



Product Information

CMN-ETH ■ PC•MIP Module 10/100Mb/s Ethernet Controller

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*The CMN-ETH is a miniature Ethernet controller, housed on a PC•MIP mezzanine module. The PC•MIP electrical characteristics are derived from the well known PCI specification. With respect to the mechanics, PC•MIP modules represent an improved successor to the PMC- and M-Module technology. Up to 6 PC•MIP modules can be mounted on a single **CompactPCI®** carrier board for a maximum of functionality at low cost, thus making easier the system integration.*

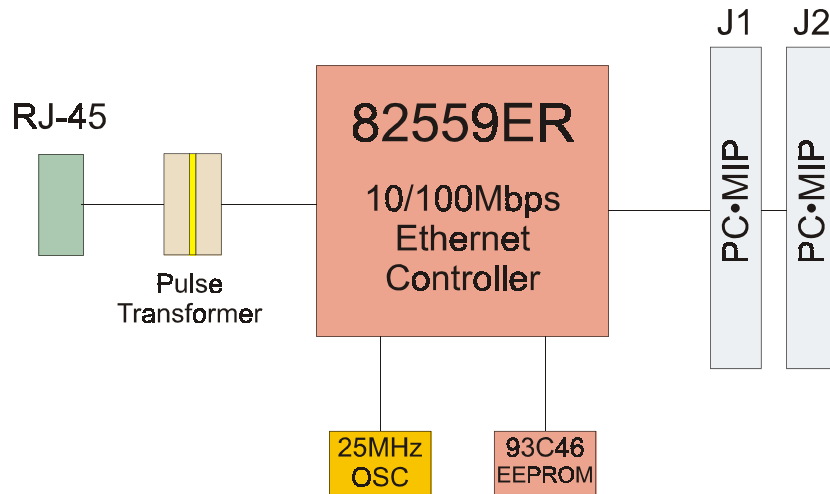
The CMN-ETH is provided with a RJ45-style jack for direct attachment to any 10Base-T and 100Base-TX based LAN by common CAT5/6 twisted-pair patch cables, with distances beyond 100m. The CMN-ETH supports auto-negotiation and is full-duplex capable, leading to a maximum data throughput of up to 200Mb/s.

The Ethernet controller CMN-ETH is a type II, single-size PC•MIP Module. The circuitry is based on the Intel 82559ER, a single-chip solution integrating both the MAC and PHY layers. Due to its improved reliability and cost advantage the CMN-ETH outperforms traditional two-chip based networking interface controller designs. The 82559 is supported by most recent disk operating systems implicitly. Furthermore, Intel offers drivers for download for a wide variety of environments.

Albeit typically connected to the LAN by an Ethernet switch or hub, the CMN-ETH Ethernet controller can also be used for a direct point-to-point communication between two computers. This method can be recommended for distributed multi-processor systems, especially with real-time demand.



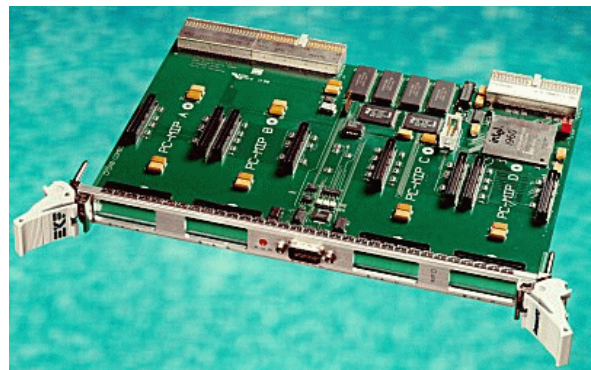
Block Diagram
CMN-ETH
PC•MIP Module



With no doubt being the most popular networking standard, Ethernet can also replace vintage device I/O interfaces, e.g. RS-232 and parallel ports. A recent powerful trend is Ethernet in fieldbus environments. By means of affordable Ethernet-switches, the structure of the LAN can be scaled exactly to the needs of the application. If managed appropriately, the switching technology can emulate point-to-point connections at full bandwidth with predictable response times. This is an important improvement over older Ethernet LANs with a simple bus topology, where all nodes had to share the available bandwidth.

Beginning at the actor/sensor module, up to the process control system, forward to the management database - Ethernet offers total connectivity for all areas of an enterprise. The TCP/IP protocol, implemented in most Ethernet based LANs, opens the door to the worlds largest network - the Internet.

The CMN-ETH controller module makes it easy to integrate any embedded system into existing Ethernet LANs. The PC•MIP mezzanine module can be combined with any passive or intelligent *CompactPCI*® carrier board from EKF, either 6U or 3U form factor. The image below shows the intelligent CM1-COMBO with 4 PC•MIP Module slots.

