DEFOGGER

TROUBLESHOOTING

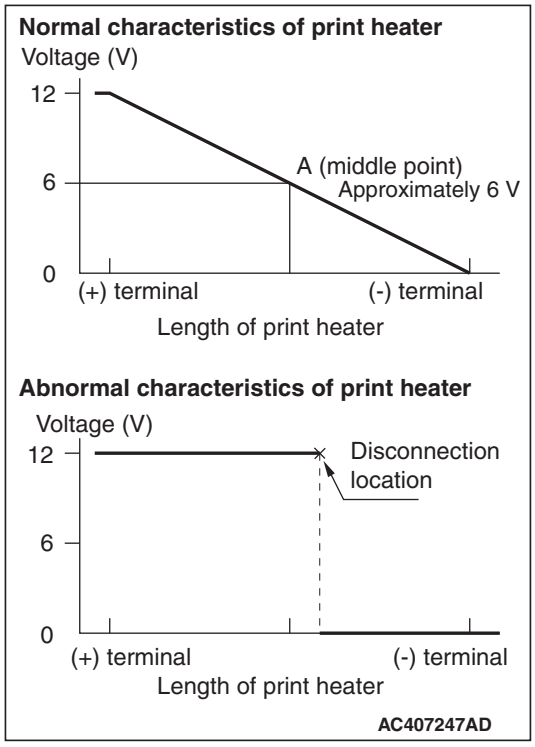
M1540500200248

Refer to GROUP 55A – Troubleshooting P.55A-9.

ON-VEHICLE SERVICE

PRINTED HEATER CHECK

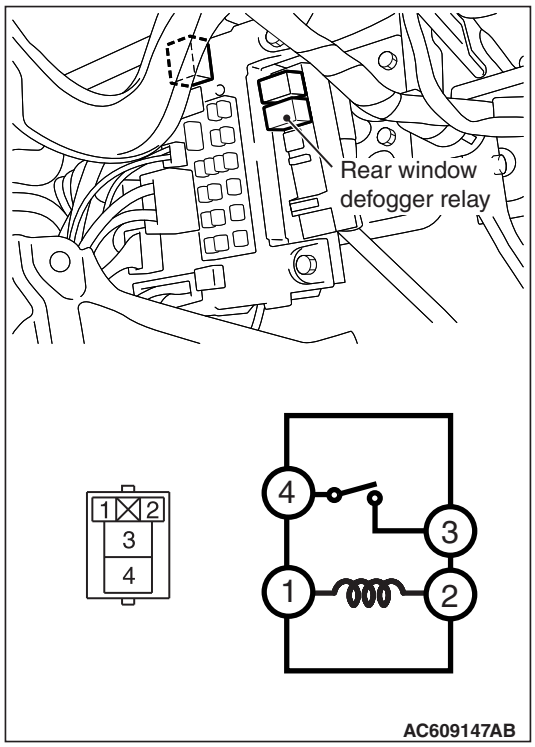
M1540500500313



1. Let the engine run (2,000 r/min), and check the printed heater with the battery fully charged.
2. With the rear window 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 rear window glass.(Refer to GROUP 42A, Rear window glass P.42A-25.)

REAR WINDOW DEFOGGER RELAY CHECK

M1540500600149



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

DEFOGGER SWITCH

REMOVAL AND INSTALLATION

M1540600200148

Refer to GROUP 55A – Heater control unit P.55A-180.

ETACS

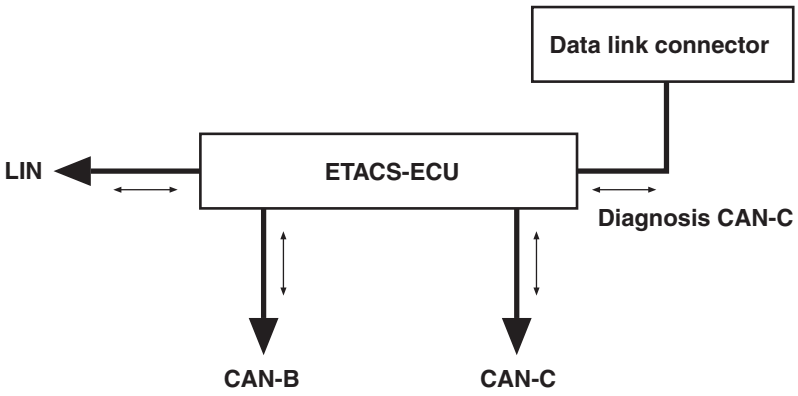
GENERAL INFORMATION

M1545000100177

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



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), diagnosis 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
- Power supply control
- Fan control

FUNCTION AND CONTROL

ACC power supply automatic shutdown function <The initial condition: With function (30 minutes)>

The function to shutdown the ACC power supply after 30 or 60 minutes with the ignition switch being ACC has been adopted.

ENGINE CONTROL <RALLIART>

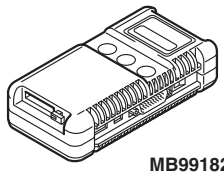
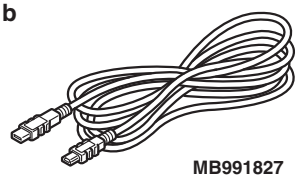
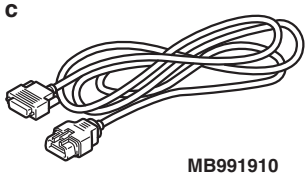
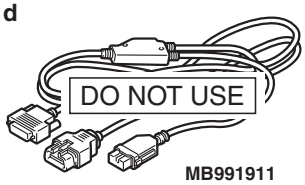
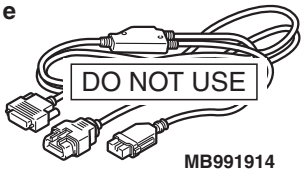
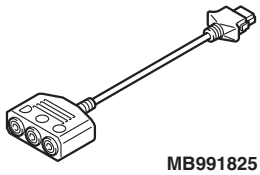
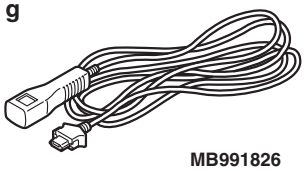
After the ignition switch is turned to the LOCK (OFF) position and the engine stops running, it takes approximately 1 second until the power of the vehicle is turned off. During the period until engine is stopped, the gear engagement in TC-SST is released in order to start the engine smoothly at the next startup.

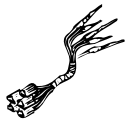
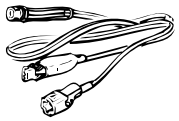
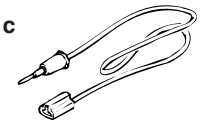
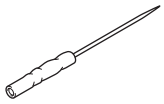
FAN CONTROL

Even after the engine is stopped, if the temperature in engine compartment is high, the engine compartment temperature is lowered by the operation of cooling fan for a specified period.

SPECIAL TOOL

M1545000600105

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

M1545000900076

Refer to GROUP 00, Contents of troubleshooting P.00-7.

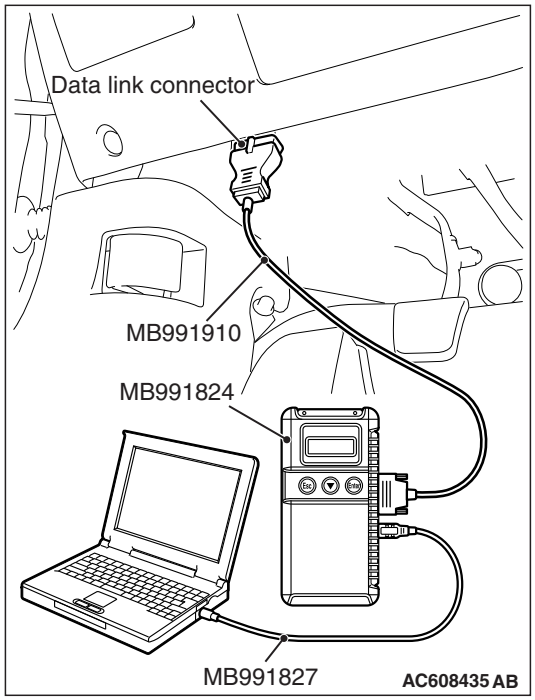
DIAGNOSTIC FUNCTION

M1545001000087

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.00-14).

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

M1545001100813

DTC No.	Trouble content	Reference page
U0001	Bus off (CAN-C)	P.54A-680
U0019	Bus off (CAN-B)	
U0100	Engine control module CAN timeout	P.54A-681
U0101	CVT-ECU/TC-SST-ECU CAN timeout	P.54A-683
U0103	Shift lever CAN timeout	P.54A-685
U0121	ASC-ECU CAN timeout	P.54A-687
U0126	Steering wheel sensor CAN timeout	P.54A-689
U0136	AWC-ECU CAN timeout	P.54A-691
U0151	SRS-ECU CAN timeout	P.54A-693
U0154	Occupant classification-ECU CAN timeout	P.54A-695
U0155	Combination meter CAN timeout	P.54A-697
U0164	A/C/Heater control unit CAN timeout	P.54A-699
U0168	WCM or KOS-ECU CAN timeout	P.54A-702
U0184	Audio CAN timeout	P.54A-704
U0195	Satellite radio tuner CAN timeout	P.54A-706
U0197	Hands free module CAN timeout	P.54A-708
U0245	Audio visual navigation unit CAN timeout	P.54A-710
U1108	Excess CAN-B ECU detection	P.54A-712
U1120	Bus line (CAN-C) low input	P.54A-713
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 <Vehicles with central door locking system>	
U0231	Rain light sensor LIN timeout <Vehicles with auto light function>	
U1109	Column SW LIN timeout	
U150B	Column SW checksum error	
U150C	P/W SW (DR) checksum error <Vehicles with central door locking system>	
U1511	Sunroof checksum error <Vehicles with sunroof>	
U1512	Rain light sensor checksum error <Vehicles with auto light function>	
U1514	Bit error (LIN)	
U1515	No-Bus activity error (LIN)	
U0331*	ECU internal error	P.54A-715
B1034	Ambient air temperature sensor system (short circuit)	Refer to GROUP 55A, Manual A/C Diagnosis P.55A-9.
B1035	Ambient air temperature sensor system (open circuit)	

TSB Revision

DTC No.	Trouble content	Reference page
B16A0	Taillight (RH) circuit open <Open circuit in the position light (RH) circuit, the taillight (RH) circuit and the rear side marker light (RH) circuit>	P.54A-234
B16A1	Taillight (LH) circuit open <Open circuit in the position light (LH) circuit, the taillight (LH) circuit, the rear side marker light (LH) circuit and the license plate light circuit>	
B16A2	Blown turn-signal light (LH) bulb	P.54A-135
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	P.54A-308
B16A7	Taillight (RH) circuit short <Short circuit in the position light (RH) circuit, the taillight (RH) circuit or the rear side marker light (RH) circuit>	P.54A-234
B16A8	Taillight (LH) circuit short <Short circuit in the position light (LH) circuit, the taillight (LH) circuit, the rear side marker light (LH) circuit or the license plate light circuit>	
B1761*	VIN not recorded	P.54A-716
B210A	+B power supply (low input)	P.54A-717
B210B	+B power supply (high input)	
B222C*	Coding incomplete	P.54A-721
B2206*	Chassis number does not match	P.54A-722
B2215*	ECU internal error	P.54A-723
B2350	Malfunction of lighting switch	P.54A-335
B2351	Malfunction of the wiper/washer switch	
B2353	Ignition power supply (low input)	P.54A-724
B2354	Ignition power supply (high input)	

*NOTE: *: If diagnostic trouble codes No. U0331, B1761, B222C, B2206, or B2215 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 JUDGEMENT

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)

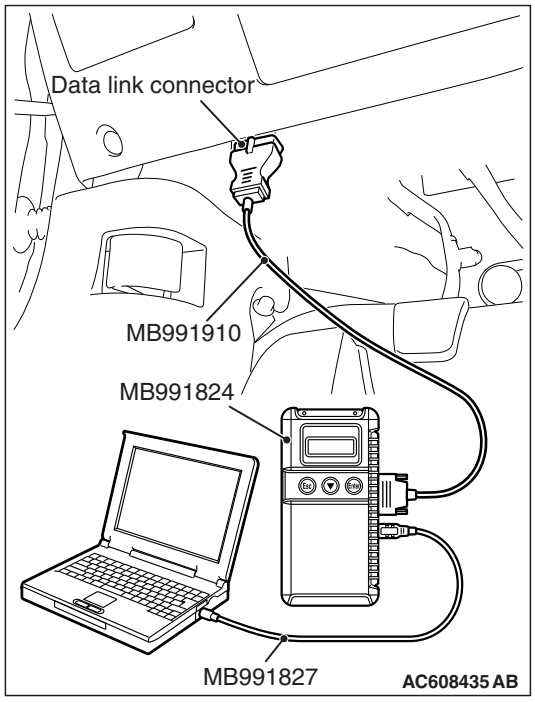
The ETACS-ECU may have a malfunction, or the ETACS-ECU power supply or earth circuit may have a problem.

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-675."
(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).

TSB Revision

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.00-14).

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.**

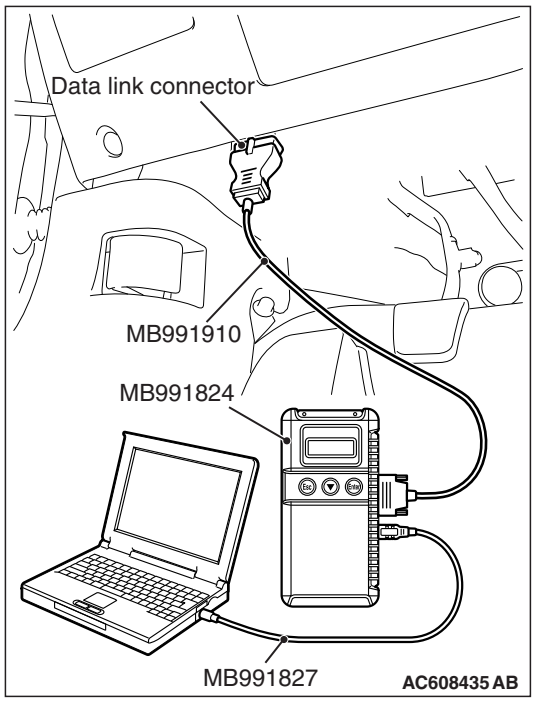
TROUBLE JUDGMENT
If the signal from engine control module cannot be received, the ETACS-ECU sets DTC U0100.

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-675."
(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-50 <2.0 L engine non-turbo>, GROUP 13B, Diagnostic Trouble Code Chart P.13B-51 <2.0 L engine turbo> or GROUP 13C, Diagnostic Trouble Code Chart P.13C-48 <2.4 L engine>).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the CVT diagnostic trouble code.
Check if DTC U0100 is set to the CVT-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 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.00-14).

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.00-14).

DTC U0101: CVT-ECU/TC-SST-ECU 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 CVT-ECU or TC-SST-ECU 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 CVT-ECU or TC-SST-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 CVT-ECU may be defective.
- The TC-SST-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

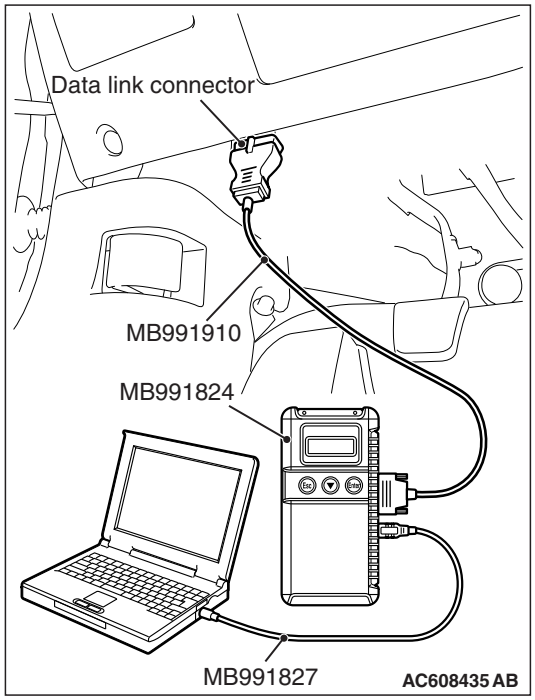
Required Special Tools:

- 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-675."
(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 CVT or TC-SST diagnostic trouble code.

Check if DTC is set to the CVT or TC-SST.

Q: Is the DTC set?

YES : Troubleshoot the CVT or TC-SST (Refer to GROUP 23A, Diagnosis P.23A-30 <CVT> or GROUP 22C, Diagnosis P.22C-33 <TC-SST>).
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.

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 CVT-ECU or TC-SST-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the CVT-ECU or TC-SST-ECU and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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 CVT-ECU or TC-SST-ECU and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

DTC U0103: Shift lever CAN timeout

⚠ CAUTION
- **If DTC U0103 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 shift lever cannot be received, the ETACS-ECU sets DTC U0103.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the shift lever 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 shift lever may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

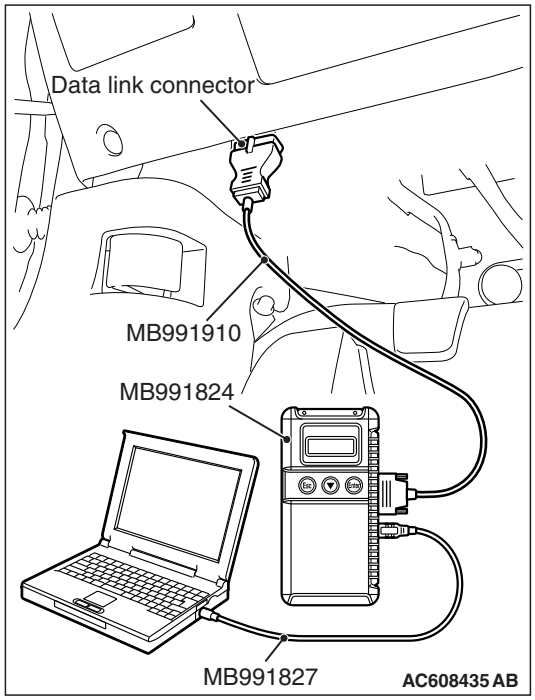
Required Special Tools:

- 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-675."
(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 shift lever diagnostic trouble code

Check if DTC is set to the shift lever.

