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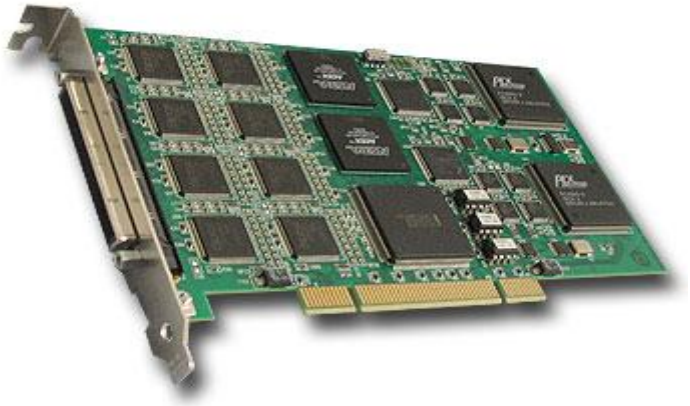
General Standards Corporation

High Performance Bus Interface Solutions

PCI-SIO8BXS

Eight Channel High Performance Serial I/O PCI Card

Featuring RS422/RS485/RS232/RS423 Software Configurable Transceivers and 32K Byte FIFO Buffers (512K Byte total)



The PCI-SIO8BXS is an eight channel serial interface card which provides high speed, full-duplex, multi-protocol serial capability for PCI applications. The PCI-SIO8BXS combines multi-protocol Dual Universal Serial Controllers, deep external FIFOs, and software selectable multi-protocol transceivers to provide eight fully independent synchronous/asynchronous serial channels. These features, along with a high performance 33MHz PCI interface engine, give the PCI-SIO8BXS unsurpassed performance in a serial interface card.

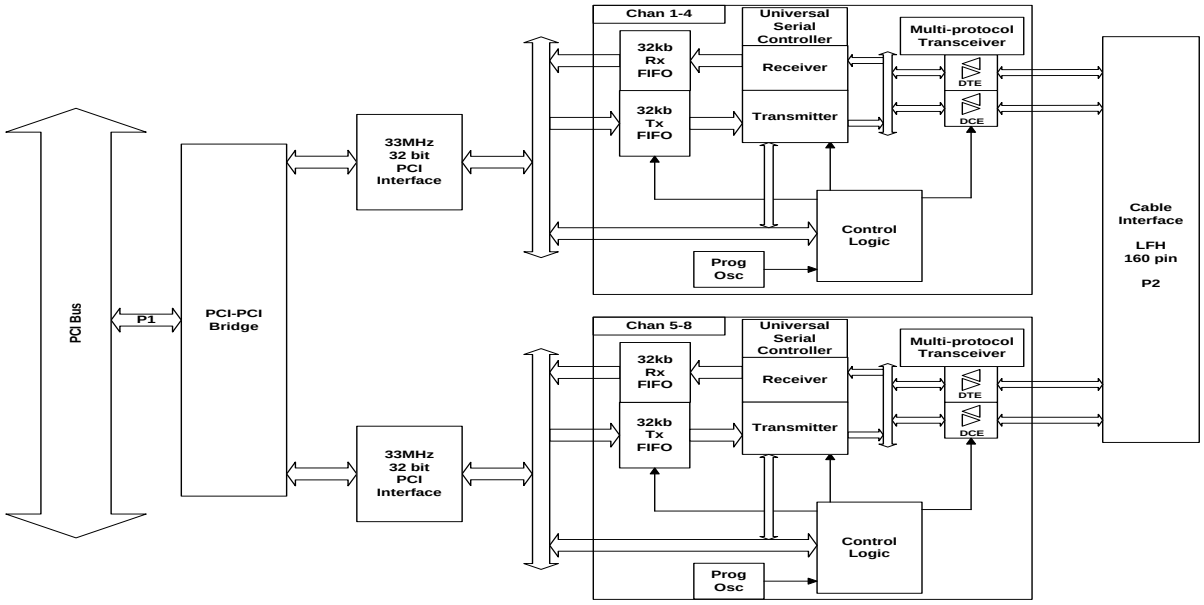
Features:

- Eight 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 Serial Channel – Up to 32K byte each
- Multiprotocol Transceivers support RS422 (V.11)/RS485, RS423 (V.10), RS232 (V.28), V.35, and RS530
- Parity and CRC detection capability
- Programmable Oscillators provide increased flexibility for Baud Rate Clock generation
- Low Force Helix (LFH) type 160 pin front edge I/O Connector
- Nine signals per channel, configurable as DTE or DCE:
  3 Serial Clocks (TxC,RxC,AuxC), 2 Serial Data signals (TxD,RxD), CTS, RTS, DCD, DTR
- Unused signals may be reconfigured as General Purpose IO
- Fast RS422/RS485 Differential Cable Transceivers Provide Data Rates up to 10Mbps
- RS423 and RS232 Cable Transceivers Provide Data Rates up to 230kbps
- Industry Standard Zilog Z16C30 Multi-Protocol Universal Serial Controllers (USC®)
- Standard Cable to eight DB25 connectors and Custom Cables available
- Available drivers include VxWorks, WinNT, Win2k, WinXP, Linux, and Labview
- Industrial Temperature Option Available

