



TECHNICAL SERVICE BULLETIN

Inoperative FordPass With DTCs U0146:09, U2402:00, And/Or U2402:92 - Built On Or Before 13-Dec-2022

23-2050

10 February
2023

Model:

Ford 2023 F-150 Lightning	Built on or before 13-Dec-2022
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Issue: Some 2023 F-150 Lightning vehicles built on or before 13-Dec-2022 may experience an inoperative FordPass application, inoperative remote start and/or inoperative remote lock and unlock that may be combined with diagnostic trouble codes (DTC) U0146:09 stored in the telematics control unit (TCU) and U2402:00 and/or U2402:92 stored in the gateway module (GWM). This may be due to the software level in the TCU. To correct the condition, follow the Service Procedure to update the TCU to the latest software level via a coordinated flash.

Action: Follow the Service Procedure to correct the condition on vehicles that meet all of the following criteria:

- 2023 F-150 Lightning
- Built on or before 13-Dec-2022
- At least one of the following conditions:
 - Inoperative FordPass application
 - Inoperative remote start
 - Inoperative remote lock and unlock
 - DTC U0146:09 stored in the TCU
 - DTCs U2402:00 and/or U2402:92 stored in the GWM

Parts

Parts To Inspect And Replace Only If Necessary

Service Part Number	Quantity	Description
BHAGM-H3	If Needed	Battery

Warranty Status: Eligible under provisions of New Vehicle Limited Warranty (NVLW)/Service Part Warranty (SPW)/Special Service Part (SSP)/Extended Service Plan (ESP) coverage. Limits/policies/prior approvals are not altered by a TSB. NVLW/SPW/SSP/ESP coverage limits are determined by the identified causal part and verified using the OASIS part coverage tool.

Labor Times

Description	Operation No.	Time
2023 F-150 Lightning: Retrieve DTCs And Update The Appropriate Modules Following The Service Procedure (Do Not Use With Any Other Labor Operations)	MT232050	Actual Time

Repair/Claim Coding

Causal Part:	14F546
Condition Code:	04

Service Procedure

NOTE: The time required to complete this procedure varies depending on several factors including the number of module software updates required, available internet bandwidth, universal serial bus (USB) flash drive variability, and the potential that controller area network (CAN) flashing (software update via the data

link connector [DLC] with Ford Diagnosis and Repair System [FDRS]) may be required. Connect to the internet with an ethernet cable and use a USB 3.0 capable flash drive when performing software updates.

1. Start an FDRS session and navigate to Toolbox tab > Datalogger > Body Control Module (BCM) and select the BATT_SOC parameter identification (PID). Verify the PID reads 80% or higher. If state of charge (SOC) is less than 80%, charge the battery then navigate back to Toolbox tab > BCM > Reset Battery Monitor Sensor Learned Values application. Perform the battery monitor sensor (BMS) reset.

(1). If the battery is unable to achieve an 80% SOC then a new battery may be required. Use the Rotunda GRX-3590 or DCA-8000 testers to verify if replacement is required. If the battery is replaced, fully charge the new battery. Disconnect the Rotunda charger and perform a BMS reset using the FDRS scan tool.
2. Reconnect the battery charger and set it to maintain a vehicle voltage of 12.6 – 13.6 volts. A low battery state of charge while performing a software update to any module may result in a repeat Restart Required message in the vehicle center display screen or a message on the FDRS saying Part Number Validation Failed or DID Validation Failed.
3. Are there any updates available for the GWM, TCU, and/or APIM modules?

(1). Yes - proceed to Step 4.

(2). No - this article does not apply. Refer to Workshop Manual (WSM), Section 415-00.
4. Perform the Module Software Updating Procedures outlined below for the following modules: GWM, APIM, and TCU. Perform a network test after each software update using the latest software level of the FDRS scan tool. This will refresh the list of modules that have available software updates based current module software levels. If any error conditions are experienced during programming, refer to WSM Section 418-01A > General Procedures > Module Programming for the Error Condition Table.

Module Software Updating Procedure

NOTE: A 32GB or larger USB flash drive is required for APIM, TCU, and GWM software updates. Make sure the USB flash drive being used is formatted correctly. To see the available drives, hold down the Windows icon keyboard key and press the E keyboard key. Right click on the USB flash drive and select Properties. If File System under the General tab is not exFAT, the drive must be formatted.

To format the USB flash drive:

- Right click on the USB flash drive
- Select Format, select exFAT for the File System
- Select Default Allocation Size for the Allocation Unit Size.

De-selecting Quick Format is not necessary and will result in a lengthier operation.

1. Using the FDRS, begin module programming by selecting the SW Updates tab. Follow all on-screen instructions carefully. Perform the software updates in the order below:

NOTE: All 3 modules must be updated.

- (1). GWM (first)
- (2). APIM (second)
- (3). TCU (last)

2. When prompted, connect the USB flash drive to the FDRS.

NOTE: It may take up to 5 minutes for the vehicle to recognize the USB flash drive.

3. When prompted by the FDRS, safely remove/eject the USB flash drive from the FDRS and connect it to the USB media hub to install the software into the module. When the USB software update begins, the center display screen displays a message stating Do Not Remove USB. The update starts automatically and may take 10 minutes or longer to complete.
4. When the pop-up stating Restart Required appears on the center display screen, turn the ignition off, and wait for 10 minutes. Restart the vehicle (key-on vehicle running). The update is still in process at this time.

NOTE: It may take up to 5 minutes before the center display screen displays Update Successful pop up. After 5 minutes if Update Successful pop up is not shown on the center display screen, remove the USB and select yes on the FDRS Was the USB Update Successful prompt (FDRS verifies if the module software update was successfully installed on the module).

5. Once the pop up stating Update Successful appears in the center display screen, select Close, remove the USB flash drive from the USB media hub, and select Yes on FDRS indicating the update installed successfully. This initiates the remaining automated configuration steps and reports the module software part numbers and application software levels to the Ford online database. Failure to follow this step results in an inaccurate database as well as omitted, improperly installed, or improperly configured applications (features) such as navigation (if equipped). It is normal for the module to reset during this step.

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NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford or Lincoln dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.