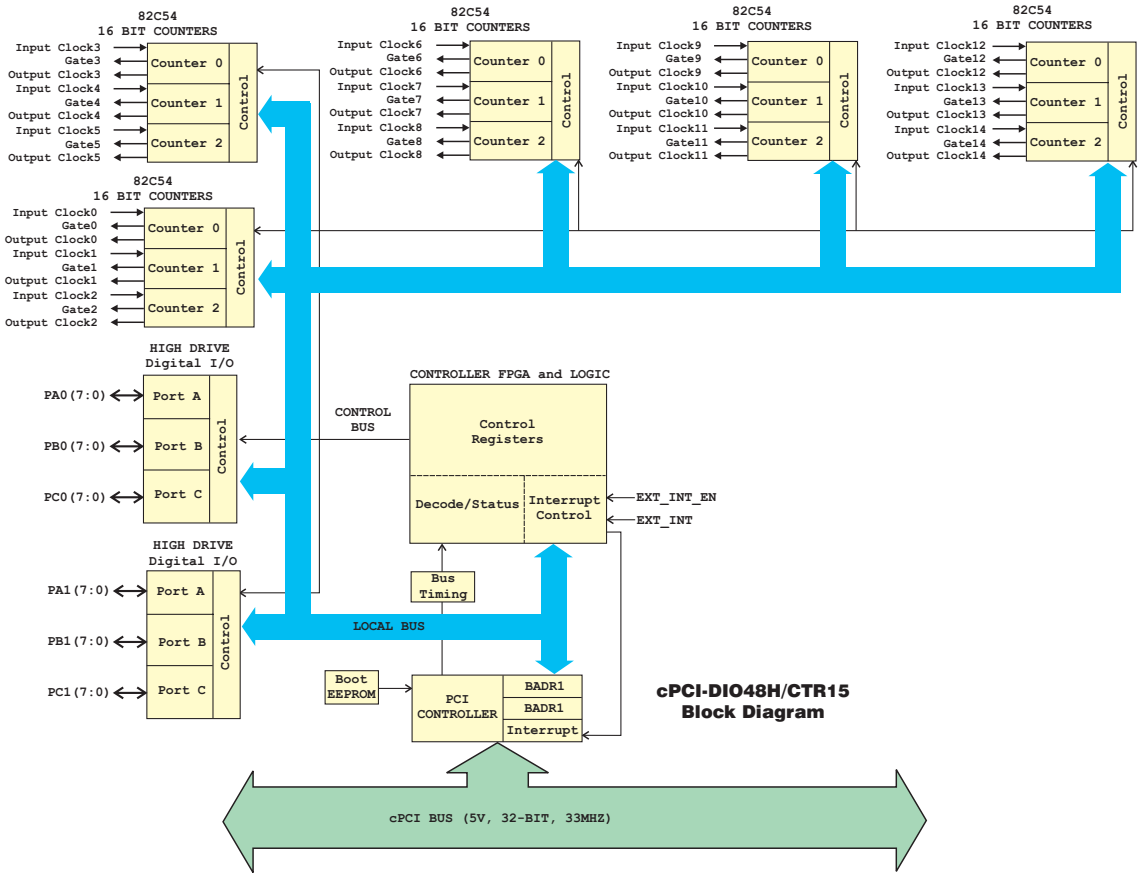
CPCI-DIO48H/CTR15

Multifunction, CompactPCI-bus Compatible, Digital I/O Board with Both Parallel Digital I/O and Counter/Timers

Features

- 48 high current digital I/O bits
- Fifteen 16-bit counters
- Compatible with a wide variety of Relay and SSR module racks
- Low cost
- High density
- On-board provisions for the installation of pull-up or pull-down resistor networks
- Fully Plug-and-Play

Block Diagram



Functional Description

The CPCI-DIO48H/CTR15 is a multifunction, logic level, digital I/O board for CompactPCI bus compatible computers. The board provides 48-bits of high current, parallel digital I/O and fifteen 16-bit counters.

The parallel digital I/O is provided in 24-bit *groups* based on an 82C55, mode 0 emulation. Each group provides an 8-bit port A and port B, and an 8-bit port C that can be split into independant 4-bit ports C-HI and C-LO. The 74S244 digital output drivers provide 64 mA sink and 15 mA source current capabilities. On power up and reset, all I/O bits are set to input mode. Like all members of the 74LS series, unconnected inputs will typically float high. If you are using the board to control items that must be *OFF* on reset, you will need to install pull down resistors. Provisions have been made on the board to allow users to quickly and easily install SIP resistor networks in either pull-up or pull-down configurations.