General Standards Corporation
8302A Whitesburg Drive · Huntsville, AL 35802
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Functional Diagram:

The PCI-SIO8BXS is a high performance, eight channel serial board based on the SIO4BX product line from General Standards Corporation. In order to maintain software compatibility, the PCI-SIO8BXS is implemented as two independent four channel SIO4BX cards.



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):

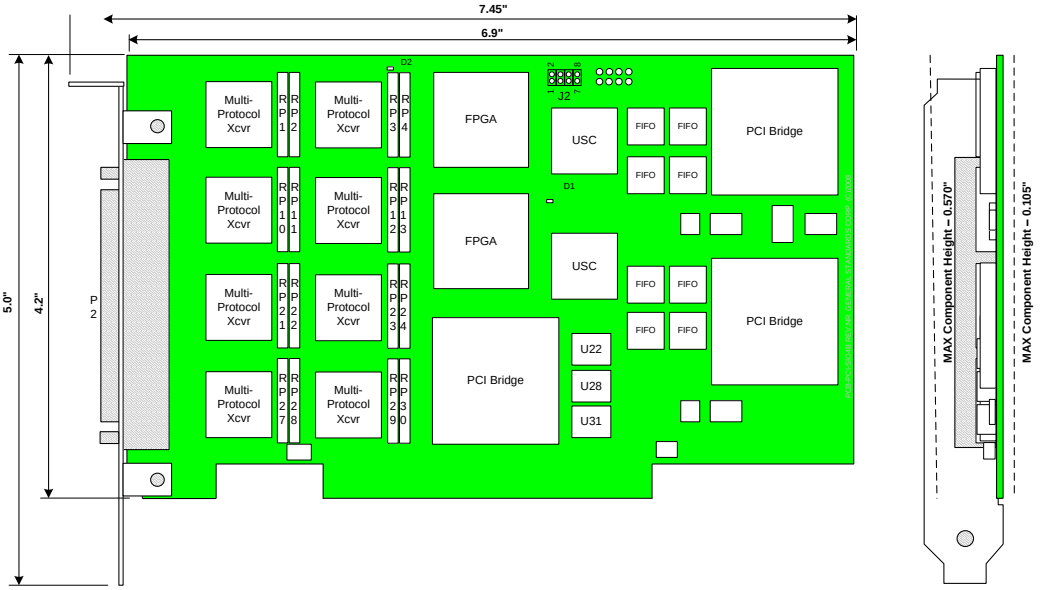
- +5VDC ± 0.2 VDC at 3 Amps Max (typical 2 Amps)
- +12VDC ± 0.2 VDC at 0.03 Amps Max (typical 0.02 Amps)
- Typical Total Power Dissipation: ~10W

PCI 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 PCI Short Card Specification
Length: 6.9"
Width: 4.2"



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:

PCI – SIO8BXS - < *FIFO Size*> - <*Temperature*>

Option	Valid Selections	Description
FIFO Size	8KLC	512 Byte Tx / 512 Byte Rx FIFO
	128K	8K Byte Tx / 8K Byte Rx FIFO
	512K	32K Byte Tx / 32K Byte Rx FIFO
Temperature	<blank>	0°C to +70°C – Commercial (Standard)
	I	-40°C to +85°C – Industrial

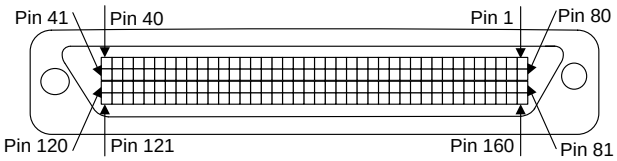
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General Standards Corporation

High Performance Bus Interface Solutions

System I/O Connections:

User Interface Connector: 160-pin LFH connector (female) - P2.
Part Number: Molex 51-24-1040.
Mating Connector: Molex 70984-4009 (contacts – qty 4)
Molex 71624-3000 (housing).



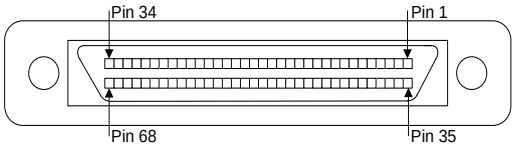
Note: Protocol Mode is set on a per channel basis.

