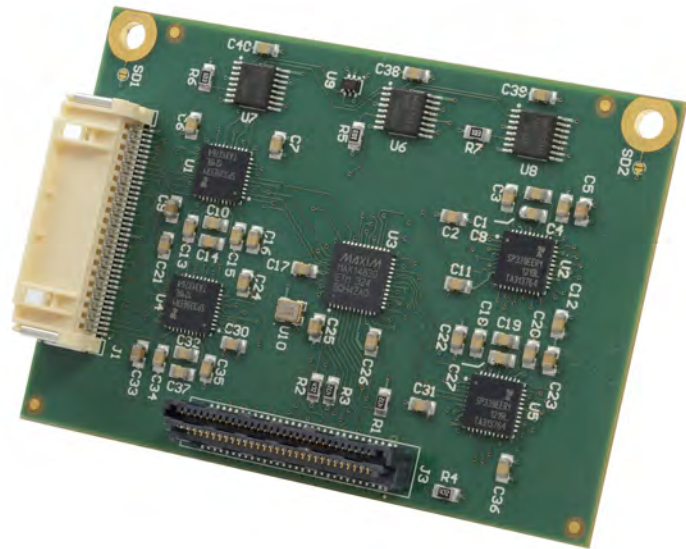


Features

- Four independent asynchronous serial channels
- Each serial channel supports:
 - 128-word Transmit and Receive FIFOs
 - RS-232, RS-422, or RS-485
 - Programmable baud rates to 5.5Mbps
 - CTS, RTS, DSR, DTR, RI, and DCD (RS-232)
- No external resistors required for RS-485/422 termination
- RS-485/422 enhanced failsafe for inputs
- ESD protection:
 - ±15kV human body model (HBM)
 - ±8kV IEC 61000-4-2 (contact)
- Programmable serial characteristics for each channel:
 - 5, 6, 7, or 8-bit character lengths
 - Even, odd, or no parity
 - 1, 1.5, or 2 stop bits
- Software and hardware flow control supported
- Local internal loopback for diagnostics
- -40° to +85°C operational temperature range
- +5 volt only operation
- Small size: 1.97 x 2.84 inches (50 x 72mm)

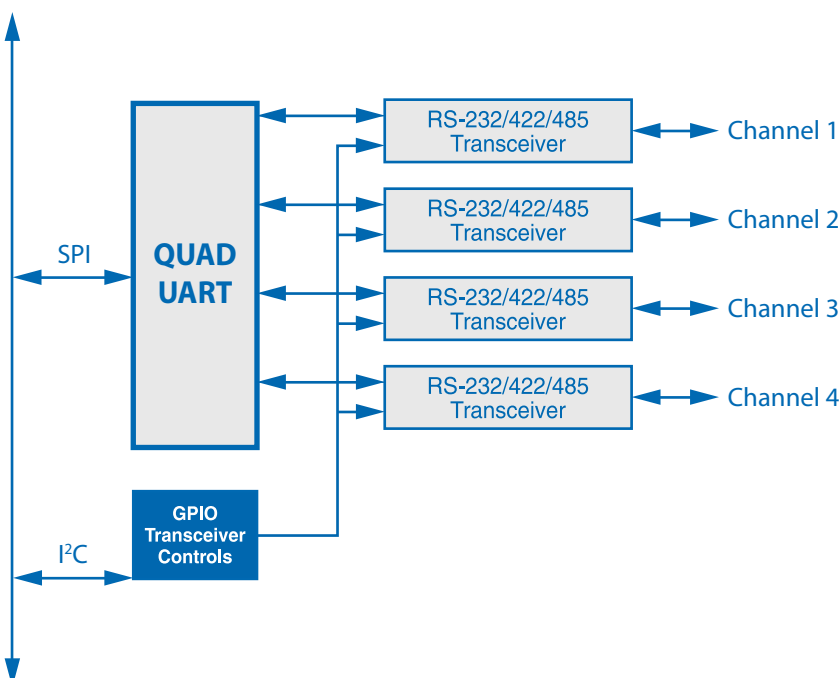


Product Description

The IO60-COM4 is a four channel asynchronous serial module supporting RS-232, RS-422, and RS-485 serial standards. The module utilizes high-speed serial peripheral interface (SPI™) and I2C interfaces to provide serial expansion for single board computers with the IO60 connector. The flexible design uses jumperless configuration and is compatible with both ARM and x86 single board computers.

