IP501-x
Serial 422/485
Communication

These modules provide an asynchronous serial communication interface for your system. They have four asynchronous, full-duplex RS422B serial ports. Since the transceivers are compatible with the RS485 standard, you can also use a full-duplex RS485 interface for multiple driver support. However, for true half-duplex RS485 operation, use the IP502.

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, 64 or 128-character FIFO buffers on the transmit and receive lines.

Features
- Four asynchronous, full-duplex RS422B serial ports (full-duplex RS485)
- 16, 64, or 128-byte FIFO buffers
- Programmable baud rate (up to 512Kbps) (Consult factory for custom rates up to 1Mbps)
- Individually controlled interrupts (unique vectors for each port)
- Handshake control signals (RTS, CTS) for each channel
- Extended temperature option (-40 to 85°C)
- 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 faults.
- FIFO buffers minimize CPU interaction for improved system performance.

Specifications

RS422B Serial Ports
- Configuration: Four independent, non-isolated RS422B serial ports with a common single return connection.
- Data rate: Programmable up to 512K bits/second using internal baud rate generator. Consult factory for custom baud rates up to 1M baud.
- Interface: Asynchronous serial only.
- 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.
- 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; or modem status (CTS). Multiple ports share the IntReq0 line according to a shifting priority scheme based on the last interrupting port serviced.

UART
- IP501-16: Texas Inst. TL16C554FN or equivalent.
- IP501-64: Startech ST16C654CJ68.
- IP501-128: Exar/StarTech XR16C854

IP Compliance (ANSI/VITA 4)
- Meets IP specifications per ANSI/VITA 4-1995.
- IP data transfer cycle types supported:
  - Input/output (I/Osel*), ID read (IDSel*).
  - 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 (IP501-16/64/128) or -40 to 85°C (IP501-16E/16E/128E/128E/64E/64E/128E).
- Storage temperature: -40 to 125°C (all models).
- Relative humidity: 5 to 95% non-condensing.
- Power: 3.3V (±5%), 850mA maximum.
- ±12V (±5%) from P1: 0mA (not used).

Ordering Information

Industry Pack Modules
- IP501-16: Four serial ports with 16-byte FIFOs.
- IP501-16E: Same as IP501-16 plus extended temp. range
- IP501-64: Four serial ports with 64-byte FIFOs
- IP501-128: Four serial ports with 128-byte FIFOs.
- IP501-128E: Same as IP501-128 plus extended temp. range.

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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