DGE Inc.

Telematics System Tester

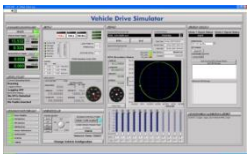
Features

- Application testing
- Fully Automated testing
- Remote access
- Flexible and Expandable
- TCU (ECU) Interface
- GPS/DR Interface
- GSM/CDMA/LTE Interfaces
- Mobile Telephone Interface
- Vehicle CAN Simulation
- Vehicle Configuration
- Vehicle & Remote Diagnostics
- Multiple Power Supplies
- Fault Insertion
- Bluetooth
- WiFi
- Scripting/Modeling
- Logging

The Telematics System Tester (TST) is a development and test system for integrating a telematics based control unit (TCU) into automotive applications. The TST simulates a "connected" on-road environment allowing engineers to create virtual driving and use case scenarios that include CAN bus simulation, GPS satellite data, cellular network, Bluetooth, and simulated hardware I/O along with telematics 'back-office' connections. The TST links each of these elements together, maintaining tight control and synchronization over each in order to realistically model the moving vehicle.

In addition to the fully simulated environment described above, the TST also connects to real environments. Recorded GPS scenarios with actual multipath elements or cellular networks linked with real production back office operators and web services.

TST with complete simulation and model based operating software



Application testing is easily implemented with the automated test features. After linking our automation to your backoffice, simulations and tests can be run 24/7 to accurately gauge the confidence levels of your entire Telematics system.

Emergency response testing and validation is also easily conducted with the simulated vehicle interface. Working with your OEM, DGE integrates the vehicle network allowing us to duplicate traffic and I/O associated with crash and emergency events.

TST systems are designed to support multiple vehicles and different versions of your system device. Our system simplifies the complexity of the vehicle architecture allowing you to focus on testing and improving your product.

The TST has greatly reduced the time required to integrate a telematics control unit into the vehicle and telematics (system) environment. With the TST's ability to simulate road, weather, and electromagnetic conditions, telematics system functionality can now be proven in the lab environment without exhaustive road and live system testing on a fleet of OEM vehicles.

TST Lite with partial simulation and model based operating software

The TST changes the platform for future telematics systems development with its flexible and expandable design; test engineers will no longer have to rely on empirical data obtained from OEM test vehicles. Additionally, the closed-loop system allows for the creation of controlled and repeatable test scenarios impossible to achieve with traditional test benches and test vehicles.

TST System Comparison Matrix	TST Full	TST Lite	TST Bench
GPS	Full	Partial	Partial
Cellular	Full	Partial	Manual
Vehicle Network	Full	Full	Partial Man.
Hardware Integration	Full	Partial	Manual
Automated Test Interface	Full	Full	Partial Opt.
Satellite Radio	Optional	Optional	Optional

Refer to back of datasheet for feature details of TST, TST Lite, and TST Bench

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TST System Detailed Feature Comparison Matrix	TST Full	TST Lite	TST Bench
GPS			
Design virtual Routes	X	-	-
Runtime interaction with GPS Simulation	X	-	-
Record Live GPS	X	X	X
Playback recordings	X	X	X
Correlated 4 wheel sensor data	X	-	-
Cellular			
Simulated network	X	-	-
Automated Call management	X	-	-
3G	X	-	-
4G LTE	X	-	-
GSM/CDMA	X	-	-
Automated SMS	X	-	-
Automated data	X	-	-
Live Cellular integration	X	X	M
Automated Call management	X	X	M
Automated SMS	X	X	M
Automated data	X	X	M
Vehicle Network			
Multiple CAN bus support	X	X	X
LIN bus support	X	X	X
Full vehicle simulation	X	X	P
Automation interface	X	X	M
Hardware Integration			
Automated Fault insertion	X	O	M
HIL breakout panel	X	X	-
FPGA signal integration	X	X	-
Audio analysis	X	X	-
Automated physical signal integration	X	X	M
Multimedia Interfaces			
Satellite Radio	O	O	O
WiFi	X	X	M
Bluetooth	X	X	M
Automated Test Interface			
User created Test Cases	X	X	-
User defined logging levels	X	X	-
HMITS integration	X	X	X
Automated speech output	X	X	O
Automated speech input	X	X	O
Video input detection	X	X	O
Touch screen interface	X	X	O

X = Contains this capability
P = Partial integration of this feature
M = Manual feature
O = Optional Feature

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