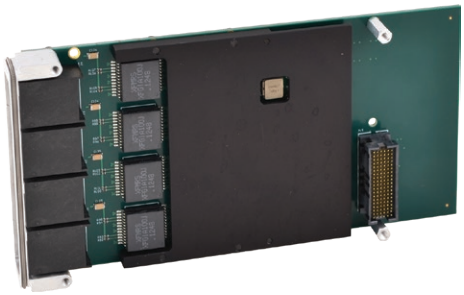
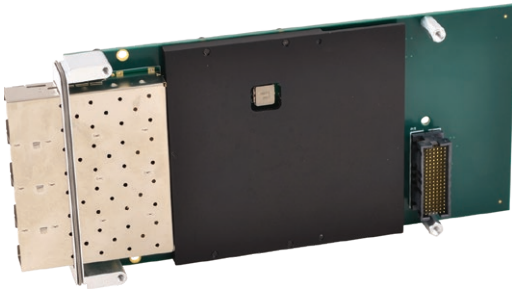
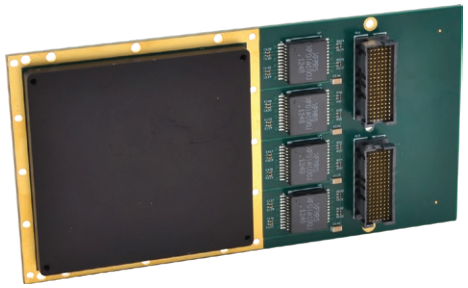
XMC Modules

XMC610 Quad-port Gigabit Ethernet XMC NIC Card

CE RoHS Compliant 2 YEAR WARRANTY







Quad RJ45, SFP, or rear ports ◆ Intel® I350 Controller ◆ Conduction-cooled version available

Description

Models
XMC611: RJ45 connectors
XMC612: SFP connectors
XMC613: Rear I/O connectors

Acromag's XMC610 series provides up to four independent gigabit Ethernet interface ports. Different models feature RJ45, SFP, or rear connectors with conduction cooling support. Intel's I350 quad gigabit Ethernet controller delivers high-performance and offers many powerful networking capabilities.

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

Key Features & Benefits

- Four independent 1-gigabit Ethernet interfaces
- Industry-leading Intel I350 Ethernet controller
- Front or rear I/O access (RJ45, SFP, or P16)
- XMC PCIe x4 Gen 2 interface
- Up to 5Gbps bus speed per lane
- Supports fiber optic or copper media
- 10/100/1000 Mbps data rates
- 3.3V low power design
- -40 to 85°C operation
- Linux®, Windows®, and VxWorks® support
- CE compliant.

Intel I350 Features

IEEE 802.3 Auto-negotiation – Automatic link configuration for speed, duplex, & flow control.

IEEE 1588 and 802.1AS Precision Timing – Time-stamping and synchronization of time sensitive applications. Distribute common time to connected devices.

IEEE 802.3az Energy Efficient Ethernet (EEE) – Power consumption is reduced by approximately 50% during idle state.

DMA Coalescing – Reduces platform power consumption by coalescing, aligning, and synchronizing DMA transfers. Enables synchronizing port activity & power management of memory, CPU, and other internal circuitry.

8 Tx and Rx Queue Pairs per Port – Supports VMware NetQueue and Microsoft VMQ

Flexible Port Partitioning (PCI-SIG SR-IOV) – Up to 32 Virtual Functions (VFs) appear as Ethernet Controllers in Linux OSes that can be assigned to VMs, Kernel processes, or teamed using Linux Bonding Drivers

TCP/UDP, IPv4/IPv6 Checksum Offloads – Extended Tx descriptors provide increased offload capabilities

Jumbo Frame Packet Support – Improves system performance related to handling of network data on multiprocessor systems.

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Tel 248-295-0310 ■ solutions@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

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Performance Specifications

Communication

Ethernet interface
Four 1-Gigabit Ethernet interfaces.
XMC611: Front, four RJ45 ports.
XMC612: Front, four SFP ports.
XMC613: Rear, four 1000BASE-T via P16

Throughput
XMC611 and XMC613 supports 10/100/1000 Mb/s data rate auto-negotiation.

PCI Express
PCIe 4-lane (x4) Gen 2.0 interface operates at a bus speed of 5 Gbps per lane per direction.

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.

