MXH932 PCIe Transparent Adapter

Host/Target x16 Gen4 SFF-8644 Adapter

The MXH932 Gen4 Host/Target Adapter is our high performance transparent solution for connecting servers to external I/O subsystems. Based on Microchip® Gen4.0 PCI Express bridging architecture, the MXH932 adapter enables reliable transparent PCIe cable connections and clock isolation.

For high performance application, such as GPU farms, test and measurement equipment, medical equipment, and storage subsystem, the MXH932 delivers flexibility and performance with extremely high data quality. It combines 256 Gb/s performance with the low latency of PCI Express, which is ideal for external I/O Expansion systems.

The adapter can act as either a host or a target board in I/O expansion applications. As a host adapter, it is installed in a server or workstation, to provide a transparent bridge to the I/O expansion subsystem. As a target, the adapter is installed in a PCIe slot in the I/O expansion system and connects to the host adapter to expand the I/O connectivity.

The MXH932 card has a quad SFF-8644 cable connector and supports the new PCIe 4.0 cables. Using the MXH932 as both Host and Target, the card supports the PCI-SIG CMI (Cable Management Interface) protocol as defined in the current PCI-SIG External Cable specification 3.0. When the MXH932 is used in conjunction with PCIe 4.0 cables, it can connected to any compliant downstream device. The MXH932 is carefully designed for maximum cable lengths. Fiber optics extends this distance to 100 meters.

The MXH932 Adapter card comes with the optional eXpressWare Board Management software for simplified monitoring and management. The adapter also comes with optional support for SMbus and configuration via a Board Management Controller.
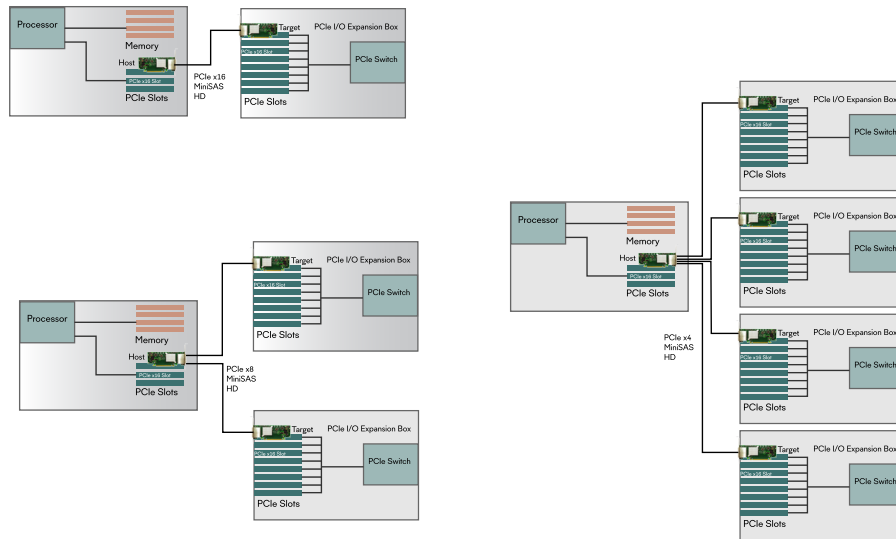
Features

- PCI Express Gen4 - 16.0 GT/s per lane
- Microchip PM40036- PFX Gen4 chipset
- Link compliant with Gen1, Gen2, and Gen3, Gen4 PCIe
- Quad SFF-8644 connector
  - » PCIe4.0 cables with CMI
- Copper and fiber-optic cable support
- Full host Clock isolation support. Automatic support for host running CFC or SSC.
- Low Profile PCIe form factor
- EEPROM for custom system configuration
- Link status LEDs through face plate
- <100ns - Cut Through latency
- MXH932 supports the following port configurations
  - » One - x16 PCIe port
  - » Two - x8 PCIe ports
  - » Four - x4 PCIe ports
- Combined with the MXS924 can scale I/O expansion systems

I/O Expansion

The MXH932 adapter is capable of being configured as a host or a target adapter. Figure 1 illustrates the various configurations supported by the MXH932.   It can support up to 4 PCIe expansion units without an external switch. As a host adapter, the MXH932 connects to PCIe targets via an SFF-8644 connector, which support PCIe 4.0 and MiniSAS HD cables. It can connect to other MXH932 boards as a target or to custom target adapters with PCIe 4.0 cables. The MXH932 configurations support x16, x8, or x4 connections.

Specifications

Link Speeds	64GT/s per port / 256 GT/s total	Mechanical Dimensions	Low profile - 68.90 mm (2.731 inches) x 167.65 mm (6.6 inches)
Active Components	Microchip Switchtec Gen4 PFX Switch	Operating Environment	Operating Temperature: 0°C - 55°C (32°F - 131°F) with AOC (TBD) AirFlow: 350 LFM Relative Humidity: 5% -95% non-condensing
PCI Express	Base Specification 4.0 Cable Specification 4.0 (draft) Card Electromechanical Specification 4.0		
Topologies	One x16 connection Two x8 connection Four x4 connection Switch topologies using MXH924	Dolphin Software	No software needed eXpressWare Board Management Software available
Cut-Through Latency	<100ns	Usage Modes	Transparent Host/Target modes
Cable Connections	SFF-8644 connector for copper / fiber cables Supports 4 - x4/ 2 - x8 or 1 - x16 connections PCIe 4.0 copper and PCIe copper / fiber copper -up to 4m (5m under , 100m with fiber)	Regulatory	CE Mark FCC Class B UL94V-0 compliant RoHS Compliant
Maximum power rating	12 Volt: max 1.66A (no port power) 2.66 A (max port power) +3.3 Volt: Not connected +3.3 Volt AUX: max 100ma	Configuration	DIP-switch x4,x8,x16 link / Safe Boot
Typical power rating	12 Volt: 1.5 A (no port power) +3.3 Volt: Not connected +3.3 Vaux: 100 mA	Mounting Plates	Full height plate installed Half height plate included with board
Port power supply (per cable port)	VPWR: 3.2V - 3.4 V, 0.86 A VMGTPWR: 3.2V -3.4, 89 mA	Operating Systems supported	Basic operations- All
		Product Codes	MXH932 - Host/Target Adapter