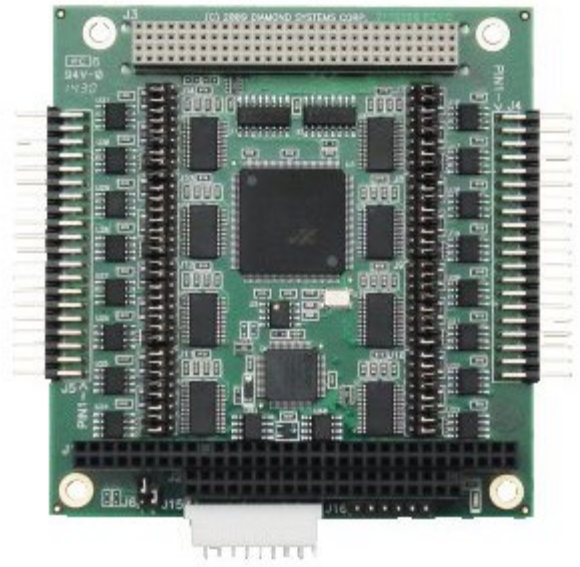
EMERALD-MM-8PLUS PC/104-Plus 8-Port RS232/422/485 Serial I/O Module



FEATURES

- 8 serial ports with up to 1.8432Mbps data rates
- Exar 17D158 octal UART with 64-byte FIFOs
- Configurable for RS-232/RS-422/RS-485 protocols or TTL level operation
- Plug and Play configuration
- Supports interrupt sharing
- 8 programmable digital I/O lines
- Dual 40-pin I/O headers, 4 ports per header
- +5V only operation
- -40°C to +85°C operating temperature
- PC/104-*Plus* form factor

Description

Emerald-MM-8Plus is a high performance multi-protocol serial communications board offering eight ports on a single PC/104-*Plus* module. Supporting baud rates up to 921.6K bps in RS-232 mode or 1.8432Mbps in RS422 or RS485 mode, each port can be individually selected for RS-232, RS-422, RS-485 or TTL level operation. Both local-echo and non-local-echo modes are supported for RS-485. Protocol selection is achieved via a jumper block for each of the eight ports. Line termination for RS-422/485 modes is also jumper-selectable.

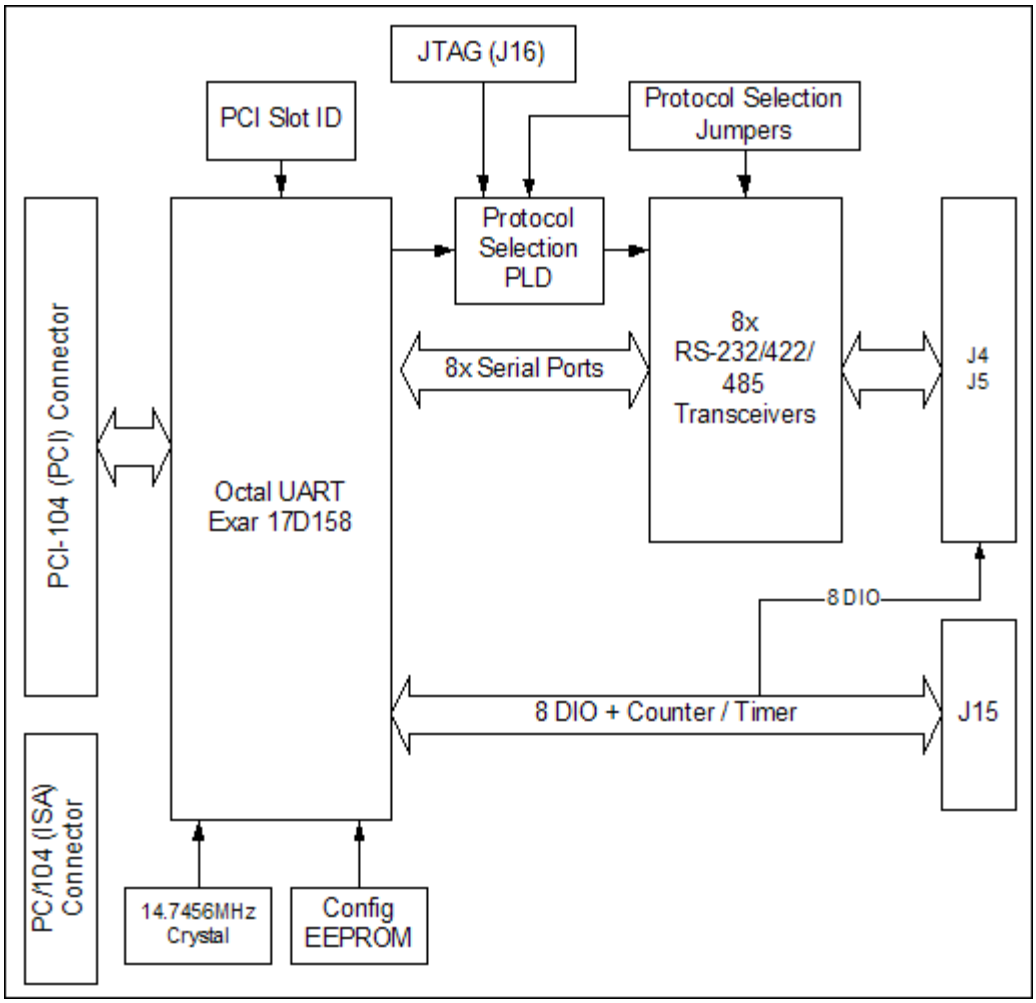
Configuration of the Emerald-MM-8Plus is simple, using the built-in plug and play technology. For manual configuration, the base address for the board may be set in software, defining a 4K block of configuration space used to access the on-board registers. A single 32-bit read shows the detailed interrupt status for each of the eight ports. The PCI "slot" is defined through a jumper block. As with all Diamond Systems products, jumpers are paralleled with locations for zero ohm resistors to create a rugged, shock-and-vibration-resistant implementation.

