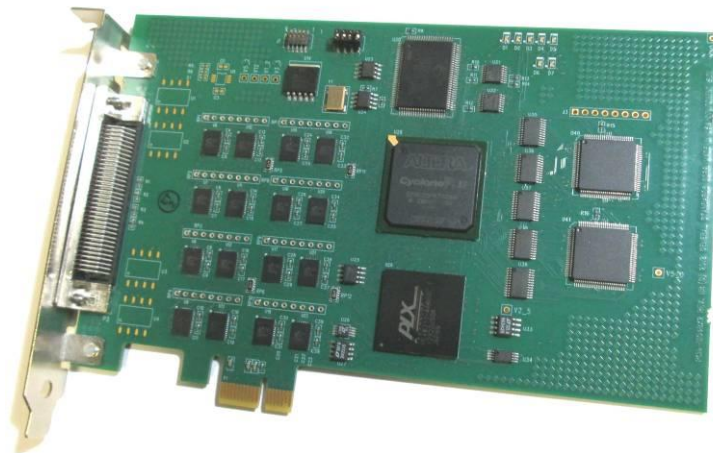


General Standards Corporation

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

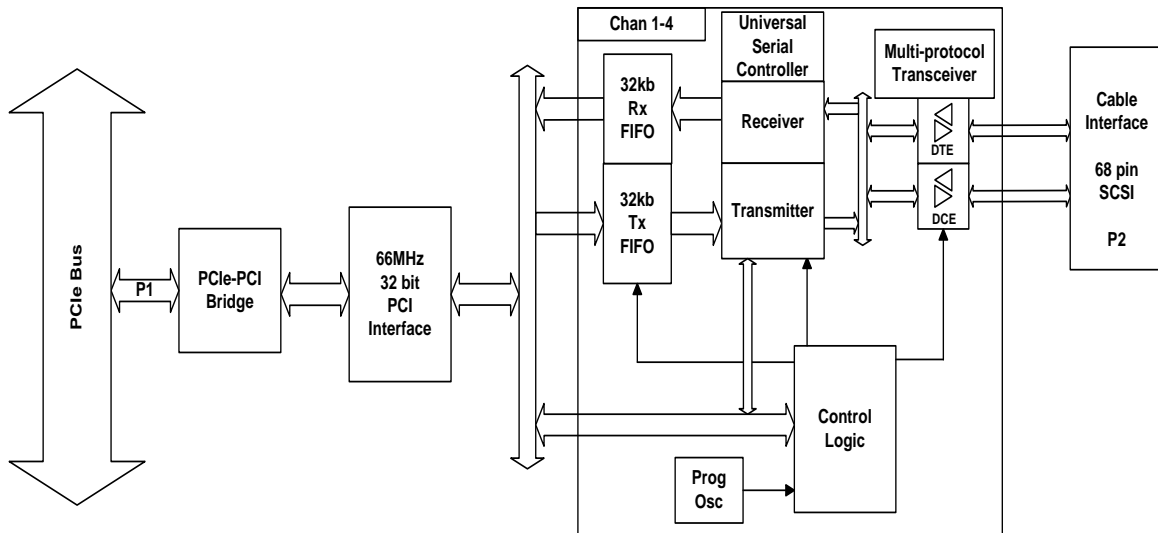
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Functional Diagram:

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
- 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):

- +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

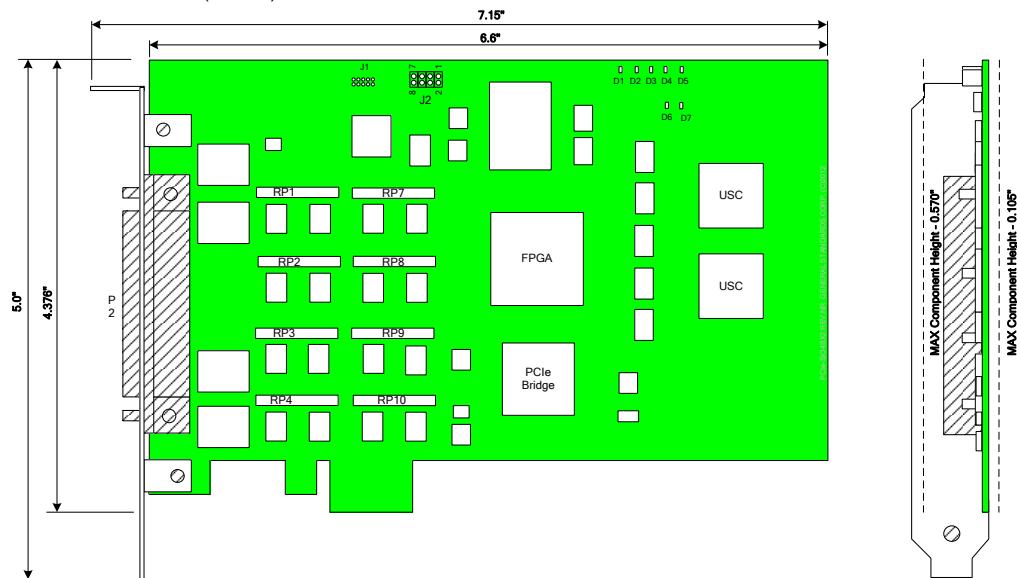
PCIe Compatibility:

- PCI Express Base Specification (Revision 1.0a)
- 1 lane PCIe support
- 128byte maximum payload support
- Auto Polarity reversal
- Link CRC support
- Flow control buffering
- PCIe transaction queues for eight outstanding TLPs
- Link/Device power management
- Legacy interrupt signaling

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 |

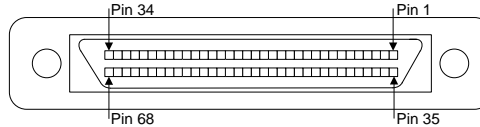
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System I/O Connections:

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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