EMERALD-MM-8PL-XT PC/104 Octal Serial Port Module
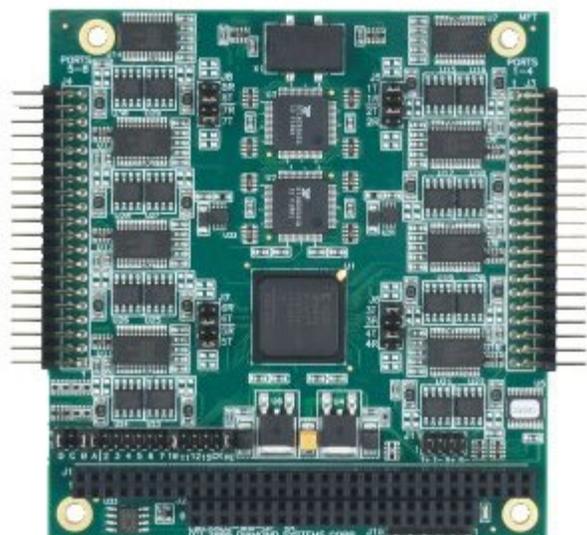
DIAMOND SYSTEMS

PC104

Description

Emerald-MM-8PL offers 8 multi-protocol serial ports on a single PC/104 module with complete software configurability via the operating system. Each port can be individually selected for RS-232, RS-422, or RS-485 under software control. Both local-echo and non-local-echo modes are supported for RS-485. I/O addresses and interrupt levels are also programmable, with interrupt sharing available for any number of ports. Each port may further be enabled or disabled in software. All configuration data is stored in an on-board EEPROM that is loaded automatically on power-up.

For applications where fixed addresses are desired, four groups of preset addresses are available with jumper settings that override the programmed settings. Line termination for RS-422/485 modes is also jumper-selectable.

Emerald-MM-8PL offers 8 convenient digital I/O lines. The direction of each line is independently programmable. Diamond's Universal Driver software provides software support for these digital I/O lines.
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.

Emerald-MM-8PL is based on the industry-standard 16C654 quad serial port IC. Two ICs provide a total of 8 serial ports. Each port contains 64-byte transmit and receive FIFOs to support the high-speed 460.8kbps data rates. Drivers are available for a wide range of operating systems including Windows 10 and Linux.

Note to existing customers: Emerald-MM-8PL is a form-fit-function replacement for our previous product Emerald-MM-8P (EMM-8P-XT) with the single exception that the maximum RS-232 data rate is limited to 115.2Kbps vs. 460.8Kbps on EMM-8P-XT. This change is due to the end of life of the RS-232 transceiver used on EMM-8P-XT. Except for this component, all other components and the PCB are the same between the two boards.

Block Diagram

EMM-8PL-XT BLOCK DIAGRAM
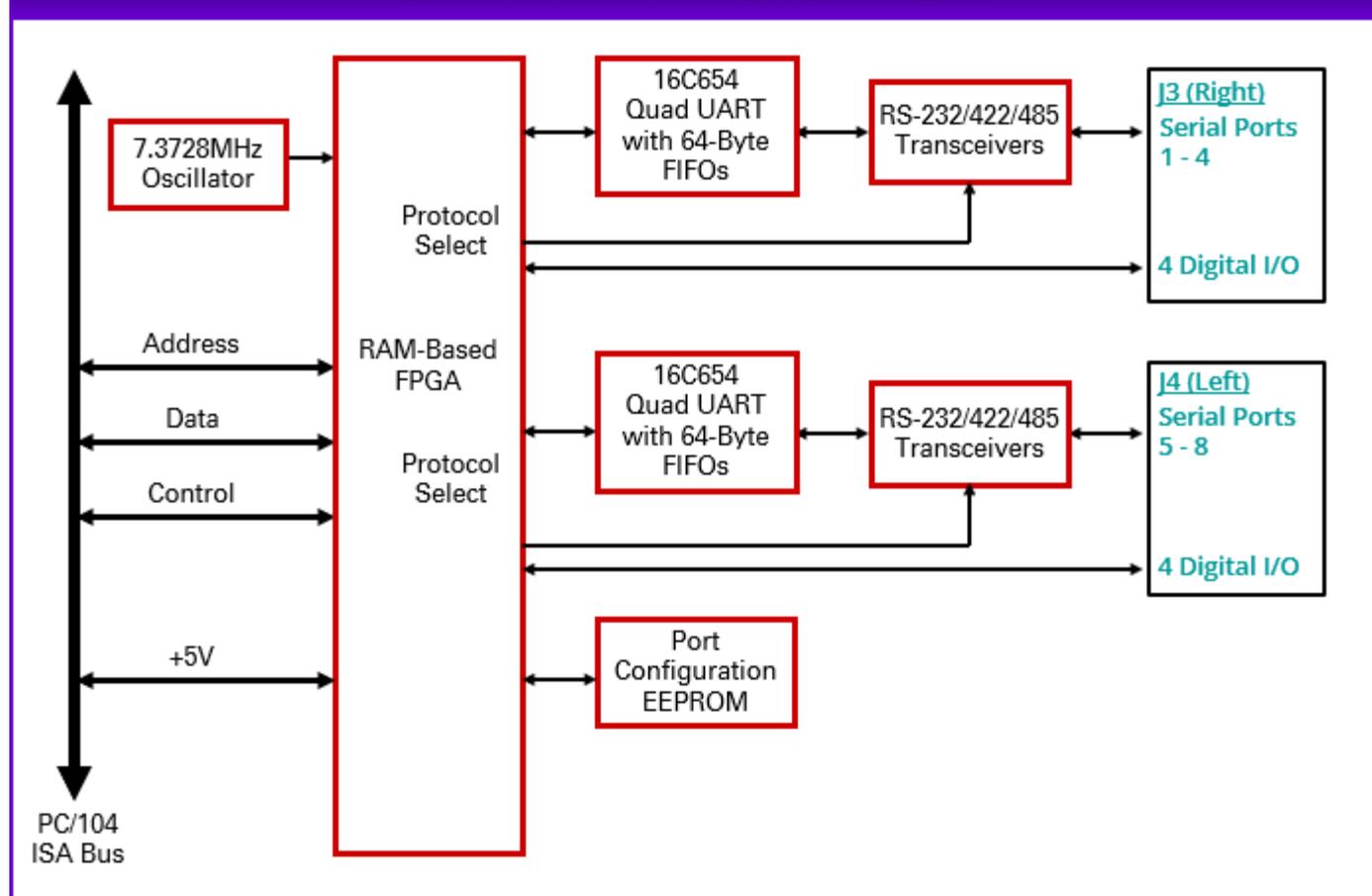
◆ **Specifications**

Serial Ports	
Number of serial ports	8
Protocols	RS-232, RS-422, RS-485 (local and no echo)
Configuration	All features software configurable
Maximum baud rate	115.2kbps
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 in, 8 out

Input voltage	Low: -0.3V min, 0.8V max
Output voltage	Low: 0.0V min, 0.4V max (IOL = 6mA max)
General	
I/O header	2 40-position (2x10) .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℃ to +85℃ standard, all versions
MTBF	490,500 hours
RoHS	Compliant

◆ Models and Accessories

Emerald-MM-8PL-XT

available models:

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

Please login or signup for an online quote request.

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