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	TXC1+	RXC1+	Unused		Unused		80	TXD1+	RXD1+	Unused		Unused	
2	TXC1-	RXC1-	TXC1	RXC1	Unused		79	TXD1-	RXD1-	TXD1	RXD1	Unused	
3	RXC1+	TXC1+	Unused		Unused		78	RXD1+	TXD1+	Unused		Unused	
4	RXC1-	TXC1-	RXC1	TXC1	Unused		77	RXD1-	TXD1-	RXD1	TXD1	Unused	
5	AUXC1+		Unused		Unused		76	DCD1+		Unused		TXD1	RXD1
6	AUXC1-		AUXC1		Unused		75	DCD1-		DCD1		RXD1	TXD1
7	DTR1+		Unused		TXC1	RXC1	74	CTS1+	RTS1+	Unused		Unused	
8	DTR1-		DTR1		RXC1	TXC1	73	CTS1-	RTS1-	CTS1	RTS1	CTS1	RTS1
9	RTS1+	CTS1+	Unused		Unused		72	SGND1		SGND1		SGND1	
10	RTS1-	CTS1-	RTS1	CTS1	RTS1	CTS1	71	Unused		Unused		Unused	
11	TXC2+	RXC2+	Unused		Unused		70	Unused		Unused		Unused	
12	TXC2-	RXC2-	TXC2	RXC2	Unused		69	SGND2		SGND2		SGND2	
13	RXC2+	TXC2+	Unused		Unused		68	TXD2+	RXD2+	Unused		Unused	
14	RXC2-	TXC2-	RXC2	TXC2	Unused		67	TXD2-	RXD2-	TXD2	RXD2	Unused	
15	AUXC2+		Unused		Unused		66	RXD2+	TXD2+	Unused		Unused	
16	AUXC2-		AUXC2		Unused		65	RXD2-	TXD2-	RXD2	TXD2	Unused	
17	DTR2+		Unused		TXC2	RXC2	64	DCD2+		Unused		TXD2	RXD2
18	DTR2-		DTR2		RXC2	TXC2	63	DCD2-		DCD2		RXD2	TXD2
19	RTS2+	CTS2+	Unused		Unused		62	CTS2+	RTS2+	Unused		Unused	
20	RTS2-	CTS2-	RTS2	CTS2	RTS2	CTS2	61	CTS2-	RTS2-	CTS2	RTS2	CTS2	RTS2
21	TXC5+	RXC5+	Unused		Unused		60	TXD5+	RXD5+	Unused		Unused	
22	TXC5-	RXC5-	TXC5	RXC5	Unused		59	TXD5-	RXD5-	TXD5	RXD5	Unused	
23	RXC5+	TXC5+	Unused		Unused		58	RXD5+	TXD5+	Unused		Unused	
24	RXC5-	TXC5-	RXC5	TXC5	Unused		57	RXD5-	TXD5-	RXD5	TXD5	Unused	
25	AUXC5+		Unused		Unused		56	DCD5+		Unused		TXD5	RXD5
26	AUXC5-		AUXC5		Unused		55	DCD5-		DCD5		RXD5	TXD5
27	DTR5+		Unused		TXC5	RXC5	54	CTS5+	RTS5+	Unused		Unused	
28	DTR5-		DTR5		RXC5	TXC5	53	CTS5-	RTS5-	CTS5	RTS5	CTS5	RTS5
29	RTS5+	CTS5+	Unused		Unused		52	SGND5		SGND5		SGND5	
30	RTS5-	CTS5-	RTS5	CTS5	RTS5	CTS5	51	Unused		Unused		Unused	
31	TXC6+	RXC6+	Unused		Unused		50	Unused		Unused		Unused	
32	TXC6-	RXC6-	TXC6	RXC6	Unused		49	SGND6		SGND6		SGND6	
33	RXC6+	TXC6+	Unused		Unused		48	TXD6+	RXD6+	Unused		Unused	
34	RXC6-	TXC6-	RXC6	TXC6	Unused		47	TXD6-	RXD6-	TXD6	RXD6	Unused	
35	AUXC6+		Unused		Unused		46	RXD6+	TXD6+	Unused		Unused	
36	AUXC6-		AUXC6		Unused		45	RXD6-	TXD6-	RXD6	TXD6	Unused	
37	DTR6+		Unused		TXC6	RXC6	44	DCD6+		Unused		TXD6	RXD6
38	DTR6-		DTR6		RXC6	TXC6	43	DCD6-		DCD6		RXD6	TXD6
39	RTS6+	CTS6+	Unused		Unused		42	CTS6+	RTS6+	Unused		Unused	
40	RTS6-	CTS6-	RTS6	CTS6	RTS6	CTS6	41	CTS6-	RTS6-	CTS6	RTS6	CTS6	RTS6

Table 1- Front Panel (P2) IO Connections

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System I/O Connections (cont):



