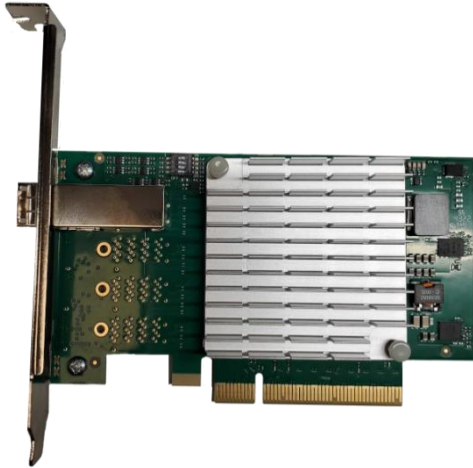


# MXH914 PCIe 4.0 NTB ADAPTER



## Features

- ✓ Low Profile, Half Length PCIe form factor
- ✓ Microchip Switchtec® Gen 4.0 PFX PCIe PM40028
- ✓ Full host Clock isolation support
- ✓ Automatic support for host running CFC or SSC
- ✓ Link compliant with Gen1.0 ,2.0 ,3.0 and 4.0 PCIe
- ✓ RDMA support through PIO and DMA
- ✓ Single SFF-8644 connector
  - PCle4.0 cable
  - PCle Fiber optic cable
- ✓ Copper and fibre-optic cable support
- ✓ Link status LEDs through face plate
- ✓ Flash for custom system configuration
- ✓ <500ns - Cut Through latency.
- ✓ eXpressWare™ software suite license

The MXH914 Gen 4.0 PCI Express NTB Host Adapter represents our introductory-level Gen 4.0 adapter solution. It is designed to accommodate a single x4 PCIe connection and employs the Microchip Switchtec® Gen4 PCIe switch to facilitate host-to-host communication. This adapter serves various purposes, such as clustering and hot-add applications, making it particularly well-suited for linking smaller systems that do not require the complete PCIe 4.0 x16 bandwidth.

Application developers using the MXH914 host adapter can harness its impressive 64 GT/s performance while benefiting from application-to-application latency that remains under 500 nanoseconds. Additionally, it offers full compatibility with our eXpressWare software suite.

[www.dolphinics.com/products/MXH914](http://www.dolphinics.com/products/MXH914)

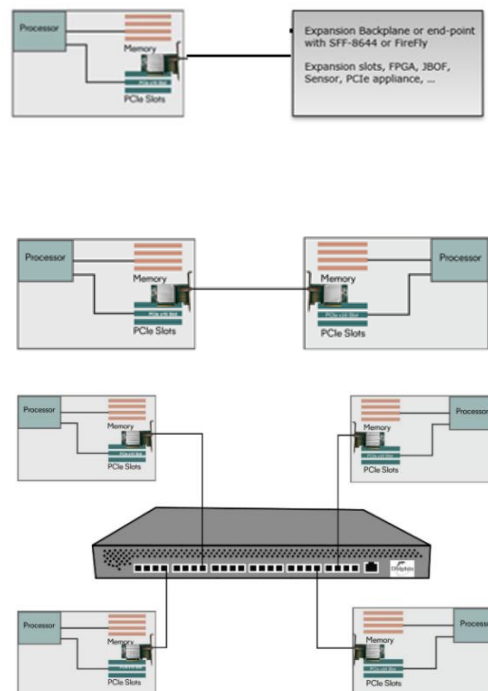
## Configurations

The MXH914 enables the establishment of various PCIe network configurations, including:

**Single-Node Transparent Hot Add:** Dolphin eXpress adds PCIe hot add support with Linux systems. Cabled PCIe expansion systems and IO devices can dynamically be added, hot swapped or removed from the system without the need to reboot the host.

**Two-Node Network:** By utilizing one x4 cable, a robust two-node network can be established, providing full PCIe Gen4 x4 performance between the two connected systems.

**Multiple-Node Network:** larger configuration can be realized with one or more Dolphin's MXS924, 24 port PCIe Gen 4.0 Switch.



