



Passion. Innovation. Solutions.



TRANSMISSION SIMULATOR

SYSTEM OVERVIEW

FEV's transmission simulator provides all the necessary inputs, outputs, and actual loads to perform real time testing of transmission control modules. It allows development engineers to exercise new hardware and software before testing it on a real vehicle.

The graphical user interface gives the user full control over all functions and parameters. Once set up with the GUI, the tester can be operated without the PC in a stand-alone mode. This mode of operation may be useful for screening modules where only one configuration is needed.

The user can save and restore configurations. Adjustments to settings may be made via the PC interface or through the separate encoders and switches on the I/O Box. The I/O Box provides momentary switches and optical encoders to modify signals. An array of LEDs displays the states of the switches, solenoids and other pertinent information.

ARCHITECTURE

This transmission simulator is based on the National Instruments eight-slot PXI system and LabVIEW Real Time with FPGA extensions. The unit can test up to 96 input or output pins plus additional power supply pins across a range of 0 to 20 Volts and 0 to 5 Amps. The GUI runs on a standard PC under Microsoft Windows. The main unit contains a basic set of loads.

A custom interface board was designed to complete the remaining I/O and connections required to communicate with a transmission control module. All of the pins on the controller can be conveniently probed by external test equipment, such as a scope, or individually disconnected for signal injection into the module by bypassing the tester. Additional I/O may be stimulated via the CAN bus interface.

INCLUDED COMPONENTS

- Main Unit
- PC with LCD Display
- I/O Box
- All Required Cables
- LED Box
- Detailed Users' Manual

EXPANSION

Up to three additional internal real solenoid loads may be added to the system. These are selectable by simply connecting the supplied cable from the Solenoid Select connector to the desired solenoid connector.