CPCI-SIO4ARHM

Quad Channel High Performance Serial I/O CPCI CARD

With up to 256Kbytes of FIFO buffering and Multiple Serial Protocols
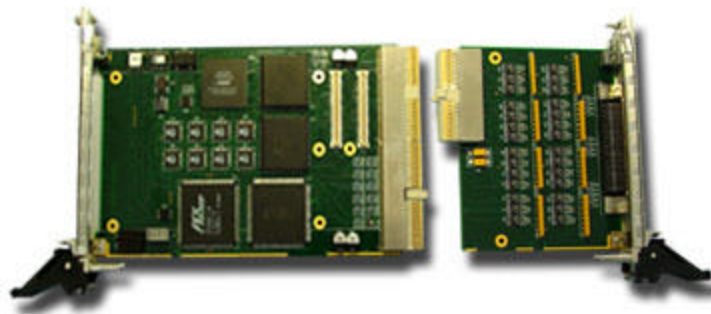
Features Include:

- 4 Full-Duplex Serial Channels

- Either RS-422/485 or RS232 interface available

- VxWorks™ and WinNT™ drivers are available

- Up to 10 Mbits/s synchronous operation on each channel

- Up to 1 Mbits/s asynchronous operation on each channel

- Up to 32 Kbyte FIFOs for transmit and receive of each channel (8 FIFOs Total)

- Serial channel cabling - via front panel of host

- Built-In-Self Test capability verifies proper operation of the card

- Supports Asynchronous, Bisync, SDLC, HDLC, and Nine-bit protocols

- Parity and CRC error detection

- DMA to/from Zilog Z16C30 (USC) to on-board FIFOs

- DMA to/from on-board FIFOs to CPCI host

- Sync word selection allows an interrupt upon the reception of a user specified character.

- Extensive interrupt signaling capability

Applications Include:

✓ LAN/WAN Networking   ✓ Telecommunications   ✓ Serial Interface

Functional Description:

The CPCI-SIO4ARHM and its transition module make a four channel full-duplex RS-422/485 serial board set. Each serial channel of the CPCI-SIO4ARHM can operate up to 10 Mbits/s in synchronous mode. Optional 32 Kbyte FIFO buffer for both transmit and receive (256 Kbytes Total FIFOs) data on each channel provides for a smooth and efficient interface between the serial interfaces and the host computer. The board is based on the Zilog Z16C30 high speed Integrated Universal Serial Controller (USC) which supports Asynchronous, Isochronous, Bisync, Monosync, HDLC, SDLC, External Sync and Nine-Bit protocols. The USC chip provides full duplex operation with baud rate generators, digital phase-locked loop for clock recovery and a full duplex DMA interface. One of the rear transition module is required and is priced separately. The module is available with RS-422/485 or RS-232 transceivers.

