

General Standards Corporation

High Performance Bus Interface Solutions

PCIe4-HPDI32CL



High-Speed 32-Bit Parallel Data Interface Board **Up to 500 MByte/sec LVDS interface**

The PCIe4-HPDI32CL is a parallel interface card which provides a high speed 32-Bit LVDS interface for PCIe applications. A four lane PCIe interface engine and memory buffers up to 512MByte give the PCIe4-HPDI32CL unsurpassed performance in a high speed parallel interface card. With features including a simple synchronous interface, deep memory buffers, programmable clock speed, and programmable signal polarity, the PCIe4-HPDI32CL provides the flexibility to meet a broad range of interface protocols.

Features:

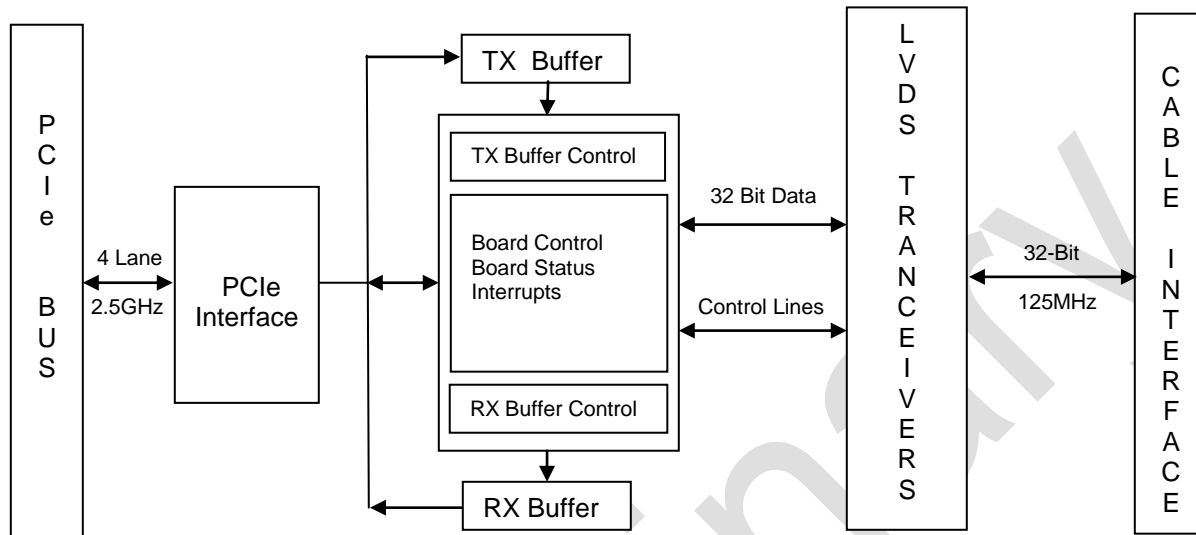
- Four Lane PCI Express (PCIe4) Interface
- PCIe Data transfers to/from Memory Buffers at speeds approaching 800 MByte/sec
- Large 512 MByte (128M x 32) Transmit/Receive Memory Buffers
- 500 MByte/sec Transfers to/from the Board via LVDS Front Panel Interface
- Bidirectional LVDS Transceivers provide for Multipoint Applications
- Half Duplex Operation - Transmit or Receive Mode
- Programmable Transmit Clock from 125MHz down to 50Hz
- Programmable Polarity for Clock and Data Valid Signals
- Five General Purpose IO Signals, including Interrupt Inputs
- Optional Receive Ready Signal for Data Throttling
- Interrupts available including DMA Completion, Transfer Status, Cable Status
- 80 pin Front Edge I/O Connector
- Standard Twisted Pair Ribbon Cables and Custom Cables available
- Windows and Linux drivers Available

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Functional Diagram:



Parallel Interface:

The flexible synchronous interface consists of Clock, Data, and Data Valid.

- Configurable in either Transmit Mode or Receive Mode
- Clocking Data on either rising or falling edge of the Clock
- Active Hi or Active Lo polarity for the Data Valid Signal
- Transmit Clock may be configured from 125MHz down to 50Hz
- Optional Rx Device Ready input/output for Data Throttling
- Five General Purpose IO /Interrupt signals

Interface Signals:

- | | | |
|---------------|--------------------------------|---------------------------------------|
| • CLK | 125MHz - 50Hz Clock | Transmit Mode: Out / Receive Mode: In |
| • VALID | Data Valid (Sync) | Transmit Mode: Out / Receive Mode: In |
| • READY | Rx Device Ready (optional) | Transmit Mode: In / Receive Mode: Out |
| • DATA[31..0] | 32-bit Data | Transmit Mode: Out / Receive Mode: In |
| • CMD[6..2] | General Purpose IO / Interrupt | Bidirectional |