Q: Is the DTC set?

YES : Troubleshoot the shift lever (Refer to GROUP 22C, Diagnosis P.22C-397).
NO : Go to Step 3.

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

Check if the DTC U0103 is set to the TC-SST-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 shift lever.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the shift lever and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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 shift lever and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

DTC U0121: 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 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 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 ASC-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

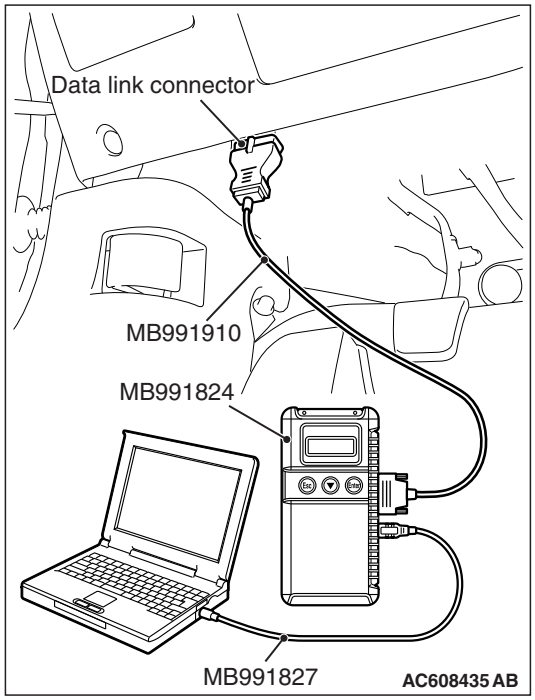
Required Special Tools:

- 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-675."
(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 ASC diagnostic trouble code.

Check if DTC is set to the ASC-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ASC (Refer to GROUP 35C, Diagnosis P.35C-25).
NO : Go to Step 3.

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

Check if the DTC U0121 is set to the CVT-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 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 ASC-ECU and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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 ASC-ECU and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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

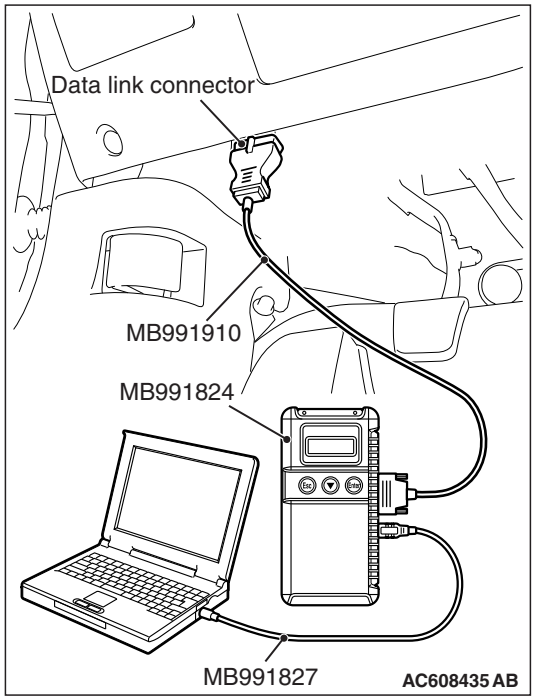
Required Special Tools:

- 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-675."
(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-25).
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.00-14).

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.00-14).

DTC U0136: AWC-ECU CAN time-out

⚠ CAUTION
- **If DTC U0136 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 AWC-ECU cannot be received, the ETACS-ECU sets DTC U0136.

JUDGMENT CRITERIA
After the following statuses continue to be true for 5 seconds, if the communication with the AWC-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 AWC-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

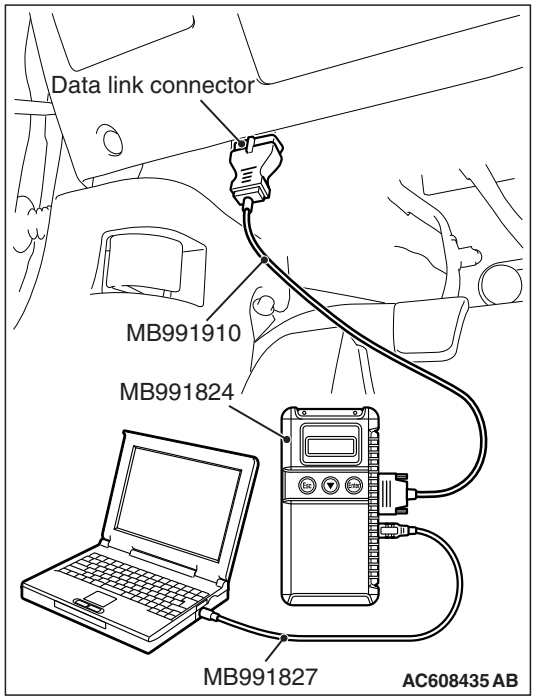
Required Special Tools:

- 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-675."
(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 AWC-ECU diagnostic trouble code

Check if DTC is set to the AWC-ECU.

Q: Is the DTC set?

YES : Troubleshoot the ACD (Refer to GROUP 22C, Diagnosis P.22C-426).
NO : Go to Step 3.

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

Check if the DTC U0136 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 AWC-ECU.
NO : The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the AWC-ECU and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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 AWC-ECU and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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

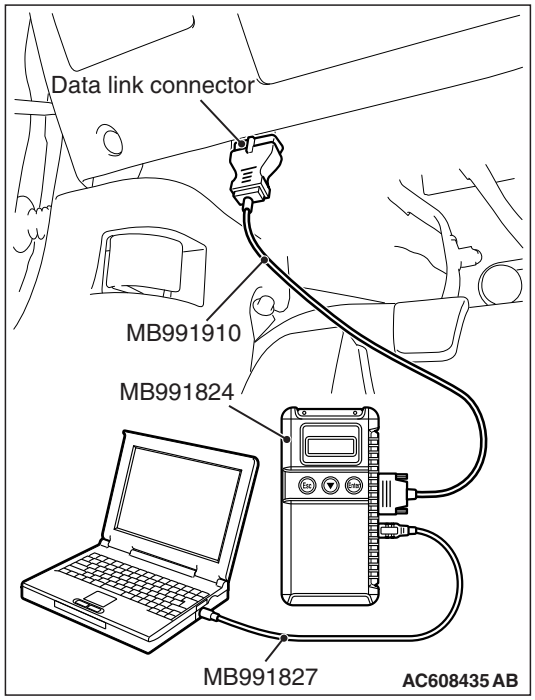
Required Special Tools:

- 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-675."
(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.00-14).

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.00-14).

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

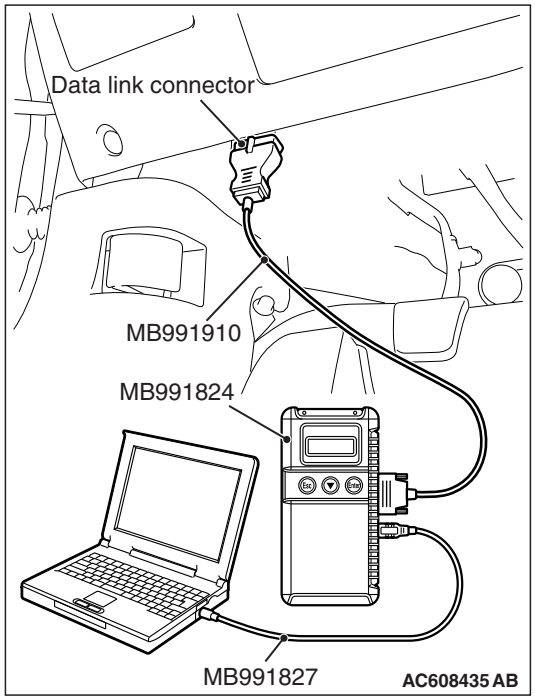
Required Special Tools:

- 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-675."
(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 occupant classification-ECU (Refer to GROUP 52B, Diagnosis P.52B-319).
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 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.00-14).

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.00-14).

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

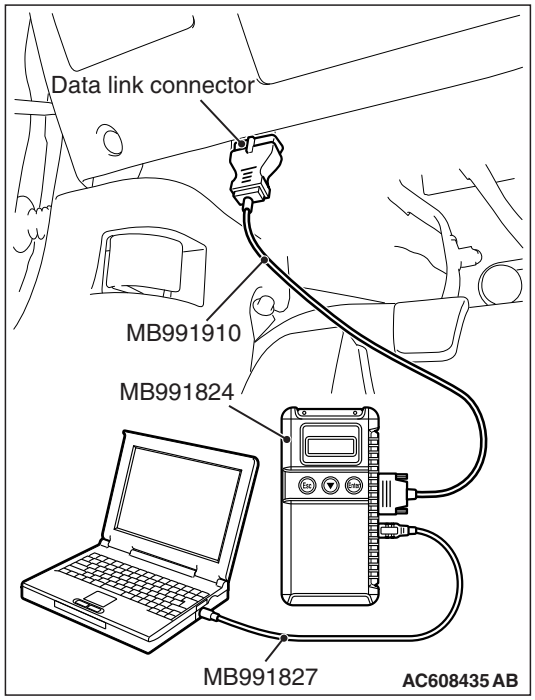
Required Special Tools:

- 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-675."
(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-33).
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.

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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 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.00-14).

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.00-14).

DTC U0164: A/C/Heater control unit 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 <vehicles with A/C> or heater control unit <vehicles without A/C> 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 <vehicles with A/C> or heater control unit <vehicles without A/C> 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 <vehicles with A/C> or heater control unit <vehicles without A/C> may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS

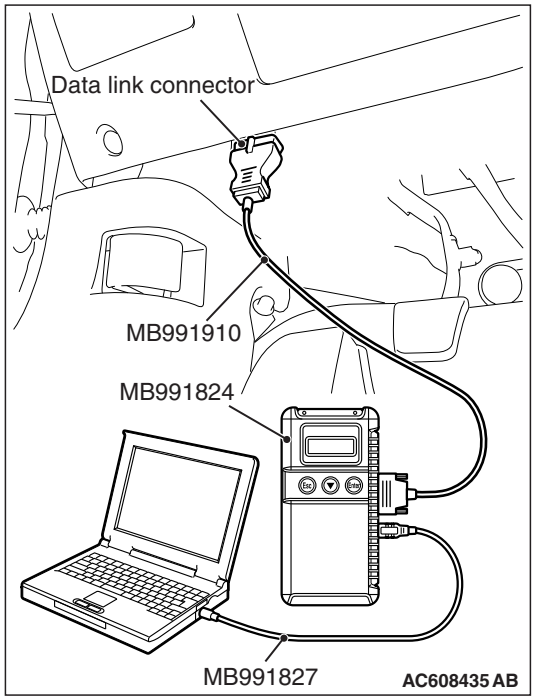
Required Special Tools:

- 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-675."
(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/Heater control unit diagnostic trouble code.

Check if DTC is set to the A/C/Heater control unit.

Q: Is the DTC set?

YES : Troubleshoot the A/C/Heater control unit (Refer to GROUP 55A, Manual A/C Diagnosis P.55A-9 or 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.

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 <vehicles with A/C> or heater control unit <vehicles without A/C>.

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 <vehicles with A/C> or heater control unit <vehicles without A/C> and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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 <vehicles with A/C> or heater control unit <vehicles without A/C> and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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)

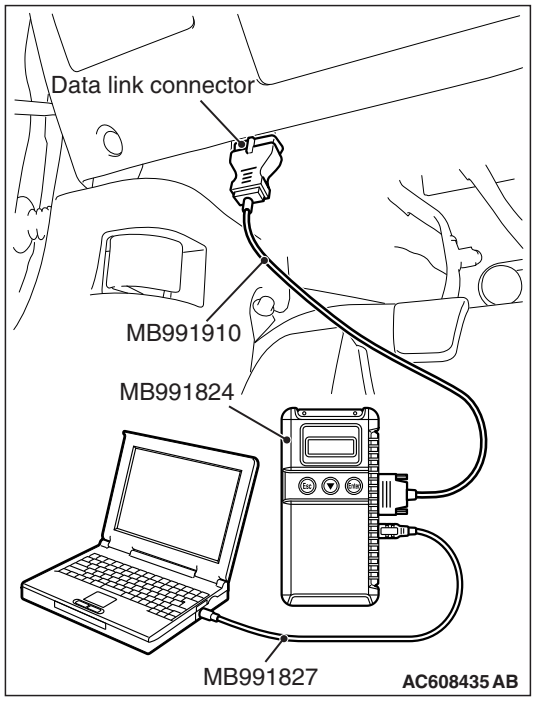
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-675."
(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 to the any of the above?

YES <Set to the WCM.> : Troubleshoot the WCM (Refer to GROUP 42C, diagnosis P.42C-17).
YES <Set to the KOS.> : Troubleshoot the KOS (Refer to GROUP 42B, Diagnosis P.42B-28).
NO <The diagnosis code is not set.> : 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.00-14).

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.00-14).

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)

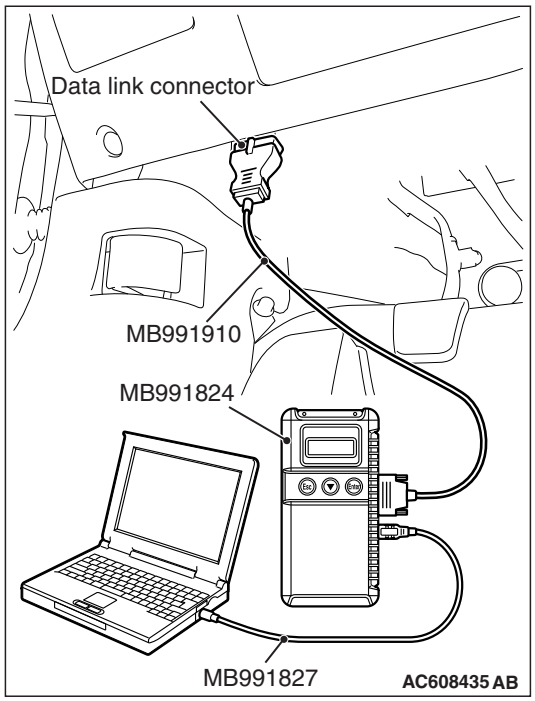
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-675."
(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, 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-347).
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.00-14).

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.00-14).

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)

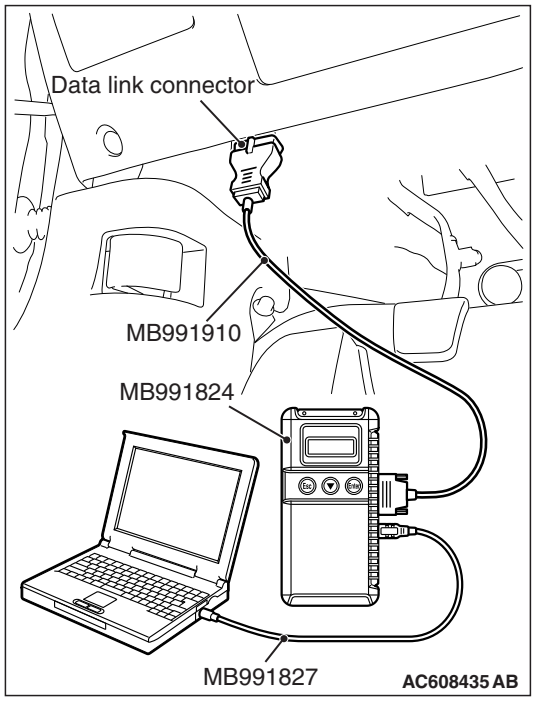
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-675."
(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-661).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the combination meter 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.00-14).

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.00-14).

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)

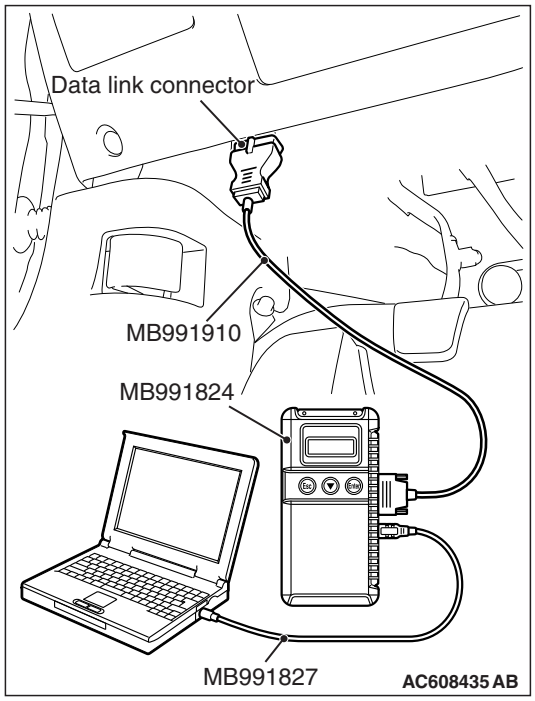
STEP 1. Using scan tool MB991958, diagnose the CAN bus line.

⚠ 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-675."
(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-563).
NO : Go to Step 3.

STEP 3. Using scan tool MB991958, read the combination meter diagnostic trouble code.
Check if the DTC U0197 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 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.00-14).

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.00-14).

