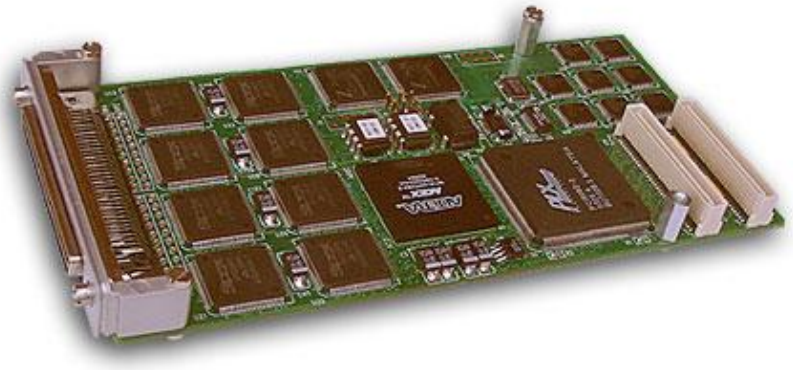
General Standards Corporation

High Performance Bus Interface Solutions

PMC-SIO4BX

Four Channel High Performance Serial I/O PMC Card

Featuring RS422/RS485/RS232/RS423 Software Configurable Transceivers and 32K Byte FIFO Buffers (256K Byte Total)



**** NOT RECOMMENDED FOR NEW DESIGNS ****
**** See GSC PMC66-SIO4BXR for New 66MHz PCI Interface and PMC Rear IO ****

The PMC-SIO4BX is a four channel serial interface card which provides high speed, full-duplex, multi-protocol serial capability for PMC applications. The PMC-SIO4BX combines multi-protocol Dual Universal Serial Controllers, deep external FIFOs, and software selectable multi-protocol transceivers to provide four fully independent synchronous/asynchronous serial channels.

Features:

- Four Independent Multi-Protocol Serial Channels
- Serial Mode Protocols include Asynchronous, Monosync, Bisync, SDLC, HDLC, Nine-Bit, and IEEE 802.3
- Synchronous Serial Data Rates up to 10Mbps
- Asynchronous Serial Data Rates up to 1Mbps
- Independent Transmit and Receive FIFOs for each channel - Up to 32K byte each
- Multiprotocol Transceivers support RS422 (V.11)/RS485, RS423 (V.10), RS232 (V.28), V.35, RS530, as well as other Mixed Protocol modes
- Parity and CRC detection capability
- Programmable Oscillators provide flexibility for Baud Rate Clock generation
- SCSI type 68 pin front edge I/O Connector
- Eight signals per channel, configurable as DTE or DCE:
  3 Serial Clocks (TxC,RxC,AuxC), 2 Serial Data signals (TxD,RxD), CTS, RTS, DCD
- Unused signals may be reconfigured as General Purpose IO
- Fast RS422/RS485 Differential Cable Transceivers Provide Data Rate up to 10Mbps
- RS423 and RS232 Cable Transceivers Provide Data Rate up to 230kbps
- Industry Standard Zilog Z16C30 Multi-Protocol Universal Serial Controllers (USC®)
- Standard Cable to four DB25 connectors and Custom Cables available
- Available drivers include VxWorks, WinNT, Win2k, WinXP, Linux, and Labview
- Industrial Temperature Option Available
- May be mounted on various adapters to fit PCI, PCIe, PXI, and cPCI form factors

