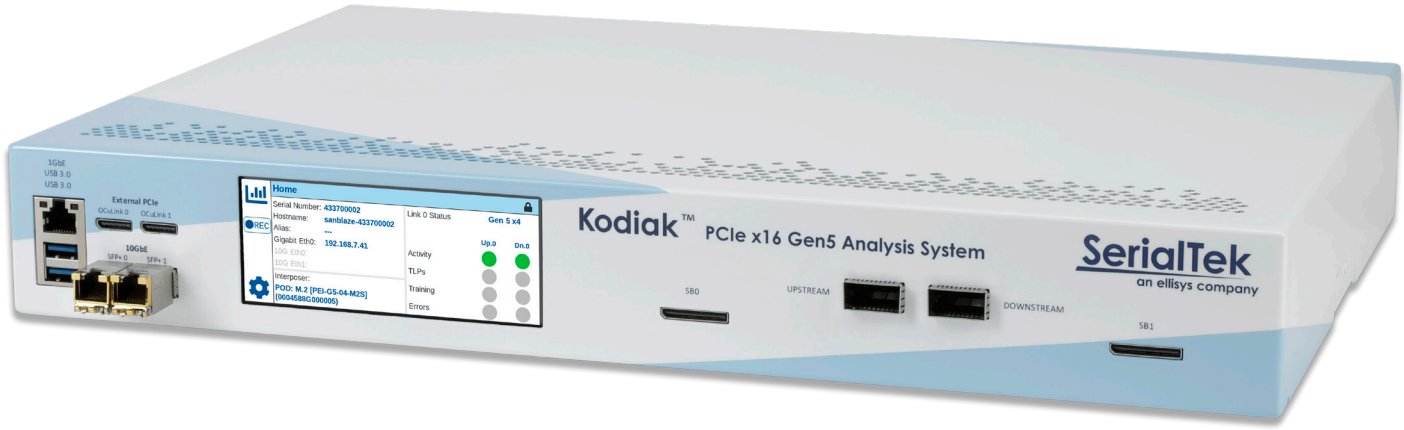
SerialTek
an ellisys company



Kodiak™

Next-Generation Gen5 PCIe®/NVMe® Analyzer

Innovative ▪ Cutting-Edge ▪ Integrated

Sales Contact:

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PCIe/NVMe Analysis Platform with Embedded Hardware, Real-Time Protocol Processor™, Calibration-Free SI-Fi™ Interposer Probing and Automatic Equalization, Internal SSD Storage, Touchscreen LCD, and Standard PCIe Cabling.

State-of-the-Art Architecture

The Kodiak PCIe Gen5 Analysis System represents the state-of-the-art in protocol analyzer design. The Kodiak platform includes an array of high-performance innovations, made possible by an advanced design that breaks free from cumbersome legacy data upload practices in favor of ultra-responsive embedded data processing.

Interface responsiveness is markedly advanced, searches involving massive amounts of data are fast, and hardware filtering is flexible and powerful.

The Kodiak platform, with its new web browser based BusXpert (TM) application, is built to tackle the challenges presented by the complexities of rapidly advancing storage and datacenter I/O technologies.

Real-Time Protocol Processor

Kodiak employs an innovative system register processing concept called Real-Time Protocol Processor (RTPP™). This proprietary feature dynamically and automatically queries and saves PCI configuration space, host controller registers, and NVMe queues, whether the analyzer is actively recording or idle. This alleviates the need for time-consuming and highly impractical reboots, and provides the ability to precisely decode, trigger, and filter using current values.

Multiple Form Factor Support

SI-Fi™ interposer form factors include AIC (x4), EDSFF, M.2, U.2, and U.3,. Additionally, U.2, U.3, single-port (1x4), and dual-port (2x2) analysis is combined into one interposer unit, providing significant cost savings in enterprise environments where all form factors are re- quired. SI-Fi™ interposers also support all relevant side- bands, including SMBus (e.g., NVMe-MI) from the host or from external / third-party injection or generation tools.

Flexible Trace Storage and Retrieval

Kodiak includes two 10GbE SFP+ ports and a GbE port to offload traces to a host computer or network and internal SSD trace storage of up to 2TB (with read-only access for other users). Direct attach storage choices include two USB 3.1 ports and two PCIe OCuLink ports.

Transparency in Probe Design is Key

Driven by the need for ever-faster data transfers, PCI Express signaling has become exceptionally complex in design and difficult to monitor unobtrusively. Signal conditioning methods used for earlier PCIe generations/speeds now seem primitive compared to the complex approaches used for PCIe Gen5. Further challenges are presented by NVMe, which adds critical requirements like hot-plug and NVM Subsystem Reset (NSSR), where the PCIe signals are renegotiated. SerialTek's proprietary SI-Fi™ technology meets and overcomes these challenges with the features and capabilities needed to work efficiently.

With SerialTek's SI-Fi™ interposer technology, the transmitter threshold and pre-emphasis from one link partner reaches the receiver of the other link partner, so the link properly trains to optimum conditions, making the interposer as transparent as possible.

At the core of this technology is a highly specialized linear amplifier design where PCIe analog signals are received at a differential input and distributed to two separate phase-matched differential outputs with a nominal, idealized gain of 0dB. This approach results in easier set up of the analyzer and product under test and avoids a variety of limitations inherent to other probing approaches where link training sequences don't pass through the interposer.

SerialTek's SI-Fi™ interposer technology expands and enables coverage in critical test areas, including link training (LTSSM), Power Management, Hot Plug, Reset, and other situations where the physical link/lane characteristics may change.

No Need for Calibration

Competing PCIe Gen5 analyzers and interposers require tuning, or calibration, which leads to reliability issues as modern PCIe link training sequences can occur dynamically, not just at boot-up.

With SI-Fi™ technology and Kodiak's adaptive EQ capabili- ties, users can save hours in setup time. And if the link characteristics change (e.g., Hot Plug or NSSR), Kodiak can follow those changes dynamically, ultimately saving your test.

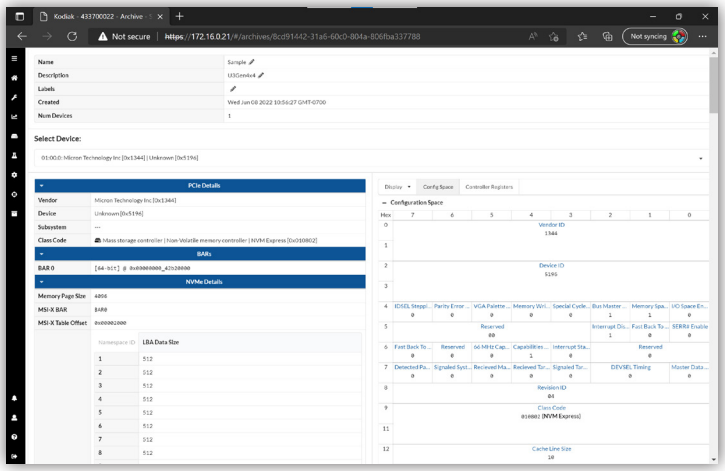
Powerful SerialTek Features

- No tuning (calibration) required
  - Kodiak's Rx automatically equalizes (EQs) the PCIe signals at all data rates
- Embedded trace processing architecture and fastest performance
- Real-Time Protocol Processor
  - No boot trace needed
  - Automatically captures PCI Config Space, Controller Registers, and NVMe Queues
  - Native NVMe triggers by device (BDF), Queues, and Packet/Event
  - Native NVMe filters by device (BDF), Controller Registers, Queues, and Packet/Event
- Deep Trace Buffers
  - 72GB, 144GB
- Internal Trace Storage (SSD)
  - 2TB
  - Read-only access for non-primary users
- Direct Attach Storage
  - Two OCuLink (PCIe) ports
  - Two USB 3.1 ports
- Network and Direct Connectivity
  - Two 10GbE SFP+ (optical/copper)
  - One 1GbE RJ-45
- Single-port (1x4) and dual-port (2x2) analysis in one platform
- Real-time access to traces in memory (prior to downloading)
  - Users can review and analyze captured traces without downloading the trace
- Touchscreen LCD for analyzer setup and status

