theft alarm sensor itself may be defective.

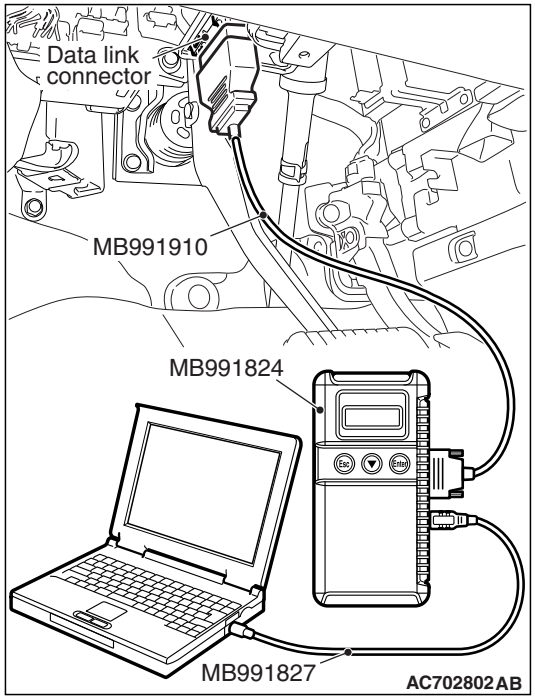
PROBABLE CAUSES

Malfunction of the theft alarm sensor

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, read the ETACS-ECU diagnostic trouble code.

Check if DTC is set to the ETACS-ECU.

⚠ 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.

Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.54A-854."

(1) Turn the ignition switch to the "ON" position.
(2) Check whether the ETACS-ECU DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to P.54A-742).
NO : Go to Step 2.

STEP 2. Theft alarm sensor operation check

Ultrasonic wave sensor check

1. With the windows of the vehicle opened, activate the theft alarm.
2. Put the arm from the outside to the inside of the vehicle.
3. Check that the theft alarm siren sounds.

Tilt angle sensor check

1. Activate the theft alarm.
2. Raise the front wheels or rear wheels.
3. Check that the theft alarm siren sounds.

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 3.

STEP 3. Check the customize function.
Check if the ultrasonic wave sensor or tilt angle sensor of the theft alarm senor operates when the sensitivity of the theft alarm senor is set to "Level 1".

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 Theft alarm sensor.

DTC B120C Theft alarm siren Flat Battery

⚠ CAUTION
Before replacing the ECU or sensor, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

DIAGNOSTIC FUNCTION
The diagnosis code No. B120C is set when the battery inside the theft alarm siren has an error.

PROBABLE CAUSES
Malfunction of theft alarm siren

DIAGNOSIS
Replace the Theft alarm siren.

TROUBLE SYMPTOM CHART
M1547001500646

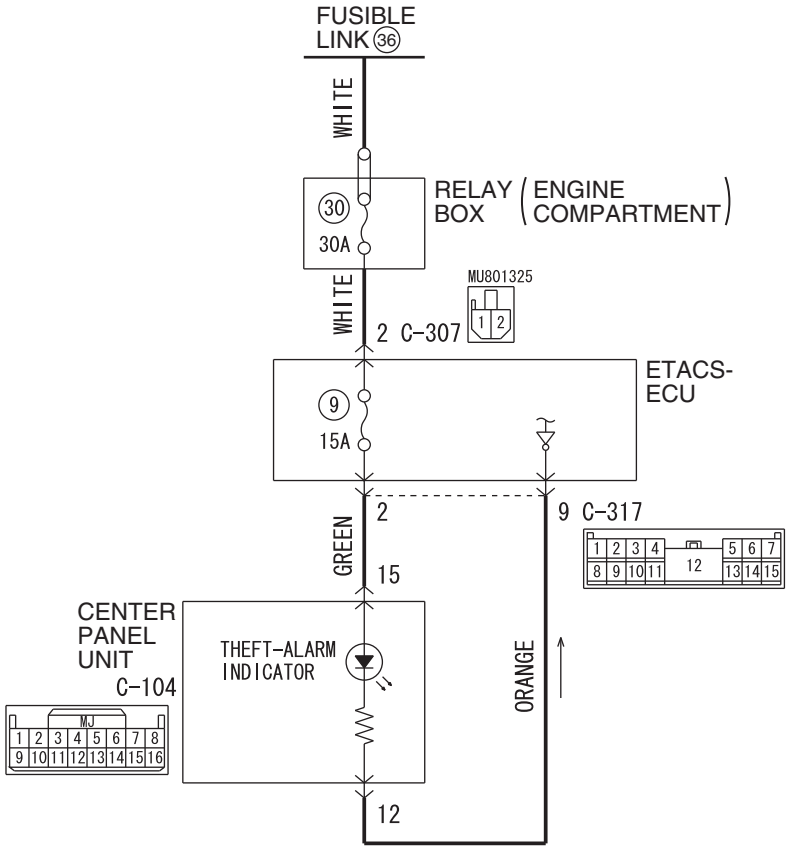
Trouble symptom	Inspection Procedure No.	Reference page
The theft-alarm is not armed (the theft-alarm indicator does not illuminate).	1	P.54A-861
The interior alarm does not work normally while the theft-alarm is triggered.	2	P.54A-867
Theft-alarm horn does not sound while the theft-alarm system is triggered.	3	P.54A-869
Horns do not sound while the theft-alarm system is triggered.	4	P.54A-874
The activated theft-alarm siren sounds even though no faulty operation is made.<Vehicles with theft alarm sensor>	5	P.54A-880

SYMPTOM PROCEDURES

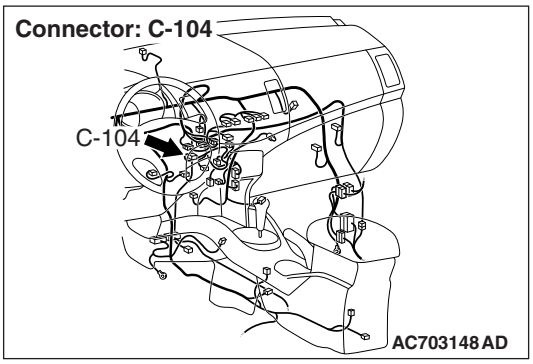
Inspection Procedure 1: The theft-alarm is not armed (the theft-alarm indicator does not illuminate).

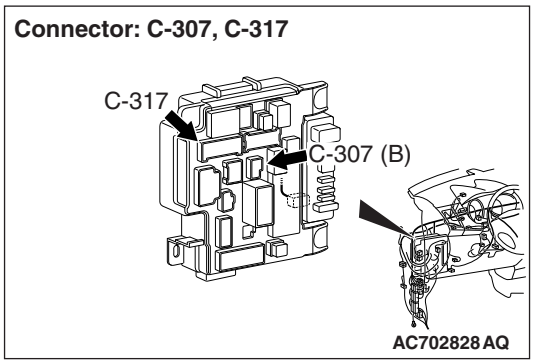
⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Theft-alarm Indicator Circuit



W8G54M135A





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TECHNICAL DESCRIPTION (COMMENT)

If this function does not work normally, the input signal circuits to the components below, the theft-alarm indicator, the ETACS-ECU or the CAN bus line may have a problem.

- Keyless entry transmitter
- Key reminder switch
- Ignition switch (ACC)
- Hood latch switch
- Door switches
- Liftgate latch switch

TROUBLESHOOTING HINTS

- CAN bus line may be defective
- Theft-alarm indicator may be defective
- Keyless entry transmitter may be defective
- The key reminder switch may be defective
- Door switch may be defective
- Liftgate latch switch may be defective
- Hood latch switch may be defective
- The KOS-ECU may be defective
- The WCM may be defective
- The ETACS-ECU 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:

- MB992006: Extra fine probe
- MB991223: Harness set
- 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.

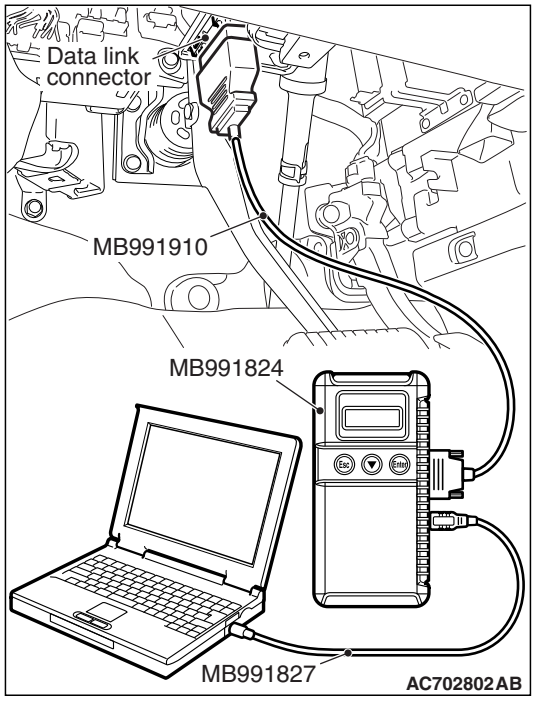
⚠ CAUTION

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-854."
(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).



