# Technical Service Bulletin

| SUBJECT: | | NO: | **TSB-23-23-003** |
|---|---|---|---|
| **SHIFT BY WIRE CONTROL (SCU) SOFTWARE UPDATE WHEN REPLACING TCM** | | DATE: | **March 2023** |
| | | MODEL: | **2022-23 Outlander** |

| CIRCULATE TO: | [ ] GENERAL MANAGER | [ X ] PARTS MANAGER | [ X ] TECHNICIAN |
|---|---|---|---|
| [ X ] SERVICE ADVISOR | [ X ] SERVICE MANAGER | [ X ] WARRANTY PROCESSOR | [ ] SALES MANAGER |

## PURPOSE

This bulletin provides instructions to update the software for the SCU (Shift by Wire Control Unit) when the TCM (Transmission Control Module) is replaced.

## BACKGROUND

In a vehicle with an old software version of the SCU, if the TCM is replaced and software updated, a mismatch between the TCM and SCU software may occur. In this situation, the vehicle can still be driven; however, if a temporary continuity fault of the inhibitor switch occurs while operating the gear selector lever, DTC: P0780/P0706 will appear and the vehicle will become undrivable. If TSB-23-23-002 has been applied to the vehicle or the SCU software is already at the new version, it is not necessary to perform this bulletin.

## AFFECTED VEHICLES

Certain 2022-2023 Outlander (VIN Cut-off JA4J4VA81NZ090721)

## ⚠ ATTENTION:

- Turn off all electrical devices to minimize the vehicle's electrical load. Also use an external power source to ensure that the vehicle battery maintains the specified voltage during reprogramming. Low voltage of the auxiliary battery may cause incomplete reprogramming and should that occur the ECU may require replacement.
- Write down all the customer's electrical device settings such as A/C and radio before reprogramming and restore them after reprogramming.
- Connect the MUT-3 to an AC power source to prevent internal battery discharge.
- Before using, make sure the USB cable and MUT-3 main harness are not damaged.
- Do not perform maintenance work in the engine room during reprogramming. If the connection between the engine ECU and ETACS is lost, the cooling fan operates as fail-safe.
- Check the "All DTC" after reprogramming and erase them (if any).

## EQUIPMENT

- The following equipment is needed to reprogram the ECU:
- VCI (Vehicle Communication Interface) or VCI Lite - MB991824 or MB992744
- MEDIC Laptop/Tablet with A/C power adapter - 520924, or FZG1MK2
- MUT III Main Harness "A" (blue connector at the DLC end) - MB991910 or MB992745
- USB 2.0 Cable - MB991827 or MB992747
- MEDIC 3.5/4 update at **786** or higher
- For Standalone MUT III units, MUT-III SE Reprogramming Database **N230201NR** or higher

## ECU REPROGRAMMING CHART

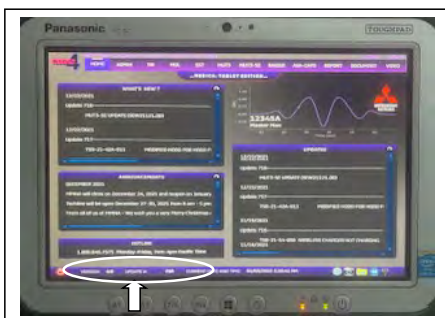| Model | Data No. (PDX File Name) | New HW Part No. | New SW Part No./Ver. | Target HW Part No. | Target SW Part No./Ver. | Remarks |
|-------|--------------------------|-----------------|----------------------|--------------------|-------------------------|---------|
| Outlander | 31038W00.7PN | 31038W007P | 31038W007P | 31038W01P | 31038W001P | SCU |

## SOFTWARE/MEDIC VERSION VERIFICATION PROCEDURE

1. Verify that the SCU-ECU has not already been updated to the latest S/W number in the table above. If the ECU is at the latest level, reprogramming is not necessary.

> **NOTE:** Reprogramming the SCU-ECU with the latest database (e.g., **N230201NR** includes all past and current reprogramming for TSBs of affected vehicles. It is not necessary to reprogram the ECU for each previous TSB.

