TELEDYNE LECROY
Everywhereyoulook™

# Summit™ T34
## PCI Express® Protocol Analyzer

## Key Features

- **Find errors fast**
  - ✓ One button error check
  - ✓ Fast upload speed
  - ✓ Large trace memory
  - ✓ Powerful triggering/filtering
- **See and understand the traffic**
  - ✓ Get useful information
  - ✓ More choices of data views (CATC Trace™ view, detailed view, spreadsheet view, data view, histogram view, raw mode view, etc.)
  - ✓ More ways to analyze data
- **Accurate data capture**
  - ✓ 100% data capture in a small, portable unit (only 3 lbs)
  - ✓ Supports data rates up to 8 GT/s (PCIe® 3.0)
  - ✓ Captures up to four lanes of data traffic (expandable to 8 lanes with 2 units)
  - ✓ Provides support for CLKREQ# for L1 substate testing
  - ✓ Supports SRIS
  - ✓ 4 GB trace memory is standard, expandable up to 32 GB (64 GB with two units)
- **Probing**
  - ✓ Gen3 PCIe Slot Interposer
  - ✓ Custom form-factors
    - ➢ SFF-8639 Interposers
    - ➢ M.2 Interposer
  - ✓ Mid-bus probe
  - ✓ Multi-lead solder-down probe
  - ✓ Additional probes available

The Summit™ T34 PCI Express Protocol Analyzer builds on the expertise that Teledyne LeCroy has developed over the years with its serial protocol analyzers. The Summit T34 is a portable and comprehensive analysis tool to display and analyze data traffic for PCIe. The Summit T34 can capture up to 4 lanes of traffic and is configurable up to 32 GB trace depth with a single unit. Larger trace depths can be achieved by cascading a second unit providing up to 64 GB.

The Summit T34 can monitor, capture, decode and analyze PCIe protocols with data rates up to 8 GT/s (Gen3). The application display is highly configurable and can be modified to most users debugging styles. A customizable multi-state trigger makes it easy to discover protocol issues on the bus. Features such as multiple local/global timers and counters allow the user advanced control to create sophisticated trigger sequences. The Summit T34 can time-correlate traces to other Teledyne LeCroy supported protocols and buses.

The portable Summit T34 protocol analyzer is designed to support multiple PCIe storage protocols such as SATA Express, NVM Express and SCSI Express. This new multi-storage protocol decoding capability combined with storage triggering, searching, filtering and protocol analysis views optimized for PCIe storage development are currently supported across the product line and make these tools valuable to understanding data transmission from the PCI Express protocol layer up to the command layer.

BitTracer™—a raw mode recording capability that shows channel information such as bit symbols, binary and 10-bit data—helps to describe what is happening right at the electrical level. In addition, other features such as hierarchical displays, real-time statistics, protocol traffic summaries, detailed error reports, powerful test scripting and the ability to create user-defined test reports will allow developers to quickly troubleshoot intricate problems and finish their projects on time.

The challenges of probing have been addressed through a wide variety of options for storage probing connectivity, including interposers for M.2 and SFF-8639 single- and dual-port connectors, multi-lead solder-down tapping, mid-bus probing and standard PCIe slot interposer. In addition, many embedded board

***Innovative Probing Options***

*Probing options for the Summit T34 include a slot interposer, custom form-factor interposers such as M.2 and SFF-8639, mid-bus probes, and multi-lead solder-down probes, all of which support data rates to 8 GT/s (PCIe 3.0).*

connector types such as XMC, VPX, AMC, XMC, Compact PCI Serial and mini card are also supported. Each interposer is designed for reliable data transmission between hosts and devices and for quick set-up times for testing new hosts or new devices.

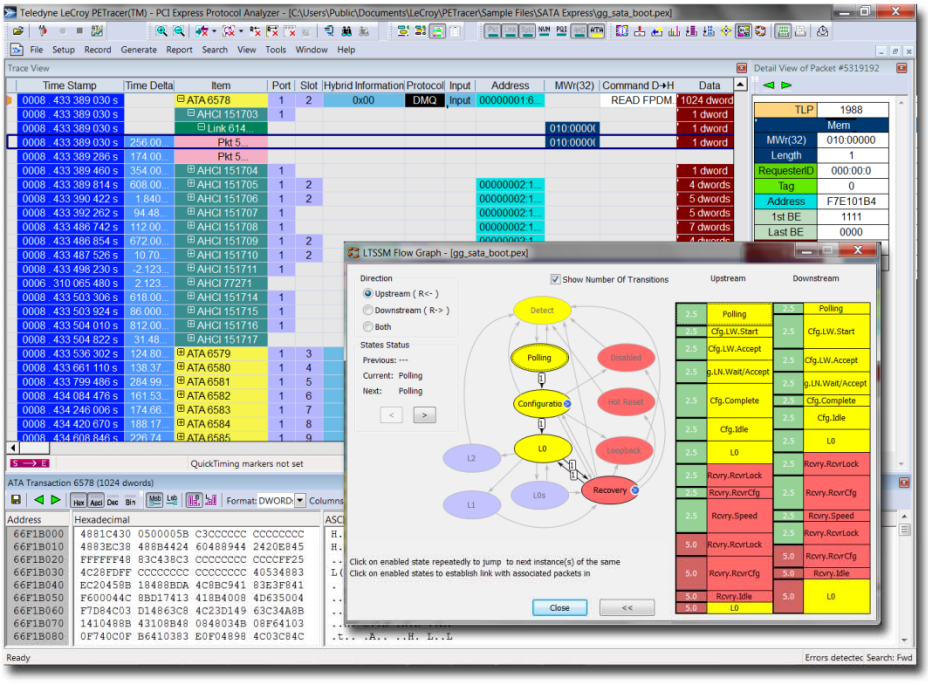
The Summit T34 can be connected to the host by either USB 2.0/3.0 or Ethernet 10/100/1000 LAN as standard features. By connecting over a LAN, engineers can operate the system remotely (e.g., control an analyzer operating in a remote lab). Also, engineers working collaboratively can time-share use of a single analyzer, reducing the need for multiple systems, and increasing the cost effectiveness of the product.