Interposers with SI-Fi™ Technology

- No tuning (calibration) required
  - Host and Device signals pass through the interposer, allowing for real-world PCIe link training and easier setup
- SI-Fi™ interposer probes expand coverage to enable testing in critical areas, including link training (LTSSM), Power Management, Hot Plug, Reset, and other situations where the physical link/lane characteristics may change
- AIC (x4), M.2 (x4), U.2 (x4), and U.3 (x4)
  - U.2, U.3, single-port (1x4), and dual-port (2x2) in one interposer
- Access to all sidebands, including SMBus

Real-Time Protocol Processor™



Automatically identifies & updates:

- PCIe configuration space
- Controller data structures (queue attributes, etc.)
- NVMe queue creation and deletion

Uses

- Capture and decode PCIe and NVMe protocols without a boot trace
- Easy analyzer set up
- Correctly decode trace if any of the above attributes change
- Native NVMe triggering: by event (packet), device (BDF), and queue - eliminates false triggers
- Native NVMe Filtering: by device (BDF), controller registers, and queue

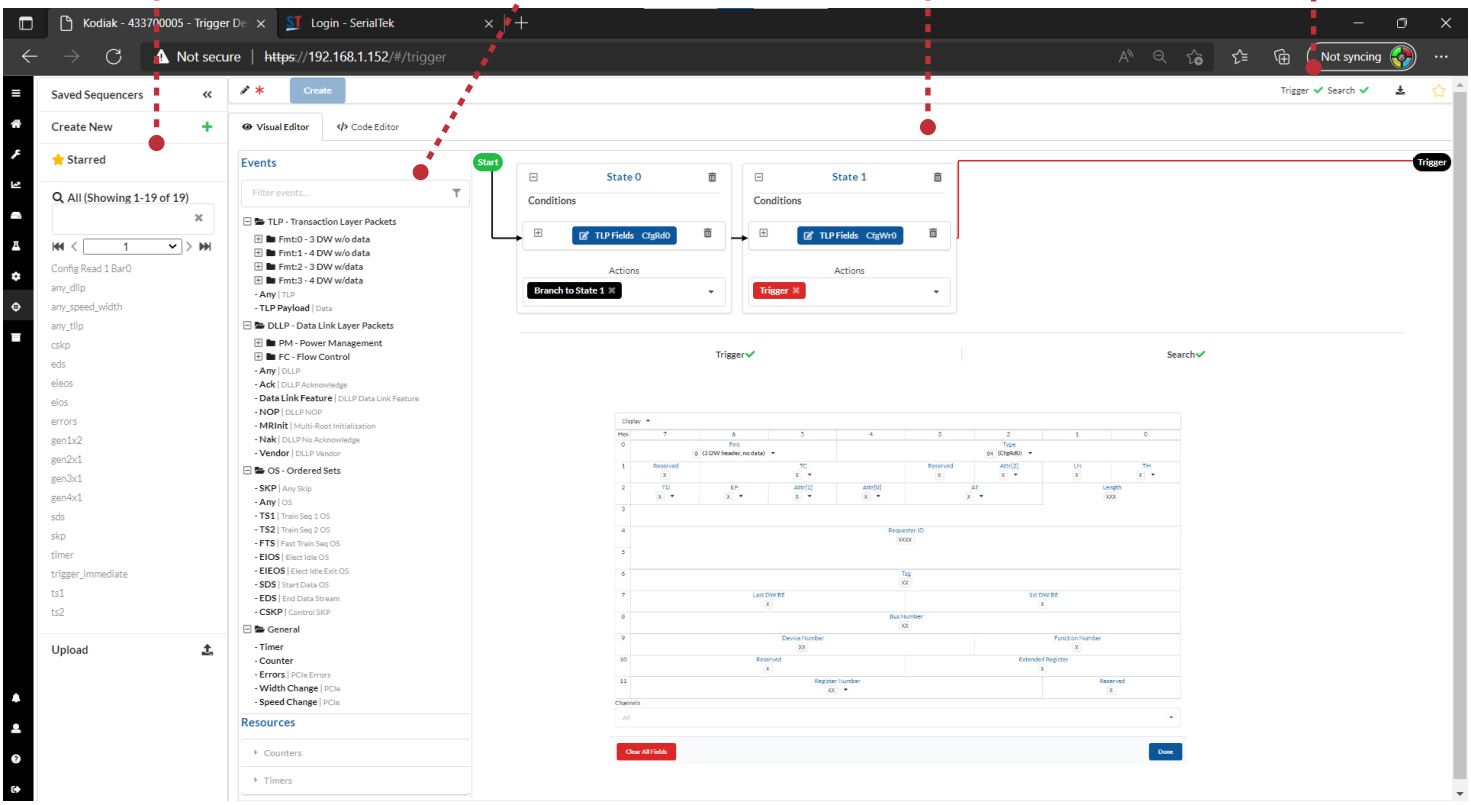
PCIe Hardware Triggers

Savable Trigger and Search conditions

Create triggers easily with searchable drag/drop interface

Simple, advanced multi-state and multi-sequencer triggering

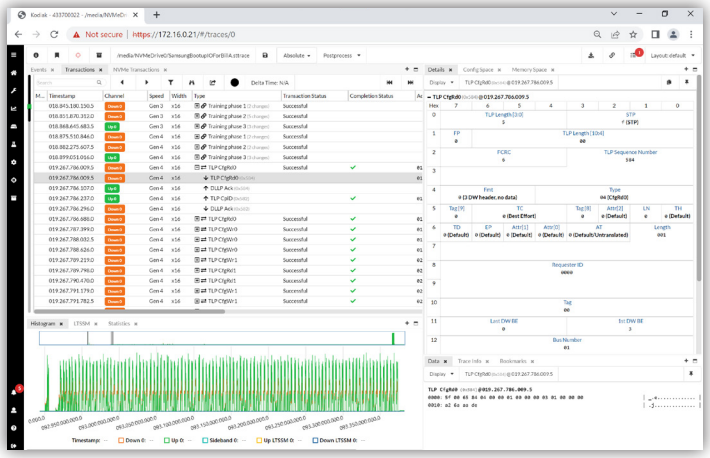
Interchangeable Trigger and Search conditions



BusXpert Software

Web Browser and Standalone Application - Two NEW User Interfaces

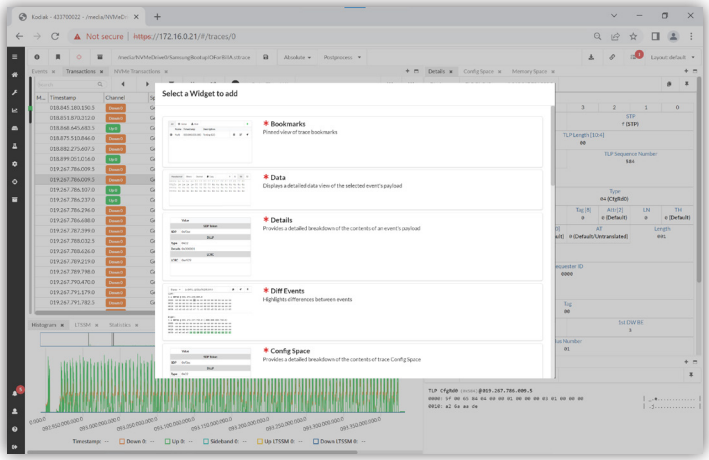
Based on an embedded software framework and REST API, The BusXpert software integrates with Kodiak hardware seamlessly. Accessed via a web browser or SerialTek's Electron®-based app, BusXpert includes a suite of powerful triggers, filters, and trace processing capabilities coupled with a new user interface for fast, easy, and reliable decoding. Users can work with trace files collaboratively in real-time and even remotely verify proper configuration of the analyzer and interposers, including visual identification of cables, link status, recording status, and much more.



