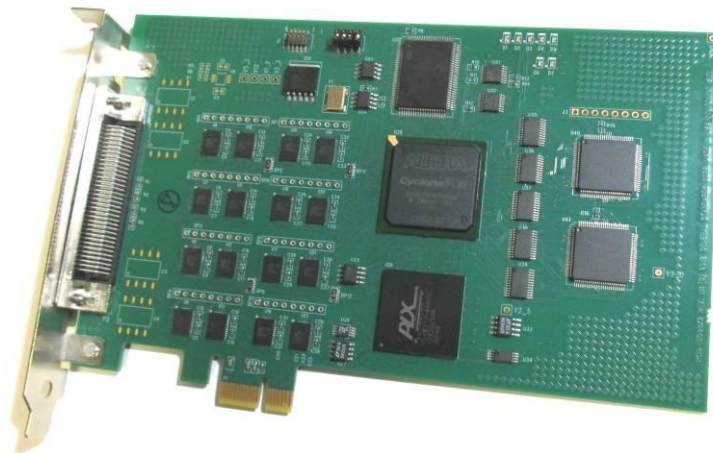


General Standards Corporation

High Performance Bus Interface Solutions

PCIe-SIO4BX2

**Four Channel High Performance Serial I/O PCIe Card
Featuring RS422/RS485/RS232 Software Configurable Transceivers
and 32K Byte FIFO Buffers (256K Byte total)**



The PCIe-SIO4BX2 is a four channel serial interface card which provides high speed, full-duplex, multi-protocol serial capability for PCIe applications. The PCIe-SIO4BX2 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. These features, along with a high performance one lane PCIe interface engine, give the PCIe-SIO4BX2 unsurpassed performance in a serial interface card.

Features:

- One Lane PCI Express (PCIe) Interface
- Four Independent RS422/RS485/RS232 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 Serial Channel – 32K byte each
- Multi-protocol Transceivers support RS422/RS485 and RS232
- Parity and CRC detection capability
- Programmable Oscillators provide increased flexibility for Baud Rate Clock generation
- SCSI type 68 pin front edge I/O Connector
- Eight signals per channel, configurable as either 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 Rates up to 10Mbps
- RS232 Cable Transceivers Provide Data Rates up to 250kbps
- 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

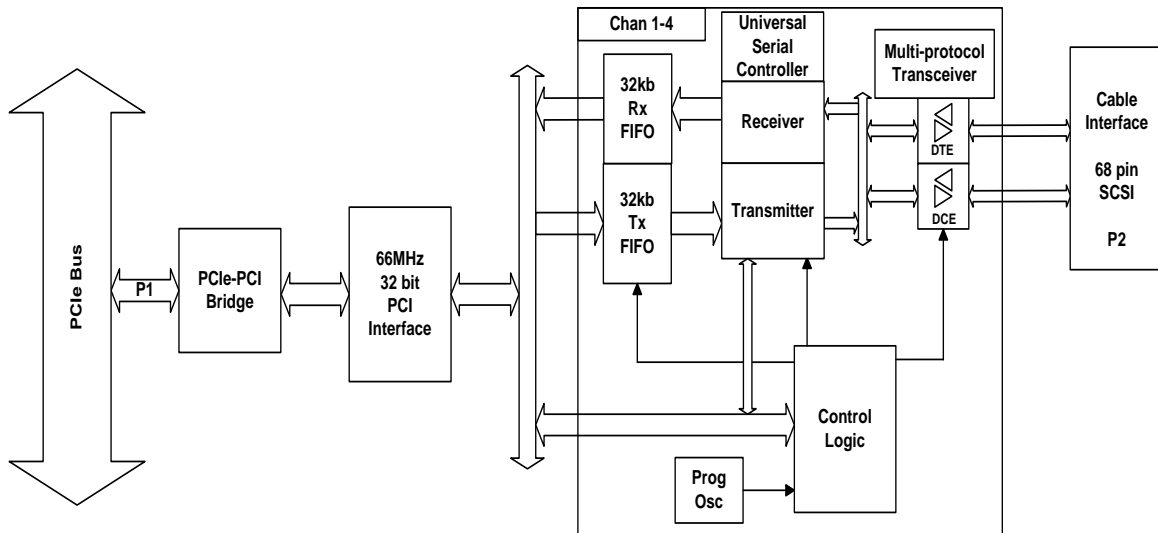
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Functional Diagram:

The PCIe-SIO4BX2 is a high performance, four channel serial board based on the SIO4BX product line from General Standards Corporation. The PCIe-SIO4BX2 has a one lane PCIe interface, multi-protocol transceivers, and 68 Pin SCSI Front Panel IO Connector.



