

LeCroy to Showcase PCI Express 3.0 Test Suite at PCI-SIG Developers Conference



LeCroy Corporation will showcase the most comprehensive and only protocol-aware suite of test and debug solutions for the PCI Express 3.0 (PCIe 3.0) specification at the PCI-SIG Developers Conference in Santa Clara, CA, June 22-23. LeCroy, a platinum sponsor of the conference, will demonstrate an integrated suite of test and debug solutions, including physical layer transmitter and receiver test options, TDR/S-parameter measurement devices, and an industry acclaimed protocol analyzer platform.

This advanced test suite addresses the requirements for serial data testing unique to the PCI Express 3.0 specification, which place new demands on traditional physical layer test tools. Not only does the specification mandate that the receiver tester be protocol aware, but certain other characteristics of the PCI Express 3.0 specification, such as dynamic equalization, essentially require combined physical/protocol layer test capabilities for validation and debug. LeCroy is able to provide these capabilities with the most extensive set of physical layer, protocol layer, and network analysis tools for complete PCI Express 3.0 transmitter, receiver, and channel testing available today.

“LeCroy has been and continues to be committed to providing complete, end-to-end solutions for established and emerging serial data standards. Our latest offerings clearly establish LeCroy as the leader with the only complete end-to-end solution for PCI Express 3.0. Our continued investment in this area will ensure that our customers will always have the most up-to-date and best-in-class tools for serial data standard debug and compliance measurements,” says David C. Graef, Chief Technical Officer of LeCroy.

The PCI Express 3.0 Test Suite addresses transmitter test with the SDA 820Zi-A oscilloscope; receiver test with the PeRT3 Phoenix protocol-aware receiver and transmitter tolerance tester; S-Parameter and TDR tests with the SPARQ signal integrity network analyzer; and protocol tests with a wide range of protocol

analyzers and exercisers that support lane widths from single lane to x16, and data rates of 2.5 GT/s to 8 GT/s. The suite also includes the industry's largest assortment of probes and interposers. These instruments are a testament to the ability of LeCroy's product development teams to move beyond many critical hardware and software limitations that challenge today's high-speed design engineers, as well as their long-standing engagement with industry partners and signal integrity groups such as PCI-SIG®.

"We're pleased to have LeCroy as a Platinum Sponsor again for our Developers Conference this year," said Al Yanes, chairman and president, PCI-SIG. "LeCroy has been active in PCI-SIG since the earliest days through its involvement in PCI-SIG's Electrical Working Group, which developed the PCIe 3.0 base spec; the Card Electromechanical Group and the Serial Enabling Group."

LeCroy PCI Express 3.0 Test Suite Advantages

PCI Express 3.0 transmitter signal integrity and transmitter preset test require a data rate of 8 Gb/s, which in turn requires 20 GHz of bandwidth for 5th harmonic captures. The unmatched signal fidelity of the 4-channel, 20 GHz SDA 820Zi-A oscilloscope make it the ideal instrument for this purpose. In addition, key PCIe 3.0 test issues, such as multi-lane characterization and tracking dynamic link equalization, are easily handled by the SDA 820Zi-A.

Tools such as ProtoSync™ and PCIe Decode Annotation permit the test engineer to use an oscilloscope to observe the protocol level DLLP transmission, the physical layer response, the opening of the eye diagram, and track the changes in the Link Training and Status State Machine (LTSSM) diagram. ProtoSync running on a LeCroy oscilloscope is the only setup that captures both the frame level CATCTM protocol view, along with the physical layer signal associated with it. This capability blends the tests that were typically either in the rigid domains of hardware or software engineers, and speeds debugging of complex problems.

The unique PeRT3™ Phoenix System addresses three tap de-emphasis to emulate transmitter equalization presets, provides a seamless transition between 8b/10b and 128b/130b encoding and decoding, and also incorporates complete jitter profile. These protocol-aware capabilities are critical for transmitter link equalization response test, receiver link equalization test, and receiver jitter tolerance testing requirements.

LeCroy's PeRT3, PCIe Decode Annotation and ProtoSync toolsets provide direct validation of 500 ns equalizer response time with visual evidence of the time and traffic during the equalization phase.

Transmitter, receiver, channel and crosstalk measurements can be made with the LeCroy SPARQ. These tests include Tx and Rx Return Loss, Breakout and Calibration Channel Characterization, Receiver Return Loss, 5 GT/s and 8 GT/s Channel Compliance Testing. The SPARQ is a new class of instrument - the signal integrity network analyzer. SPARQ is a TDR/TDT-based analyzer that measures 40 GHz, 4-port S-parameters with a single button press, and at a fraction of the cost of a VNA.

The Summit T3-16 Protocol Analyzer captures, decodes and displays PCI Express 3.0

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protocol traffic between root complex and endpoint devices and features auto-calibration for interposer probing in systems using dynamic equalization.

The Summit Z3-16 Protocol Exerciser generates PCI Express 3.0 traffic at up to x16 lanes as an emulated root complex or endpoint. Engineers can test link up stability, speed/lane size/ LTSSM state changes, DLLP and TLP transaction layer operations. Capture PCI Express 3.0 traffic using the Summit T3-16 protocol analyzer and then play back on the Summit Z3-16 analyzer with the device under test for corner case testing.

Further Information

Engineers and technicians who would like to know more can contact LeCroy at 1-800-5LeCroy (1-800-553-2769) or visit the LeCroy web site (www.lecroy.com [1]).

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[1] <http://www.lecroy.com>