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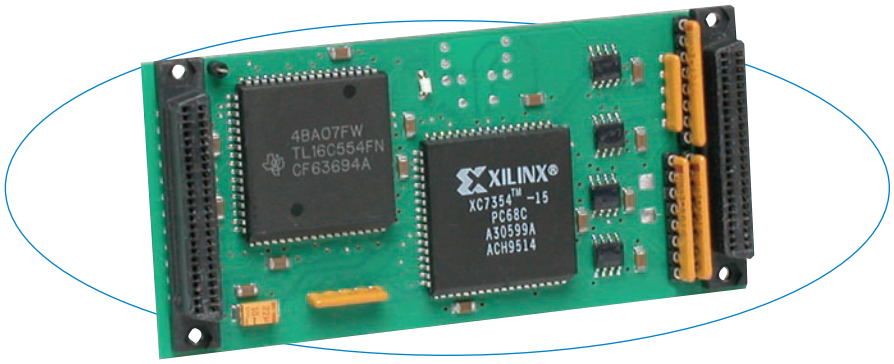
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Acromag
THE LEADER IN INDUSTRIAL I/O

IP502
Serial 485 Communication



The IP502 provides a cost-effective interface to RS485 networks. A variety of features add flexibility to handle more applications

These modules provide an asynchronous serial communication interface for your system. The IP502 has four asynchronous, half-duplex RS485 serial ports. It provides a cost-efficient interface to RS485 multi-driver networks which support up to 32 nodes. However, for full handshaking support, use the full-duplex IP501.

Software-configuration quickly sets the baud rate, character-size, stop bits, and parity.

For more efficient data processing, each serial port is equipped with16-character FIFO buffers on the transmit and receive lines.

Features

- Four asynchronous, half-duplex RS485 serial ports
- 16-byte FIFO buffers
- Programmable baud rate (up to 512Kbps) (consult factory for custom rates up to 1M bps)
- Individually controlled interrupts (unique vectors for each port)
- Line-break and false start-bit detection
- Industry-standard 16C550 family UART includes software-compatible 16C450 mode

Benefits

- Failsafe receivers guarantee a high output state when the inputs are left open or floating.
- Internal diagnostics help detect communication faults.
- 16-byte FIFO buffers minimize CPU interaction for improved system performance.

Specifications

RS485 Serial Ports

Configuration: Four independent, non-isolated RS485 serial ports with a common single return connection.

Data rate: Programmable up to 512Kbps using internal baud rate generator and carrier 8MHz clock. Consult factory for custom baud rates up to 1M baud.

Interface: Asynchronous serial only.

Max. cable length: 1200 meters (4000 feet) typical. A signal repeater can extend this limit.

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: 16-byte receive FIFO buffers and 16-byte transmit FIFO buffers.

Interrupts: Receiver line status (overrun error, parity error, framing error, or break interrupt); received data available (FIFO level reached) or character time-out; transmitter holding register empty. Multiple ports share the IntReq0 line according to a shifting priority scheme based on the last interrupting port serviced.

UART

UART: Texas Instruments TL16C554FN.

IP Compliance (ANSI/VITA 4)

Meets IP specifications per ANSI/VITA 4-1995.

IP data transfer cycle types supported:
Input/output (IOSel*), ID read (IDSel*).

Access times (8MHz clock):
ID PROM read: 1 wait state (375nS cycle).
Channel register read/write: 2 wait states (500nS cycle).
Interrupt select read: 2 wait states.

Environmental

Operating temperature: 0 to 70°C.

Storage temperature: -40 to 125°C.

Relative humidity: 5 to 95% non-condensing.

Power:
+5V (±5%): 300mA maximum.
±12V (±5%) from P1: 0mA (not used)

MTBF: 7,642,747 hrs at 25°C, MIL-HDBK-217F, Notice 2.

Ordering Information

Industry Pack Modules

IP502
Four RS485 serial ports.

Acromag offers a wide selection of Industry Pack Carrier Cards.

Software

IPSW-API-VXW
VxWorks® software support package

IPSW-API-WIN32
32-bit Windows® DLL driver software support package

IPSW-API-WIN64
64-bit Windows® DLL driver software support package

Accessories

See www.acromag.com for more information

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