

GROUP 54Ad

ETACS

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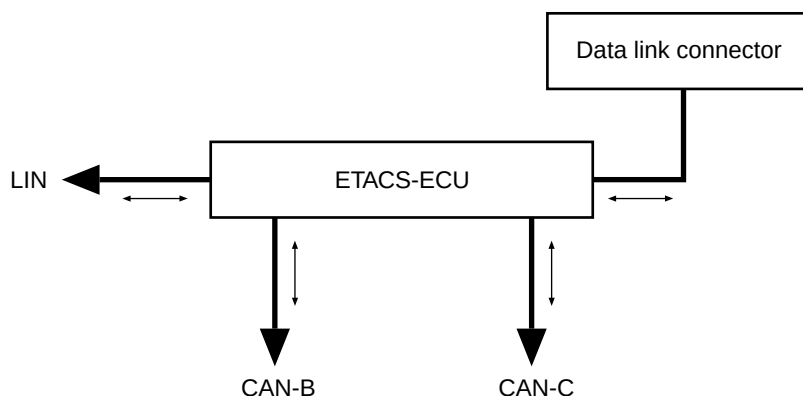
GENERAL INFORMATION

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ETACS*-ECU has three main functions.

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

GATEWAY FUNCTION



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

▪ **Data transfer among four networks***

Transfers the data flowing in a network to another network in real time.

NOTE: *: CAN-C (power train network), CAN-B (middle-speed body network), LIN (low-speed body network), diagnostics CAN-C (diagnosis exclusive network)

▪ **Diagnosis of each network communication line**

Detects and stores an open circuit and short circuit of communication line.

▪ **Communication error diagnosis of network ECUs**

Detects and stores the ECU that is not properly transmitting data.

CODING FUNCTION

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

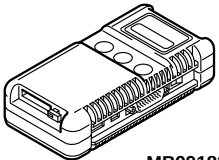
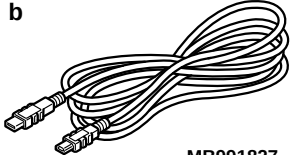
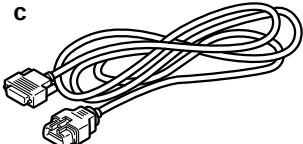
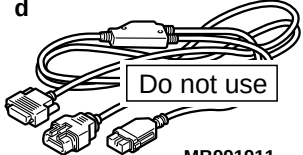
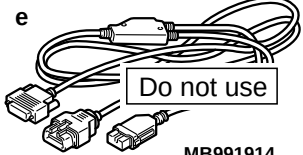
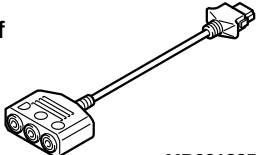
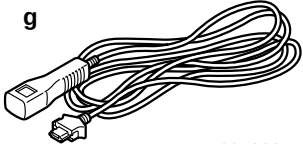
BODY ELECTRICAL EQUIPMENT CONTROL FUNCTION

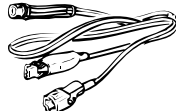
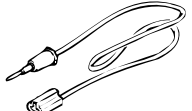
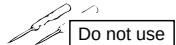
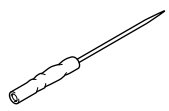
This function controls the following electrical equipment.

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

SPECIAL TOOL

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Tool	Tool number and name	Supersession	Application
a  MB991824 b  MB991827 c  MB991910 d  MB991911 e  MB991914 f  MB991825 g  MB991826 YB9919580000	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 Daimler Chrysler models only) f. M.U.T.-III measurement adapter g. M.U.T.-III trigger harness	MB991824-KIT <i>NOTE: G: MB991826 M. U. T. -III Trigger Harness is not necessary when pushing V. C. I. ENTER key.</i>	⚠ CAUTION M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle. ETACS-ECU check (Diagnostic trouble code, service data)

Tool	Tool number and name	Supersession	Application
a  b  c  d  YB9912230000	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

DIAGNOSIS

STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

Refer to GROUP 00 - Troubleshooting contents P. 00-6.

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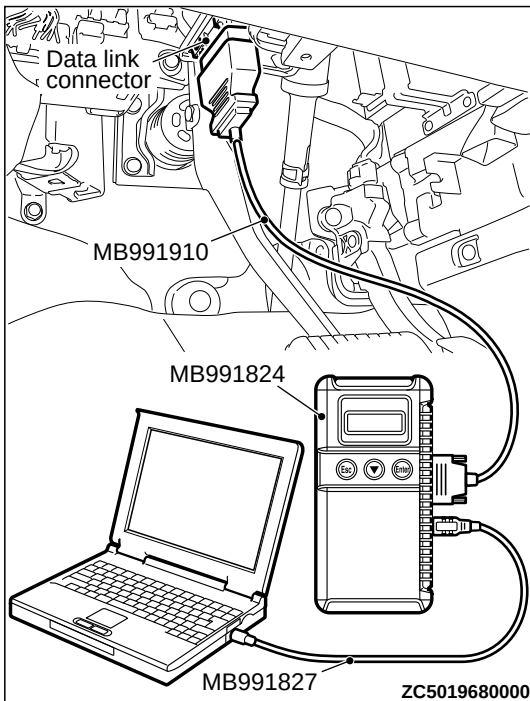
DIAGNOSTIC FUNCTION

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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."
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.

HOW TO DIAGNOSE THE CAN BUS LINES

Required Special Tools:

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

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

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

CHECK OF FREEZE FRAME DATA

The freeze frame data can be checked by using the scan tool (GROUP 00, How to Cope with Intermittent Malfunction P.00-15).

When detecting fault and storing the DTC, the ECU connected to CAN bus line obtains the data before the

determination of the DTC and the data when the DTC is determined, and then stores the ECU status of that time. By analyzing the data from scan tool, the troubleshooting can be performed more efficiently. The displayed items are as shown in the table below.

Display item list

Item No.	Item name	Data item	Unit
01	Odometer	Total driving distance after the diagnostic trouble code is generated	km ^{*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 km or FFFF km 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 timeout.*

DIAGNOSTIC TROUBLE CODE CHART

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Diagnostic trouble code number	Trouble content	Reference page
U0001	Bus off (CAN-C)	P.54Ad-9
U0019	Bus off (CAN-B)	
U0100	Engine control module CAN timeout	P.54Ad-11
U0101	Transaxle control module CAN timeout	P.54Ad-13
U0114	AWD-ECU CAN timeout	P.54Ad-15
U0121	ABS-ECU or ASC-ECU CAN timeout	P.54Ad-17
U0126	Steering wheel sensor CAN timeout	P.54Ad-19
U0151	SRS-ECU CAN timeout	P.54Ad-21
U0154	Occupant classification-ECU CAN timeout	P.54Ad-23
U0155	Combination meter CAN timeout	P.54Ad-25
U0164	A/C-ECU CAN timeout	P.54Ad-27
U0168	WCM or KOS-ECU CAN timeout	P.54Ad-29
U0184	Audio CAN timeout	P.54Ad-31
U0195	Satellite radio tuner CAN timeout	P.54Ad-33
U0197	Hands free module CAN timeout	P.54Ad-35
U0245	Audio visual navigation unit CAN timeout	P.54Ad-37
U1108	Excess CAN-B ECU detection	P.54Ad-39
U1120	Bus line (CAN-C) low input	P.54Ad-40
U1121	Bus line (CAN-C) high input	
U0169	Sunroof-ECU timeout	Refer to GROUP 54C, Diagnosis P.54C-6.
U0215	Power window main switch timeout	
U1109	Column switch timeout	
U150B	Column switch checksum error	
U150C	Power window main switch checksum error	
U1511	Sunroof-ECU checksum error	
U1514	Bit error (LIN)	
U1515	Bus error (LIN)	
U0331*	ECU internal error	P.54Ad-42

Diagnostic trouble code number	Trouble content	Reference page
B1034	Temperature sensor (low input)	Refer to GROUP 55A, Manual A/C Diagnosis P. 55A-8.
B1035	Temperature sensor (high input)	
B16A0	Tail light (right) open circuit	Refer to GROUP 54Ac, Diagnosis <rear combination light> P. 54Ac-100.
B16A1	Tail light (left) open circuit	
B16A2	Blown turn-signal light (left) bulb	Refer to GROUP 54Ac, Diagnosis <headlight> P. 54Ac-14.
B16A3	Turn-signal light (left) short circuit	
B16A4	Blown turn-signal light (right) bulb	
B16A5	Turn-signal light (right) short circuit	
B16A6	Blown turn-signal light fuse	Refer to GROUP 54Ac, Diagnosis <hazard warning light> P. 54Ac-162.
B16A7	Tail light (right) short circuit	Refer to GROUP 54Ac, Diagnosis <rear combination light> P. 54Ac-100.
B16A8	Tail light (left) short circuit	
B1761*	Chassis number not recorded	P.54Ad-42
B210A	+B power supply (low input)	P.54Ad-43
B210B	+B power supply (high input)	
B222C*	Coding incomplete	P.54Ad-46
B2206*	Chassis number does not match	P.54Ad-47
B2215*	ECU internal error	P.54Ad-48
B2350	Malfunction of lighting switch	Refer to GROUP 54Ah, Diagnosis P.54Ah-6.
B2351	Malfunction of the wiper switch	
B2353	Ignition power supply (low input)	P.54Ad-49
B2354	Ignition power supply (high input)	

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

DIAGNOSTIC TROUBLE CODE PROCEDURES

DTC U0001: Bus off (CAN-C)

DTC U0019: Bus off (CAN-B)

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CAUTION

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

TROUBLE JUDGMENT

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

TECHNICAL DESCRIPTION (COMMENT)

The ETACS-ECU may have a malfunction, or the ETACS-ECU power supply or 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**

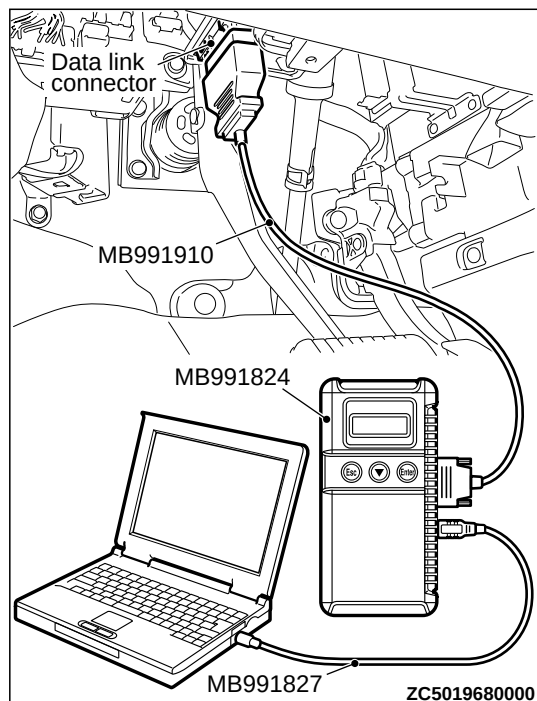
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

**STEP 2. Recheck for diagnostic trouble code.**

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

- (1) Erase the DTC.

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

NO: The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P. 00-15).

DTC U0100: Engine control module CAN timeout

M15410600051USA0000010000

⚠ 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, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

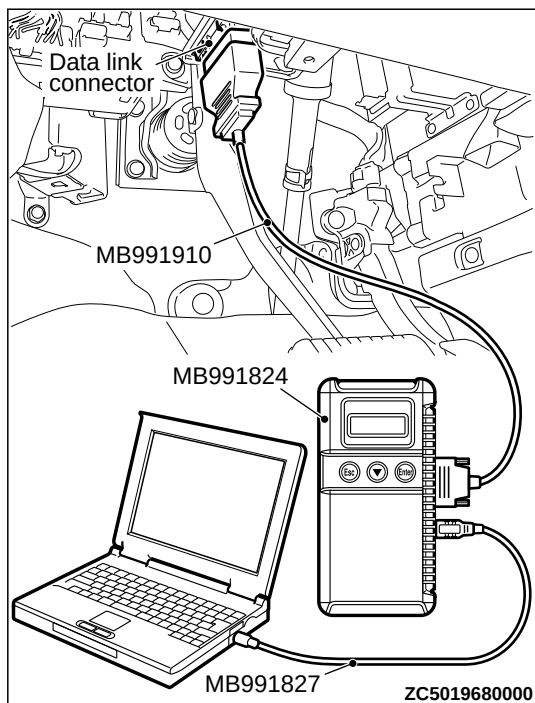
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-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 13Ab, Diagnostic Trouble Code Chart P.13Ab-44.)

NO: Go to Step 3.

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

Check if DTC U0100 is set to the transaxle control module.

Q: Is the DTC set?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace the engine control module.

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

NO: The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the engine control module and the ETACS-ECU.

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

DTC U0101: Transaxle control module CAN timeout

M15410600052USA0000010000

⚠ CAUTION

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

TROUBLE JUDGMENT

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

JUDGMENT CRITERIA

After the following statuses continue to be true for 5 seconds, if the communication with the transaxle control module cannot be established for 0.6 second

or more, the ETACS-ECU determines that a problem has occurred.

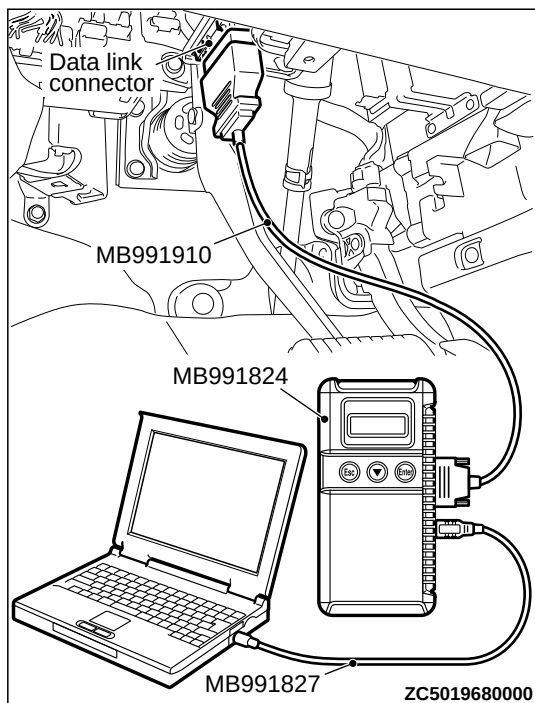
- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

TROUBLESHOOTING HINTS

- The transaxle control module may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS**Required Special Tools:**

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



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

⚠ CAUTION

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

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

STEP 2. Using scan tool MB991958, read the transaxle control module diagnostic trouble code.

Check if DTC is set to the transaxle control module.

Q: Is the DTC set?

YES: Troubleshoot the automatic transaxle. (Refer to GROUP 23A, Automatic Transaxle Diagnosis P.23A-22.)

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 transaxle control module.

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

DTC U0114: AWD-ECU CAN timeout

⚠ CAUTION

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

TROUBLE JUDGMENT

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

JUDGMENT CRITERIA

After the following statuses continue to be true for 5 seconds, if the communication with the AWD-ECU cannot be established for 0.6 second or more, the

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ETACS-ECU determines that a problem has occurred.

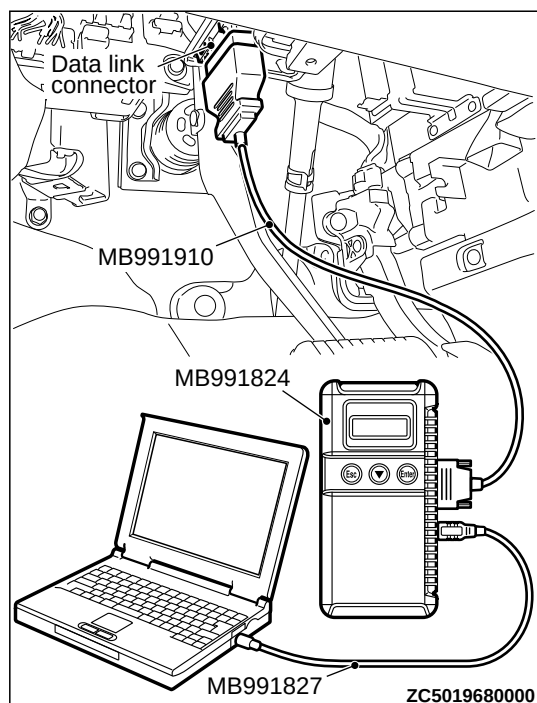
- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

TROUBLESHOOTING HINTS

- The AWD-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS**Required Special Tools:**

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



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

⚠ CAUTION

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

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

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

Check if DTC is set to the AWD-ECU.

