AcroPack® Modules

AP500 Series Communication

Field-I/O Connector — RS-232 Ports (8) → **RS-232 Transceivers (8)** ↔ **Exar 17V358 UART** — PCIe x1 ↔ **Mini-PCIe Connector**
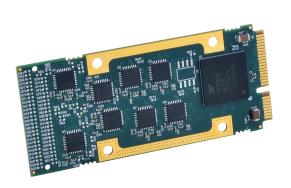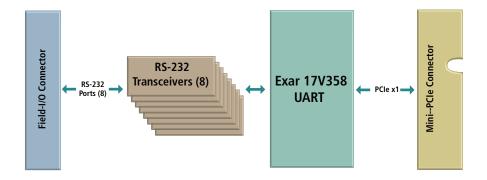
Eight RS232 serial ports ◆ Extended Temperature ◆ PCIe Bus Interface

Description

Model: AP520-64E-LF

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 AP520 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. Signal support for RTS/CTS handshaking 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 AP520 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 standoff 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 AP520 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
- Eight RS232E serial ports
- 256-byte transmit FIFO buffers
  256-byte receive FIFO buffers
- Programmable baud rate (up to 500Kbps)
- Individual handshake lines (RTS, CTS) on each channel
- Line-break and false start-bit detection
- 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.
- Each serial channel provides handshake support to simplify interfacing with modems.
- Extended temperature range

Acromag
THE LEADER IN INDUSTRIAL I/O

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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. Consult factory for custom baud rates up to 512K baud

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 FIFO buffer

Interrupts
Receiver line status (overrun, parity, framing error, or break interrupt); received data available
(FIFO level reached) or character time-out; transmitter (FIFO level reached); or modern status (CTS)

■ 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%) 110mA typical

■ Physical

Length
70mm

Width
30mm

Ordering Information

AcroPack® Modules

AP520-64E-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

See Acromag.com/AcroPack-Carriers for a full list of 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).

AP-CC-01 Conduction-Cool Kit

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