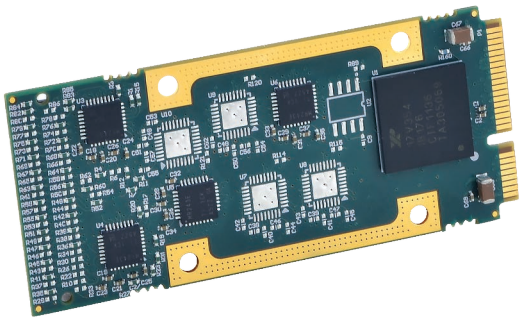
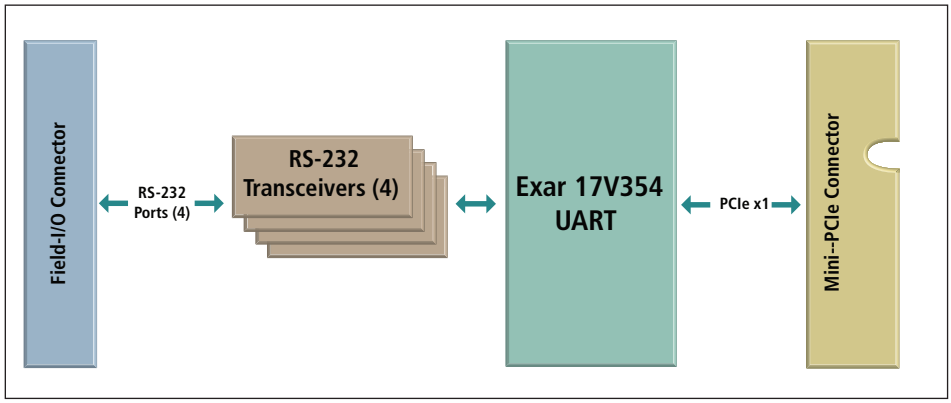
AcroPack® Modules

AP500 Serial RS232 Communication





Four RS232 Serial Ports ◆ Extended Temperature ◆ PCIe Bus Interface

Description

The AcroPack® product line updates our popular Industry Pack I/O modules with a PCIe interface format. This tech-refresh design offers a compact size, low-cost I/O, the same functionality and memory map of the existing Industry Pack modules and a rugged form factor.

The AP500 modules provide four asynchronous serial communication interfaces for your system. Software-configuration helps you quickly set baud rates, character-sizes, stop bits, and parity. Full signal support for modem control is also included.

For more efficient data processing, each serial port is equipped with 256-character FIFO buffers on the transmit and receive lines.

The data ports generate individually controlled transmit, receive, line status, and data set interrupts. All interrupts can be read from a single register.

The AP500 series modules are 70mm long, this is 19.05mm longer than the full-length mini-PCIe card at 50.95mm. The board's width is the same as mPCIe board of 30mm and they use the same mPCIe standard board hold down strandoff and screw keep out areas.

A down facing 100 pin Samtec connector will mate with the carrier card. Fifty of these signals are available as field I/O signals. Pin spacing and signal assignments will allow for 100V of signal to signal isolation.

The AP500 series maintains the same functionality and memory map of the existing Industry Pack modules providing a smooth transition to the AcroPack I/O modules.

Key Features & Benefits

- PCI Express Generation 1 interface
- Four RS232E serial ports
- 256-byte FIFO buffers
- Programmable baud rate (up to 500Kbps)
- Individual modem control signals on each channel
- Handshake lines (RTS, CTS, DTR, DSR, DCD, RI)
- Line-break and false start-bit detection
- 16550 compatible register set
- 256-byte FIFO buffers minimize CPU interaction for improved system performance.
- Each serial channel provides full handshake support to simplify interfacing with modems.
- Extended temperature range

Acromag® THE LEADER IN INDUSTRIAL I/O

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Bulletin #8400-880d

AcroPack® Modules

AP500 Serial RS232 Communication

Performance Specifications

RS232E Serial Ports

Configuration
Independent, non-isolated serial ports with a common single return connection and configured as a DTE device.

Data Rate
Programmable up to 500K bits/second using internal baud rate generator.

Max. Cable Length
15 meters (50 feet) typical, limited to a cable capacitive load of 2500pF

Character size
5 to 8 bits, software-programmable

Parity
Odd, even, or no parity; software-programmable.

Stop bits
1, 1-1/2, or 2 bits; software-programmable

Data register buffers
256-byte receive FIFO buffer and 256-byte transmit FIFO buffer.

Interrupts
Receiver line status (overrun, parity, framing error, or break interrupt); received data available (FIFO level reached) or character time-out; transmitter holding register empty ; or modem status (CTS, DSR, RI, or DCD).

PCI Express Base Specification

Conforms to revision 2.0

Lanes
1 lane in each direction

Bus Speed
2.5 Gbps (Generation 1)

Memory
8k space required
1 base address register

Environmental

Operating temperature
-40 to 70°C

-40 to 85°C
(requires an AcroPack heatsink conduction-cool kit)

Storage temperature
-55 to 125°C

Relative humidity
5 to 95% non-condensing

Power
+3.3V (±5%) 100mA typical

Physical

Length
70mm

Width
30mm

Ordering Information

AcroPack® Modules

AP500E-LF
Four RS232E serial ports

(Note: AcroPack modules are compatible only with the carriers listed below)

Accessories

AP-CC-01
Conduction-cool kit

Carrier Cards

APCe7010E-LF
PCIe AcroPack carrier, holds one AcroPack module, air-cooled.

APCe7020E-LF
PCIe AcroPack carrier, holds two AcroPack modules, air-cooled.

APCe7040E-LF
PCIe AcroPack carrier, holds four AcroPack modules, air-cooled.

VPX4500E-LF
3U VPX AcroPack carrier, holds three AcroPack modules, air-cooled.

VPX4500-CC-LF
3U VPX AcroPack carrier, holds three AcroPack modules, conduction-cooled.

XMCAP2020-LF
XMC AcroPack carrier; holds two AcroPack modules, 2-slots out front, air-cooled.

XMCAP2021-LF
XMC AcroPack carrier; holds two AcroPack modules, 2-slots out rear, air-cooled.

Software *(see software documentation for details)*

APSW-API-VXW
VxWorks® software support package.

APSW-API-WIN
Windows® DLL driver software support package.

APSW-API-LNX
Linux® support (website download only).

AP-CC-01 Conduction-Cool Kit

ISO9001
AS9100
MADE IN USA

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