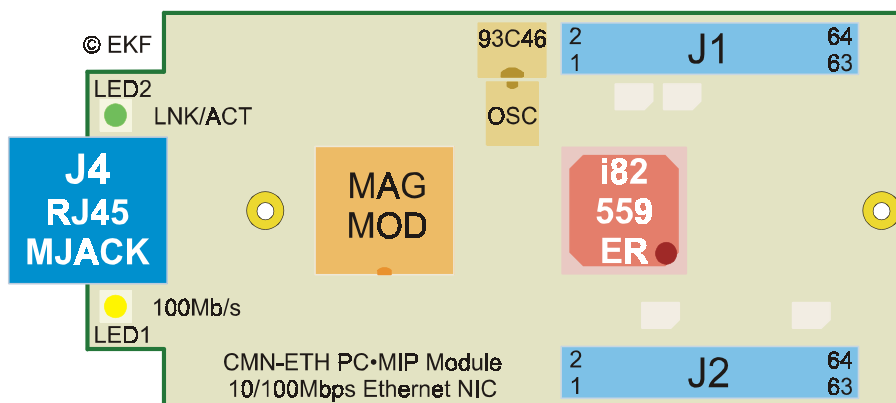


CM1-COMBO PC•MIP Carrier-Board

Your application must be Intra- and Internet instant ready - no problem with the CMN-ETH.

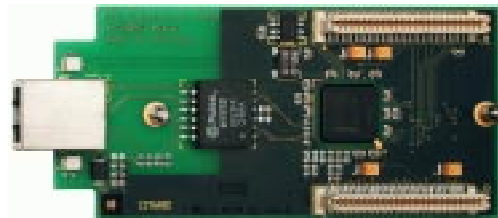
Technical Specifications		
Printed Circuit Board	Dimensions	PC•MIP module type II (single-size 47x99.25mm ²)
Ethernet	Connector	Twisted pair RJ45, 8-position, wired as a hostadapter. 1:1 cabling to any hubs, switches, routers, transceivers. Cross wiring required for direct connection to a second hostadapter
	Cable Type	Category 5/6, UTP (Unshielded Twisted Pair) or STP (Shielded Twisted Pair), length up to 105m maximum
	Data Transfer Rate	10Base-T 10Mb/s (20Mb/s @ full-duplex) 100Base-TX (Fast-Ethernet) 100Mb/s (200Mb/s @ full-duplex), auto-negotiation for best performance
	Controller Chip	Intel 82559ER PCI Ethernet Controller, Single Chip MAC and PHY (Transceiver)
	LED Array	2 x on-board LED, Activity/Link, 100Mb/s
PCI Bus PC•MIP	Connector J1/J2	32-Bit, 33MHz, DMA Bus Master, 133MB/s
Power Supply	Connector J1/J2	+5V ±5% 0.1A max. +3.3V ±0.3V 0.2A max.
Temperature Humidity	Commercial Grade Version	Operating temperature 0-70 °C Humidity 5-90% non condensing
Software	Drivers	Implicit supported by recent operation systems (e.g. Linux, Windows-ME), additionally Intel drivers available for most operating systems (e.g. VxWorks)

specifications are subject to change without further notification



CMN-ETH Assembly Drawing

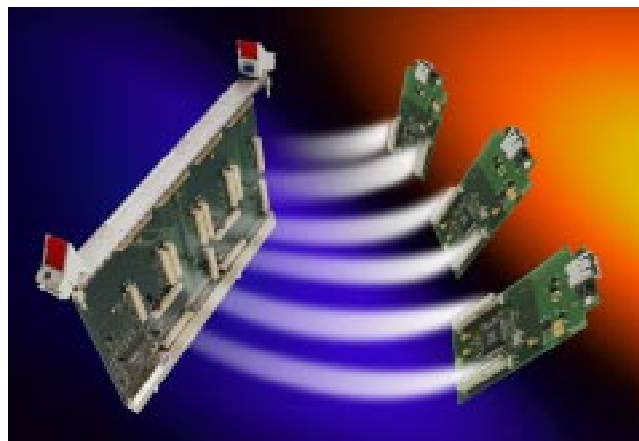
Ordering Information		
Alias	Ordering No.	Short Description
	CMN-1-ETH	PC•MIP Module 10/100Mb/s Ethernet controller
COMBO	CM1-1-COMBO	6U <i>CompactPCI</i> board, intelligent PC•MIP modules carrier/bridge with 4 PC•MIP slots, local i960 processor
TRIO	CM5-1-TRIO	3U <i>CompactPCI</i> board, passive PC•MIP modules carrier/bridge with 3 PC•MIP slots
SEXTET	CM6-1-SEXTET	6U <i>CompactPCI</i> board, passive PC•MIP modules carrier/bridge with 6 PC•MIP slots



CMN-ETH



CM5-TRIO



CM6-SEXTET PC•MIP Carrier Board

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