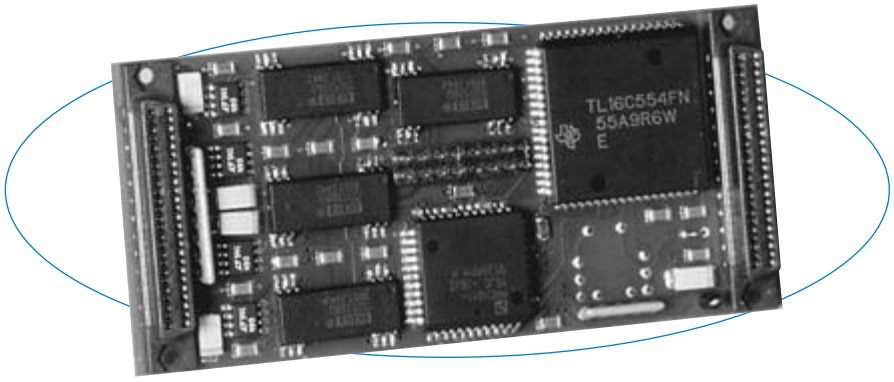
IP512-x Isolated Serial 485 Communication



Large 64-byte FIFO buffers reduce the processing burden on the CPU to increase the overall system performance.

IP512 Industry Pack (IP) modules provide an isolated, high-performance serial communication interface for your computer.

Large FIFO buffers on the transmit and receive lines of each serial port enable more efficient data processing. When the buffer is full, an interrupt is sent to the CPU to read the data. To match your budget and performance requirements, you can order 16 or 64-byte (IP512-16/64) buffers.

Features

- Four asynchronous RS485 serial ports
- Isolated serial ports
- 16 or 64-byte FIFO buffers
- Software-programmable baud rate (up to 512Kbps)
- Individually controlled interrupts (unique vectors for each port)
- Line break generation and detection
- False start bit detection
- Industry-standard 16C550 UART including software compatible 16C450 mode

Benefits

- Isolation protects computer system from ground loops and transient signals.
- FIFO buffers minimize CPU interaction for more efficient data processing.
- Internal diagnostics help detect communication faults.
- Priority shifting scheme prevents continuous interrupts from blocking other ports.

Specifications

Serial Ports

Configuration: 4 independent, isolated, RS485 ports.

Interface: Asynchronous serial only.

Data rate: Programmable to 512K bits/second using internal baud rate generator.

Character size: Programmable 5-8 bits.

Parity: Programmable odd, even, or no parity.

Stop bits: Programmable 1, 1-1/2, or 2 bits.

Data register buffers: Double-buffered (16C450 mode) or 16/64-byte FIFO buffered,

Interrupts: Receiver Line Status, Received Data Available or Character Timeout, Transmitter Holding Register Empty.

Receiver input resistance: 12K ohms minimum.

Differential input threshold: ±0.2V.

Bias resistors: 560 ohms pull-ups.

Output short circuit current: 250mA maximum.

Termination resistors 120 ohms. Installed in board sockets (removable).

Port power requirements: Isolated +5V ±5%, 15mA maximum, each port.

Maximum cable length: 1200m (4000 ft.).

UART

IP512-16: Texas Inst. TL16C554FN or equivalent.

IP512-64: Startech ST16C654CJ68.

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*), Interrupt select (INTSel*).

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

Environmental

Operating temperature: 0 to 70°C

Storage temperature: -40 to 125°C.

Relative humidity: 5 to 95% non-condensing.

Power:
+5V (±5%): 160mA maximum.
±12V (±5%): 0mA (not used).

MTBF: Consult factory.

Ordering Information

Industry Pack Modules

IP512-16
Four RS485 ports with 16-byte FIFOs.

IP512-64
Four RS485 ports with 64-byte FIFOs.

For Industry Pack Carrier Cards, see Page 5.

Software *(see Page 81)*

IPSW-API-VXW
VxWorks® software support package

IPSW-API-QNX
QNX® software support package

IPSW-ATX-PCI
ActiveX®/OLE Controls 2.0 software package

For accessories information, see Page 87.