

Diagnostic Sheet

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PERSONAL SERVICE LAB

MASTERS OF CARE

TBM2 Diagnostic Checklist

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This Diagnostic Sheet serves as a guide and provides additional diagnostic info for possible TBM anomalies.

MODELS: M182 Grecale 2.0 L4 MHEV and M189 GranTurismo(All MY).

CUSTOMER CONCERN: malfunctions related to the management of the TBM module (emergency call module)

DIAGNOSIS: open a BOL as a support request attaching the completed checklist and outcome of the requested checks.

CHECKLIST:

1) 1) Preliminary checks

- Vehicle Model _____
- Chassis _____
- Warranty start date _____
- Mileage _____
- Customer complaint _____
- _____
- _____

- Attach DTC and parameters report of the vehicle
- 12V battery report
- If there are any updates to the TBM module, execute them

2) Customer concern (in agreement with the customer concern carry out the requested checks):

• **Customer concern A: Red LED on SOS button – ceiling light**

Checks:

- 1) Attach DTC and parameters report of the car
- 2) Clear DTC (SOS LED status check before and after the error's cancellation)
- 3) Do a key off/key on after DTC clear
- 4) For DTC in active status related to "USB no operation" and/or to "GPS/GSM signal lost", verify all wiring connection (antennas, etc.) on TBM-side and the USB with ETM.
- 5) Remove TBM power fuse (or TBM connector) or perform a hard reset through Diagnostic equipment to do a power reset. Then check functionality again
- 6) Is the issue present? _____

• **Customer concern B: "Service" message on TBM**

Checks:

- 1) Check SOS button LED on ceiling light -> check whether the backlighting is white or red fixed.
- 2) If the SOS button light is red fixed: see Customer's Complaint A) "Red LED on SOS button - ceiling light"
- 3) The white LED indicates normal operation, no action is required.
- 4) If no DTC is present, test all TBM functions (SOS call and Wi-Fi Hot Spot)
- 5) Electrically disconnect the TBM for a few minutes (ECU reset) and connect it again
- 6) Is the complaint still present? _____
- 7) If DTC **B22A9-96- ECU Internal Performance- Component Internal Failure** is stored, check if the following TBM parameters for errors using MD Evo:

Modem
SIM Module
GNSS/Modem receiver
Wi-Fi module
Accelerometer – E6D

- 8) Perform the following cycle:
 - clear DTC
 - key OFF
 - wait 2 minutes
 - key ON
 - wait 2 minutes
 - read DTCs
- 9) Repeat step 8 at least three times. If DTC **B22A9-96** persists, replace the TBM.

NOTE: Ignore DTC **U008000 Ethernet Bus**, if it is present. This error does not affect the operation of related services and so no corrective action is necessary.

• **Customer concern C: "Backup Battery discharge or defect" message**

Checks:

- 1) Attach 12V battery report.
- 2) From the TBM parameters report, check the status of the auxiliary battery "Variable 2907"

Variable: 2907 - Backup Battery Charge Level	
Backup Battery Voltage	3.522 V
Backup Battery Charge level	97 %

- 3) Remove TBM power fuse (or TBM connector) or perform a hard reset through Diagnostic equipment to do a power reset. Then check functionality again
- 4) Put key at idle for 30 minutes and verify if the auxiliary battery charges
- 5) Verify if the messages is already present
- 6) Is the issue present? _____

• **Customer concern D: Non- functioning remote operation mobile APP**

Checks:

- 1) Remove TBM power fuse (or TBM connector) or perform a hard reset through Diagnostic equipment to do a power reset. Then check functionality again
- 2) Is the issue present? _____

• **Customer concern E: The SOS/Assist call doesn't start**

Checks:

- 1) Remove TBM power fuse (or TBM connector) or perform a hard reset through Diagnostic equipment to do a power reset. Then check functionality again
- 2) Is the issue present? _____

• **Customer concern F: Connected services update message**

Click on "update now" and after 15 minutes check on ETM (central display) waiting for the

confirmation popup about the completion of the update. If the pop-up request appears again

1) Check the vehicle battery status (fully charged battery is requested)

• **Customer concern G: Missing TBM communication even if no DTCs are present**

Checks:

- 1) Disconnect the TBM for 10 minutes reconnect it
- 2) Is the issue present? _____

• **Customer concern H: SOS Grey Icons / assist call & WiFi Hotspot**

Checks:

- 1) LED control on the SOS button- light ceiling, if it is white backlight or red steady
- 2) In case the SOS button is steady red: see Customer complaint A "Red LED on SOS button- ceiling light"
- 3) Remove TBM power fuse (or TBM connector) or perform a hard reset through Diagnostic equipment to do a power reset. Then check functionality again
- 4) Is the issue present? _____