MXS610 PCIe 6.0 Switch



Features

- ✓ PCIe 6.0 cabled switch
- ✓ 10 x16 CopprLink external ports (CDFP)
  - Copper cables
  - Fiber cables
- ✓ 64 GT/s per lane
- ✓ 1024 GT/s per port
- ✓ Active optical cable support (CDFP)
- ✓ Sideband support
- ✓ REFCLOCK in and out
- ✓ Remote management: OpenBMC, Redfish
- ✓ Hot pluggable, redundant PSUs
- ✓ Supported by Dolphin ExpressWare:
  - SISCI API
  - PCIe Multicast
  - SuperSockets
  - PCIe Hot-Add
  - PCIe Device lending
  - PCIe fail-over
- ✓ 19 Inch 1U rack mountable

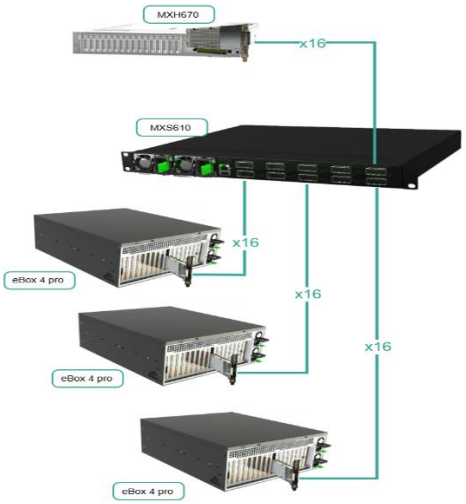
Dolphin's MXS610 is a 10-port PCI Express 6.0 switch in a compact 1U top-of-rack form factor. The MXS610 is delivering 1024 GT/s of non-blocking bandwidth per port with ultra-low latency. Based on Microchip Switchtec PFX technology, it provides a powerful and flexible platform for PCIe I/O switching, large-scale PCIe fanout to expansion and storage systems, and high-throughput PCIe clustering.
The MXS610 uses standard PCIe cables to create scalable fabric configurations, with multiple switches interconnected to support larger deployments. Firmware-selectable transparent and Non-Transparent Bridging (NTB) modes enable both I/O expansion and clustering applications. Support for PCIe peer-to-peer and device-to-device communication, device migration, and multicast provides additional configuration flexibility.

Each connection supports PCIe generations 1.0 through 6.0, enabling integration with existing and next-generation PCIe equipment. Dolphin's eXpressWare software suites simplify operation and enable dynamic reconfiguration of the PCIe fabric.

www.dolphinics.com/products/MXS610.html

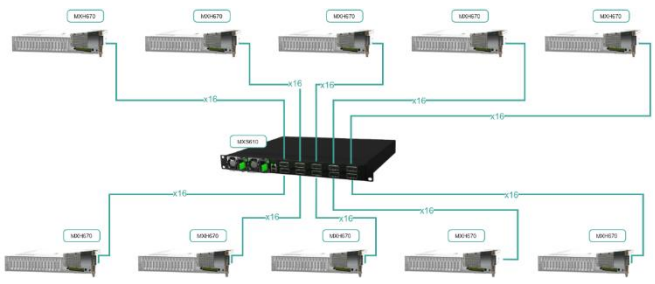
PCIe IO Expansion

The MXS610 switch, used with the PCIe 5.0 MXH572 or PCIe 6.0 MXH672, supports standard I/O expansion, connecting one server to multiple PCIe Devices or PCIe Expansion chassis. Switch configurations supporting multiple hosts, switch partitioning, and fail-over configurations can be deployed. The PCIe fabric will be managed and configured through the Ethernet port using Redfish APIs. The figure below shows a typical I/O expansion setup using the MXS610 and Dolphin's eBox 4 Pro Expansion chassis. Up to 9 expansion chassis can be connected to a single switch/computer.



PCIe Clustering / Networking

For host-to-host communication, the MXS610 can be combined with Dolphin's PCIe 5.0 MXH570 or PCIe 6.0 MXH670 Host Adapters. Operating in Non-Transparent Bridging mode, Dolphin has solved the strict power-on requirements normally associated with PCI Express. Hosts, cables, and the switch can be hot-swapped and power-cycled in any order, providing real plug-and-play as normally expected from networking components. The figure below shows a typical 10-node cluster network.

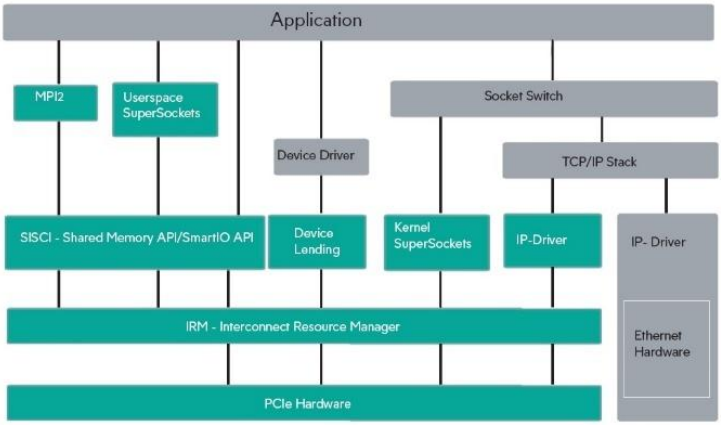


eXpressWare PCIe Software

The MXS610 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. PIO transfers are optimized for small packet transfers, minimizing latency. DMA seamlessly moves large data packets with minimal CPU utilization. eXpressWare is compatible with Linux and Windows. The software framework is designed to rapidly develop and deploy multi-node systems.



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

Specifications

PCI Express	➢ PCIe 6.0 ➢ CopprLink External	Operating Environment	➢ Operating Temperature: 0˚C - 40˚C (32˚F - 113˚F) ➢ Relative Humidity: 5% -95% non-condensing ➢ Redundant Fans
Application Performance	100 ns port latency	Storage Environment	➢ Storage Temperature: -25˚C to 70˚C (-40˚F to 158˚F) ➢ Relative Humidity: 95% (non-condensing) at 35°C
Active Components	Microchip Switchtec® PCIe® Gen 6 PFX Switch	Mechanical Dimensions	1U, 19-inch rack-mountable chassis 440mm(W) x 300mm(D) x 45mm(H)
		Management	➢ PCIe In-band management ➢ Open BMC and Redfish ➢ USB service port ➢ Status and alert LEDs
Software	eXpressWare	Ethernet	RJ45 - 1Gb / 100Mb Speed
Power Consumption	➢ Max power consumption with copper cables: 120W ➢ Max power consumption with fiber cables: 250W	Power Supply	Redundant, hot-pluggable CRPS PSU 100-240V AC 50-60Hz
EMC and Safety (Pending)	EMC, Class A: ➢ FCC Title 47, Part 15 ➢ ICES-003 ➢ EU EMC ➢ KCC Safety, IEC/EN/UL 62368-1: ➢ caULus, NRTL ➢ EU LVD ➢ CB cert ➢ CE mark	Environmental	➢ EU Reach ➢ EU RoHS ➢ EU POPs ➢ EU WFD ➢ EU WEEE ➢ China RoHS, EFUP 50 ➢ US TSCA Section 8(a)(7) PFAS Reporting Rule (40 CFR Part 705) ➢ US Minnesota PFAS reporting (Minn. Stat. § 116.943) ➢ US California Proposition 65

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