

## ► Dual Gigabit Ethernet PMC Adapter

The Dual Gigabit Ethernet PMC (PCI Mezzanine Card) Adapter provides dual 10/100/1000 Mbps Ethernet communications links on either copper or fibre media. The adapter is available in both conduction-cooled (CC) and air-cooled versions : ruggedised, industrial and commercial.

### Architecture

The Dual Gigabit Ethernet PMC Adapter uses a custom intelligent ASIC for the control of the Gigabit Ethernet MACs (Media Access Controllers). The ASIC removes protocol processing overhead from the host processor, thus providing for higher net data throughput.

The ASIC incorporates Virtual Cable Tester (VCT) technology for advanced cable diagnostics. VCT enables the system to pinpoint the location of cabling issues down to a meter or less, reducing network installation and support costs.

### Features

- A state-of-the-art ASIC enables the adapter to support the PCI-bus, ensuring 32-bit and 64-bit compatibility and maximum performance, while reducing CPU utilisation.
- Dual channels provide redundant Gigabit Ethernet links for high system reliability.
- Redundant Link Management implemented in hardware manages unattended and automatic failure recovery of downed links.
- Automatic MDI/MDIX crossover at all speeds.
- High data transmission rate.
- Compliant to IEEE 802.3 (Ethernet), IEEE 802.3u (Fast Ethernet) and IEEE 802.3ab (Gigabit Ethernet).
- The conduction-cooled Dual Gigabit Ethernet PMC Adapter conforms to the CCPMC (Conduction-Cooled PCI Mezzanine Card) Standard, namely ANSI/VITA 20-2001.

### I/O Media Types

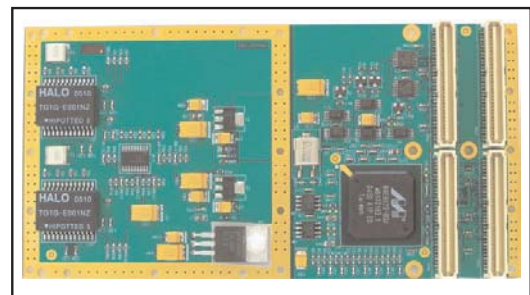
1000BASE-SX is a fibre media Gigabit Ethernet standard. It operates over multimode fibre using a 850 nm wavelength. The standard specifies a distance capability between endpoints of 220 m over 62,5/125 µm fibre although in practice, with good quality fibre and terminations, 1000BASE-SX will usually work over significantly longer distances.

1000BASE-LX is a fibre media Gigabit Ethernet standard. It operates over singlemode fibre using a 1 270 to 1 355 nm wavelength. 1000BASE-LX is specified to work over a distance of up to 2 km over 9 µm singlemode fibre. In practice it will often operate correctly over a much greater distance. 1000BASE-LX can also run over multimode fibre with a maximum segment length of 550 m.

1000BASE-T (also known as IEEE 802.3ab) is a standard for Gigabit Ethernet over copper wiring. It requires Category 5 cable, but Category 5e ("Category 5 enhanced") and Category 6 cable may also be used and are often recommended. Each network segment can have a maximum distance of 100 m.

### Applications

- Distributed real-time applications in harsh environments
- Mission-critical applications
- Avionics, Vetronics
- High-speed sensor integration
- High-performance multimedia applications
- Distributed digital voice and video applications