Customizable Views – Widgets

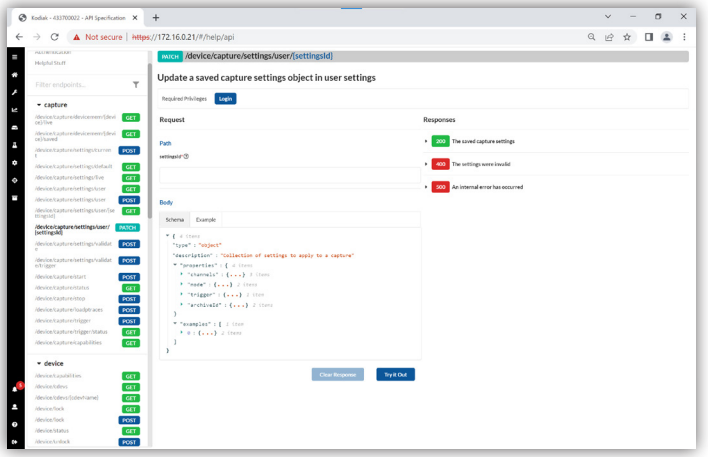
One major aspect of the new GUI are the widgets and how the user interacts with the trace data through them. The widgets contain controls that are specific to them and there is a global toolbar that applies to all widgets.

There are a collection of widgets that a user can user to analyze the trace data in several different formats, easily accessed via a layout manager used to customize your Home, Capture, and Trace Viewing screens.



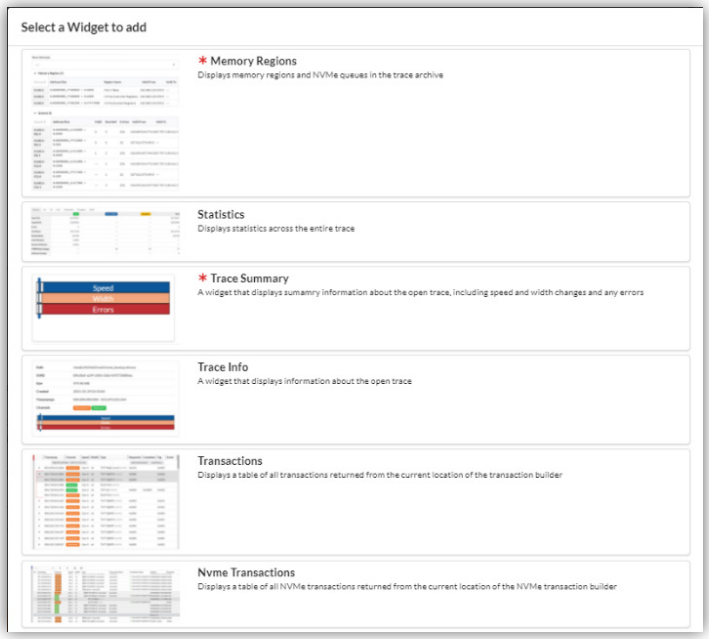
Easy Automation - REST API

The Kodiak REST API makes automation straightforward and efficient, providing programmatic facilities for monitoring and capturing traffic, statistical analyses, and detailed searching. Kodiak's advanced hardware design also means there is no need to download a multi-gigabyte trace before the user can begin to review the analysis – data is ready immediately.



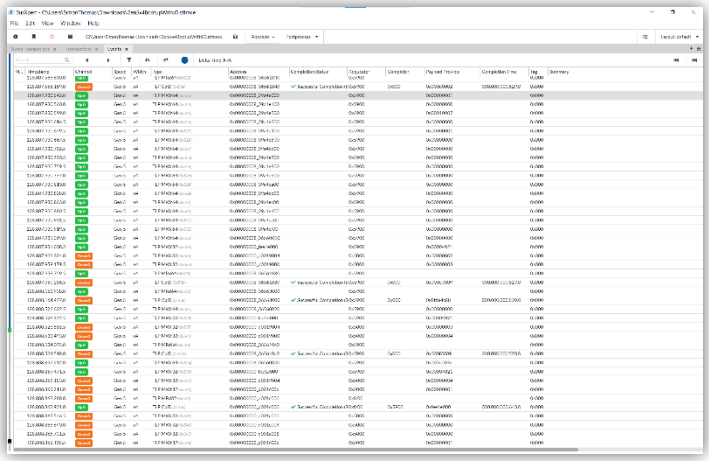
Trace Widgets

Trace widgets are a collection of views used to analyze the trace data in several different formats, including Events (i.e. spreadsheet), PCIe Transaction, and NVMe Transaction widgets.

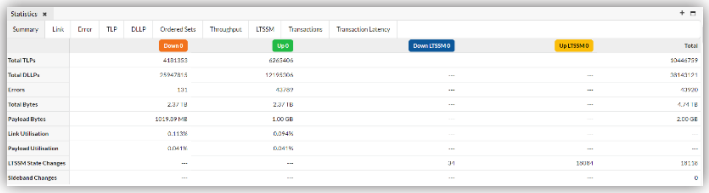


Events

Displays a table of all events returned from the current location of the curser.



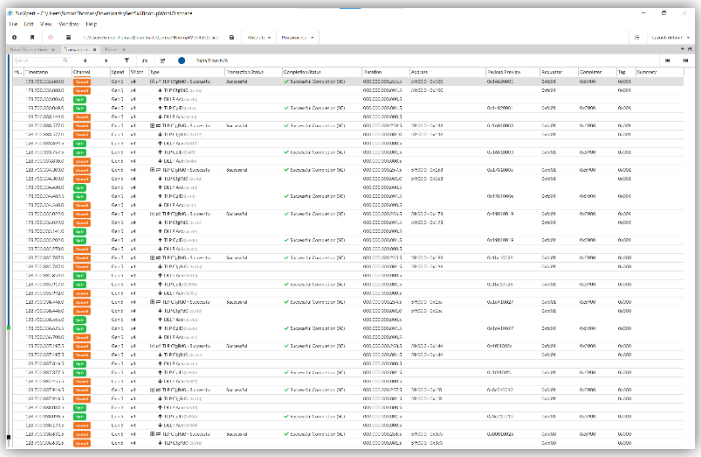
Statistics



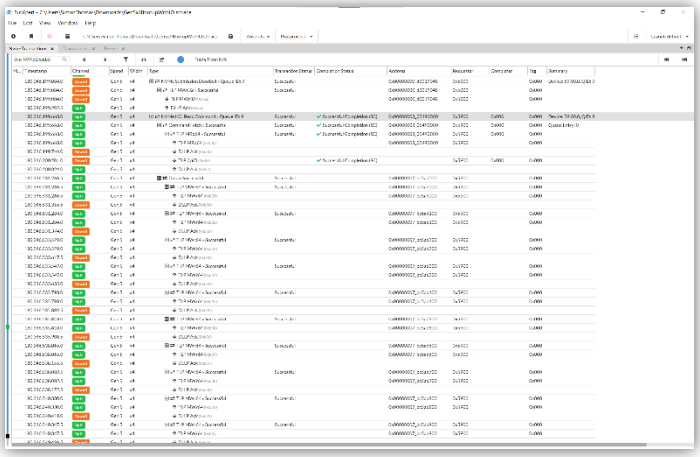
Transaction View Widgets

Events are collated into sequences that make up transactions on the bus. The transactions consist mainly of commands coming from one side of the stream and responses coming from the other. The transactions can be expanded (all events visible) or collapsed (only the transaction summary visible). Each row contains information about the packet it represents, and the columns are filled with the information from that packet.

