



DGE Inc.

## Electronic Module Tester

### System Overview

The EMT's flexible hardware and software structure allows this single unit to test a wide array of automotive electronic modules. Complete data logs of each test are recorded along with any faults diagnosed for a particular unit.

The EMT Graphical User Interface gives the user simple controls over various test options. The user may select a fully automated complete test or an individual I/O pin test.

The system may be configured to perform simple Go/No Go tests that can be used to verify modules in a production environment. This configuration is ideally suited for testing modules that have been removed from a vehicle on the assembly line and must be verified as defective before returning to the supplier.

The EMT eliminates or greatly reduces the common problem of No Trouble Found (NTF) for the module manufacturer. Additional diagnostic software features may be added to assist technicians in repairing modules in the Service Center environment.

DGE's Electronic Module Tester is a highly flexible pin by pin electronic control unit tester. The EMT is designed to test a wide array of automotive modules and provides all the necessary analog, digital and power inputs, outputs, loads, and communication channels required to test systems such as Body Control Modules or Instrument Clusters.

### Hardware Architecture

The EMT is built upon an eighteen-slot National Instruments chassis. The standard system contains ten cards leaving eight additional slots for expansion. The system provides the primary controls for selecting loads, the pin under test, and module power. The EMT contains two main load boards which present loads to the selected I/O in a generic nature. The loads are software configurable based on individual module pin requirements. Additional load boards can be designed and installed into the system to meet the specific I/O requirements of the electronic modules to be tested.

### Software Structure

Once a load has been configured for a particular pin, the EMT test software utilizes J2190 or KWP2000 commands to exercise and test the pin via a J1850 or CAN bus communication port. The system monitors the activity on the pin and compares it to the expected results. Once a pin has been tested, the results are entered into a pass/fail log and the system will then proceed to the next pin in the test sequence. HTML reports are generated and can be linked to Access or Oracle databases. The barcode reader links the unit serial numbers to the matching test results. A network connection is provided.

### Self Test Mode

A loop back diagnostic cable is provided with each system for verifying the correct operation of all I/O and communication pins. The automatic self test mode can be used at the beginning of each day to validate the system before module testing begins.



### Included Items

Each EMT is shipped with the following items:

- 19" Rack Mount Cabinet and Power Supply
- Loop Back Self Test Cable
- Custom Harnesses for Each Module to be Tested
- Windows-based Application Software
- LCD Monitor, Keyboard and Optical Mouse
- Bar Code Reader
- Detailed User's Manual



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