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STEP 2. Using scan tool MB991958, check for any diagnostic trouble code.

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

(1) Turn the ignition switch to the "ON" position.
(2) Check whether the KOS or WCM related DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES <vehicles with KOS> : Troubleshoot the KOS (Refer to GROUP 42B, KOS P.42B-31).
YES <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-18).
NO : Go to Step 3.

STEP 3. Check the keyless operation key <KOS> or keyless entry transmitter <WCM>.

Q: is the keyless operation key <KOS> or keyless entry transmitter <WCM> normally?

YES : Go to Step 4.
NO <vehicles with KOS> : Troubleshoot the KOS (Refer to GROUP 42B, KOS P.42B-31).
NO <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-18).

STEP 4. Using scan tool MB991958, check data list.

Use the ETACS-ECU data list to check the signals related to the theft-alarm function.

- Turn the ignition switch to the "ACC" position.

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

- Turn the ignition switch to the "LOCK" (OFF) position (with ignition key <vehicles with WCM> or emergency key <vehicles with KOS> inserted).

Item No.	Item name	Normal condition
Item 264	Handle lock switch	Key in
Item 288	ACC switch	OFF

- Open each door.
- Open the liftgate.
- Open the hood.

Item No.	Item name	Normal condition
Item 256	Dr door ajar switch	Open
Item 257	As door ajar switch	Open
Item 258	RR door ajar switch	Open
Item 259	RL door ajar switch	Open
Item 260	Trunk/gate trunk ajar switch	Open
Item 266	Hood switch	ON

- Close each door.
- Close the tailgate.
- Open the hood.

Item No.	Item name	Normal condition
Item 256	Dr door ajar switch	Close
Item 257	As door ajar switch	Close
Item 258	RR door ajar switch	Close
Item 259	RL door ajar switch	Close
Item 260	Trunk/gate trunk ajar switch	Close
Item 266	Hood switch	OFF

Q: Does scan tool MB991958 display the items "Dr door ajar switch", "As door ajar switch", "RR door ajar switch", "RL door ajar switch", "Trunk/gate trunk ajar switch" , "Handle lock switch", "Hood switch" and "ACC switch" as normal condition?

YES <Normal conditions are displayed for all items.> : Go to Step 5.

NO <Normal condition is not displayed for item No. 256.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 5 "ETACS-ECU does not receive any signal from the front door switch (LH)" P.54A-813.

NO <Normal condition is not displayed for item No. 257.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 6 "ETACS-ECU does not receive any signal from the front door switch (RH)" P.54A-816.

NO <Normal condition is not displayed for item No. 258.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 7 "ETACS-ECU does not receive any signal from the rear door switch (LH)" P.54A-818.

NO <Normal condition is not displayed for item No. 259.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 8 "ETACS-ECU does not receive any signal from the rear door switch (RH)" P.54A-820.

NO <Normal condition is not displayed for item No. 260.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 9 "ETACS-ECU does not receive any signal from liftgate latch switch" P.54A-823.

NO <Normal condition is not displayed for item No. 264.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 3 "ETACS-ECU does not receive any signal from key reminder switch" P.54A-803.

NO <Normal condition is not displayed for item No. 266.> : Troubleshoot the ETACS-ECU. Refer to Inspection Procedure 10 "ETACS-ECU does not receive any signal from the Hood latch switch" P.54A-826.

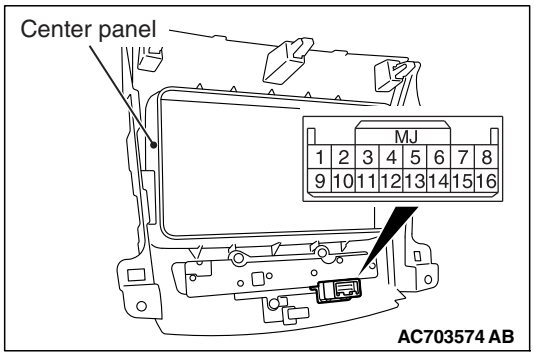
NO <Normal condition is not displayed for item No. 288.> : Troubleshoot the ETACS-ECU. Refer to GROUP 54A, Diagnosis - Inspection Procedure 1 "ETACS-ECU does not receive any signal from the ignition switch (ACC) signal" P.54A-797.

STEP 5. Check center panel unit connector C-104 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is center panel unit connector C-104 in good condition?

YES : Go to Step 6.

NO : Repair the damaged parts.



STEP 6. Check the theft-alarm indicator.

Q: Is the theft-alarm indicator in good condition?

YES : Go to Step 7.

NO : Replace the center panel unit.

STEP 7. Check ETACS-ECU connector C-307 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is the ETACS-ECU connector C-307 in good condition?

YES : Go to Step 8.

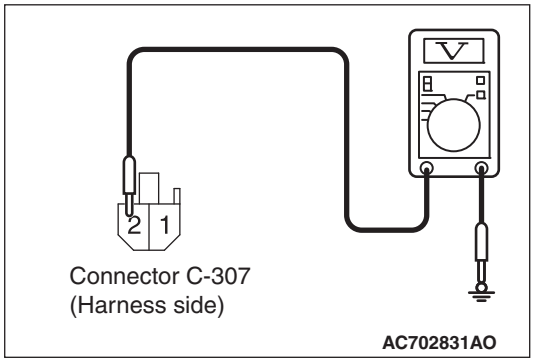
NO : Repair the damaged parts.

STEP 8. Measure the voltage at ETACS-ECU connector C-307.

(1) Disconnect ETACS-ECU connector C-307, and measure the voltage wiring harness side.

(2) Measure the voltage between ETACS-ECU connector-307 (terminal No. 2) and the body ground.

- 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 10.

NO : Go to Step 9.

STEP 9. Check the Wiring harness between ETACS-ECU connector C-307 (terminal No. 2) and fusible link (36).

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

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 : Repair the wiring harness between ETACS-ECU connector C-307 and fusible link (36).

STEP 10. 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 11.
NO : Repair the damaged parts.

STEP 11. Check the Wiring harness between ETACS-ECU connector C-317 (terminal No. 2,9) and center panel unit connector C-104 (terminal No. 15,12).

- Check the input/output lines for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 12.
NO : Repair the wiring harness between ETACS-ECU connector C-317 and center panel unit connector C-104.

STEP 12. Retest the system.

Q: Does the theft-alarm work 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 ETACS-ECU.

Inspection Procedure 2: The interior alarm does not work normally while the theft-alarm is triggered.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

TECHNICAL DESCRIPTION (COMMENT)

If the interior alarm does not work normally, the input signal circuits to the components below, ETACS-ECU, or combination meter built-in tone alarm may have a problem.

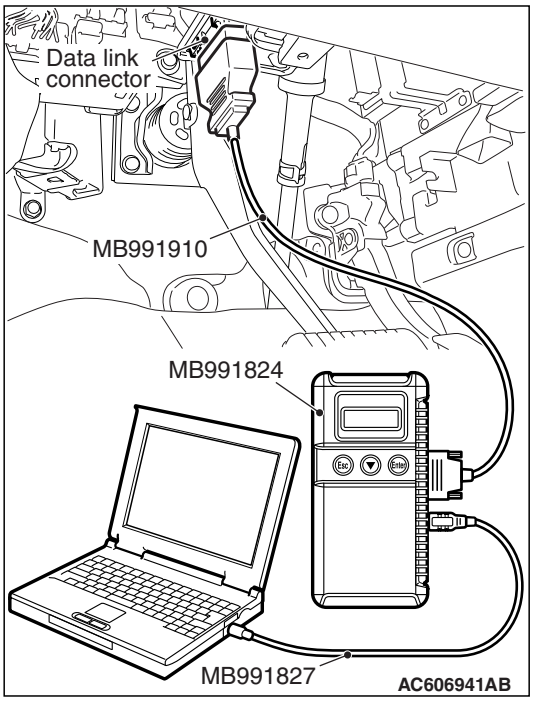
TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective
- Combination meter 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:

- 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-465."
(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-742).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, check actuator test.

(1) Connect scan tool MB991958 to the data link connector.
(2) Turn the ignition switch to the "ON" position.
(3) Set scan tool MB991958 to the actuator test mode.
- Item 12: Tone alarm

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

Q: Is the check result normal?

YES : Go to Step 4.
NO : Replace the combination meter.

