DIAGNOSIS AND TESTING

Module Configuration

Special Tool(s)

ST2332-A	Worldwide Diagnostic System (WDS) Vehicle Communication Module (VCM) with appropriate adapters, or equivalent diagnostic tool
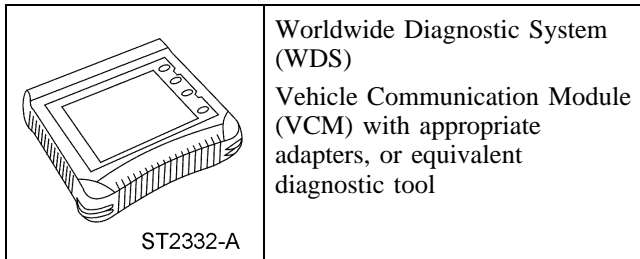
Principles of Operation

Some modules must be programmed as part of the repair procedure. If this procedure is not followed, the module does not function correctly and may set a number of diagnostic trouble codes (DTCs), including B2477 or P1639, which indicate that necessary data has not been programmed into the module.

NOTE: The vehicle must be stationary and level, with all accessories off, while configuring modules.

Modules that need programming should not be exchanged between vehicles. In most cases the parameter values or settings are unique to that vehicle, and if not set correctly, cause concerns or faults.

The diagnostic tool automatically attempts to retrieve the module configuration information from all modules and from a backup location in the powertrain control module (PCM) when vehicle ID is carried out. If the module and the PCM do not contain correct information, the diagnostic tool either requests As-Built data or displays a list of items that are needed to be manually configured. The diagnostic tool programs the module based on the data entered.

For additional diagnostic tool programming procedures, refer to Programmable Module Installation in this section.

There are 3 different methods that are used for module programming:

• programmable module installation (PMI)

• calibration update

• programmable parameters

Some modules do not support all 3 methods.

Definition of Terms

Programmable Module Installation (PMI)

The PMI method is used when a new programmable module is installed on the vehicle. It is no longer necessary to command the diagnostic tool to gather module option content from the old module. The diagnostic tool automatically obtains any available module option content information from the old module during the vehicle ID routine that runs when the diagnostic tool is initially connected to the vehicle. It is important that the diagnostic tool is connected to the vehicle and allowed to identify the vehicle and obtain configuration data prior to any module removal.

If a module that has been modified using programmable parameters needs to be installed, the PMI procedure maintains the parameters in their altered state if the diagnostic tool is able to communicate with the old module during vehicle ID. Otherwise, you may need to use programmable parameters to return parameters to the altered state.

Calibration Update

Some modules are designed to be flashed or reflashed with completely new software packages. This process of reflashing the module is a calibration update.

A calibration update should be carried out only upon notification (such as a Technical Service Bulletin [TSB]). Also, if a module sets DTC U2050, this indicates no application is present and reflashing of the software application is required. If a module sets DTC U2051, this indicates no calibration is present and reflashing of calibration is required.

NOTE: If calibration fails when calibrating the DSM, disconnect the vehicle battery, wait 1 minute, connect the battery and complete the calibration update.

Programmable Parameters

These are options contained within the existing software. These include items such as tire size, customer preference items, and anti-theft options. The current settings are downloaded from an existing module then uploaded to a new module. They can also be configured using the diagnostic tool. Programming parameters is different from updating calibrations as no software is changed, only the options already contained in the software.

DIAGNOSIS AND TESTING (Continued)

Vehicle Identification (VID) Block
Some PCMs contain a memory area called a VID block.

The PCM VID block may contain the factory settings for the configurable modules unless the PCM is flashed with a new calibration, in which case some PCM parameters may be modified.

As-Built Data Center
The As-Built Data Center maintains a record of the vehicle configuration in a database. The vehicle identification number (VIN) is necessary to obtain this information. The As-Built Data Center records the applicable module configurations stored in each module before the vehicle leaves the factory. The As-Built Data Center data always reflects the original build of the vehicle as it left the factory. Contact the As-Built Data Center only when directed to do so by the diagnostic tool.

Inspection and Verification
1. Verify the customer concern.

2. Visually inspect for obvious signs of electrical damage.

Visual Inspection Chart

Electrical
• Wiring harness • Connectors

Configurable Modules
The vehicle contains the following modules that are configurable:

- audio unit

- instrument cluster

- smart junction box (SJB)

- powertrain control module (PCM)

Programmable Parameters Index

Module	Calibration Updatable	PMI	Programmable Parameter
Audio Unit	No	Yes	• Cell Phone Module • Satellite Digital Audio Radio Service
Instrument Cluster	Yes	Yes	—
SJB	Yes	Yes	—
PCM	Yes	Yes	• Axle Ratio • Fuel Octane • Tire/Wheel Size • Speed Control • VIN