

## CERTAIN 2021 MODEL YEAR F-150, MACH-E, EDGE, NAUTILUS, AND BRONCO VEHICLES — NON-UPDATEABLE MODULES

### SERVICE PROCEDURE

#### Module Programming

**NOTE:** Program appropriate vehicle modules before performing diagnostics and clear all DTC's after programming. For DTC's generated after programming, follow normal diagnostic service procedures.

1. Connect a battery charger to the 12V battery.

**NOTE:** Verify that the negative cable of the charger is installed on a chassis or engine ground, and not the 12 volt battery negative terminal to prevent the battery saver mode from activating on the vehicle.

**NOTE:** If the diagnostic software does not load or if the vehicle cannot be identified properly, make sure there is a good internet connection and the VCM is properly connected to the DLC.

2. Log into Ford Diagnostic and Repair System (FDRS).

**NOTE:** Ensure the FDRS is at the most current version. Version 31.6.7 or higher is required.

**NOTE:** Vehicle information is automatically retrieved by the diagnostic software and a Network Test is run. Vehicle identification data appears on the screen when this is complete.

3. Click 'Read VIN from Vehicle' or manually enter the VIN.

4. Is the vehicle customer owned or an unsold unit?

For Customer Owned - Proceed to Step 13.  
For Unsold Unit - Proceed to Step 5.

**NOTE:** Available modules are shown on the Left Hand (LH) side of the screen, and available procedures are listed on the Right Hand (RH) side of the screen. Modules that are communicating are highlighted in green.

5. Select Toolbox tab.

6. From the list on the LH side of the screen, select the APIM.

7. From the list on the RH side of the screen, select APIM - Sync Module (APIM) Software Update.

8. Click RUN. Follow all on-screen instructions carefully.



9. On the LH side of the screen, select TCU.
10. On the RH side of the screen, select Telematic Control Unit Module (TCU) -Software Update.
11. Click RUN. Follow all on-screen instructions carefully.
12. Was either the APIM and/or TCU module software update unsuccessful?  
  
Yes - Proceed to Step 13.  
No - Proceed to Step 14.
13. The vehicle will need to through the recovery process. Please perform TSB 22-2150 and reattempt the software update for the module that was unsuccessful.  
  
For APIM - Proceed to Step 5.  
For TCU - Proceed to Step 9.
14. From the list on the RH side of the screen, select Self-Test and click RUN.
15. Click the Run Selected Tests button in the lower right.
16. Click the Clear & Retest button at the top of the screen to clear DTC's in all modules.
17. Disconnect the battery charger from the 12V battery once the programming has completed.

### **Important Information for Module Programming**

**NOTE:** When programming a module, use the following basic checks to ensure programming completes without errors.

- Make sure the 12V battery is fully charged before carrying out the programming steps and connect FDRS/scan tool to a power source.

**NOTE:** A good internet connection is necessary to identify the vehicle and to load the diagnostic software.

- Inspect Vehicle Communication Module II (VCM II)/Vehicle Communication and Measurement Module (VCMM) and cables for any damage. Make sure scan tool connections are not interrupted during programming.
- A hardwired connection is strongly recommended.
- Turn off all unnecessary accessories (radio, heated/cooled seats, headlamps, interior lamps, HVAC system, etc.) and close doors.
- Disconnect/depower any aftermarket accessories (remote start, alarm, power inverter, CB radio,etc.).
- Follow all scan tool on-screen instructions carefully.
- Disable FDRS/scan tool sleep mode, screensaver, hibernation modes.
- Create all sessions key on engine off (KOEO). Starting the vehicle before creating a session will cause errors within the programming inhale process.



## Recovering a module when programming has resulted in a blank module

- a. Disconnect the VCMII or VCMM from the data link connector (DLC) and your PC.
- b. After ten seconds, reconnect the VCMII/VCMM to the DLC and the PC. Launch FDRS. The VCMII/VCMM icon should turn green in the bottom right corner of the screen. If it does not, troubleshoot the FDRS to VCM connection.
- c. If you are using the same FDRS as the initial programming attempt, select the appropriate VIN from the Vehicle Identification menu. If you are using a different FDRS, select "Read VIN from Vehicle" and proceed through the Network Test.
- d. In the Toolbox menu, navigate to the failed module and Download/Run Programmable Module Installation (PMI). Follow the on-screen prompts. When asked if the original module is installed, select "No" and continue through the installation application.
- e. Once programming has completed, a screen may list additional steps required to complete the programming process. Make sure all applicable steps are followed in order.