STEP 4. Retest the system.

Check that the theft-alarm works normally.

Q: Does the theft-alarm work 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 ETACS-ECU.

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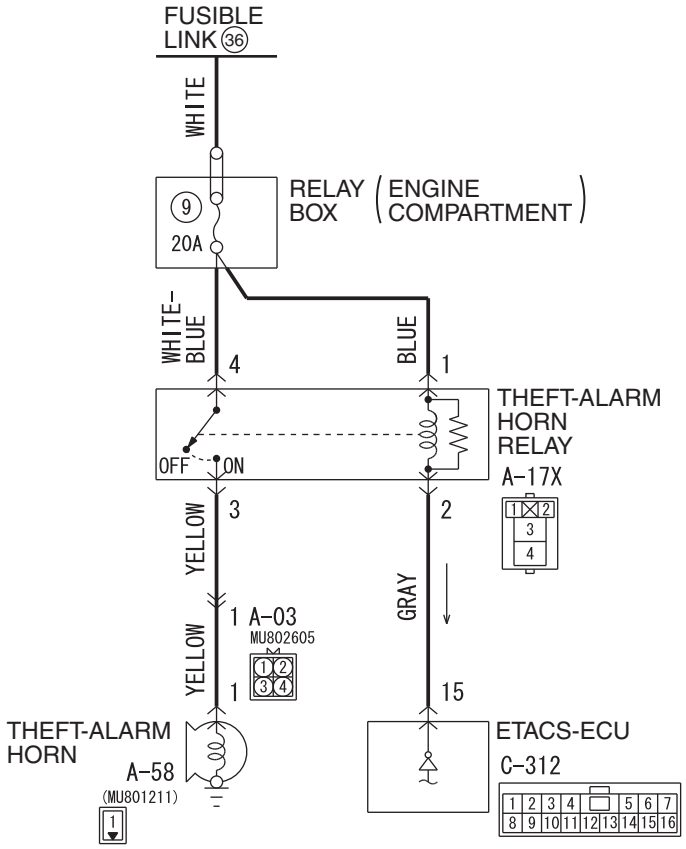
Inspection Procedure 3: Theft-alarm horn does not sound while the theft-alarm system is triggered.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal.

Theft-alarm Horn Circuit



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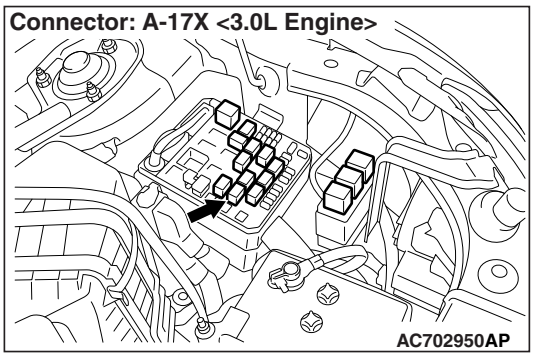

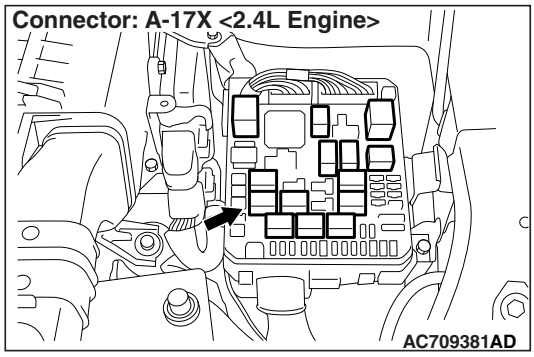

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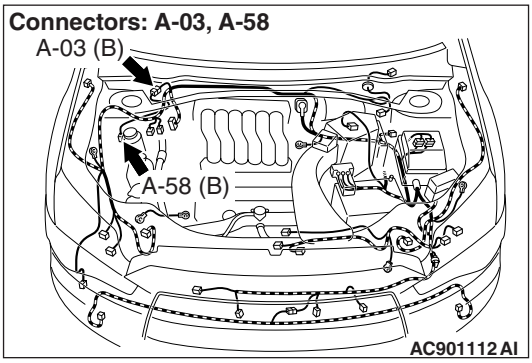
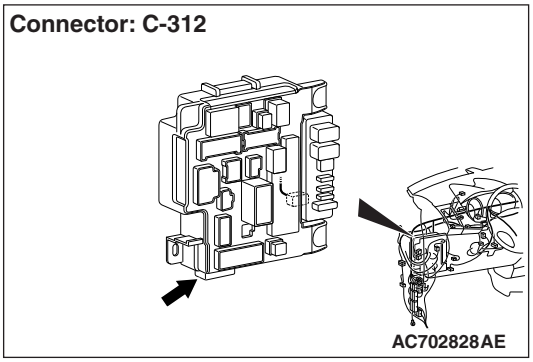




TECHNICAL DESCRIPTION (COMMENT)

If theft-horn does not sound, the theft-horn input signal circuit or the ETACS-ECU may be defective.

TROUBLESHOOTING HINTS

- Theft-alarm horn may be defective
- Theft-alarm horn relay may be defective
- The ETACS-ECU 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:

- MB992006: Extra fine probe
- MB991223: Harness set
- 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, read the diagnostic trouble code.

Check if DTC is set to the ETACS-ECU.

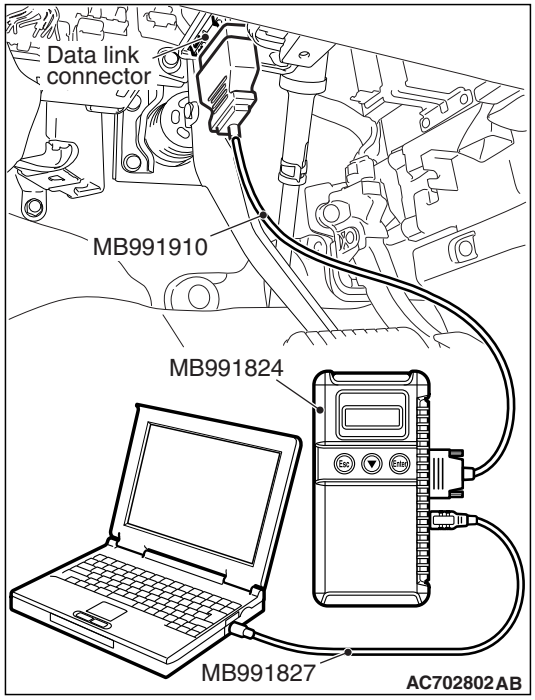
⚠ CAUTION

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 scan too (M.U.T.-III) P.54A-854."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to P.54A-742.
NO : Go to Step 2.

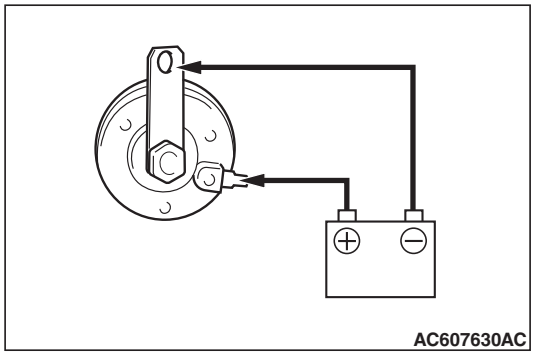


STEP 2. Check the theft-alarm horn work normally.

Connect the battery as shown, and verify that the horn sounds.

Q: Does horn (HI) work normally?

YES : Go to Step 3.
NO : Replace the horn (HI). Then, go to Step 4.



STEP 3. Check theft-alarm horn relay connector A-17X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is theft-alarm horn relay connector A-17X in good condition?

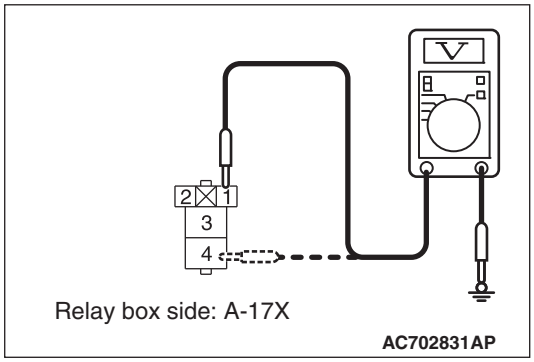
YES : Go to Step 4.
NO : Repair the damaged parts.

STEP 4. Check the theft-alarm horn relay.
Refer to P.54A-886.

Q: Is the theft-alarm horn relay in good condition

YES : Go to Step 5.
NO : Replace the theft-alarm horn relay.

STEP 5. Measure the voltage at theft-alarm horn relay A-17X.
(1) Remove the relay, and measure at the relay box side.
(2) Measure the voltage between theft-alarm horn relay connector A-17X (terminal No. 1,4) and the body ground.
- The voltage should measure approximately 12 volts (battery positive voltage).