PCIe Transactions

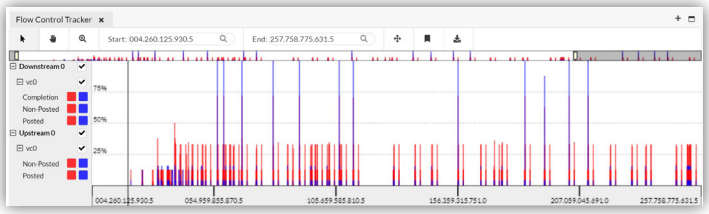


NVMe Transactions



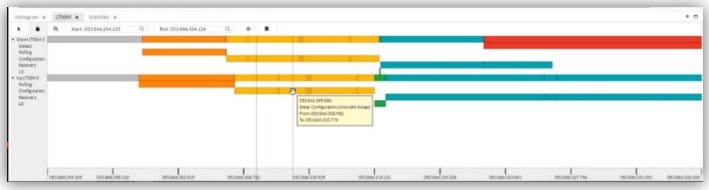
Flow Control

Tracks flow control credit usage over the duration of the trace.



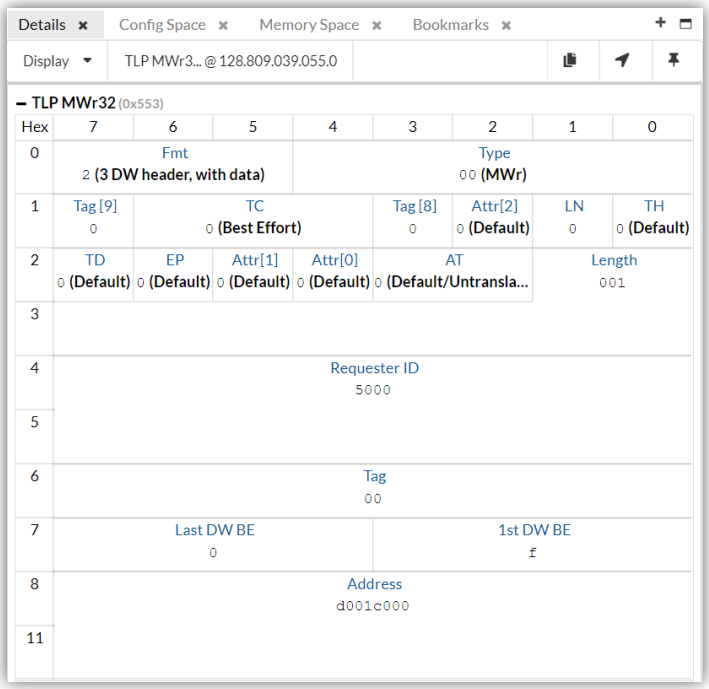
LTSSM

A timeline view of the "Link Training and Status State Machine" as seen in the trace data. The widget is arranged by up & down streams of the link. The data is shown as a tree that expands out and can be zoomed in to view data with finer granularity.

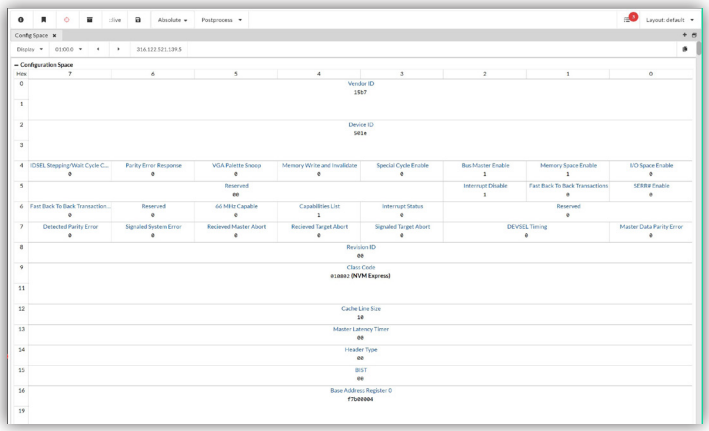


Packet Details

Provides a detailed breakdown of contents of an events payload.

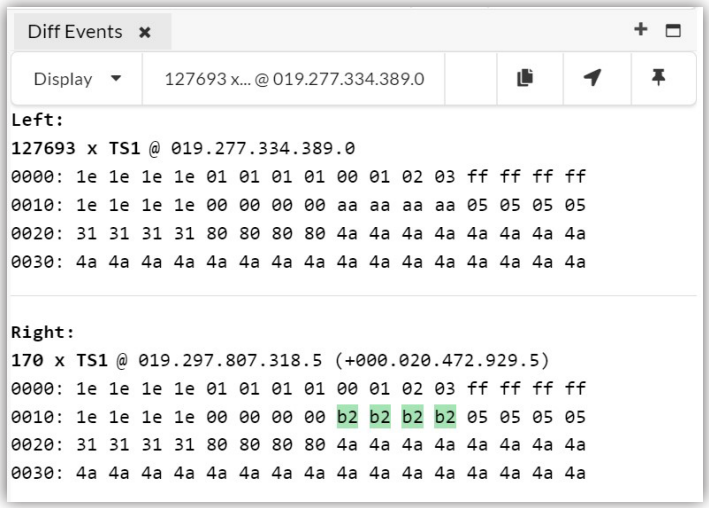


Config Space & Memory Space



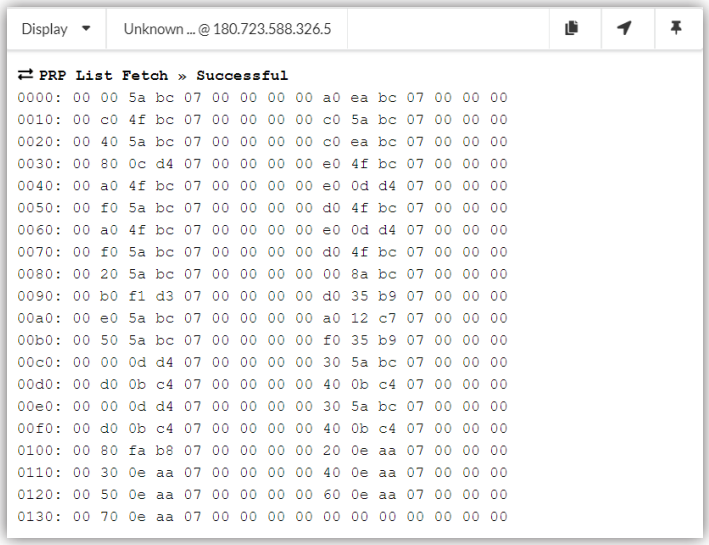
Diff Events

Highlights differences between two selected trace events.



Packet Data

Provides a detailed breakdown of the data/payload of an event.

