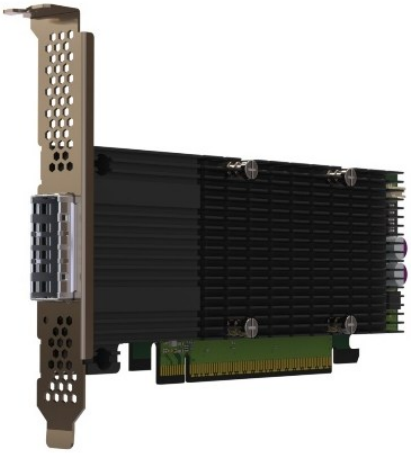
MXH570 PCIe 5.0 x16 CDFP NTB Adapter



Features

- ✓ PCI Express 5.0 - 32.0 GT/s per lane
- ✓ Microchip Switchtec® PCIe 5.0 PFX
- ✓ Link compliant with PCIe 1.0, 2.0, 3.0, 4.0, and 5.0
- ✓ Host Clock isolation support
  Automatic support for a host running CFC or SSC
- ✓ Single x16 CDPF connector
- ✓ Low Profile, Half Length PCIe form factor
- ✓ Support for both copper and fiber cables
- ✓ FLASH for multiple system configurations
- ✓ RDMA support through PIO and DMA
- ✓ Link status LED through the faceplate
- ✓ ~600ns-application-to-application latency
- ✓ ~100ns-cut-through latency
- ✓ 57 Gigabyte/second DMA transfer rate
- ✓ eXpressWare™ software suite license

The MXH570 PCIe 5.0 NTB Host Adapter is our High-Performance networking solution. It is designed to the PCI-SIG Card Electromechanical (CEM) Specification 5.0 and the PCI-SIG CopprLink 1.0 specification, and it employs the Microchip Switchtec® PCIe 5.0 PFX switch to enable reliable, fast host-to-host communication. This adapter supports various high-performance applications, such as clustering and IO hot-add.

The MXH570 adapter is available in two versions: MXH570 with a passive heatsink and MXH570F with an integrated fan for use with AOCs, open desktops, or low-airflow environments.

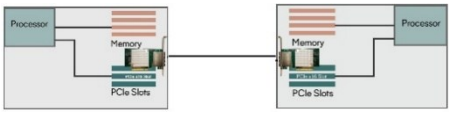
Application developers using the MXH570 host adapter can harness its impressive PCIe 5.0 performance while benefiting from sub-500 nanosecond application-to-application latency. It is also fully compatible with our eXpressWare software suite.

www.dolphinics.com/products/MXH570.html

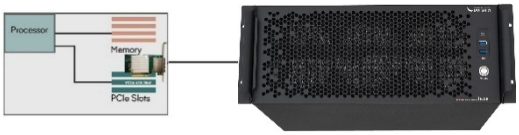
Configurations

The MXH570 enables the establishment of the following PCIe network topologies:

2 Node cluster: A two-node cluster can be realized using two cards and one CopprLink cable (x16). Full PCIe 5.0 x16 performance between the two systems.



Transparent Hot-Add: Dolphin eXpressWare adds PCIe Hot-Add support for servers running Linux or Windows operating systems. You can dynamically add, hot-swap, or remove cabled PCIe expansion systems and IO devices without rebooting the host.



Multiple-Node Network: Larger networks can be realized using the Dolphin MXS610 switch or eBox 4 Pro with multiple uplinks. Please contact Dolphin for details.

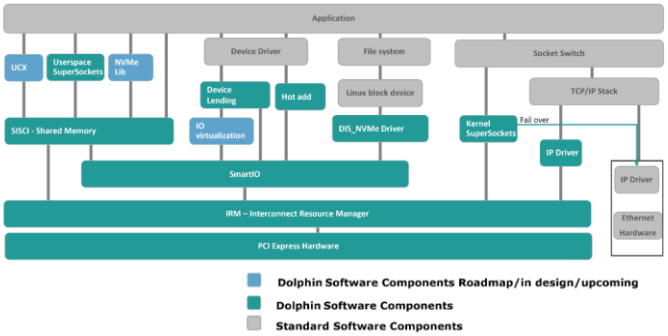
Topology Examples

eXpressWare PCIe Software

The MXH570 card is bundled with a full license for Dolphin's eXpressWare clustering software, which includes.