The CPCI-SIO4ARHM also has a PMC host site to allow customers to create more compact system solutions. Customers can mount any PMC board, including General Standard's PMC-SIO4A board. The CPCI-SIO4ARHM and the PMC-SIO4A combination will provide eight serial ports in a single CPCI slot.
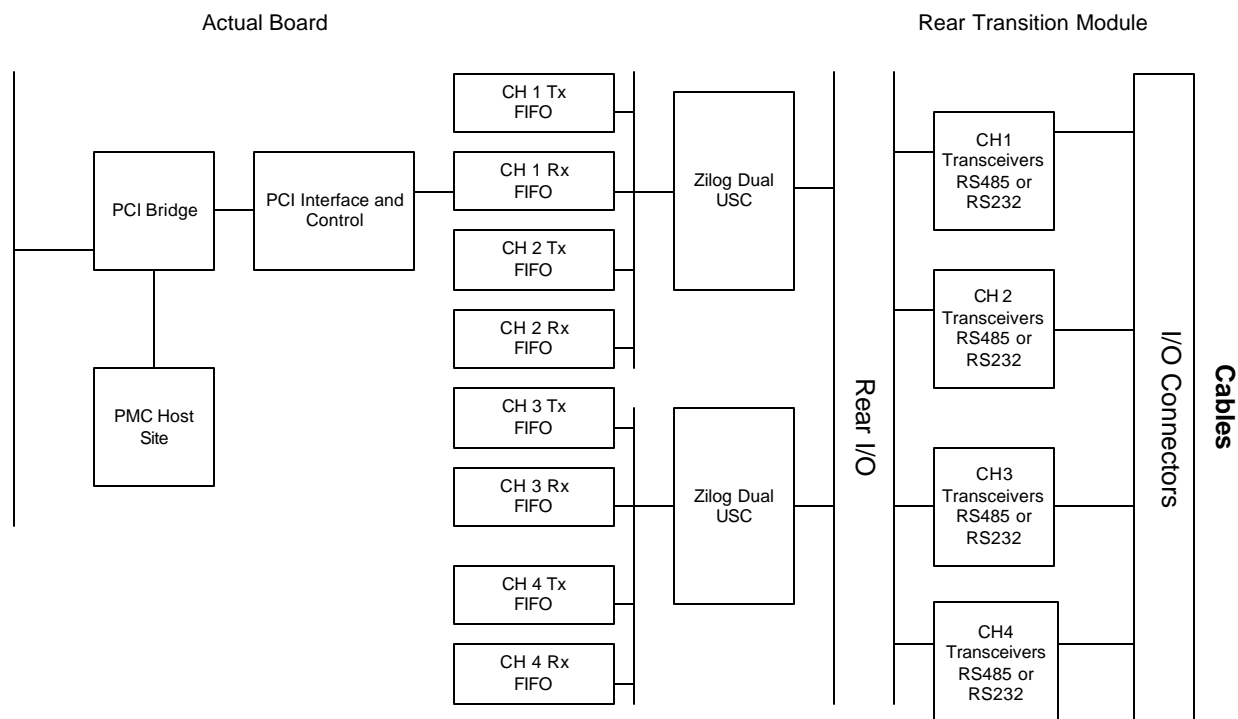
Actual Board   Rear Transition Module

ELECTRICAL SPECIFICATIONS

At +25 $^{\text{O}}$C, with specified operating voltages.

PCI INTERFACE

❑ **Compatibility:**   Conforms to PCI Specification 2.1, with D32 read/write transactions.
Supports "plug-n-play" initialization.
Provides a single multifunction interrupt.
Supports FIFO DMA transfers as bus master.

MECHANICAL AND ENVIRONMENTAL SPECIFICATIONS

❑ **Power Requirements**

+5VDC ±0.2 VDC at 1.5 Amps

Power Dissipation: 6.0 Watts, Side 1
1.5 Watts, Side 2

❑ **Physical Characteristics**

Height: 106.7 mm
Depth: 21.6 mm
Width: 160.0 mm

❑ **Environmental Specifications**

Ambient Temperature Range: Operating: 0 to +55 degrees Celsius
Storage: -40 to +85 degrees Celsius

Relative Humidity: Operating: 0 to 80%, non-condensing
Storage: 0 to 95%, non-condensing

Altitude: Operation to 10,000 ft.

❑ **Cooling Requirements**

Conventional air-cooling; 200 LPFM (typical mezzanine environment).

ORDERING INFORMATION

Specify the basic product model number (CPCI-SIO4ARHM), followed by an option suffix "-X", as indicated below. For example, model number CPCI-SIO4ARHM-256K describes a board with a total of 256Kbytes of FIFO buffering.