Designed to complement WinSystems' single board computers, the IO60 expansion modules feature long-term product availability, -40° to +85°C operational temperature, and shock tested mounting.

Serial UART – The IO60-COM4 is based on a Maxim MAX14830 advanced quad universal asynchronous receiver-transmitter (UART). The high-speed SPI interface supports a clock rate up to 26MHz. Each UART includes 128-word transmit and receive first-in/first-out (FIFO) buffers with advanced control to reduce host processor data flow management. Phase-Locked Loop (PLL) and fractional baud-rate generators allow flexible data rates up to 5.5Mbps with the onboard 1.8432MHz reference



The SPI interface for the IO60-COM4 is wired directly to the SPI_CS0 (chip select 0) on the IO60 connector. Internal lane shifting within the IO60 stack allows multiple boards to be used in a stack. The location of the board in the stack and resources utilized by other devices will determine which SPI chip select should be used with the module.

The MAX14830 UART provides a single shared interrupt request signal, which is routed to the IO60 connector. There are four interrupt source registers for each UART and a Global IRQ register. The Interrupt Status Register (ISR) can be polled directly to determine the state of UARTs or used in conjunction with the physical IRQ output.

Multiprotocol Transceivers – The serial channels include EXAR SP339E multiprotocol transceivers with internal termination and four configuration modes, allowing all three protocols to be used interchangeably over a single cable. Each transceiver is software configurable through the I2C interface. Supported modes include loopback, RS-232, RS-485 (2-wire half duplex), or RS-422 (4-wire full duplex). The slew rate, cable termination or transceiver enables are also independently selectable through the I2C interface.

The I2C bus interface includes three 8-bit I/O port expanders connected to the SCLK and SDATA signals on the IO60 connector. These devices provide 20 configuration signals used to enable and set the operation modes for each transceiver.

Software – WinSystems provides Linux drivers and configuration utilities to demonstrate the most commonly used features of the IO60-COM4. Source code and full programming register information are available so engineers can take full advantage of the flexibility of the IO60-COM4 design.

Custom Configurations – Our engineering staff can utilize the building blocks contained in our standard products to address most requirements that arise. We will work directly with your staff to define an optimum solution in order to reach production in a short time frame. These customizations may be simply configuring products prior to shipment or specialized product designs.

Technical Specification

Electrical

Four Serial Ports	RS-232, RS-422, or RS-485
Baud Rates	Variable up to 5.5Mbps
Control Signals	RS-232: CTS, RTS, DSR, DTR, RI, DCD RS-422/485: CTS and RTS
Electrical Power ¹	Vdd +3.3VDC @ 37mA

Environmental

Operational temperature -40° to +85°C
RoHS compliant

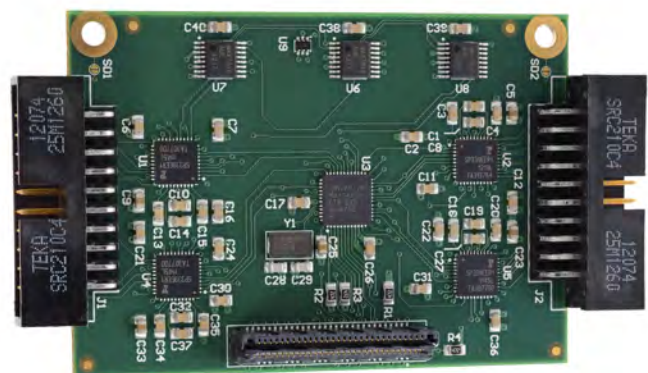
Mechanical

Dimensions	1.97 x 2.84 inches (50 x 72mm)
Weight	19 gm (0.67 oz)
PC board	0.078 inches, four layer FR4

Ordering Information

(See website for complete ordering information and accessories.)

IO60-COM4 Quad RS-232/RS-422/RS-485 Serial IO60 Module



IO60-COM4 - Back View

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Product names of other companies may be trademarks of their respective companies

¹Power consumption estimates are for the IO60-COM4 only and exclude any external devices