



IRTS SERIAL8-I PC104 Communication board

Overview

The IRTS PC/104 Serial8 board has 8 independent asynchronous serial ports that support baud rates from 200 baud to 500 kbaud. The board is fully software configurable for addressing and interrupts. Eight external hardware interrupts are supported. The interrupt line of each serial port can be assigned to a separate and distinct interrupt, or interrupts may be shared or disabled in any combination. The I/O addressing of each serial port is set in software.

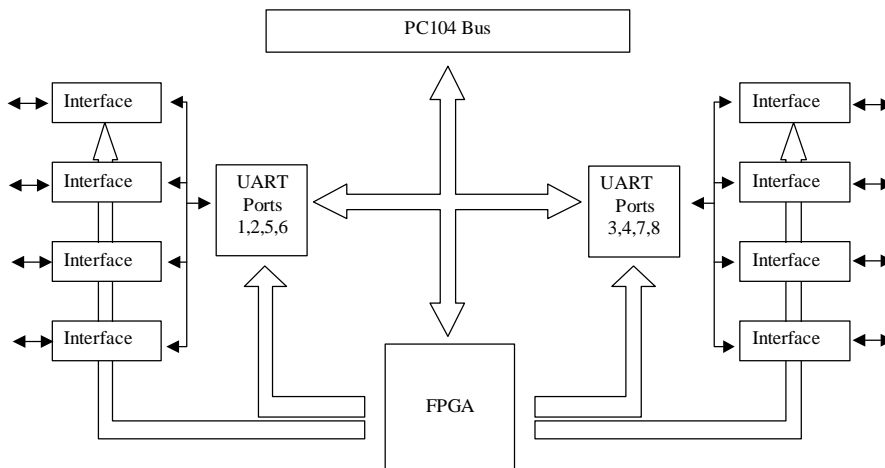
The board uses industry-standard 16750 UARTs. Any software that will work with these UARTs on other boards will work on the IRTS Serial8 board. Any port can be assigned to any address and use any interrupt, resulting in a high level of flexibility.

A small DOS utility program called TESTSER is used to access the serial port set-up registers as well as allowing easy assignment and testing of each serial port. The source code of TESTSER is provided for the user so that they can easily incorporate the coded example into their application. The eight serial ports are split between two 50-pin headers, with pin outs that allow each port to be directly wired to industry standard DB9 male connectors using ribbon cable.

The supported serial signals are a subset of the complete serial signal set, as indicated below:

Physical interface	Supported signals
RS232	RxD, TxD, RTS, CTS
RS422	Rx+, Rx-, Tx+, Tx-
RS485	RxTx+, RxTx-

Each channel can be configured to operate as RS232, RS422, or RS485. The configuration of each channel is accomplished through register configuration. The position of each signals on the 50-pin headers can be configured for specific needs through the soldering of 0R shunts located on solder face of the board.



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Features

The IRTS Serial8 PC/104 Card is a highly flexible, embedded serial I/O module with the following features:

UARTS - Industry Standard 16750 UARTS for each serial port

Data Rates - 200 baud to 500 kbaud

Transceivers - RS232, RS422, or RS485 physical interface for each serial port, **fully ESD/EFT protected**

Configuration - Onboard software register stack for individually configuring I/O addresses, IRQs, physical interface for each serial port

Physical Size - Compact PC/104 footprint (3.550" x 3.775")

Connectors - Serial ports accessible through two 2x25 shrouded headers

Cabling - Ribbon cabling from 50-pin headers to standard DB9 connectors provided

Power - Powered through the PC/104 header

IRQs - Eight (8) separate interrupts available, with interrupts internally OR'd to allow sharing (interrupts 10, 11, 12, and 15 available when full 16-bit PC/104 bus used)

BUS - Full 16-bit PC/104 bus header allows usage with any PC/104 CPU, including those with only the 8-bit PC/104 bus connector.

Specifications

RS232 Serial Port Specifications

Full duplex, single ended (no multi-drop), unbalanced signalling.

RS422 Serial Port Specifications

Full duplex, singled ended or multi-drop (not recommended for RS422), balanced (differential) signalling.

RS485 Serial Port Specifications

Half duplex, ideal for multi-drop, balanced (differential) signalling.

Physical Specifications

PC/104 Form Factor (3.550"x3.770").

Power Specifications

Supply voltage: 5V DC +/- 5%
 Supply voltage ripple: 100 mV peak to peak 0 - 20 MHz
 Supply current (maximal): 100 mA, no load

Operating Environment

Temperature:

-40° to +85°C Extended Operating Temperature Range (**)with appropriate airflow))

Humidity:

5% to 95% non-condensing

(*) The maximum operating temperature is the maximum measurable temperature on any spot on the modules' surface. It is the user's responsibility to maintain this temperature within the above specification.