DTC U0245: Audio visual navigation unit CAN timeout

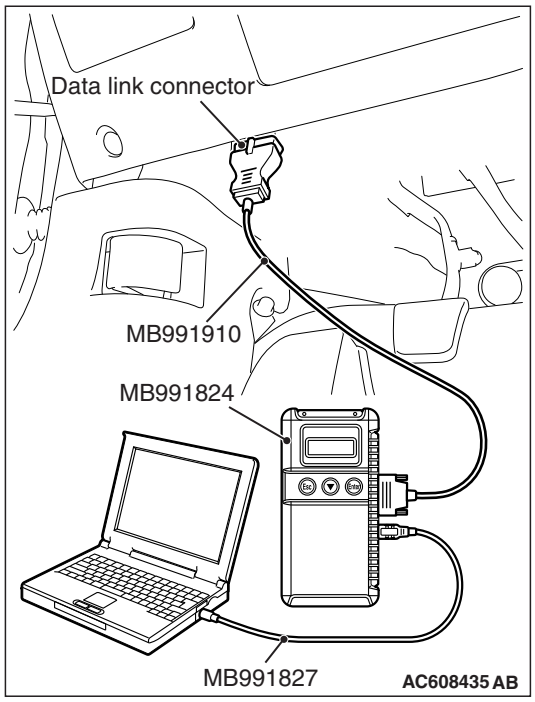
⚠ CAUTION
- **If DTC U0245 is set to the ETACS-ECU, always diagnose the CAN bus line.**
- **Before replacing the ECU, ensure that the communication circuit is normal.**

TROUBLE JUDGMENT
If the signal from CAN box unit (audio visual navigation unit) 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 (audio visual navigation unit) 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-675."
(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).

TSB Revision

STEP 2. Using scan tool MB991958, read the audio visual navigation unit diagnostic trouble code.
Check if DTC is set to the audio visual navigation unit.

Q: Is the DTC set?

YES : Troubleshoot the MMCS (Refer to P.54A-452).
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 (audio visual navigation unit).
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 (audio visual navigation unit) and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

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 (audio visual navigation unit) and the ETACS-ECU (Refer to GROUP 00, How to Cope with Intermittent Malfunction P.00-14).

DTC U1108: Excess CAN-B ECU Detection

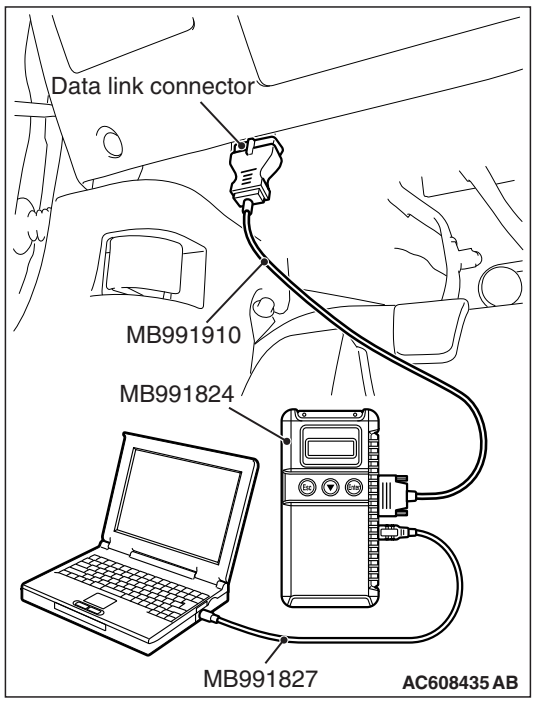
⚠ CAUTION
If the DTC U1108 is set to the ETACS-ECU, always diagnose the CAN bus line.

TROUBLE JUDGEMENT
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)



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-675."
(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 JUDGEMENT

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.

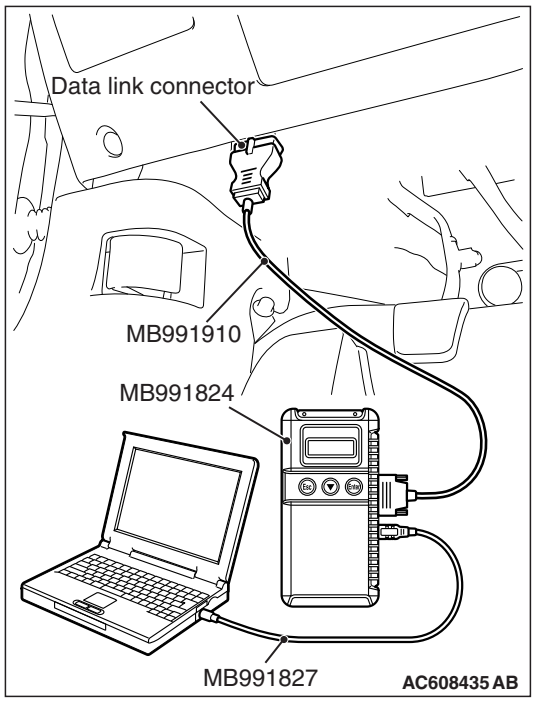
TROUBLESHOOTING HINTS

- 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-675."
(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.

DTC U0331: ECU internal error

TROUBLE JUDGEMENT

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.

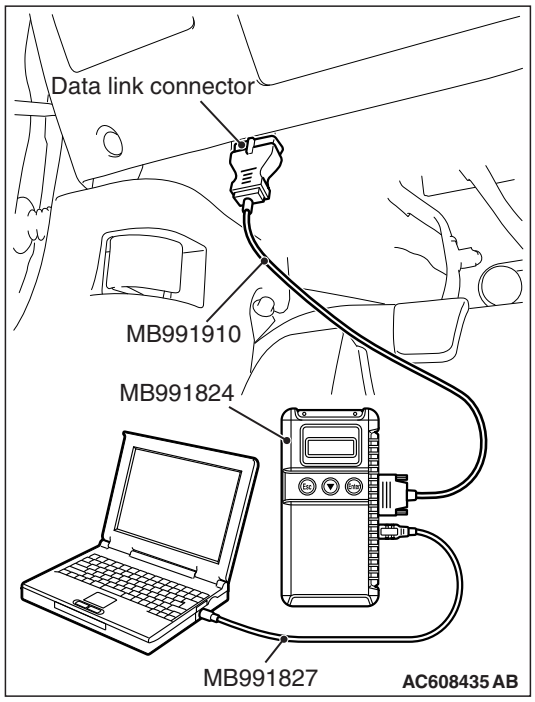
⚠ CAUTION

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-675."
(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: VIN not recorded

TROUBLE JUDGEMENT

If the VIN 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.

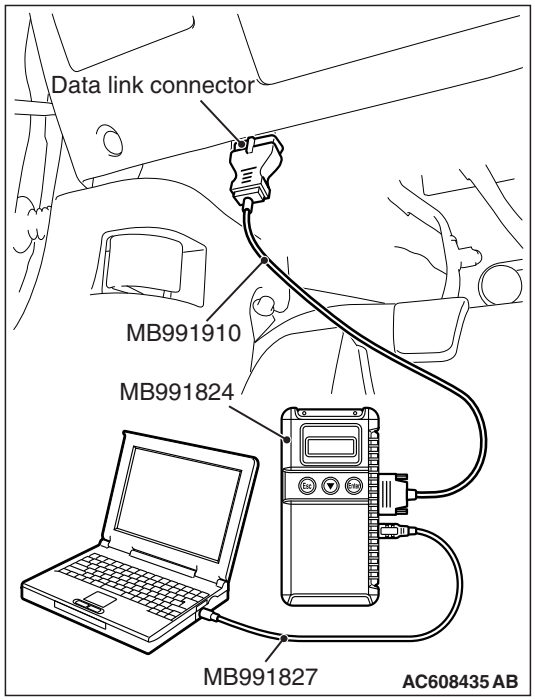
⚠ CAUTION

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-675."
(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?

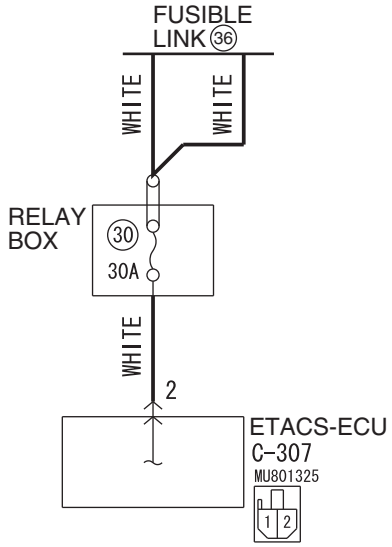
YES : Replace with the coded ETACS-ECU.
NO : The diagnosis is complete.



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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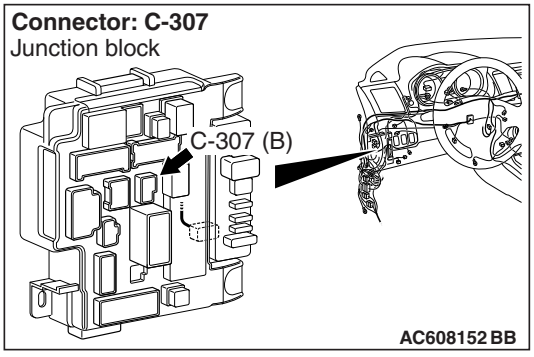


TROUBLE JUDGMENT

The ETACS-ECU sets DTC B210A if the power supply fuse (IOD 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 (IOD fuse) or the ETACS-ECU may have a problem.

TROUBLESHOOTING HINTS

- The power supply fuse (IOD fuse) may be defective.
- The ETACS-ECU may be defective.
- The battery may be defective.
- The alternator 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. Check the wiring harness 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 : The short circuit may be present in the power supply circuit. Check the wiring harness between the C-307 ETACS-ECU connector terminal No. 2 and fuse No.30. Repair the wiring harness if necessary, 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.16-10.

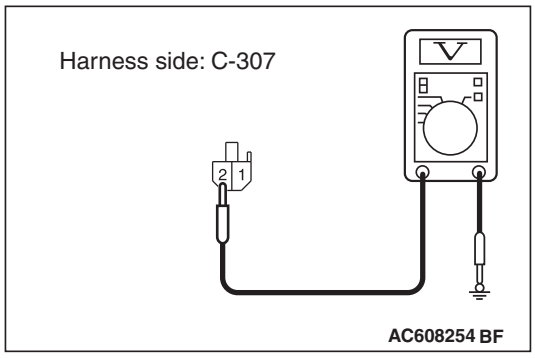
Q: Is the charging system in good condition?

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) 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.

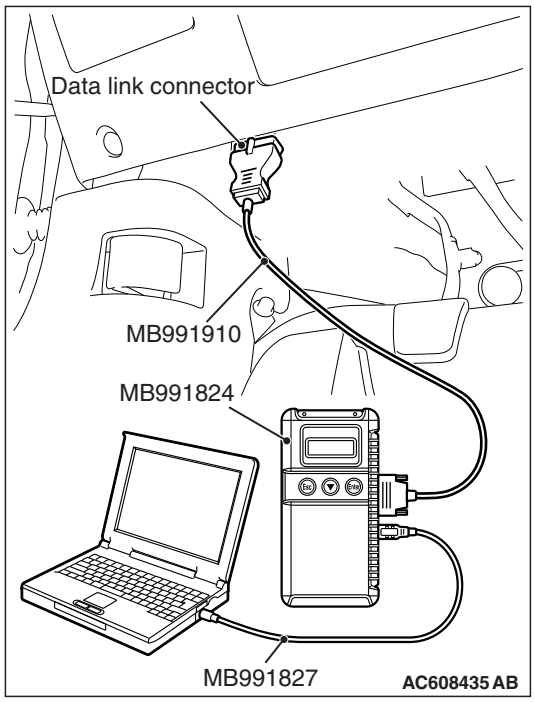
STEP 7. Check the wiring harness between ETACS-ECU connector C-307 (terminal 2) and the fusible link (36).

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-675."

(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: Do 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.00-14).

DTC B222C: Coding incomplete

TROUBLE JUDGEMENT

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.

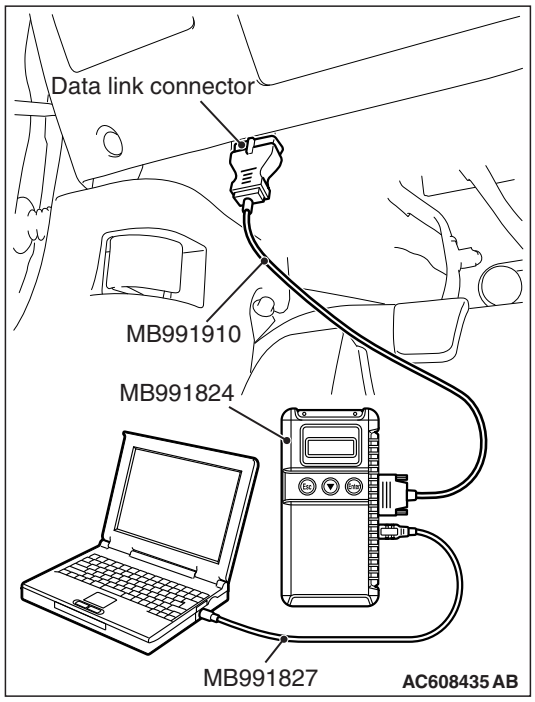
DIAGNOSIS

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-675."
(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

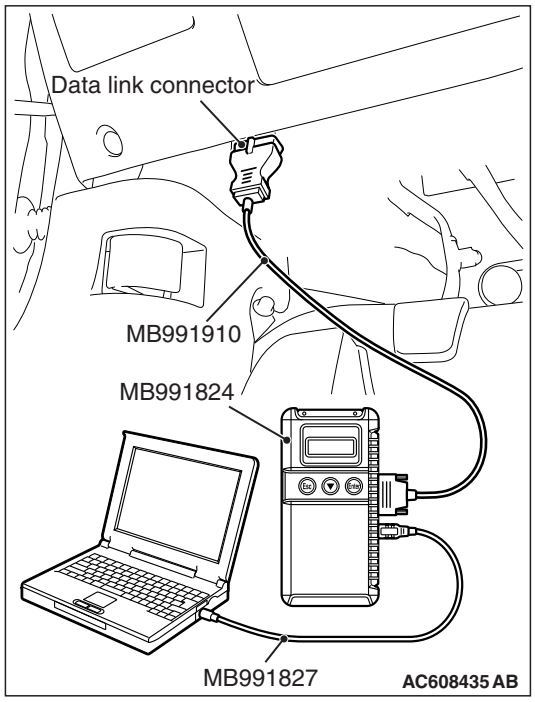
⚠ CAUTION
If DTC B2206 is set, always diagnose the CAN bus line.

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-675."
(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-50 <2.0 L engine non-turbo>, GROUP 13B, Diagnostic Trouble Code Chart P.13B-51 <2.0 L engine turbo> or GROUP 13C, Diagnostic Trouble Code Chart P.13C-48 <2.4 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 procedure is complete.

DTC B2215: ECU internal error

TROUBLE JUDGEMENT

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

TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective.

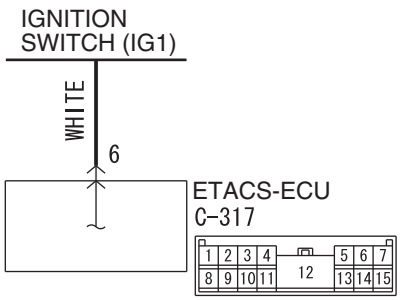
DIAGNOSIS

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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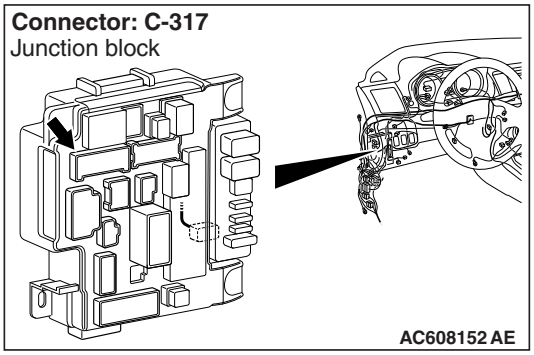

TROUBLE JUDGMENT

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 alternator 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)

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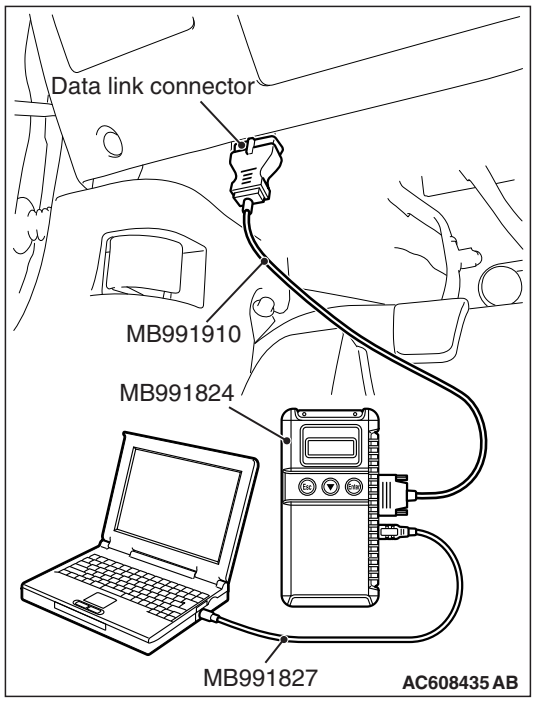

STEP 1. Using scan tool MB991958, check data list.
Check the ignition power supply voltage.

⚠ 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-675."
(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: Do 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 P.54A-8.

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

STEP 3. Charging system check
Refer to GROUP 16 – Output Current Test P.16-10.

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-738.
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.00-14).

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DATA LIST REFERENCE TABLE

M1545001300118

NOTE: Some items are not displayed on scan tool MB991958 according to the information in the ECU.

