



Teledyne LeCroy Releases World's First PCI Express® Gen 5-Ready Protocol Analyzer

Industry-First Protocol Compliant Jamming Test Capability Enables Improved System Testing and Faster Times to Market

Milpitas, CA, June 5, 2018 – Teledyne LeCroy Inc., the worldwide leader in protocol test solutions, today announced its Summit™ M5x PCIe Protocol Analyzer/Jammer, the world's first platform to support the still nascent PCIe 4.0 specification as well as the next-generation PCIe 5.0 (32 GT/s) specification. With the industry's first PCIe 4.0-compliant jamming test capability, the Summit M5x delivers test functionality long sought after by engineers trying to ensure improved reliability. Moreover, the Summit M5x can modify, replace, insert, or delete traffic between a PCIe root complex and endpoint to verify adherence to design specifications and identify potential errors in protocol behavior.

"The introduction of the Summit M5x PCIe Protocol Analyzer/Jammer aligns with our strategy to support key markets with critical functionality to ensure the successful implementation of developing technologies," said Tom Reslewic, President of Teledyne LeCroy. "Teledyne has a well-established track record of developing protocol test technologies that allow our customers to rapidly develop and implement higher speed data communications. Early customer feedback has validated that the Summit M5x will play an important role in enhancing our customers' ability to get to market quickly and with confidence in a robust design."

The Summit M5x PCIe Protocol Analyzer/Jammer meets the growing industry demand for ever-higher speeds from PCI Express by providing a new class of analysis and test for PCIe and NVMe-based devices and systems. It is also the first protocol analyzer to introduce jamming capabilities for NVMe and NVMe-MI protocols. Specifically, the Summit M5x jams transmissions between the root complex and endpoint while remaining within normal PCIe operating specifications. This compares to earlier PCIe jammers that created undesirable, out-of-spec latencies and retransmissions. These features combine to forge a powerful testing tool for PCIe validation and development labs, helping to ensure higher PCIe product quality and faster times to market.

"New technologies on the horizon will require more test coverage than ever before. And the Summit M5x is uniquely positioned to support these evolving industry demands," said Joe Mendolia, Vice President of Marketing, Protocol Solutions Group and Teledyne LeCroy. "With high-speed, state-of-the-art capture, recording, and jamming, the Summit M5x positions Teledyne to deliver unique value to our customers as the industry moves forward with higher-performance systems."

"Enabling designers to identify and correct flaws in their designs for data-intensive applications requires a full-featured protocol test system." Said Scott Knowlton, Sr. Product Marketing Manager at Synopsys. "Synopsys' silicon-proven DesignWare® IP for PCI Express and Teledyne LeCroy's new Summit M5x protocol analyzer with jamming test capability allow designers to deliver highly reliable products to market and ensure interoperability."

Key Features

The PCIe 5.0-ready Summit M5x platform delivers an extensive set of features including:

- Supports transmission speeds up to 32 GT/s,

- Monitors and analyzes emerging high-speed protocols built on the PCIe specification, such as Gen-Z and CCIX,
- Supports PCIe 4.0 at up to x16 link widths today and is designed to handle PCIe 5.0 at x8 link widths,
- Includes new probing methodology that eliminates the need for a traditional “interposer” type probe to interface with systems under test, which is ideal for server-based systems that utilize horizontal insertion,
- Features memory buffer that can be configured up to 128 GB, which is advantageous for users requiring long protocol recordings,
- Can be controlled through USB or remotely through 1000-BaseT Ethernet, and
- Can synchronize with other high-speed protocol analyzers from Teledyne LeCroy using CrossSync functionality, which enables time-aligned packet traffic as well as cross triggering from multiple high-speed serial busses for design, debug, and validation across bridges.

Delivers Unique Value to a Broad Spectrum of Customers

The extensive capabilities of the Summit M5x delivers benefits to a wide range of potential users. This includes I/O cards such as storage controllers, Ethernet, Fibre Channel HBAs, and others who will now benefit from the full suite of analyzer functions, capabilities, and views while better managing costs. SSD storage applications will also gain from the integrated support for SSD bus protocols such as PCIe, NVMe, SMBus, NVMe-MI, TCG, and more.

Supports Wide Range of Configurations, Real-World Testing and Debugging

The Summit M5x PCIe Protocol Analyzer/Jammer is fully capable of capturing, decoding, modifying, and describing virtualized systems in a multitude of configurations. The CATC Trace™ View, along with the recently added spreadsheet view, NVMe queue-characterization tables, and LTSSM state views, helps users quickly determine how well their devices and systems are behaving in real-world environments. The BitTracer™ option, which records the bytes exactly as they traverse the link, gets developers down to the byte level to see traffic just before and after deskew. This allows for the debugging of PHY-layer problems and combines logic-analyzer features with a decoded protocol-analyzer view.

Delivers the Latest in Storage-Protocol Decoding and Supports NVMe Management Technology

When it comes to storage technologies, the Summit M5x features the latest in storage-protocol decoding including NVM Express® (NVMe), SATA Express, SCSI Express, and others. It is also the only protocol analyzer to fully support the latest in NVMe management technology described in the NVM Express Management Interface (NVMe-MI) protocol specification. For example, unlike other PCIe analyzers, Summit™ analyzers can simultaneously capture in-band (PCIe bus) and out-of-band (SMBus) protocol traffic. In addition, a new hardware-extended recording mode for NVMe applications aids in debugging difficult-to-find SSD anomalies. Finally, communications between applications using the Trusted Computing Group’s Enterprise and Opal security can be decoded to confirm accurate data transmission.

Availability

The Summit M5x PCIe Protocol Analyzer/Jammer is available for order now. For additional information, contact Teledyne LeCroy at 1-800-5LeCroy (1-800-553-2769) or visit Teledyne LeCroy's web site at teledynelecroy.com.

About Teledyne LeCroy

Teledyne LeCroy Inc. is a leading manufacturer of advanced oscilloscopes, protocol analyzers, and other test instruments that verify performance, validate compliance, and debug complex electronic systems

quickly and thoroughly. Since its founding in 1964, the Company has focused on incorporating powerful tools into innovative products that enhance "Time-to-Insight". Faster time to insight enables users to rapidly find and fix defects in complex electronic systems, dramatically improving time-to-market for a wide variety of applications and end markets. Teledyne LeCroy is based in Chestnut Ridge, N.Y. For more information, visit Teledyne LeCroy's website at teledynelecroy.com.

About PCI-SIG

PCI-SIG is the consortium that owns and manages PCI specifications as open industry standards. The organization defines industry standard I/O (input/output) specifications consistent with the needs of its members. Currently, PCI-SIG is comprised of over 700 industry-leading member companies. To join PCI-SIG, and for a list of the Board of Directors, visit www.pcisig.com.

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