Q: Is the DTC set?

YES: Troubleshoot the electronic control AWD. (Refer to GROUP 27C, Troubleshooting P.27C-9.)

NO: Go to Step 3.

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

Check if the DTC U0114 is set to the combination.

Q: Is the DTC set?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace the AWD-ECU.

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

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

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⚠ CAUTION

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

TROUBLE JUDGMENT

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

JUDGMENT CRITERIA

After the following statuses continue to be true for 5 seconds, if the communication with the ABS-ECU or ASC-ECU cannot be established for 0.6 second or

more, the ETACS-ECU determines that a problem has occurred.

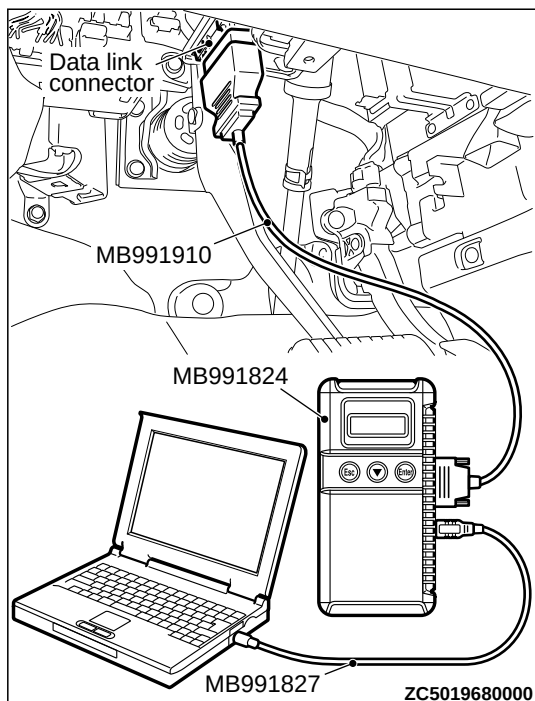
- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

TROUBLESHOOTING HINTS

- The ABS-ECU may be defective.
- The ASC-ECU may be defective.
- The ETACS-ECU may be defective.
- The CAN bus may be defective.

DIAGNOSIS**Required Special Tools:**

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



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

⚠ CAUTION

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

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

STEP 2. Using scan tool MB991958, check for any ABS or ASC diagnostic trouble code.

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

Q: Is the DTC set?

YES: Troubleshoot the ABS or ASC. (Refer to GROUP 35B, Diagnosis P.35B-9<ABS> or GROUP 35C, Diagnosis P.35C-11<ASC>.)

NO: Go to Step 3.

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

Check if the DTC U0121 is set to the transaxle control module ECU.

Q: Is the DTC set?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace the ABS-ECU or ASC-ECU.

NO: The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the ABS-ECU or ASC-ECU and the ETACS-ECU. (Refer

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

DTC U0126: Steering wheel sensor CAN timeout

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⚠ 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, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

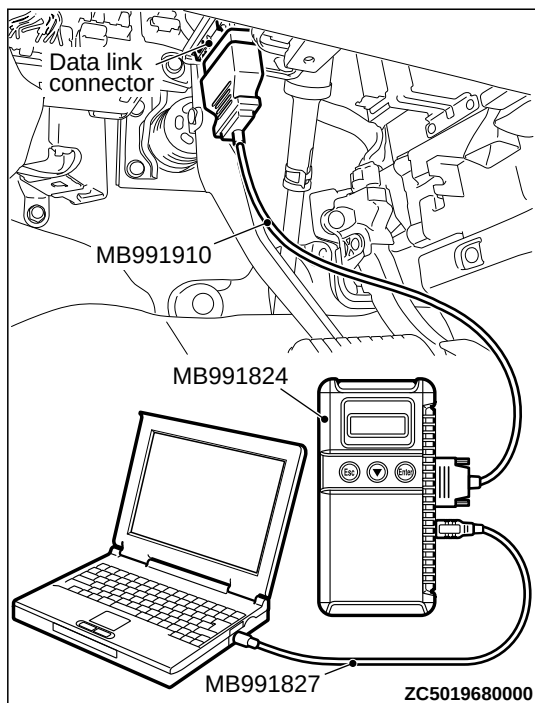
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

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

Check if DTC is set to the ASC-ECU.

Q: Is the DTC set?

YES: Troubleshoot the steering. (Refer to GROUP 35C, Diagnosis P.35C-11.)

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 the steering wheel sensor, and then go to Step 4.

NO: The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the steering wheel sensor and the ETACS-ECU.

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

STEP 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 ETACS-ECU.

NO: The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the steering wheel sensor and the ETACS-ECU.

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

DTC U0151: SRS-ECU CAN timeout

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⚠ 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, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

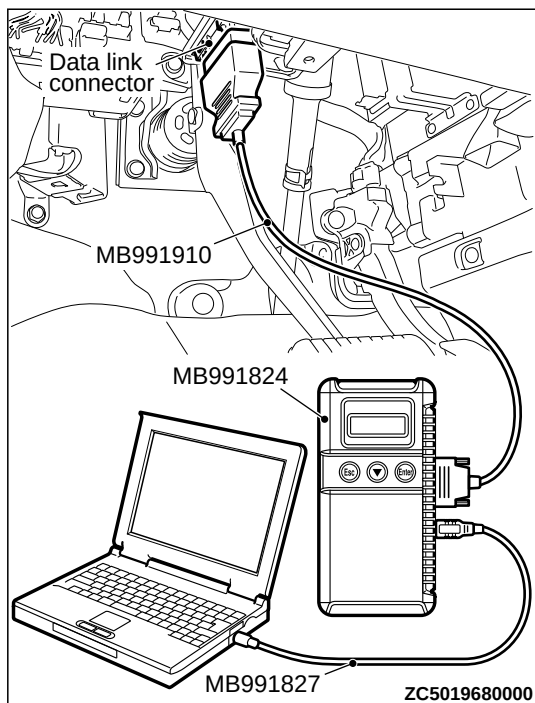
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-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-33.)

NO: Go to Step 3.

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

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

Q: Is the DTC set?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace the SRS-ECU.

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

DTC U0154: Occupant classification-ECU CAN timeout

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⚠ 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.

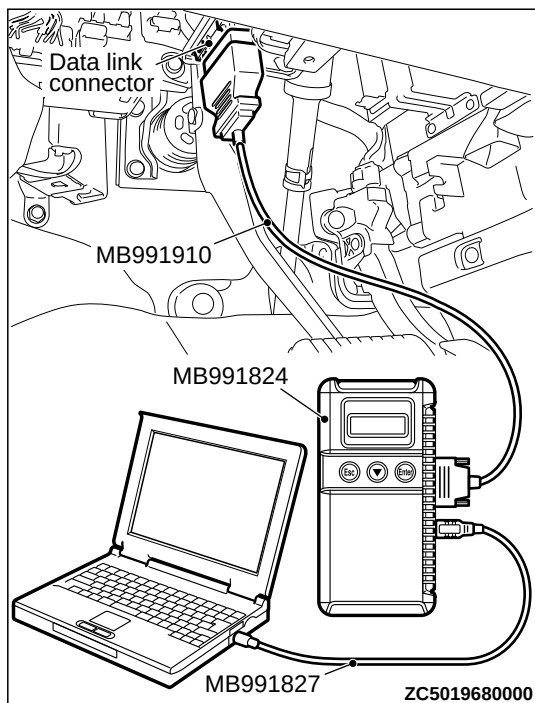
- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

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.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

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

Check if DTC is set to the SRS.

Q: Is the DTC set?

YES: Troubleshoot the SRS. (Refer to GROUP 52B, Diagnosis P.52B-33.)

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 the occupant classification-ECU, then go to Step 4.

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

STEP 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 ETACS-ECU.

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

DTC U0155: Combination meter CAN timeout

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⚠ 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, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

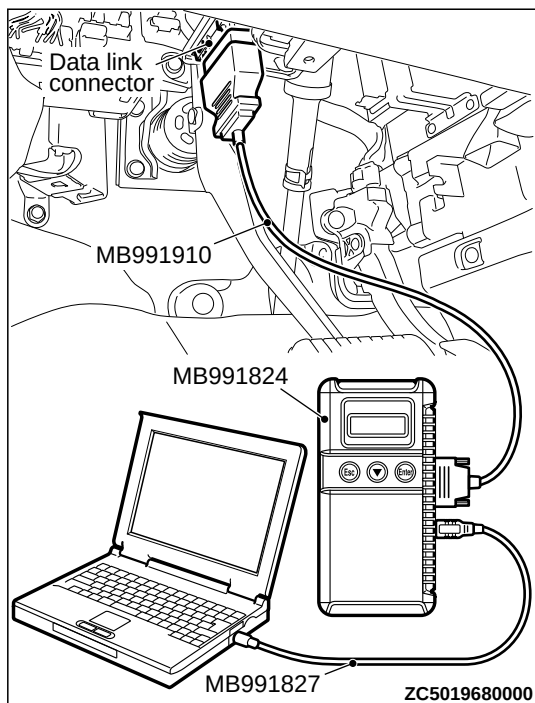
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-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 GROUP 54Ab, Diagnosis P.54Ab-7.)

NO: Go to Step 3.

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

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

Q: Is the DTC set?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace the combination meter.

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

DTC U0164: A/C-ECU CAN timeout

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⚠ CAUTION

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

TROUBLE JUDGMENT

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

JUDGMENT CRITERIA

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

ETACS-ECU determines that a problem has occurred.

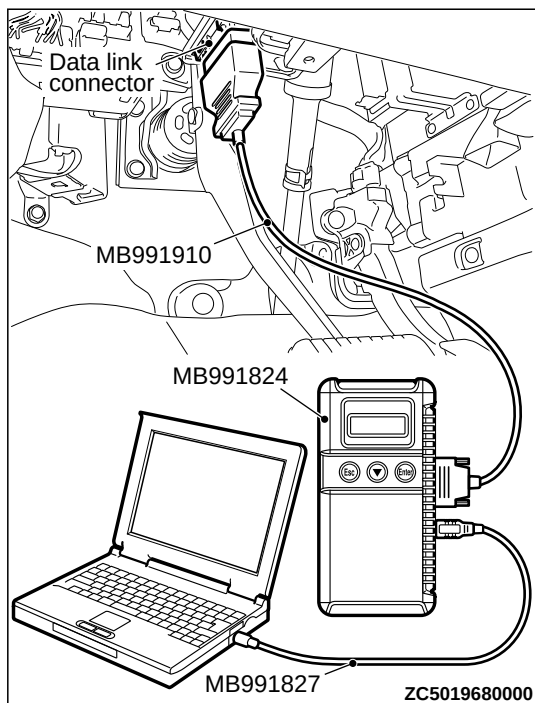
- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

TROUBLESHOOTING HINTS

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

DIAGNOSIS**Required Special Tools:**

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



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

⚠ CAUTION

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

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

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

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

Q: Is the DTC set?

YES: Troubleshoot the A/C. (Refer to GROUP 55A, Manual A/C Diagnosis P.55A-8 GROUP 55B, Auto A/C Diagnosis P.55B-7.)

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.

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

DTC U0168: WCM or KOS-ECU CAN timeout

M15410600058USA0000010000

⚠ 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.

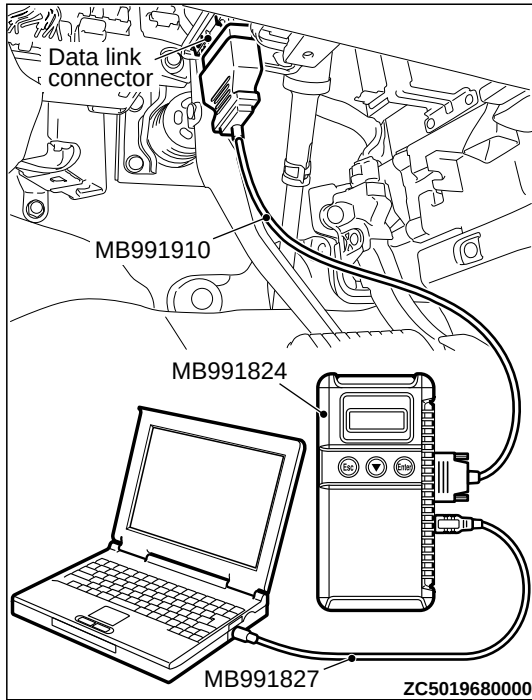
- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

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.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

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

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

Q: Is the DTC set?

YES: Troubleshoot the WCM or KOS. (Refer to GROUP 42B, Diagnosis P.42B-18<KOS> or GROUP 42C, Diagnosis P.42C-11<WCM>.)

NO: Go to Step 3.

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

Check if the DTC U0168 is set to the combination meter.

Q: Is the DTC set?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace the WCM or KOS-ECU.

NO: The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the WCM or KOS-ECU and the ETACS-ECU. (Refer to

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

DTC U0184: Audio CAN timeout

M15410600059USA0000010000

⚠ 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, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

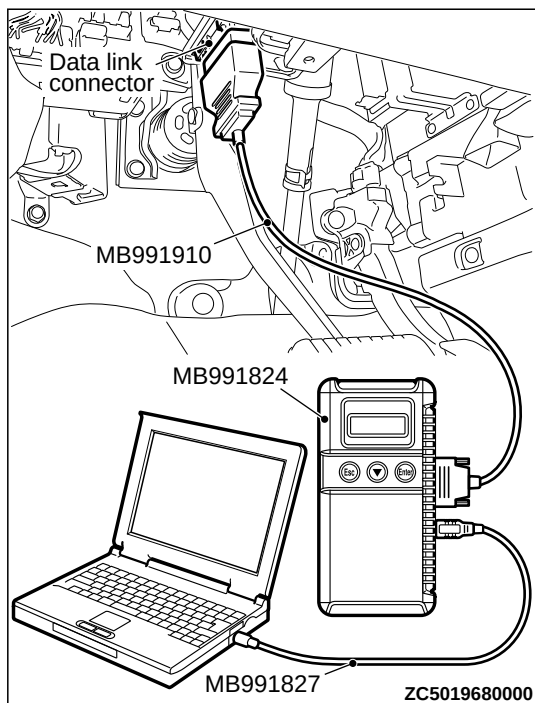
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

STEP 2. Using scan tool MB991958, read the audio diagnostic trouble code.

Check if DTC is set to the audio.

Q: Is the DTC set?

YES: Troubleshoot the audio. (Refer to GROUP 54B, Diagnosis P.54B-7.)

NO: Go to Step 3.

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

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

Q: Is the DTC set?

YES: Go to Step 4.

NO: Go to Step 5.

STEP 4. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace the radio and CD player or CD changer.

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

STEP 5. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

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

DTC U0195: Satellite radio tuner CAN timeout

M15410600080USA0000010000

⚠ 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.

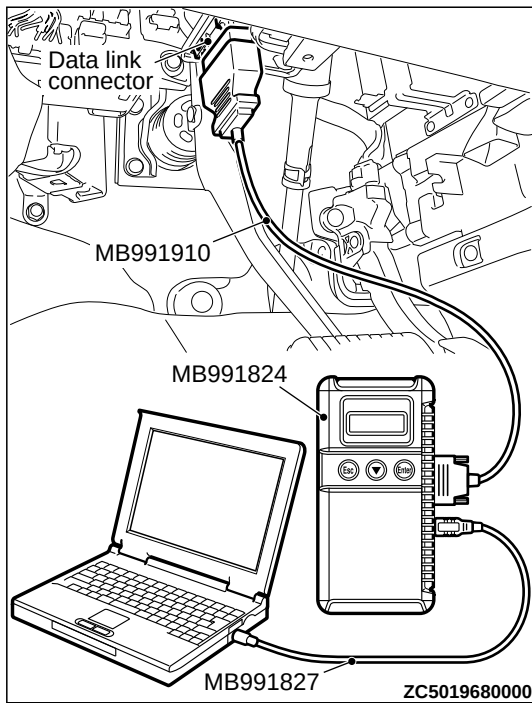
- No abnormality is present to the network.
- Ignition switch is in the ON position.
- No abnormality is present to the power supply fuse, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

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.54Ad-5."
- (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 54D, Diagnosis P.54D-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 GROUP 54B, Diagnosis <Satellite radio tuner> P.54B-136.)

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 the satellite radio tuner, then go to Step 4.

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

STEP 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 ETACS-ECU.

