

## Module Configuration

### Special Tool(s)



Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

### Principles of Operation

**NOTE:** *The Smart Junction Box (SJB) is also known as the Generic Electronic Module (GEM) .*

Configurable modules accommodate a variety of vehicle options, eliminating the need for many unique modules for one vehicle line. These modules must be configured when replaced as part of a repair procedure. Configurable modules should not be exchanged between vehicles since the settings are unique to each vehicle. Failure to configure a new module may result in incorrect operation and/or DTCs setting.

The following are the 3 different methods of configuration:

- Programmable Module Installation (PMI)
- Module reprogramming ("flashing")
- Programmable parameters

Some modules do not support all 3 methods.

### Definition of Terms

The following are definitions of configuration terms:

#### Programmable Module Installation (PMI)

PMI is a scan tool process which configures settings in a new module. Data used for the PMI process is automatically downloaded from the original module and stored when a scan tool session is started. If this data cannot be retrieved from the module being replaced, the scan tool may prompt for As-Built data entry or display a list of parameter values that need to be manually selected. Some modules are reprogrammed during PMI when a strategy/calibration update is available. To carry out PMI , refer to [Programmable Module Installation \(PMI\)](#) in this section.

**NOTE:** *It is important that the scan tool identifies the vehicle and obtains configuration data prior to removing any modules. The new module must be able to communicate with the scan tool in order to carry out PMI .*

#### Module Reprogramming

Module reprogramming (also referred to as "flashing") is a scan tool process which updates the strategy/calibration in a module. Reprogramming a module with the same level of software will not improve module operation or repair a hardware failure. Module reprogramming is automatically carried out during PMI when a later strategy/calibration is available.

**NOTE:** *Module reprogramming should be limited to circumstances where a published TSB procedure recommends doing so.*

**NOTE:** A module cannot communicate with other modules on the communication network while being reprogrammed. Clear any network communication DTCs which may have been set in other modules during the reprogramming process.

**Programmable Parameters**

Programmable parameters are customer preference items that may be modified by the dealer via the scan tool or in some cases modified by the customer following a procedure listed in the vehicle Owner's Literature. While many configuration options may exist for a module, only a few of these options are programmable parameters.

**Adaptive Learning and Calibration**

Some modules require a separate learning procedure be carried out if replaced as part of a repair procedure. For adaptive learning and calibration instructions, refer to the specific module removal and installation procedures.

**Vehicle Identification (VID) Block**

Some PCMs contain a memory area called a Vehicle Identification (VID) block. The PCM VID block commonly stores powertrain configuration items such as Vehicle Identification Number (VIN) , tire size, axle ratio, and whether or not the vehicle is equipped with speed control.

**Module Address**

A unique module address is assigned to each module on the network for identification.

**As-Built Data**

As-Built data is a VIN -specific module configuration record. During vehicle build, the configuration from all modules is downloaded and stored in the As-Built database. As-Built data will not reflect customer preference items that have been changed from the default state. These items will need to be changed using programmable parameters after the module is configured.

**NOTE:** It is not necessary to obtain As-Built data unless directed to do so by the scan tool. This data may be accessed from the technician service publication website.

The following chart lists As-Built data addresses and describes specific module configuration information:

**Module Configuration and Parameter Chart**

Module	Module Address	Requires <u>PMI</u>	Reprogram/ Flash Capable	Requires Adaptive Learning or Calibration	Available Programmable Parameters
ABS module	760	No	No	No	None
Audio Control Module (ACM)	727	Yes	Yes	No	<ul style="list-style-type: none"> <li>• Language E/F/S (CD6 and SHAKER® only)</li> <li>• Display units English/metric (CD6 and SHAKER® only)</li> </ul>
Instrument Cluster (IC)	720	Yes	Yes	No	None

Module	Module Address	Requires PMI	Reprogram/ Flash Capable	Requires Adaptive Learning or Calibration	Available Programmable Parameters
PCM	7E0	Yes	Yes	Yes	<ul style="list-style-type: none"> <li>Speed control enable/disable</li> <li>Tire size</li> <li>Axle ratio</li> </ul>
Restraints Control Module (RCM)	58	No	No	<ul style="list-style-type: none"> <li>Seat weight sensor re-zero</li> </ul>	None
Satellite Digital Audio Receiver System (SDARS) module	782	Yes	Yes	No	None
Smart Junction Box (SJB)	726	Yes	Yes	No	None

**Inspection and Verification**

This section provides step-by-step module configuration procedures. Carry out the Programmable Module Installation (PMI) procedure in this section when another workshop manual section directs to carry out configuration or when DTCs from the below list are present:

**DTC Chart**

DTC	Description	Source	Action
B2477	Module Configuration Failure	<ul style="list-style-type: none"> <li>Audio Control Module (ACM)</li> <li>Instrument Cluster (IC)</li> <li>Restraints Control Module (RCM)</li> <li>Smart Junction Box (SJB)</li> </ul>	CARRY OUT PMI . REFER to <a href="#">Programmable Module Installation (PMI)</a> in this section.
P0602	Powertrain Control Module Programming Error	<ul style="list-style-type: none"> <li>PCM</li> </ul>	CARRY OUT PMI . REFER to <a href="#">Programmable Module Installation (PMI)</a> in this section.
P0605	Internal Control Module Read Only Memory (ROM ) Error	<ul style="list-style-type: none"> <li>PCM</li> </ul>	CARRY OUT PMI . REFER to <a href="#">Programmable Module Installation (PMI)</a> in this section.
P1639	Vehicle ID Block Corrupted, Not Programmed	<ul style="list-style-type: none"> <li>PCM</li> </ul>	CARRY OUT PMI . REFER to <a href="#">Programmable Module Installation (PMI)</a> in this section.
U0300	Internal Control Module Software Incompatibility	<ul style="list-style-type: none"> <li>PCM</li> </ul>	CARRY OUT PMI . REFER to <a href="#">Programmable Module Installation (PMI)</a> in this section.

DTC	Description	Source	Action
U2050	No Application Present	<ul style="list-style-type: none"> <li>• <u>ACM</u></li> <li>• ABS module</li> <li>• <u>IC</u></li> <li>• PCM</li> <li>• Satellite Digital Audio Receiver System (SDARS) module</li> <li>• <u>SJB</u></li> </ul>	CARRY OUT <u>PMI</u> . REFER to <a href="#">Programmable Module Installation (PMI)</a> in this section.
U2051	One or More Calibration Files Missing / Corrupt	<ul style="list-style-type: none"> <li>• ABS module</li> <li>• <u>ACM</u></li> <li>• PCM</li> </ul>	CARRY OUT <u>PMI</u> . REFER to <a href="#">Programmable Module Installation (PMI)</a> in this section.