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
- Biphasic Mark
- Biphasic-Space
- Biphasic Level
- Differential Biphasic Level

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

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Power Requirements (@25° C):

- +3.3VDC ± 0.2 VDC at 1.5 Amps Max (typical 1.1 Amps)
- +12VDC ± 0.2 VDC at 0.05Amps Max (typical 0.03 Amps)
- Typical Total Power Dissipation: ~4W

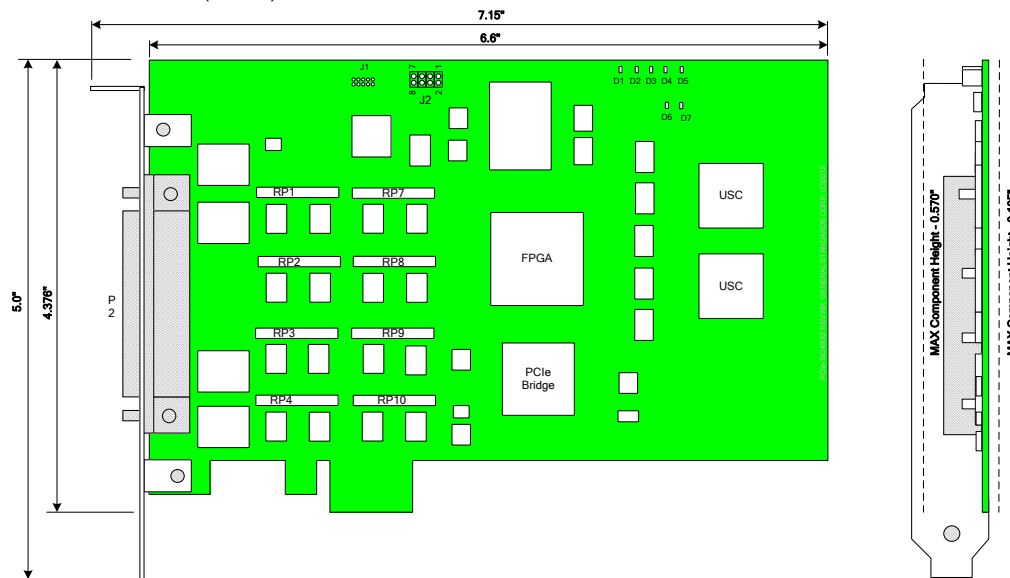
PCIe Compatibility:

- PCI Express Base Specification (Revision 1.1)
- 1 lane PCIe support
- 512byte maximum payload support
- Lane reversal and lane polarity inversion
- End-to-end CRC (ECRC) check and generation
- Up to four outstanding memory reads
- Four, 128-byte read completion buffers
- ASPM L0s link state power management
- Legacy interrupt signaling and MSI interrupts

Physical Characteristics:

Conforms to PCIe Short Card Specification

Length: 167.65 mm (6.600")
 Width: 111.15 mm (4.376")



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

Ordering Information:

PCIe – SIO4BX2 - <Temperature>

Option	Valid Selections	Description
Temperature	<blank>	0°C to +70°C – Commercial (Standard)
	I	-40°C to +85°C – Industrial

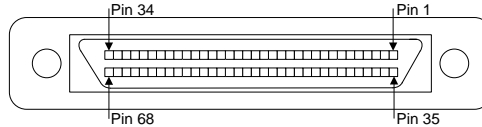
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System I/O Connections:

User I/O Connector: 68-pin SCSI connector (female) (P2)
 Part Number: AMP/TYCO 787170-7
 Mating Connector: AMP/TYCO 749111-6 (or equivalent)



Note: RS422/RS485 mode or RS232 mode is set on a per channel basis

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

Table 1- Front Panel (P2) IO Connections

General Standards Corporation assumes no responsibility for the use of any circuits in this product. No circuit patent licenses are implied. Information included herein supersedes previously published specifications on this product and is subject to change without notice.

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