VIAVI Solutions

Brochure

# VIAVI
# Xgig E1 EDSFF Interposer

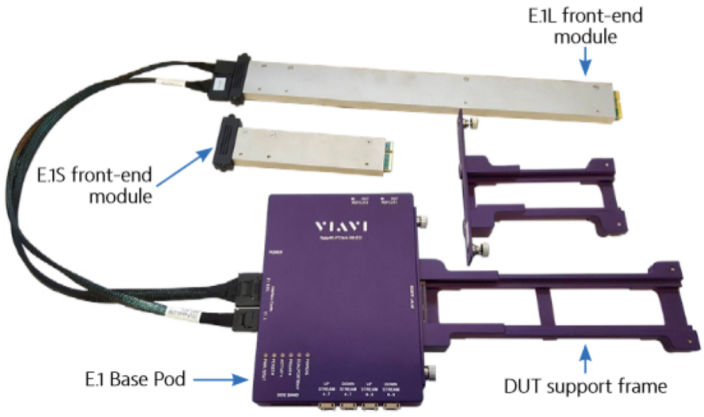
for PCI Express ® 4.0

Provides a tap of host-system to EDSFF NVMe SSD data signals for input to the VIAVI Analyzer

VIAVI Solutions Xgig4K-PCIe4-X8-E1 is an Active Interposer optimized for developing, debugging and performance tuning NVMe SSD operation in high-density storage servers. Bidirectional PCIe 4.0 protocol data on 8-lanes can be captured at 16GTps for analysis.

The interposer is supplied with both E1.L (long) and E1.S (short) user swappable front-end modules for proper system fit. The E1.S is implemented to fit the 9.5mm Short Form Factor with Optional Symmetric Enclosure variation. The interposer is designed to support either 1 link of 4 or 8 lanes.

This interposer uses high-speed linear signal redrivers to buffer the system data signals across the interposer between host system and SSD devices-under-test. This design ensures a clean signal is delivered to the Analyzer for reliable protocol capture and analysis.




## Key Features

- Operates up to 16GTps, PCIe 4.0 data rates
- Downward compatible with PCIe data rates of 2.5, 5.0 and 8.0GTps
- Supports 1 link of 4 or 8 lanes
- EDSFF E1.L or E1.S NVMe SSD DUT (not supplied) plugs directly into the interposer
- Data path uses high-speed linear redrivers to insure good signal capture with little or no tuning
- Includes 4 high-quality, mini-SAS HD 4X cables for Analyzer connection
- Supports Analyzer side-band signal capture and triggering with display in multiple formats
- The supplied power brick makes interposer power independent of host system
- LED's give quick indicators of power and status
- Size: Base Pod: 120 x 162 x 30 mm
  E1.L: 331 x 9.5 x 38.4 (LxTxH)
  E1.S: 162 x 9.5 x 33.7
- Works together with the VIAVI Xgig4K-PCIe4-X16 Analyzer/Jammer chassis platform
- Supported by VIAVI Xgig™ Analyzer tools for trace capture with filter, trigger and more
- Provides consistent, repeatable capture of link training, equalization negotiation and other data
- Supports error injection (jamming) for deep system analysis

## Application

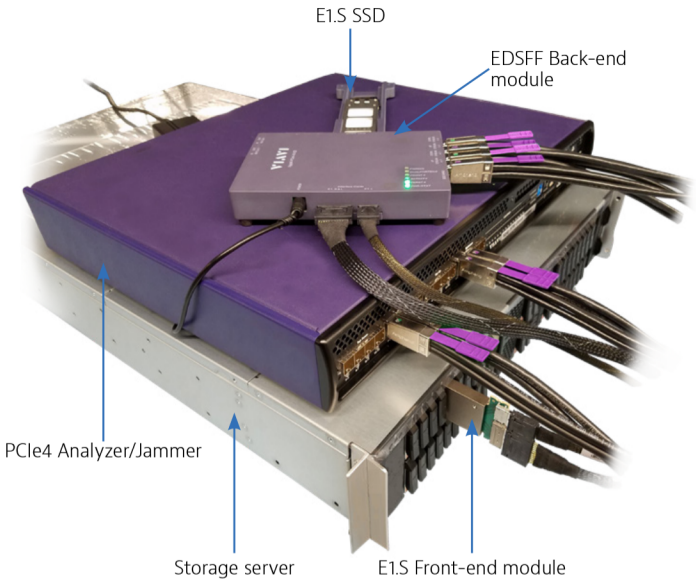
Working together with the VIAVI PCIe 4.0 Analyzer/Jammer chassis, this Interposer enables debug and verification of new NVMe controller ICs, new server designs, firmware tuning, validation of system BIOS and software, and for verification of manufacturing test.

