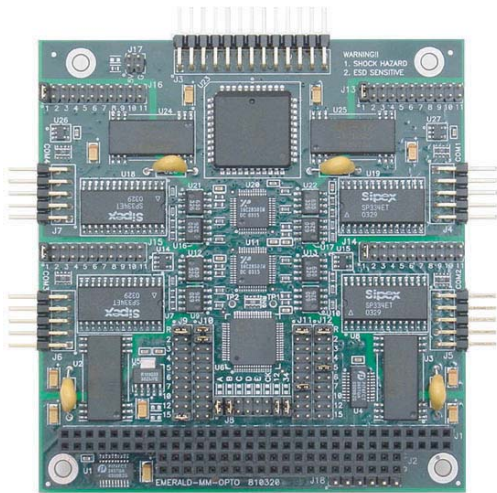# EMERALD-MM-OPTO

2 or 4-Port RS-232/RS-422/RS-485 PC/104 Module

- 2-4 Optoisolated serial ports, RS232/422/485 protocols

- Full handshake RS232

- Jumper-selectable protocols, addresses and interupts

- 16C2850 UARTs with 128-byte FIFOs

- 460.8Kbps max baud rate

- 24 digital I/O lines with programmable direction

DESCRIPTION

Emerald-MM-Opto provides 2 or 4 optically isolated serial ports with RS-232, RS-422, and RS-485 protocols, as well as 24 digital I/O lines, all on a single board. The optical isolation of 1000V DC or AC protects your embedded system from ground differentials or noise spikes on the serial ports that could damage non-isolated boards. Each port is isolated from the other ports as well as the system. An optional 3M?/ 220pF isolation bridge between port ground and system ground is available. Extended temperature capability (-40 to +85°C) enables the board to operate reliably in vehicles such as trains and buses.

In addition to ruggedness, Emerald-MM-Opto offers flexibility with the following advanced features:

- Independent protocol and IRQ configuration for each serial port.

- Eight different I/O address combinations with jumper selection

- 16C2850 UART chips with 128-byte FIFOs support high-speed data rates at up to 460kbps without overloading the system processor

SPECIFICATIONS

# ports	2 or 4
Protocols Supported	RS232, RS422 & RS485, jumper selectable
Max Baud Rate	460.8Kbps
Communications	5,6,7 or 8 data bits; Even, odd or no parity
Base UART	16C2850
FIFO	128 bytes
Address / Interrupt Configuration	Jumper
Digital I/O	24, programmable direction
Short protection	Continuous, all outputs
Bus Interface	PC/104 (ISA)
Power Draw (typical)	+5VDC±10%@300mA
Operating temp	-40°C to +85°C
Weight	3.0oz / 85g
# ports	2 or 4

• Auto-flow control enables easy RS-485 operation by automatically enabling and disabling the transmitter during data transmission, preventing bus conflicts and ensuring compatibility with standard serial port software.

• Multiple line termination options to support RS-422 or RS-485 networks, including 1K pull-up / pull-down resistors and 150 end termination resistors.

The 24 digital I/O lines are based on an 82C55 chip and feature programmable direction in 4- and8-bit groups. All I/O lines contain user-configurable10K pull-up resistors. This 2-in-1 combination of serial ports and digital I/O provides more functionality in less space.

ORDERING INFORMATION

Part No.	Description
EMM-OPT2-XT	2 opto-isolated RS-232/422/485 ports, 24 digital I/O
EMM-OPT4-XT	4 opto-isolated RS-232/422/485 ports, 24 digital I/O

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