Item No.	Display on scan tool MB991958	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%

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Item No.	Display on scan tool MB991958	Check condition	Normal condition
209	Gate light ON duty	When the trunk is opened	100 %
		When the trunk 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 active	ON
		When the theft alarm is not active	OFF
215	Security indicator	When the theft alarm is active	ON
		When the theft alarm is not active	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 → OFF (20 minutes after)
		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
228	Dr door unlock	When unlocking is performed by the central door lock	ON
		Other than above	OFF

Item No.	Display on scan tool MB991958	Check condition	Normal condition
230	Trunk/gate opener	Trunk open switch: 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
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
260	Trunk/gate trunk ajar switch	Trunk lid: Open	Open
		Trunk lid: 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

Item No.	Display on scan tool MB991958	Check condition	Normal condition
265	Hazard switch	While the hazard switch is pressed	ON
		Other than above	OFF
266	Hood switch	Not used	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	Not used	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
290	Stoplight 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
293	Process error information	–	–
294	Process error counter	–	0–255 times
340	Headlight switch(tail)	Lighting switch: Position light position	ON
		Other than above	OFF

Item No.	Display on scan tool MB991958	Check condition	Normal condition
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
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	Not used	OFF
357	Rear wiper(washer)	Not used	OFF
358	Front wiper(MIST)	Wiper switch: During MIST operation	ON
		Other than above	OFF

Item No.	Display on scan tool MB991958	Check condition	Normal condition
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

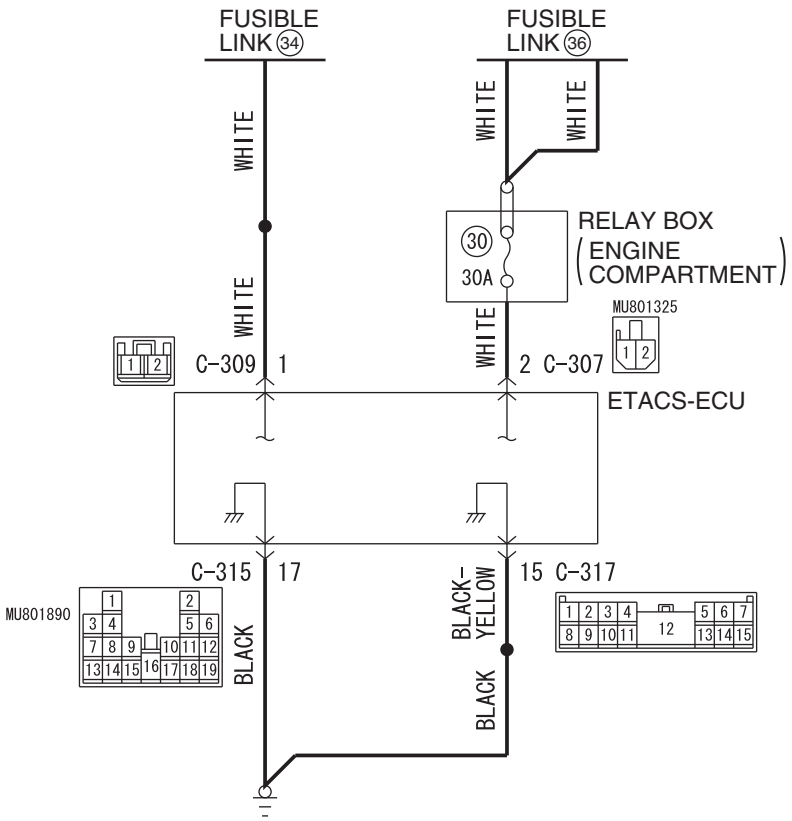
M1545001200111

Trouble symptom	Reference page
Malfunction of ETACS-ECU power supply circuit	P.54A-731

SYMPTOM PROCEDURES

Malfunction of ETACS-ECU power supply circuit

ETACS-ECU Power Supply Circuit



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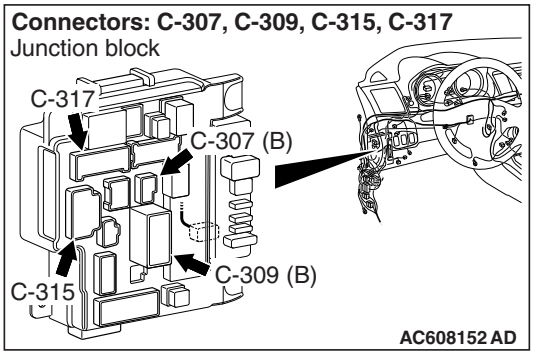


TECHNICAL DESCRIPTION (COMMENT)

If the ETACS-ECU functions do not work at all, the ETACS-ECU power supply system, earth 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:

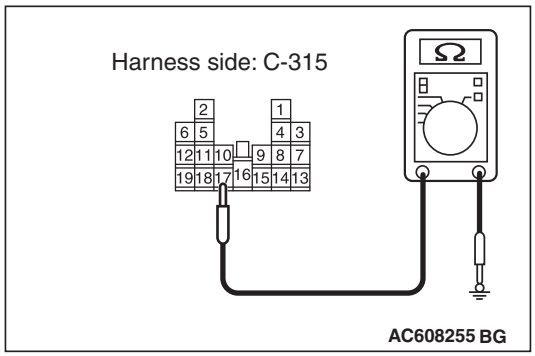
- MB991223: Harness Set
- MB992006: Extra Fine Probe

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).

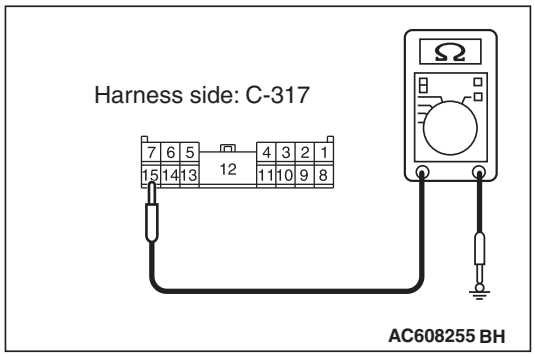


STEP 2. Check the ground circuit to the ETACS-ECU. Measure the resistance at ETACS-ECU connectors C-315 and C-317.

(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.

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.

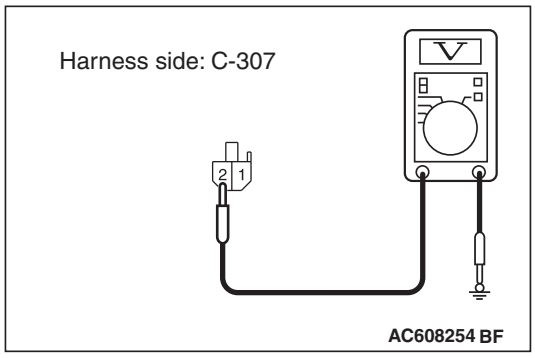
NO : Repair or replace the damaged component(s) (Refer to GROUP 00E, Harness Connector Inspection P.00E-2).

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.

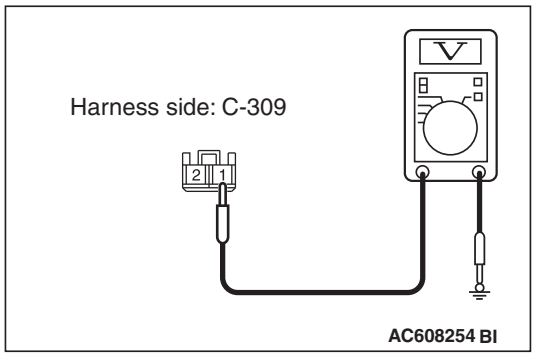
(2) Measure the voltage between ETACS-ECU connector C-307 terminal 2 and ground.

- 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 connectors C-307 (terminal 2) or C-309 (terminal 1) and the fusible link (36) or (34).

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

Q: Is the wiring harness between ETACS-ECU connectors C-307 (terminal 2) or C-309 (terminal 1) and the fusible link (36) or (34) 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.

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.00-14).
NO : Replace the ETACS-ECU.

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TROUBLE SYMPTOM CHART FOR INPUT SIGNAL

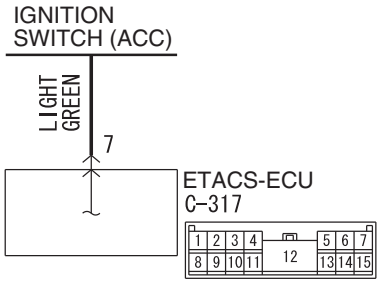
M1545004900090

Trouble symptom	Inspection Procedure No.	Reference page
ETACS-ECU does not receive any signal from the ignition switch (ACC).	1	P.54A-735
ETACS-ECU does not receive any signal from the ignition switch (IG1).	2	P.54A-738
ETACS-ECU does not receive any signal from the key reminder switch.	3	P.54A-741
ETACS-ECU cannot receive the signal of front door lock actuator (LH) or front door lock actuator (RH).	4	P.54A-744
ETACS-ECU does not receive any signal from the front door switch (LH).	5	P.54A-751
ETACS-ECU does not receive any signal from the front door switch (RH).	6	P.54A-753
ETACS-ECU does not receive any signal from the rear door switch (LH).	7	P.54A-756
ETACS-ECU does not receive any signal from the rear door switch (RH).	8	P.54A-758
ETACS-ECU does not receive any signal from the trunk lid actuator and switch.	9	P.54A-761
ETACS-ECU does not receive any signal from the hazard warning light switch.	10	P.54A-764
ETACS-ECU does not receive any signal from the column switch signal.	11	P.54A-766

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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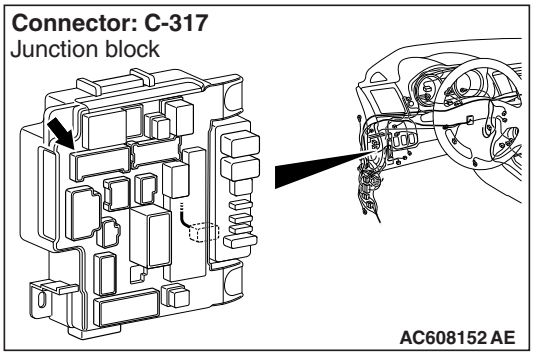


TECHNICAL DESCRIPTION (COMMENT)

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

TSB Revision

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.

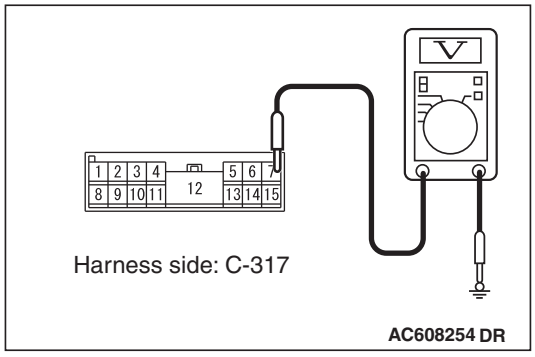
Q: Is ETACS-ECU connector C-317 in good condition?

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.

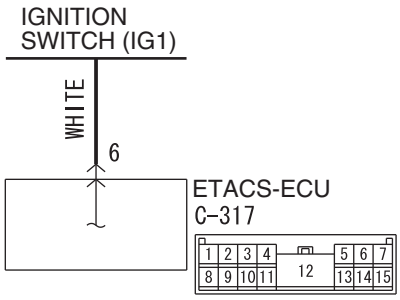
Q: Is the check result normal?

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.00-14).

NO : Refer to Inspection Procedure 2 "Defective power supply system of the ignition switch" P.54A-20

Inspection Procedure 2: Malfunction of the ignition switch (IG1) input/output signal

Ignition Switch (IG1) Input Circuit



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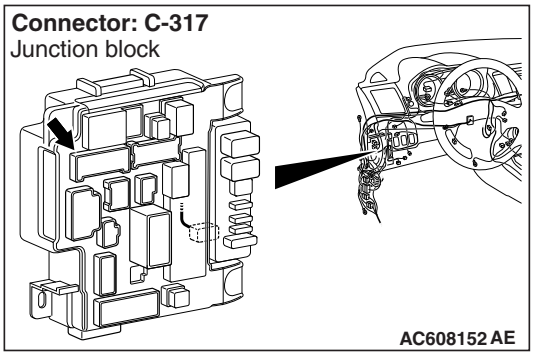


TECHNICAL DESCRIPTION (COMMENT)

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:

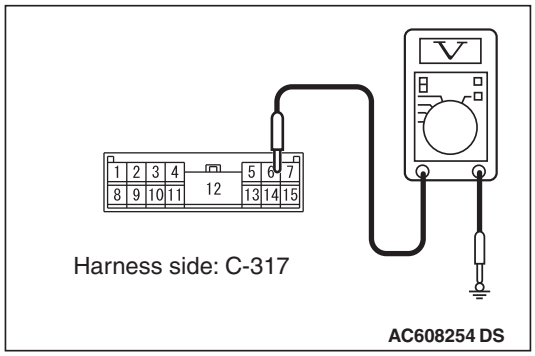
- MB991223: Harness Set
- MB992006: Extra Fine Probe

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	Battery positive voltage

OK: Normal condition is displayed.

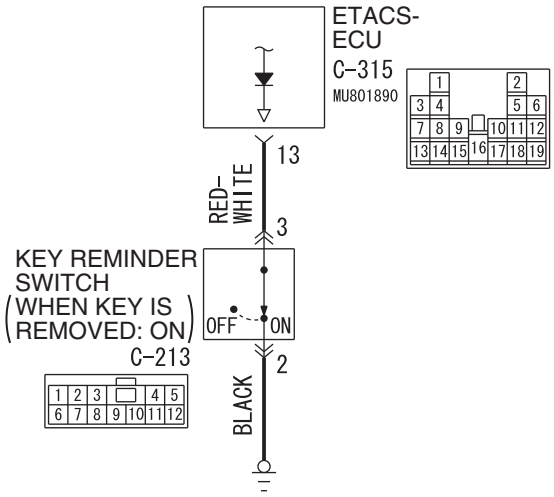
Q: Is the check result normal?

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.00-14).

NO : Refer to Inspection Procedure 2 "Defective power supply system of the ignition switch" P.54A-20

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

Key Reminder Switch Input Circuit



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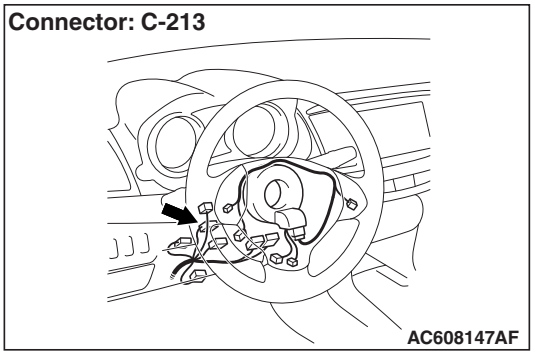
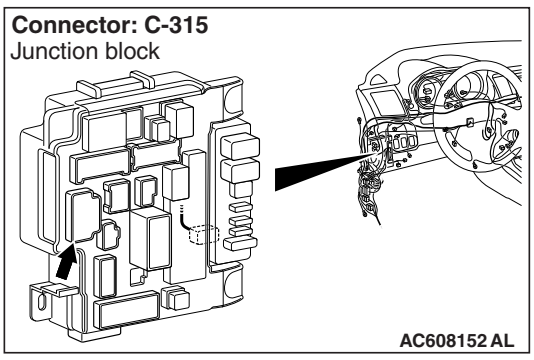




COMMENTS ON TROUBLE SYMPTOM

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

TSB Revision

STEP 1. Check key reminder switch connector C-213 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is key reminder switch connector C-213 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-213. Then check continuity between terminals.

Ignition key	Tester connection	Specified condition
Removed	2 – 3	Continuity exists (2 ohms or less)
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-213.

(1) Disconnect key reminder switch connector C-213 and measure the resistance available at the wiring harness side of the connector.

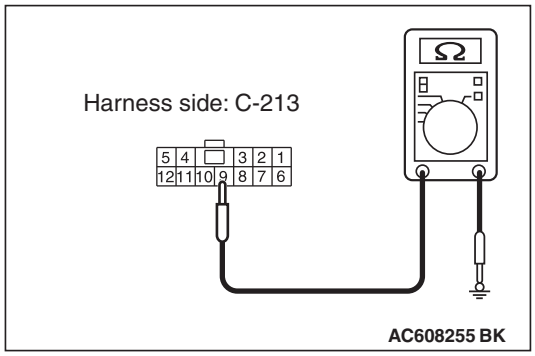
(2) Measure the resistance value between terminal 2 and ground.

- 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-213 (terminal 2) and ground.
Check the ground wires for open circuit.

Q: Is the wiring harness between key reminder switch connector C-213 (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.