**For MEDIC 3.5/4 users only:  (MUT-III SEV users go to step 5)**

2. Verify the MEDIC 3.5/4 is at version 3.5 and at update **786** or higher.
   If your **MEDIC 3.5/4 update is at least 786**, continue with the Reprogramming Procedure. If your **MEDIC 3.5/4 update is below 786**, update your MEDIC as follows:

3. Select the MEDIC 3.5/4 Admin tab and click on "Updates".



4. If the MEDIC update screen advises updates are available, click the "Begin" button. After all updates are complete, **GO TO THE REPROGRAMMING PROCEDURE**.
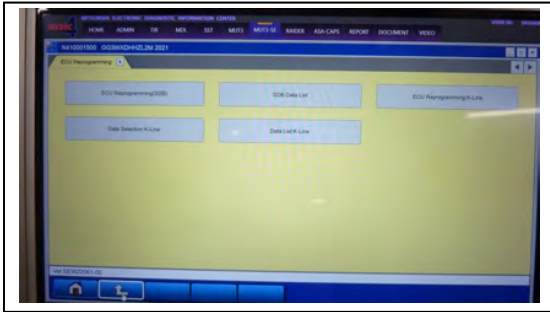


5. STANDALONE MUT-III SE SCAN TOOL VIEWER (STV) ONLY: (MEDIC 3.5 USERS – GO TO THE REPROGRAMMING PROCEDURE). Verify that your MUT-III SE has the most current version of the reprogramming database from the MUT-III SE Main Page.
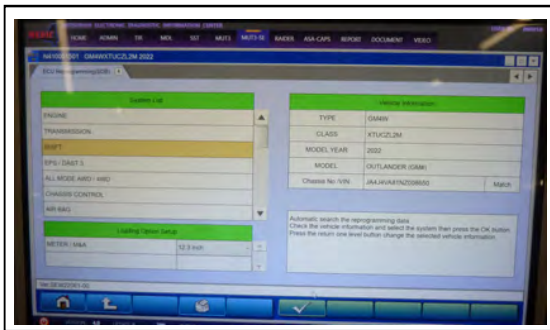
   a. Press the MUT-III SE STV icon.

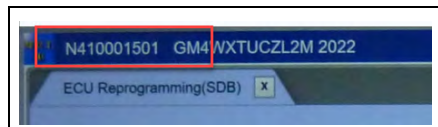b. Press "ECU Reprogramming (SDB)" button.



c. Verify the vehicle information and select the system "Shift" followed by the OK button.



d. Confirm that the database number displayed at the top is **N230201NR** or higher.

    i. If the database number displayed on your MUT-III SE is **N230201NR** or greater, continue to the next section.

    ii. If the reprogramming database number displayed on your MUT-III SE is lower than **N230201NR**, then the MUT-III SE database needs to be updated.

    iii. Once the database number is confirmed, hit the Home button to go back to the System Select screen.
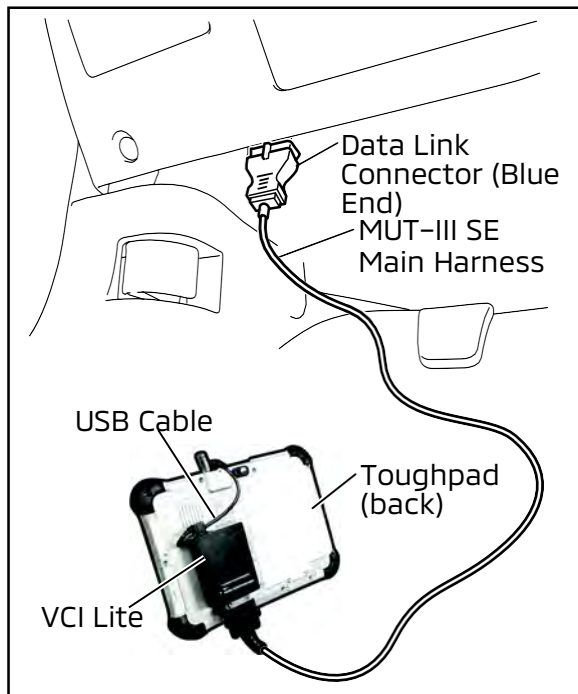
## REPROGRAMMING PROCEDURE

