IP502
Serial 485
Communication

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 with 16-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 (I/OSe*), ID read (I/OSe*).
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)

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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