MXH918 PCIe 4.0 x8 NTB Host 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 Gen 1.0, 2.0, 3.0, and 4.0 PCIe
- ✓ RDMA support through PIO and DMA
- ✓ Double SFF-8644 connector
  - PCIe 4.0 copper cable
  - PCIe 4.0 Fiber optic cable
- ✓ Link status LEDs through face plate
- ✓ Flash for custom system configuration
- ✓ <500ns - Cut Through latency.
- ✓ eXpressWare™ software suite license

The MXH918 NTB Host Adapter is our medium performance PCIe Gen 4.0 solution. It is designed to accommodate a single x8 or a dual x4 PCIe connection and employs the Microchip Switchtec® Gen 4.0 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 full PCIe 4.0 x16 bandwidth.

Application developers using the MXH918 host adapter can harness its impressive 128 GT/s performance while benefiting from application-to-application latency under 500 nanoseconds. The MXH918 comes with a license to the eXpressWare software suite.

www.dolphinics.com/products/MXH918.html

Configurations

The MXH918 enables the establishment of various PCIe network configurations, including:

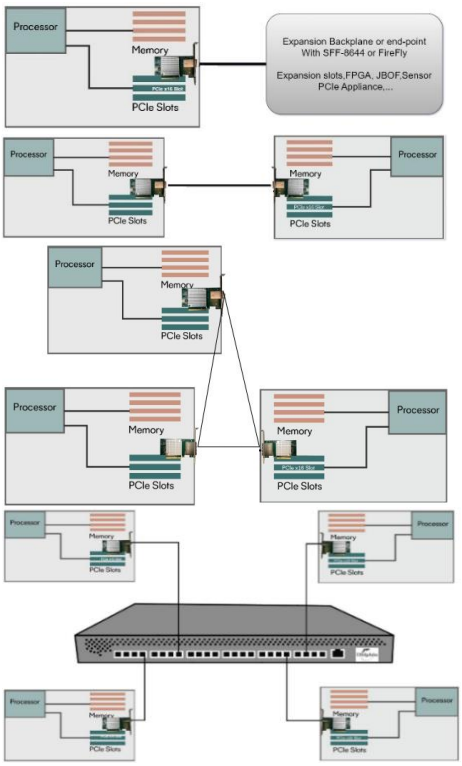
Single-Node Transparent Hot Add: Dolphin eXpressWare adds PCIe hot add support with Linux systems. Cabled PCIe expansion systems and IO devices can dynamically be added, hot-swapped or removed from the system without rebooting the host.

Two Node Network:
By utilizing two x4 cables, a robust 2-node network can be established, providing full PCIe 4.0 x8 performance between the connected systems.

Three Node Network:
By utilizing x4 cables, a robust 3-node network can be established, providing full PCIe 4.0 x4 performance between the connected systems.

Multiple-Node Network:

Larger configurations can be realised using one or more of Dolphin's MXS924, 24 port PCIe Gen 4.0 Switches.



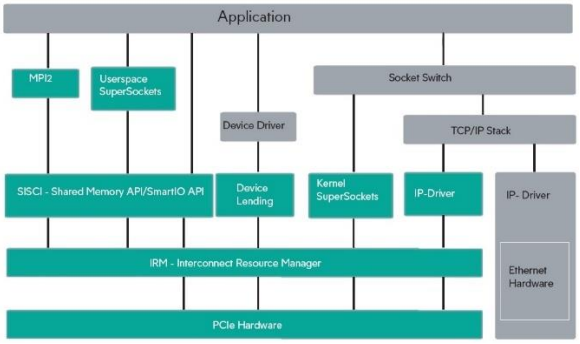
Topology Configurations

eXpressWare PCIe Software

The MXH918 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
- ✓ SuperSockets socket accelerator software
- ✓ SmartIO – Hot and 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 data with minimal CPU utilization. The eXpressWare software is compatible with Linux, Windows, and VxWorks. The software framework is designed to develop and deploy inter-processor communication systems rapidly.



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

Specifications

PCI Express	➢ Base Specification 4.0 ➢ External Cabling Specification 4.0 ➢ Card Electromechanical Specification 4.0	Operating Environment	➢ Operating Temperature: 0˚C - 55˚C (32˚F - 131˚F) ➢ Relative Humidity: 5% -95% non-condensing
		Altitude vs Temperature	**250 LFM** / **350 LFM** 45 (°C) 3000m — 55 (°C) 3000m 35 (°C) 4500m — 45 (°C) 4500m 25 (°C) 6000m — 35 (°C) 6000m
Application Performance	➢ ~500ns latency (application to application) ➢ About 14 GBytes/s throughput (system dependent)	Storage Environment	➢ Storage Temperature: -40˚C to 70˚C (-40˚F to 158˚F) ➢ Relative Humidity 95% (non-condensing) at 35°C
Cut-Through Latency	<500ns	Mechanical Dimensions	➢ Low profile, half-length, 68.90 mm (2.731 inches) x116.2 mm (4.5 inches)
Active Components	Microchip Switchtec® Gen4 PFX Switch	Dolphin Software	➢ Super Sockets Berkley Sockets API ➢ Microsoft WinSock2/LSP support ➢ IPO PCIe driver ➢ SISCI API ➢ Smart IO
Max Link Speeds	128GT/s	Usage Modes	Non-transparent bridging (NTB)
Configuration	DIP-switch	Operating Systems	Windows, Linux, VxWorks
Topologies	➢ Two nodes x8 ➢ Three-nodes direct x4 cable ➢ Multi-Node using MXS924 Switch	Regulatory	➢ CE Mark ➢ FCC Class B ➢ UL94V-0 compliant ➢ RoHS Compliant
Cable Connections	➢ SFF-8644 connector for copper/fiber cables ➢ Supports double x4 Connector. ➢ PCIe 4.0 copper, up to 4m ➢ PCIe 4.0 fiber, up to 100m	Mounting Plates	➢ Full height plate installed. ➢ The half-height plate is included with a board shipping box.
Maximum power rating	➢ 12 Volt: max 1.53A (no port power) 1.79 A (max cable port power) ➢ +3.3 Volt: Not connected. ➢ +3.3 Volt AUX: 0.03A	Product Codes	MXH918 - Host NTB Adapter
Typical power rating	➢ 12 Volt: 1.0 A (no cable port power) ➢ +3.3 Volt: Not connected. ➢ +3.3 Volt Aux: 0,01 A	Regulatory Approvals	➢ EN 55032:2012 ➢ EN 55035:2017 ➢ EN 61000-3-2:2014 ➢ EN 61000-3-3:2013 ➢ 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