⚠️**CAUTION**     **To ensure that the vehicle battery maintains 12V during the procedure, hook-up a battery charger to the vehicle during the procedure.**

**NOTE: VCI Stand–alone reprogramming is not available for this procedure. The laptop/tablet and the VCI must remain connected for the entire procedure.**

1. Connect the equipment as follows:

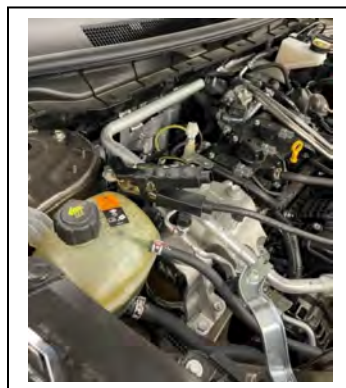   **NOTE:** VCI Lite and MEDIC 4.0 Toughpad shown for illustration purposes only.



- Turn the MEDIC PC/tablet on. If the battery indicator in the lower right hand corner of the screen does not show a full charge, it is recommended that either the battery be charged prior to beginning or be used with the A/C power adaptor connected.

- Connect the USB cable to the VCI/VCI Lite. When the laptop/tablet displays the MUT-III SE main screen, connect the USB cable to the device.

- Connect the MUT-III SE main harness with the blue DLC connection to the VCI/VCI Lite. Connect the blue connection of the MUT-III SE main harness to the vehicle's data link connector.

- For VCI only (p/n MB991824): Turn the VCI power switch ON. Verify that the indicator lamp in the upper right corner of the screen is green.

⚠️**CAUTION**

**DO NOT DISTURB THE HARNESS CABLES OR CONNECTIONS DURING THE REPROGRAMMING PROCESS AS IT COULD CAUSE THE CONTROL UNIT TO LOSE DATA. IF THE USB CABLE IS DISCONNECTED DURING THIS PROCEDURE, A WARNING MESSAGE WILL DISPLAY.**

**NOTE:** Due to limited space it may be easiest to connect battery charger cable onto ground point.
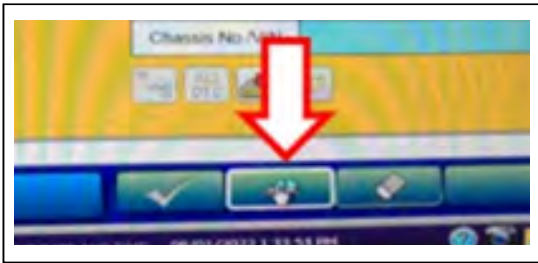


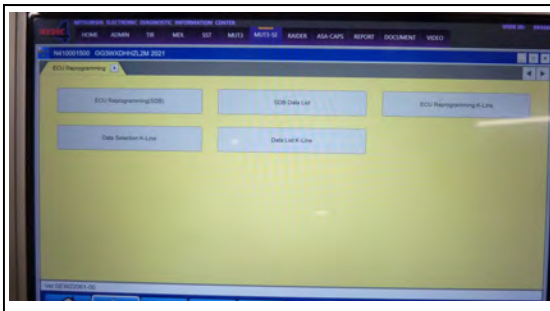2. Turn the ignition switch to the "ON" position.
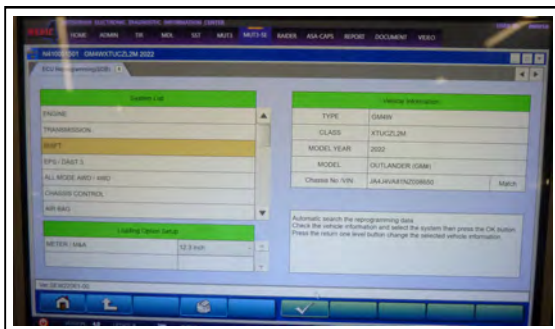
a. Press MUT–III SE STV icon.