**Dual Gigabit Ethernet Conduction-Cooled PMC Adapter**



► **Dual Gigabit Ethernet PMC Adapter**

**Dual Gigabit Ethernet PMC and CCPMC Adapter Specifications**

<b>Bus Interface</b>	64-bit, 33 MHz PCI-bus (32-bit compatible) Electrically : PCI Rev. 2.1 Mechanically : Single CMC formfactor i.a.w. IEEE P1386.1
<b>No. of Interfaces</b>	2 x 10/100/1000Base-T copper, 2 x 1000Base-T fibre, full duplex or half duplex support
<b>LAN Controller</b>	Custom ASIC
<b>I/O Addresses</b>	Automatic assigned to the slot by PCI Rev. 2.1 Plug-and-Play
<b>I/O Options</b>	Front-panel or rear connector I/O options with various rear connector PMC Jn4 I/O pin assignments. Conduction-cooled version has rear connector I/O only.
<b>Interrupts</b>	User-programmable interrupts
<b>DMA</b>	Automatic depending on PCI slot (bus master)
<b>Dimensions</b>	Air-cooled : 149,00 mm x 74,00 mm x 13,50 mm Conduction-cooled : 143,65 mm x 74,00 mm x 13,50 mm (VITA 20)
<b>Mass</b>	105 g ± 10g
<b>Power Requirement</b>	Universal Card (+3,3 V and +5 V compatible) 650 mA @ 5 V
<b>MTBF</b>	Figures according to MIL-HDBK-217F, Parts Stress Method : Ground, Mobile T <sub>j</sub> = 65 C T <sub>a</sub> = 45 C 25 000 hrs Naval, Sheltered T <sub>j</sub> = 60 C T <sub>a</sub> = 40 C 35 000 hrs Airborne, Inhabited Cargo T <sub>j</sub> = 75 C T <sub>a</sub> = 55 C 25 000 hrs
<b>Software Drivers</b>	Various software drivers offered including for VxWorks, Linux, Solaris, Windows 2000, Windows XP and Windows 2003 operating systems as standard; others are costed options.
<b>Protocols</b>	<ul style="list-style-type: none"> <li>• MAC</li> <li>• IP</li> <li>• TCP/IP</li> <li>• UDP/IP</li> </ul>
<b>Supporting Tools</b>	Sample driver usage software (C/C++ source code)
<b>Standards Compliance</b>	<ul style="list-style-type: none"> <li>• IEEE 802.3 (Ethernet), IEEE 802.3u (Fast Ethernet) and IEEE 802.3ab (Gigabit Ethernet)</li> <li>• Compliant to IEEE 802.3x (flow control support)</li> <li>• IEEE 802.1p support (QoS)</li> </ul>

**Environmental Specifications**

	Commercial	Industrial	Ruggedised/Conduction-Cooled
<b>Temperature</b>			
- Operating	0 C to +55 C	-15 C to +75 C	-40 C to + 85 C
- Storage	-40 C to +85 C	-50 C to +85 C	-60 C to +125 C
<b>Humidity</b>	0% - 90%	0% - 95%	0% - 95%
<b>Shock</b>	N/A	30 g peak for 11 ms	40 g peak for 11 ms
<b>Vibration</b>			
- Sine	2 g (peak) 10 Hz to 100 Hz	10 g (peak) 5 Hz to 2 kHz	10 g (peak) 5 Hz to 2 kHz
- Random	0,04 g²/Hz at 15 Hz to 2 kHz	0,1 g²/Hz at 15 Hz to 2 kHz	0,1 g²/Hz at 15 Hz to 2 kHz

Part Designation	Grade	I/O Connector Type	I/O Media Type
CCII/GNET/PMC/2P/SX/FP/COM	Commercial	SFF/LC Connector	Fibre, Multimode
CCII/GNET/PMC/2P/SX/FP/IND	Industrial	SFF/LC Connector	Fibre, Multimode
CCII/GNET/PMC/2P/SX/FP/RGD	Ruggedised	SFF/LC Connector	Fibre, Multimode
CCII/GNET/PMC/2P/LX/FP/COM	Commercial	SFF/LC Connector	Fibre, Singlemode
CCII/GNET/PMC/2P/LX/FP/IND	Industrial	SFF/LC Connector	Fibre, Singlemode
CCII/GNET/PMC/2P/LX/FP/RGD	Ruggedised	SFF/LC Connector	Fibre, Singlemode
CCII/GNET/PMC/2P/RJ/FP/COM	Commercial	RJ-45 Connector	UTP, Front-panel, Copper
CCII/GNET/PMC/2P/RJ/FP/IND	Industrial	RJ-45 Connector	UTP, Front-panel, Copper
CCII/GNET/PMC/2P/RJ/FP/RGD	Ruggedised	RJ-45 Connector	UTP, Front-panel, Copper
CCII/GNET/PMC/2P/BP/CC	Conduction-Cooled		UTP, Backplane