NO: The trouble can be an intermittent malfunction such as a poor connection or open circuit in the CAN bus lines between the satellite radio tuner and the ETACS-ECU.

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

DTC U0197: Hands free module CAN timeout

M15410600078USA0000010000

⚠ 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, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

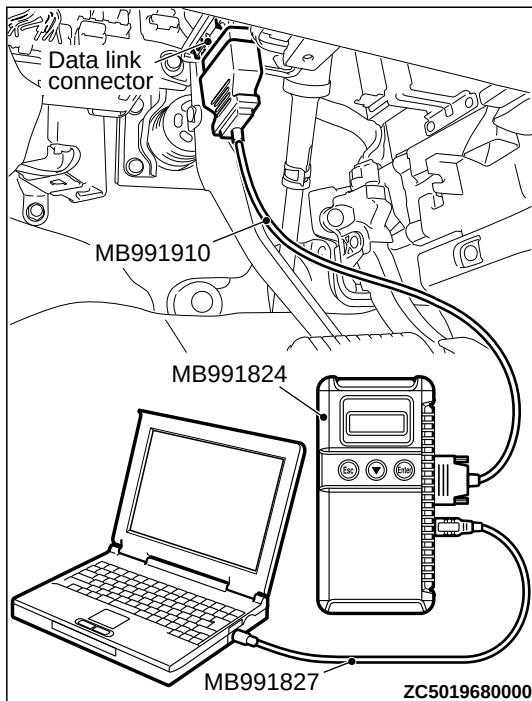
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-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 GROUP 54Ae, Diagnosis <hands-free cellular phone system> P.54Ae-14.)

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 the hands free module, then go to Step 4.

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

STEP 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 ETACS-ECU.

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

DTC U0245: Audio visual navigation unit CAN timeout

M15410600079USA0000010000

⚠ 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, or the odometer value is at 80.5 km (50.0 miles) or more.
- ETACS-ECU system voltage is at 10-16 volts.

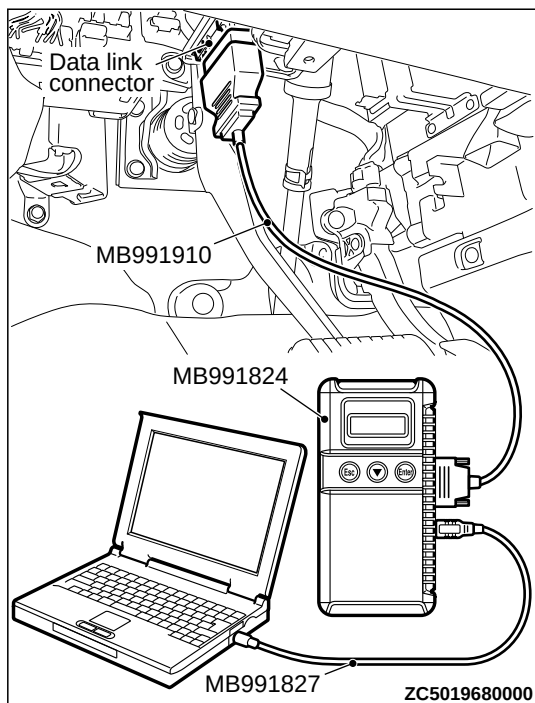
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-17).

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 GROUP 54B, Diagnosis <MMCS> P.54B-63.)

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 the CAN box unit (audio visual navigation unit), then go to Step 4.

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.00-15)

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 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.00-15)

DTC U1108: Excess CAN-B ECU Detection

M15410600060USA0000010000

⚠ CAUTION

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

TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective.
- The CAN bus may be defective.

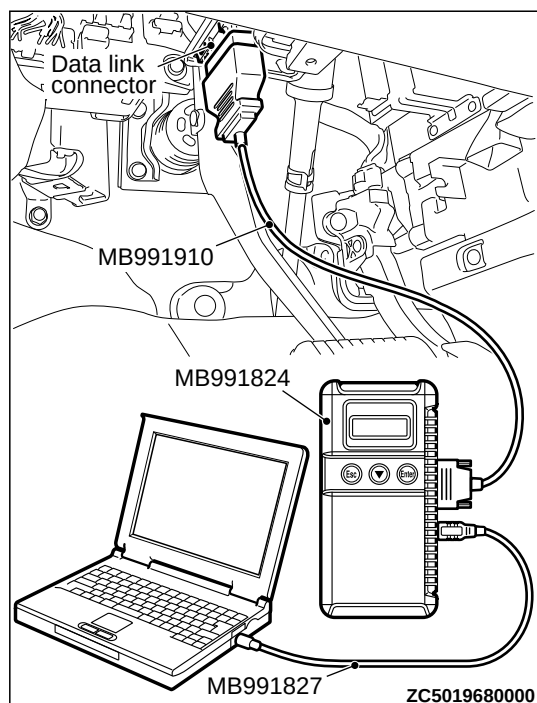
TROUBLE JUDGMENT

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

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.54Ad-5."
- (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 54D, Diagnosis P.54D-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

M15410600062USA0000010000

TROUBLE JUDGMENT

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

* If the CAN bus line voltage is 0.3 volt or less, DTC U1120 is set.

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

TROUBLESHOOTING HINTS

- The CAN bus line may be defective.

DIAGNOSIS

Required Special Tools:

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

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

CAUTION

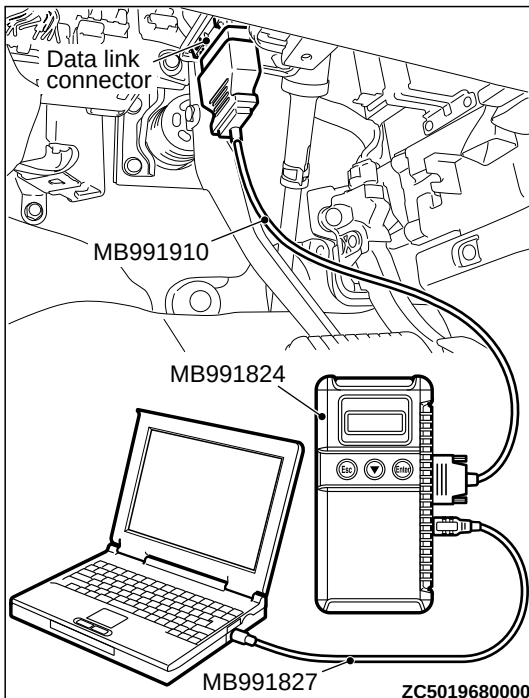
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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 54D, Diagnosis P.54D-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

M15410600061USA0000010000

TROUBLE JUDGMENT

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

TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective.

DIAGNOSIS**Required Special Tools:**

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

Recheck for diagnostic trouble code.

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

CAUTION

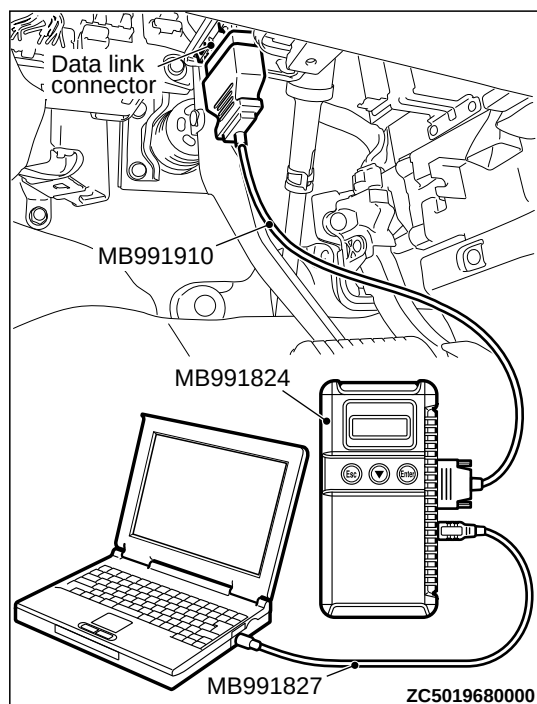
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (2) Turn the ignition switch to the "ON" position.
- (3) Erase the DTC.
- (4) Turn the ignition switch from "LOCK" (OFF) position to "ON" position.
- (5) Check if DTC is set.
- (6) Turn the ignition switch to the "LOCK" (OFF) position.

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

NO: The diagnosis is complete.

**DTC B1761: Chassis number not recorded**

M15410600063USA0000010000

TROUBLE JUDGMENT

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

TROUBLESHOOTING HINTS

- Chassis number not recorded
- The ETACS-ECU may be defective.

DIAGNOSIS

Required Special Tools:

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

Recheck for diagnostic trouble code.

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

CAUTION

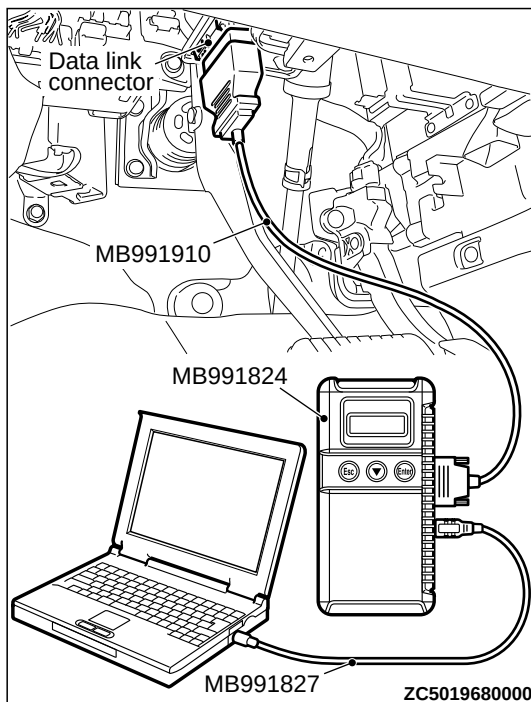
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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)

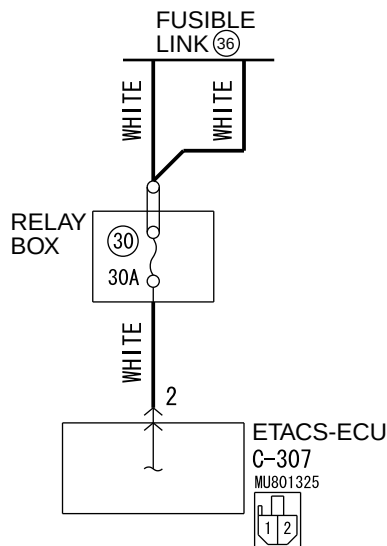
DTC B210B: +B power supply (high input)

M15410600064USA0000010000

CAUTION

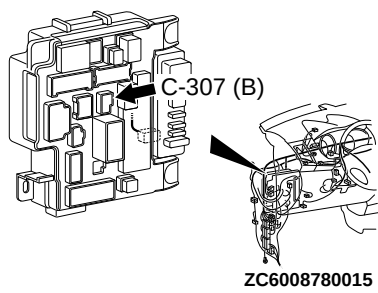
Before replacing the ECU, ensure that the input and output signal circuits are normal.

ETACS-ECU Power Supply Circuit



D7G54M053A00

Connector: C-307

**TROUBLE JUDGMENT**

The ETACS-ECU sets DTC B210A if the power supply fuse voltage decreases to the specified value or less, and sets DTC B210B if the power supply fuse voltage increases to the specified value or more. However,

when the status returns to normal, the ETACS-ECU automatically erases DTCs B210A and B210B.

TECHNICAL DESCRIPTION (COMMENT)

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

TROUBLESHOOTING HINTS

- The power supply fuse may be defective.
- The ETACS-ECU may be defective.
- The battery may be defective.
- The 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 2.

NO: Replace the power supply fuse, and then go to Step 2.

STEP 2. 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 3.

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

STEP 3. 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.

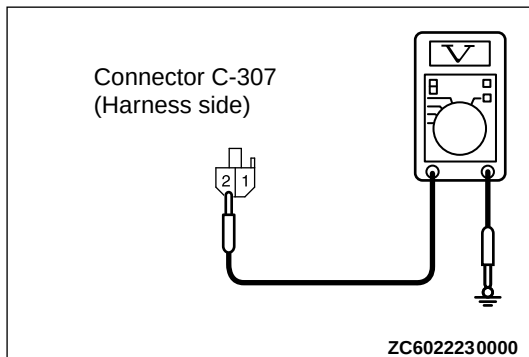
(2) Measure the voltage between terminal 2 and ground.

*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 5.

NO: Go to Step 4.



STEP 4. Check the wiring harness between ETACS-ECU connector C-307 (terminal 2) and the fusible link (36).

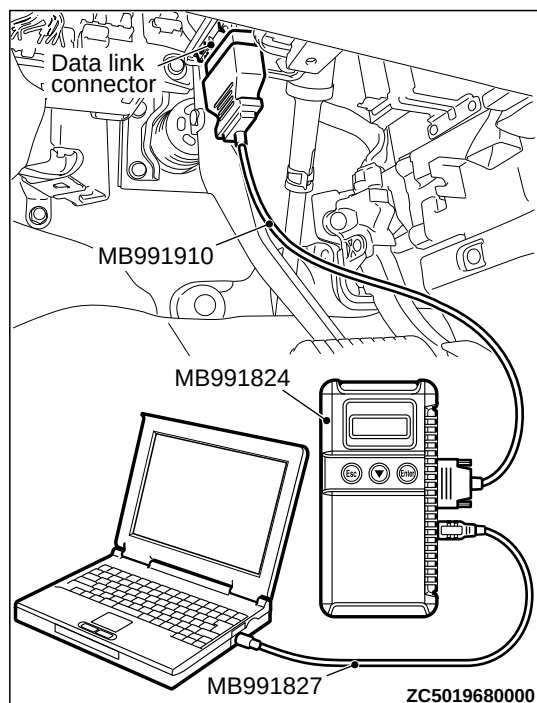
Q: Is the wiring harness between ETACS-ECU connector C-307 (terminal 2) and the fusible link (36) in good condition?

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 5. 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.54Ad-5."
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the ETACS data list.

*Turn the ignition switch to the "ACC" position.

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

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

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

YES: Go to Step 6.

NO: Replace the ETACS-ECU.

STEP 6. Recheck for diagnostic trouble code.

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

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

Q:Is the DTC set?

YES: Replace the ETACS-ECU.

NO: The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P. 00-15).

DTC B222C: Coding incomplete

M15410600065USA0000010000

TROUBLE JUDGMENT

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

TROUBLESHOOTING HINTS

- *Variant code not written
- *The ETACS-ECU may be defective.

DIAGNOSIS

Required Special Tools:

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

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

Recheck for diagnostic trouble code.

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

⚠ CAUTION

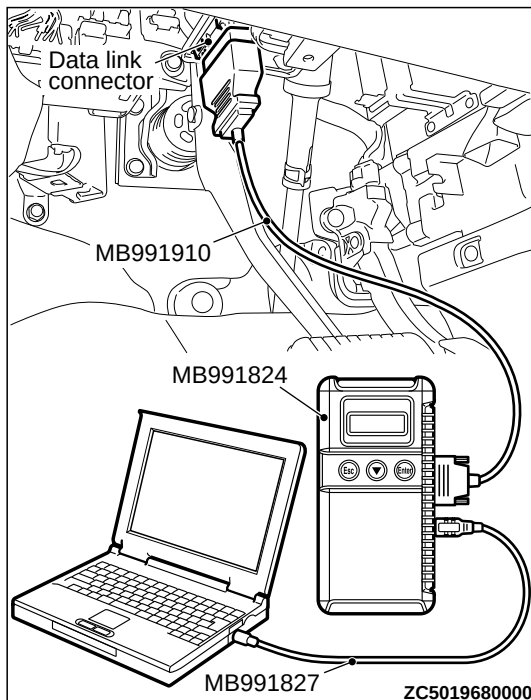
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (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

M15410600066USA0000010000

⚠ 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.