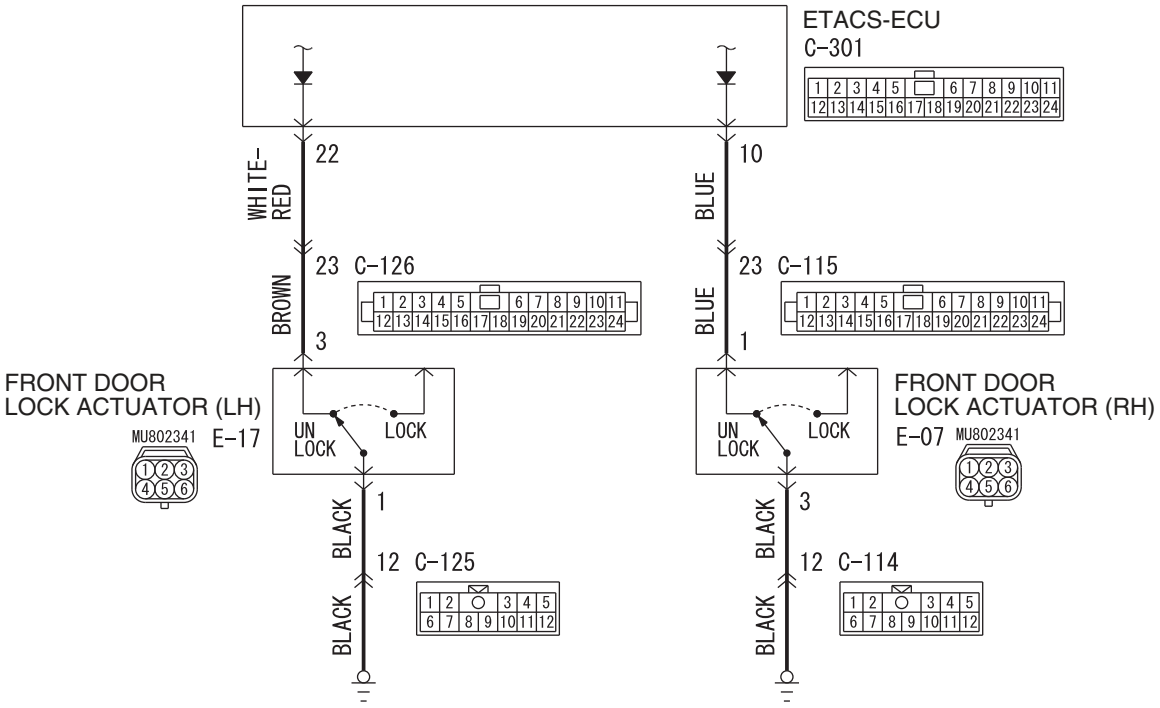
STEP 6. Check the wiring harness between key reminder switch connector C-213 (terminal 3) and ETACS-ECU connector C-315 (terminal 13).
Check the output lines for open circuit and short circuit.

Q: Is the wiring harness between key reminder switch connector C-213 (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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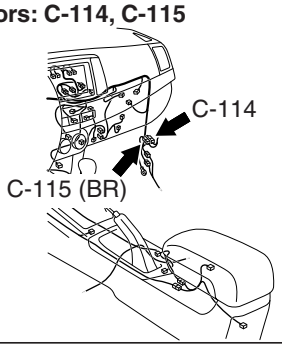
Connectors: C-114, C-115



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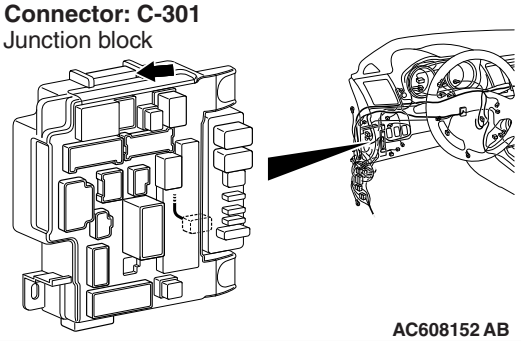
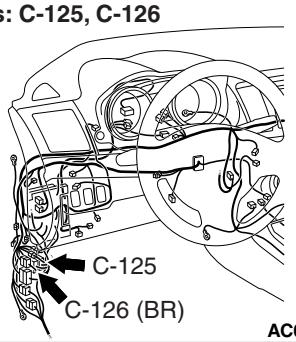
Connector: C-301
Junction block



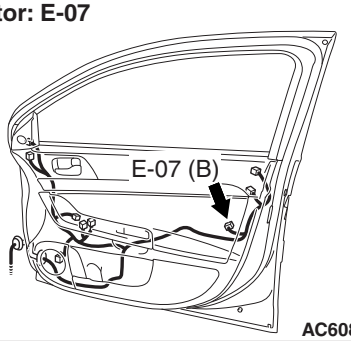
AC608152 AB

Connectors: C-125, C-126



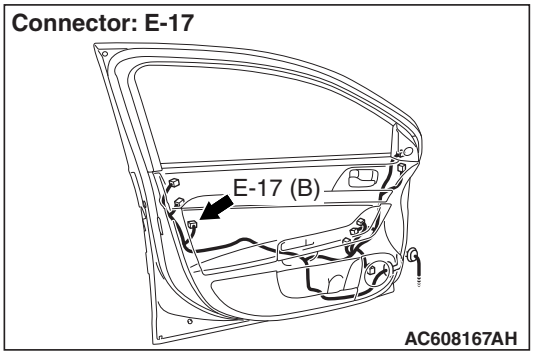
AC608145AR

Connector: E-07



AC608168 AF

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

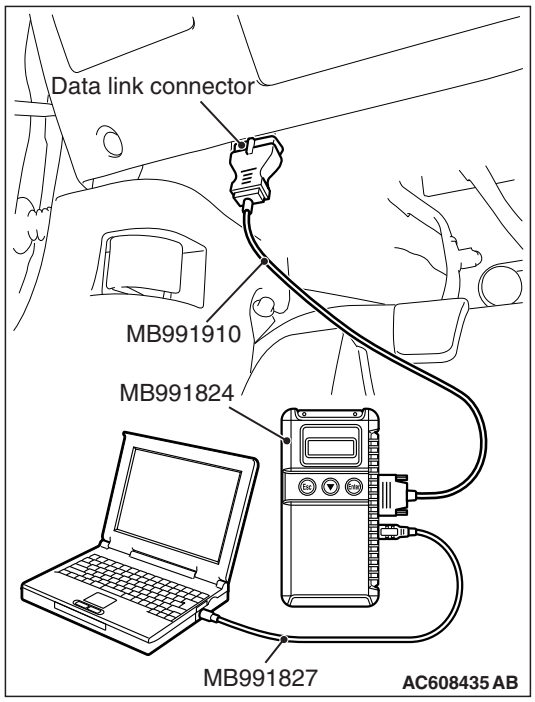
PROBABLE CAUSES

- 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-675."
(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-17 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

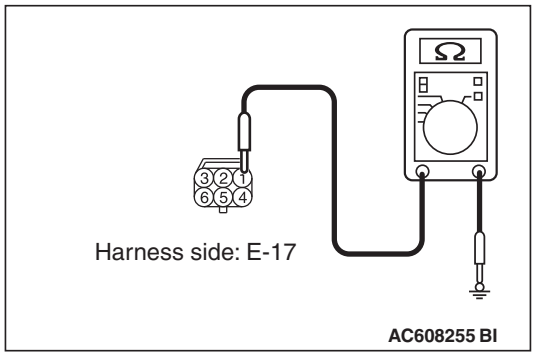
Q: Is front door lock actuator (LH) connector E-17 in good condition?
YES : Go to Step 3.
NO : Repair or replace the damaged component(s) (Refer to GROUP 00E, Harness Connector Inspection P.00E-2). Check that the input signal of front door lock actuator (LH) is normal.

STEP 3. Check the front door lock actuator (LH).
Disconnect front door lock actuator (LH) connector E-17. Then check continuity between the terminals.

Lever position	Tester connection	Specified condition
UNLOCK	1 – 3	Continuity exists (2 ohms or less)
LOCK	1 – 3	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-17.
(1) Disconnect front door lock actuator (LH) connector E-17 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-17 (terminal 1) and ground.
Check the ground wires for open circuit.

NOTE: Also check intermediate connector C-125 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-125 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-17 (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-17 (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-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-17 (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-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door lock actuator (RH) connector E-07 in good condition?

YES : Go to Step 9.

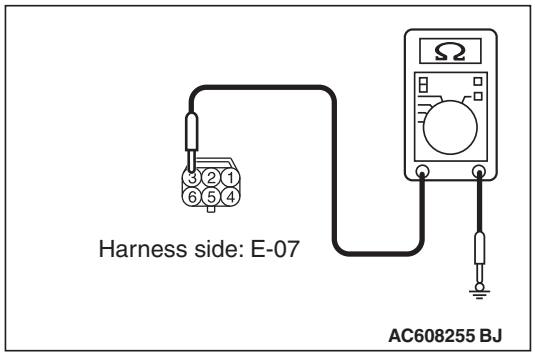
NO : Repair or replace the damaged component(s) (Refer to GROUP 00E, Harness Connector Inspection P.00E-2). Check that the input signal of front door lock actuator (RH) is normal.

STEP 9. Check the front door lock actuator (RH).
Disconnect front door lock actuator (RH) connector E-07. Then check continuity between the terminals.

Lever position	Tester connection	Specified condition
UNLOCK	1 – 3	Continuity exists (2 ohms or less)
LOCK	1 – 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-07.
(1) Disconnect front door lock actuator (RH) connector E-07 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-07 (terminal 3) and ground.
Check the ground wires for open circuit.

NOTE: Also check intermediate connector C-114 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-114 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-07 (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-07 (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-115 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-115 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

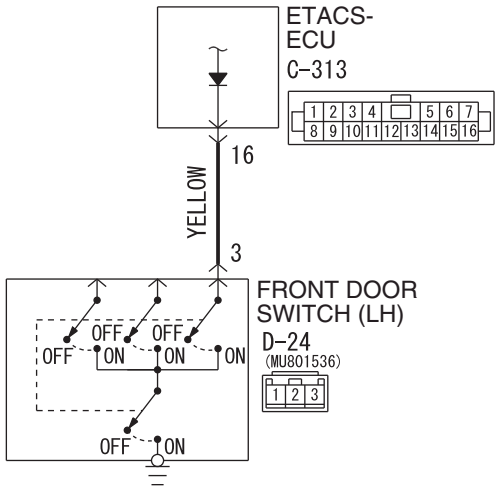
Q: Is the wiring harness between front door lock actuator (RH) connector E-07 (terminal 1) and ETACS-ECU connector C-301 (terminal 10) in good condition?

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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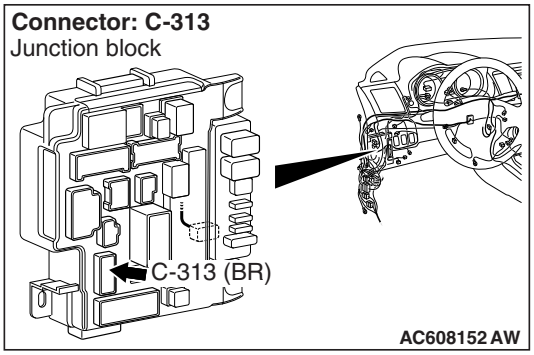
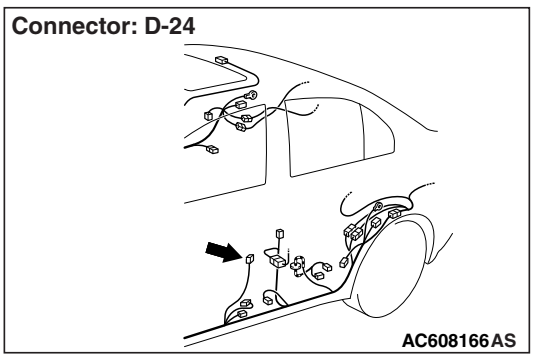




TECHNICAL DESCRIPTION (COMMENT)

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

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

TSB Revision

STEP 1. Check front door switch (LH) connector D-24 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front door switch (LH) connector D-24 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	Continuity exists (2 ohms or less)
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-24 (terminal 3) and ETACS-ECU connector C-313 (terminal 16).

Check the input lines for open circuit and short circuit.

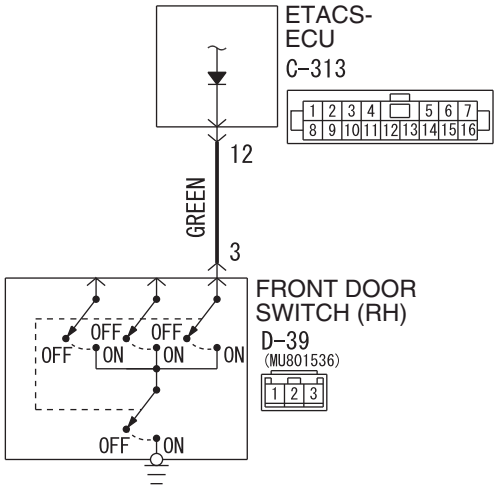
Q: Is the wiring harness between driver's door switch connector D-24 (terminal 3) and ETACS-ECU connector C-313 (terminal 16) in good condition?

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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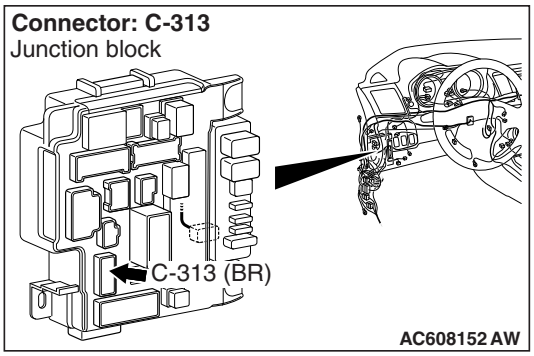
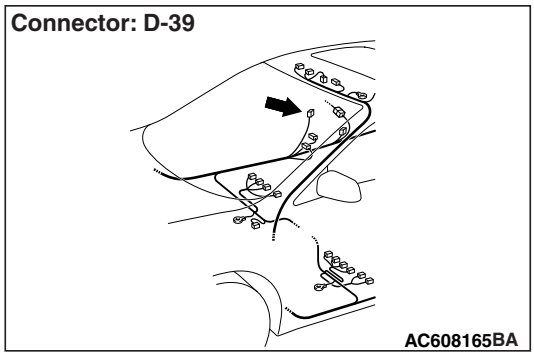




TSB Revision

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

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	Continuity exists (2 ohms or less)
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.

TSB Revision

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-39 (terminal 3) and ETACS-ECU connector C-313 (terminal 12).

Check the input lines for open circuit and short circuit.

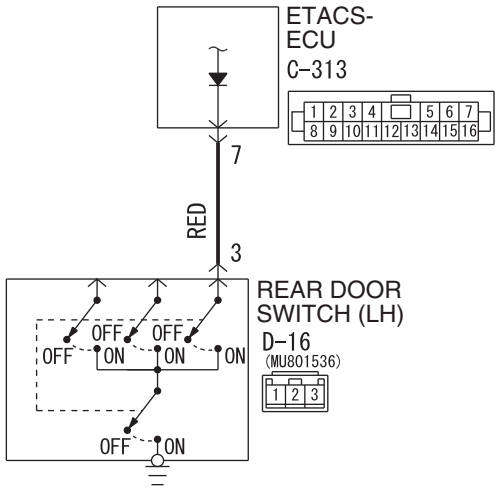
Q: Is the wiring harness between driver's door switch connector D-39 (terminal 3) and ETACS-ECU connector C-313 (terminal 12) in good condition?

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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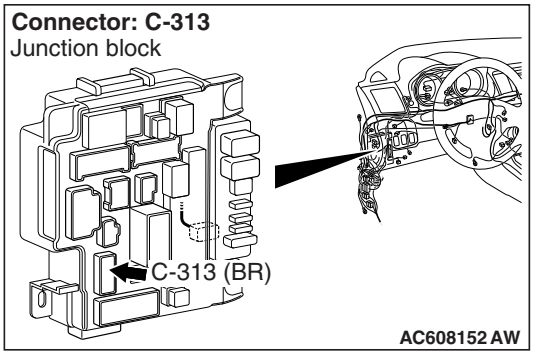
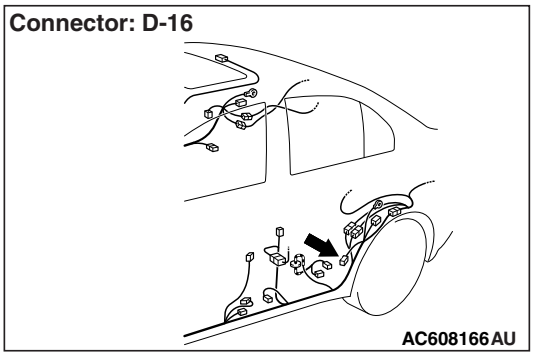




TECHNICAL DESCRIPTION (COMMENT)

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

TSB Revision

STEP 1. Check rear door switch (LH) connector D-16 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door switch (LH) connector D-16 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	Continuity exists (2 ohms or less)
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-16 (terminal 3) and ETACS-ECU connector C-313 (terminal 7).

Check the input lines for open circuit and short circuit.

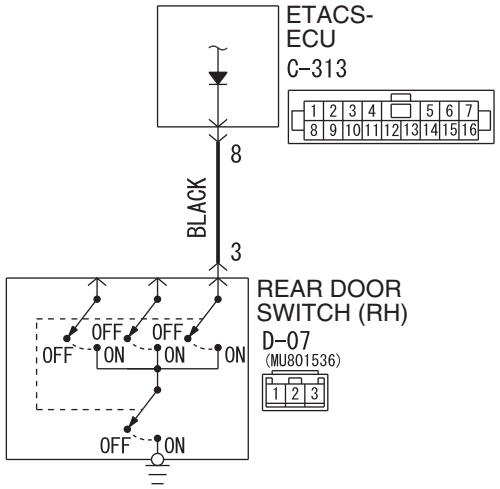
Q: Is the wiring harness between rear door switch connector D-16 (terminal 3) and ETACS-ECU connector C-313 (terminal 7) in good condition?

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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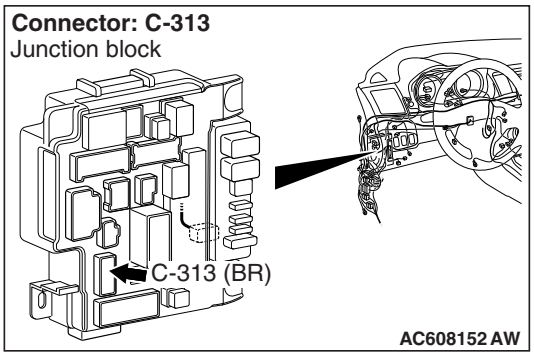
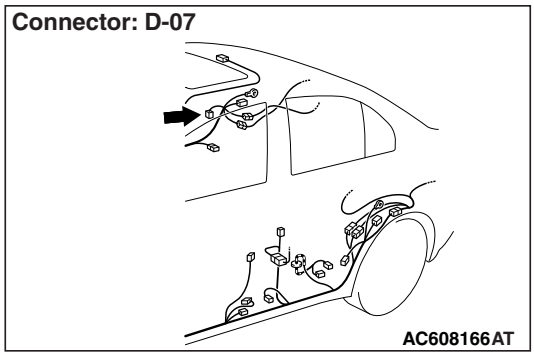




TSB Revision

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	Continuity exists (2 ohms or less)
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.

