SERVICE BULLETIN

MITSUBISHI MOTORS

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : CHANGE	ISSUE NO. : MSB-13EXML17-001	DATE : 2013-10-02
SUBJECT : DIAGNOSIS FUNCTION/ACC/FCM & RADAR BLOCKAGE DETECTED		<Affected Destination/Model> (AS PER ATTACHED) <M/Y> 13-14
GROUP : ENGINE/EMISSION CONTROL(Gr:17)		OUTLANDER/OUTLANDER PHEV (GF0W)

1. Description :

Please refer to the attached document for the information about the change of mention in the applicable service manual.
(Change of the maintenance point of the radar Cruise control (ACC) system)

2. Affected service manuals :

Please refer to the attached document（Attached sheet 1）

3. About the details :

Please refer to the attached document（Attached sheet 3-4）

4. Effective time : From the vehicle produced initially

別紙 1

Attached sheet 1

MMNA

Applicable manual	Pub. No.	Applicable title (INFO ID)	Content
2014 OUTLANDER Service Manual	MSCD-007B-2014	Gr.17: DIAGNOSTIC FUNCTION (M172-00-490-51300-01)	Attached sheet 3 (1/3, 2/3)
		Gr.17: DTC C1753: ACC/FCM Radar Blockage Detected (M172-01-010-01100-01)	Attached sheet 3 (3/3)

EU/RUSSIA

Applicable manual	Pub. No.	Applicable title (INFO ID)	Content
2013 OUTLANDER Workshop Manual	CGFE13E1-CD (English) CGFF13E1-CD (French) CGFG13E1-CD (German) CGFS13E1-CD (Spanish) CGFI13E1-CD (Italian) RUSSIA:N/A	Gr.17: DIAGNOSIS FUNCTION (M172-00-211-43900-01)	Attached sheet 4 (1/3, 2/3)
		Gr.17: DTC C1753: ACC/FCM Radar Blockage Detected (M172-01-010-01100-01)	Attached sheet 4 (3/3)
2014 OUTLANDER/ OUTLANDER PHEV Workshop Manual	CGFE14E1-CD (English) CGFF14E1-CD (French) CGFG14E1-CD (German) CGFS14E1-CD (Spanish) CGFI14E1-CD (Italian) RUSSIA:N/A	Gr.17: DIAGNOSIS FUNCTION (M172-00-211-43900-01)	Attached sheet 4 (1/3, 2/3)
		Gr.17: DTC C1753: ACC/FCM Radar Blockage Detected (M172-01-010-01100-01)	Attached sheet 4 (3/3)

G.EXP/GCC

Applicable manual	Pub. No.	Applicable title (INFO ID)	Content
2014 OUTLANDER Workshop Manual	PWRE1303R (English) PWRS1304R (Spanish)	Gr.17: DIAGNOSIS FUNCTION (M172-00-211-43900-01)	Attached sheet 4 (1/3, 2/3)
		Gr.17: DTC C1753: ACC/FCM Radar Blockage Detected (M172-01-010-01100-01)	Attached sheet 4 (3/3)

MMAL/NZ/CHINA

Applicable manual	Pub. No.	Applicable title (INFO ID)	Content
2013 OUTLANDER Workshop Manual	AU900304 (MMAL) DRAFT (NZ) DRAFT (CHINA)	Gr.17: DIAGNOSIS FUNCTION (M172-00-211-43900-01)	Attached sheet 4 (1/3, 2/3)
		Gr.17: DTC C1753: ACC/FCM Radar Blockage Detected (M172-01-010-01100-01)	Attached sheet 4 (3/3)
2014 OUTLANDER/ OUTLANDER PHEV Workshop Manual	AU900408 (MMAL) DRAFT (NZ) DRAFT (CHINA)	Gr.17: DIAGNOSIS FUNCTION (M172-00-211-43900-01)	Attached sheet 4 (1/3, 2/3)
		Gr.17: DTC C1753: ACC/FCM Radar Blockage Detected (M172-01-010-01100-01)	Attached sheet 4 (3/3)

HOW TO DIAGNOSE THE CAN BUS LINES

Required Special Tools:

- MB992744: Vehicle communication interface-Lite (V.C.I.-Lite)
- MB992745: V.C.I.-Lite main harness A
- MB992747: V.C.I.-Lite USB cable short
- MB992748: V.C.I.-Lite USB cable long
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicles Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

1. Connect scan tool (M.U.T.-III) 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 THE FREEZE FRAME DATA

Various data of when the diagnostic trouble code has been stored is obtained, and the status of that time is stored. By analyzing each data using M.U.T.-III, troubleshooting can be carried out efficiently.