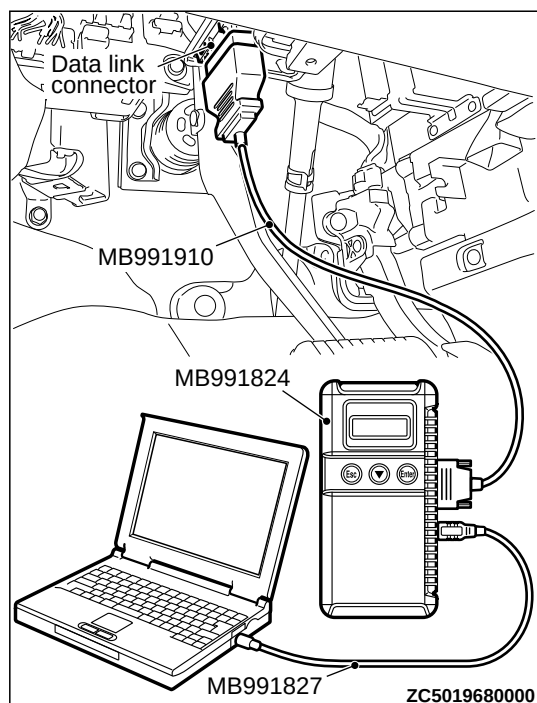
TROUBLESHOOTING HINTS

- 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.54Ad-5."
- (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 54D, Diagnosis P.54D-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 13Ab, Diagnostic Trouble Code Chart P.13Ab-44.)

NO: Go to Step 3.

STEP 3. Recheck for diagnostic trouble code.

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

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

Q: Is the DTC set?

YES: Replace with the coded ETACS-ECU.

NO: The diagnosis is complete.

DTC B2215: ECU internal error

TROUBLE JUDGMENT

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

TROUBLESHOOTING HINTS

- The ETACS-ECU may be defective.

DIAGNOSIS

Replace the ETACS-ECU.

DTC B2353: Ignition power supply (low input)

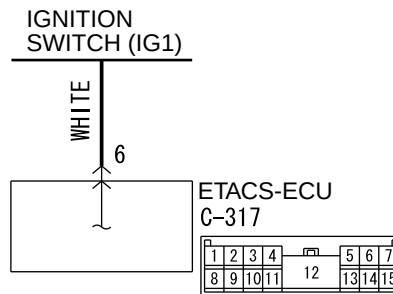
DTC B2354: Ignition power supply (high input)

M15410600068USA0000010000

CAUTION

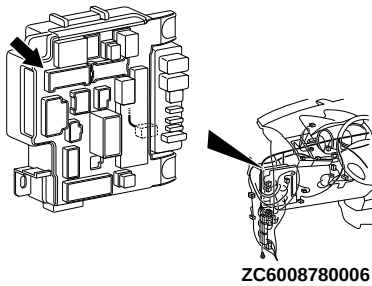
Before replacing the ECU, ensure that the input and output signal circuits are normal.

Ignition Switch (IG1) Input Circuit



D7G54M055A00

Connector: C-317



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.

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.

DIAGNOSIS

Required Special Tools:

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

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

STEP 1. Using scan tool MB991958, check data list.

Check the ignition power supply voltage.

CAUTION

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

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) P.54Ad-5."
- (2) Turn the ignition switch to the "ON" position.
- (3) 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)

- (4) 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 2.

NO: Replace the ETACS-ECU.

STEP 2. 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 3.

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

STEP 3. Check the ignition switch (IG1) circuit to the ETACS-ECU. Measure the voltage at ETACS-ECU connector C-317.

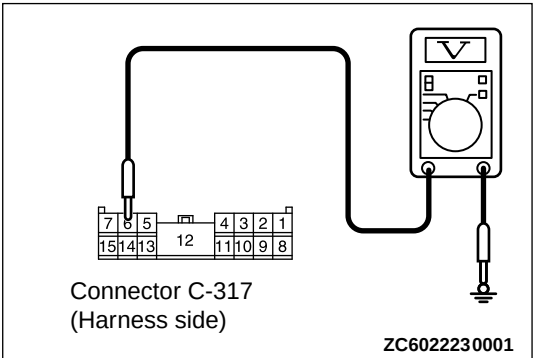
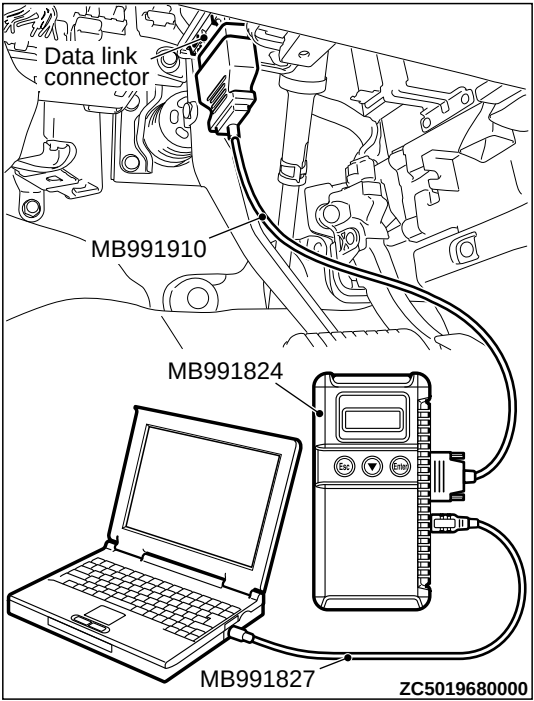
- (1) Disconnect ETACS-ECU connector C-317 and measure the voltage available at the wiring harness side of the connector.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal 6 and ground.

•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 5.

NO: Go to Step 4.



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

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 6) and the ignition switch (IG1) 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 5. Recheck for diagnostic trouble .

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

(1) Erase the DTC.

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

(3) Check if DTC is set.

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

Q: Is the DTC set?

YES: Replace the ETACS-ECU.

NO: The trouble can be an intermittent malfunction (Refer to GROUP 00, How to Cope with Intermittent Malfunction P. 00-15).

DATA LIST REFERENCE TABLE

M15410600015USA0000010000

NOTE: Some items are not displayed on M. U. T. -III according to the information in the ECU.

Item No.	Scan tool MB991958 display	Condition
1	CAN-H voltage	0-4 V
2	CAN-L voltage	1-5 V
10	Network cnfg C ABS/ASC target	Programmed or Not program/SNA
11	Network cnfg C ABS/ASC current	Programmed or Not program/SNA
12	Network cnfg C ENGINE target	Programmed or Not program/SNA
13	Network cnfg C ENGINE current	Programmed or Not program/SNA
14	Network cnfg C CVT/AT/AMT target	Programmed or Not program/SNA
15	Network cnfg C CVT/AT/AMTcurrent	Programmed or Not program/SNA
16	Network cnfg C PSM target	Programmed or Not program/SNA
17	Network cnfg C PSM current	Programmed or Not program/SNA
18	Network cnfg C ACD/AYC target	Programmed or Not program/SNA
19	Network cnfg C ACD/AYC current	Programmed or Not program/SNA
20	Network cnfg C 4WD target	Programmed or Not program/SNA
21	Network cnfg C 4WD current	Programmed or Not program/SNA
22	Network cnfg C ESM target	Programmed or Not program/SNA
23	Network cnfg C ESM current	Programmed or Not program/SNA
24	Network cnfg C SAS target	Programmed or Not program/SNA

Item No.	Scan tool MB991958 display	Condition
25	Network cnfg C SAS current	Programmed or Not program/SNA
26	Network cnfg C FACU target	Programmed or Not program/SNA
27	Network cnfg C FACU current	Programmed or Not program/SNA
36	Network cnfg C PRE_CRUSH target	Programmed or Not program/SNA
37	Network cnfg C PRE_CRUSH current	Programmed or Not program/SNA
38	Network cnfg C ASBS target	Programmed or Not program/SNA
39	Network cnfg C ASBS current	Programmed or Not program/SNA
40	Network cnfg C AFS target	Programmed or Not program/SNA
41	Network cnfg C AFS current	Programmed or Not program/SNA
48	Network cnfg B PLGM target	Programmed or Not program/SNA
49	Network cnfg B PLGM current	Programmed or Not program/SNA
54	Network cnfg B METER target	Programmed or Not program/SNA
55	Network cnfg B METER current	Programmed or Not program/SNA
60	Network cnfg B HFM target	Programmed or Not program/SNA
61	Network cnfg B HFM current	Programmed or Not program/SNA
66	Network cnfg B A/C target	Programmed or Not program/SNA
67	Network cnfg B A/C current	Programmed or Not program/SNA
70	Network cnfg B LRDM target	Programmed or Not program/SNA
71	Network cnfg B LRDM current	Programmed or Not program/SNA
74	Network cnfg B MSMD target	Programmed or Not program/SNA
75	Network cnfg B MSMD current	Programmed or Not program/SNA
76	Network cnfg B OCM target	Programmed or Not program/SNA
77	Network cnfg B OCM current	Programmed or Not program/SNA
78	Network cnfg B SRS target	Programmed or Not program/SNA
79	Network cnfg B SRS current	Programmed or Not program/SNA
84	Network cnfg B AUDIO target	Programmed or Not program/SNA
85	Network cnfg B AUDIO current	Programmed or Not program/SNA
86	Network cnfg B RRDM target	Programmed or Not program/SNA
87	Network cnfg B RRDM current	Programmed or Not program/SNA
88	Network cnfg B SATR target	Programmed or Not program/SNA
89	Network cnfg B SATR current	Programmed or Not program/SNA
96	Network cnfg B WCM target	Programmed or Not program/SNA
97	Network cnfg B WCM current	Programmed or Not program/SNA
98	Network cnfg B VES target	Programmed or Not program/SNA
99	Network cnfg B VES current	Programmed or Not program/SNA
100	Network cnfg B DISP target	Programmed or Not program/SNA
101	Network cnfg B DISP current	Programmed or Not program/SNA
102	Network cnfg B NAVI target	Programmed or Not program/SNA
103	Network cnfg B NAVI current	Programmed or Not program/SNA

Item No.	Scan tool MB991958 display	Condition
108	Network cnfg B CAMERA target	Programmed or Not program/SNA
109	Network cnfg B CAMERA current	Programmed or Not program/SNA
110	Network cnfg B TUNER target	Programmed or Not program/SNA
111	Network cnfg B TUNER current	Programmed or Not program/SNA
112	Network cnfg B AND target	Programmed or Not program/SNA
113	Network cnfg B AND current	Programmed or Not program/SNA
122	Network cnfg L column target	Programmed or Not program/SNA
123	Network cnfg L column current	Programmed or Not program/SNA
124	Network cnfg L P/W DR target	Programmed or Not program/SNA
125	Network cnfg L P/W DR current	Programmed or Not program/SNA
126	Network cnfg L P/W AS target	Programmed or Not program/SNA
127	Network cnfg L P/W AS current	Programmed or Not program/SNA
128	Network cnfg L P/W RL target	Programmed or Not program/SNA
129	Network cnfg L P/W RL current	Programmed or Not program/SNA
130	Network cnfg L P/W RR target	Programmed or Not program/SNA
131	Network cnfg L P/W RR current	Programmed or Not program/SNA
132	Network cnfg L P/W BK target	Programmed or Not program/SNA
133	Network cnfg L P/W BK current	Programmed or Not program/SNA
134	Network cnfg L sunroof target	Programmed or Not program/SNA
135	Network cnfg L sunroof current	Programmed or Not program/SNA
170	LIN protocol error counter	times
171	LIN protocol CS error column	times
172	LIN prtcl res error cntr column	times
173	LIN protocol CS error P/W DR	times
174	LIN prtcl res error cntr P/W DR	times
175	LIN protocol CS error P/W AS	times
176	LIN prtcl res error cntr P/W AS	times
177	LIN protocol CS error P/W RL	times
178	LIN prtcl res error cntr P/W RL	times
179	LIN protocol CS error P/W RR	times
180	LIN prtcl res error cntr P/W RR	times
181	LIN protocol CS error P/W BK	times
182	LIN prtcl res error cntr P/W BK	times
183	LIN protocol CS error sunroof	times
184	LIN prtcl res err cntr PW s/roof	times
185	LIN protocol CS error RLS	times
186	LIN prtcl res error cntr P/W RLS	times
187	LIN protocol CS error RCM	times
188	LIN prtcl res error cntr P/W RCM	times

Item No.	Scan tool MB991958 display	Condition
200	Original VIN writing status	Comp/Unperformed or ECU internal Err or Comp and locked
201	Current VIN writing status	Comp/Unperformed or ECU internal Err or Comp and locked
202	Internal error	No error or 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/ADC error or PLL/ADC/EEPROM or PLL/ADC/Boot or PLL/ADC/Boot/ROM
203	Process error	No error or Interrupt error or Switch error or Sequence error or Stck pointer Err or Dispatch call Er or Other error
204	Coding counter	times
205	Coding counter Option	times
206	Head lamp LO ON duty	0-100%
207	Fan control relay ON duty	0-100%
208	Room lamp ON duty	0-100%
209	Gate lamp ON duty	0-100%
210	IG key illumination	0-100%
211	Head lamp Hi	ON or OFF
212	Front fog lamp	ON or OFF
213	Horn theft horn	ON or OFF
214	Head lamp washer	ON or OFF
215	Security indicator	ON or OFF
216	IG1-2 fuel pump	ON or OFF
218	Tail lamp	ON or OFF
219	Turn RH/LH lamp	ON or OFF
220	Blower fan	ON or OFF
221	Defogger	ON or OFF
222	Interior lamp cut	ON or OFF
224	Door lock	ON or OFF
227	Door unlock	ON or OFF
228	Dr door unlock	ON or OFF
230	Trunk/gate opener	ON or OFF
231	Rear fog lamp	ON or OFF
232	ACC Relay	ON or OFF
233	Fan Lo	ON or OFF
234	Fan Hi	ON or OFF

Item No.	Scan tool MB991958 display	Condition
235	Front wiper ACT	ON or OFF
236	Front wiper Lo/Hi	ON or OFF
237	Front washer	ON or OFF
238	Rear washer	ON or OFF
239	Rear wiper	ON or OFF
240	Power window	ON or OFF
241	Hold mirror open	ON or OFF
242	Hold mirror close	ON or OFF
243	Dead lock	ON or OFF
244	Independent DRL	ON or OFF
251	Auto Light Sensor	Voltage
252	Ambient Temperature Sensor	Voltage
253	Voltage sensing of IOD Line	Voltage
254	IG voltage	Voltage
255	Theft sensor	ON or OFF
256	Dr door ajar switch	Open or Close
257	As door ajar switch	Open or Close
258	RR door ajar switch	Open or Close
259	RL door ajar switch	Open or Close
260	Trunk/gate trunk ajar switch	Open or Close
262	Room lamp center ON switch	ON or OFF
263	Room lamp center OFF switch	ON or OFF
264	Handle lock switch	Key out or Key in
265	Hazard switch	ON or OFF
266	Hood switch	ON or OFF
267	Mirror switch	ON or OFF
268	Trunk/gate opener switch	ON or OFF
270	Dr door lock switch	Unlock or Not Unlock
271	Dr door unlock switch	Unlock or Not Unlock
272	As door unlock switch	Unlock or Not Unlock
273	Except Dr/As door unlock switch	Unlock or Not Unlock
274	Door key lock switch	ON or OFF
275	Dr door key unlock switch	ON or OFF
276	Door key unlock switch	ON or OFF
277	Power lock switch	ON or OFF
278	Power unlock switch	ON or OFF
279	Brake fluid switch	ON or OFF
280	Washer fluid switch	ON or OFF
281	ASC/TCL OFF switch	ON or OFF

Item No.	Scan tool MB991958 display	Condition
287	Starter switch	ON or OFF
288	ACC switch	ON or OFF
289	Backup lamp or shift reverses SW	ON or OFF
290	Brake switch	ON or OFF
291	Front wiper auto stop switch	ON or OFF
292	Rear wiper auto stop switch	ON or OFF
293	Process error information	-
294	Process error	times
295	Rear sunroof unlock	ON or OFF
340	Head light switch(tail)	ON or OFF
341	Head light switch	ON or OFF
342	Head light switch(Dimmer)	ON or OFF
343	Turn switch left	ON or OFF
344	Turn switch right	ON or OFF
345	Fog light ON	ON or OFF
346	Fog light OFF	ON or OFF
347	Switch type	LHD or RHD
348	Head light switch(auto)	ON or OFF
349	Head light cleaner	ON or OFF
350	Head light switch(flasher)	ON or OFF
351	Column ECU sleep	OK or NG
352	Front wiper(INT)	ON or OFF
353	Front wiper(LO)	ON or OFF
354	Front wiper(HI)	ON or OFF
355	Front wiper(washer)	ON or OFF
356	Rear wiper	ON or OFF
357	Rear wiper(washer)	ON or OFF
358	Front wiper(MIST)	ON or OFF
359	Front wiper(interval volume)	-
360	Wiper switch lever fail	No fail or Fail
361	Turn/Light switch lever fail	No fail or Fail

