**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.

These modules provide eight asynchronous serial communication ports from a single AP carrier slot for a high-densigy solution. Software-configuration helps you quickly set baud rates, character-sizes, stop bits, and parity.

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, data set, and flow control interrupts. All interrupts can be read from a single register.

The AP522 series modules are 70mm long, this is 19.05mm longer than the full length mini PCIe card at 50.95mm. The boards width is the same as mPCIe board of 30mm and they use the same mPCIe standard board hold down standoff and screw keep out areas.

A down facing 100 pin Samtec connector will mate with the carrier card. Fifteen 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 AP522 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

- Eight asynchronous, full duplex RS422B serial ports (supports RS485)
- 256-byte transmit FIFO buffers
  256-byte receive FIFO buffers
- Programmable baud rate (up to 20Mbps)
- Individual handshake lines (RTS, CTS) on each channel
- Line-break and false start-bit detection
- Failsafe receivers
- Built-in termination and bias resistors
  Consult factory for no termination
- 16550 compatible register set
- High-density design lowers per-port costs and saves IP carrier card slots for other functions.
- 256-byte FIFO buffers minimize CPU interaction for improved system performance.
- Extended temperatures deliver dependable operation in extreme conditions.
Performance Specifications

■ Serial Ports
Configuration
Independent, non-isolated serial ports with a common single return connection.
Data Rate
20M bits/second, maximum
Max. Cable Length
1200 meters (4000 feet) typical
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 FIFO buffer
Interrupts
Receiver line status (overrun, parity, framing error, or break interrupt); receive/transmit FIFO level reached or character time-out; Xon/Xoff or special character detected.

■ Environmental
Operating temperature
-40 to 85°C
a conduction cooled application with an AcroPack requires heatsink model AP-CC-01
Storage temperature
-55 to 125°C
Relative humidity
5 to 95% non-condensing
Power
+3.3V (±5%) 150mA typical
+5V (±5%) 40mA typical

■ Physical
Length
70mm
Width
30mm

Ordering Information

AcroPack® Modules
AP522E-LF
Eight RS422/485 serial ports
(Note: AcroPack modules are compatible only with the carriers listed below)

Accessories
AP-CC-01
Conduction-cool kit

Carrier Cards
AcroPack carrier cards

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).

■ 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