ECU REPROGRAMMING AND ECU SECURITY KEY WRITING

USING TECHSTREAM AND THE LATEST TSBs TO HELP KEEP ECUs UP TO DATE

Today, each vehicle has numerous computers that have to communicate with one another for the vehicle to operate as designed. At the center of that communication is the Electronic Control Unit, or ECU. During some repairs, you may need to flash reprogram or replace the ECU on the engine, which could be caused by an accident or ECU failure. Some replacement ECUs are merely "plug and play"—when you install the new ECU, the vehicle is good to go. Others may require flash reprogramming. Yet others require that the new ECU's Security Key be written in order for the ECU to communicate on the vehicle's network. This is true on select 2021 and newer Toyota models, like the RAV4 Prime, Sienna Hybrid and the Venza Hybrid.

To help you understand the procedures for flash reprogramming an ECU and how to write the ECU Security Key, Toyota has prepared two Technical Service Bulletins:

- T-SB-0134-16 Rev2 outlines the process for flash reprogramming Toyota ECUs
- T-SB-0111-20 outlines the process for writing the ECU Security Key

To perform these tests, you need any one of these: J2534 compliant hardware, Techstream ADVi, Techstream 2.0, Techstream Lite, or Techstream Lite (green cable). Regardless of the hardware, it has to be running the latest Techstream software version found on Toyota's Technical Information (TIS). Toyota recommends using Toyota Approved J2534 Hardware found at https://techinfo.toyota.com.

One advantage of using a Techstream device is that when it is configured correctly and connected to TIS, it will automatically search for the appropriate Service Bulletin using the current calibration ID from the vehicle.

TECHSTREAM ECU FLASH REPROGRAMMING

The flash reprogramming process may be available for various 2001 – 2020 model year Toyota vehicles, including the 4Runner, 86, Avalon, C-HR, Camry, Celica, Corolla, Corolla Hatchback, Echo, FJ Cruiser, Highlander, iA, iM, Land Cruiser, Matrix, Mirai, MR2 Spyder, Prius, Prius c, Prius Plug-In Hybrid, Prius Prime, Prius v, RAV4, Sequoia, Sienna, Solara, Tacoma, Tundra, Venza, and Yaris.

ECU flash reprogramming allows the ECU to be updated and recalibrated without having to be replaced. Be aware that flash reprogramming updates can only be applied to the vehicle/ECU combination for which they are intended because ECUs have internal security that will not allow them to be reprogrammed with another ECU's information.

- ECU flash reprogramming requires that you use any one of these tools: a J2534 compliant device, Techstream ADVi, Techstream 2.0, Techstream Lite, or Techstream Lite (green cable). Regardless of what you use, you must run the latest Techstream software version found on TIS.

For step-by-step instructions on how to perform ECU flash reprogramming, please refer to the complete procedures listed in T-SB-0134-16 Rev 2.

- Be sure to follow the flash reprogramming procedures as indicated in the Service Bulletin to help prevent damage to the ECU.

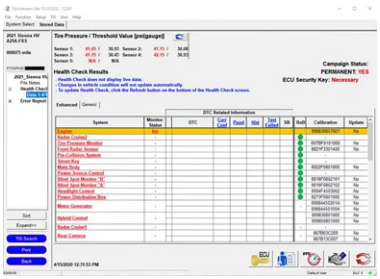
FYI: Techstream devices can be obtained through our Toyota Approved Dealer Equipment program at www.techstreamsupport.com or call 1 (800) 368-6787.

One advantage of using a Techstream device is that when it is configured correctly and connected to TIS, it will automatically search for the appropriate Service Bulletin using the current calibration ID from the vehicle. The calibration links will be embedded in that Service Bulletin.

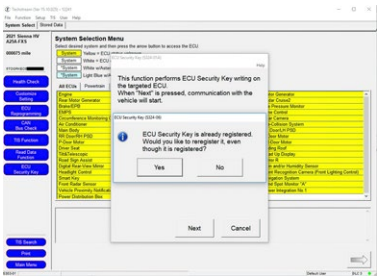
DETERMINING IF THE ECU REQUIRES AN ECU SECURITY KEY

There are two ways to confirm if the ECU Security Key writing is required:

1. Performing a Health Check—it will display "Necessary" when an ECU Security Key needs to be written and "-" when it is not.



2. Using the ECU Security Key button—Techstream will indicate if the ECU Security Key has already been registered prior to starting the registration process.



ECU SECURITY KEY WRITING PROCESS

To ensure you follow the correct steps when you have confirmed that ECU Security Key writing is required, refer to T-SB-0111-20.

Remember that, in some instances, the automatic vehicle detection feature may not be functional after ECU replacement. If that is the case, you will have to manually select the appropriate vehicle information.

If you have completed the procedure and the ECU Security Key indicator is still showing "Necessary"—then the Security Key was not written properly and you will need to repeat the process.

THE IMPORTANCE OF PROPER FLASH REPROGRAMMING AND ECU SECURITY KEY WRITING

Whether flash reprogramming the ECU or writing the Security Key, this is an essential step as it will ensure that the ECU is up to date and in-sync with the rest of the vehicle.