TROUBLE SYMPTOM CHART

M15410600017USA0000010000

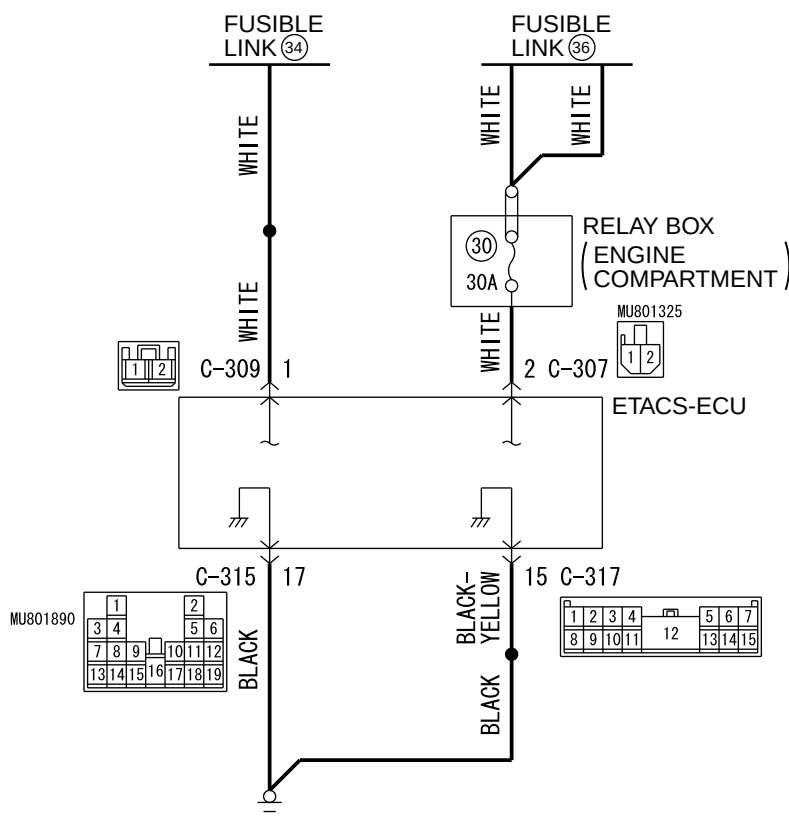
Trouble symptom	Reference page
Malfunction of ETACS-ECU power supply circuit	P.54Ad-57

SYMPTOM PROCEDURES

Malfunction of ETACS-ECU power supply circuit

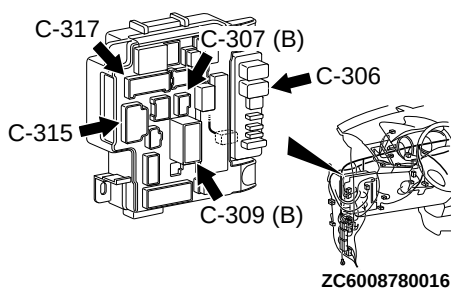
M15410600019USA0000010000

ETACS-ECU Power Supply Circuit



D7G54M054A00

Connectors: C-306, C-307, C-309, C-315, C-317



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.

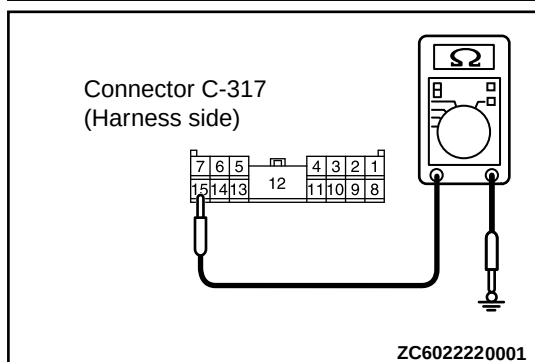
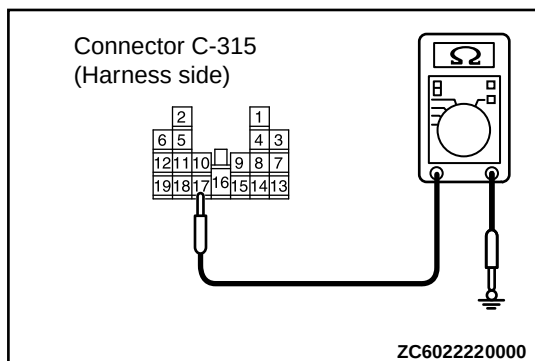
NO: Go to Step 3.

STEP 3. Check the wiring harness between ETACS-ECU connector C-315 (terminal 17) or C-317 (terminal 15) and the ground.

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.

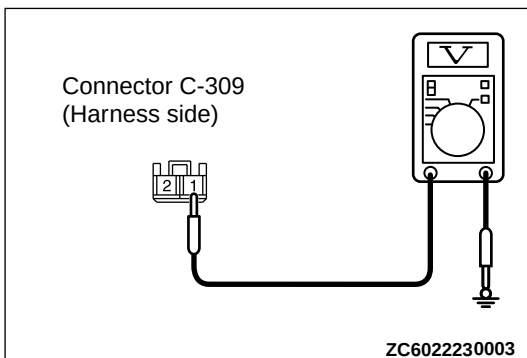
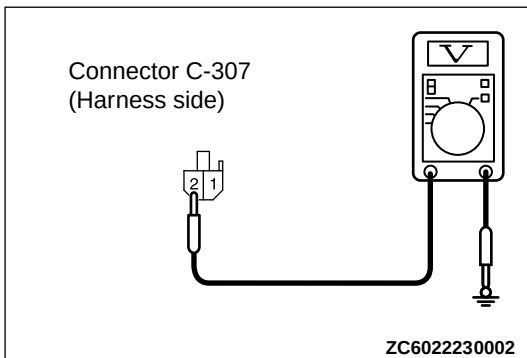
NO: Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection P.00E-2.

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 connector C-306 (terminal 1 or 2) and the fusible link (34) or (36).

Q: Is the wiring harness between ETACS-ECU connector C-306 (terminal 1 or 2) and the fusible link (34) or (36) in good condition?

YES: No action is necessary and testing is complete.

NO: The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The system should communicate with the ETACS-ECU normally.

STEP 7. Retest the system

Check that the ETACS-ECU functions work normally.

Q:Is the check result satisfactory?

YES: The procedure is complete. (If no malfunctions are found in all steps, an intermittent malfunction is suspected. Refer to GROUP 00, How to Use Troubleshooting/ Inspection Service Points – How to Cope with Intermittent Malfunction P.00-15).

NO: Replace the ETACS-ECU.

TROUBLE SYMPTOM CHART FOR INPUT SIGNAL

M15410600026USA0000010000

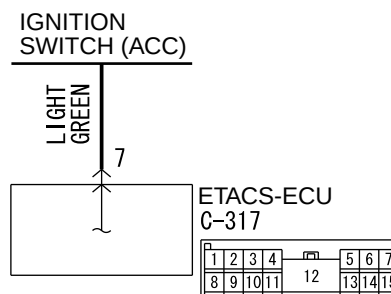
Trouble symptom	Inspection Procedure No.	Reference page
ETACS-ECU does not receive any signal from the ignition switch (ACC).	1	P.54Ad-61
ETACS-ECU does not receive any signal from the ignition switch (IG1).	2	P.54Ad-62
ETACS-ECU does not receive any signal from the key reminder switch.	3	P.54Ad-64
ETACS-ECU does not receive any signal from the front door lock actuator.	4	P.54Ad-67
ETACS-ECU does not receive any signal from the front door switch (LH).	5	P.54Ad-73
ETACS-ECU does not receive any signal from the front door switch (RH).	6	P.54Ad-75
ETACS-ECU does not receive any signal from the rear door switch (LH).	7	P.54Ad-77
ETACS-ECU does not receive any signal from the rear door switch (RH).	8	P.54Ad-80
ETACS-ECU does not receive any signal from the liftgate switch.	9	P.54Ad-82
ETACS-ECU does not receive any signal from the hood switch.	10	P.54Ad-85
ETACS-ECU does not receive any signal from the hazard warning light switch.	11	P.54Ad-87
ETACS-ECU does not receive any signal from the column switch signal.	12	P.54Ad-89

INPUT SIGNAL PROCEDURES

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

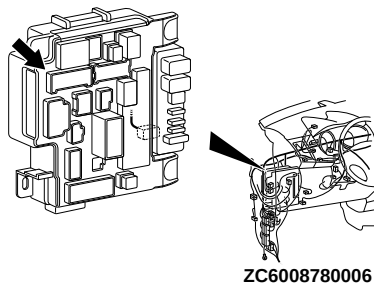
M15410600028USA0000010000

Ignition Switch (ACC) Input Circuit



D7G54M056A00

Connector: C-317



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

TECHNICAL DESCRIPTION (COMMENT)

If there is an error to the ignition switch (ACC) input signal, or the ACC relay inside the ETACS-ECU does

DIAGNOSIS

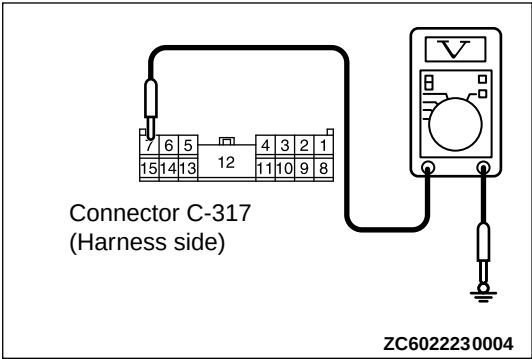
Required Special Tools:

- 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) Disconnect ETACS-ECU connector C-317 and measure the voltage available at the junction block side of the connector.
- (2) Turn the ignition switch to the "ACC" position.
- (3) Measure the voltage between terminal 7 and ground.
 - The voltage should measure approximately 12 volts (battery positive voltage).

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

YES: Replace the ETACS-ECU. Check that the input signal of ignition switch (ACC) is normal.

NO: Go to Step 3.

STEP 3. Check the wiring harness between ETACS-ECU connector C-317 (terminal 7) and the ignition switch (ACC).

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 7) and ignition switch (ACC) in good condition?

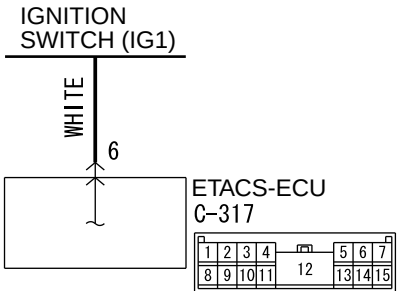
YES: No action is necessary and testing is complete.

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 ignition switch (ACC) is normal.

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

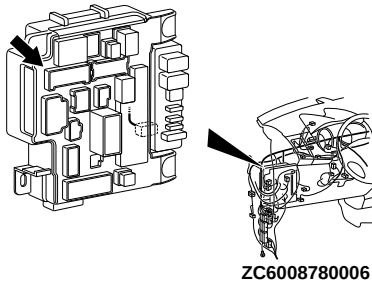
M15410600029USA0000010000

Ignition Switch (IG1) Input Circuit



D7G54M055A00

Connector: C-317



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) Disconnect ETACS-ECU connector C-317 and measure the voltage available at the junction block side of the connector.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal 6 and ground.

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

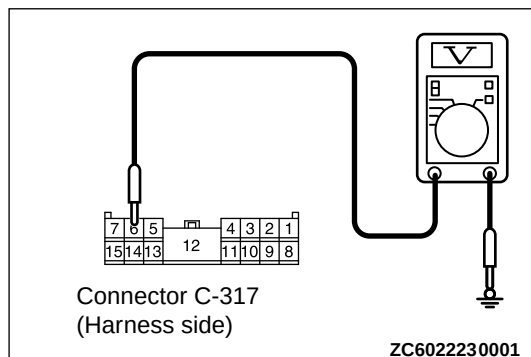
Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES: Replace the ETACS-ECU. Check that the input signal of ignition switch (IG1) is normal.

NO: Go to Step 3.

STEP 3. Check the wiring harness between ETACS-ECU connector C-317 (terminal 6) and the ignition switch (IG1).

Q: Is the wiring harness between ETACS-ECU connector C-317 (terminal 6) and ignition switch (IG1) in good condition?

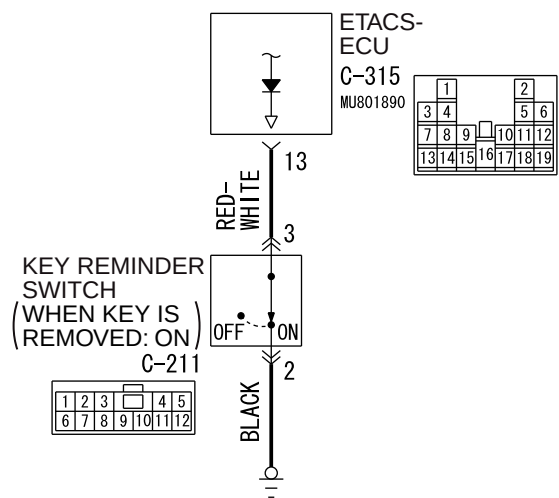


YES: No action is necessary and testing is complete.
NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of ignition switch (IG1) is normal.

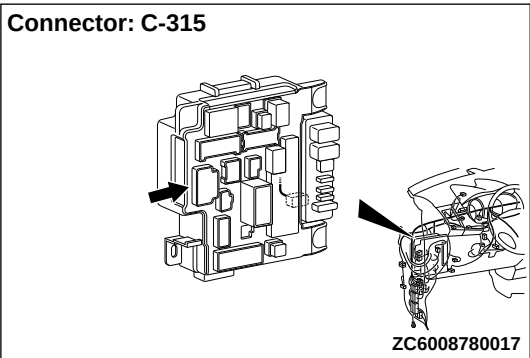
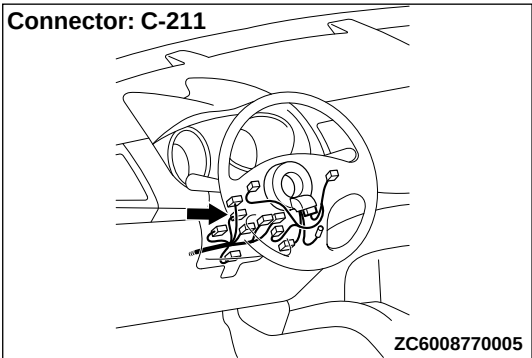
Inspection Procedure 3: ETACS-ECU does not receive any signal from the key reminder switch.

M15410600030USA0000010000

Key Reminder Switch Input Circuit



D7G54M057A00



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

- 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

TROUBLESHOOTING HINTS

- The key reminder switch may be defective

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check key reminder switch connector C-211 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is key reminder switch connector C-211 in good condition?

YES: Go to Step 2.

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

STEP 2. Check the key reminder switch.

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

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

Q: Is the key reminder switch in good condition?

YES: Go to Step 3.

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

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

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

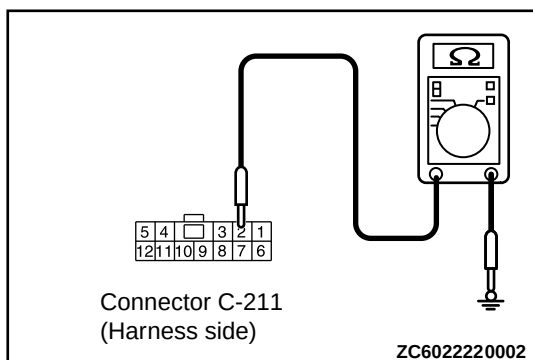
(2) Measure the resistance value between terminal 2 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES: Go to Step 5.

NO: Go to Step 4.



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

Q: Is the wiring harness between key reminder switch connector C-211 (terminal 2) and ground in good condition?

YES: No action is necessary and testing is complete.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of key reminder switch is normal.

STEP 5. Check ETACS-ECU connector C-315 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

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

YES: Go to Step 6.

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

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

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

YES: Go to Step 7.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of key reminder switch is normal.

STEP 7. Check for continuity between key reminder switch connector C-211 terminal 2 and each of the other terminals as well as terminal 3 and each of the other terminals.

- (1) Disconnect key reminder switch connector C-211 and measure the resistance available at the equipment side of the connector.
- (2) Check for continuity between key reminder switch connector C-211 terminal 2 and each of the other terminals as well as terminal 3 and each of the other terminals.