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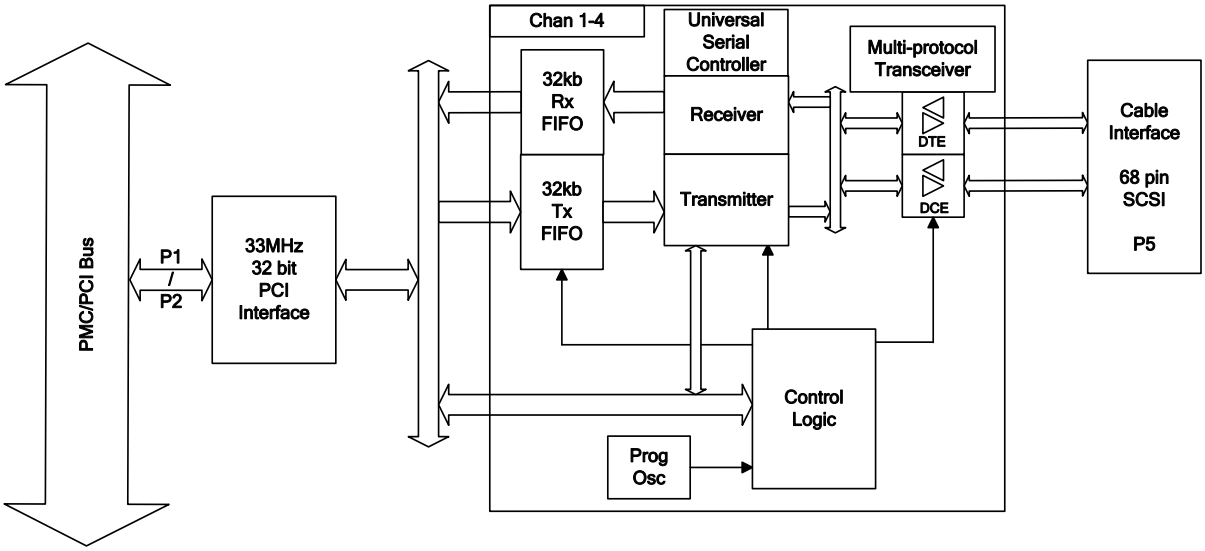
Functional Diagram:

The PMC-SIO4BX is a high performance, four channel serial board from the SIO4BX product line from General Standards Corporation. The PMC-SIO4BX has a 33MHz/32 bit PCI interface, multi-protocol transceivers, and 68 Pin SCSI Front Panel IO Connector. This card may also be mounted on various adapters to fit PCI, PCIe, PXI, and cPCI form factors.



Universal Serial Controller Data Modes:

• Asynchronous	Sample rates of 1/16, 1/32/ or 1/64 Clock Rate. Programmable Start/Stop/Parity Bits
• Isochronous	1x Synchronous Clocking . Programmable Start/Stop/Parity Bits
• Async with Code Violations	Start Bit replaced with Three Bit Code Violation Pattern as in MIL-STD-1553B
• Monosync	Single Character used for Synchronization
• Bisync	Two Characters used for Synchronization
• HDLC	Receiver recognizes Flags, Optional Address Matching, Zero Deletion, and CRC Checking
• Bisync Transparent	Sync Pattern is DLE-SYN Programmable.
• NineBit	Additional Address/Data bit between Parity and Stop Bits
• 802.3	Implements Data Format of 802.3 with 16 bit Address Compare
• Slaved Monosync	Transmit Data is Synchronized to Received Data
• HDLC Loop	Transmitter Echoes Received Messages

Universal Serial Controller Data Encoding:

- NRZ
- NRZB
- NRZI-Mark
- NRZI-Space
- Biphase Mark
- Biphase-Space
- Biphase Level
- Differential Biphase Level

See Zilog Z16C30 data sheet at www.zilog.com for detailed Universal Serial Controller Capabilities

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Power Requirements (@25° C):

