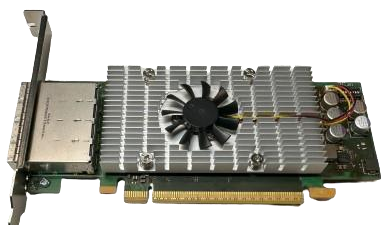


# MXH530 PCIe 5.0 x16 NTB Adapter



## Features



- ✓ Low Profile, Half Length PCIe form factor
- ✓ Microchip Switchtec® Gen 5.0 PFX
- ✓ Full host Clock isolation support
- ✓ Automatic support for host running CFC or SSC
- ✓ Link compliant with PCIe 1.0, 2.0, 3.0, 4.0 and 5.0
- ✓ RDMA support through PIO and DMA
- ✓ Quad SFF-8644 x4 connectors
- ✓ Copper and fibre-optic cable support
- ✓ Link status LEDs through face plate
- ✓ Flash for custom system configuration
- ✓ <500ns – application to application latency.
- ✓ eXpressWare™ software suite license

The card is by default delivered with a passive heat sink, but also available with a fan for open desktop use.

The MXH530 PCIe 5.0 NTB Host Adapter is our High-Performance Gen 5.0 NTB adapter 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.

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 offers full compatibility with our eXpressWare software suite.

[www.dolphinics.com/products/MXH530.html](http://www.dolphinics.com/products/MXH530.html)

## Configurations

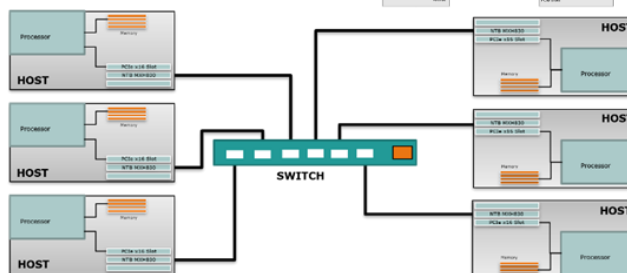
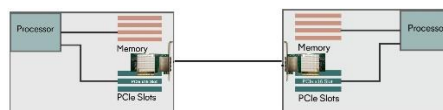
The MXH530 enables the establishment of various PCIe network topologies including:

**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 connection to another system

**3-5 Node NTB Network:** By utilizing one or two x4 PCIe cables, a robust 3 and 5-node network can be established without an external PCIe switch.

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



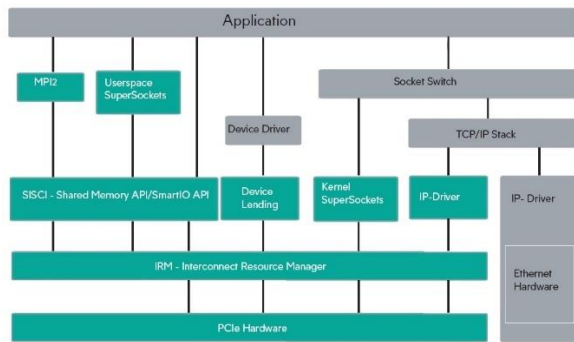
Topology Examples

# eXpressWare PCIe Software

The MXH530 card is bundled with a full license for Dolphin's eXpressWare clustering software, which includes.

- ✓ SISI API - a robust and powerful shared memory programming environment for PCIe
- ✓ Standard TCP/IP drivers
- ✓ SuperSockets socket accelerator software
- ✓ SmartIO - access to remote PCIe devices over PCIe
- ✓ Board management software

Dolphin's software suite uses DMA and PIO data transfer schemes to support large and small data transfers effectively. 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. 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	<ul style="list-style-type: none"> <li>➤ Base Specification 5.0</li> <li>➤ External Cabling Specification 5.0</li> <li>➤ Card Electromechanical Specification 5.0</li> </ul>	Operating Environment	<ul style="list-style-type: none"> <li>➤ Operating Temperature: 0°C - 55°C (32°F - 131°F)</li> <li>➤ Air flow: TBD</li> <li>➤ Relative Humidity: 5% -95% non-condensing</li> </ul>
Application to Application latency	~500ns (system dependent)	Storage Environment	<ul style="list-style-type: none"> <li>➤ Storage Temperature: -40°C to 70°C (-40°F to 158°F)</li> <li>➤ Relative Humidity 95% (non-condensing) at 35°C</li> </ul>
Application to Application Throughput	> 50 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	<ul style="list-style-type: none"> <li>➤ SISI API</li> <li>➤ Super Sockets Berkley Sockets API</li> <li>➤ Microsoft WinSock2/LSP support</li> <li>➤ TCP-IP driver</li> <li>➤ SmartIO</li> <li>➤ Board Management</li> </ul>
Max Link Speeds	64 GB/s	Usage Modes	Non-transparent bridging (NTB)
Configuration	DIP-switch	Operating Systems	Windows, Linux
Topologies	<ul style="list-style-type: none"> <li>➤ Two-nodes direct cable</li> <li>➤ 3-5 nodes direct cable</li> <li>➤ Multi-Node Switch</li> </ul>	Pending Regulatory markings	<ul style="list-style-type: none"> <li>➤ CE Mark</li> <li>➤ FCC Class B</li> <li>➤ UL94V-0 compliant</li> <li>➤ RoHS Compliant</li> </ul>
Cable Connections	<ul style="list-style-type: none"> <li>➤ SFF-8644 connector for copper/fiber cables</li> <li>➤ Supports single x4 cables.</li> <li>➤ Passive PCIe 5.0 copper, up to 2 meters</li> <li>➤ Active PCIe 5.0 copper cables up to 5 meters</li> <li>➤ PCIe 5.0 fiber, up to 100m</li> </ul>	Mounting Brackets	<ul style="list-style-type: none"> <li>➤ Full height Bracket installed.</li> <li>➤ Half-height bracket is included in the shipping box.</li> </ul>
Maximum power rating	TBD	Product Codes	<ul style="list-style-type: none"> <li>➤ MXH530 - Host NTB Adapter – Passive heat sink</li> <li>➤ MXH950F- Host NTB Adapter – Fan sink option</li> </ul>
Typical power rating	TBD	Pending Regulatory Approvals	<ul style="list-style-type: none"> <li>➤ EN 55032:2012</li> <li>➤ EN 55035:2017</li> <li>➤ EN 61000-3-2:2014</li> <li>➤ EN 61000-3-3:2013</li> <li>➤ 47 CFR Part 15, Subpart B (Clause 15.107 and 15.109) in conjunction with ANSI C63.4:2014</li> <li>➤ CISPR 35:2016 Edition 1.0 (CISPR/1/412/CDV) Korean Harmonized standard, KN 35</li> </ul>

15<sup>th</sup> August 2024 Preliminary