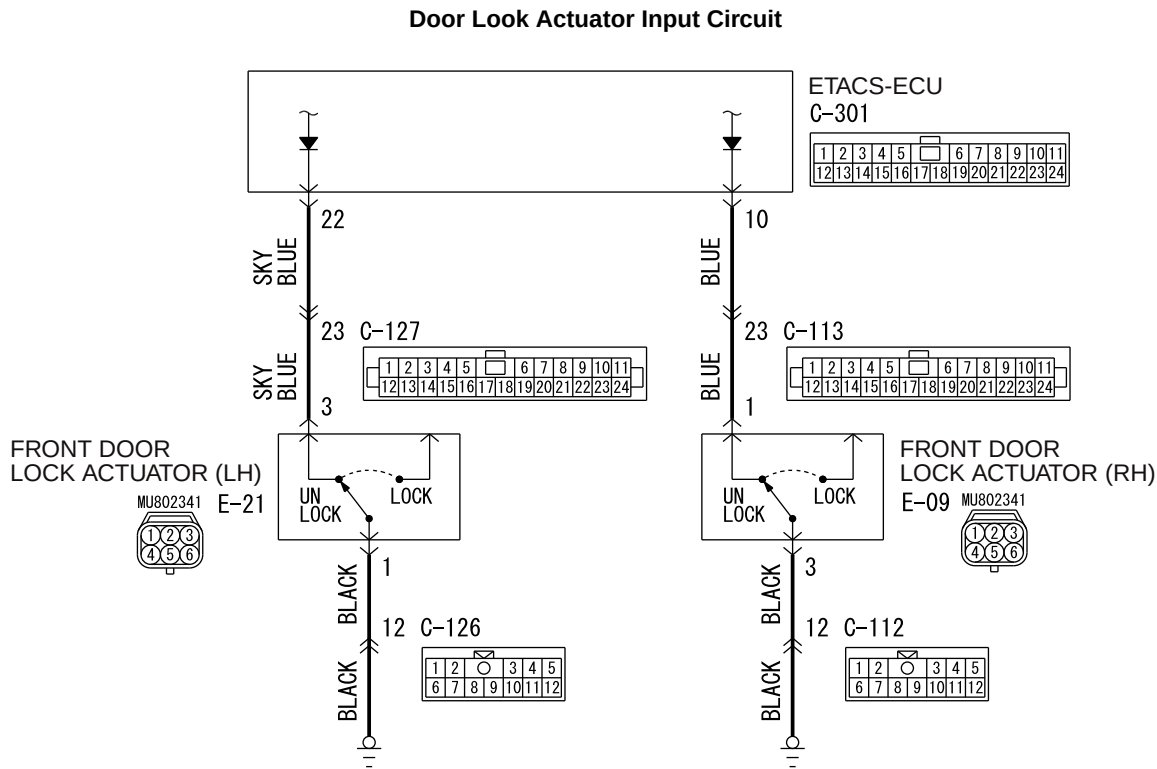
Q: Does continuity exist between the terminals?

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

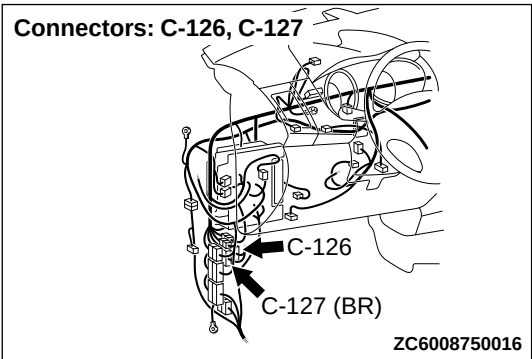
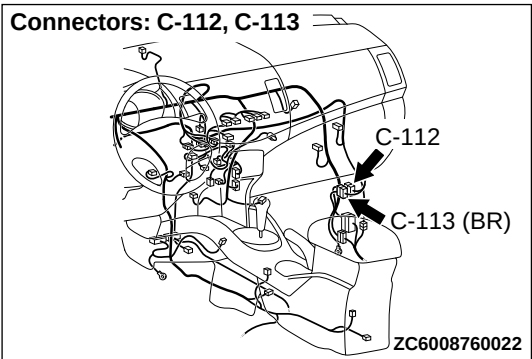
YES: Replace the key reminder switch. Check that the input signal of key reminder switch is normal.

Inspection Procedure 4: ETACS-ECU does not receive any signal from the front door lock actuator.

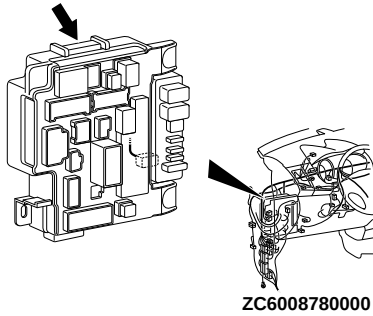
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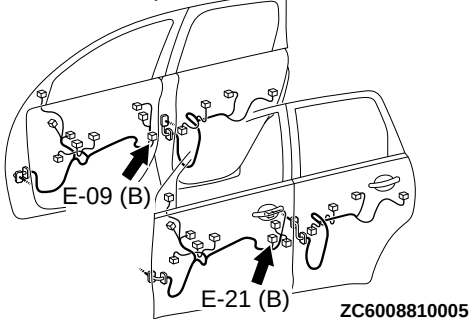
D7G54M058A00



Connector: C-301



Connectors: E-09, E-21

**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

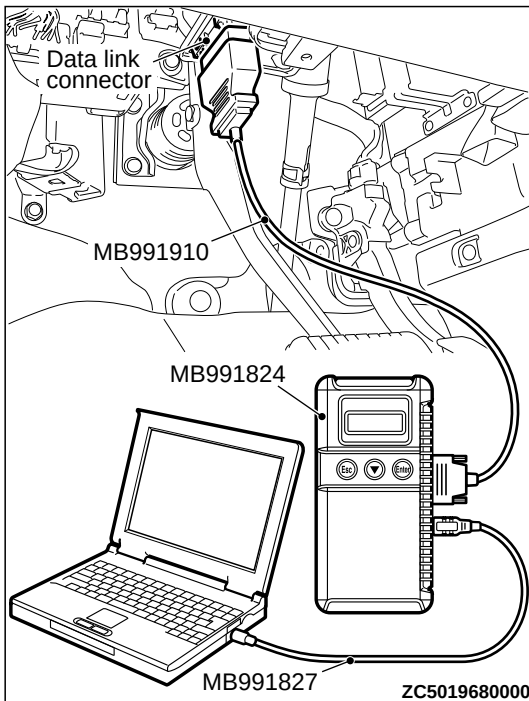
- The front door lock actuator (LH) may be defective
- The front door lock actuator (RH) may be defective <vehicles with KOS>
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

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.54Ad-5."
- (2) Turn the ignition switch to the "ON" position.
- (3) Check the ETACS data list.

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

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

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

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

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

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

YES<Normal conditions are displayed for all the items>:

No action is necessary and testing is complete.

NO<Normal condition is not displayed for item No.271>:

Go to Step 2.

NO<Normal condition is not displayed for item No.272>:

Go to Step 8.

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

Q:Is front door lock actuator (LH) connector E-21 in good condition?

YES: Go to Step 3.

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

STEP 3. Check the front door lock actuator (LH).

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

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

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

YES: Go to Step 4.

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

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

(1) Disconnect front door lock actuator (LH) connector E-21 and measure the resistance available at the wiring harness side of the connector.

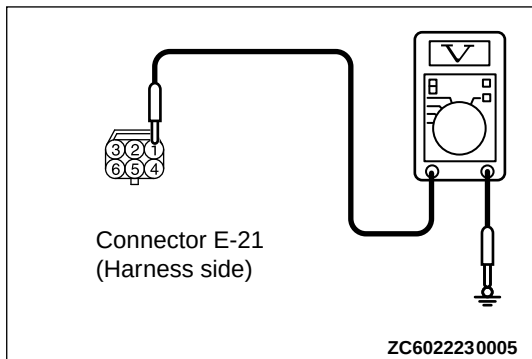
(2) Measure the resistance value between terminal 1 and ground.

• The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES: Go to Step 6.

NO: Go to Step 5.



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

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

Q: Is the wiring harness between front door lock actuator (LH) connector E-21 (terminal 1) and ground in good condition?

YES: No action is necessary and testing is complete.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of front door lock actuator (LH) is normal.

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

Q: Is ETACS-ECU connector C-301 in good condition?

YES: Go to Step 7.

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

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

NOTE: Also check intermediate connector C-127 for loose, corroded, or damaged terminals, or terminals pushed back in

the connector. If intermediate connector C-127 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection P.00E-2.

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

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

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of front door lock actuator (LH) is normal.

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

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

YES: Go to Step 9.

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

STEP 9. Check the front door lock actuator (RH).

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

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

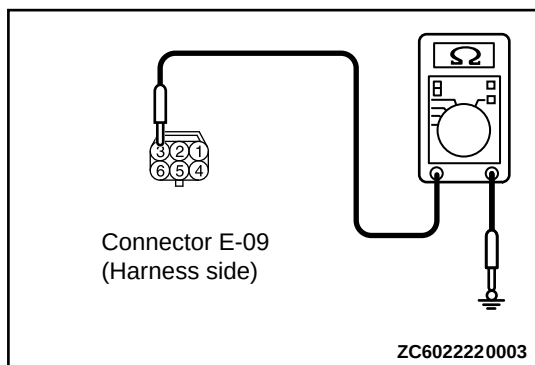
Q: Is the front door lock actuator (RH) in good condition?

YES: Go to Step 10.

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

STEP 10. Check the ground circuit to the front door lock actuator (RH). Measure the resistance at front door lock actuator (RH) connector E-09.

(1) Disconnect front door lock actuator (RH) connector E-09 and measure the resistance available at the wiring harness side of the connector.



(2) Measure the resistance value between terminal 3 and ground.

• The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES: Go to Step 12.

NO: Go to Step 11.

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

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

Q: Is the wiring harness between front door lock actuator (RH) connector E-09 (terminal 3) and ground in good condition?

YES: No action is necessary and testing is complete.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of front door lock actuator (RH) is normal.

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

Q: Is ETACS-ECU connector C-301 in good condition?

YES: Go to Step 13.

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

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

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

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

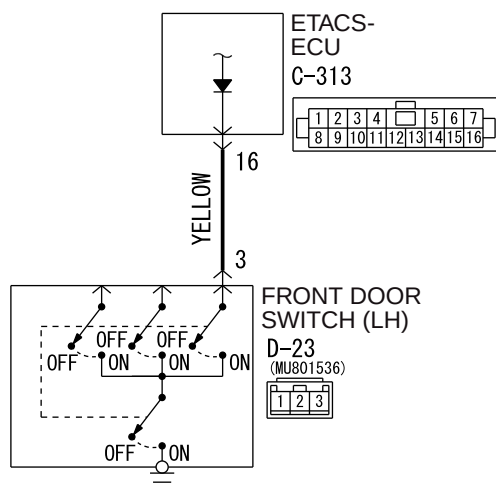
YES: Replace the ETACS-ECU. Check that the input signal of front door lock actuator (RH) is normal.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of front door lock actuator (RH) is normal.

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

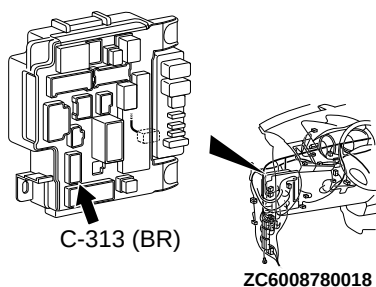
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Front Door Switch (LH) Input Circuit

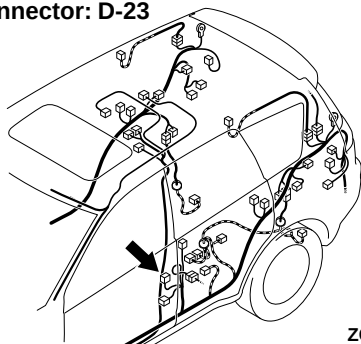


D7G54M059A00

Connector: C-313



Connector: D-23



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

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

Q: Is front door switch (LH) connector D-23 in good condition?

YES: Go to Step 2.

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

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

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

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

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

YES: Go to Step 3.

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

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

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

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

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES: Go to Step 4.

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

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

Q: Is ETACS-ECU connector C-313 in good condition?

YES: Go to Step 5.

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

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

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

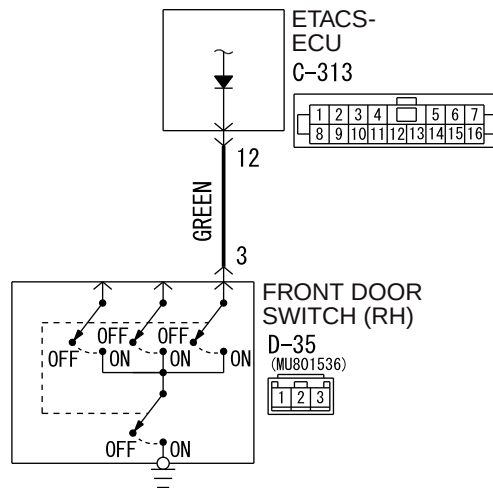
YES: Replace the ETACS-ECU. Check that the input signal of front door switch (LH) is normal.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of front door switch (LH) is normal.

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

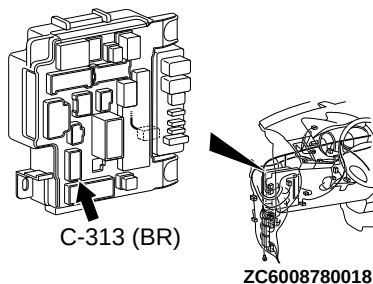
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Front Door Switch (RH) Input Circuit

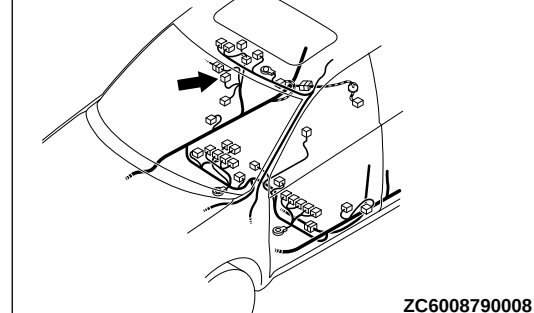


D7G54M060A00

Connector: C-313



Connector: D-35



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.

- 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

TROUBLESHOOTING HINTS

- The front door switch (RH) may be defective

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	Less than 2 ohms
Pressed	3 - switch body	Open circuit

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

YES: Go to Step 3.

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

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

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

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

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES: Go to Step 4.

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

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

Q: Is ETACS-ECU connector C-313 in good condition?

YES: Go to Step 5.

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

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

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

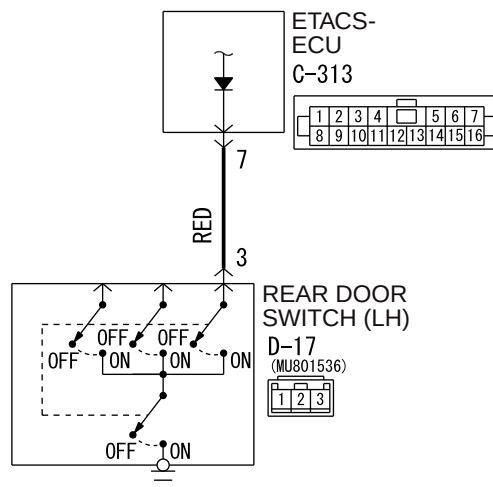
YES: Replace the ETACS-ECU. Check that the input signal of front door switch (RH) is normal.

NO: The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of front door switch (RH) is normal.

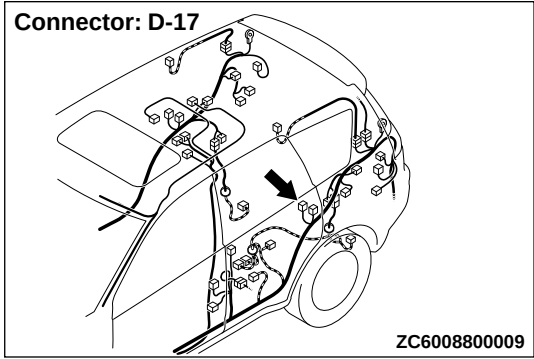
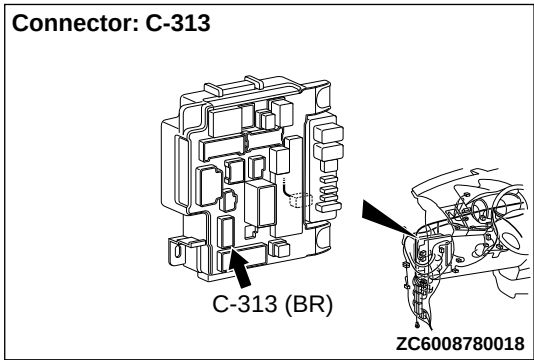
Inspection Procedure 7: ETACS-ECU does not receive any signal from the rear door switch (LH).

