MXH530 PCIe 5.0 x16 NTB Adapter

Features

- ✓ PCI Express Gen5 - 32.0 GT/s per lane
- ✓ Microchip Switchtec® Gen 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 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.
- ✓ 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 to the PCI-SIG External Cabling Specification 5.0 and employs the Microchip Switchtec® PCIe 5.0 PFX switch to facilitate reliable and fast 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 Linux systems. Cabled PCIe expansion systems and IO devices can dynamically be 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 utilizing one or two x4 PCIe cables.

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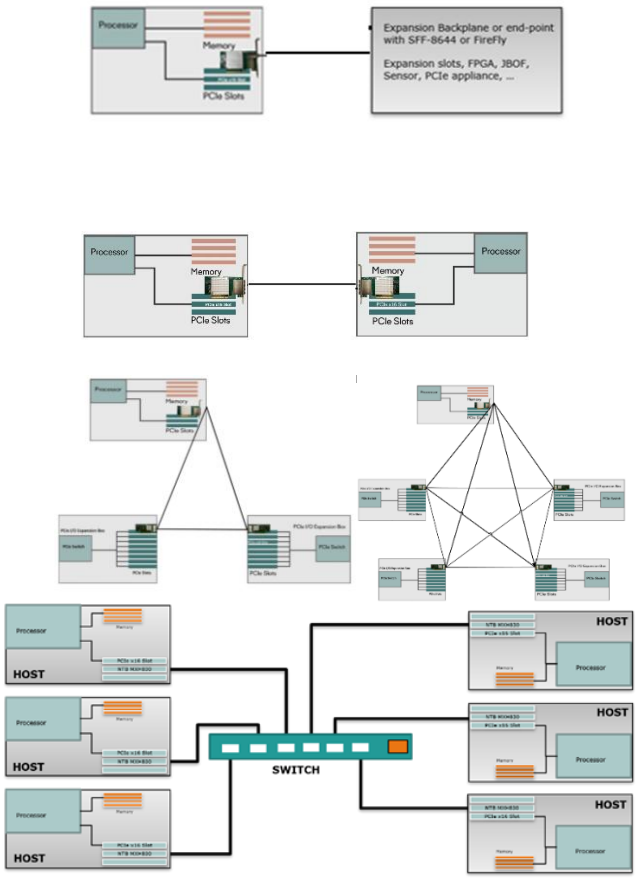
6-60 Node NTB Network
A more extensive configuration can be realised with one or more Dolphin's MXS524, 24 port PCIe Gen 5.0 Switch.



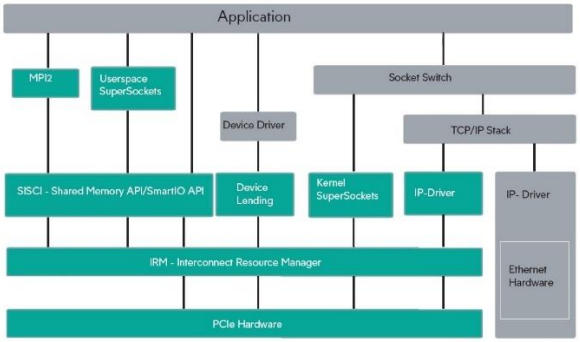
Topology Examples

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 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 and Windows. The software framework is designed to develop and deploy multi-node systems rapidly.



For more details, please visit [www.dolphinics.com/software.](http://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 - 55˚C (32˚F - 131˚F) ➢ Airflow: TBD ➢ 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® Gen5 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-nodes direct cable ➢ 3-5 nodes direct cable ➢ Multi-Node Switch	Pending Regulatory markings	➢ CE ➢ FCC Class B ➢ KCC ➢ Canada/IC ➢ 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 2 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) 500mA (Max port 1 Power)	Product Codes	➢ MXH530 Host NTB Adapter – Passive Heatsink
Typical power rating	➢ 12V: 2.5A (no port power) ➢ 3.3V Not connected ➢ 3.3V Aux: Max 100mA (Copper Cables)	Pending Regulatory Approvals	➢ EN 55032:2012 ➢ EN 55035:2017 ➢ EN 61000-3-2:2014 ➢ EN 61000-3-3:2013 ➢ EN 61010-1:2010 ➢ 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