

VIAVI Xgig U.3-Server Interposer

for PCI Express® 5.0

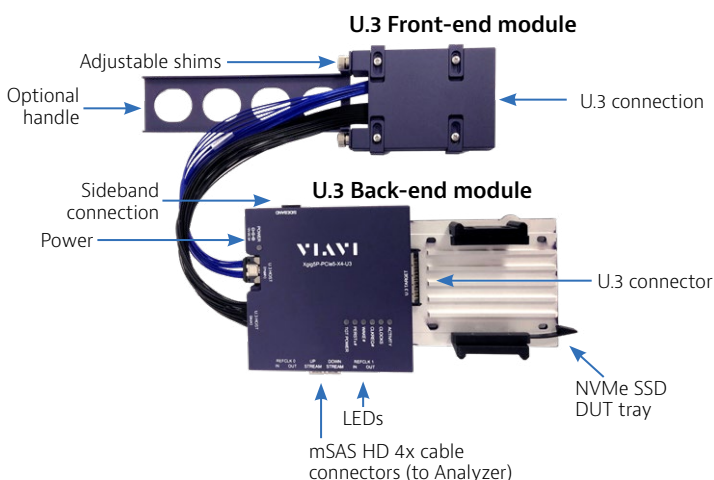
Provides a tap of communication between a host-system and a U.3 NVMe SSD for input to a VIAVI PCIe 5.0 Analyzer

VIAVI Solutions Xgig5K-PCIe5-X4-U3 is an active Interposer optimized for development, debugging and performance tuning of NVMe SSD operation in high-density storage servers. Bidirectional PCIe 5.0 protocol data on 4 lanes is captured at 32GTps for analysis. The Interposer supports either 1 link of 4 lanes, or 2 links of 2 lanes. It is compliant to the SFF-TA-1001 connections standard for PCIe signals.

This Interposer uses high-speed linear signal redrivers to buffer the PCIe data lanes 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.

The Front-End module is physically the same size as a 2.5-inch SSD allowing it to be inserted into the drive carrier normally used with the server. Alternatively, a light-weight handle can be attached and used for drive insertion.

The flex cables allow the Back-End module to lay on top of the server or on the lab bench.



Key Features

- Operates up to 32GTps, PCIe 5.0 data rates
- Downward compatible with PCIe gen-1, gen-2, gen-3 and gen-4, and data rates of 2.5, 5.0, 8.0 and 16GTps
- Supports 1 link of 4 lanes, or 2 links of 2 lanes
- Front-end module plugs into system-under-test
- U.3 NVMe SSD DUT (not supplied) plugs into the Back-end module
- Adjustable tray clamps and quick-release latch allow for snug fit and quick SSD swap
- Data path uses high-speed linear redrivers to ensure good signal capture with minimal tuning effort
- Supplied with high-quality, custom cables for Analyzer system attachment
- Supports Analyzer side-band signal triggering and capture via custom cable
- Supplied power brick makes interposer power independent of host system
- LED gives quick indicators of power and operation
- Size: Front-end module 100.45 x 69.85 x 15mm
Back-end module 226.8 x 111.2 x 33.3mm
- Works with VIAVI Xgig 5P8 and 5P16 PCIe 5.0 analysis chassis
- Supported by VIAVI Xgig Analysis tools for trace capture with filter, trigger and more
- Provides consistent, repeatable capture of link training, negotiation and other data
- Supports error injection for deep system analysis
- Exerciser EP emulation mode supported

Application

Working together with the VIAVI PCIe 5.0 Analysis chassis this Interposer enables debug and verification of new NVMe controller ICs, new system implementations, firmware, validation of system BIOS and software, and for manufacturing test quality assurance.

To setup the Interposer for operation, an NVMe SSD is inserted into the Xgig5P-PCIe5-X4-U3 Interposer. The Interposer is then inserted into the NVMe bay or drive carrier of a high-density storage server. Adjust tray clamps and shims as needed for best fit. To complete the test setup mini-SAS HD 4X cables are attached connecting the VIAVI PCIe 5.0 Protocol Analysis Platform. Xgig analysis tools are loaded and run on a local or remote Windows PC.

The photo on the right shows an example application, while the corresponding block diagram below indicates the signal data paths and connections.

When operating in Analyzer mode, the Device Under Test (DUT) data is captured or 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 and is resynchronized (retimed) for transmission. When operating in Analyzer/Exciser mode, data flows through the Interposer to the DUT.

VIAVI offers a variety of Interposer types for different PCIe system applications.

Kit Contents

Item	Description	Qty
1	Xgig5P-PCIe5-X4-U3, U.3 NVMe SSD-to-Server, 4-lane interposer for PCIe 5.0	1
2	Custom high-performance data cables	2
3	Y-splitter cable	2
4	Sideband cable (to analyzer)	1
5	Coax cable for optional clock	2
6	Hardware kit (includes handle and screws)	1
7	Power brick, 120/220 input, 12V/3A output	1
8	Quick Start Guide	1

Ordering Information

Part Number	Description
Xgig5P-PCIe5-X4-U3	Xgig U.3-to-Server, 4-lane, 32GTps Interposer for PCIe 5.0
XGIG-INTPSR-C-Hx (x=1,2,3,4)	1-year extended hardware warranty



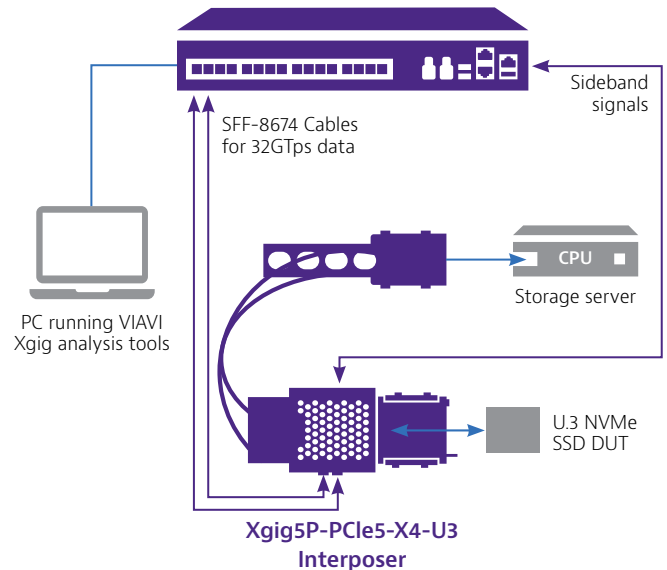
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Xgig5P-PCIe5 Analysis Platform



Xgig5P16 (or 5P8) Analysis Platform



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