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.

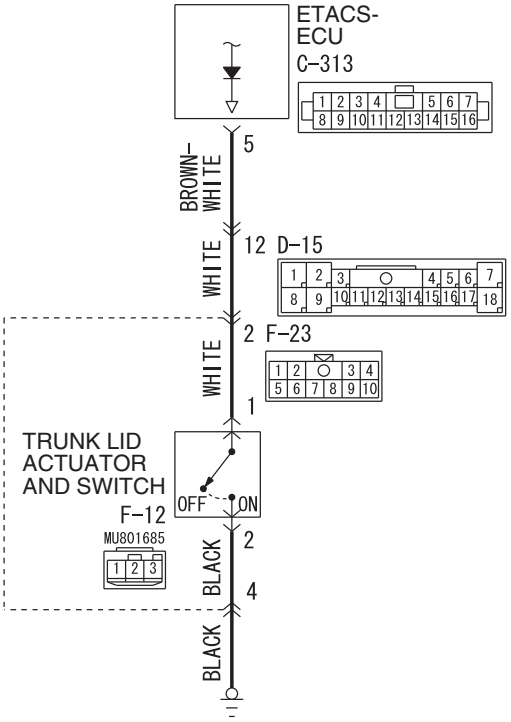
Q: Is the wiring harness between rear door switch connector D-07 (terminal 3) and ETACS-ECU connector C-313 (terminal 8) in good condition?

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 trunk lid actuator and switch.

Trunk Lid Actuator and Switch Input Circuit



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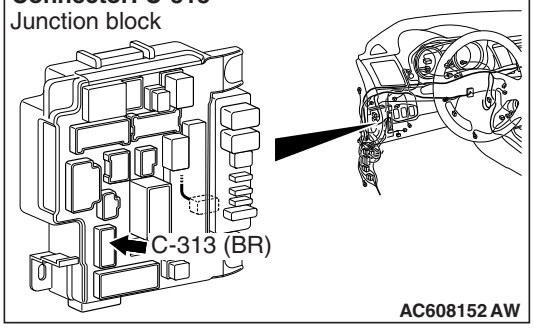
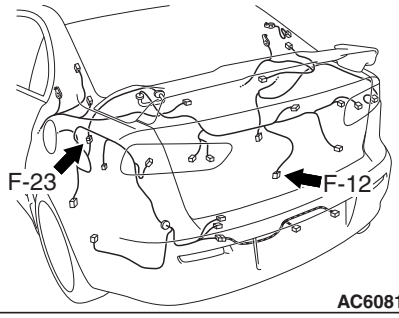
Connector: C-313
Junction block



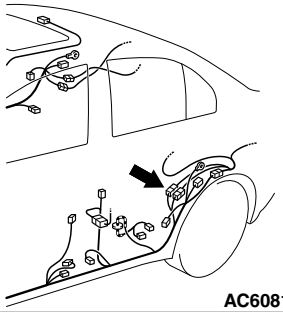
AC608152 AW

Connectors: F-12, F-23



AC608171 AE

Connector: D-15



AC608166 AL

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the trunk lid actuator and switch input signal, the trunk lid actuator and switch signal is no longer output to the communication line.

TROUBLESHOOTING HINTS

- The trunk lid actuator and 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

TSB Revision

DIAGNOSIS

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

STEP 1. Check trunk lid actuator and switch connector F-12 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is trunk lid actuator and 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 trunk lid actuator and switch is normal.

STEP 2. Check the trunk lid actuator and switch.

Disconnect trunk lid actuator and switch connector F-12. Then check continuity between terminals.

Ignition key	Tester connection	Specified condition
Released	1 – 2	Continuity exists (2 ohms or less)
Pressed	1 – 2	Open circuit

Q: Is the trunk lid actuator and switch in good condition?

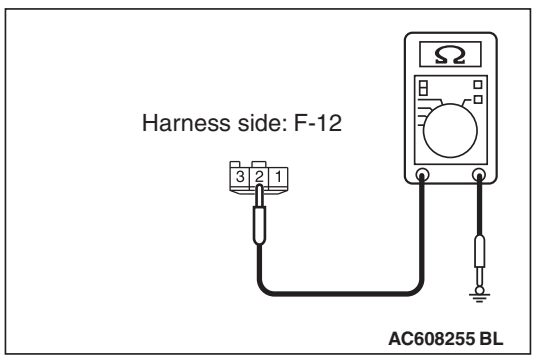
YES : Go to Step 3.

NO : Replace the trunk lid actuator and switch. Check that the input signal of trunk lid actuator and switch is normal.

STEP 3. Check the ground circuit to the trunk lid actuator and switch. Measure the resistance at trunk lid actuator and switch connector F-12.

(1) Disconnect trunk lid actuator and switch connector F-12 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 trunk lid actuator and switch connector F-12 (terminal 2) and ground.

Check the ground wires for open circuit.

NOTE: Also check intermediate connector F-23 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector F-23 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

Q: Is the wiring harness between trunk lid actuator and switch connector F-12 (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 trunk lid actuator and switch is normal.

STEP 5. 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 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 trunk lid actuator and switch is normal.

STEP 6. Check the wiring harness between trunk lid actuator and switch connector F-12 (terminal 1) and ETACS-ECU connector C-313 (terminal 5).

Check the output lines for open circuit and short circuit.

NOTE: Also check intermediate connectors F-23 and D-15 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector F-23 or D-15 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

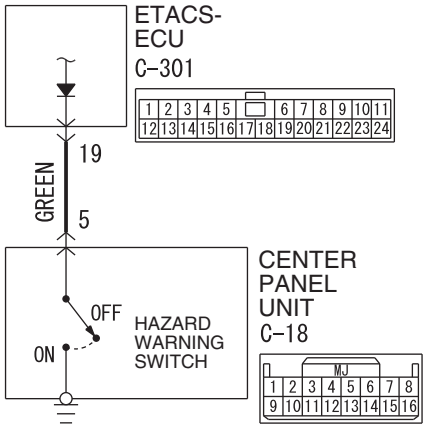
Q: Is the wiring harness between trunk lid actuator and switch connector F-12 (terminal 1) and ETACS-ECU connector C-313 (terminal 5) in good condition?

YES : Replace the ETACS-ECU. Check that the input signal of trunk lid actuator and 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 trunk lid actuator and switch is normal.

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

Hazard Warning Switch Input Circuit



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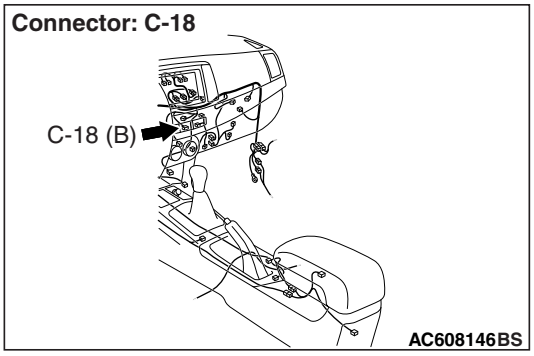
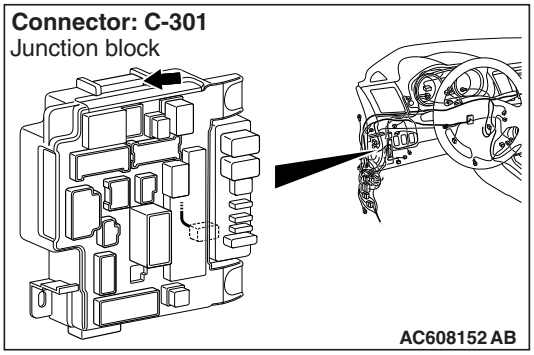
Connector: C-18



Connector: C-301
Junction block



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-18 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is center panel unit connector C-18 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	Continuity exists (2 ohms or less)

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-18 (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-18 (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 11: 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.

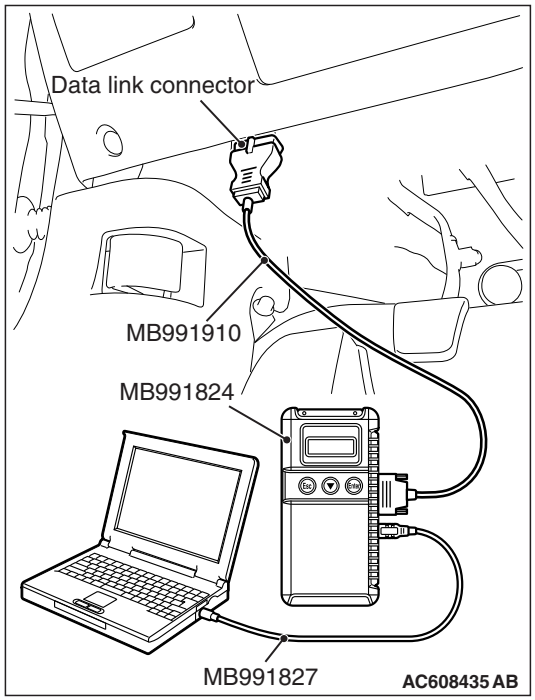
⚠ CAUTION

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-675."
(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-678).
NO : Go to Step 2.



STEP 2. Column switch check

- Check the continuity for windshield wiper and windshield washer switch (Refer to P.54A-339).
- Check the continuity for column switch (switch body part) (Refer to P.54A-340).

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.00-14).

NO : Replace the column switch.

ON-VEHICLE SERVICE

CUSTOMIZATION FUNCTION

M1545002500858

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 display)	Adjustment item	Adjusting contents (scan tool 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	No 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	No function

Adjustment item (scan tool display)	Adjustment item	Adjusting contents (scan tool 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)
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	No function
		Enable (C-spec.)	With function (initial condition)

Adjustment item (scan tool display)	Adjustment item	Adjusting contents (scan tool display)	Adjusting contents
Welcome light	Disabling or enabling welcome light function <Vehicles with color liquid crystal meter>	Disabled	No function
		Small light	Tail light illuminates. (initial condition)
		Head light	Headlight illuminates.
Coming home light	Disabling or enabling coming home light function <Vehicles with color liquid crystal meter>	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	Disable	No 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 <Vehicles with keyless entry system>	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)
Auto door unlock	Adjustment of the auto door unlock function	Disabled	Without function (initial condition) <M/T, CVT, TC-SST>
		Always (P pos)	With function: Operates when the shift lever or the selector lever is moved to the P position. <CVT, TC-SST>
		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. <CVT, TC-SST>
		Always(Lock pos)	With function: Operates when the ignition switch is moved to the LOCK (OFF) position. <M/T, CVT, TC-SST>
		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. <M/T, CVT, TC-SST>
Duration of horn chirp	Horn sounding time during horn answer back	Short	0.01 second (initial condition)
		Long	0.02 second

Adjustment item (scan tool display)	Adjustment item	Adjusting contents (scan tool display)	Adjusting contents
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)
Buzzer answer back	Adjusts the tone alarm answer back function. <Vehicles with KOS>	Not Sound Buzzer	No 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	No function
		Enable	With function (initial condition)
F.A.S.T.* key detect out fm window	With/without KOS key exterior detection function	Enable	No function
		Disable	With function (initial condition)
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)*

TSB Revision

ETACS-ECU

REMOVAL AND INSTALLATION

M1545004700308

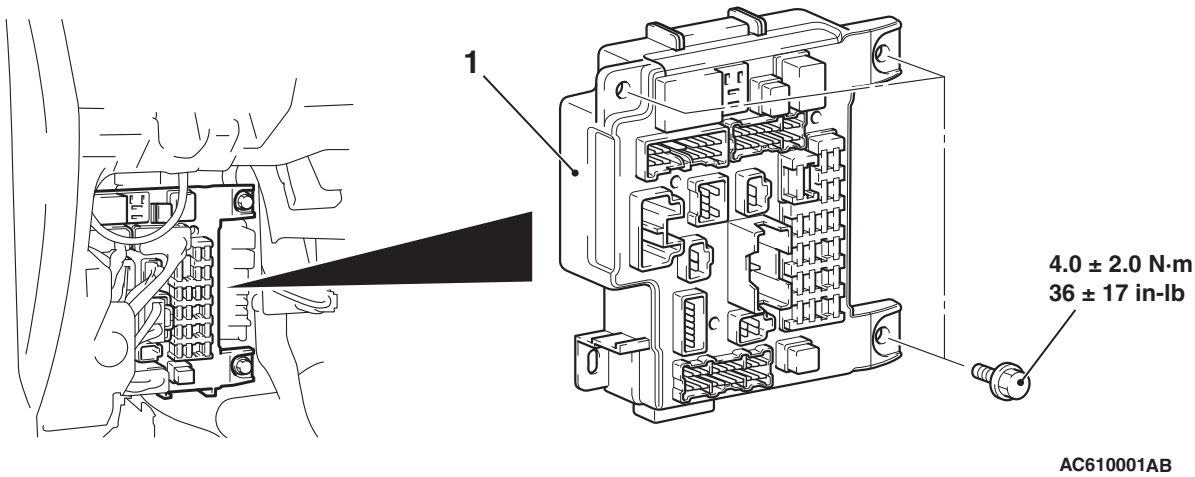
⚠ *WARNING*

- ***Before removing the ETACS-ECU and knee air bag module, refer to GROUP 52B, Service Precautions P.52B-25 and Knee Air Bag Module P.52B-439.***
- ***When removing and installing the ETACS-ECU, do not let it bump against the knee air bag module.***

⚠ 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.

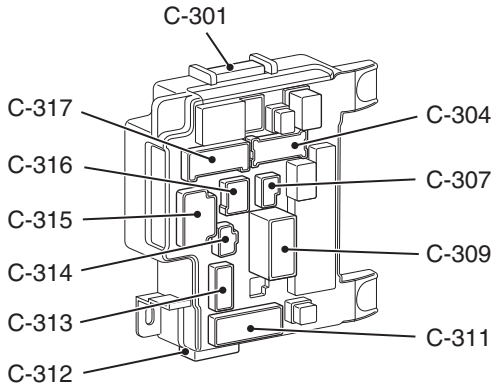
Pre-removal and Post-installation Operation
- Side lower panel assembly (Refer to GROUP 52A, Instrument Lower Panel P.52A-8).
- Knee air bag module (Refer to GROUP 52B, Knee Air Bag Module P.52B-439).



Removal Step
1. ETACS-ECU

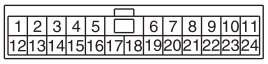
CHECK WITH TERMINAL VOLTAGE

M1545004800286



AC507027AB

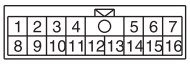
CONNECTOR: C-301



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 volt or less
3–9	–	–	–
10	Input from front passenger's door lock actuator (unlock)	Front passenger's door lock: Unlocked	1 volt or less
11	–	–	–
12	Output to defogger switch	Defogger switch: ON	1 volt or less
13–18	–	–	–
19	Input from hazard warning light switch	Hazard warning light switch: ON	1 volt or less
20	–	–	–
21	Input from windshield wiper backup switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	1 volt or less
22	Input from driver's door lock actuator (unlock)	Driver's door lock: Unlocked	1 volt 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	–	–	–
3	Output to position light (LH)	When position light is illuminated	Battery positive voltage
4	–	–	–
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 volt 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	–	–	–
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

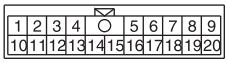
Terminal No.	Check item	Check condition	Normal condition
1	Fuel pump power supply	Ignition switch: ON	Battery positive voltage
2	Battery power supply	Always	Battery positive voltage

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

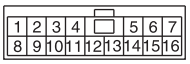


AC507035AB

Terminal No.	Check item	Check condition	Normal condition
1	Output to trunk lid lock actuator	When trunk 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 volt or less
4, 5	–	–	–
6	Output to rear door lock actuator (unlock)	When rear door is unlocked	Battery positive voltage
7, 8	–	–	–
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	–	–	–

Terminal No.	Check item	Check condition	Normal condition
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	–	–	–

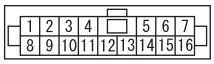
CONNECTOR: C-312



AC507034AB

Terminal No.	Check item	Check condition	Normal condition
1	Input from brake fluid level switch	Brake fluid level switch: ON	1 volt or less
2	Output to radiator fan relay	When radiator fan is operating	1 volt or less
3	–	–	–
4	Output to fog lights	Fog light switch: ON	1 volt or less
5	–	–	–
6	Output to headlight (LO)	Headlight switch: ON	1 volt or less
7	Input from ambient temperature sensor	Always	0.2 – 2.72 volts
8	Output to condenser fan relay	When condenser fan is operating	1 volt or less
9	Output to fan control relay	When fan control is operating	1 volt or less
10	Output to daytime running light	Ignition switch: ON	1 volt or less
11	Output to horn	When horn sounds	1 volt or less
12	–	–	–
13	Output to Headlight (HI)	Dimmer switch: ON	1 volt or less
14	Ground (ambient temperature sensor)	Always	1 volt or less
15	–	–	–
16	Input from stoplight switch	Stoplight switch: ON	Battery positive voltage

