



DGE Featured Product

High Speed Data Acquisition System

DGE has created a high speed Data Acquisition System (DAS) for use in automotive validation testing that is capable of simulating a vehicle environment. The DAS can replicate complex timed signals such as Cam and Crank with nanosecond resolution.

Features

192 Digital I/O

16 Analog I/O

Arbitrary Waveform Generator

2 CAN Ports

Excel spreadsheet defines the measurement criteria

Ethernet remote command interface

Automatic module Baselines for all signals allows more accurate detection of anomalies

Data logging

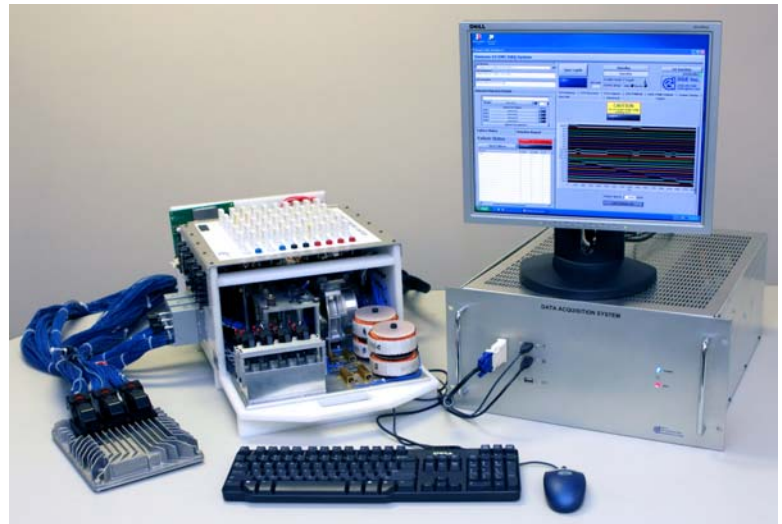
Log file tool creates data reports, summaries and graphs in Excel

Timing Signal Display

The DAS's ability to monitor and generate a large number of complex signals means that testing of modules with high I/O counts can now be completed in just a single pass. Earlier acquisition systems required multiple passes and constant reconfiguration due to their limited monitoring capabilities. Often, additional equipment, or even an actual vehicle, was required to simulate normal operating conditions.

Testing with the DAS has reduced customer costs by allowing validation tests to be performed under normal lab conditions and eliminating the multiple passes previously required.

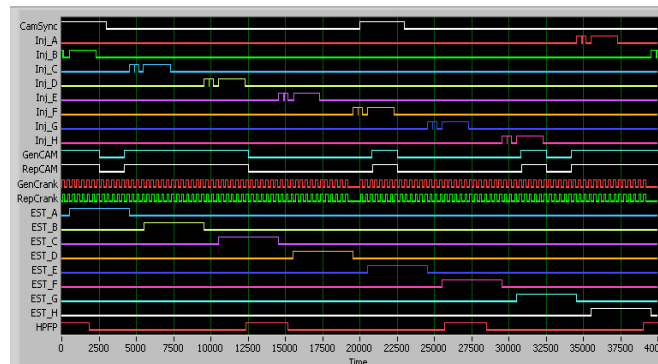
Typical ECUs have a complex layout of I/O that goes through a number of changes during a normal development cycle. To allow for these changes, the signals are defined in an Excel worksheet.



This worksheet allows the user to add, remove or redefine signal names, tolerances and units, as well as signal conversion or scaling, without the need for system software changes.

The tight tolerances of ECU signals requires the DAS to easily adapt to slight differences in production built modules as well as variations in test setups. The DAS solves this by baselining. The Baseline Mode records all outputs of the ECU over a specified time and dynamically adjusts the user's tolerances to match the current ECU outputs. With the baseline information, the user is now able to detect minute deviations during testing.

Because the system monitors at such a high rate, recording every reading produces a great deal of data. To manage this, the DAS generates a report showing the nominal readings of the recorded baseline, and any reading that exceeds defined tolerances. By using a provided log file tool, the user can quickly generate detailed reports showing module performance broken down by individual tests.



Example Timing Signal Display

The DAS can function as a master or slave during the test procedure. Ethernet control of the DAS allows for simple integration with existing test control software. The DAS can be used for EMC testing, as a bench-top simulator, or even as a functional tester.

By integrating this system into their test environment, our customers have seen typical test time reduced from months to weeks!