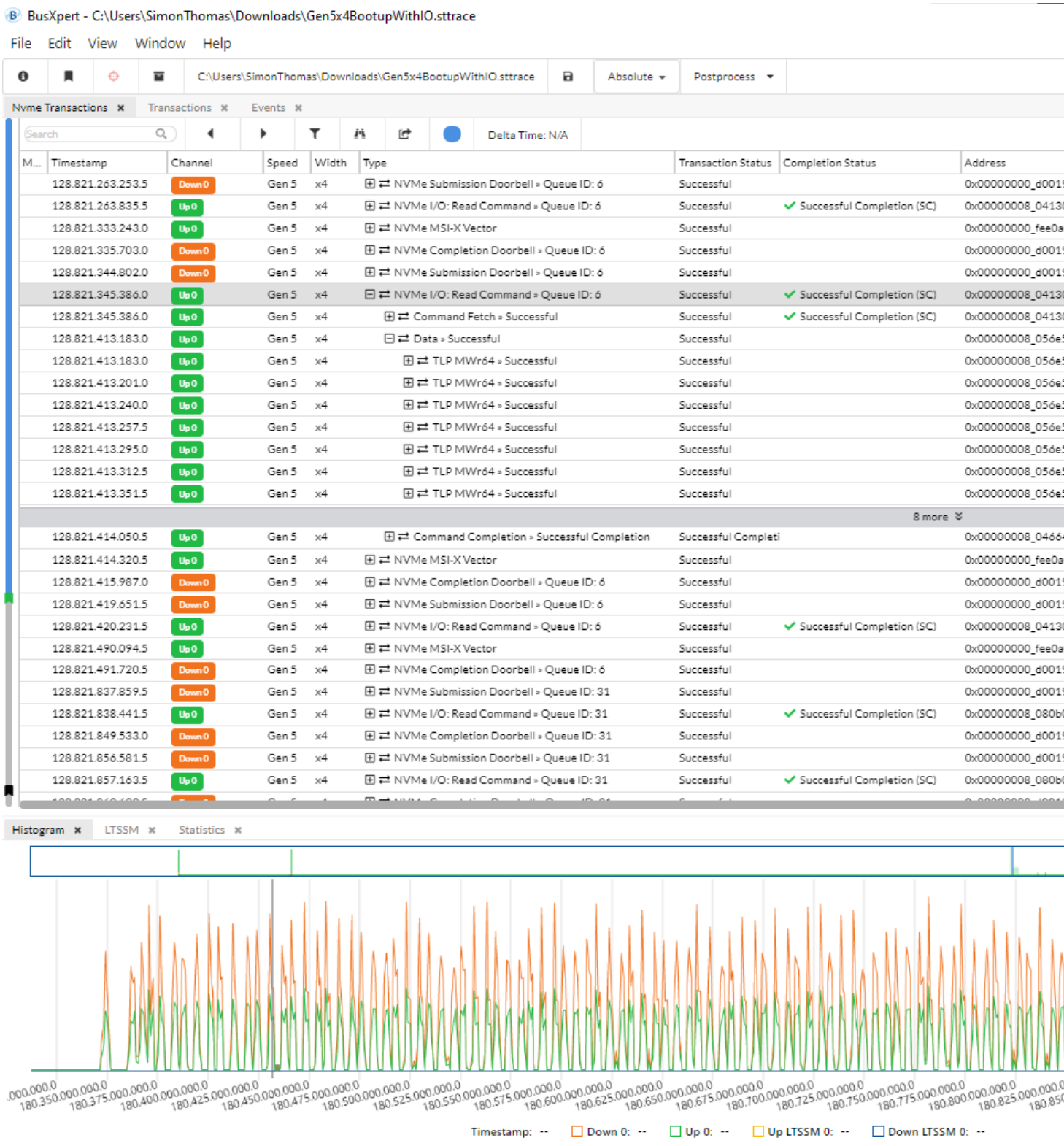


Additional Widgets / Functions

- Real-time Link Statistics
- Global & User Bookmarks
- Quick Search: Contextual type search field
- Trace Summary Information
- Buffer Status
- LED's
- Concurrent user trace access (Events & Transactions Views)
- User, User Groups, User Permissions, & LDAP support

Protocol Trace Widgets
Low-level and stacked protocol elements are hierarchically and chronologically displayed in easily configurable views.

Fast & Advanced Search
Quickly find events using a contextual search field. Includes multi-state search, and copy/paste from the trace views.

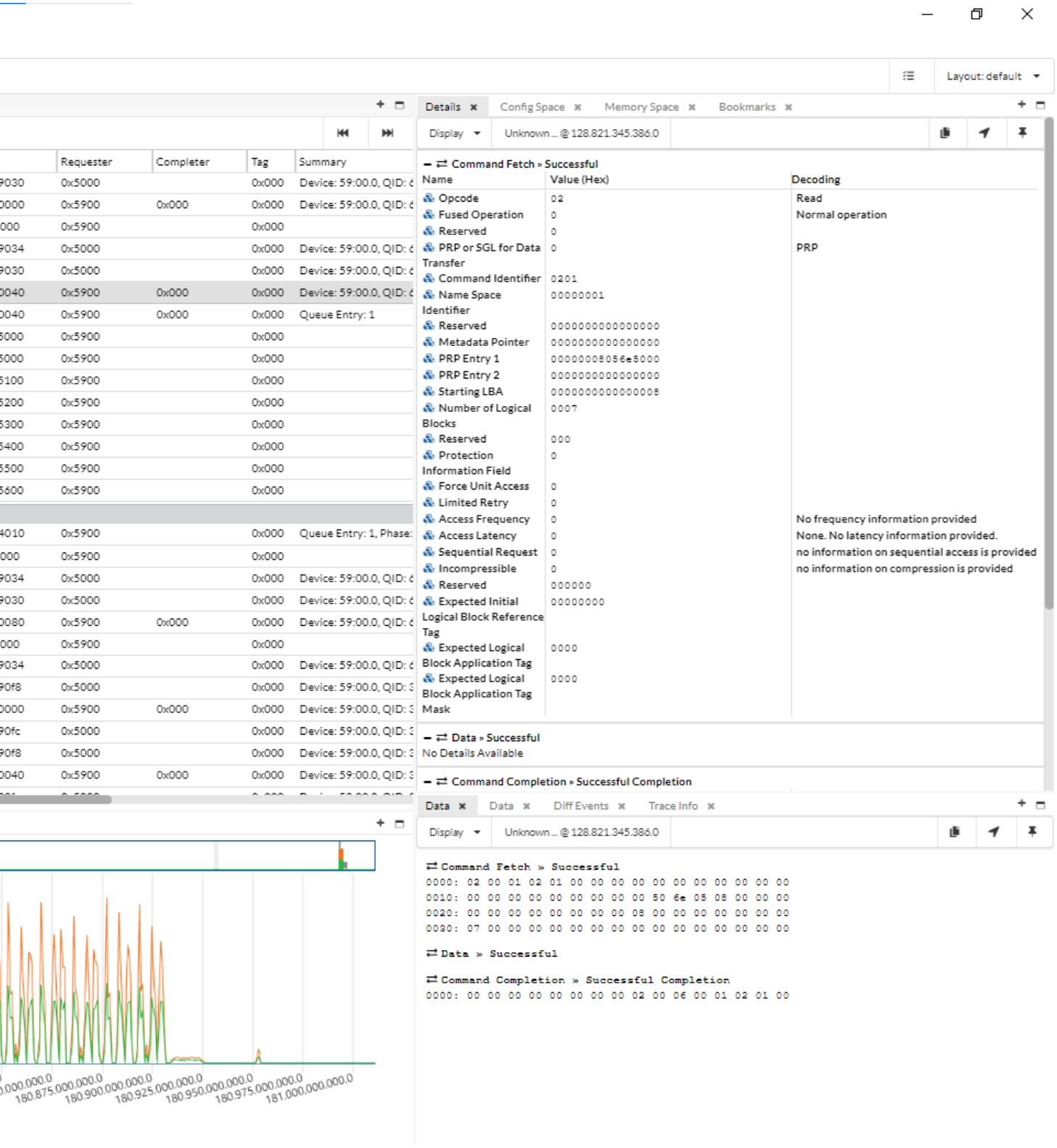


Precision Timestamping
Every event is given a precise timestamp and synchronized across all views. Measuring delta time is easy via ctl+ selecting any two events in the trace.

Whole Trace Timing Views
Every event, synchronized across all views, can be displayed in a custom graphing widget. Measuring is easily set via right-clicking the mouse.