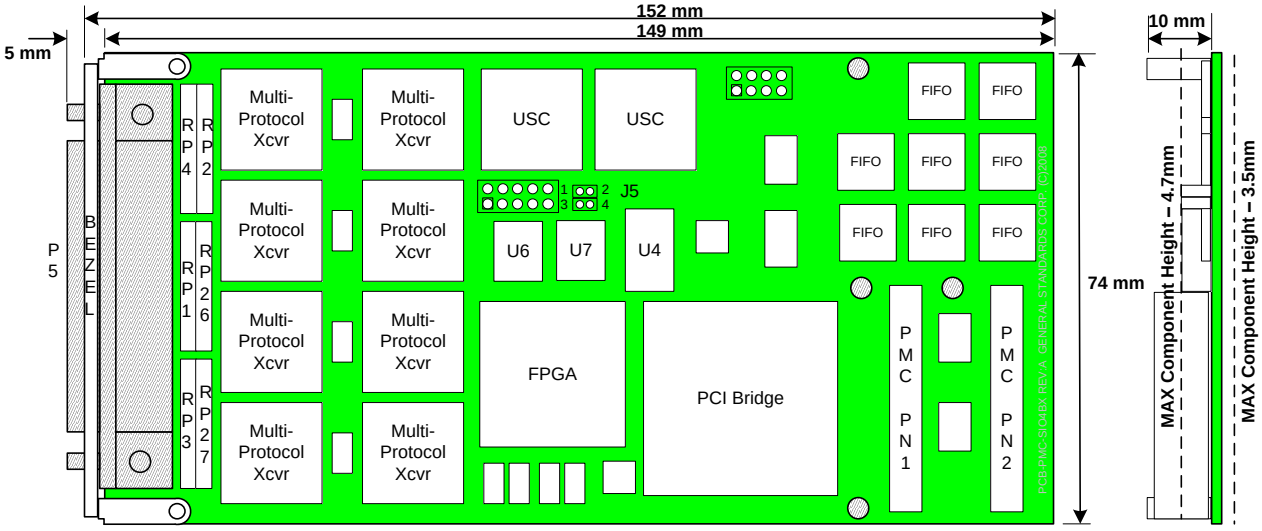
- +5VDC ±0.2 VDC at 1.3 Amps Max(typical 0.9 Amps)
- +12VDC ± 0.2 VDC at 0.03 Amps Max (typical 0.02 Amps)
- Typical Total Power Dissipation: ~4.75W

PMC Compatibility:

- 32bit / 33MHz PCI r2.1 Compliant
- Direct master DMA transfer
- Provides a single multifunction interrupt (INTA)
- 3.3V IO / 5V tolerant PCI bus interface

Physical Characteristics:

Conforms to PMC Mezzanine Specification
Length: 149 mm
Width: 74 mm



Environmental Specifications:

Ambient Temperature Range:	Operating:	0° to +70° C (Commercial Option)
		-40° to +85° C (Industrial Option)
	Storage:	-40° to +85° C
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:

PMC - SIO4BX - *<FIFO Size>* - *<Temperature>*

Option	Valid Selections	Description
FIFO Size	4KLC	512 Byte Tx / 512 Byte Rx FIFO
	64K	8K Byte Tx / 8K Byte Rx FIFO
	256K	32K Byte Tx / 32K Byte Rx FIFO
Temperature	<blank>	0°C to +70°C – Commercial (Standard)
	I	-40°C to +85°C – Industrial

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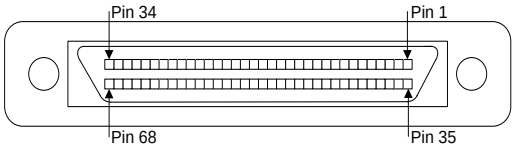
System I/O Connections:

User I/O Connector: 68-pin SCSI connector (female) - P5
Part Number: AMP/TYCO 787170-7
Mating Connector: AMP/TYCO 749111-6 (or equivalent)



Note: Protocol Mode is set on a per channel basis.

