



Serial Data Protocol Test Solutions

Comprehensive Coverage
Of a Wide Range
Of Protocols



PROTOCOL TEST SOLUTIONS

LeCroy's Protocol Solutions Group leads the industry in offering a wide range of solutions for serial data protocols, and the greatest depth of products for each protocol that we support.

The key products available for protocol test include:

Protocol Analyzers: These multipurpose test tools form the backbone of developing, testing and understanding products using serial data protocols. The protocol analyzer taps into the traffic and records the actual traffic between devices. The system then decodes the traffic to present it to the engineer at the level appropriate to the problems under investigation, from bit traffic to high-level transaction layer views. Common problems are automatically identified and highlighted.

Exercisers: Also called traffic generators or emulators, exercisers initiate new traffic to test and confirm product performance. Emulators add high-level pre-programmed functions to emulate other products (both host and device), in order to verify the ability of the device under test to meet all specification requirements.

Error Injectors: Also called jammers, error injectors monitor live traffic at full data rates and can replace or inject selected data patterns with new pre-defined patterns, allowing engineers to test the full envelope of error detection and recovery.

Summit™ T2-16 Protocol Analyzer for PCI Express®

The Summit T2-16 is LeCroy's highest performance PCI Express protocol analyzer, and offers advanced features such as: support for PCI Express 2.0; data rates of both 2.5 GT/s and 5 GT/s; full data capture on bidirectional lane widths of x1, x2, x4, x8 and x16; and a full 4 GB of trace memory. The product is ideal for high-performance protocol development for add-in boards, servers and work-stations, and for engineers currently working on Gen1 applications but with Gen2 on their roadmaps.

Key Features

- Find errors fast with one button error check and zero time search
- See and understand traffic through a variety of analysis views
- Accurate traces with low power state tracking
- Fast trace upload
- 4G memory depth
- Active, passive, multi-lead and MidBus probing connector solutions



Protocol Test Card for PCI Express

The LeCroy Protocol Test Card (PTC) is a multimodal test board used for checking adherence to the protocol-oriented sections of the PCI Express 2.0 specification. The PTC has been developed in close collaboration with Intel® and is specifically designed to meet industry requirements for next generation development tools for PCI Express. This new tool is used by validation and test engineers to check for functionality and interoperability of add-in



Summit™ Z2-16 Exerciser for PCI Express

The Summit Z2-16 is LeCroy's third generation protocol exerciser, with support for PCI Express at the Gen2 data rate of 5 GT/s. The Summit T2-16 Analyzer and Summit Z2-16 Exerciser provide a complete test and development system for engineers working on PCI Express 2.0 designs.

Key Features

- Unified single application
- Automated test application
- Re-uses device configuration space information and analyzer traces for environment emulation
- High bus bandwidth utilization
- Low ACK latency between packets
- Device and host emulation solutions



cards, systems, and chips using PCI Express 2.0.

Key Features

- Uses system BIOS for all system calls.
- Easy to understand user interface
- Generates pass/fail reports





Sierra™ M6-4 SAS/SATA Protocol Verification System

The Sierra M6-4 is the 6th generation in the leading line of SAS/SATA protocol test solutions. Sierra provides the most accurate capture, display and analysis of both SAS and SATA traffic at data rates up to 6 Gb/s. The Sierra product family includes the capability for protocol analysis, traffic generation, host and/or device emulation, and error injection, all within one system.

Key Features

- SAS & SATA at data rates to 6 Gb/s
- Fully integrated, multifunctional test system
 - ✓ Analyzer
 - ✓ Exerciser
 - ✓ Error injector
- Fast lock time
- Intelligent triggering
- Hardware filtering

Key Features (continued)

- Raw bit recording
- Error detection
- Logical & chronological displays
- Statistical reporting
- Expansion port
- Cascading
- External triggering
- 4 and 8 GB trace memory buffer
- GbE and USB host interface



STX™ SAS/SATA Protocol Verification Systems

The powerful STX-131, STX-231, STX-431 and STX-460 platforms provide a feature-rich, highly portable test solution for SAS and SATA. All STX systems support comprehensive trigger and filter capabilities to ensure that only relevant data is captured. Statistical summaries of the trace data are available at the click of a mouse.

Key Features

- SAS and SATA protocols
- 1.5, 3 and 6 Gb/s data rates
- Analyzer and emulator in one system
- Performance monitor
- COM API interface



SAS Tracer/Trainer™ Protocol Verification Systems

The SAS Tracer/Trainer provides an integrated test system for SAS and SATA protocols at data rates up to 3 Gb/s. The modular design of the SAS Tracer chassis allows the user to upgrade modules as needed. The powerful CATC Trace™ display allows for easy analysis of the protocol traffic, including OOB traffic display. A comprehensive Compliance Test Suite provides a library of scripts for testing initiator, target and expander device compliance to specifications. The SAS Tracker™ Command Analyzer option comprehensively monitors command execution and completion.

PROTOCOL TEST SOLUTIONS



Voyager™ USB 3.0 Protocol Verification System

The Voyager M3 is a 6th generation USB protocol verification platform designed for the next evolution of universal serial bus known as SuperSpeed USB. Leveraging LeCroy's extensive expertise in high-speed serial data analysis, the Voyager provides 100% accurate protocol capture of both USB 2.0 and 3.0 at data rates up to 5 Gb/s.

Key Features

- Flexible hardware platform
 - Record and analyze USB 2.0 & USB 3.0 simultaneously
 - Integrated USB 2.0 & USB 3.0 exerciser option
- Unmatched accuracy
 - Fast-locking on 5 GHz signaling
 - Records all bus & power state transitions
- Raw debug power
 - Full decoding of control transfers and upper layer protocols



Conquest™ USB 2.0 Protocol Analyzer

The Conquest USB Protocol Analyzer System provides comprehensive USB analysis features at an extraordinary price point. Full USB device level decoding makes it easy to understand and debug transactions occurring at the system level. Designed for easy setup with time saving features like predefined trigger settings, the Conquest is equally suited for both first-time and advanced users.



Key Features

- The lowest priced full-function analyzer
- Comprehensive device class decoding
- Easy mode USB event triggering
- Ethernet or USB 2.0 control interface
- Field upgradeable firmware



UWB Tracer/Trainer™ Ultra-Wideband Wireless USB Protocol Verification System

The first fully integrated analyzer - exerciser system designed to verify functionality between WiMedia devices, the UWB Tracer/Trainer provides non-intrusive capture, decoding, and analysis of Wireless USB protocol traffic transmitted on multiple logical channels. It also includes an exerciser module designed to test compliance and error

recovery by allowing users to transmit custom WiMedia packets with low-level control of headers, payloads, and timing.

Key Features

- Integrated analyzer / exerciser system
- Modular design allows easy upgrade of analyzer front end
- Trigger & filter on secure packets
- WiMedia platform compliance suite

For other protocols, including Bluetooth, Fibre Channel, Infiniband, IEEE 1394, PCI and ATA, see www.lecroy.com.