Fast & Advanced Hide/Show
Quickly show/hide links, sidebands, LTSSM, and protocol events.

Real-Time Protocol Processor
Automatically queries/saves the Configuration space, controller registers, and NVMe queues, whether recording or idle.



User-Configurable Views & Layouts
Easily modify tab sets and protocol views by adding or re- moving widgets, columns, and more.

Export Everything
All data is exportable to JSON or CSV. Exports are customizable.

SI-Fi™ Interposers

SerialTek's Gen5 (32.0 GT/s) PCI Express® (PCIe®) and Non-volatile Memory Express® (NVMe®) interposers with SI-Fi™ allow users to
monitor an unprecedented variety of PCIe and NVMe bus traffic with unparalleled power and ease.

Enabled by SerialTek's proprietary SI-Fi™ technology, users can save hours over legacy approaches requiring interposer calibration. This technology improves critical test coverage by providing high signal integrity, even over changing conditions, such as link training (LTSSM), power management, hot plug, reset, and other tests where the physical link/lane characteristics may change.

Each lane's analog signal is received at the probe's differential input and distributed to two separate phase matched differential outputs with a nominal gain of 0dB, allowing the host and device signals to pass through the interposer, allowing for real-world PCIe link training and easier set-up of the analyzer and DUT.

SI-Fi™ PCIe Gen5 Interposers continue SerialTek's TCO approach. With the focus on signal integrity, flexible, low-cost, SFF-8644-based cables connect each interposer to the analyzer. These cables are readily available and rated greater than 20GHz, resulting in uncompromised SI at all PCIe transfer rates.

All sideband signals are passed through the interposer from root complex (host) to controller (device), and all are made available to the analyzer for trigger, decode, and analysis.

Key Features

- SI-Fi™ Interposers require no calibration
- Supports PCI Express Gen 1.0, 2.0, 3.0, and 4.0
- Accurate capture of PCIe data traffic at line rates including:

  32.0GT/s (Gen5), 16.0GT/s (Gen4), 8.0 GT/s (Gen3), 5.0 GT/s (Gen2), and 2.5 GT/s (Gen1)
- Single U.2 / U.3 interposer supports single-port and dualport capture (only one analyzer is needed for dual-port)
- "Passive" tapping to avoid masking, hiding, or "cleaning up" electrical and/or link issues
- Low-cost, flexible, high-performance cabling for reliable analyzer to interposer connections

Gen5 Slot/AIC Interposer

PCI Express slots are ubiquitous in ATX or ATX-based form factors in computing, storage, networking, and communication equipment applications. SerialTek's PCIe Gen5 slot interposers supports analysis of x1, x2, x4, x8, and x16 link-widths. SerialTek's PCIe Gen5 Slot (AIC) Interposers with SI-Fi technology are specially designed test adapters that are physically placed in between the PCIe host and a PCIe endpoint to intercept and relay a copy of the high-speed signaling and discrete data lines to the Kodiak PCIe Analysis system in real-time. All sideband signals are passed through the interposer from root complex (host) to controller (device), and all are made available to the analyzer for trigger, decode, and analysis. All relevant sidebands, including SMBus (e.g., NVMe-MI) from the host or from external/ third-party injection or generation tools are supported.

Overview

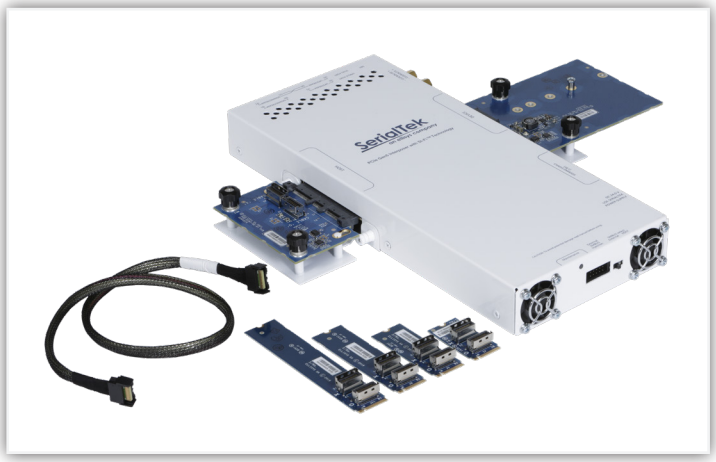
- Dimensions: 25 x 116 x 248 mm (1 x 4.5 x 9.7")
- Power connector: Molex 87427-0602
- Analyzer connectors: QSFP-DD
- Device connector: PCIe CEM slot x16 straddle mount connector
- Host module connectors: PCIe CEM x16 Edge fingers
- SMBUS injection connector: 2×5 pin 0.1" header, 3.3 Vdc
- REFCLK output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLK output control connector: 2 pin 0.1" header
- REFCLK buffer control connector: 3 pin 0.1" header
- Sideband signal access connector: 2×9 pin 0.1" header, 3.3 Vdc

M.2 Interposer

M.2 is a specification supporting specifically keyed modules of different lengths that facilitate the addition or expansion of functions via a small form factor. The PCIe M.2 form factor is typically used for PCIe adaptation and small form factor NVMe SSD's. SerialTek's M.2 interposer supports all relevant keys, link-widths, and sidebands, including SMBus (e.g., NVMe-MI) from the host or from external / third-party injection or generation tools. SerialTek's PCIe Gen4 M.2 Interposers with SI-Fi technology are specially designed test adapters that are physically placed in between the M.2 port and an M.2 endpoint to intercept and relay a copy of the high-speed signaling and discrete data lines to the Kodiak PCIe Analysis system in real-time.

Overview

- Dimensions: 154 x 34 x 232 mm (6 x 1.3 x 9")
- Power connector: Molex 87427-0602
- Analyzer connectors: 2x SFF-8644
- Device connector: M.2 Socket 3, Key M, 22110, 2280, 2260, 2242, 2230
- Host module connectors: 2x MCIO 38 pin
- SMBUS injection connector: 2×5 pin 0.1" header, 3.3 Vdc
- REFCLK output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLK output control connector: 2 pin 0.1" header, 3.3 Vdc
- REFCLK buffer control connector: 3 pin 0.1" header, 3.3 Vdc
- Sideband signal access connector: 2×9 pin 0.1" header, 3.3 Vdc



EDSFF Interposer

SerialTek's EDSFF interposer is mechanically modular and easily converts from E1.S to E1.L to E3.S form factors. The included EDSFF host adapters are easy to change and plug into a host system. High-quality cabling (instead of lossy PCB material) from the interposer to the storage enclosure preserves signal quality while adding flexibility, saving customers money, and providing for safe placement of the device under test (DUT) on a bench or in a test rack. SerialTek's EDSFF Interposer supports all relevant sidebands, including SMBus (e.g., NVMe-MI) from the host or from external / third-party injection or generation tools. SerialTek's PCIe Gen5 EDSFF Interposers with SI-Fi technology are specially designed test adapters that are physically placed in between the EDSFF port and an E1.x or E3.x EDSFF target to intercept and relay a copy of the high-speed signaling and discrete data lines to the Kodiak PCIe Analysis system in real-time.