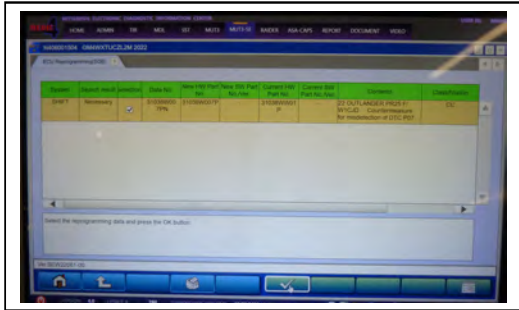b. Press the model information display button (car icon) and verify all vehicle info is correct.



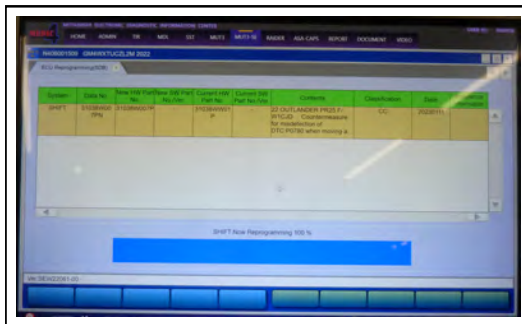c. Press "ECU Reprogramming (SDB)" button.



d. Verify the vehicle information and select the system Shift" followed by the OK button.

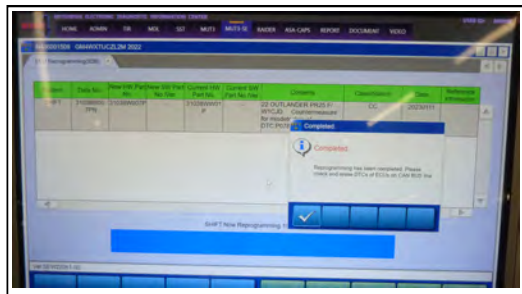e.  The Automatic ECU Reprogramming (SDB) database screen will display.  Press the OK button.



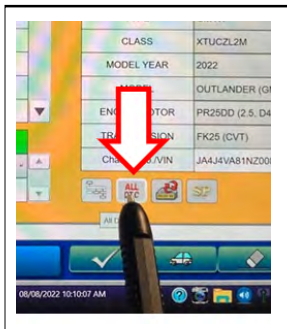f.  Type AS2 account information (if applicable) and press the OK button to start the reprogramming.



**Note:**  Do not disturb the cable or turn off the ignition during reprogramming to prevent damage to the ECU.

g.  Once the reprogramming is initiated the screen will display the reprogramming progress.  Verify that the software version has been updated per the ECU Reprogramming chart.

h. Press the "ALL DTC" button to initiate "Erase and Read all DTCs". Press OK when complete.

   **IMPORTANT:** The "Erase and Read all DTCs" must be performed since DTCs may be generated and stored.



3. Using a ball-point pen, enter the appropriate ECU part number, Software Part Number (ROM ID#), this Technical Service Bulletin number, your dealer code, and the current date on the Engine Compartment/Control Module Label (p/n MSSF024G00). The Vendor Code is not applicable. The label is available from your facing PDC.



Test drive the vehicle to confirm proper operation.

## PARTS INFORMATION

| Model | Data No. (PDX File Name) | New HW Part No. | New SW Part No./Ver. | Target HW Part No. | Target SW Part No./Ver. | Remarks |
|-------|--------------------------|-----------------|----------------------|--------------------|-------------------------|---------|
| Outlander | 31038W00.7PN | 31038W007P | 31038W007P | 31038W01P | 31038W001P | SCU |

## WARRANTY

This bulletin is supplied as technical information only and is not an authorization to repair. If an affected vehicle is reported with the described condition, diagnose the condition, repair as described in this bulletin, and submit a normal warranty claim using the information below.

| Operation Code | Operation | Quantity | Work Time |
|----------------|-----------|----------|-----------|
| 238511KM | SCU Software Reflash | 1 | 0.4H |