Emerald-MM-8Plus is based on the Exar 17D158 octal UART IC. This device contains 8 4 identical sets of 16C55registers, one for each port, and is compatible with the standard PC serial port. Each port contains 64-byte transmit and receive FIFOs to support the high-speed data rates.

Emerald-MM-8Plus also offers 8 convenient digital I/O lines. The direction of each line is independently programmable. Finally, Emerald-MM-8Plus also offers a 16-bit programmable counter / timer with a configurable clock source.

Two I/O headers are provided, with four serial ports and four digital I/O lines on each

header. The board operates on +5V only, eliminating the need for a +12V supply that is often required for serial port operation.



Operating Systems Compatibility

The Emerald-MM-8Plus uses the Exar (Maxlinear) XR17D158 UART which is based on the industry-standard 16C550 UART. Drivers are available for most popular embedded operating systems. Check the drivers included with your OS or the Support tab for drivers on this producdt page, or else visit maxlinear.com.

Cables

EMM-8Plus-XT uses 2 of Diamond's C-DB9M-4 cable for the 8 serial ports. Each cable has a 2x20 .1" pitch socket header to connect to the board's pin header and 4 DB9 Male panel-mountable connectors for user connections.

Cable	Description	Drawing
C-DB9M-4	Quad DB9 male to 40-pin header 18" cable, Serial ports 1-4 (uses 2)	Show

Specifications

Serial Ports	
Number of serial ports	8
Protocols	RS-232, RS-422, RS-485 (local and no echo)
Protocol Configuration	Jumpers
Software Configuration	Plug and Play

Maximum baud rate	1.8432Mbps
Communications parameters	5, 6, 7, or 8 data bits; Even, odd, or no parity
Short circuit protection	Continuous, all outputs
RS-232 mode	
Input Impedance	3KΩ min
Input voltage swing	±30V maximum
Output voltage swing	±5V min, ±7V typical
RS-422/RS-485 modes:	
Differential input threshold	-0.2V min, +0.2V max
Input impedance	12KΩ minimum
Input current	+1.0mA max (Vin = 12V) -0.8mA max (Vin = -7V)
Differential output voltage	2.0V min (RL=50Ω)
High/low states differentia output voltage symmetry	0.2V max
Digital I/O	
Number of I/O lines	8 individually programmable
Input voltage	Logic 0: -0.3V min, 0.8V max Logic 1: 2.0V min, 5.3V max
Output voltage	0: 6mA max 1: -4mA max
General	
I/O header	2 40-position (2x20) .025" square pin header on .1" centers; Headers mate with standard ribbon cable (IDC) connectors
Dimensions	3.55" x 3.775"
Power supply	+5VDC ±10%
Current consumption	160mA typical, all outputs unloaded
Operating temperature	-40°C to +85°C standard, all versions
Weight	3.1oz (87.9g)
RoHS	Compliant

Models and Accessories

Emerald-MM-8PLUS

available models:

EMM-8PLUS-XT 8 RS-232/422/485 Serial Ports PC/104-Plus Module Available

Please login or signup for an online quote request.

Cables and accessories

available models:

C-DB9M-4 Quad DB9 male to 40-pin header 18" cable, Serial ports 1-4 (uses 2)

Please login or signup for an online quote request.

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