Overview

- Dimensions: 154 x 34 x 232 (6 x 1.3 x 9")
- Power connector: Molex 87427-0602
- Analyzer connectors: 2x SFF-8644
- Device connectors: SFF-TA-1009
- Host connectors: SFF-TA-1009
- SMBUS injection connector: 2×5 pin 0.1" header, 3.3 Vdc
- REFCLKA output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLKA output control connector: 2 pin 0.1" header
- REFCLKA buffer control connector: 3 pin 0.1" header
- REFCLKB output connectors: 2x U.FL,AC coupled LPHCSL
- REFCLKB output control connector: 2 pin 0.1" header
- REFCLKB buffer control connector: 3 pin 0.1" header
- Sideband signal access connector: 2×9 pin 0.1" header, 3.3 Vdc

PCIe Cable Interposer

PCIe External Cabling provides an electrically efficient channel to connect external or internal PCIe components directly to a root port, daughter card, backplane, adapter, or other PCIe based ports. Cable interposers support OCuLink (SFF-8611) and SlimSAS (SFF-8654) form factors and supports all relevant sidebands, including SMBus (e.g., NVMe-MI) from the host or from external / third-party injection or generation tools. SerialTek's PCIe Gen5 Cable Interposers with SI-Fi technology are specially designed test adapters that are physically placed in between the OCuLink (SFF-8611) or SlimSAS (SFF-8654) host port and its endpoint to intercept and relay a copy of the high-speed signaling and discrete data lines to the Kodiak PCIe Analysis system in real-time.

Overview

- Dimensions: 154 x 34 x 232 mm (6 x 1.3 x 9")
- Power connector: Molex 87427-0602
- Analyzer connectors: 2x SFF-8644
- Device connectors: SFF-8611 (OCuLink), SFF-8654 (SlimSAS)
- Host connectors: SFF-8611 (OCuLink), SFF-8654 (SlimSAS)
- SMBUS injection connector: 2×5 pin 0.1" header, 3.3 Vdc
- REFCLKA output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLKA output control connector: 2 pin 0.1" header
- REFCLKA buffer control connector: 3 pin 0.1" header
- REFCLKB output connectors: 2x U.FL,AC coupled LPHCSL
- REFCLKB output control connector: 2 pin 0.1" header
- REFCLKB buffer control connector: 3 pin 0.1" header
- Sideband signal access connector: 2×9 pin 0.1" header, 3.3 Vdc

U.2/U.3 Interposer

SerialTek's U.2 and U.3 interposers support standard and extended length storage bays, and all relevant sidebands, including SMBus (e.g., NVMe-MI) from the host or from external / third-party injection or generation tools. SerialTek's PCIe Gen5 U.2 and U.3 Interposers with SI-Fi technology are specially designed test adapters that are physically placed in between the U.2/U.3 port and an U.2/U.3 target to intercept and relay a copy of the high-speed signaling and discrete data lines to the Kodiak PCIe Analysis system in real-time.

Overview

- Dimensions: 194 x 29 x 337 mm (7.6 x 1 x 13")
- Power connector: Molex 87427-0602
- Analyzer connectors: 4x SFF-8644
- Device connector: SFF-8639 receptacle
- Host connectors: SFF-8639 plug
- SMBUS injection connector: 2×5 pin 0.1" header, 3.3 Vdc
- REFCLKA output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLKA output control connector: 2 pin 0.1" header
- REFCLKA buffer control connector: 3 pin 0.1" header
- REFCLKB output connectors: 2x U.FL,AC coupled LPHCSL
- REFCLKB output control connector: 2 pin 0.1" header
- REFCLKB buffer control connector: 3 pin 0.1" header
- Sideband signal access connector:
  2×9 pin 0.1" header, 3.3 Vdc

> *I've been using protocol analyzers for 31 years and PCIe analyzers and interposers extensively for the past 5 years. We use them for important assignments that affect revenue and customer satisfaction," said* ***John Wehman, Principal Applications Engineer at Phison Technology****. "With other analyzers I have had to abandon my testing many times, because I could not find a good quality signal lock. SerialTek's Kodiak analyzer and SI-Fi interposers have changed all that. I have 100% confidence in Kodiak's ability to achieve lock and give me the trace I need to do my job. Kudos to Ellisys and SerialTek for creating not only an electrically reliable platform, but the actual mechanical hardware itself is beautiful.*

Kodiak PCIe WebUI – Remote Access!

Access from Anywhere

- Easily connect to Kodiak via your web browser
- Real-time online system and recording status and I/O graphs
- Real-time Analyzer and Interposer configuration information, including cable status
- Online Trace file management

Interposers

- Real-time information for the PCIe Gen5 interposer and its status; including type, serial number, and connectivity state
- Kodiak automatically detects any good, bad, and unnecessary cable connections with easy to identify colors (green, orange, red)

System Settings

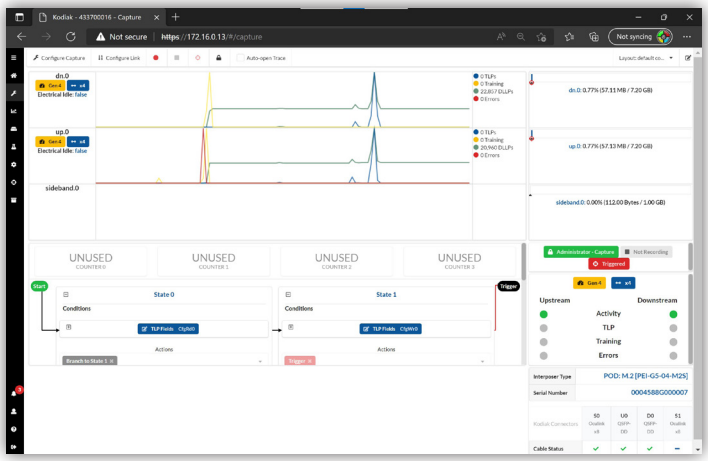
- Linux, easy for IT to manage
- Supports User Names, User Groups, and LDAP
- 1G and 10G ethernet ports (DHCP, Static IP settings)
- Update and/or verify Kodiak firmware remotely
- Update and/or verify Kodiak licenses remotely
- Remote system restart or full reset

Management and System Reset

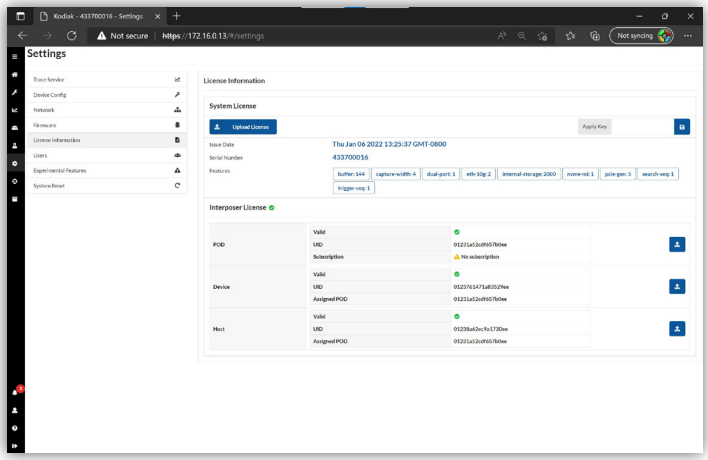
- Secure and manage Kodiak remotely
- Configure user permissions (read, read/write, update, admin, …)
- Reboot and recover the analyzer
- Reset analyzer to factory settings (with or without user data)
- Remote factory reset

Trace Storage and Management

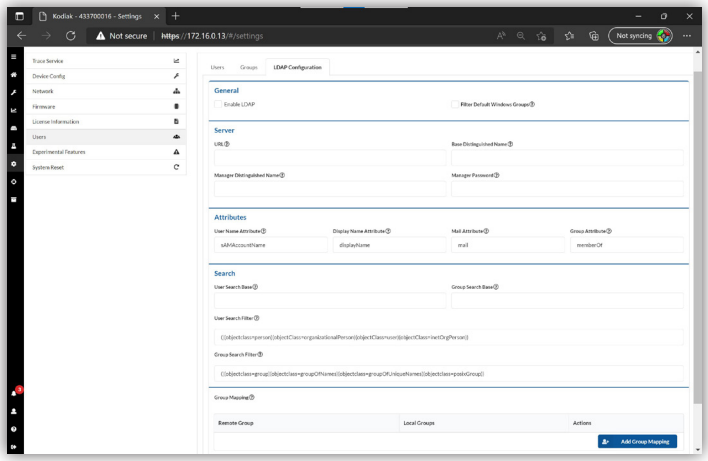
- Save traces to Kodiak's internal NVMe SSD storage
- Open traces while saved in Kodiak or download them to a client
- Zip traces in Kodiak and then download