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
81	TXD3+	RXD3+	Unused		Unused		160	TXC3+	RXC3+	Unused		Unused	
82	TXD3-	RXD3-	TXD3	RXD3	Unused		159	TXC3-	RXC3-	TXC3	RXC3	Unused	
83	RXD3+	TXD3+	Unused		Unused		158	RXC3+	TXC3+	Unused		Unused	
84	RXD3-	TXD3-	RXD3	TXD3	Unused		157	RXC3-	TXC3-	RXC3	TXC3	Unused	
85	DCD3+		Unused		TXD3	RXD3	156	AUXC3+		Unused		Unused	
86	DCD3-		DCD3		RXD3	TXD3	155	AUXC3-		AUXC3		Unused	
87	CTS3+	RTS3+	Unused		Unused		154	DTR3+		Unused		TXC3	RXC3
88	CTS3-	RTS3-	CTS3	RTS3	CTS3	RTS3	153	DTR3-		DTR3		RXC3	TXC3
89	SGND3		SGND3		SGND3		152	RTS3+	CTS3+	Unused		Unused	
90	Unused		Unused		Unused		151	RTS3-	CTS3-	RTS3	CTS3	RTS3	CTS3
91	Unused		Unused		Unused		150	TXC4+	RXC4+	Unused		Unused	
92	SGND4		SGND4		SGND4		149	TXC4-	RXC4-	TXC4	RXC4	Unused	
93	TXD4+	RXD4+	Unused		Unused		148	RXC4+	TXC4+	Unused		Unused	
94	TXD4-	RXD4-	TXD4	RXD4	Unused		147	RXC4-	TXC4-	RXC4	TXC4	Unused	
95	RXD4+	TXD4+	Unused		Unused		146	AUXC4+		Unused		Unused	
96	RXD4-	TXD4-	RXD4	TXD4	Unused		145	AUXC4-		AUXC4		Unused	
97	DCD4+		Unused		TXD4	RXD4	144	DTR4+		Unused		TXC4	RXC4
98	DCD4-		DCD4		RXD4	TXD4	143	DTR4-		DTR4		RXC4	TXC4
99	CTS4+	RTS4+	Unused		Unused		142	RTS4+	CTS4+	Unused		Unused	
100	CTS4-	RTS4-	CTS4	RTS4	CTS4	RT4	141	RTS4-	CTS4-	RTS4	CTS4	RTS4	CTS4
101	TXD7+	RXD7+	Unused		Unused		140	TXC7+	RXC7+	Unused		Unused	
102	TXD7-	RXD7-	TXD7	RXD7	Unused		139	TXC7-	RXC7-	TXC7	RXC7	Unused	
103	RXD7+	TXD7+	Unused		Unused		138	RXC7+	TXC7+	Unused		Unused	
104	RXD7-	TXD7-	RXD7	TXD7	Unused		137	RXC7-	TXC7-	RXC7	TXC7	Unused	
105	DCD7+		Unused		TXD7	RXD7	136	AUXC7+		Unused		Unused	
106	DCD7-		DCD7		RXD7	TXD7	135	AUXC7-		AUXC7		Unused	
107	CTS7+	RTS7+	Unused		Unused		134	DTR7+		Unused		TXC7	RXC7
108	CTS7-	RTS7-	CTS7	RTS7	CTS7	RTS7	133	DTR7-		DTR7		RXC7	TXC7
109	SGND7		SGND7		SGND7		132	RTS7+	CTS7+	Unused		Unused5	
110	Unused		Unused		Unused		131	RTS7-	CTS7-	RTS7	CTS7	RTS7	CTS7
111	Unused		Unused		Unused		130	TXC8+	RXC8+	Unused		Unused	
112	SGND8		SGND8		SGND8		129	TXC8-	RXC8-	TXC8	RXC8	Unused	
113	TXD8+	RXD8+	Unused		Unused		128	RXC8+	TXC8+	Unused		Unused	
114	TXD8-	RXD8-	RXD8	TXD8	Unused		127	RXC8-	TXC8-	RXC8	TXC8	Unused	
115	RXD8+	TXD8+	Unused		Unused		126	AUXC8+		Unused		Unused	
116	RXD8-	TXD8-	RXD8	TXD8	Unused		125	AUXC8-		AUXC8		Unused	
117	DCD8+		Unused		RXD8	TXD8	124	DTR8+		Unused		TXC8	RXC8
118	DCD8-		DCD8		RXD8	TXD8	123	DTR8-		DTR8		RXC8	TXC8
119	CTS8+	RTS8+	Unused		Unused		122	RTS8+	CTS8+	Unused		Unused	
120	CTS8-	RTS8-	CTS8	RTS8	CTS8	RTS8	121	RTS8-	CTS8-	RTS8	CTS8	RTS8	CTS8

Table 1- Front Panel IO (P2) Connections (continued)

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