



# Test Equipment and Testing Services

## DGE Automotive Validation Test Platform

### Test Equipment

- DVP and EOL testers
- EMC High Speed Data Acquisition
- Simulators and HIL based ECU testers
- Bench top development systems
- Sensor emulators
- DGE has provided test systems for:
- Powertrain and body controllers
- Telematics systems
- Electric vehicle component testers
- Safety modules
- Air bag inflator
- Automotive and Heavy truck

### Testing Services

- Consulting
- Test Plan development
- Resource planning
- Test equipment recommendations
- Test support and management
- Failure Analysis
- Corrective measure consultation
- Hardware and Software design reviews
- Maintenance of 3rd Party ECU Test Systems

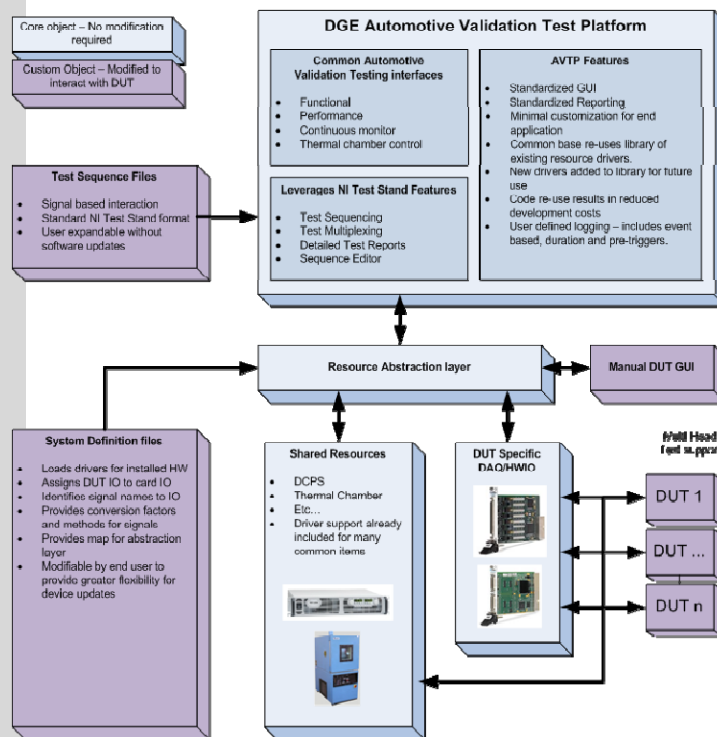
Based on years of experience developing test systems for automotive products, DGE has created a package that combines the primary features necessary to complete a typical product validation.

The AVTP allows DGE to provide a low cost and rapidly deployable Test Platform that is easily expanded and highly adaptable to accommodate your electronics device.

This system contains all of the necessary elements required to complete the Functional, Performance and Continuous monitoring requirements of OEM validation testing while keeping the customization and cost of the system to a minimum. Provide us with your device profile and we can configure the AVTP to optimize cost and performance for your project.

### AVTP Features

- Standardized GUI
- Standardized Reporting
- Minimal customization for end application
- Common base makes use of existing library of resources and drivers
- New drivers added to the library for future use
- Code reuse results in reduced development costs
- Typical devices already integrated – Lambda/HP power supplies, Thermotron 4800/Espec thermal chambers, etc.
- Event based system wide logging with configurable pre-trigger and record duration
- System allows user to modify/create new tests without modifying code
- Parallel testing of multiple devices
- Manual device GUI





# Solutions for Vehicle Electronics

## DGE Inc.

Providing electrical engineering design and consulting services to the automotive OEMs, Tier and Aftermarket Suppliers.

### Integration

With our experience and expertise, we assist our partners in integrating their products into the OEM vehicle. We focus on the entire vehicle system.

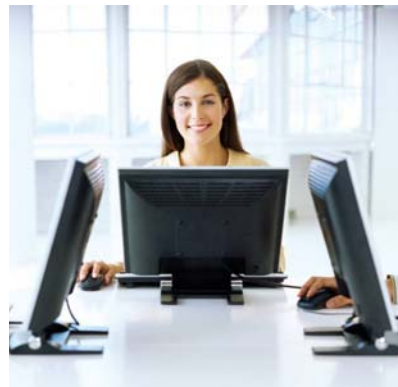
### Consulting

We collaborate with OEMs and Tier suppliers to develop and validate electronic designs. We support your EE activities by providing prototype design and consulting services. We speed the process by advising regarding the OEM product development cycles and provide project management and coordination.

### Design

Areas of expertise include:

- Embedded Software and Hardware
- Telematics
- Vehicle Networks
- Testers and Simulators
- Communication Gateways
- ECU/Subsystem Hardware
- System Integration and Validation



### Products

- **Automotive Network Gateways**
  - CAN / GM-LAN/ Ford FNOS
  - Ethernet
  - LIN
- **Vehicle Bus Interfaces**
  - ECU subsystem for seamless access to OEM vehicle network
  - OEM-Safe Aftermarket Gateway
- **Custom Automotive Development Tools**
  - Engine Simulator
  - Transmission Simulator
  - Telematics HIL Vehicle Drive Simulator
  - High Speed Data Acquisition System
  - Load Boxes (design or build to print)
- **Custom Automotive Designs**
  - Body Control Modules
  - Telematics / Infotainment Control Modules
  - Motor Control Modules
  - Hybrid/BEV Battery Control Modules
- **Telematics Designs**
  - GPS
  - GSM/CDMA
  - Bluetooth, WiFi
  - DSRC / Car2x On-Board Equipment

### Services

- **Hardware Design**
  - Embedded Circuit Design (MCU, ASIC, FPGA, CPLD, Power, and RF Technologies)
  - Prototype and Production Vehicle Module Design
  - ECU Test, Validation, and Simulation Equipment Design
- **Software Development**
  - Embedded Solutions
  - PC Solutions
  - C, C++, and Assembly Language
  - Real Time Operating Systems Application Design (Linux, OSEK, and Others)
  - National Instrument LabVIEW (Real Time, PDA, FPGA)
- **Testing and Validation**
  - Vehicle Bus Software and Hardware Design Validation
  - Vehicle-Level Bus Validation
  - ECU Diagnostics Validation
  - End-to-End System Integration and Validation
- **CAD and Lab Services**
  - Schematics and PCB Layout
  - Electronic Packaging Design – Solid Modeling
  - Complete Electronic Box Builds
  - Prototype Vehicle Modifications
- **Project Management**
  - Coordination / Management of Entire Customer Projects
- **Vehicle Electronics Troubleshooting and Consulting**



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