Capture Settings



System Settings



System Users

Configurations and Purchase Information

Edition	Speed	Width	NVMe	CXL (future)	Buffer	Internal Storage	Multi-State Triggering	Multi-State Search	10GE	Dual-Port
Enterprise	Gen5	x16	Yes	Yes	144	2TB	Yes	Yes	2x	Yes
Enterprise	Gen5	x8	Yes	Yes	144	2TB	Yes	Yes	2x	Yes
Enterprise	Gen5	x4	Yes	Yes	144	2TB	Yes	Yes	2x	Yes
Professional	Gen5	x4	Yes	Yes	144	2TB	Yes	Yes	2x	No
Standard	Gen5	x4	Yes	n/a	72	2TB	Yes	Yes	1x	No

Kodiak PCIe Analyzers

Description	Code
Kodiak Gen5 PCIe x16 Protocol Analyzer Enterprise Edition	PK2A-G5-16-ENT
Kodiak Gen5 PCIe x8 Protocol Analyzer Enterprise Edition	PK2A-G5-08-ENT
Kodiak Gen5 PCIe x4 Protocol Analyzer Enterprise Edition	PK2A-G5-04-ENT
Kodiak Gen5 PCIe x4 Protocol Analyzer Professional Edition	PK2A-G5-04-PRO
Kodiak Gen5 PCIe x4 Protocol Analyzer Standard Edition	PK2A-G5-04-STD
Kodiak Gen4 PCIe x16 Protocol Analyzer Enterprise Edition	PK2A-G4-16-ENT
Kodiak Gen4 PCIe x8 Protocol Analyzer Enterprise Edition	PK2A-G4-08-ENT
Kodiak Gen4 PCIe x4 Protocol Analyzer Enterprise Edition	PK2A-G4-04-ENT
Kodiak Gen4 PCIe x4 Protocol Analyzer Professional Edition	PK2A-G4-04-PRO

SI-Fi Interposers

Description	Code
PCIe Gen5 x16 slot interposer	PEI-G5-16-AIC
PCIe Gen5 x8 slot interposer	PEI-G5-08-AIC
PCIe Gen5 x4 slot interposer	PEI-G5-04-AIC
PCIe Gen5 U2 interposer	PEI-G5-04-U2E
PCIe Gen5 U3 interposer	PEI-G5-04-U3E
PCIe Gen5 EDSFF interposer	PEI-G5-04-EDS
PCIe Gen5 M.2 interposer	PEI-G5-04-M2S
PCIe Gen5 MCIO Cable interposer	PEI-G5-04-MCS
PCIe Gen4 Slim-SAS Cable Interposer	PEI-G5-04-SCS
PCIe Gen5 x4 Premium Package; U2, U3, EDSFF, M.2	PEI-G5-04-PRE

Technical Specifications

Kodiak Enclosure

- Dimensions: 443 x 67 x 305 mm (17 x 2.6 x 12”)
- Weight: 7 kg (15 lbs)
- Mounting: 19” Rack Mount Option, Tilt Feet Option
- Ambient Operating Temperature: 5-35°C at up to 2133m (7000 feet) altitude

Displays and Indicators

- Front Panel LCD: 800x320 4.6” WCGA, Touchscreen
- System Status: RGB LED

Front-Panel Connectors

- Interposer Connection: 4x QSFP-DD
- Ethernet (10 GbE): 2x SFP+ (10 GbE)
- Ethernet (1 GbE): RJ45
- PCIe Interface: 2x OCuLink
- USB Interface: 2x USB 3.1 Type A

Rear-Panel Connectors

- Power: IEC C13, 90-264 Vac, 47-63 Hz
- Clock Out: SMA, 50 Ω, 3.3 Vdc, 10 MHz
- Clock In (10 MHz): SMA, 50 Ω, 3.3 Vdc, 10 MHz
- Trigger Out: SMA, 50 Ω, 3.3 Vdc
- Trigger In: SMA, 50 Ω, 3.3 Vdc
- Maintenance: RJ45, USB Micro-B (Not for customer use)

Interposer Power Unit (Common)

- Input: 100-240 Vac/50-60 Hz
- Output: 5 Vdc
- Power: 50 W
- Plug: Molex 039-01-2060
- Safety: UL, CUL, CE, TUV-GS, PSE
- EMI: CE, FCC
- Environmental: ROHS, WEEE, VI

M.2 Interposer

- Dimensions: 154 mm(W) x 34 mm(H) x 232 mm(L) (6 x 1.3 x 9”)
- Power connector: Molex 87427-0602
- Analyzer connectors: 2x SFF-8644
- Device connector: M.2 Socket 3, Key M, 22110, 2280, 2260, 2242, 2230
- Host module connectors: 2x MCIO 38 pin
- SMBUS injection connector: 2x5 pin 0.1” header, 3.3 Vdc
- REFCLK output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLK output control connector: 2 pin 0.1” header, 3.3 Vdc
- REFCLK buffer control connector: 3 pin 0.1” header, 3.3 Vdc
- Sideband signal access connector: 2x9 pin 0.1” header, 3.3 Vdc

U.2/3 Interposer

- Dimensions: 194 x 29 x 337 mm (7.6 x 1 x 13”)
- Power connector: Molex 87427-0602
- Analyzer connectors: 4x SFF-8644
- Device connector: SFF-8639 receptacle
- Host connectors: SFF-8639 plug
- SMBUS injection connector: 2x5 pin 0.1” header, 3.3 Vdc
- REFCLKA output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLKA output control connector: 2 pin 0.1” header
- REFCLKA buffer control connector: 3 pin 0.1” header
- REFCLKB output connectors: 2x U.FL,AC coupled LPHCSL
- REFCLKB output control connector: 2 pin 0.1” header
- REFCLKB buffer control connector: 3 pin 0.1” header
- Sideband signal access connector: 2x9 pin 0.1” header, 3.3 Vdc

X4 Slot Interposer

- Dimensions: 25 x 116 x 248 mm (1 x 4.5 x 9.7”)
- Power connector: Molex 87427-0602
- Analyzer connectors: 2x SFF-8644
- Device connector: PCIe CEM slot x16 straddle mount connector
- Host module connectors: PCIe CEM x4 Edge fingers
- SMBUS injection connector: 2x5 pin 0.1” header, 3.3 Vdc
- REFCLK output connectors: 2x U.FL, AC coupled LPHCSL
- REFCLK output control connector: 2 pin 0.1” header
- REFCLK buffer control connector: 3 pin 0.1” header
- Sideband signal access connector: 2x9 pin 0.1” header, 3.3 Vdc

Maintenance and Licensing

- Free lifetime software updates – no maintenance fees
- Free full-featured web browser and standalone software – easily share traces between computers and colleagues and replay captured traffic
- Use SerialTek hardware on any computer – no additional licenses needed

Warranty

- 1, 2, and 3 year limited warranties available, Basic and Standard Editions
- Six-month limited warranty, Interposers

Minimum Requirements

- Intel Core, 2 GHz or compatible processor
- 4 GBytes of RAM
- 1280 x 1024 display resolution with at least 65,536 colors
- 64-bit OS only (Windows 7, Ubuntu 14, Centos7 or higher)
- 1GbE controller

More information at: www.serialtek.com/kodiakgen5