Test System Platform Midi

Prevas Midi platform provides all hardware and software required for computerized testing of a single control unit /device under test (DUT). The platform is optimized for signals used for controlling machines, robots and vehicles.

Each test system is custom build due to each DUT's special needs (protocol, load, function etc.). Using Prevas Midi platform as a starting-point for system like this shortens development time and lowering cost for systemization, design and manufacturing significantly.

Application areas

- Unit test
- HIL testing
- Data recorder
- Maintenance and repair test
- Robustness and safety test

Design guidelines

A Prevas test system follows the design guidelines of open and modular architecture.
Open architecture gives the customer full access to the system to make any change.
Modular architecture ensures the systems to be easy maintained and adaptable to change.

Features

The platform provides piggy-back boards as an open solution for signal conditioning and signal adaptation in order to match the input and output from the DUT to the computerized I/O, with reed relays on each signal, also providing switching, brake out and fault insertion functionality.

The Midi platform is compatible with Prevas Exchangeable Loadbox™ (see separate data sheet) which provides a flexible test system setup, enabling the test system to efficiently support testing of several independent DUT with specific wiring and loads.

Hardware

Prevas Midi platform is based on selected off-the-shelf components. Prevas Fault Insertion Signal Conditioning (FISC) board provides customized signal conditioning (see separate datasheet).

Isolated I/O for accurate measurements when switching high currents.

Generic FPGA based I/O providing cost effective flexible, high performance.

Software

The Midi platform is compatible with Prevas software platform Viking. The Viking platform is designed for measurement and control system, designed according to open and modular guidelines.

The Viking platform is highly reconfigurable and not bound to a specific type of I/O, or a specific type of Graphical User Interface (GUI) layout, as this changes from project to project.
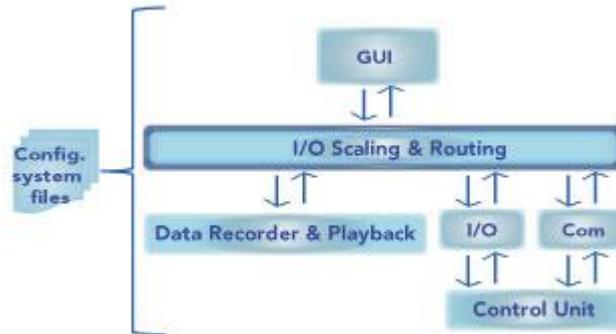
Built-in scaling and routing supports the user to focus on testing functions and behaviors instead of voltages, bit patterns and connector pins. The Viking platform supports recording and playback of data.

Via a plug-in to the Viking platform the system can be upgraded to a HIL-system, supporting real-time execution of models written in LabVIEW, C, C++ or Simulink

The Viking platform has full support for automatic testing with use of test sequences in TestStand or other tools.

Technical specification: (Other performance quoted upon request)

Power supply (for device to be tested): 0-60V / 1500W

Up to 250 channels (signals), 60V/10A

Digital signals:
Amplitude 5-50 Volt, Timing resolution: 10MHz

Analog signals:
Sampling speed: 500ks/s (@12 bits res., Sampling res. 24 bits (@50kS/s)
Output res 16 bits (@100ks/s), output speed: 100ks/s (@16 bits)

All I/O signals are FPGA based, providing software configurable features such as:
● Bit pattern generation, encoder signal generation etc.
● Timing measurements, encoding bit-patterns etc.
● Input and output signals can also be combined in order simulate more complex signals.

Communication protocols:
  Upon custom request (CAN, Ethernet, RS-232, Modbus, …)