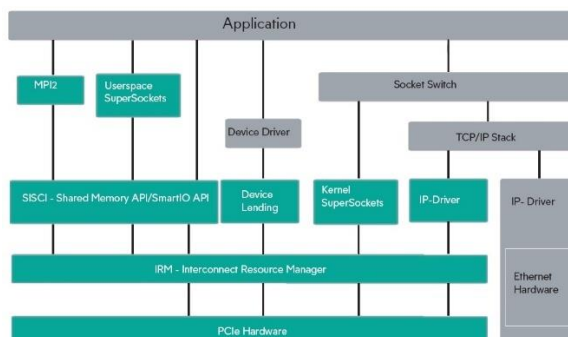
Topology Configurations

## eXpressWare PCIe Software

The MXH914 card is bundle with a full license for the 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
- ✓ Transparent Hot Add

Dolphin's software suite takes advantage of DMA and PIO data transfer scheme to effectively supporting both large and small data transfers. PIO transfers are optimized for small packet transfers, minimizing latency. DMA seamlessly moves data with minimal CPU utilization. The eXpressWare software is compatible with Linux, Windows, and VxWorks. The overall software framework is designed for rapid development and deployment of inter-processor communication systems.



For more detail, please visit [www.dolphinics.com/software](http://www.dolphinics.com/software)

## Specifications

PCI Express	<ul style="list-style-type: none"> <li>➢ Base Specification 4.0</li> <li>➢ External Cabling Specification 4.0</li> <li>➢ Card Electromechanical Specification 4.0</li> </ul>	Operating Environment	<ul style="list-style-type: none"> <li>➢ Operating Temperature: 0°C - 55°C (32°F - 131°F)</li> <li>➢ Relative Humidity: 5% -95% non-condensing</li> </ul>														
		Altitude vs Temperature	<table border="1"> <thead> <tr> <th colspan="2">250 LFM</th> <th colspan="2">350 LFM</th> </tr> </thead> <tbody> <tr> <td>45 (°C)</td> <td>3000m</td> <td>55 (°C)</td> <td>3000m</td> </tr> <tr> <td>35 (°C)</td> <td>4500m</td> <td>45 (°C)</td> <td>4500m</td> </tr> <tr> <td>25 (°C)</td> <td>6000m</td> <td>35 (°C)</td> <td>6000m</td> </tr> </tbody> </table>	250 LFM		350 LFM		45 (°C)	3000m	55 (°C)	3000m	35 (°C)	4500m	45 (°C)	4500m	25 (°C)	6000m
250 LFM		350 LFM															
45 (°C)	3000m	55 (°C)	3000m														
35 (°C)	4500m	45 (°C)	4500m														
25 (°C)	6000m	35 (°C)	6000m														
Application Performance	<ul style="list-style-type: none"> <li>➢ ~500ns latency (application to application)</li> <li>➢ About 7.1 GBytes/s throughput</li> </ul>	Storage Environment	<ul style="list-style-type: none"> <li>➢ Storage Temperature: -40°C to 70°C (-40°F to 158°F)</li> </ul>														
Cut-Through Latency	<500ns	Mechanical Dimensions	<ul style="list-style-type: none"> <li>➢ Low profile, half length, 68.90 mm (2.731 inches) x116.2 mm (4.5 inches)</li> </ul>														
Active Components	Microchip Switchtec® Gen4 PFX Switch	Dolphin Software	<ul style="list-style-type: none"> <li>➢ SuperSockets Berkley Sockets API</li> <li>➢ Microsoft WinSock2/LSP support</li> <li>➢ IPO PCIe driver</li> <li>➢ SISI API</li> <li>➢ Smart IO</li> </ul>														
Max Link Speeds	64GT/s	Usage Modes	Non-transparent bridging (NTB)														
Configuration	DIP-switch	Operating Systems	Windows, Linux, VxWorks														
Topologies	<ul style="list-style-type: none"> <li>➢ Dual-nodes direct cable</li> <li>➢ Multi-Node Switch</li> </ul>	Regulatory	<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 Connector.</li> <li>➢ PCIe 4.0 copper, up to 4m</li> <li>➢ PCIe 4.0 fiber, up to 100m</li> </ul>	Mounting Plates	<ul style="list-style-type: none"> <li>➢ Full height plate installed.</li> <li>➢ Half height plate included with board shipping box</li> </ul>														
Maximum power rating	<ul style="list-style-type: none"> <li>➢ 12 Volt: max 1.49A (no port power) 1.62 A (max cable port power)</li> <li>➢ +3.3 Volt: Not connected.</li> <li>➢ +3.3 Volt AUX: 0.03A</li> </ul>	Product Codes	<ul style="list-style-type: none"> <li>➢ MXH914 - Host NTB Adapter</li> </ul>														
Typical power rating	<ul style="list-style-type: none"> <li>➢ 12 Volt: 1.0 A (no cable port power)</li> <li>➢ +3.3 Volt: Not connected.</li> <li>➢ +3.3 Volt Aux: 0,01 A</li> </ul>	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/1412/CDV) Korean Harmonized standard, KN 35</li> </ul>														