CONNECTOR: C-313



AC610017

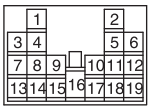
Terminal No.	Check item	Check condition	Normal condition
1	–	–	–
2	Ignition switch (IG1) power supply	Ignition switch: ON	Battery positive voltage
3	–	–	–
4	Ignition switch (IG1) power supply	Ignition switch: ON	Battery positive voltage
5	Input from trunk lid actuator and switch	Trunk lid actuator and switch: ON (trunk lid open)	1 volt or less
6	–	–	–
7	Input from rear door switch (LH)	Rear door switch (LH): ON (door open)	1 volt or less
8	Input from rear door switch (RH)	Rear door switch (RH): ON (door open)	1 volt or less
9–11	–	–	–
12	Input from front door switch (RH)	Front door switch (RH): ON (door open)	1 volt or less
13–15	–	–	–
16	Input from front door switch (LH)	Front door switch (LH): ON (door open)	1 volt 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

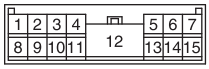
Terminal No.	Check item	Check condition	Normal condition
1	–	–	–
2	Output to front door lock actuator (LH) (unlock)	When front door (LH) is unlocked	Battery positive voltage
3	–	–	–
4	Battery power supply	Always	Battery positive voltage
5	Output to front door lock actuator (RH) (unlock)	When front door (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 volt or less
14	–	–	–
2	Input from power window main switch or front power window sub switch (central door lock switch)	Central door lock switch: Unlocked	1 volt or less
16	Output to blower motor	Blower motor in operation	Battery positive voltage
17	Ground (signal)	Always	1 volt 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 volt 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 volt 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 volt or less
10	Battery power supply	Always	Battery positive voltage
11–14	–	–	–
15	Ground	Always	1 volt or less

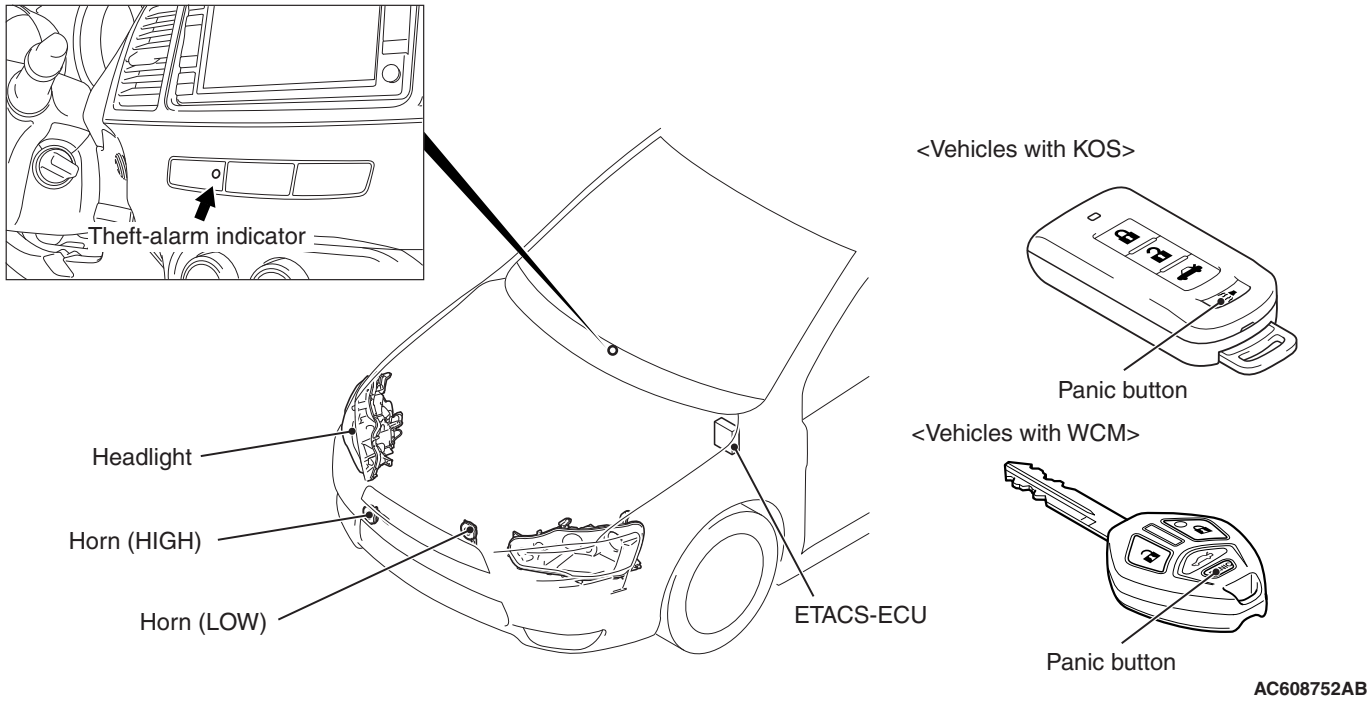
THEFT ALARM

GENERAL INFORMATION

M1547000100236

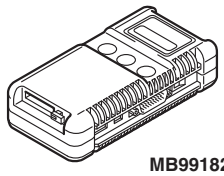
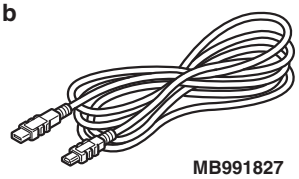
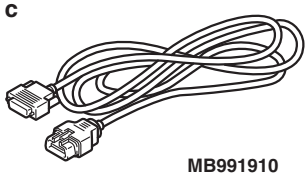
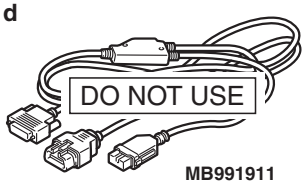
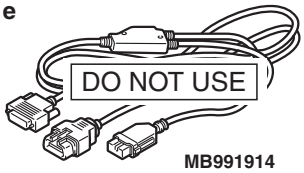
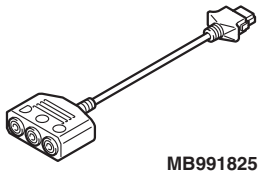
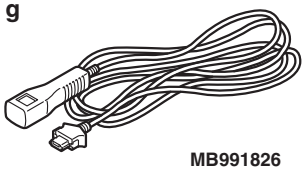
- When the doors are locked using the keyless entry or KOS (except when locked by using the key cylinder or door lock switch), the improper opening of door or trunk causes the ETACS-ECU function and control to give off an alarm with the flashing of headlights and the intermittent sounding of horns (HIGH and LOW). Also, the ETACS-ECU warns that the theft-alarm system is being set by flashing the theft-alarm indicator. <Standard: ES,GTS,RALLIART Option: DE>
- By pressing the panic button of transmitter, the flashing of headlights and the intermittent sounding of horns can be performed by remote control operation. <Standard: ES,GTS,RALLIART Option: DE>

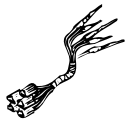
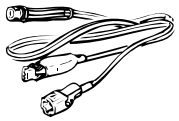
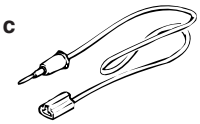
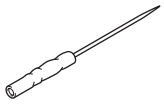
CONSTRUCTION DIAGRAM



SPECIAL TOOLS

M1547000600372

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 and data list.

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

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

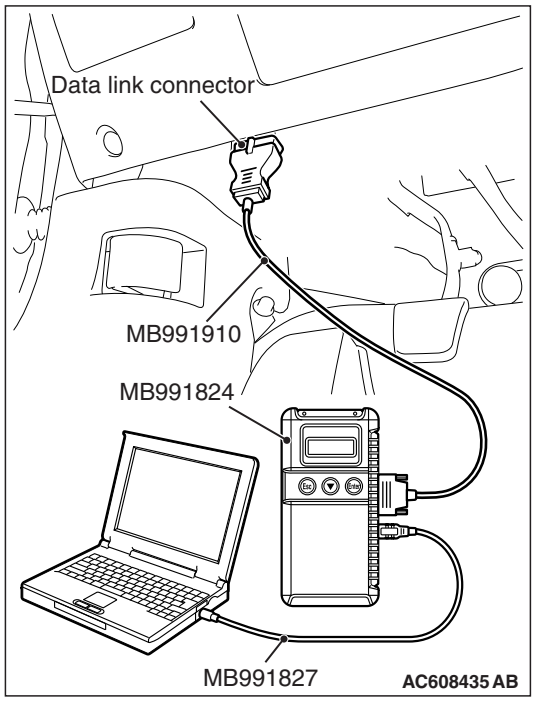
M1547001200106

Refer to GROUP 00 – Contents of troubleshooting
P.00-7.

DIAGNOSTIC FUNCTION

M1547001300028

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.

TROUBLE SYMPTOM CHART

M1547001500475

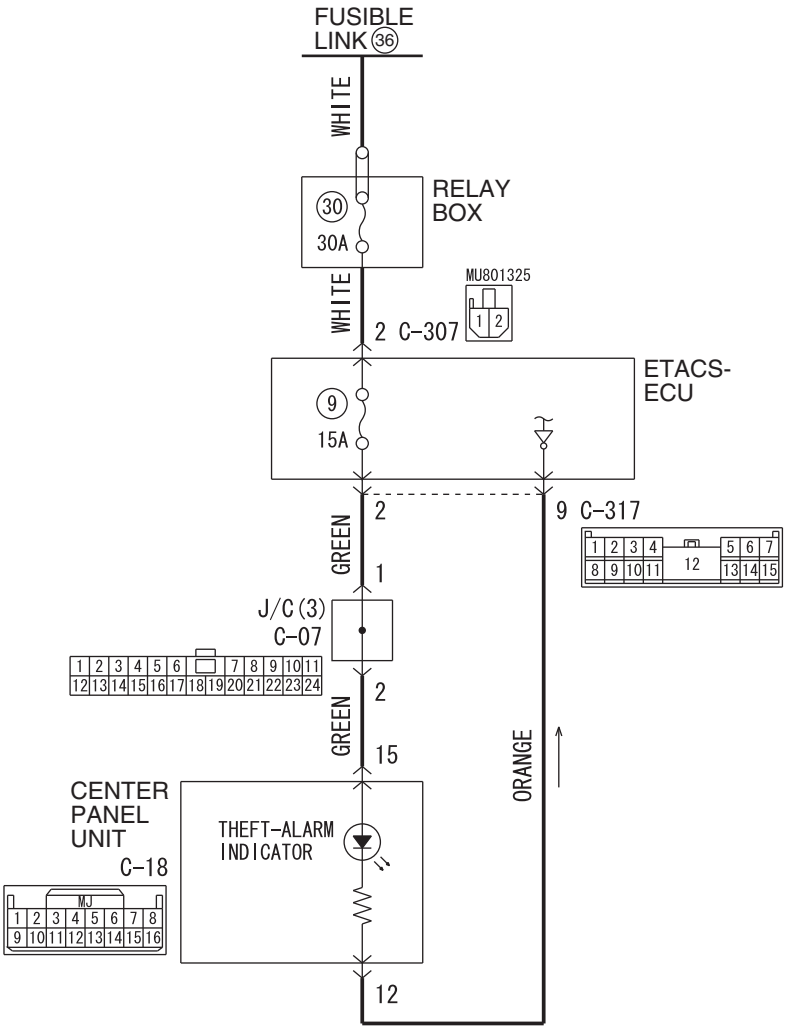
Trouble symptom	Inspection Procedure No.	Reference page
The theft-alarm is not armed (the theft-alarm indicator does not illuminate).	1	P.54A-786
The interior alarm does not work normally while the theft-alarm is triggered.	2	P.54A-792
Horns do not normally sound while the theft-alarm system is triggered.	3	P.54A-794
Panic alarm does not work normally.	4	P.54A-799

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



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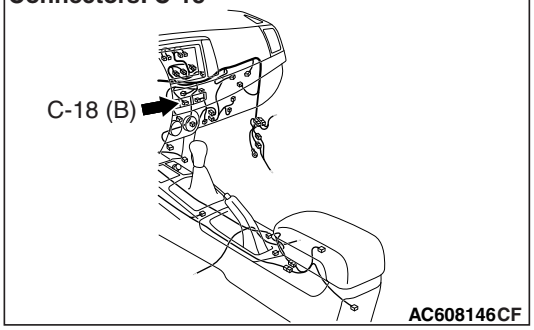
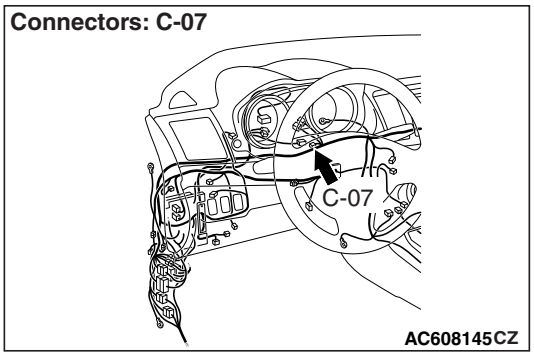
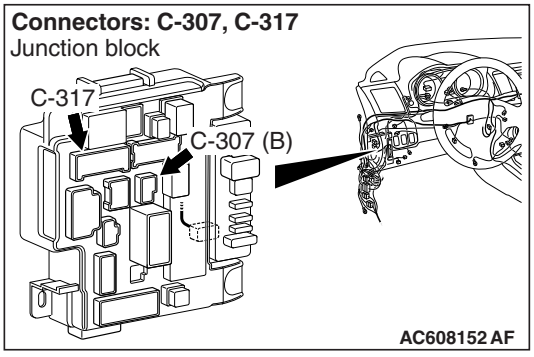
Connectors: C-18



Connectors: C-07



Connectors: C-307, C-317
Junction block



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)
- Door switches
- Trunk lid actuator and switch

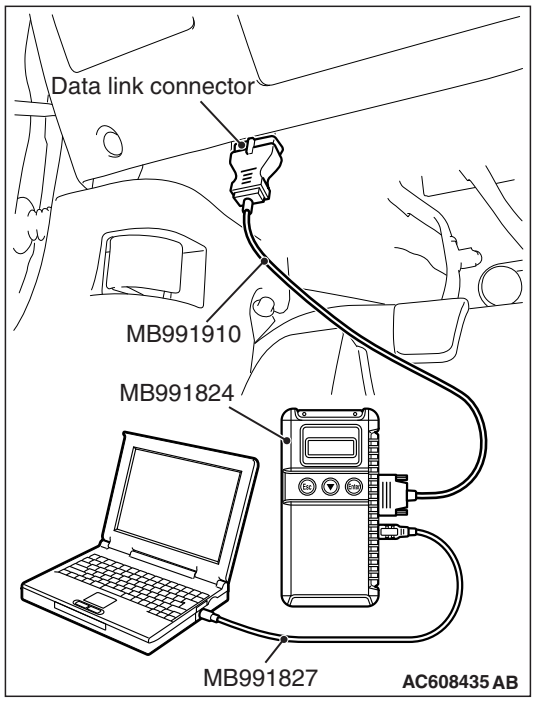
TROUBLESHOOTING HINTS

- 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
- trunk lid actuator and 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-783."
(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 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-28).
YES <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-17).
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-28).
NO <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-17).

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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.
- Open each door.
- Open the Trunk.

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 264	Handle lock switch	Key in
Item 288	ACC switch	ON

- Close each door.
- Close the Trunk.

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

- Turn the ignition switch to the "LOCK" (OFF) position (keep the ignition key <vehicles with WCM> or emergency key <vehicles with KOS> removed).

Item No.	Item name	Normal condition
Item 264	Handle lock switch	Key out
Item 288	ACC 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" 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 diagnosis -

Inspection Procedure 5 "ETACS-ECU does not receive any signal from the front door switch (LH)" P.54A-751.

NO <Normal condition is not displayed for item No. 257.> : Troubleshoot the ETACS-ECU. Refer to diagnosis - Inspection Procedure 6 "ETACS-ECU does not receive any signal from the front door switch (RH)" P.54A-753.

NO <Normal condition is not displayed for item No. 258.> : Troubleshoot the ETACS-ECU. Refer to diagnosis - Inspection Procedure 7 "ETACS-ECU does not receive any signal from the rear door switch (LH)" P.54A-756.

NO <Normal condition is not displayed for item No. 259.> : Troubleshoot the ETACS-ECU. Refer to diagnosis - Inspection Procedure 8 "ETACS-ECU does not receive any signal from the rear door switch (RH)" P.54A-758.

NO <Normal condition is not displayed for item No. 260.> : Troubleshoot the ETACS-ECU. Refer to diagnosis - Inspection Procedure 9 "ETACS-ECU does not receive any signal from the trunk lid actuator and switch P.54A-761.

NO <Normal condition is not displayed for item No. 264.> : Troubleshoot the ETACS-ECU. Refer to diagnosis - Inspection Procedure 3 "ETACS-ECU does not receive any signal from key reminder switch" P.54A-741.

NO <Normal condition is not displayed for item No. 288.> : Troubleshoot the ETACS-ECU. Refer to diagnosis - Inspection Procedure 1 "ETACS-ECU does not receive any signal from the ignition switch (ACC) signal" P.54A-735.

STEP 5. Check center panel unit connector C-18 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

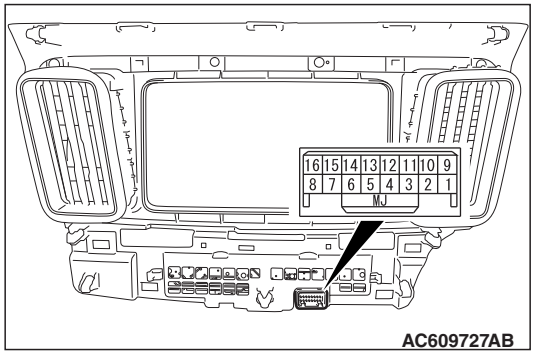
Q: Is center panel unit connector C-104 in good condition?

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.