Electrical/Mechanical Interface: Single-width module.

Software Support

Linux®, Windows®, and VxWorks® systems
Drivers available with support for all NIC functions.
See www.acromag.com for more information.

Electrical

PCIe Interface x4
Complies with VITA 42.3 XMC PCIe Standard.

JTAG Interface
Complies with IEEE 1149.1.

RJ45 Interface (XMC611)
Four 1000BASE-T ports complying with IEEE 802.3.

SFP Interface (XMC612)
Four ports complying with INF-8074i SFP Specification.

P16 XMC Rear I/O (XMC613)
Four 1000BASE-T ports complying with IEEE 802.3.

SFP connectors
Four SFP module front I/O ports.

Environmental

Operating temperature
-40 to 85°C.

Storage temperature
-55 to 125°C.

Relative humidity
5 to 95% non-condensing.

Power requirements
XMC611 and XMC613: 3.3V (±5%): 3.7W typical.
XMC612: 3.3W (±5%): 2.3W typical.
All ports active.
5V, 12V: not used on all models.

Weight
XMC611: 83.2 g
XMC612: 98.5 g
XMC613: 78.5 g

Certifications
CE Compliant

Ordering Information

XMC Modules

XMC611
Gigabit Ethernet interface module with RJ45 connectors, lead-free.

XMC612
Gigabit Ethernet interface module with SFP optical connectors, lead-free.

XMC613
Gigabit Ethernet interface module with rear I/O connectors, conduction-cooled, lead-free.

Carrier Cards

PCIe Carriers

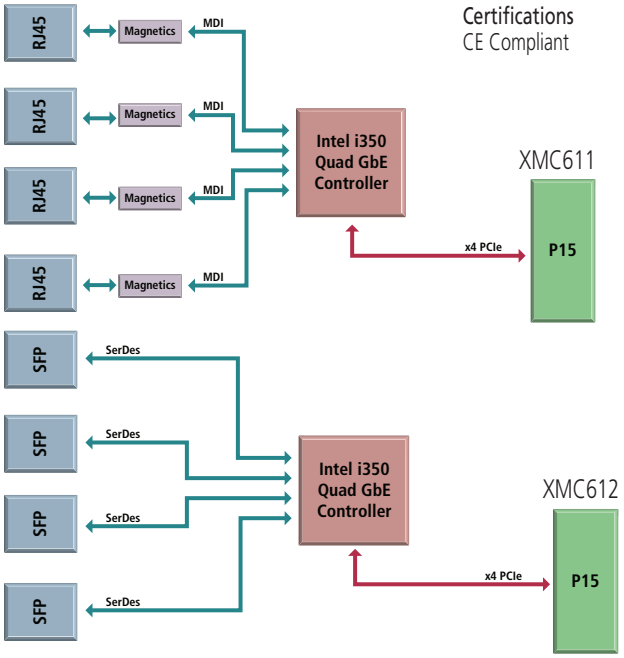
VPX Carriers

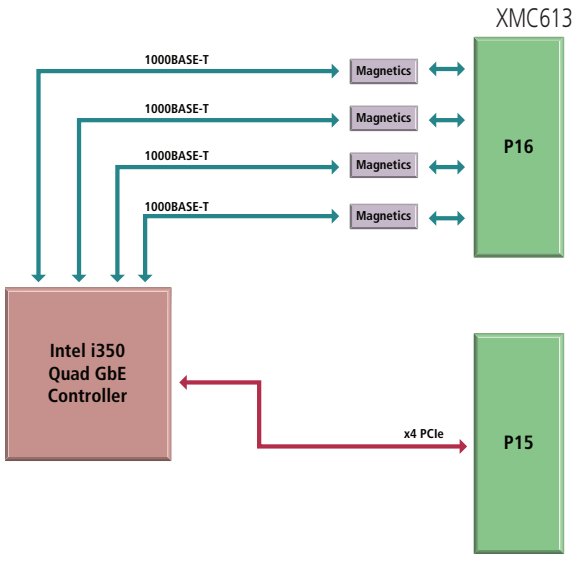
Accessories

5028-449
SFP cable, SFP-to-SFP (male-male) connectors, 1 meter.

5028-452
SFP transceiver, MSA, 1000BASE-SX multi-mode Fiber.

5028-455
SFP transceiver, MSA, 1000Base-T RJ45 copper.





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