Relay box side: A-17X
AC702831AP

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

YES : Go to Step 7.
NO : Go to Step 6.

STEP 6. Check the Wiring harness between theft-alarm horn relay connector A-17X (terminal No. 1,4) and fusible link (36).
Check the power supply lines for open circuit and short circuit.

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 : Repair the wiring harness between theft-alarm horn relay connector A-17X and fusible link (36).

STEP 7. Check theft-alarm horn connector A-58 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is theft-alarm horn connector A-58 in good condition?

YES : Go to Step 8.
NO : Repair the damaged parts.

STEP 8. Check the Wiring harness between theft-alarm horn connector A-58 (terminal No. 1) and theft-alarm horn relay connector A-17X (terminal No. 3).
Check the output line for open circuit and short circuit.

NOTE: Before the wiring harness check, check intermediate connector A-03, and then repair them if necessary.

Q: Is the check result normal?

YES : Go to Step 9.
NO : Repair the wiring harness between theft-alarm horn connector A-58 and theft-alarm horn relay connector A-17X.

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STEP 9. Check ETACS-ECU connector C-312 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-312 in good condition?

YES : Go to Step 10.
NO : Repair the damaged parts.

STEP 10. Check the Wiring harness between theft-alarm horn relay connector A-17X (terminal No. 2) and ETACS-ECU connector C-312 (terminal No. 15).
Check the output lines for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 11.
NO : Repair the wiring harness between theft-alarm horn relay connector A-17X and ETACS-ECU connector C-312.

STEP 11. Replace theft-alarm horn.
(1) Replace the theft-alarm horn.

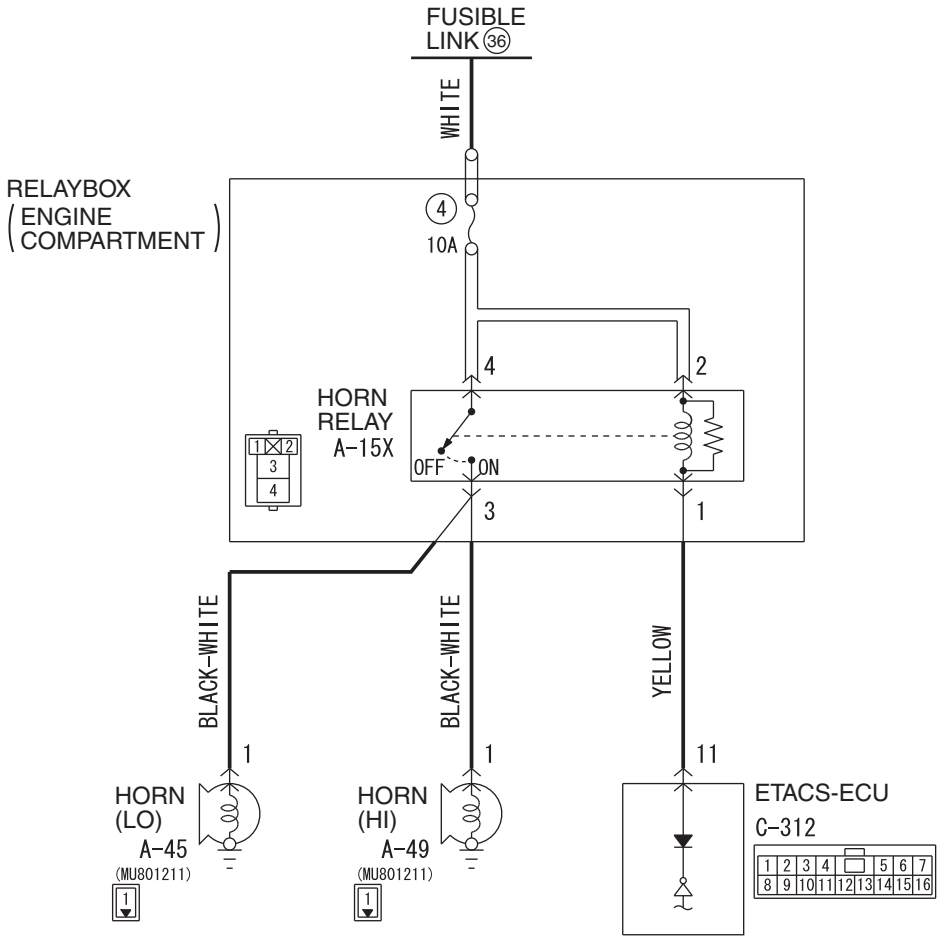
Q: Does the theft-alarm work normally?

YES : he 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 ETACS-ECU.

Inspection Procedure 4: Horns do not sound while the theft-alarm system is triggered.

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the ground circuit and the communication circuit are normal

Horn Circuit



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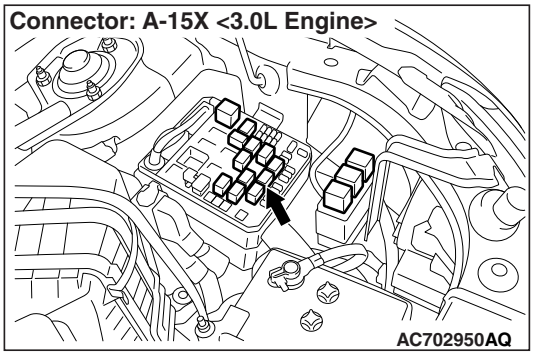

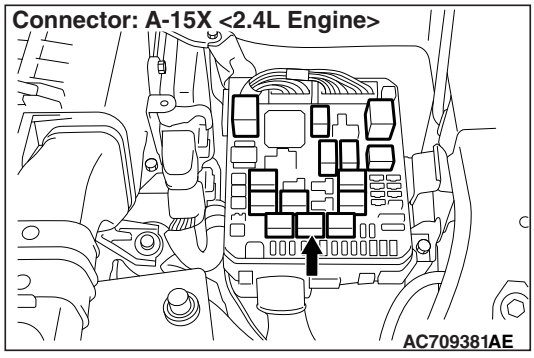

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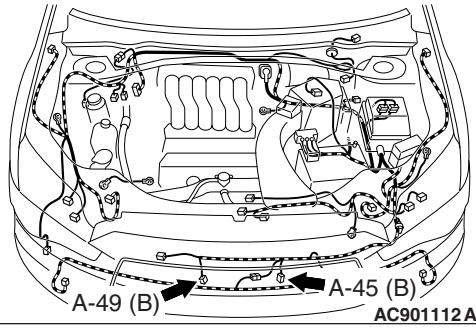
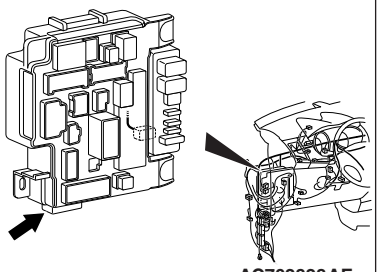
Connectors: A-45, A-49



Connector: C-312



TECHNICAL DESCRIPTION (COMMENT)

If horns do not sound, the horn input signal circuit or the ETACS-ECU may be defective.

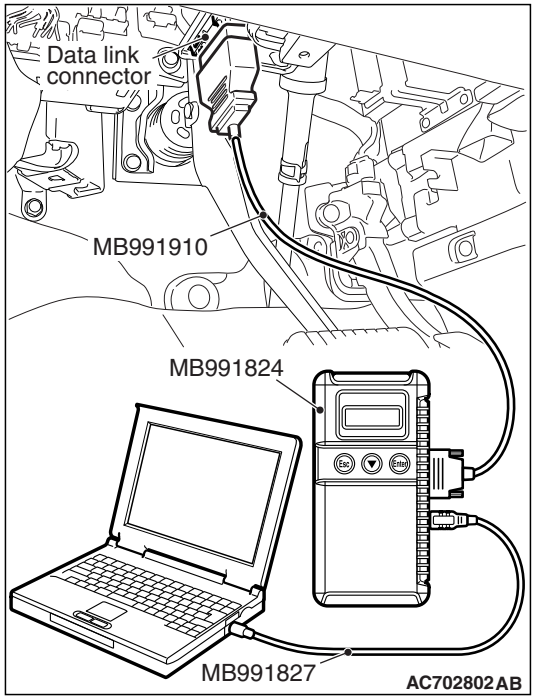
TROUBLESHOOTING HINTS

- Horns may be defective
- Horn relay may be defective
- The ETACS-ECU 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:

- MB992006: Extra fine probe
- MB991223: Harness set
- 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, read the diagnostic trouble code.

Check if DTC is set to the ETACS-ECU.

