MXH530 PCIe 5.0 x16 SFF-8614 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
- ✓ Selectable host Clock isolation support, Automatic support for a host running CFC or SSC
- ✓ Quad SFF-8614 x4 connectors
- ✓ Passive Copper cable support
- ✓ EEPROM for multiple system configurations
- ✓ RDMA support through PIO and DMA
- ✓ Link status LEDs through the face plate
- ✓ ~600ns - application-to-application latency
- ✓ ~100ns - Chip latency
- ✓ 57 Gigabyte/second DMA transfer rate
- ✓ eXpressWare™ software suite license
- ✓ Low Profile, Half Length PCIe form factor

The MXH530 PCIe 5.0 NTB Host Adapter is our High-Performance networking solution. It is designed to accommodate cables compliant with the PCI-SIG External Cabling Specification 5.0 and employs the Microchip Switchtec® PCIe 5.0 PFX switch to enable reliable, high-speed host-to-host communication. This adapter serves various high-performance purposes, such as clustering and hot-add applications.

The card is delivered with a passive heat sink by default, but it is also available with a fan for open desktop use.
Application developers using the MXH530 host adapter can harness its impressive PCIe 5.0 performance while benefiting from application-to-application latency under 500 nanoseconds. Additionally, it is fully compatible with our eXpressWare software suite.

www.dolphinics.com/products/MXH530.html

Configurations

The MXH530 enables the establishment of various PCIe network topologies, including:

Single-Node Transparent Hot Add: Dolphin eXpressWare adds PCIe hot add support to Windows and Linux systems. Cabled PCIe expansion systems and I/O devices can be dynamically added, hot-swapped, or removed from the system without rebooting the host.

2 Node NTB network: By using up to four x4 PCIe cables, you can realize a connection to another system

3-5 Node NTB Network: A robust 3 and 5-node network can be established without an external PCIe switch by using one or two x4 PCIe cables.

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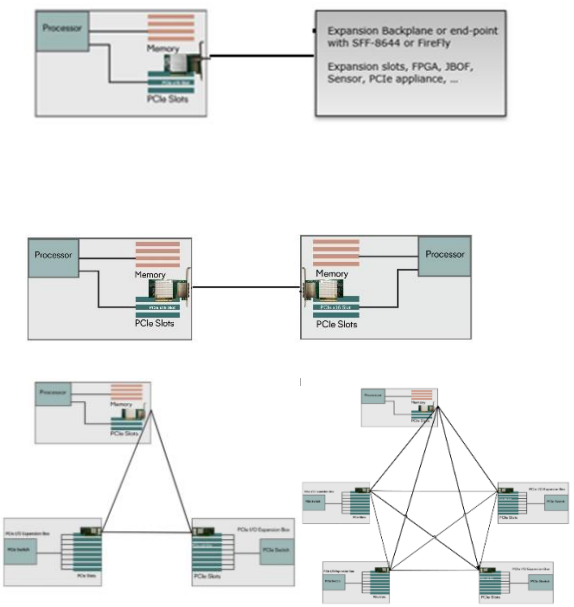


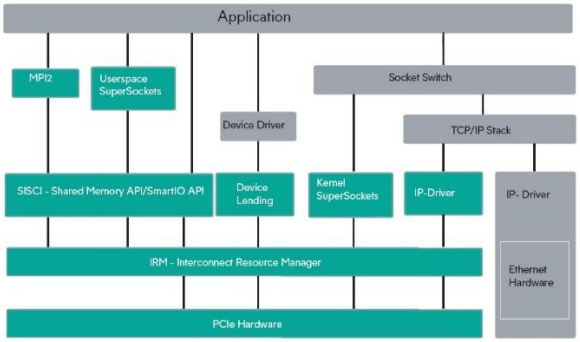
Sample Topology Configurations

eXpressWare PCIe Software

The MXH530 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
- ✓ Board management software

Dolphin's software suite effectively supports both large and small data transfers using DMA and PIO 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 and Windows. The software framework is designed to enable rapid development and deployment of multi-node systems.



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

Specifications

PCI Express	➢ Base Specification 5.0 ➢ External Cabling Specification 5.0 ➢ Card Electromechanical Specification 5.0	Operating Environment	➢ Operating Temperature: 0˚C - 45˚C (32˚F - 113˚F) ➢ Airflow: see the users guide ➢ Relative Humidity: 5% -95% non-condensing
Application to Application latency	~600ns (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, 167.65mm- (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	128 Gb/s per cable port, 512Gb/s in total	Usage Modes	Non-transparent bridging (NTB)
Configuration	DIP-switch	Operating Systems	Windows, Linux
Topologies	➢ Two-node direct cable ➢ 3-5 nodes direct cable ➢ Multi-Node Switch	Regulatory markings	➢ CE ➢ FCC ➢ KCC ➢ EFUP 50 ➢ RCM
		Regulatory Compliant	➢ Reach ➢ RoHS ➢ UL94V-0
Cable Connections	➢ SFF-8614 connector for copper/fiber cables ➢ Supports quad x4 cables. ➢ Passive PCIe 5.0 copper, up to 3 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) 3.3A (max port power) ➢ 3.3V Not connected. ➢ 3.3V Vaux: 100mA (no port power)	Product Codes	➢ MXH530 Host NTB Adapter – Passive Heatsink ➢ MXH530F Host NTB Adapter – Active fan Heatsink
Typical power rating	➢ 12V: 2.5A (Copper Cable) ➢ 3.3V Not connected ➢ 3.3V Aux:100mA (Copper Cables)	Regulatory Approvals	➢ EN 55032:2012 ➢ EN 55035:2017 ➢ EN 61326-1:2013 ➢ ICES-003 ➢ KS C 9832:2019, KS C 9835:2019 ➢ 47 CFR Part 15, Subpart B (Clause 15.107 and 15.109) in conjunction with ANSI C63.4:2014 ➢ CISPR 35:2016 Edition 1.0 (CISPR/I/412/CDV) Korean Harmonized standard, KN 35

June 3rd, 2026