- ✓ SISCI API - a robust and powerful shared memory programming environment for PCIe
- ✓ Standard TCP/IP drivers
- ✓ Super Sockets socket accelerator software
- ✓ SmartIO - access to remote PCIe devices over PCIe and transparent Hot-Add
- ✓ Board Management software

Dolphin's software suite effectively supports large and small data transfers using DMA and PIO data transfer schemes. PIO transfers are optimized for small packet transfers, minimizing latency. DMA seamlessly moves large data packets with minimal CPU utilization. The eXpressWare software is compatible with Linux, Windows, WxWorks, and RTX. The software framework enables rapid development and deployment of multi-node systems.



For more details, please visit www.dolphinics.com/software.

Specifications

PCI Express	➢ Base Specification 5.0 ➢ CopprLink Specification 1.0 ➢ Card Electromechanical Specification 5.0	Operating Environment	➢ Operating Temperature: 0˚C - 45˚C (32˚F - 113˚F) ➢ Airflow: See users guide ➢ Relative Humidity: 5% -95% non-condensing
Cut-through latency	~100ns (system dependent)	Storage Environment	➢ Storage Temperature: -40˚C to 70˚C (-40˚F to 158˚F) ➢ Relative Humidity: 95% (non-condensing) at 35°C
Application to Application Maximum DMA Throughput	~ 57 GBytes/s (system dependent)	Mechanical Dimensions	Low profile, half-length, 167.65 mm (6.6 inches) x 68.90 mm (2.731 inches)
Active Components	Microchip Switchtec® PCIe 5.0 PFX Switch	eXpressWare Software	➢ SISCI API ➢ Super Sockets Berkley Sockets API ➢ Microsoft WinSock2/LSP support ➢ TCP-IP driver ➢ SmartIO ➢ Board Management
Max Link Speeds	512Gb/s	Usage Modes	Non-transparent bridging (NTB) Hot-Add
Configuration	DIP-switch	Operating Systems	Windows, Linux, QNX, WxWorks, RTX
Topologies	➢ Two-node direct cable	Regulatory markings	➢ CE ➢ FCC Class B ➢ EFUP 50 ➢ KCC
		Regulatory Compliance	➢ Reach ➢ RoHS ➢ UL94V-0
Cable Connections	Single x16 CDFP connector ➢ 1–3-meter PCPR5C-444 PCIe 5.0 x16 copper cable ➢ 10- 50 meters PCPR5FC-444 PCIe 5.0 x16 fiber optic cables ➢ 1.25-meter PCPR5PC-44-1M25 PCIe 5.0 x16 fiber optic Pigtails ➢ 24-strand patch cables 10 – 50 meters	Mounting Brackets	➢ Full-height Bracket installed. ➢ Half-height bracket is included in the shipping box.
Maximum power rating	➢ 12V: 2.8A (no port power) ➢ 12V: 4.0A (max port power) ➢ 3.3V: Not connected ➢ 3.3V Vaux: 100mA	Product Codes	➢ MXH570 Host NTB Adapter – Passive Heatsink ➢ MXH570F Host NTB Adapter – Active fan Heatsink Please consult the MXH570 Users Guide for recommendations
Typical power rating	➢ 12V: 2.5A (Copper Cable) ➢ 12V: 3.5A (AOC) ➢ 3.3V: Not connected ➢ 3.3V Aux:100mA	Regulatory Approvals	➢ EN 55032:2015+A11:2020 ➢ EN 55035:2017+A11:2020 ➢ EN 61000-3-2:2014 ➢ EN 61000-3-3:2013 ➢ KS C 9832:2024, KS C 9835:2019 ➢ 47 CFR Part 15, Subpart B
Port Power	➢ 12V (11V-13V): 1.0A Max (12W) ➢ 3.3V (3.2V-3.4V): 1.5A Max (5W)		