⚠ 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 scan too (M.U.T.-III) P.54A-854."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU related DTC is set.
(4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the ETACS-ECU. Refer to P.54A-742.
NO : Go to Step 2.

STEP 2. Check which horn is defective.

Check which horn does not sound when the theft-alarm system is triggered.

Q: Which horn does not sound?

Horn (HI) and horn (LO) : Go to Step 3.
Horn (HI) only : Go to Step 9.
Horn (LO) only : Go to Step 12.

STEP 3. Check horn relay connector A-15X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is horn relay connector A-15X in good condition?

YES : Go to Step 4.
NO : Repair the damaged parts.

STEP 4. Check the horn relay.

Refer to P.54A-886.

Q: Is the horn relay in good condition

YES : Go to Step 5.
NO : Replace the horn relay.

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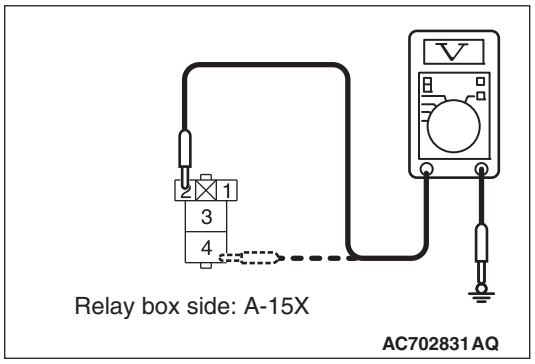


STEP 5. Measure the voltage at horn relay A-15X.

(1) Remove the relay, and measure at the relay box side.
(2) Measure the voltage between horn relay connector A-15X (terminal No. 2, 4) and the body ground.
- 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 7.
NO : Go to Step 6.

STEP 6. Check the Wiring harness between horn relay connector A-15X (terminal No. 2,4) and fusible link (36).

Check the power supply lines for open circuit and short circuit.

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 : Repair the wiring harness between theft-alarm horn relay connector A-15X and fusible link (36).

STEP 7. Check ETACS-ECU connector C-312 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-312 in good condition?

YES : Go to Step 8.
NO : Repair the damaged parts.

STEP 8. Check the Wiring harness between horn relay connector A-15X (terminal No. 1) and ETACS-ECU connector C-312 (terminal No. 11).

Check the output line for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 9.
NO : Repair the wiring harness between horn relay connector A-15X and ETACS-ECU connector C-312.

STEP 9. Check horn (HI) connector A-49 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is horn (HI) connector A-49 in good condition?

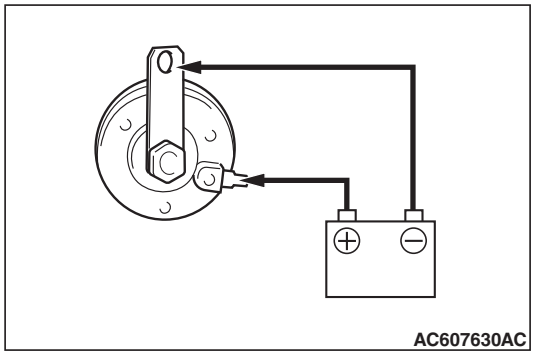
YES : Go to Step 10.
NO : Repair the damaged parts.

STEP 10. Check the Wiring harness between horn (HI) connector A-49 (terminal No. 1) and horn relay connector A-15X (terminal No. 3).
Check the output line for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 11.
NO : Repair the wiring harness between horn (HI) connector A-49 and horn relay connector A-15X.

STEP 11. Check the horn (HI) work normally.
Connect the battery as shown, and verify that the horn sounds.



Q: Does horn (HI) work normally?

YES : Go to Step 12.
NO : Replace the horn (HI). Then, go to Step 12.

STEP 12. Check which horn is defective.
Check which horn does not sound when the theft-alarm system is triggered.

Q: Which horn does not sound?

Horn (HI) and horn (LO) : Go to Step 13.
Horn (HI) only : Replace the ETACS-ECU.
Horn (LO) only : Go to Step 13.

STEP 13. Check horn (LO) connector A-45 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

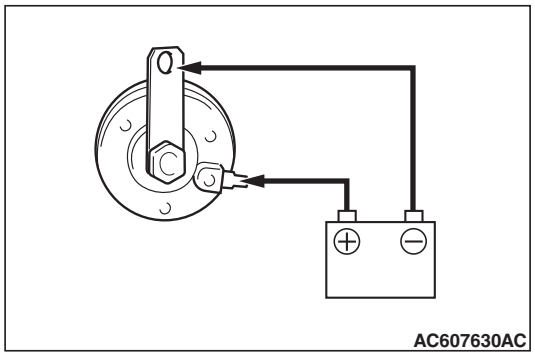
Q: Is horn (LO) connector A-45 in good condition?

YES : Go to Step 14.
NO : Repair the damaged parts.

STEP 14. Check the Wiring harness between horn (LO) connector A-45 (terminal No. 1) and horn relay connector A-15X (terminal No. 3).
Check the output line for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 15.
NO : Repair the wiring harness between horn (LO) connector A-45 and horn relay connector A-15X.



STEP 15. Check the horn (LO) work normally.

Connect the battery as shown, and verify that the horn sounds.

Q: Does the horn (LO) work normally?

YES : Go to Step 16.

NO : Replace the horn (LO).go to Step 16.

STEP 16. Retest the theft-alarm system.

Q: Does the theft-alarm system work normally?

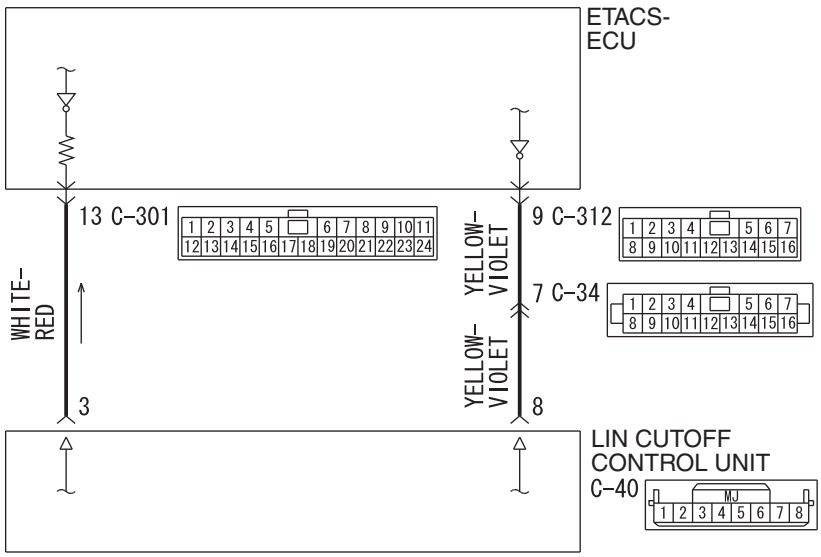
YES : The trouble can be an intermittent malfunction (Refer to GROUP 00, How to use Troubleshooting/inspection Service Points –How to Cope with Intermittent Malfunction P.00-15).

NO : Replace the ETACS-ECU.

Inspection Procedure 5: The activated theft alarm siren sounds even though no faulty operation is made.<Vehicles with theft alarm sensor>

⚠ CAUTION
Before replacing the ECU, ensure that the power supply circuit, the earth circuit and the communication circuit are normal.

Security Alarm Siren Communication Circuit



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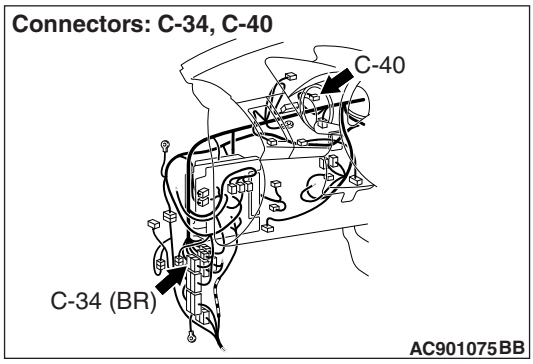
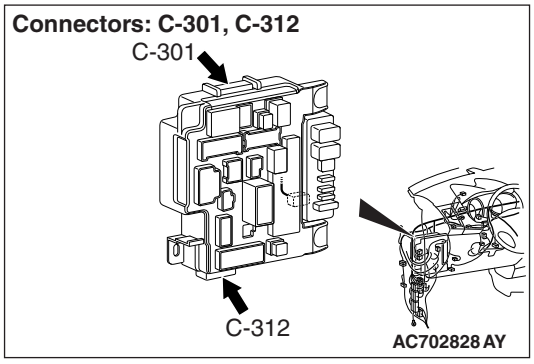




COMMENTS ON TROUBLE SYMPTOM

If the activated theft alarm siren sounds even though no faulty operation is made, the theft alarm siren may not be able to receive the signal from the ETACS-ECU via the LIN cutoff control unit.