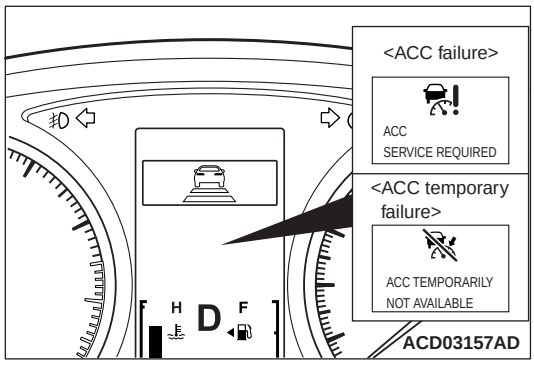
Display items of the freeze frame data are as follows.

DISPLAY ITEM LIST

Item No.	Item	Unit/display contents
1	Odometer	km (mile)
2	Odometer (Last time)	km (mile)
3	Frequency counter	Count
4	Operation counter	Count
5	System counter	Count

<Added>
Insert the attached sheet 3 (2/3)

FAIL-SAFE FUNCTIONS <ACC/FCM-ECU> (Related to the ACC)



If the ACC/FCM-ECU determines that the ACC is defective by means of its self-diagnosis, the ACC failure display or the ACC temporary failure display will illuminate.

Illumination condition of display in case of failure

DTC No.	Item	ACC failure display	ACC temporary failure display
C1394	Incompleted learn neutral (Steering wheel sensor)	ON	OFF
C1707	Implausible coding data	ON	OFF
C1750	ACC/FCM-ECU voltage out of range	OFF	ON
C1751	ACC/FCM-ECU failure	ON	OFF
C1752	ACC/FCM radar temperature out of range	OFF	ON
C1753	ACC/FCM radar blockage detected	OFF	ON
C1754	ACC/FCM radar calibration not completed	OFF	ON
C1768	Alignment left compensation	ON	OFF
C1769	Alignment right compensation	ON	OFF
C1770	Reflector plate in the lowermost	ON	OFF
C1771	Reflector plate in the uppermost	ON	OFF
C1772	Alignment sensor too far right	ON	OFF
C1773	Alignment sensor too far left	ON	OFF
C1774	Alignment sensor too low	ON	OFF
C1775	Alignment sensor too high	ON	OFF
C1776	Received ACC failure from engine control module	ON	OFF
C1777	Received ACC failure from ASC-ECU	ON	OFF
C1778	Vehicle speed signal failure	ON	OFF
C1779	Brake master pressure signal failure	ON	OFF
C1780	A basis signal failure	ON	OFF
C1781	SAS failure	ON	OFF
C1782	SAS signal failure	ON	OFF
C1783	ACC distance switch fixed ON	ON	OFF
C1785	Fault detection signal failure	ON	OFF
C1786	Received limp home from transaxle control module	ON	OFF
U0100	Engine CAN timeout	ON	OFF
U0101	T/M CAN timeout	ON	OFF
U0121	ABS/ASC CAN timeout	ON	OFF
U0126	SAS CAN timeout	ON	OFF
U0141	ETACS CAN timeout	ON	OFF
U1195	Coding not completed	ON	OFF

<Added>
NOTE: The radar may not function normally if foreign object or dirt (snow or ice) is adhered on the radar or its surrounding area, or the road condition is bad due to a severe weather (heavy rain or snow). In that case, the system will deactivate the ACC and/or FCM as system protection and display an alert message ("ACC or FCM temporarily not available") on the combination meter.

DTC C1753: ACC/FCM Radar Blockage Detected

⚠ CAUTION
- **If there is any problem in the CAN bus lines, an incorrect diagnostic trouble code may be stored. Prior to this diagnosis, diagnose the CAN bus lines.**
- **Whenever the ECU is replaced, ensure that the CAN bus lines are normal.**

OPERATION
The ACC/FCM-ECU monitors whether the <Old> ~~radar~~ is contaminated or its beam is blocked by foreign material. <New> radar or its surrounding area <New>

- If any of the following conditions are satisfied with the cruise control switch or the FCM switch "ON", the system will determine that the radar detection performance is deteriorated.
  - The radar or its surrounding area is contaminated with dirt or foreign material (snow or ice).
  - The system can not monitor a vehicle-travelling-ahead steadily due to a water splash, etc.
  - The system receives little radar reflection from a distance (traffic is not heavy and free of obstacles, or the obstacles are covered with snow).

