104-COM-8S & 104-COM-4S

PC/104 SERIAL COMMUNICATION

EMBEDDED-PC
PC/104
MODULES

KEY FEATURES:

- 8 or 4 independent asynchronous serial COM ports
- Field selectable RS-422 and RS-485, independent for each port
- Auto-RTS feature makes half-duplex RS-485 communications effortless
- Speeds up to 921.6K
- Fixed bias and jumper selectable termination provided on each transmit and receive channel simplifies cabling
- Low power required: +5VDC at 80mA typical
- Programmable individual non-volatile base addresses and IRQs simplifies installation
- Operates as a standard COM port in all operating systems

FACTORY OPTIONS:

- 16850 UARTS with 128-byte FIFO
- 2-port version available
- 0 to 70°C and -40 to +85°C versions available

The 104-COM-8S and 104-COM-4S are eight and four port, asynchronous, serial communication boards that support both RS-485 and RS-422 communications. Ideal for POS, gaming systems, machine monitoring, military, and high-density networking applications, these boards may be installed in any system with PC/104 support. Ports are accessed via a 50-pin IDC type right angle connector.

This board may be operated in two modes. In the Default Mode, the base address for the board is selected by jumpers and all of the channel addresses are sequential. Alternately, the addresses and interrupts of the individual channels may be stored in non-volatile memory on the board and loaded into programmed logic when the board is initially powered.

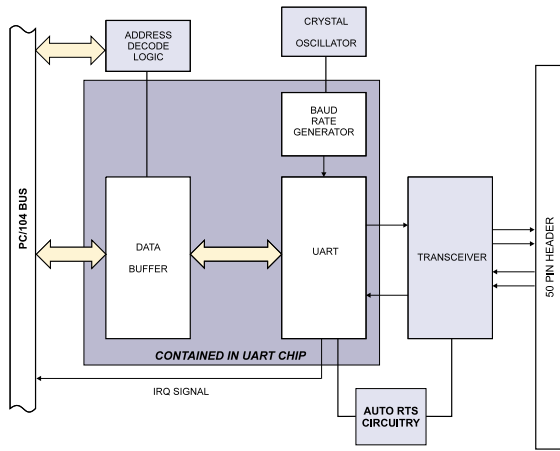Individual interrupts for each channel are programmed into the non-volatile memory in both modes.

The boards include a convenient Auto-RTS feature, which makes half-duplex RS-485 communications effortless. The 104-COM-8S and -4S offer optional type 16850 UARTS with 128-byte transmit/receive FIFO buffers to protect against lost data in multi-tasking systems while maintaining 100% compatibility with all operating system COM port drivers. A jumper selection on the board permits baud rate capability up to 921.6K. ACCES offers the 104-COM-8S and 4S in both standard and extended temperature versions ideal for outdoor applications or harsh industrial surroundings.

SOFTWARE

The 104-COM-8S and -4S are supported by all operating systems and include a free DOS, Linux and Windows 95/98/Me/NT/2000/XP compatible software package. This includes sample programs and source code in "C" and Pascal for DOS, and Visual Basic, Delphi, C++ Builder, and Visual C++ for Windows. Also included is a graphical setup program in Windows. An easy-to-use Windows terminal program simplifies verification of proper operation.

Block Diagram & Pin Configuration

RS-422 Functions

GND	01 — 02	PORT0 Tx+
PORT0 Tx-	03 — 04	GND
PORT0 Rx+	05 — 06	PORT0 Rx-
GND	07 — 08	PORT1 Tx+
PORT1 Tx-	09 — 10	GND
PORT1 Rx+	11 — 12	PORT1 Rx-
GND	13 — 14	PORT2 Tx+
PORT2 Tx-	15 — 16	GND
PORT2 Rx+	17 — 18	PORT2 Rx-
GND	19 — 20	PORT3 Tx+
PORT3 Tx-	21 — 22	GND
PORT3 Rx+	23 — 24	PORT3 Rx-
GND	25 — 26	PORT4 Tx+
PORT4 Tx-	27 — 28	GND
PORT4 Rx+	29 — 30	PORT4 Rx-
GND	31 — 32	PORT5 Tx+
PORT5 Tx-	33 — 34	GND
PORT5 Rx+	35 — 36	PORT5 Rx-
GND	37 — 38	PORT6 Tx+
PORT6 Tx-	39 — 40	GND
PORT6 Rx+	41 — 42	PORT6 Tx-
GND	43 — 44	PORT7 Tx+
PORT7 Tx-	45 — 46	GND
PORT7 Rx+	47 — 48	PORT7 Rx-
GND	49 — 50	GND

RS-485 Functions

GND	01 — 02	PORT0 Tx/Rx+
PORT0 Tx/Rx-	03 — 04	GND
NC	05 — 06	NC
GND	07 — 08	PORT1 Tx/Rx+
PORT1 Tx/Rx-	09 — 10	GND
NC	11 — 12	NC
GND	13 — 14	PORT2 Tx/Rx+
PORT2 Tx/Rx-	15 — 16	GND
NC	17 — 18	NC
GND	19 — 20	PORT3 Tx/Rx+
PORT3 Tx/Rx-	21 — 22	GND
NC	23 — 24	NC
GND	25 — 26	PORT4 Tx/Rx+
PORT4 Tx/Rx-	27 — 28	GND
NC	29 — 30	NC
GND	31 — 32	PORT5 Tx/Rx+
PORT5 Tx/Rx-	33 — 34	GND
NC	35 — 36	NC
GND	37 — 38	PORT6 Tx/Rx+
PORT6 Tx/Rx-	39 — 40	GND
NC	41 — 42	NC
GND	43 — 44	PORT7 Tx/Rx+
PORT7 Tx/Rx-	45 — 46	GND
NC	47 — 48	NC
GND	49 — 50	GND

Specifications

Serial Ports

Number of serial ports	8 or 4
Protocol	RS-422 and RS-485, independent for each port
Maximum baud rate	921.6K
Character length	5, 6, 7, or 8 data bits
Parity	Even, odd, or none
Receiver input sensitivity	±200mV differential input. Lines include factory bias and jumper selectable termination.
Common mode voltage range	+12V to -7V
Transmitter output drive capability	60mA with thermal shutdown. Lines include factory bias and jumper selectable termination.
Base address options	Programmable
Interrupts	Individual IRQs for each channel are stored onboard in non-volatile memory

General

I/O connections	Via a 50 pin IDC type right angle connector. There are four pins per port plus common grounds.
Short circuit protection	All outputs protected against continuous short circuit
Power required	+5VDC at 80mA typical, all outputs open
Operating temperature	-40 to +85°C optional, all versions
Operating humidity	5% to 95% RH, non-condensing
PC/104 bus	8-bit and 16-bit bus headers are used

104-COM-8S	8-port RS-422/485
104-COM-4S	4-port RS-422/485

ACCES I/O Products, Inc. 10623 Roselle Street   San Diego, CA 92121
Tel: (858) 550-9559   (800) 326-1649   Fax: (858) 550-7322
Email: contactus@accesio.com   Website: www.accesio.com