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Rear Door Switch (LH) Input Circuit



D7G54M061A00



TECHNICAL DESCRIPTION (COMMENT)

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

TROUBLESHOOTING HINTS

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

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check rear door switch (LH) connector D-17 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door switch (LH) connector D-17 in good condition?

YES: Go to Step 2.

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

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

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

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

Q: Is the rear door switch in good condition?

YES: Go to Step 3.

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

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

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

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

•The resistance should equal 2 ohms or less.

Q:Is the measured resistance 2 ohms or less?

YES: Go to Step 4.

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

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

Q:Is ETACS-ECU connector C-313 in good condition?

YES: Go to Step 5.

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

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

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

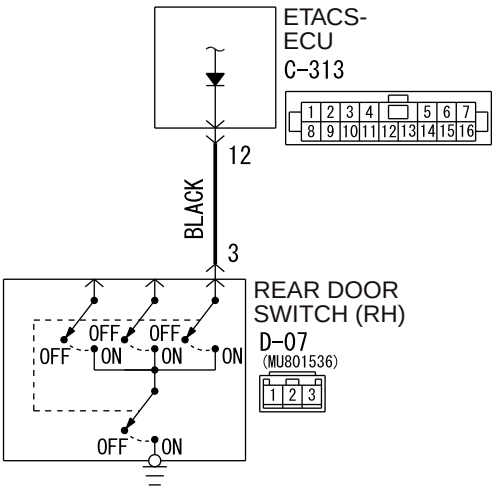
YES: Replace the ETACS-ECU. Check that the input signal of rear door switch (LH) is normal.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of rear door switch (LH) is normal.

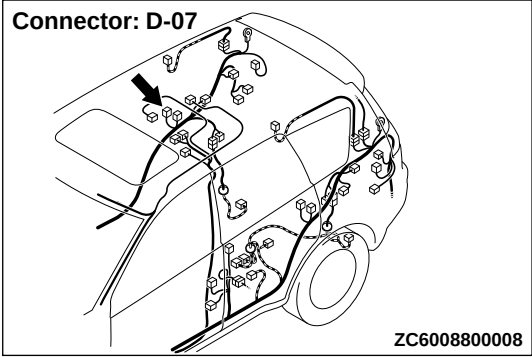
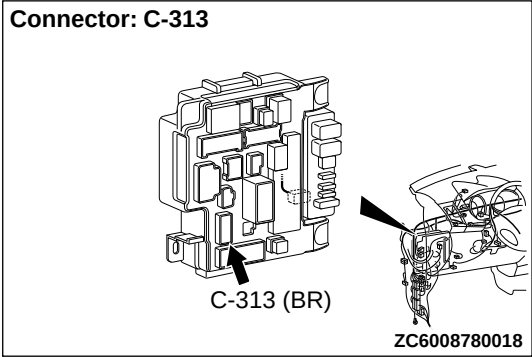
Inspection Procedure 8: ETACS-ECU does not receive any signal from the rear door switch (RH).

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Rear Door Switch (RH) Input Circuit



D7G54M062A00



TECHNICAL DESCRIPTION (COMMENT)

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

TROUBLESHOOTING HINTS

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

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check rear door switch (RH) connector D-07 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear door switch (RH) connector D-07 in good condition?

YES: Go to Step 2.

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

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

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

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

Q: Is the rear door switch in good condition?

YES: Go to Step 3.

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

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).

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

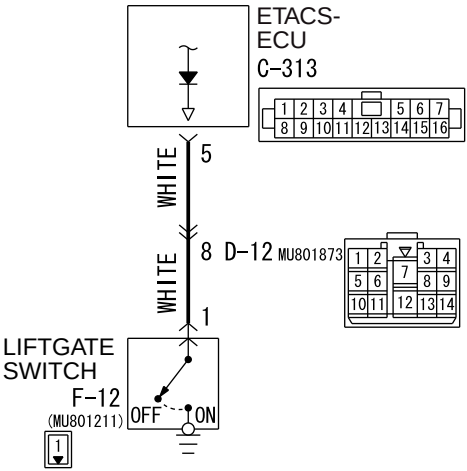
YES: Replace the ETACS-ECU. Check that the input signal of rear door switch (RH) is normal.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of rear door switch (RH) is normal.

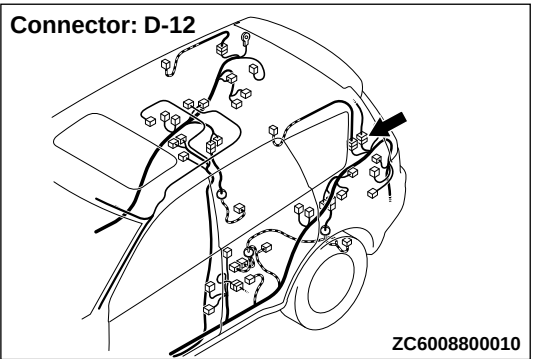
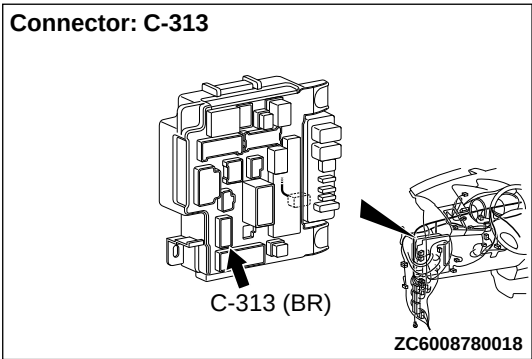
Inspection Procedure 9: ETACS-ECU does not receive any signal from the liftgate switch.

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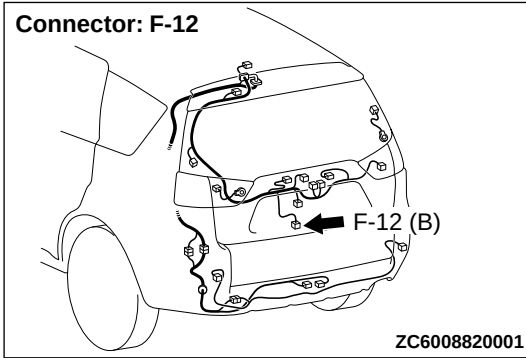
Liftgate Switch Input Circuit



D7G54M063A00



Connector: F-12



TROUBLESHOOTING HINTS

- The liftgate switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

TECHNICAL DESCRIPTION (COMMENT)

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

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe

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

Q: Is liftgate switch connector F-12 in good condition?

YES: Go to Step 2.

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

STEP 2. Check the liftgate switch.

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

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

Q: Is the liftgate switch in good condition?

YES: Go to Step 3.

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

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

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

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

- The resistance should equal 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES: Go to Step 4.

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

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

Q: Is ETACS-ECU connector C-313 in good condition?

YES: Go to Step 5.

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

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

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

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

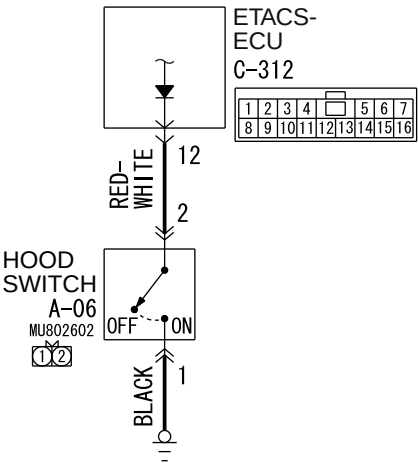
YES: Replace the ETACS-ECU. Check that the input signal of liftgate switch is normal.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of liftgate switch is normal.

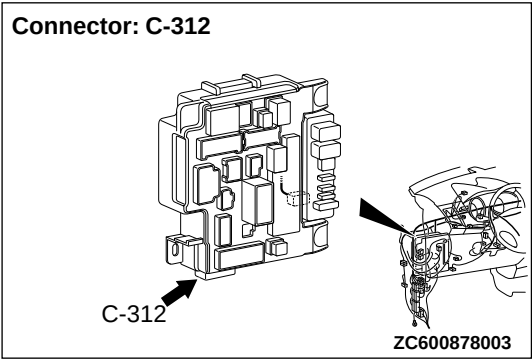
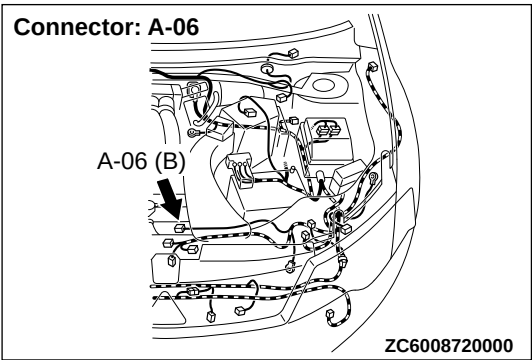
Inspection Procedure 10: ETACS-ECU does not receive any signal from the hood switch.

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Hood Switch Input Circuit



D7G54M064A00



TECHNICAL DESCRIPTION (COMMENT)

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

TROUBLESHOOTING HINTS

- The hood switch may be defective
- The ETACS-ECU may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set

*MB992006: Extra Fine Probe

STEP 1. Check hood switch connector A-06 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q:Is hood switch connector A-06 in good condition?

YES: Go to Step 2.

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

STEP 2. Check the hood switch.

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

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

Q:Is the hood switch in good condition?

YES: Go to Step 3.

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

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

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

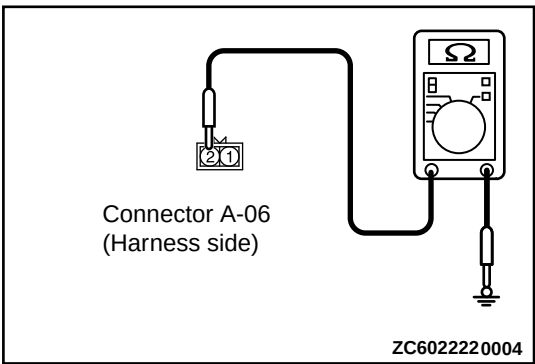
(2) Measure the resistance value between terminal 2 and ground.

*The resistance should equal 2 ohms or less.

Q:Is the measured resistance 2 ohms or less?

YES: Go to Step 5.

NO: Go to Step 4.



STEP 4. Check the wiring harness between hood switch connector A-06 (terminal 1) and ground.

Q:Is the wiring harness between hood switch connector A-06 (terminal 1) and the ground in good condition?

YES: No action is necessary and testing is complete.

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of hood switch is normal.

STEP 5. Check ETACS-ECU connector C-312 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-312 in good condition?

YES: Go to Step 6.

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

STEP 6. Check the wiring harness between driver's door switch connector A-06 (terminal 2) and ETACS-ECU connector C-312 (terminal 12).

Q: Is the wiring harness between driver's door switch connector A-06 (terminal 2) and ETACS-ECU connector C-312 (terminal 12) in good condition?

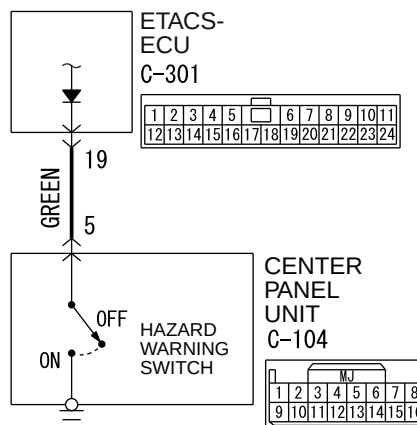
YES: Replace the ETACS-ECU. Check that the input signal of hood switch is normal.

NO: The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of hood switch is normal.

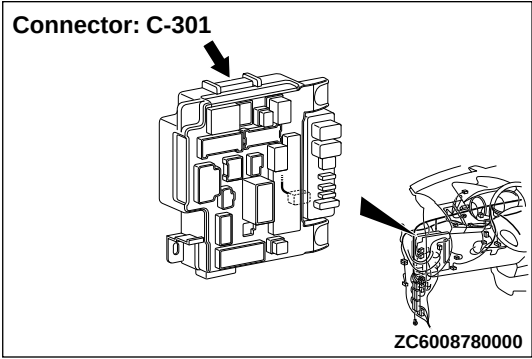
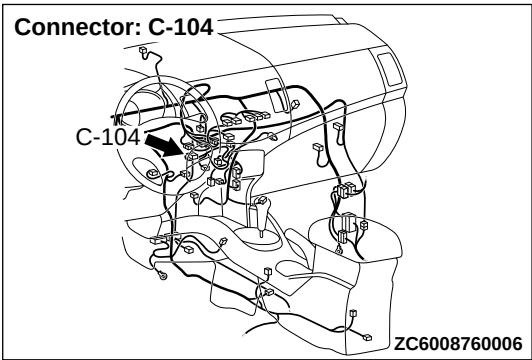
Inspection Procedure 11: ETACS-ECU does not receive any signal from the hazard warning light switch.

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Hazard Warning Switch Input Circuit



D7G54M065A00



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

STEP 1. Check center panel unit connector C-104 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

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

YES: Go to Step 2.

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

STEP 2. Check the hazard warning light switch.

Remove the center panel unit. Then check continuity between the switch terminal and switch body.

Switch position	Tester connection	Specified condition
Released	5 - switch body	Less than 2 ohms
Pressed	5 - switch body	Open circuit

Q: Is the hazard warning light switch in good condition?

YES: Go to Step 3.

NO: Replace the center panel unit. Check that the input signal of hazard warning light switch is normal.

STEP 3. Check ETACS-ECU connector C-301 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-301 in good condition?

YES: Go to Step 4.

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

STEP 4. Check the wiring harness between center panel unit connector C-104 (terminal 5) and ETACS-ECU connector C-301 (terminal 19).

Q: Is the wiring harness between center panel unit connector C-104 (terminal 5) and ETACS-ECU connector C-301 (terminal 19) in good condition?

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

NO: The wiring harness may be damaged or the connector (s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Check that the input signal of hazard warning light switch is normal.

Inspection Procedure 12: ETACS-ECU does not receive any signal from the column switch signal.

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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

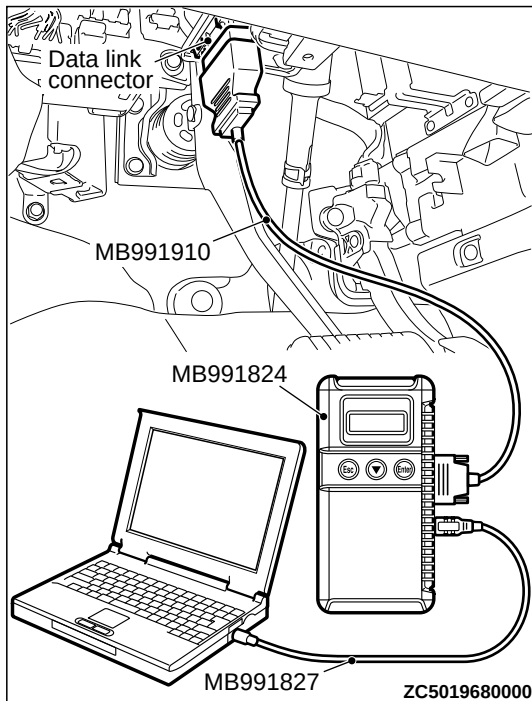
DIAGNOSIS

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.54Ad-5."
- (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.54Ad-8).

NO: Go to Step 2.

STEP 2. Column switch check

- Check the continuity for windshield wiper and windshield washer switch. Refer to GROUP 54Ah, Inspection P. 54Ah-9.
- Check the continuity for column switch (switch body part). Refer to GROUP 54Ah, Inspection P.54Ah-9.

Q:Is the check result normal?

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

NO: Replace the column switch.

ON-VEHICLE SERVICE**CONFIGURATION FUNCTION**

M15410600041USA0000010000

With the scan tool MB991958 operation, the following information is held even when the battery is disconnected. The programmed functions can be programmed.