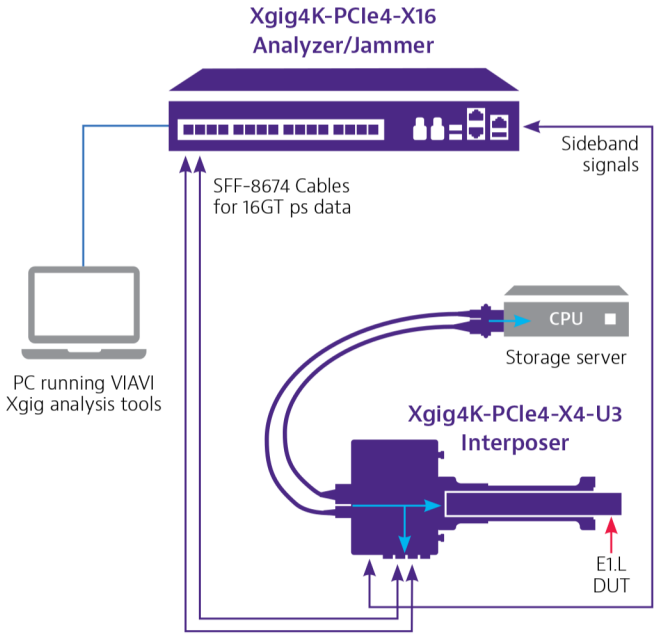
To setup the interposer for operation, an E1 EDSFF SSD is inserted into the Interposer base pod. The interposer front-end module is then inserted into the EDSFF bay of a high-density storage server. To complete the test data path the mSAS HD cables are attached connecting the VIAVI PCIe 4.0 protocol Analyzer/Jammer platform. Xgig analysis tools are loaded and run on a local or remote Windows PC.

The following photo shows an example application, while the corresponding block diagram indicates the signal data path.

When operating in Analyzer mode, the DUT data is captured (tapped) from both the upstream and downstream data paths as inputs to the Analyzer. When operating in Jammer mode, or Analyzer/ Jammer mode, data flows through the Analyzer between DUT devices.

VIAVI offers a variety of interposer types for different PCIe system applications, including 4-, 8- and 16-lane CEM, U.2, M.2, OCulink and others.




## Kit Contents

| Item | Description | Qty |
|---|---|---|
| 1 | Xgig4K-PCIe4-X8-E1, 8-lane EDSFF Interposer Base Pod | 1 |
| 2 | E1.L Front-end module | 2 |
| 3 | E1.S Front-end module | 1 |
| 4 | SFF-8674 custom high-performance cables | 4 |
| 5 | Sideband cable (to analyzer) | 1 |
| 6 | Coax cable for optional clock | 2 |
| 7 | Power brick, 120/220 input, 12V/3A output | 1 |
| 8 | Bracket kit | 1 |
| 9 | Quick Start Guide | 1 |

## Ordering Information

| Part Number | Description |
|---|---|
| Xgig4K-PCIe4-X8-E1 | Xgig 8-lane E1 EDSFF Interposer for PCIe 4.0 |
| Xgig4K-PCIe4-X8-E1-H1 | 1-year extended hardware warranty |

VIAVI Solutions

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