Pin #	RS422/RS485 V.35		RS232		RS423		Pin #	RS422/RS485 V.35		RS232		RS423	
	DTE	DCE	DTE	DCE	DTE	DCE		DTE	DCE	DTE	DCE	DTE	DCE
1	AUXC1+		Unused		Unused		35	AUXC3+		Unused		Unused	
2	AUXC1-		AUXC1		AUXC1		36	AUXC3-		AUXC3		AUXC3	
3	DCD1+		Unused		Unused		37	DCD3+		Unused		Unused	
4	DCD1-		DCD1		DCD1		38	DCD3-		DCD3		DCD3	
5	CTS1+	RTS1+	Unused		Unused		39	CTS3+	RTS3+	Unused		Unused	
6	CTS1-	RTS1-	CTS1	RTS1	Unused		40	CTS3-	RTS3-	CTS3	RTS3	Unused	
7	RXD1+	TXD1+	Unused		Unused		41	RXD3+	TXD3+	Unused		Unused	
8	RXD1-	TXD1-	RXD1	TXD1	RXD1	TXD1	42	RXD3-	TXD3-	RXD3	TXD3	RXD3	TXD3
9	RXC1+	TXC1+	Unused		Unused		43	RXC3+	TXC3+	Unused		Unused	
10	RXC1-	TXC1-	RXC1	TXC1	RXC1	TXC1	44	RXC3-	TXC3-	RXC3	TXC3	RXC3	TXC3
11	RTS1+	CTS1+	Unused		Unused		45	RTS3+	CTS3+	Unused		Unused	
12	RTS1-	CTS1-	RTS1	CTS1	Unused		46	RTS3-	CTS3-	RTS3	CTS3	Unused	
13	TXD1+	RXD1+	Unused		Unused		47	TXD3+	RXD3+	Unused		Unused	
14	TXD1-	RXD1-	TXD1	RXD1	TXD1	RXD1	48	TXD3-	RXD3-	TXD3	RXD3	TXD3	RXD3
15	TXC1+	RXC1+	Unused		Unused		49	TXC3+	RXC3+	Unused		Unused	
16	TXC1-	RXC1-	TXC1	RXC1	TXC1	RXC1	50	TXC3-	RXC3-	TXC3	RXC3	TXC3	RXC3
17	SGND1		SGND1		SGND1		51	SGND3		SGND3		SGND3	
18	SGND2		SGND2		SGND2		52	SGND4		SGND4		SGND4	
19	CTS2+	RTS2+	Unused		Unused		53	CTS4+	RTS4+	Unused		Unused	
20	CTS2-	RTS2-	CTS2	RTS2	Unused		54	CTS4-	RTS4-	CTS4	RTS4	Unused	
21	RXD2+	TXD2+	Unused		Unused		55	RXD4+	TXD4+	Unused		Unused	
22	RXD2-	TXD2-	RXD2	TXD2	RXD2	TXD2	56	RXD4-	TXD4-	RXD4	TXD4	RXD4	TXD4
23	RXC2+	TXC2+	Unused		Unused		57	RXC4+	TXC4+	Unused		Unused	
24	RXC2-	TXC2-	RXC2	TXC2	RXC2	TXC2	58	RXC4-	TXC4-	RXC4	TXC4	RXC4	TXC4
25	RTS2+	CTS2+	Unused		Unused		59	RTS4+	CTS4+	Unused		Unused	
26	RTS2-	CTS2-	RTS2	CTS2	Unused		60	RTS4-	CTS4-	RTS4	CTS4	Unused	
27	TXD2+	RXD2+	Unused		Unused		61	TXD4+	RXD4+	Unused		Unused	
28	TXD2-	RXD2 -	TXD2	RXD2	TXD2	RXD2	62	TXD4-	RXD4-	TXD4	RXD4	TXD4	RXD4
29	TXC2+	RXC2+	Unused		Unused		63	TXC4+	RXC4+	Unused		Unused	
30	TXC2-	RXC2-	TXC2	TXC2	TXC2	RXC2	64	TXC4-	RXC4-	TXC4	RXC4	TXC4	RXC4
31	DCD2+		Unused		Unused		65	DCD4+		Unused		Unused	
32	DCD2-		DCD2		DCD2		66	DCD4-		DCD4		DCD4	
33	AUXC2+		Unused		Unused		67	AUXC4+		Unused		Unused	
34	AUXC2-		AUXC2		AUXC2		68	AUXC4-		AUXC4		AUXC4	

Table 1- Front Panel (P5) IO Connections

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