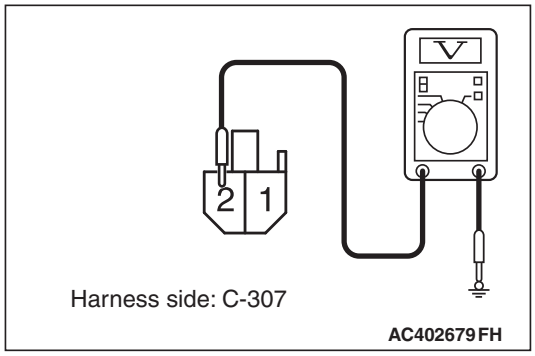
STEP 7. Check ETACS-ECU connector C-317 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

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.00-14).
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-18 (terminal No. 15,12).

- Check the input/output lines for open circuit and short circuit.

NOTE: Also check the joint connector C-07 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If the joint connector C-07 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 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.00-14).
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.

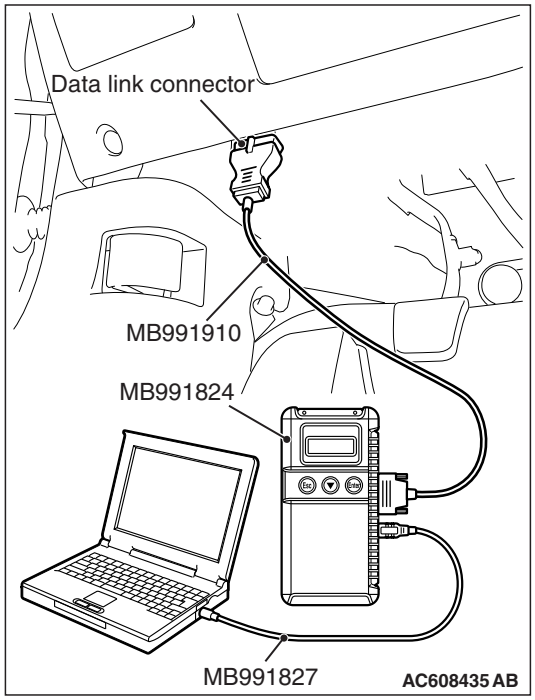
TROUBLESHOOTING HINTS

- 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, 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.

(1) Connect scan tool MB991958. Refer to "How to connect scan tool (M.U.T.-III) P.54A-783."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the ETACS-ECU 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-678).
NO : Go to Step 2.

STEP 2. 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: Buzzer

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

Q: Is the check result normal?

YES : Go to Step 3.
NO : Replace the combination meter.

STEP 3. Retest the system.

Check that the theft-alarm works normally.

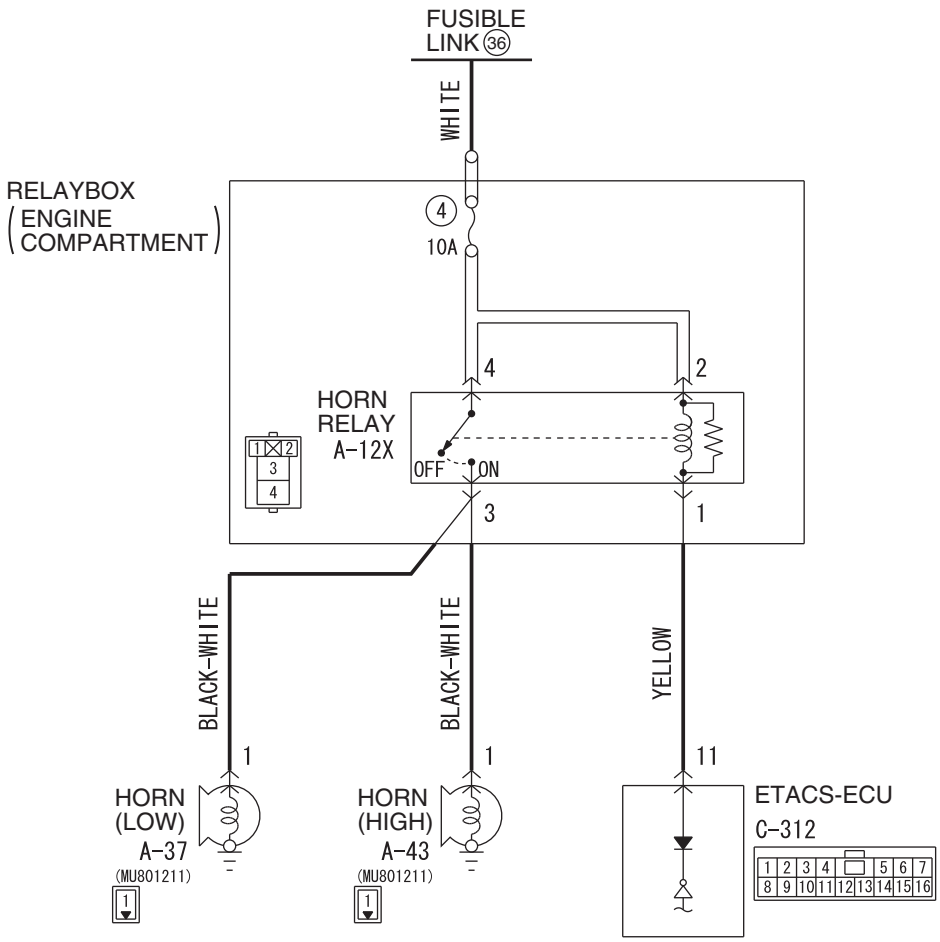
Q: Does the theft-alarm work normally?

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.00-14).
NO : Replace the ETACS-ECU.

Inspection Procedure 3: Horns do not normally 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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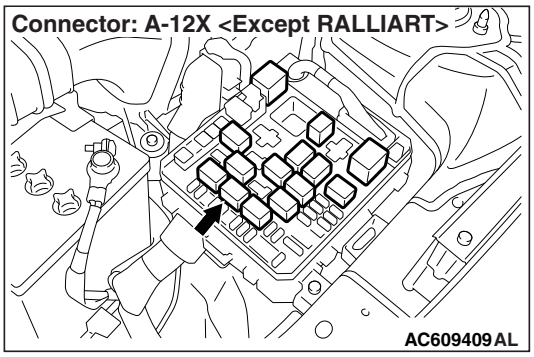
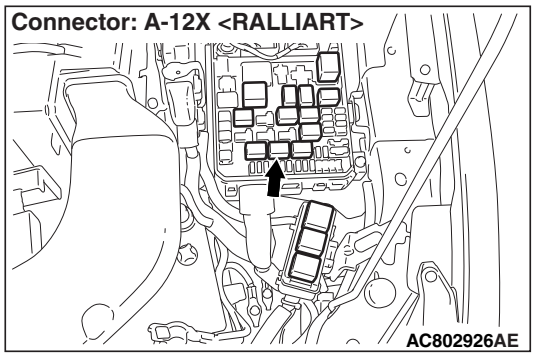
Connector: A-12X <Except RALLIART>



AC609409AL

Connector: A-12X <RALLIART>



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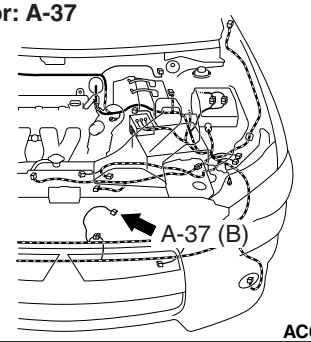
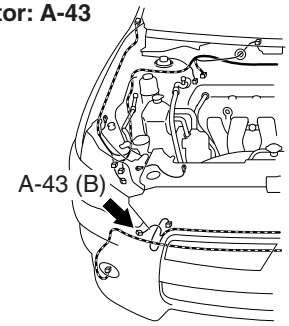
TSB Revision

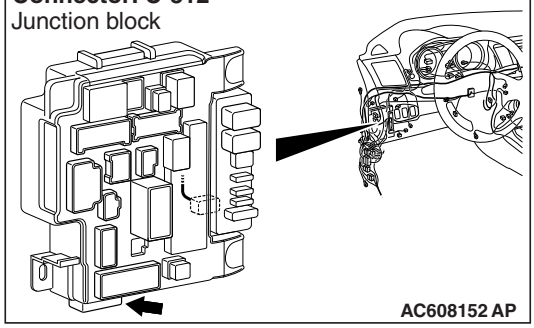
Connector: A-37



Connector: A-43



Connector: C-312
Junction block



TECHNICAL DESCRIPTION (COMMENT)

If horns do not sound, the horn input signal circuit or the ETACS-ECU may be defective.

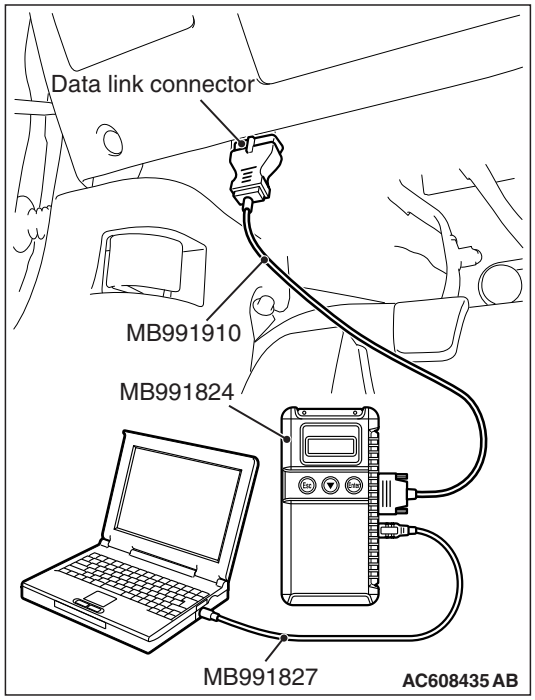
TROUBLESHOOTING HINTS

- 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: 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-783."
(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-678.
NO : Go to Step 2.

STEP 2. Check horn relay connector A-12X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is horn relay connector A-12X in good condition?

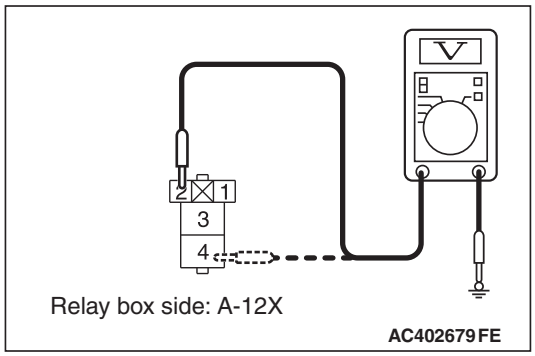
YES : Go to Step 3.
NO : Repair the damaged parts.

STEP 3. Check the horn relay.

Refer to P.54A-801.

Q: Is the horn relay in good condition

YES : Go to Step 4.
NO : Replace the theft-alarm horn relay.



STEP 4. Measure the voltage at horn relay A-12X.

(1) Remove the relay, and measure at the relay box side.
(2) Measure the voltage between horn relay connector A-12X (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 6.
NO : Go to Step 5.

STEP 5. Check the Wiring harness between theft-alarm horn relay connector A-12X (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.00-14).
NO : Repair the wiring harness between horn relay connector A-12X and fusible link (36).

STEP 6. 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 7.
NO : Repair the damaged parts.

STEP 7. Check the Wiring harness between theft-alarm horn relay connector A-12X (terminal No. 1) and ETACS-ECU connector C-312 (terminal No. 11).

Check the output lines for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 8.
NO : Repair the wiring harness between horn relay connector A-12X and ETACS-ECU connector C-312.

STEP 8. Check horn (HIGH) connector A-43 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is Horn (HIGH) connector A-43 in good condition?

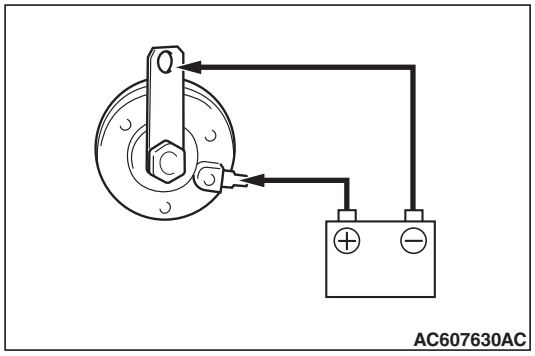
YES : Go to Step 9.
NO : Repair the damaged parts.

STEP 9. Check the Wiring harness between horn (HIGH) connector A-43 (terminal No. 1) and horn relay connector A-12X (terminal No. 3).
Check the output lines for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 10.
NO : Repair the wiring harness between horn (HIGH) connector A-43 and horn relay connector A-12X.

STEP 10. Check the horn (HIGH) work normally.
Connect the battery as shown, and verify that the horn sounds.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Q: Is the check result normal?

YES : Go to Step 11.
NO : Replace the horn (HIGH). go to step 11.

STEP 11. Check horn (LOW) connector A-37 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is Horn (LOW) connector A-37 in good condition?

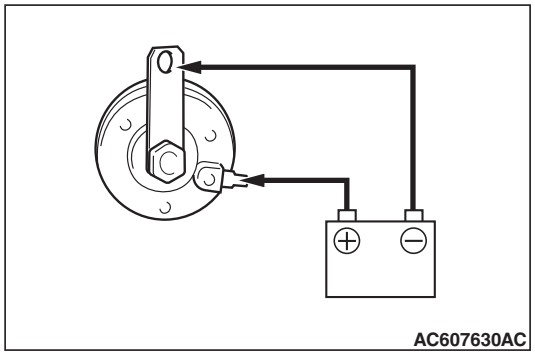
YES : Go to Step 12.
NO : Repair the damaged parts.

STEP 12. Check the Wiring harness between horn (LOW) connector A-37 (terminal No. 1) and horn relay connector A-12X (terminal No. 3).
Check the output lines for open circuit and short circuit.

Q: Is the check result normal?

YES : Go to Step 13.
NO : Repair the wiring harness between horn (LOW) connector A-37 and horn relay connector A-12X.

STEP 13. Check the horn (LOW) work normally.
Connect the battery as shown, and verify that the horn sounds.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Q: Is the check result normal?

YES : Go to Step 14.
NO : Replace the horn (LOW). go to step 14.

STEP 14.Retest the theft-alarm system.

Q: Does the theft-alarm system 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.00-14).

NO : Replace the ETACS-ECU.

Inspection Procedure 4: 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:

- 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)

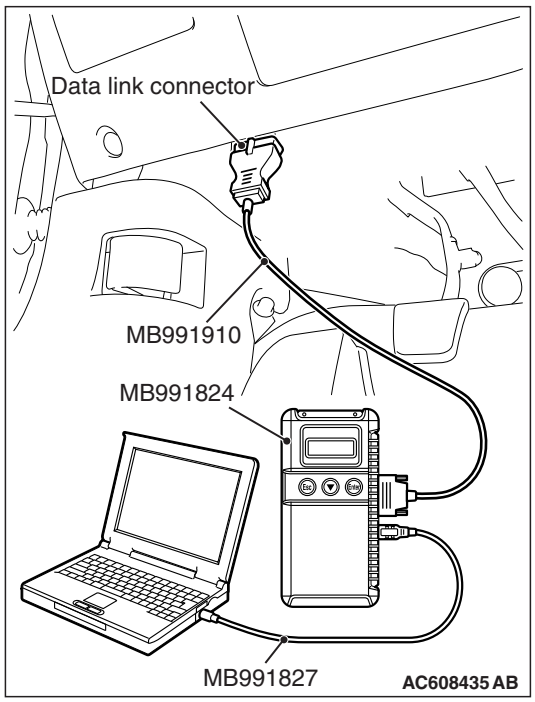
STEP 1. Check if the theft-alarm is normally set and the exterior protection can be executed.

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-785).



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) Connect scan tool MB991958. Refer to "How to connect the scan tool (M.U.T.-III) P.54A-783."
(2) Turn the ignition switch to the "ON" position.
(3) Check whether the KOS or WCM related DTC is set.
(4) 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-28).
YES <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-17).
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-137).
NO <vehicles with WCM> : Troubleshoot the WCM (Refer to GROUP 42C, WCM P.42C-83).

STEP 4. Using scan tool MB991958, check the configuration function.

(1) Turn the ignition switch to the "ON" position.
(2) Use the ETACS-ECU configuration 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 configuration function to set the "Panic alarm switch" to "Enable"(Refer to P.54A-801).

TSB Revision

ON-VEHICLE SERVICE

CONFIGURATION FUNCTION

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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 display)	Adjustment item	Adjustment contents (scan tool display)	Adjusting contents
Panic alarm switch	With/without panic alarm function	Disable	Without function
		Enable	With function (default)

REMOVAL AND INSTALLATION

M1547001000339

Theft-alarm system component parts

- Headlight assembly (Refer to P.54A-216).
- Horn (Refer to P.54A-312).
- Door switch (Refer to GROUP 42A – Door, Door Assembly P.42A-127).
- Front and rear door lock actuator (Refer to GROUP 42A – Door, Door Handle and Latch P.42A-135).
- Trunk lid latch assembly (Refer to GROUP 42A – Trunk Lid P.42A-153).
- Key reminder switch (Refer to P.52A-7).
- Theft-alarm indicator (Refer to GROUP 52A – Instrument Center Panel P.52A-3).

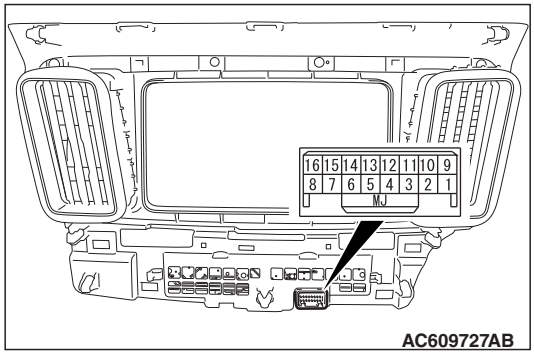
Panic alarm system component parts

- Headlight assembly (Refer to P.54A-216).
- Horn (Refer to P.54A-312).

INSPECTION

THEFT-ALARM INDICATOR CHECK

M1547001100187



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.

NOTES