The Summit T34 protocol analyzer is lightweight and portable for both field and lab applications, and is licensable to accommodate different configurations to match user requirements with available budget. The Summit T34 for PCI Express utilizes the CATC Trace™ to assist users in analyzing how PCI Express components work together in diagnosing problems. The interface helps find errors fast by using the powerful triggering, filtering and error reporting. View meaningful reports about performance and protocol behavior in real time, and post captured traffic. Spreadsheet View is highly organized way of showing time correlated storage data and command info between host and devices. The CATC Trace is another powerful and intuitive expert software system, embedding detailed

***Extensive Decoding***

*The Summit T34 provides extensive decoding of many specialized protocols, including NVMe, SCSI Express and SATA Express.*

*Powerful displays allow for easy analysis of protocol traffic.*



knowledge of the protocol hierarchy and intricacies as defined in the protocol specification. The CATC Trace utilizes a graphical display that has been optimized for fast and easy navigation through a captured traffic session. Users are alerted as violations are detected at all levels of the protocol layering, and can easily drill down to areas of interest or collapse and hide fields that are not relevant. Protocol data can be viewed in several ways from logical to chronological, and by events unique to PCI Express.

*Rear Panel of Summit T34*

## Specifications

| | |
|---|---|
| **Host Machine Minimum Requirements** | Microsoft Windows® 8, Windows Server 2012, Windows 7, Windows Server 2008R2, Windows XP; 2 GB of RAM; Storage with at least 200 MB for the installation of the software and additional space for recorded data; display with resolution of at least 1024x768 with at least 16-bit color depth; and USB 2.0 port and/or 100/1000baseT Ethernet. For optimal performance, please refer to our recommended configuration in the product documentation. |
| **Recording Memory Size** | 4 GB expandable to 32 GB in a single unit; expandable to 64 GB with two units |
| **Data Rates Supported** | 2.5 GT/s, 5 GT/s and 8 GT/s |
| **Front Panel LEDs** | Power, Status, Trigger, three data rate LEDs (2.5, 5.0 and 8.0 GT/s) for both Upstream and Downstream traffic, four lane LEDs (3,2,1,0) for both Upstream and Downstream traffic |
| **Front Panel Connectors** | Upstream & Downstream iPass x4 Port, SMA Ref Clock connectors for both Upstream and Downstream traffic, SMA connectors for Trigger IN & OUT |
| **Rear Panel Controls & Connectors** | Expansion Port (for second Summit T34 system), Sync/Data port, 100/1000BASET Ethernet (connection to Host Machine), USB 3.0 (alternate connection to Host Machine), DC 12V power connector (from supplied AC-DC adapter), Power ON/OFF switch |
| **Dimensions (W x H x D)** | 209 x 40 x 302 mm (8.3” x 1.6” x 11.9”) |
| **Weight** | 1.4 Kg (3.0 lbs) |
| **Power Requirements** | 100-240 VAC, 50-60 Hz, 230W |
| **Environmental** | Operating: 0 to 55°C (32 to 131°F)<br>Non-operating: -20 to 80°C (-4 to 176°F)<br>Humidity: 10 to 90% non-condensing |

*Summit T34 Carry Case*

## Ordering Information

| Product Description | Product Code |
|---|---|
| Summit T34 (licensed as a Gen3 x4 analyzer, no probes or cables)..... | PE080AAA-X |
| Summit T34 (licensed as a Gen2 x4 analyzer, no probes or cables)..... | PE082AAA-X |
| Summit T34 Expansion Option for 8 GB Memory..... | PE095SUA-X |
| Summit T34 Expansion Option for 16 GB Memory..... | PE096SUA-X |
| Summit T34 Expansion Option for 32 GB Memory..... | PE097SUA-X |
| Expansion Kit for two Summit T34s to behave as one recording device (1) MicroDB25-to-MicroDB25 and (1) Expansion Ribbon Cable..... | PE093ACA-X |
| CrossSync Cable (MicroDB25-to-MicroDB25 to enable time-correlated recording of multiple protocols)..... | AC001XXA-X |

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