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TECHNOLOGY GROUP

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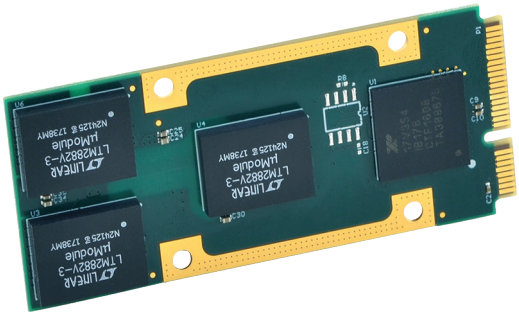
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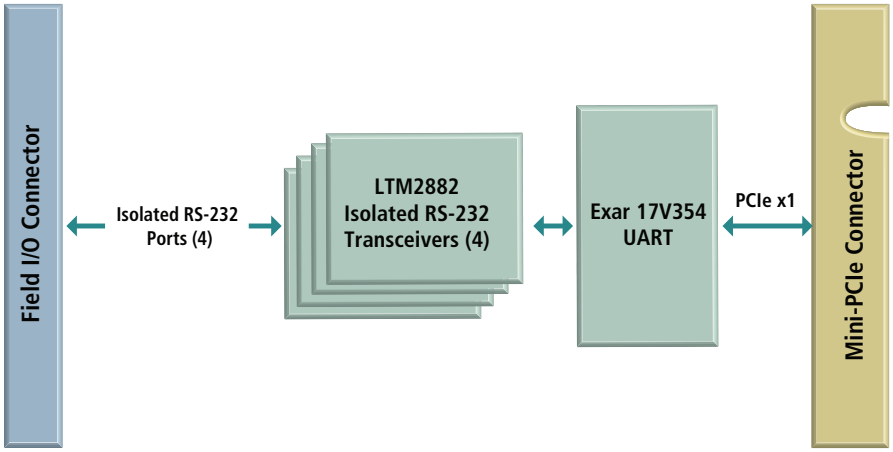
Find the *Acromag / Xembedded / Xycom AP500* at our website: *Click HERE*

AcroPack® Modules

AP500 Series Communication

CE 2 YEAR WARRANTY RoHS Compliant





Four Isolated RS232 Serial Ports ◆ Extended Temperature ◆ PCIe Bus Interface

Description

Model: AP513E-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 of the existing Industry Pack modules and a rugged form factor.

These modules provide four isolated serial communication ports from a single AP carrier slot for a high-density solution. Software-configuration helps you quickly set baud rates, character-sizes, stop bits, and parity. RTS/CTS handshake 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 large buffers minimize CPU interaction for improved system performance

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.

AcroPack modules are only 30mm wide and 70mm long. This is just 19.05mm longer than a full length mini PCIe card but the same width. AcroPacks also use standard mPCIe board hold down standoffs and screw keep out areas.

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

Key Features & Benefits

- Four isolated RS232 serial ports
- Each port isolated (250V) from digital circuitry and (100V) from the other 3 ports
- Internal isolated power created onboard
- Exar Quad UART with 16550-compatible register set
- 256-byte TX and RX FIFOs with programmable triggers for improved system performance
- Programmable baud rate (up to 1Mbps) on each channel with fractional divisors
- Interrupt support with individually controlled transmit, receive, line status, and data set interrupts
- Each channel provides handshake support (RTS, CTS) to simplify interfacing with modems
- General purpose 16-bit timer/counter with internal 125MHz clock supporting single-shot, re-trigger, and interrupts
- Line-break and false start-bit detection

Acromag® THE LEADER IN INDUSTRIAL I/O

Tel: 844-878-2352 ■ solutions@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

AcroPack® Modules

ISO9001
AS9100
MADE IN USA

AP500 Series Communication

Performance Specifications

Serial Ports

Configuration
Four independent, isolated RS232 serial communication ports configured as a DTE device.

Isolation
Each port has 250V of isolation from digital circuitry and100V of isolation from the other 3 ports.

UART
16550-compatible Exar 17v354.

Transceivers
Four Analog Devices LTM2882 galvanically isolated dual RS232 transceivers compatible with the TIA/EIA-232-F standard.

Data Rate
Programmable up to 1M 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 (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
4k space required.
1 base address register.

Environmental

Operating temperature
-40 to 85°C with minimum airflow of 200LFM.

(Conduction-cooled applications require heatsink kit, Model AP-CC-01)

Storage temperature
-55 to 125°C

Relative humidity
5 to 95% non-condensing

Power
+3.3V (±5%) 130mA idle, 200mA typical.

Internal Isolated Power
Isolated power is created onboard using LTM2882 Isolated Transceiver + Power, so isolated power does not need to be supplied externally.

MTBF (Mean Time Between Failure)
MTBF in hours using MIL-HDBK-217F, FN2. Per MIL-HDBK-217, Ground Benign, Controlled, GBGC.

25°C:
6,957,683 MTBF hours (794.3 MTBF years).
143.7 failure rate (FIT[1]).

40°C:
4,548,928 MTBF hours (519.3 MTBF years).
219.8 failure rate (FIT[1]).

Note 1: FIT is Failures in 10^9 hours.

Physical

Size
Length: 70.0mm (2.76 in)
Width: 30.0mm (1.18 in).
Height: 12.5mm (0.4921 in).

Weight
Unit weight: 10.8g (0.382 oz).

Ordering Information

AcroPack® Modules

AP513E-LF
Four Isolated RS232 serial ports

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

Accessories

AP-CC-01
Conduction-cool kit

5028-609
Adapter cable, 68-pin VHDCI to four male DSUB-9 connectors, 7″ long.

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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