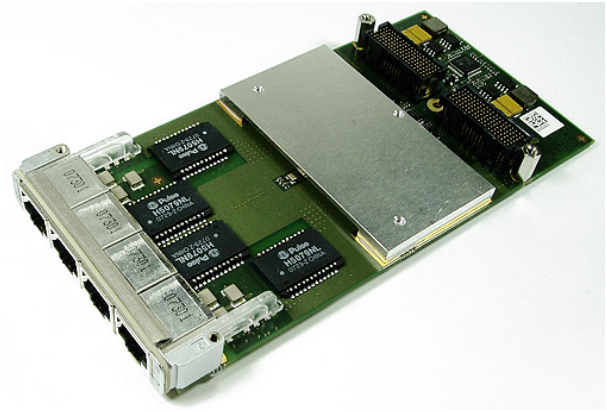
Embedded Solutions

P602 - Quad Redundant Gigabit Ethernet XMC



- **Four 10/100/1000Base-T channels**
- **2 XMC connectors with 1x 4 PCIe® link on each connector**
- **Alternatively two redundant channel pairs**
- **4 RJ45 connectors at front**
- **Full and half duplex**
- **1.5 kV electrical isolation**

The P602 is a Gigabit Ethernet XMC mezzanine card suitable for any XMC compliant single-board computer or host carrier board in any type of bus system, i.e. CPCI, PXI™, VME or on any type of stand-alone SBC. Compared to PMC, the XMC standard defines a different board-to-board connector for support of PCI Express®. The four Ethernet channels on the P602 are provided by two Ethernet controllers with two lines each. Each of the two XMC connectors supports one link with up to four lanes. With a specific set-up the two lines inside each Ethernet controller can be used as a redundant channel pair. In this mode one line is monitored by the other line and the controller recognizes when an error occurs.
The P602 is typically suited as an extension for Windows® and Linux based systems with a heavy demand for multiple and ultra-fast communication requirements. As such it is used in high-bandwidth multi-channel communication applications in networked appliances such as base stations, routers, switches, gateways, residential gateway controllers, etc. Main target markets comprise telecom, medical engineering and transportation.
For use in rugged environments the P602 is delivered with a passive heat sink and is prepared for conformal coating.Equipped with Intel® components that come exclusively from the Intel® Embedded Line, the P602 has a guaranteed minimum standard availability of 5 years.

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Technical Data

Ethernet
- Four 10/100/1000Base-T Ethernet channels at front panel
- RJ45 connectors at front panel
- Two independent dual-port Ethernet controllers
  - Fully integrated Gigabit Ethernet Media Access Controllers (MAC) and physical layer ports (PHY)
  - 48kB per port on-chip packet buffer
  - Full duplex and half duplex operation
- Ethernet controllers are connected by two PCIe® links with four lanes each
- Two LEDs per channel to signal LAN Link, Activity status and connection speed (10/100/1000Base-T)

XMC Characteristics
- Compliant with XMC standard VITA 42.3-200x
- XMC connectors P15 and P16 assembled

Peripheral Connections
- Via front panel on four RJ45 connectors

PCI Express®
- Two links with four lanes each to connect local 1000Base-T Ethernet controllers (1GB/s per channel in each direction)
- One link with four lanes on XMC connector P15 and one on P16

Electrical Specifications
- Isolation voltage: 1.5kV DC electrical isolation between isolated side and digital side
- Supply voltage/power consumption:
  - +5V or +12V (-5%/+5%), 1.4A typ. (+5V), 600mA typ. (+12V)
  - +3.3V (-5%/+5%), 100mA typ.
- MTBF: 920,841h @ 40°C according to IEC/TR 62380 (RDF 2000)

Mechanical Specifications
- Dimensions: conforming to XMC standard VITA 42.0-200x
- Weight: 106 g (with heat sink)

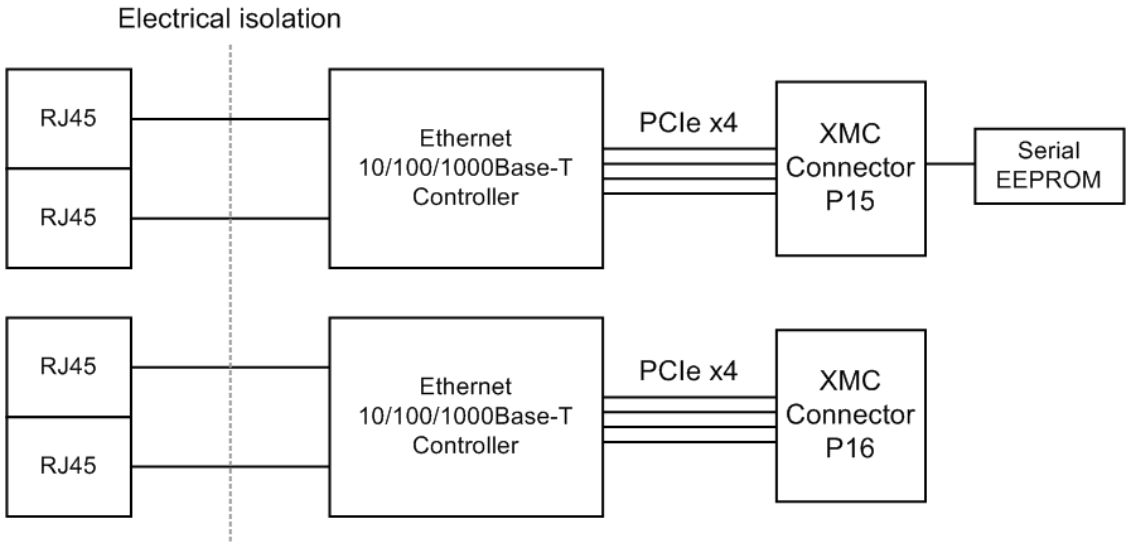
Environmental Specifications
- Temperature range (operation):
  - 0..+55°C
  - Industrial temperature range on request
  - Airflow: min. 10m³/h
- Temperature range (storage): -40..+85°C
- Relative humidity (operation): max. 95% non-condensing
- Relative humidity (storage): max. 95% non-condensing
- Altitude: -300m to + 3,000m
- Shock: 15g/11ms
- Bump: 10g/16ms
- Vibration (sinusoidal): 2g/10..150Hz
- Conformal coating on request

Safety
- PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers

EMC
- Tested according to EN 55022 (radio disturbance), IEC1000-4-2 (ESD) and IEC1000-4-4 (burst)

Software Support
- Drivers from Intel® for Windows® and Linux

Diagram


Electrical isolation
RJ45
RJ45
Ethernet
10/100/1000Base-T
Controller
PCIe x4
XMC
Connector
P15
Serial
EEPROM
RJ45
RJ45
Ethernet
10/100/1000Base-T
Controller
PCIe x4
XMC
Connector
P16

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Ordering Information

Standard Hardware

15P602-00	2 XMC connectors, 1x4 PCIe link on each XMC connector, 0..+55°C

Software: Windows

13T001-70	Windows® network driver (Intel®) for F14, F15, F17, F18, D9, D6, D7, D601, A19, A20 and P601, P602

Documentation

20P602-00	P602 User Manual

For the most up-to-date ordering information and direct links to other data sheets and downloads, see the P602 online data sheet under » www.men.de.

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