DIAGNOSTIC TROUBLE CODE SET CONDITION
This diagnostic trouble code is stored when the abnormality below is detected: <Old>
- ~~Cruise control switch "ON" or FCM switch "ON"~~
- ~~The ACC/FCM-ECU's radar detection performance is deteriorated or its detection is interfered.~~

PROBABLE CAUSES
- The <Old> ~~radar~~ is contaminated by dirt or foreign material, etc. <Old> radar or its surrounding area <New>
- Improperly installed ACC/FCM-ECU
- Malfunction of ACC/FCM-ECU

DIAGNOSIS

STEP 1. Check the <Old> ~~radar~~ for dirt or foreign material.
(1) Wipe off the dirt or foreign material from the ACC/FCM-ECU's <Old> ~~radar~~ <Old> radar or its surrounding area <New>

⚠ CAUTION
To prevent damage to scan tool (M.U.T.-III), always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool (M.U.T.-III).
(2) Connect scan tool (M.U.T.-III). Refer to "How to connect the Scan Tool (M.U.T.-III)."
(3) Turn the ignition switch to the "ON" position.
(4) Erase the diagnostic trouble code.
(5) Drive the vehicle for approx. five minutes.
(6) Check if the diagnostic trouble code is stored.
(7) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is diagnostic trouble code No.C1753 stored?
YES : Go to Step 2
NO : This diagnosis is complete <Old> ~~(Protection is deactivated)~~.

<New>
The system has deactivated the ACC or/and FCM temporarily for safety reason.
This is not a malfunction.

STEP 2. Check whether the ACC/FCM-ECU is installed properly.
Check whether the ACC/FCM-ECU is installed correctly (Refer to).

Q: Is the check result normal?
YES : Go to Step 3
NO : Reinstall the ACC/FCM-ECU correctly (Refer to).

STEP 3. Check whether the diagnostic trouble code is stored again.

Q: Is diagnostic trouble code No.C1753 stored?
YES : Replace the ACC/FCM-ECU (Refer to).
NO : Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).

TROUBLESHOOTING

DIAGNOSIS TROUBLESHOOTING FLOW

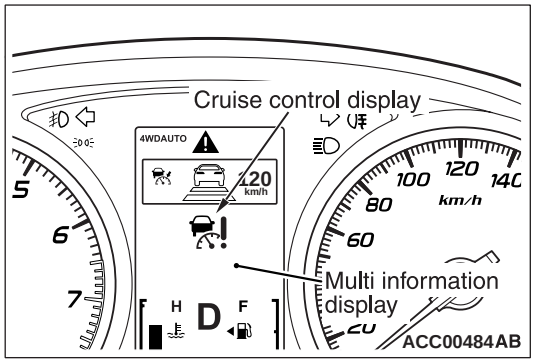
M1172002001238

Refer to GROUP 00 – How to Use Troubleshooting/ Inspection Service Points, Contents of Troubleshooting.

DIAGNOSIS FUNCTION

M1172002101439

WARNING DISPLAY



When a malfunction occurs in the adaptive cruise control system (ACC), the figure will be displayed on the information screen of multi information display.

If the indicator continues to be displayed on the information screen of multi information display, check the diagnosis code that is set.

METHOD OF READING THE DIAGNOSIS CODE

Use the M.U.T.-III to read the diagnosis code (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points, Diagnosis Function).

METHOD OF ERASING THE DIAGNOSIS CODE

Use the M.U.T.-III to erase the diagnosis code (Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points, Diagnosis Function).

CHECK OF THE FREEZE FRAME DATA

Various data of when the diagnosis code has been set is obtained, and the status of that time is stored. By analysing each data using M.U.T.-III, troubleshooting can be carried out efficiently.
Display items of the freeze frame data are as follows.

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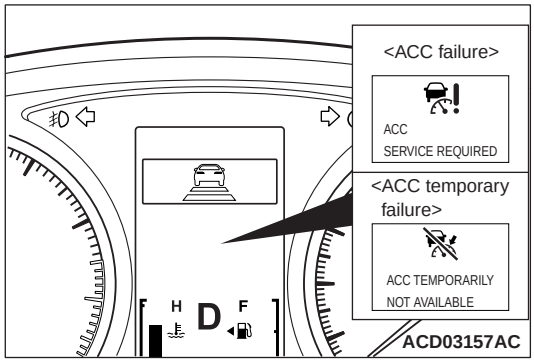
<Added>
Insert the attached sheet 4 (2/3)

FAIL-SAFE FUNCTIONS <ACC/FCM-ECU> (Related to the ACC)



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Illumination condition of display in case of failure

