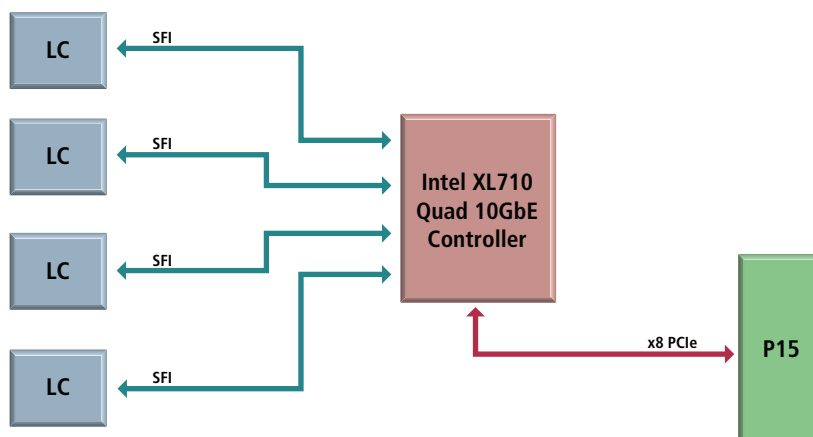
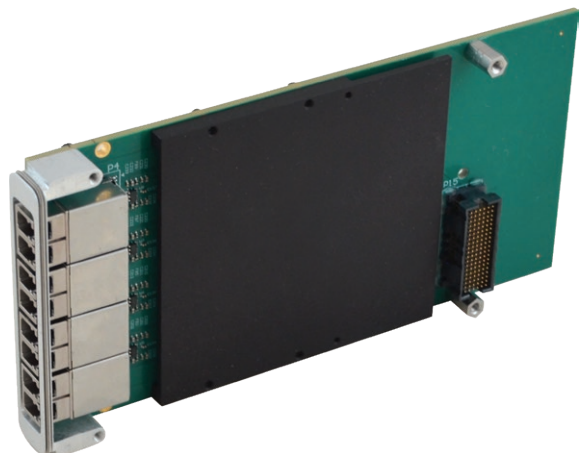


XMC640 Series 10-Gigabit Ethernet Network Interface Card (NIC)



Up To Four LC optical ports ♦ Intel® XL710 Controller ♦ PCIe Gen 3 x8 ♦ Extended temperature operation

Description

Acromag's XMC640 modules provide up to four 10-GbE interface ports. Rugged RJ fiber optic transceivers support duplex PC & UPC LC cables.

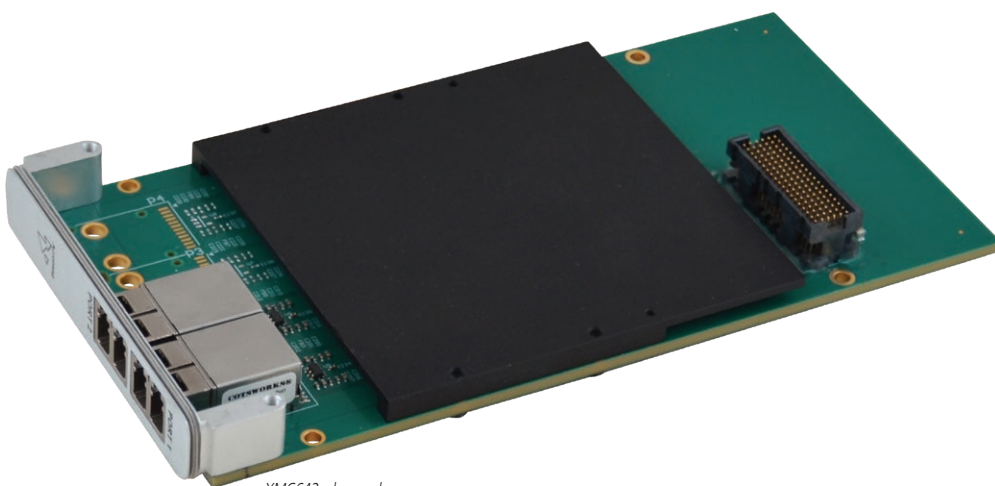
[Intel's XL710 quad-port 10-gigabit Ethernet controller](#) delivers high-performance and offers many powerful networking capabilities. Advanced virtualization, intelligent offload and accelerator technologies optimize network performance.