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Power Requirements (@25° C):

- +12VDC \pm 0.2 VDC at 1.0 Amps Max (typical 0.7 Amps)
- Typical Total Power Dissipation: ~10W

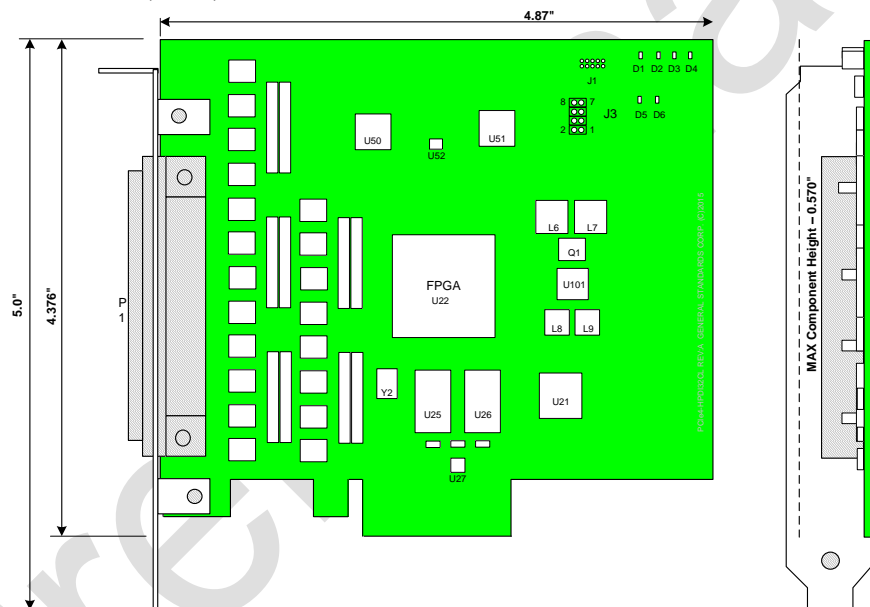
PCIe Compatibility:

- PCI Express Base Specification (Revision 1.1)
- 4 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
- MSI interrupts

Physical Characteristics:

Conforms to PCIe Short Card Specification

Length: 123.70 mm (4.870")
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:

PCIe4 – HPDI32CL

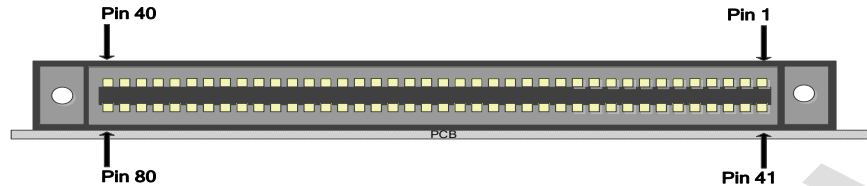
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System I/O Connections:

User I/O Connector: 80 pin IO connector (female)
 Part Number: Robinson Nugent P50E-080-P1-SR1-TG
 Mating Connector: Robinson Nugent P50E-080-S-TG (50 mil twisted pair)
 Robinson Nugent P25E-080-S-TG (25 mil non-twisted pair)



Pin #	Signal Name	Pin #	Signal Name
1	CLKp	41	D12p
2	CLKn	42	D12n
3	CMD0p / VALIDp	43	D13p
4	CMD0n / VALIDn	44	D13n
5	CMD1p / READYp	45	D14p
6	CMD1n / READYn	46	D14n
7	CMD2p	47	D15p
8	CMD2n	48	D15n
9	CMD3p	49	D16p
10	CMD3n	50	D16n
11	CMD4p	51	D17p
12	CMD4n	52	D17n
13	CMD5p	53	D18p
14	CMD5n	54	D18n
15	CMD6p	55	D19p
16	CMD6n	56	D19n
17	D0p	57	D20p
18	D0n	58	D20n
19	D1p	59	D21p
20	D1n	60	D21n
21	D2p	61	D22p
22	D2n	62	D22n
23	D3p	63	D23p
24	D3n	64	D23n
25	D4p	65	D24p
26	D4n	66	D24n
27	D5p	67	D25p
28	D5n	68	D25n
29	D6p	69	D26p
30	D6n	70	D26n
31	D7p	71	D27p
32	D7n	72	D27n
33	D8p	73	D28p
34	D8n	74	D28n
35	D9p	75	D29p
36	D9n	76	D29n
37	D10p	77	D30p
38	D10n	78	D30n
39	D11p	79	D31p
40	D11n	80	D31n

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