

FTS-200

Mixed-Signal Functional Test System

Features

Hardware

- Computer-based instrumentation hardware with bandwidth up to 200 MHz
- Mass-interconnect test fixture interface from Virginia Panel
- Completely integrated test rack
- Test and validation fixture (optional)

Software

- Test execution software based on industry-standard LabVIEW and TestStand application development environments
- Soft front panel instrument interfaces for troubleshooting and diagnostics

Typical Applications

- High-volume functional testing in production environments
- Printed circuit board testing
- Medical device testing



Overview

The FTS-200 Mixed-Signal Functional Test System Platform is an integrated system that can be used to test common electronic device functions using state-of-the-art measurement hardware, test fixtures and test execution software. It can be modified to fit a wide range of functional test applications from high-volume printed circuit board testing to medical device validation.

The system includes common measurement devices such as a digital multimeter, digitizer, arbitrary waveform generator and digital pattern generator and can handle additional modules for future expandability.

Features

- High-performance PXI modular instrumentation from National Instruments.
- Mass-interconnect interface allows many different devices to be tested using a single test system.
- Small system footprint with ergonomic design ideally suited for production facilities.
- Reduced cabling through the use of standard connectors and a custom switch interface.
- Commercial off-the-shelf modules integrated together as a complete turnkey system.

Using these instruments in conjunction with a switch matrix, a wide range of measurements can be performed at multiple test points. To minimize the cabling to the switch matrix and to maintain the integrity of the signal path, Cal-Bay Systems has designed a custom switch interface board.

The mass-interconnect interface provides a standard connectivity from the unit under test (UUT) to the instrumentation hardware making it possible to test different devices with one test system. Bed-of-nails UUT fixtures can be interchanged with validation fixtures to execute production tests or system validation.

Benefits

- Reduced time to develop new functional testers since only the fixture needs to be built.
- Reduced capital cost in deploying testers, as test hardware can be re-used for multiple products.
- Extended system lifecycle due to the system's modular approach and the use of off-the-shelf components.
- Reduced risk by using components from industry-leading vendors such as National Instruments, Virginia Panel and Agilent.

FTS-200 Specifications

Standard Instrumentation

Oscilloscope/Waveform Digitizer

- 2 simultaneously sampled channels with 12-bit resolution
- 150 MHz bandwidth with noise and antialias filters
- 200 MS/s real-time, 4.0 GS/s equivalent time sampling or control from external clock
- -75 dBc spurious-free dynamic range (SFDR)
- Edge, window, hysteresis, video and digital triggering with 100 ps timestamps

Arbitrary Waveform Generator

- 16-bit resolution, 200 MS/s sampling rate
- Multimodule synchronization with <20 ps skew
- 8, 32, 256, or 512 MB of shared waveform data and sequence instruction memory
- Optional 16-bit LVDS digital pattern output
- 80 MHz analog bandwidth

Digital Multimeter

- Industry's most accurate 7½-digit digital multimeter
- Voltage measurements from ±10 nV to 1000 VDC (700 VAC)
- 8 DC current ranges with sensitivity down to 1 pA
- 1.8 MS/s isolated, 1000 V waveform acquisition
- Resistance measurements from 10 μΩ to 5 GΩ

Digital Waveform Generator/Analyzer

- 100 MHz maximum clock rate
- 20 channels with per-channel direction control
- 1, 8, or 64 Mb/channel onboard memory
- Interactive waveform and script editor software
- -2.0 to 5.5 V voltage levels, programmable in 10 mV steps

Power Supply

- Programmable power supply from Agilent
- Quad (4) 50W outputs
- Programming ranges: 0-50V and 0-5A
- Built-in voltage and current measurement
- Low ripple and noise

Ultra-High Density Switch Matrix

- 512-crosspoint matrix switching in a single 3U PXI slot
- 4x128 (1-wire), 8x64 (1-wire), 4x64 (2-wire), and 8x32 (2-wire) matrix configurations
- Up to 100 VDC/100 VACpk and 500 mA
- 2000 crosspoints/s switching speed
- 16 2x16 1-wire building blocks to create custom configurations

Mass Interconnect Interface

- High quality mass-interconnect from Virginia Panel
- Customizable modules for low and high power signals
- Configurable up to 2880 signal contacts
- High reliability (20,000 mating cycle)
- Low maintenance and minimal downtime



Optional Instrumentation

Source Measure Unit (SMU)

- General purpose source meter with contact check
- 5 ½ digit resolution and 0.012% accuracy
- Measurements up to 200V and 1A
- 20W power output

RF Vector Signal Analyzer

- 9 kHz to 2.7 GHz
- 32 or 64 MB memory
- 20 MHz real-time bandwidth
- 14-bit resolution, 64 MS/s digitizer
- -130 to +30 dBm signal level range

RF Vector Signal Generator

- 250 kHz to 2.7 GHz
- 20 MHz real-time bandwidth
- 32, 256, or 512 MB of onboard memory
- -145 to +10 dBm output power
- Quadrature digital upconversion

To order a system or discuss pricing, please contact:

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