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Find the *Excalibur Systems M4KSerial4* at our website: *Click HERE*

M4KSerial

AVIONICS COMMUNICATION MODULE

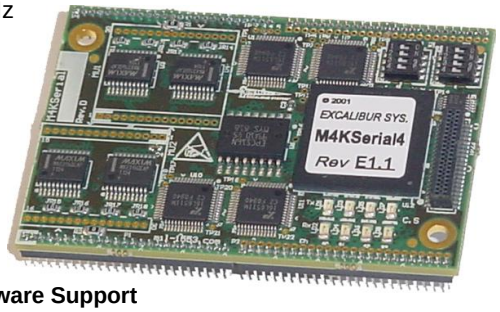
The M4KSerial is a serial interface module for the multiprotocol Excalibur 4000 family of carrier boards. This module supports up to four independent channels of serial communications, each of which can be selected as RS-485, RS-422 or RS-232. The module operates independently of the host computer, reducing the need for host intervention.

The M4KSerial module is based on the Exar XR16L651 Universal Asynchronous Receiver/ Transmitter (UART). The device is compatible to industry standard 16C450, 16C550, ST16C580 and ST16C650A UARTs.

Each of the M4KSerial's four channels contains a transmit FIFO capable of holding up to 8000 bytes and a receive FIFO capable of holding either 16000 input bytes or 3200 bytes with a 32-bit Time Tag associated with each byte. These large buffers allow application code to transfer large quantities of data with a single non-blocking subroutine call. The 32-bit Time Tag on receive channels is very useful for synchronizing serial data with data from other modules on the 4000 board or on other interface boards. Each channel has a programmable baud rate of up to 2 Mbps and can be configured as RS-232, RS-422 or RS-485.

General Features

- Up to four independent serial channels based on XR16L651 UART
- Software compatible to industry standard 16C450, 16C550, ST16C580 and ST16C650A UARTs
- Software or hardware selectable RS-232, RS-422 and RS-485 communications
- Up to 2 Mbps asynchronous operation per channel
- Optional FIFO data buffers for both Transmit (8K x 9) and Receive (16K x 9) per channel
- Receive data break, frame, parity and overrun errors detection
- Data rates are selectable, via the on-board Baud Rate Generator and the configuration registers for each channel, from 50 bps to 1 Mbps for RS-232 and from 50 bps to 2 Mbps for RS-422 and RS-485
- Selectable input clock: 14.7456 MHz, 24.0 MHz or 32.0 MHz
- 120 Ohm termination resistors on RS-422 and RS-485
- Provides Loop-back testing
- 32-bit Time Tagging per receive channel
- Interrupts on: Receive data, Parity error, Stop Bit error, Tx FIFO Empty
- RS-422 and RS-485 true fail-safe receivers
- Transmitters and receivers protected against wiring faults
- Burst mode transfers on PCIe carrier boards



Physical Characteristics

- Dimensions: 67mm x 46mm
- Weight (4 ch.): 18g

Operation Environment

- Temperature: 0°–70°C standard temperature
  -40° to +85°C extended temperature (optional)
- Humidity: 5%–90% noncondensing
- MTBF (2 ch.): 303,000 hours at 25°C, G_F, S217F

Host Interface

- 4000 family of carrier boards
- Power: 5V @ 450mA (max)

Software Support

- C drivers with source code
- Additional software may be available on our website

Ordering Information

- **M4KSerial2** Module with two RS-232/422/485 channels
- **M4KSerial4** Module with four RS-232/422/485 channels
- Additional Options:
  - **-E** Extended temperature option
  - **-001** With conformal coating

Note: When ordering this module with a carrier board, use the module code specified in the user's manual of the carrier board.

CERTIFIED AMS AS 9100

CERTIFIED QMS SI ISO 9001: 2008

January 2012, Rev A-2

These specifications are subject to change without notification

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