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
ACC power auto cut	Time to ACC power cut-off when the ignition switch is in the ACC position	Disable	Without function (default)
		30 min	30 minutes
		60 min	60 minutes

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Turn power source	Adjustment of turn-signal light operation condition	ACC or IG1	Operable with ACC or ON position
		IG1	Operable with ON position (default)
Comfort flasher	With/without comfort flasher function	Disable	Without function
		Enable	With function (default)
Comfort flasher switch time	Switch operation time to activate the comfort flasher function	Normal	0.4 seconds (default)
		Long	0.8 seconds
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 (default)
		Lock:1, Unlock:0	LOCK: Flashes once, UNLOCK: No flash
		Lock:0, Unlock:2	LOCK: No flash, UNLOCK: Flash twice
		Lock:2, Unlock:1	LOCK: Flash twice, UNLOCK: Flash once
		Lock:2, Unlock:0	LOCK: Flash twice, UNLOCK: No flash
		Lock:0, Unlock:1	LOCK: No flash, UNLOCK: Flash once
		Lock:0, Unlock:0	Without function
Front wiper operation	Adjustment of the intermittent windshield wiper operation	Normal INT	Intermittent wiper interval is fixed to 4 seconds.
		Variable INT	Intermittent wiper interval is calculated only by the wiper volume control.
		Vehicle speed dependent	Intermittent wiper interval is calculated according to the intermittent wiper volume control and vehicle speed (default).
Front wiper washer	Disabling or enabling washer-linked wiper function	Washer only	Without function
		Washer-linked wiper	With function (default)
Rear wiper intermittent duration	Adjustment of rear wiper interval	0 seconds	No wiper interval
		4 seconds	4 seconds
		8 seconds	8 seconds (default)
		16 seconds	16 seconds
Rear wiper low speed mode	Disabling or enabling rear wiper continuous operation	Disabled	Without function (default)
		Enabled	With function
Room lamp delay timer with door	Adjustment of interior light delay shutdown time	0sec	0 second (no delay shutdown time)
		7.5sec	7.5 seconds
		15sec	15 seconds
		30sec	30 seconds (default)

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
		60sec	60 seconds
		120sec	120 seconds
		180sec	180 seconds
Head lamp auto cut customize	Adjustment of headlight automatic shutdown function	Disable	Without function
		C-spec.	With function (default)
Interior lamp auto cut timer	Adjustment of interior light automatic shutdown function operation time	Disabled	Without function
		3min	3 minutes
		30min	30 minutes (default)
		60min	60 minutes
Door unlock mode	Door lock system	All doors unlock	All the doors are unlocked when the driver's side door is unlocked.
		Dr door unlock	Only the driver's side door is unlocked when the driver's side door is unlocked. (default)
Auto door unlock by P position	Auto door unlock by P position function	Disable	Without function (default)
		Always enabled	Always with function
		P/W unlocked	With function (with power window unlocked)
Duration of horn chirp	Horn sounding time during horn answer back	Short	0.01 second (default)
		Long	0.02 second
Horn chirp by RKE	Horn chirp by RKE	Not sound horn	Without 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. (default)
Buzzer answer back	Adjusts the buzzer answer back function.	Not sound buzzer	Without function
		At keyless key	Sounds when the keyless entry system is activated.
		At keyless	Sounds when KOS is activated (default).
		At Both	Sounds when the keyless entry system or KOS is activated.
Timer lock timer	Timer lock period adjustment	30sec	30 seconds (default)
		60sec	60 seconds
		120sec	120 seconds
		180sec	180 seconds
Duration pre-alarm	Adjustment of pre-alarm continue time	10 sec	10 seconds (default)
		6 sec	6 seconds

Adjustment item (scan tool MB991958 display)	Adjustment item	Adjusting contents (scan tool MB991958 display)	Adjusting contents
Alarm	With/without theft-alarm function	Disable	Without function
		Enable	With function (default)
Panic alarm switch	With/without panic alarm function	Disable	Without function
		Enable	With function (default)
Fob out of car	With/without KOS key exterior detection function	Disable	Without function (default)
		Enable	With function
KOS feature	KOS function adjustment	Both enable	All KOS functions are enabled (default).
		DoorEntry enable	Only door entry function is enabled.
		ENG strt enable	Only engine starting function is enabled.
		Both disabled	All KOS functions are disabled.
KOS unlock disable time	Adjusts the door unlock inhibition period after door lock is activated.	0sec	0 seconds
		3sec	3 seconds (default)
		5sec	5 seconds

ETACS-ECU

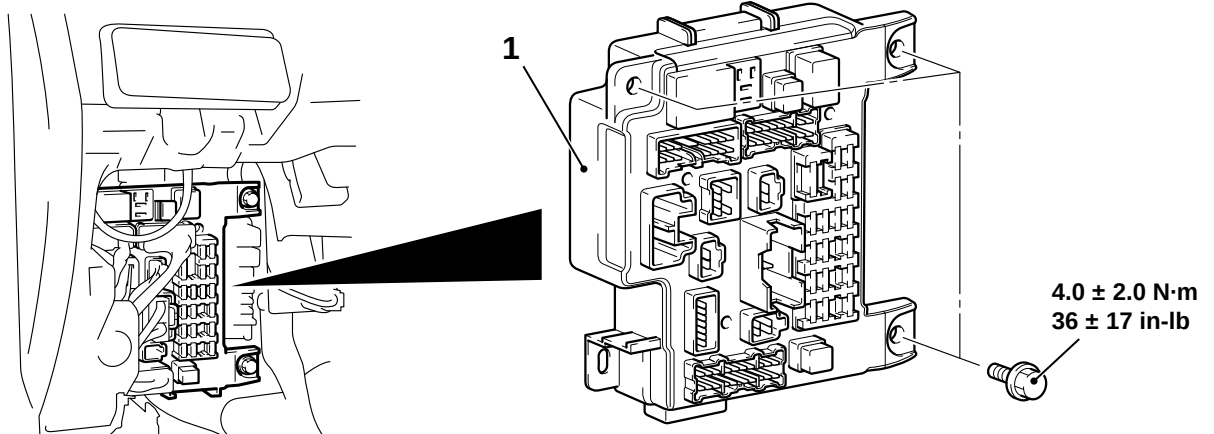
REMOVAL AND INSTALLATION

⚠ CAUTION

When replacing the ETACS-ECU, use the ETACS-ECU to which the chassis number is written and the coding is implemented. Also, if diagnostic trouble code B1761 "Chassis No. not

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programmed" or B222C "Coding not completed" is set to the ETACS-ECU, replace with the ETACS-ECU to which the chassis number same as that of vehicle is written and the coding is implemented.



Removal Steps

Side air outlet, bottom cover assembly (driver's seat), side lower panel

Removal Steps

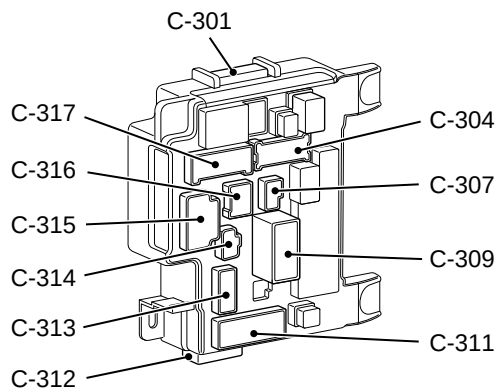
assembly (Refer to GROUP 52A, Instrument Panel Assembly P.52A-2.)

Removal Steps

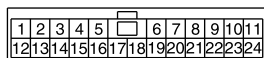
1. ETACS-ECU

CHECK WITH TERMINAL VOLTAGE

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ZC6019640000

CONNECTOR: C-301

ZC6019650000

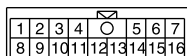
Terminal No.	Check item	Check condition	Normal condition
1	-	-	-
2	Input from power window main switch or front power window sub switch (lock)	Power window main switch or front power window sub switch: Locked	0 volt
3-9	-	-	-
10	Input from front passenger's door lock actuator (unlock)	Front passenger's door lock: Unlocked	0 volt
11	-	-	-
12	Output to defogger switch	Defogger switch: ON	0 volt
13-15	-	-	-
16	Input from door lock key cylinder switch (lock)	Door lock key cylinder switch: Locked	0 volt
17	Input from door lock key cylinder switch (unlock)	Door lock key cylinder switch: Unlocked	0 volt
18	-	-	-
19	Input from hazard warning light switch	Hazard warning light switch: ON	0 volt
20	-	-	-
21	Input from windshield wiper backup switch	Windshield low-speed wiper switch or windshield high-speed wiper switch: ON	0 volt

ETACS
CHECK WITH TERMINAL VOLTAGE

54Ad-95

Terminal No.	Check item	Check condition	Normal condition
22	Input from driver's door lock actuator (unlock)	Driver's door lock: Unlocked	0 volt
23, 24	-	-	-

CONNECTOR: C-304



ZC6019660000

Terminal No.	Check item	Check condition	Normal condition
1	Stop light switch power supply	Stop light switch: ON	Battery voltage
2	Input from transmission range switch (R)	Selector lever: R Ignition switch: ON	Battery voltage
3	Output to position light (LH)	When position light is illuminated	Battery voltage
4	-	-	-
5	Output to windshield wiper (HI)	When windshield wipers are operating at high speed	Battery voltage
6	Output to windshield wiper (LO)	When windshield wipers are operating at low speed	Battery voltage
7	Output position light (RH)	When position light illuminated	Battery voltage
8	Input from windshield wiper auto stop switch	When windshield wipers are operating	Battery voltage
9	Output to front and side turn-signal light (LH)	When front and side turn-signal light (LH) is illuminated	Battery voltage
10	Output to engine control module (IG1)	Ignition switch: ON	Battery voltage
11	Input from engine control module (fuel control)	Engine: Started	0 volt
12	Output to windshield wiper (ACC)	Ignition switch: ACC	Battery voltage
13	Output to windshield washer	When windshield washer is operating	Battery voltage
14	Output to rear washer output	When rear washer is operating	Battery voltage
15	Output to engine control module (START)	Ignition switch: START	Battery voltage
16	Output to front and side turn-signal light (RH)	When front and side turn-signal light (RH) is illuminated	Battery voltage

CONNECTOR: C-307



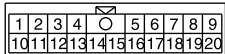
ZC6019670000

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

CONNECTOR: C-309

ZC6019680000

Terminal No.	Check item	Check condition	Normal condition
1	Battery power supply	Always	Battery voltage
2	Battery power supply	Always	Battery voltage

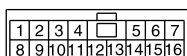
CONNECTOR: C-311

ZC6019690000

Terminal No.	Check item	Check condition	Normal condition
1	Output to liftgate lock actuator	When liftgate is locked	Battery voltage
2	Backup light power supply	When backup light is illuminated	Battery voltage
3	Input from luggage compartment light	When luggage compartment light is illuminated	0 volt
4	Output to rear wiper motor	When rear wiper is operating	Battery voltage
5	Output to rear wiper	When rear wiper is operating	Battery voltage
6	Output to rear door lock actuator (unlock)	When rear door is unlocked	Battery voltage
7	-	-	-
8	Input from rear wiper auto stop switch	When rear wiper is operating	Battery voltage
9	Output to rear door lock actuator (lock)	When rear door is locked	Battery 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 voltage
11	-	-	-
12	Rear power window motor power supply	Ignition switch: ON	Battery 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 voltage
14, 15	-	-	-
16	Output to accessory socket 1	Ignition switch: ACC	Battery voltage

Terminal No.	Check item	Check condition	Normal condition
17	Output to luggage compartment light	When luggage compartment light is illuminated	2 volts or less
18	Output to rear turn-signal light (LH)	When rear turn-signal light (LH) is illuminated	Battery voltage
19	Output to rear turn-signal light (RH)	When rear turn-signal light (RH) is illuminated	Battery voltage
20	-	-	-

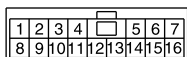
CONNECTOR: C-312



ZC6019700000

Terminal No.	Check item	Check condition	Normal condition
1	Input from brake fluid level switch	Brake fluid level switch: ON	0 volt
2	Output to radiator fan relay	When radiator fan is operating	0 volt
3	-	-	-
4	Output to fog lights	Fog light switch: ON	0 volt
5	-	-	-
6	Output to headlight (LO)	Headlight switch: ON	0 volt
7	Input from ambient temperature sensor	Always	0.2 - 2.72 volts
8	Output to condenser fan relay	When condenser fan is operating	0 volt
9	Output to fan control relay	When fan control is operating	0 volt
10	Output to daytime running light	Ignition switch: ON	0 volt
11	Output to horn	When horn sounds	0 volt
12	Input from Hood switch	Hood switch: ON (hood open)	0 volt
13	Output to Headlight (HI)	Dimmer switch: ON	0 volt
14	Ground (ambient temperature sensor)	Always	0 volt
15	Output to theft-alarm horn output	When theft-alarm function is operating (with horn sound)	0 volt
16	Input from stoplight switch	Stoplight switch: ON	12 volts

CONNECTOR: C-313



ZC6019710000

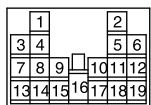
Terminal No.	Check item	Check condition	Normal condition
1	-	-	-

Terminal No.	Check item	Check condition	Normal condition
2	Ignition switch (IG1) power supply	Ignition switch: ON	Battery voltage
3	-	-	-
4	Ignition switch (IG1) power supply	Ignition switch: ON	Battery voltage
5	Input from liftgate switch	Liftgate switch: ON (liftgate open)	0 volt
6	-	-	-
7	Input from rear door switch (LH)	Rear door switch (LH): ON (door open)	0 volt
8	Input from rear door switch (RH)	Rear door switch (RH): ON (door open)	0 volt
9-11	-	-	-
12	Input from front door switch (RH)	Front door switch (LH): ON (door open)	0 volt
13	-	-	-
14	Input from liftgate lock release handle	Liftgate lock release handle: ON	0 volt
15	Input from ASC off switch	ASC off switch: ON	0 volt
16	Input from front door switch (LH)	Front door switch (RH): ON (door open)	0 volt

CONNECTOR: C-314

ZC6019720000

Terminal No.	Check item	Check condition	Normal condition
1	Output to fuel pump	Engine: Started	Battery voltage
2	-	-	-

CONNECTOR: C-315

ZC6019730000

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 voltage
3	-	-	-
4	Battery power supply	Always	Battery voltage
5	Output to front door lock actuator (RH) (unlock)	When front door (RH) is unlocked	Battery voltage
6	Output to central door locking (for locking the doors)	When the door lock actuators lock the doors	Battery voltage

Terminal No.	Check item	Check condition	Normal condition
7	Ignition switch (START) power supply	Ignition switch: START	Battery voltage
8	Power window motor power supply	Ignition switch: ON	Battery voltage
9	Ignition switch (ACC) power supply	Ignition switch: ACC	Battery voltage
10	Power window main switch power supply	Ignition switch: ON	Battery voltage
11	Output to accessory socket 2	Ignition switch: ACC	Battery voltage
12	Output to accessory socket 3	Ignition switch: ACC	Battery voltage
13	Input from key reminder switch	Key reminder switch: ON (ignition key removed)	0 volt
14	-	-	-
2	Input from power window main switch or front power window sub switch (unlock)	Power window main switch or front power window sub switch: Unlocked	0 volt
16	Output to blower motor	Blower motor in operation	Battery voltage
17	Ground (signal)	Always	0 volt
18	Output to ignition key cylinder illumination light	When ignition key cylinder illumination is ON	12 volts
19	Input from horn switch	Horn switch: ON	0 volt

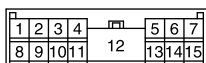
CONNECTOR: C-316



ZC6019740000

Terminal No.	Check item	Check condition	Normal condition
1	-	-	-
2	Sunroof motor assembly power supply	Always	Battery voltage
3, 4	-	-	-
5	Input from dome light	When dome light is illuminated	0 volt
6	Output to dome light output	When dome light is illuminated	2 volts or less

CONNECTOR: C-317



ZC6019750000

Terminal No.	Check item	Check condition	Normal condition
1	Battery power supply	Always	Battery voltage
2	Battery power supply	Always	Battery voltage

Terminal No.	Check item	Check condition	Normal condition
3, 4	-	-	-
5	Ignition switch (IG1) power supply	Ignition switch: ON	Battery voltage
6	Input from ignition switch (IG1)	Ignition switch: ON	Battery voltage
7	Input from ignition switch (ACC)	Ignition switch: ACC	Battery voltage
8	-	-	-
9	Output to theft-alarm indicator light	When theft-alarm indicator light is illuminated	0 volt
10	Battery power supply	Always	Battery voltage
11-14	-	-	-
15	Ground	Always	0 volt