

PC/104-Plus Expansion Module with Ethernet and Digital I/O



- 2 PCI-based 10/100Mbps Ethernet Ports
- NS DP83815 Mac+Phy chips 8 digital inputs and 8 digital outputs
- 24 digital I/O using 82C55 on ISA bus
- Latching pin headers and RJ-45 jacks
- Dimensions: 3.55" x 3.775"
- Operating temperature: -40°C to +85°C

DESCRIPTION

The Mercator PC/104 module integrates 2 PCI-based 10/100 Ethernet ports with 24 user-configurable digital I/O lines in the compact and rugged PC/104 format. This 2-in-1 combination of Ethernet and digital I/O can help lower the size and cost of your embedded system by eliminating one additional board from your PC/104 stack.

The Ethernet ports utilize the National Semiconductor DP83815 Mac + Phy PCI controller chip and are NE2000 compatible.

The 24 digital I/O lines are based on an 82C55 chip and feature programmable direction in 4- and 8-bit groups. All I/O lines contain user-configurable 10K Ohm pull-up resistors for convenience.

Extended temperature capability (-40 to +85°C) enables the board to operate in environments with extreme temperature swings, such as vehicles or outdoor installations. In addition, the board may be custom-configured with 0-ohm resistors in place of jumper blocks for increased ruggedness in high-vibration environments.

Diamond Systems offers appropriate mating cables for your convenience. Cable no. C-PRZ-02 provides a panel mountable RJ-45 connector for the Ethernet, and cable no. C-26-18 is a 26-conductor ribbon cable for the digital I/O.

SPECIFICATIONS

General	
No. of controllers	1 (MRC-100) or 2 (MRC-224)
Protocol	IEEE 802.3 10Base-T & 100Base-TX compatible
Maximum baud rate	100Mbps
I/O headers	Ethernet ports: RJ-45 female sockets and 6-pin straight male headers Digital I/O: 26-pin (2x13) .025" square pin header on .1" centers
Mating cables	Ethernet ports: RJ-45 sockets: Standard CAT5 cable Pin headers: Diamond Systems cable no. C-PRZ-02 Digital I/O: Diamond Systems cable no. C-26-18
Dimensions	3.55" x 3.775" (PC/104 standard)
Power supply	+5VDC ±10%
Operating temp.	-40°C to +85°C
Operating humidity	5% to 95% noncondensing
PC/104-plus bus	Both PC/104 and PC/104+ stackthrough headers installed.
Digital I/O	
No. of I/O lines	24
Direction	Programmable
Input Voltage	Low -0.5V min, 0.8V max High 2.0V min, 5.5V max
Output Voltage	Low 0.0V min, 0.4V max High 3.0V min, Vcc - 0.4V max
Output current	±2.5mA max, each line
Pull-up resistors	10K all lines, selectable w. jumper

Configuration Options

Provision is made on the board for zero-ohm resistors to replace jumpers to enable a hard-wired configuration.

- Digital I/O base address (8 address options with 3 jumpers)
- Digital I/O configuration: pull-up enabled or Disabled
- PCI slot selection for each Ethernet port

FOR MORE INFORMATION

Diamond Systems Corporation
1255 Terra Bella Avenue
Mountain View, CA 94043
Tel: 650-810-2500
Fax: 650-810-2525
techinfo@diamondsystems.com

ORDERING INFORMATION

Part No.	Description
MRC-224-XT	PC/104+ Dual 10/100Mbps Ethernet Module + 24 Digital I/O ext. temp.

Diamond Point International (Europe) Ltd

Suite 13, Ashford House, Beaufort Court

Sir Thomas Longley Road, Rochester, Kent, ME2 4FA, UK

Phone 01634 300900 - Fax 01634 722398 - Email sales@dpie.com – Web www.dpie.com www.dpieshop.com



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