Manufacturing Test Systems

EnGenius has specialized in manufacturing test systems that build on our broad knowledge of vehicle multiplexed network systems. Our experience in test systems covers the full life-cycle of a product – from development to manufacturing to after sales diagnostics.

In addition to manufacturing test systems, EnGenius supplies custom multiple station test systems for DV, PV, and other engineering test applications. The test applications can be developed in EnGeniusTEST, LabView®, TestStand®, C/C++, and/or Visual Basic.

The following are examples of the range of manufacturing test systems EnGenius has developed.

Brake Evacuation and Fill

EnGenius supplied brake evacuation and fill stations to Korean and North American vehicle OEMs. These stations communicated with the ABS controller and the fluid fill equipment to cycle the valves in the ABS system to facilitate full evacuation of air from the brake system and complete fluid fill.

Driver Assistance Module End-Of-Line Tester

The driver assistance module end-of-line tester runs a comprehensive test of the module that includes a brief functional test in a simulated vehicle environment in addition to I/O and diagnostic testing. This required simulated radar sensor data streams, network messages, and digital/analog I/O to put the module in the desired operating states and analyze the output for correct operation.

An automated test fixture engaged the module, triggered the test, and released the module on completion. Test results were sent the plant quality assurance system while a rolling buffer of detailed test data files was maintained to facilitate trouble shooting of any failed modules.

Because multiple versions of the driver assistance module were build on the same assembly line, a barcode scan of the part number determined the test to be executed.

Key-Fob Programming and Test

The key-fob programming and test station received data from the plant broadcast system. Scanned the barcodes on the key-fobs, and programmed the information into the vehicle security module.

After programming, the key-fob and security module function is checked. The results are then reported to the plant quality assurance system.

Window Lift Controller Test and Calibration

The introduction of one-touch window close functionality to the window control module has added an additional test to the vehicle in-process testing regime. Since the current required to lift the window varies with the individual installation the limit currents must be determined after door installation in the vehicle. The test station supplied power, captured actual motor current, communicated with the module, and cycled the window lift switch inputs to execute the calibration procedure. On completion, the test results and recorded currents were transmitted to the plant quality assurance system.

In-Plant Recertification

As any supplier of electronic control modules knows, the return of modules that failed during vehicle manufacturing but return “No Problem Found” when retested by the supplier can be a significant cost driver. Adding a recertification facility in the assembly plant or in a facility nearby can reduce the cost of returned components or provide early warning data on emerging problems.

A recertification test system can be built as an enhanced EOL tester that runs the tests required to confirm correct operation or flash updated module firmware without the cost and time associated with a trip back to manufacturing.

For more information

Visit our website at www.engenius.com.

You can contact us by email at sales@engenius.com.