Diagnosis code No.	Item	ACC failure display	ACC temporary failure display
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C1751	ACC/FCM-ECU failure	ON	OFF
C1752	ACC/FCM radar temperature out of range	OFF	ON
C1753	ACC/FCM radar blockage detected	OFF	ON
C1754	ACC/FCM radar calibration not completed	OFF	ON
C1768	Alignment left compensation	ON	OFF
C1769	Alignment right compensation	ON	OFF
C1770	Reflector plate in the lowermost	ON	OFF
C1771	Reflector plate in the uppermost	ON	OFF
C1772	Alignment sensor too far right	ON	OFF
C1773	Alignment sensor too far left	ON	OFF
C1774	Alignment sensor too low	ON	OFF
C1775	Alignment sensor too high	ON	OFF
C1776	Received ACC failure from engine-ECU	ON	OFF
C1777	Received ACC failure from ASC-ECU	ON	OFF
C1778	Vehicle speed signal failure	ON	OFF
C1779	Brake master pressure signal failure	ON	OFF
C1780	A basis signal failure	ON	OFF
C1781	SAS failure	ON	OFF
C1782	SAS signal failure	ON	OFF
C1783	ACC distance switch fixed ON	ON	OFF
C1785	Fault detection signal failure	ON	OFF
C1786	Received limp home from T/M ECU	ON	OFF
U0100	Engine CAN timeout	ON	OFF
U0101	T/M CAN timeout	ON	OFF
U0121	ABS/ASC CAN timeout	ON	OFF
U0126	SAS CAN timeout	ON	OFF
U0141	ETACS CAN timeout	ON	OFF
U1195	Coding not completed	ON	OFF

<Added>

NOTE: The radar may not function normally if foreign object or dirt (snow or ice) is adhered on the radar or its surrounding area, or the road condition is bad due to a severe weather (heavy rain or snow). In that case, the system will deactivate the ACC and/or FCM as system protection and display an alert message ("ACC or FCM temporarily not available") on the combination meter.

Code No.C1753: ACC/FCM Radar Blockage Detected

⚠ CAUTION

- **If there is any problem in the CAN bus lines, an incorrect diagnosis code may be set. Prior to this diagnosis, diagnose the CAN bus lines.**
- **Whenever the ECU is replaced, ensure that the CAN bus lines are normal.**

OPERATION

The ACC/FCM-ECU monitors whether the ~~radar~~ <Old> radar or its surrounding area <New> is contaminated or its beam is blocked by foreign material.

DIAGNOSIS CODE SET CONDITION

This diagnosis code is set when the abnormality below is detected:

~~- cruise control switch "ON" or FCM switch "ON"~~
~~- The ACC/FCM-ECU' radar detection performance is deteriorated or its detection is interfered~~ <Old>

PROBABLE CAUSES

- The ~~radar~~ <Old> radar or its surrounding area <New> is contaminated by dirt or foreign material, etc.
- Improperly installed ACC/FCM-ECU
- Malfunction of ACC/FCM-ECU

<New>

- If any of the following conditions are satisfied with the cruise control switch or the FCM switch "ON", the system will determine that the radar detection performance is deteriorated.
  - The radar or its surrounding area is contaminated with dirt or foreign material (snow or ice).
  - The system can not monitor a vehicle-travelling-ahead steadily due to a water splash, etc.
  - The system receives little radar reflection from a distance (traffic is not heavy and free of obstacles, or the obstacles are covered with snow).

DIAGNOSIS PROCEDURE

STEP 1. Check the ~~radar~~ <Old> radar or its surrounding area <New> for dirt or foreign material.

(1) Wipe off the dirt or foreign material from the ACC/FCM-ECU's ~~radar~~ <Old>.
(2) Erase the diagnosis code.
(3) Drive the vehicle for approx. five minutes.
(4) Check if the diagnosis code is set.

Q: Is diagnosis code No.C1753 set?
YES : Go to Step 2
NO : This diagnosis is complete (~~Protection is deactivated~~ <Old>)

STEP 2. Check whether the ACCS/FCM-ECU is installed properly.

Check whether the ACC/FCM-ECU is installed correctly (Refer to).

Q: Is the check result normal?
YES : Go to Step 3
NO : Reinstall the ACC/FCM-ECU correctly (Refer to).

STEP 3. Check whether the diagnosis code is reset.

Q: Is diagnosis code No.C1753 set?
YES : Replace the ACC/FCM-ECU (Refer to).
NO : Intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction).

<New>

The system has deactivated the ACC or/and FCM temporarily for safety reason. This is not a malfunction.