Combining the intelligent off-loading features of the XL710 controller with the processing power of a Xeon-D processor can deliver outstanding performance levels. Together, the two Intel devices provide a balanced hybrid solution of compute and off-load to achieve optimal performance and efficiency in an embedded system.

Designed for COTS applications, these rugged XMC mezzanine modules offer a high-density, high-performance solution for network interface applications. They are ideal for use in defense, aerospace, industrial, and scientific research computing systems.

Key Features & Benefits

- Intel XL710 controller with four independent 10-GbE interfaces
- Duplex LC connectors support 10GBASE-SX connections
- PCIe x8 Gen 3 interface
- IEEE 1588 and 802.1AS precision timing
- IEEE 802.3az Energy Efficient Ethernet (EEE)
- Advanced traffic steering capability increases transaction rates and reduces latency
- VMDq for emulated path
- Dynamic load balancing
- Flexible port partitioning (PCI-SIG SR-IOV)
- Tx/Rx IP, TCP/UDP/SCTP, IPv4/IPv6 checksum offloads lower processor usage
- Jumbo frame packet support up to 9.5KB
- Up to -40 to 85°C operation
- Linux® and Windows® support



XMC642 shown above.

XMC640 Series 10-Gigabit Ethernet Network Interface Card (NIC)

Performance Specifications

■ Ethernet Interface

Ethernet Controller
Intel® XL710

Network Interface

Two or four fiber optic 10-Gigabit Ethernet interfaces.
Complies with IEEE 802.3-2008 standard for Ethernet.
Complies with IEEE 802.3ae-2002 amendment for 10 Gb/s Ethernet.

Throughput

10,000 MB/s (10Gb/s) per port, full-duplex.
Total aggregate rate limited by PCIe host interface.

■ XMC Host Interface

XMC Compliance

Complies with ANSI/VITA 42.0 specification for XMC module mechanicals and connectors.
Complies with ANSI/VITA 42.3 specification for XMC modules with PCI Express interface.

PCI Express

Conforms to PCI Express Base Specification, Rev. 3.1.
PCIe 8-lane (x8) Gen 3 interface operates at a bus speed of 8 Gbps per lane per direction.
Gen 3 PCIe interface requires VITA 61 connectors.
Gen 2 PCIe interface supported w/ VITA 42 connectors.

■ Electrical / Mechanical

Optical Connectors

Two or four rugged RJ fiber optic transceivers supporting duplex PC & UPC LC cables.
850nm VCSEL transmitter and PIN receiver.
Typical reach of 82m on OM2, 300m on OM3, and 400m on OM4.
SFF-8472 compliant control and diagnostics monitor interface.
Compliant to IEC-60825-1, Class 1 laser eye safe.

XMC Connectors

P15 for PCIe bus via eight high-speed serial lanes.
VITA 42

Power Requirement

XMC642 (dual port):
3.3V: 512mA idle, 567mA active, 650mA max.
5V: 370mA idle, 450mA active, 550mA max.
12V: 388mA idle, 408mA active, 500mA max.
Power: 2.23W idle, 2.52W active, 5.47W max.

XMC644 (quad port):

3.3V: 806mA idle, 912mA active, 1000mA max.
5V: 400mA idle, 475mA active, 575mA max.
12V: 391mA idle, 439mA active, 525mA max.
Power: 2.98W idle, 3.49W active, 6.20W max.

Dimensions

Single-width XMC. 149 x 74 x 10 mm.
Weight (XMC642): 134.3 g.
Weight (XMC644): 147.0 g.

■ Environmental

Operating Temperature Range

-40 to 85°C (200 LFM airflow).

Storage Temperature

-55 to 125°C.

Relative Humidity

5 to 95% non-condensing.

Shock

Designed to comply with VITA 47 Class OS1.

Vibration

Designed to comply with VITA 47 Class V1.

■ Software Support

Linux® and Windows® Systems

Intel XL710 Ethernet Controller drivers available at www.intel.com.

Ordering Information

■ XMC Modules

XMC642-01-42-30

10GbE NIC with two LC fiber optic ports and VITA 42 connectors.

XMC644-01-42-30

10GbE NIC with four LC fiber optic ports and VITA 42 connectors.

■ Carrier Cards

See acromag.com for a full list of XMC carrier cards for PCIe and VPX architectures.