

ELECTRICAL/ELECTRONIC SYSTEMS

H 13. Perform software transfers, software updates, or flash reprogramming on electronic modules. (P-3)

Today's vehicles use many various electronic control modules (ECM)s to control engines, power trains and electronically controlled accessories as well. While these solid state devices cannot be serviced with wrenches and hand tools, they can sometimes be serviced electronically with manufacturer specific scan tools. These dedicated scan tools and related software were once proprietary and available only at manufacturer dealerships. Today most manufacturers have released them and they are available to independent auto repair shops. Modules can be reprogrammed, updated, or software can be transferred to a new module after installation.

This can done by downloading new calibration files from a personal computer, modem, or a scan tool into the electrically erasable programmable read-only memory (EEPROM) of an electronic control module (ECM).

An appropriate scan tool can be connected to a vehicle's data link connector (DLC) to enter the vehicle information into the scan tool. The vehicle identification number and current EEPROM calibration can be downloaded. The scan tool can now be disconnected from the vehicle and connected to a shop PC where online or disc (CD or DVD) calibrations can be downloaded into the scan tool. The scan tool can now be reconnected to the vehicle DLC and the new calibration material can be downloaded to the ECM. Direct programming can be done by connecting a PC with appropriate Internet connection or installed disc (CD or DVD) directly to the vehicle DLC using an interface called a SAE J2534 pass-thru device. This method does not require the use of a scan tool.