PROBABLE CAUSES

- theft alarm siren may be defective
- LIN cutoff control unit may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

TSB Revision

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, read the ETACS-ECU diagnostic trouble code.

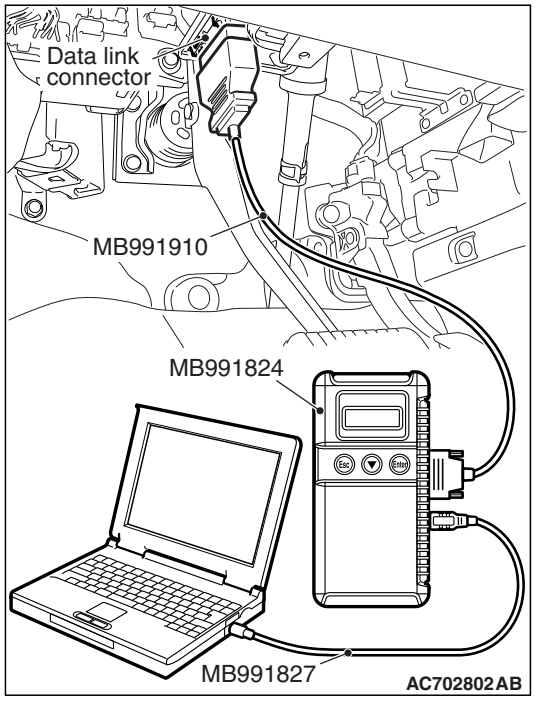
Check if DTC is set to the ETACS-ECU.

⚠ 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.

Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.54A-854."

(1) Turn the ignition switch to the "ON" position.
(2) Check whether the ETACS-ECU DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.



Q: Is the DTC set?

YES : Diagnose the ETACS-ECU (Refer to P.54A-742).
NO : Go to Step 2.

STEP 2. LIN cutoff control unit check

Check for continuity of the LIN cutoff control unit.(Refer to P.54A-886.)

Q: Is the check result normal?

YES : Go to Step 3.
NO : Replace LIN cutoff control unit.

STEP 3. Check ETACS-ECU connector C-312, C-301 and LIN cutoff control unit C-40 for loose, corroded or damaged terminals, or terminals pushed back in the connector

Q: Is the check result normal?

YES : Go to Step 4.
NO : Repair the defective connector.

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STEP 4. Check the Wiring harness between ETACS-ECU connector 301 (terminal No. 13) and LIN cutoff control unit C-40 (terminal No. 3).
Check the signal line for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 5.
NO : Repair the wiring harness.

STEP 5. Check the Wiring harness between ETACS-ECU connector 312 (terminal No. 9) and LIN cutoff control unit C-40 (terminal No. 8).
Check the signal line for short circuit.

NOTE: Also check intermediate connector C-34 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-34 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the check result normal?

YES : Go to Step 6.
NO : Repair the wiring harness.

STEP 6. Retest the theft alarm system.
Check if the activated theft alarm siren sounds even though no faulty operation is made.

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 ETACS-ECU.

ON-VEHICLE SERVICE

CUSTOMIZATION FUNCTION

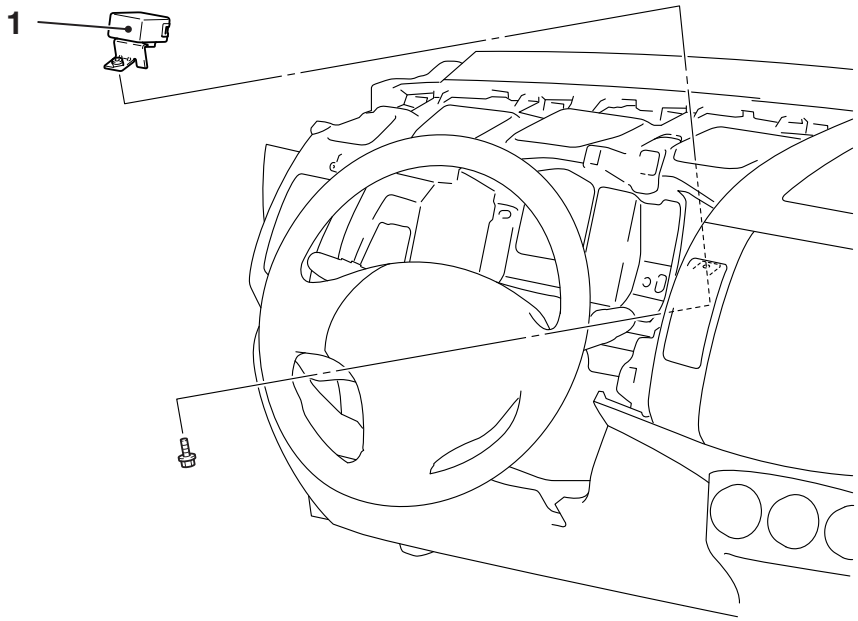
M1547003400366

With the M.U.T.-III operation, the following functions can be adjusted. The adjusted information is held even when the battery is disconnected.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting content
Sensitivity for theft sensor	Sensitivity level setting of theft alarm sensor	Level 1	100% sensitivity of theft alarm sensor (initial condition)
		Level 2	90% sensitivity of theft alarm sensor
		Level 3	80% sensitivity of theft alarm sensor
		Level 4	70% sensitivity of theft alarm sensor

REMOVAL AND INSTALLATION

M1547004800011



AC901017AC

Removal Steps

- Meter hood assembly(Refer to P.54A-123.)

Removal Steps (Continued)

- Bottom cover assembly (driver's side)(Refer to GROUP 52A - Instrument panel assembly P.52A-2.)

1. LIN cutoff control unit

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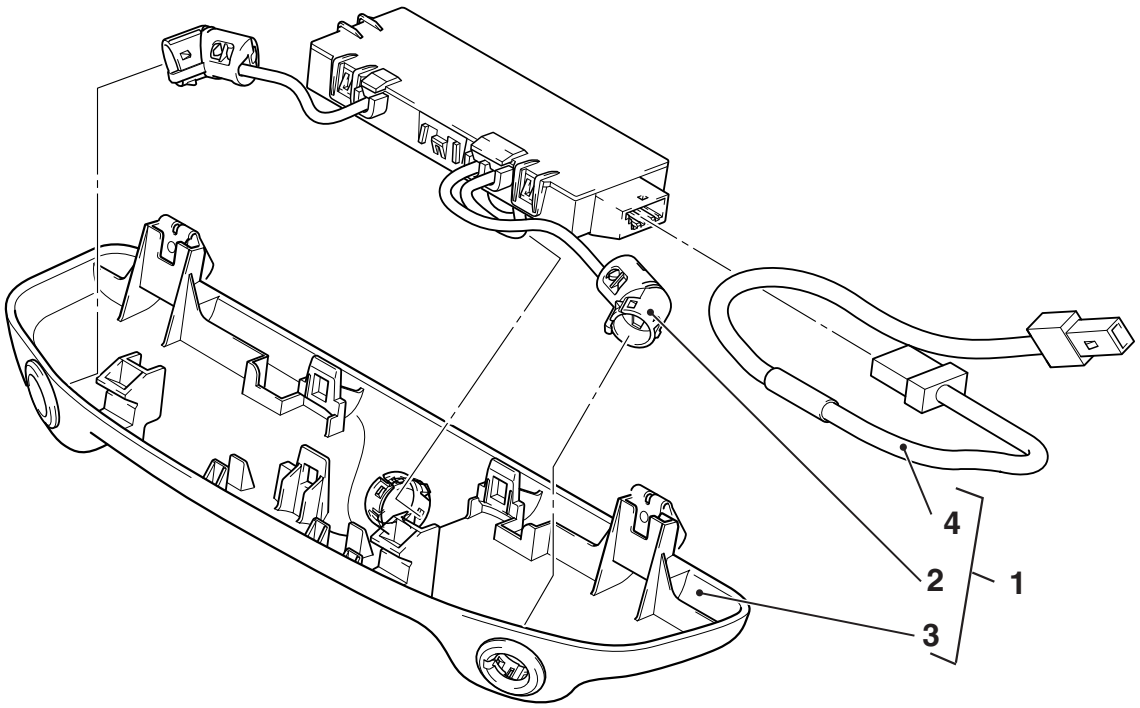
REMOVAL AND INSTALLATION

M1547004900018



AC902749AB

Removal Step

1. Theft alarm sensor assembly (Refer to GROUP 52A - Headlining P.52A-15)
2. Theft alarm sensor

Removal Step (Continued)

