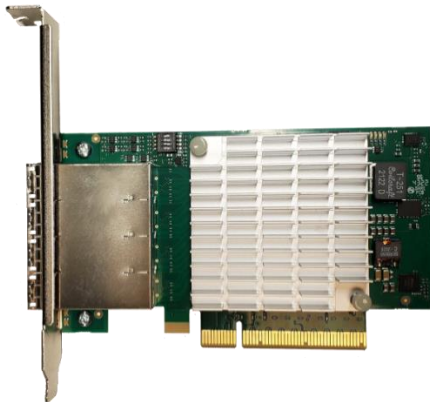# MXH916 PCIe 4.0 NTB HOST Adapter

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 Gen1.0, 2.0, 3.0, and 4.0 PCIe
- ✓ RDMA support through PIO and DMA
- ✓ Four SFF-8644 connectors
    - PCIe 4.0 cable
    - PCIe 4.0 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 MXH916 PCIe 4.0 NTB Host Adapter is our medium performance scale out solution. By using PCIe 4.0 cables you can create a robust 3 or 5 node cluster without using the MXS924 switch product.

It particularly well-suited for linking smaller systems that do not require the full PCIe 4.0 x16 bandwidth.

Application developers using the MXH914 host adapter can harness its impressive 128 GT/s performance while benefiting from application-to-application latency under 500 nanoseconds. Additionally, it offers full compatibility with our eXpressWare software suite.
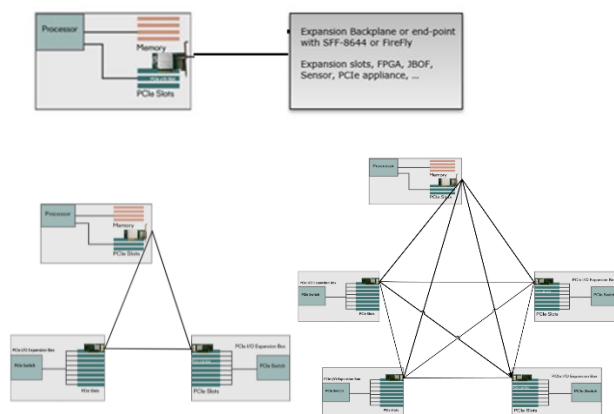
www.dolphinics.com/products/MXH916.html

Configurations

The MXH916 enables the establishment of various PCIe network configurations, including:

Single-Node Transparent Hot Add: Dolphin SmartIO supports 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.

Three and Five-Node Network: By utilizing PCIe cables, a robust 3 and 5-node network can be established without a PCIe switch.
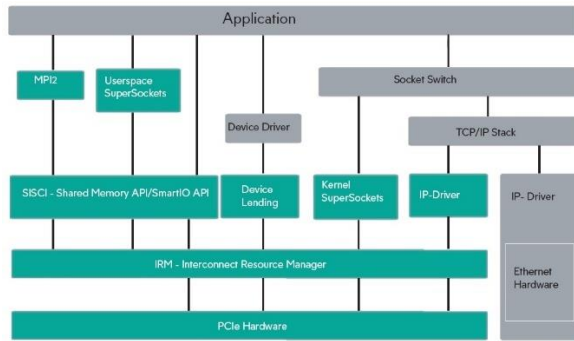

Topology Configurations

eXpressWare PCIe Software
PCI Express® Network

The MXH916 card is bundled with a full license for the 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 - access to remote PCIe devices over PCIe
- ✓ Board management software
- ✓ Transparent Hot Add

Dolphin's software suite uses DMA and PIO data transfer schemes to effectively support 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 software framework is designed to develop and deploy inter-processor communication systems rapidly.

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

Specifications

PCI Express	➢ Base Specification 4.0 ➢ External Cabling Specification 4.0 ➢ Card Electromechanical Specification 4.0
Application Performance	➢ ~500ns latency (application to application) ➢ About 14 GBytes/s throughput (system Dependent)
Cut-Through Latency	<500ns
Active Components	Microchip Switchtec® Gen4 PFX Switch
Max Link Speeds	128 GT/s
Configuration	DIP-switch
Topologies	➢ Dual-nodes direct cable ➢ Multi-Node Switch
Cable Connections	➢ SFF-8644 connector for copper/fiber cables ➢ Supports four x4 Connector. ➢ PCIe 4.0 copper, up to 4m ➢ PCIe 4.0 fiber, up to 100m
Maximum power rating	➢ 12 Volt: max 1.66A (no port power) 2.18 A (max cable port power) ➢ +3.3 Volt: Not connected. ➢ +3.3 Volt AUX: 0.03 A
Typical power rating	➢ 12 Volt: 1.05 A (no cable port power) ➢ +3.3 Volt: Not connected. ➢ +3.3 Volt Aux: 0,01 A

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
Storage Environment	➢ Storage Temperature: -40˚C to 70˚C (-40˚F to 158˚F) ➢ Relative Humidity 95% (non-condensing) at 35˚C			
Mechanical Dimensions	➢ Low profile, half-length, 68.90 mm (2.731 inches) x116.2 mm (4.5 inches)			
Dolphin Software	➢ Super Sockets Berkley Sockets API ➢ Microsoft WinSock2/LSP support ➢ IPO PCIe driver ➢ SISCI API ➢ Smart IO			
Usage Modes	Non-transparent bridging (NTB)			
Operating Systems	Windows, Linux, VxWorks			
Regulatory	➢ CE Mark ➢ FCC Class B ➢ UL94V-0 compliant ➢ RoHS Compliant			
Mounting Brackets	➢ Full height Bracket installed. ➢ The half-height bracket is included with a board shipping box.			
Product Codes	MXH916 - Host NTB Adapter			
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			