Optional Parameter	Value	Specify Option As:
FIFO Size:	256Kbyte	X =256K
	128Kbyte	X = 128K
	64Kbyte	X = 64K
	32Kbyte	X = 32K
	8Kbyte	X = 8K
	4Kbyte	X = 4K
	1Kbyte	X = 1K

SYSTEM I/O CONNECTIONS

Pin #	PA2, Row A, Signal Names:	Pin #	PB2, Row B, Signal Names:
1	Channel 1 Lwr Cable TXD/RXD +	35	Channel 3 Lwr Cable TXD/RXD +
2	Channel 1 Lwr Cable TXD/RXD -	36	Channel 3 Lwr Cable TXD/RXD -
3	Channel 1 Lwr Cable CTS/DCD +	37	Channel 3 Lwr Cable CTS/DCD +
4	Channel 1 Lwr Cable CTS/DCD -	38	Channel 3 Lwr Cable CTS/DCD -
5	Channel 1 Lwr Cable TX/RX Clk +	39	Channel 3 Lwr Cable TX/RX Clk +
6	Channel 1 Lwr Cable TX/RX Clk -	40	Channel 3 Lwr Cable TX/RX Clk -
7	Channel 1 Upr Cable TXD/RXD +	41	Channel 3 Upr Cable TXD/RXD +
8	Channel 1 Upr Cable TXD/RXD -	42	Channel 3 Upr Cable TXD/RXD -
9	Channel 1 Upr Cable CTS/DCD +	43	Channel 3 Upr Cable CTS/DCD +
10	Channel 1 Upr Cable CTS/DCD -	44	Channel 3 Upr Cable CTS/DCD -
11	Channel 1 Upr Cable TX/RX Clk +	45	Channel 3 Upr Cable TX/RX Clk +
12	Channel 1 Upr Cable TX/RX Clk -	46	Channel 3 Upr Cable TX/RX Clk -
13	Channel 2 Lwr Cable TXD/RXD +	47	Channel 4 Lwr Cable TXD/RXD +
14	Channel 2 Lwr Cable TXD/RXD -	48	Channel 4 Lwr Cable TXD/RXD -
15	Channel 2 Lwr Cable CTS/DCD +	49	Channel 4 Lwr Cable CTS/DCD +
16	Channel 2 Lwr Cable CTS/DCD -	50	Channel 4 Lwr Cable CTS/DCD -
17	Channel 2 Lwr Cable TX/RX Clk +	51	Channel 4 Lwr Cable TX/RX Clk +
18	Channel 2 Lwr Cable TX/RX Clk -	52	Channel 4 Lwr Cable TX/RX Clk -
19	Channel 2 Upr Cable TXD/RXD +	53	Channel 4 Upr Cable TXD/RXD +
20	Channel 2 Upr Cable TXD/RXD -	54	Channel 4 Upr Cable TXD/RXD -
21	Channel 2 Upr Cable CTS/DCD +	55	Channel 4 Upr Cable CTS/DCD +
22	Channel 2 Upr Cable CTS/DCD -	56	Channel 4 Upr Cable CTS/DCD -
23	Channel 2 Upr Cable TX/RX Clk +	57	Channel 4 Upr Cable TX/RX Clk +
24	Channel 2 Upr Cable TX/RX Clk -	58	Channel 4 Upr Cable TX/RX Clk -
25	No connect	59	No connect
26	No connect	60	No connect
27	No connect	61	No connect
28	No connect	62	No connect
29	No connect	63	No connect
30	No connect	64	No connect
31	Cable Spare 0 +	65	Cable Spare 2 +
32	Cable Spare 0 -	66	Cable Spare 2 -
33	Cable Spare 1 +	67	Cable Spare 3 +
34	Cable Spare 1 -	68	Cable Spare 3 -

Panel Pin-view
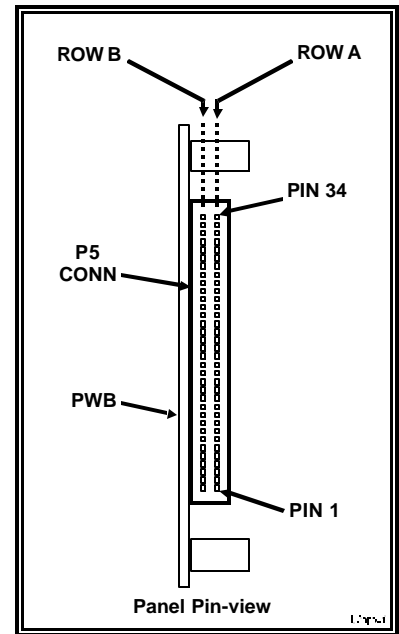
The 68-pin DSUB (user I/O interface) connector (PLUG) is mounted at the front edge of the board (Ref. Des. PA2, for row A & PB2, for row B). The part number is P50E-068PI-SRI-TG, manufacturer, Robinson Nugent. The mating part number is P50E68-S-TG. This cable is used for all 4 channels. The Robinson Nugent phone no. is 812-945-0211. Contact GSC for factory built cables of any desired length. See Table above for pin-out.