3. Theft alarm sensor cover
4. Sub harness

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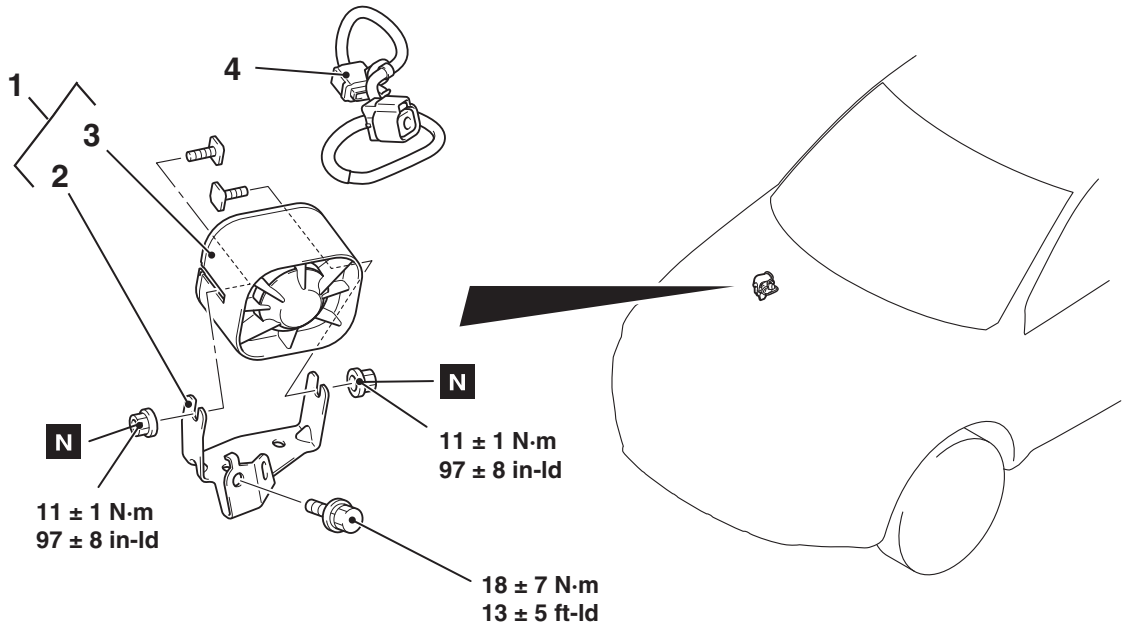
REMOVAL AND INSTALLATION

M1547005000018



AC901015AE

Removal Steps

- Strut tower bar (Refer to GROUP 33 –Strut assembly P.33-10)
- ABS-ECU or ASC-ECU harness connector (Refer to GROUP 35B – Hydraulic Unit P.35B-189 or GROUP 35C- Hydraulic Unit P.35C-290)

<<A>>

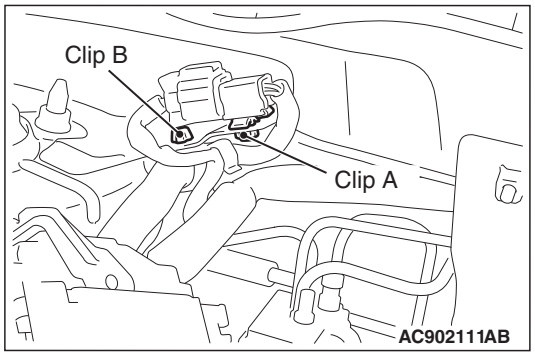
Removal Steps (Continued)

1. Theft alarm siren assembly
2. Theft alarm siren bracket
3. Theft alarm siren
4. Sub harness

REMOVAL SERVICE POINT

<<A>> REMOVAL OF ANTENNA FEEDER

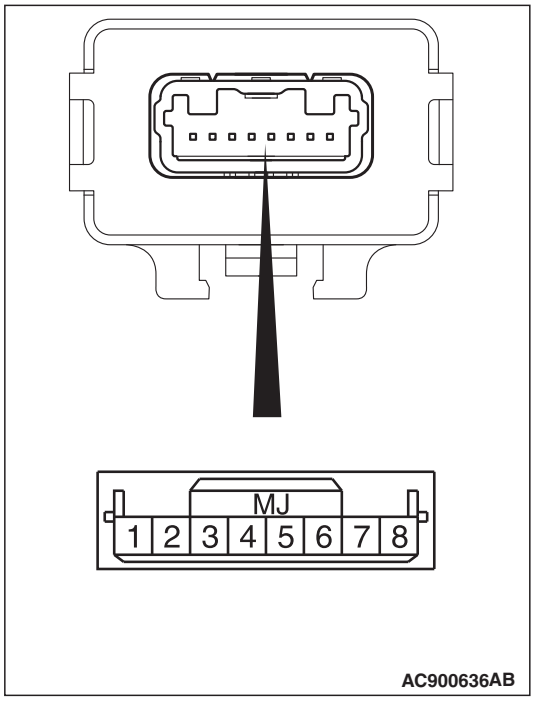
Remove the clip A and clip B.



INSPECTION

LIN CUTOFF CONTROL UNIT CHECK

M1547005600010



CONTINUITY CHECK

Remove the LIN cutoff control unit.(Refer to P.54A-883)

Terminal number	Measurement value
5 to 3	Continuity exists (2 Ω or less)

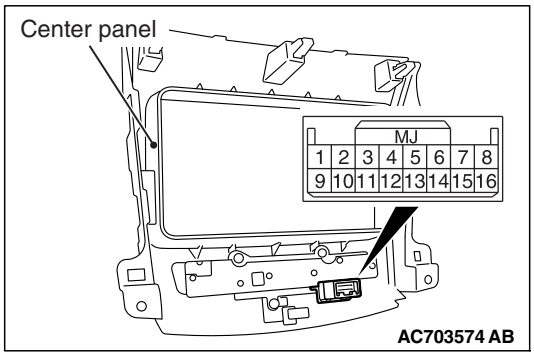
RELAY CHECK

Remove the LIN cutoff control unit.(Refer to P.54A-883)

Battery voltage	Terminal number	Normal condition
At no energization	5 to 7	No continuity
With current supply [terminal 1 (+), terminal 8 (−)]		Continuity exists (2 Ω or less)

THEFT-ALARM INDICATOR CHECK

M1547001100198



1. Remove the center panel.
2. Connect the battery (+) terminal with the center panel connector (terminal No. 15). Then, check if the theft-alarm indicator is illuminated when the battery (−) terminal and the center panel connector (terminal No. 12) are connected.
3. If the theft-alarm indicator is illuminated, it is judged good.

PANIC ALARM

GENERAL INFORMATION

M1547000100311

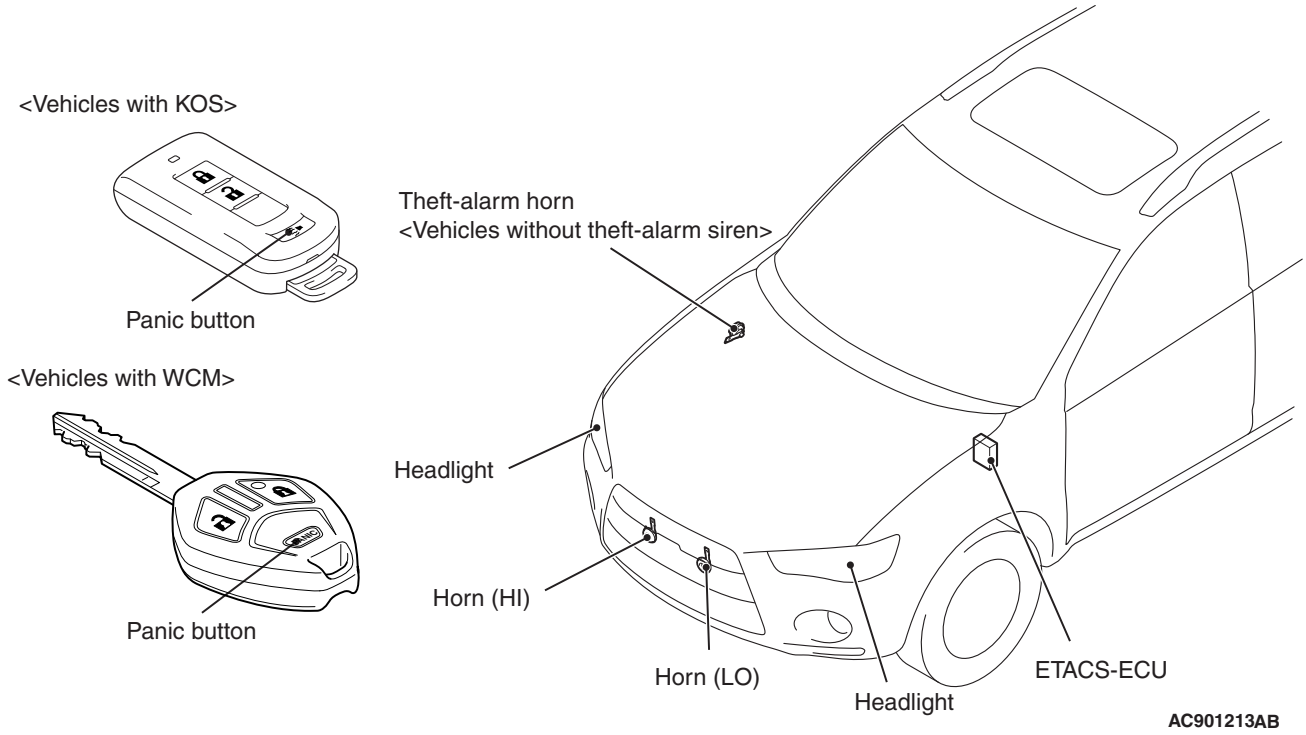
If danger is perceived near the vehicle and if the ignition switch is in the OFF position or the key has been removed, press the panic button on the ignition key or the keyless operation key for one second, then the headlights flash and the horns(HI, LO, theft-alarm horn <Vehicles without theft-alarm siren>) sound for approximately 3 minutes.

