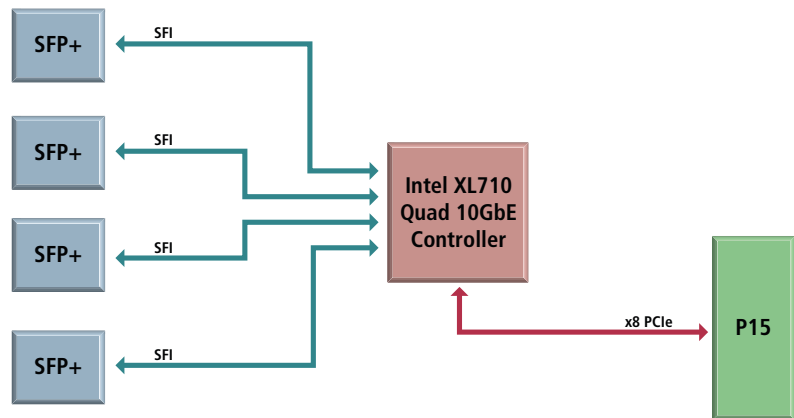
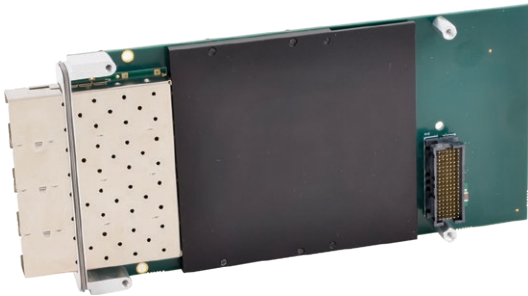


# XMC Modules

## XMC631 10-Gigabit Ethernet Network Interface Card (NIC)



Quad SFP+ ports ♦ Intel® XL710 Controller ♦ PCIe Gen 3 x8 interface ♦ Extended temperature operation

### Description

Acromag's XMC631 module provides up to four 10-GbE interface ports. Different models are available for extended temperature operation and [VITA 42/61 connector](#) options to support a PCIe Gen 3 interface. Four SFP+ ports support optical or copper cabling.

[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

- Industry-leading Intel XL710 controller with four independent 10-GbE interfaces
- Four SFP+ ports support 10GBASE-SR, 10GBASE-LR, 10GBASE-T and 10GSFP+Cu 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
- CE compliant.



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## XMC631 10-Gigabit Ethernet Network Interface Card (NIC)



### Performance Specifications

#### ■ Ethernet Interface

Ethernet Controller  
Intel® XL710

#### Network Interface

Four SFP+ 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

##### SFP+ Connectors

Four front panel connector cages for insertion of SFP+ transceiver modules supporting optical or copper cables.

Complies with SFF-8431 specification.

##### XMC Connectors

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

Available as VITA 42 standard or VITA 61 upgrade for PCIe Gen 3 applications.

##### Power Requirement

3.3V: 250mA idle, 250mA active, 400mA max.

5.5V: 470mA idle, 565mA active, 1100mA max.

12V: 220mA idle, 260mA active, 485mA max.

Power: 3.0W idle, 3.5W active, 6.2W max.

##### Dimensions

Single-width XMC. 149 x 74 x 10 mm.

Unit weight: 104.2 g.

#### ■ Environmental

Operating Temperature Range

Operation - Industrial: 0 to 70°C.

Operation - Extended: -40 to 85°C  
(200 lfm airflow min.)

Storage: -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.

#### Certifications

CE compliant.

#### ■ Software Support

Linux® and Windows® Systems

Intel XL710 Ethernet Controller drivers available at [www.intel.com](http://www.intel.com).

### Ordering Information

#### ■ XMC Modules

[Go to on-line ordering page >](#)

##### XMC631-42-20

10GbE NIC with quad SFP+ front I/O, VITA 42, industrial temperature ratings

##### XMC631-61-20

10GbE NIC with quad SFP+ front I/O, VITA 61, industrial temperature ratings

##### XMC631-42-30

10GbE NIC with quad SFP+ front I/O, VITA 42, extended temperature ratings

##### XMC631-61-30

10GbE NIC with quad SFP+ front I/O, VITA 61, extended temperature ratings

#### ■ Accessories

##### SM10G-LR

10-GbE long reach single-mode optical SFP+ module.

##### SM10G-SR

10-GbE short reach multi-mode optical SFP+ module.

##### TAPCABLE1M

SFP+ cable, SFP+ to-SFP+ (male-male) connectors, 1 meter.

#### ■ Carrier Cards

PCIe Carriers

VPX Carriers