General Standards Corp.
8302A Whitesburg Drive
Huntsville, AL 35802

SYSTEM I/O CONNECTIONS

User Connector

Pin #	PA2, Row A, Signal Names:	Pin #	PB2, Row B, Signal Names:	Pin #	PB2, Row B, Signal Names:
1	No Connect	24	Channel 2 Lwr Cable RXC/TXC -	47	Channel 3 Uwr Cable RXD/TXD +
2	No Connect	25	Channel 2 DCD +	48	Channel 3 Uwr Cable RXD/TXD -
3	No Connect	26	Channel 2 DCD -	49	Channel 3 Uwr Cable RXC/TXC+
4	No Connect	27	Channel 2 Uwr Cable RXD/TXD +	50	Channel 3 Uwr Cable RXC/TXC -
5	Channel 1 CTS +	28	Channel 2 Uwr Cable RXD/TXD -	51	Ground
6	Channel 1 CTS -	29	Channel 2 Uwr Cable RXC/TXC+	52	Ground
7	Channel 1 Lwr Cable RXD/TXD +	30	Channel 2 Uwr Cable RXC/TXC -	53	Channel 4 CTS +
8	Channel 1 Lwr Cable RXD/TXD -	31	No Connect	54	Channel 4 CTS -
9	Channel 1 Lwr Cable RXC/TXC+	32	No Connect	55	Channel 4 Lwr Cable RXD/TXD +
10	Channel 1 Lwr Cable RXC/TXC -	33	No Connect	56	Channel 4 Lwr Cable RXD/TXD -
11	Channel 1 DCD +	34	No Connect	57	Channel 4 Lwr Cable RXC/TXC+
12	Channel 1 DCD -	35	No Connect	58	Channel 4 Lwr Cable RXC/TXC -
13	Channel 1 Uwr Cable RXD/TXD +	36	No Connect	59	Channel 4 DCD +
14	Channel 1 Uwr Cable RXD/TXD -	37	No Connect	60	Channel 4 DCD -
15	Channel 1 Uwr Cable RXC/TXC+	38	No Connect	61	Channel 4 Uwr Cable RXD/TXD +
16	Channel 1 Uwr Cable RXC/TXC -	39	Channel 3 CTS +	62	Channel 4 Uwr Cable RXD/TXD -
17	Ground	40	Channel 3 CTS -	63	Channel 4 Uwr Cable RXC/TXC+
18	Ground	41	Channel 3 Lwr Cable RXD/TXD +	64	Channel 4 Uwr Cable RXC/TXC -
19	Channel 2 CTS +	42	Channel 3 Lwr Cable RXD/TXD -	65	No Connect
20	Channel 2 CTS -	43	Channel 3 Lwr Cable RXC/TXC+	66	No Connect
21	Channel 2 Lwr Cable RXD/TXD +	44	Channel 3 Lwr Cable RXC/TXC -	67	No Connect
22	Channel 2 Lwr Cable RXD/TXD -	45	Channel 3 DCD +	68	No Connect
23	Channel 2 Lwr Cable RXC/TXC+	46	Channel 3 DCD -		

The 68-pin SCSI (user I/O interface) connector (PLUG) is mounted at the front edge of the board (Ref. Des. PA2, for row A & PB2, for row B). The part number is 787170-7, manufacturer, AMP. Contact GSC for factory built cables of any desired length. See Table above for pin-out.