NOTE: The theft-alarm siren does not sound.<Vehicles with theft-alarm siren>

Panic alarm system operation table

Operation of keyless operation key or ignition key		System operation
Panic button	Press once (press and hold for 1 second)	Starts the panic alarm (headlights flash and horn honks for abut three minutes)
Lock button, Unlock button, Panic button	Press again	Stops the panic alarm in progress

Construction diagram



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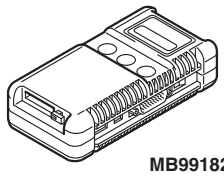
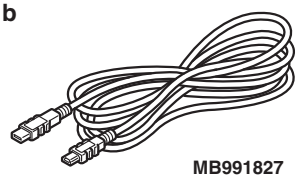
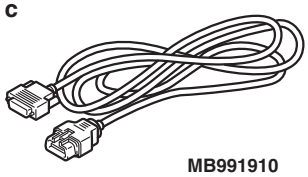
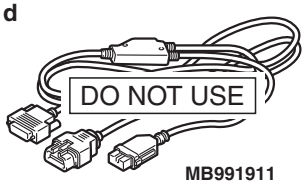
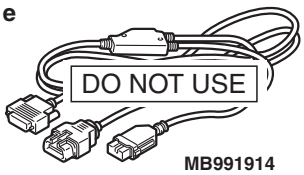
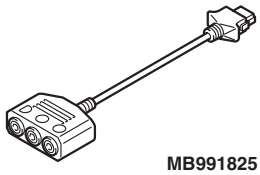
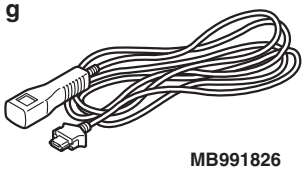
SPECIAL TOOLS

M1547000600402

Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 MB991958	MB991958 a. MB991824 b. MB991827 c. MB991910 d. MB991911 e. MB991914 f. MB991825 g. MB991826 M.U.T.-III sub-assembly a. Vehicle communication interface (V.C.I.) b. M.U.T.-III USB cable 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. M.U.T.-III main harness C (for Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT *NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.*	**⚠ 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.** Reading diagnostic trouble code.

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

M1547001200195

Refer to GROUP 00 –Contents of troubleshooting P.00-7.

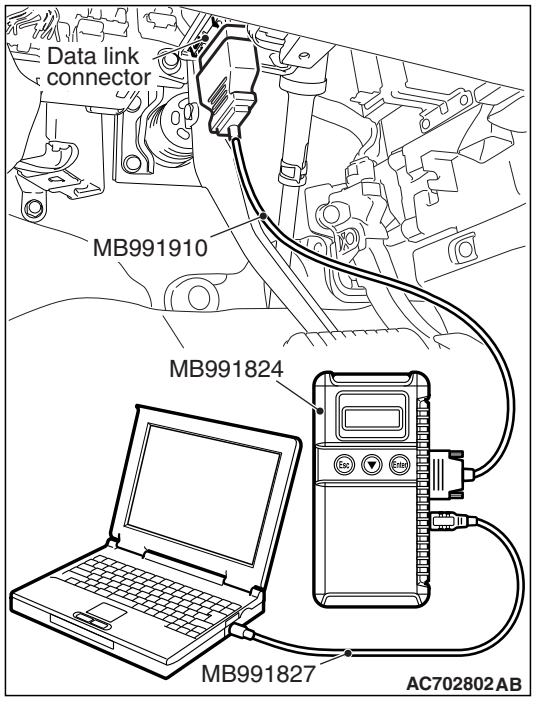
DIAGNOSTIC FUNCTION

M1547001300095

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

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)



⚠ 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: 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)

⚠ 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.

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 "ETACS" 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.

TROUBLE SYMPTOM CHART

M1547001500282

Trouble symptom	Reference page
Panic alarm does not work normally.	P.54A-861

SYMPTOM PROCEDURES

Panic alarm does not work normally.

TECHNICAL DESCRIPTION (COMMENT)

If keyless operation system <KOS> or keyless entry system <WCM> is normal, the ETACS-ECU may be defective.

TROUBLESHOOTING HINTS

- Keyless operation system <KOS> or keyless entry system <WCM> may be defective
- The ETACS-ECU may be defective
- Function is not set with the customization.
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

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)

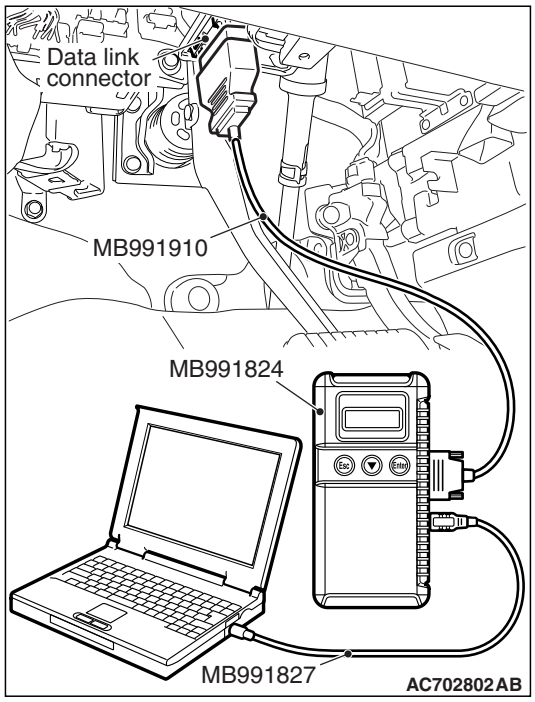
STEP 1. Check if the theft-alarm is normally set and the exterior protection can be executed.

Check that the theft-alarm works normally.

Q: Does the theft-alarm work normally?

YES : Go to step 2.

NO : Troubleshoot the theft-alarm (Refer to P.54A-860).



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

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

⚠ 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) Turn the ignition switch to the "ON" position.
(2) Check whether the KOS or WCM related DTC is set.
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES <vehicles with KOS> : Troubleshoot the KOS (Refer to GROUP 42B, KOS P.42B-31).
YES <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-18).
NO : Go to Step 3.

STEP 3. Check keyless operation system <KOS> or keyless entry system <WCM>.

Q: Do keyless operation system <KOS> or keyless entry system <WCM> work normally?

YES : Go to Step 4.
NO <vehicles with KOS> : Troubleshoot the KOS (Refer to GROUP 42B, KOS P.42B-31).
NO <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-18).

STEP 4. Using scan tool MB991958, check the configuration function.

(1) Turn the ignition switch to the "ON" position.
(2) Use the ETACS-ECU customization function to check that the "Panic alarm switch" is set to "Enable".
(3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the "Panic alarm switch" set to "Enable"?

YES : Replace the ETACS-ECU.
NO : Use the ETACS-ECU customization function to set the "Panic alarm switch" to "Enable"(Refer to P.54A-892).

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REMOVAL AND INSTALLATION

M1547002600066

Panic alarm system component parts

- Headlight assembly (refer to P.54A-217).
- Horn (refer to GROUP 54A-Horn P.54A-317).

ON-VEHICLE SERVICE

CUSTOMIZATION FUNCTION

M1547003400225

By operating the ETACS system or MMCS of scan tool MB991958, the following functions can be programmed. The programmed information is held even when the battery is disconnected.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Panic alarm switch	With/without panic alarm function	Disable	Without function
		Enable	With function (initial condition)