PC/104-Plus Digital Communication

FEATURES

- PC/104 Plus (PCI-104 Optional)
- 96 Channel TTL-DTL high speed digital I/O
- Software selectable in / out as 8 bit and 4 bit ports
- All I/O lines buffered with 32 mA source, 64mA sink current capabilities
- I/O Buffers can be enabled or tri-stated under program control
- Jumper selectable I/O pulled up to 5V for contact montoring, pulled down to ground or floating
- Resettable fused +5VDC outputs per 50-pin connector
- Compatible with Industry-Standard I/O Racks such a Gordos, OPTO22, Potter & Brumfield, etc. with optional cable
- Emulates 4 industry standard 8255 PPIs (mode 0)
- Full 32-bit PCI interface design
- Low CPU overhead
- Known power-up states
- Output port status read back
- Standard 50-pin IDC connectors (x4)

FACTORY OPTIONS

- Extended operating temperature -40 to +85˚C
- PCI-104 (no ISA connector)
- This product is available in a RoHS compliant version

FUNCTIONAL DESCRIPTION

This PC104 plus board features 96 bits of TTL-compatible digital I/O with high-current capabilities. Each digital port can be programmed to accept inputs or to drive outputs in twelve or six 8-bit ports. The I/O wiring connections are via two or four industry standard 50-pin connectors. For external circuits, fused +5VDC power is available at pin 49 of each I/O connector. The resettable fuse is rated at 0.5A.

All I/O lines are buffered by a type 74ABT543A tristate buffer transceiver capable of sourcing 32 mA or sinking 64 mA. The buffers are configured under program control for input or output. Jumper selected resistors permit configuration of each 24-bit / 50-pin connector group for pull-up (to +5 VDC), pull-down (to ground) or floating depending on the application requirement. Pull-ups are useful for contact monitoring and assure that there are no erroneous outputs at power-up until the card is initialized by system software.

ACCESSORIES

Available accessories include flat ribbon cables and DIN-rail mountable screw terminal boards. Also available is our low cost IIB-24 which will add optical isolation to any standard 24-channel digital I/O port on a 50 pin connector.

SOFTWARE

This board is supported for use in most operating systems and includes a free Linux and Windows 2000/XP/2003 compatible software package. This package contains sample programs and source code in Visual Basic, Delphi and Visual C++ for Windows. Also incorporated is a graphical setup program in Windows. Third party support includes a Windows standard DLL interface usable from the most popular application programs and includes example LabView VIs. Embedded OS support includes Windows XPe.

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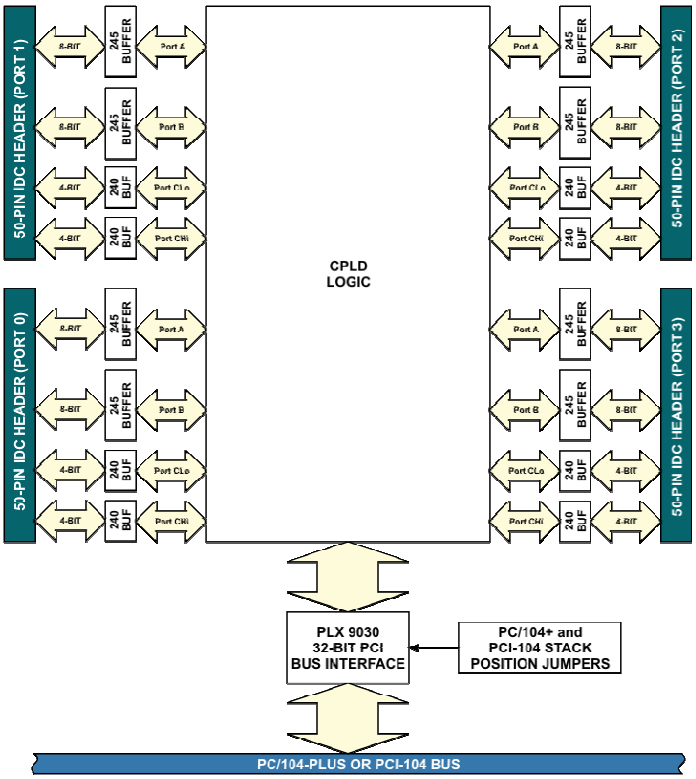
Block Diagram



Specifications

Data Transfer Rate, I/O Mapped, 33MHz bus

From I/O connector to PCI bus:	7.37M bytes/sec in 8255 emulation mode
From PCI bus to I/O connector:	14.74M bytes/sec in 8255 emulation mode
From I/O connector to PCI bus:	9M bytes/sec with Fast PPI port map
From PCI bus to I/O connector:	18M bytes/sec with Fast PPI port map

Data Transfer Rate, Memory Mapped, 33MHz bus

From I/O Connector to PCI bus:	12M bytes/sec in 8255 emulation mode
From PCI bus to I/O connector:	24M bytes/sec in 8255 emulation mode
From I/O connector to PCI bus:	28M bytes/sec with Fast PPI port map
From PCI bus to I/O connector:	18M bytes/sec with Fast PPI port map

Digital Inputs (TTL Compatible)

Logic High:	2.0 to 5.0 VDC
Logic Low:	-0.5 to +0.8 VDC
Input Load (High):	10uA
Input Load (Low):	-10uA
Digital Outputs	
Logic High:	2.5 VDC min., source 32 mA
Logic Low:	0.5 VDC max., sink 64 mA

Change of State Detection (Factory option)

Group 0 Port C-high	connector P1 pins 1, 3, 5, & 7
Group 1 Port C-high	connector P2 pins 1, 3, 5, & 7
Group 2 Port C-high	connector P3 pins 1, 3, 5, & 7
Group 3 Port C-high	connector P4 pins 1, 3, 5, & 7

Environmental

Operating Temp:	-20˚C to +70˚C
Storage Temp:	-50˚C to +120˚C
Humidity:	0 to 90% RH, non-condensing

Power

Power Output:	+5 VDC from bus (resettable 0.5A fuse) on each connector
Power Required:	290 mA typical at 5V (no load, all I/O ports set as inputs)

Ordering Information

P104-DIO-96	96 High-Speed Digital I/O's

Model Options

-RoHS	Compliant board
-T	Extended operating temperature -40˚C to +85˚C

Accessories

STB-50	Screw terminal board
IIB-24	24-channel optical isolator board
CAB50F-6	6' flat ribbon cable female 50-pin connector
CAB50-6	6' flat ribbon cable female to edge connector
MP104-DIN	DIN rail mounting provision

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