The counter/timer functionality of the board is based on the 82C54, which provides three 16-bit down counters. The counter section provides access to the gate, clock and counter output of all three counters. The CPCI-DIO48H/CTR15 provides 15 counters (three 82C54s). The board also provides a high-stability, 10-MHz crystal controlled oscillator that may be connected to one or more of the counter inputs.

The board is completely plug-and-play and there are no switches or jumpers that you must set. All board addresses, interrupt levels, etc. are set by your computer's plug-and-play software.

I/O Connector & Cables

All I/O signals of the CPCI-DIO48H/CTR15 are brought out through a 100-pin connector. The C100FF-XX cable splits the 100 pin connector into two 50-pin cables that are compatible with the SCB-50 screw connection box (requires one), the CIO-MINI50 (requires two) as well as a large variety of our 50-pin compatible digital signal conditioning boards.

CPCI-DIO48H/CTR15

Port A7 B	1	51	CTR1CLK
Port A6 B	2	52	CTR1GATE
Port A5 B	3	53	CTR1OUT
Port A4 B	4	54	CTR2CLK
Port A3 B	5	55	CTR2GATE
Port A2 B	6	56	CTR2OUT
Port A1 B	7	57	CTR3CLK
Port A0 B	8	58	CTR3GATE
Port B7 B	9	59	CTR3OUT
Port B6 B	10	60	CTR4CLK
Port B5 B	11	61	CTR4GATE
Port B4 B	12	62	CTR4OUT
Port B3 B	13	63	CTR5CLK
Port B2 B	14	64	CTR5GATE
Port B1 B	15	65	CTR5OUT
Port B0 B	16	66	CTR6CLK
Port C7 B	17	67	CTR6GATE
Port C6 B	18	68	CTR6OUT
Port C5 B	19	69	CTR7CLK
Port C4 B	20	70	CTR7GATE
Port C3 B	21	71	CTR7OUT
Port C2 B	22	72	CTR8CLK
Port C1 B	23	73	CTR8GATE
Port C0 B	24	74	CTR8OUT
Port A7 A	25	75	CTR9CLK
Port A6 A	26	76	CTR9GATE
Port A5 A	27	77	CTR9OUT
Port A4 A	28	78	CTR10CLK
Port A3 A	29	79	CTR10GATE
Port A2 A	30	80	CTR10OUT
Port A1 A	31	81	CTR11CLK
Port A0 A	32	82	CTR11GATE
Port B7 A	33	83	CTR11OUT
Port B6 A	34	84	CTR12CLK
Port B5 A	35	85	CTR12GATE
Port B4 A	36	86	CTR12OUT
Port B3 A	37	87	CTR13CLK
Port B2 A	38	88	CTR13GATE
Port B1 A	39	89	CTR13OUT
Port B0 A	40	90	CTR14CLK
Port C7 A	41	91	CTR14GATE
Port C6 A	42	92	CTR14OUT
Port C5 A	43	93	CTR15CLK
Port C4 A	44	94	CTR15GATE
Port C3 A	45	95	CTR15OUT
Port C2 A	46	96	10MHz
Port C1 A	47	97	IRQIN
Port C0 A	48	98	IRQEN
+5V	49	99	+5V
GND	50	100	GND

PCI-DIO48H/CTR15 Connector Diagram

Specifications

Digital Input / Output

Number of channels	48
Configuration	Groups of 24: 2 banks of 8, 2 banks of 4, programmable by bank as input or output
I/O Device Type	TTL based 8255 mode 0 emulation Output: 74S244 Input: 74LS373
Output High	2.4 volts min @ -15mA
Output Low	0.5 volts max @ 64 mA
Input High	2.0 volts min, 7 volts absolute max
Input Low	0.8 volts max, -0.5 volts absolute min
Power-up / reset state	Input mode (high impedance)
Interrupts	INTA# - mapped to IRQn via PCI BIOS at boot-time
Interrupt enable	External (IR ENABLE, active low, programmable through PCI9050-1; 0 = disabled, 1 = enabled (default)
Interrupt sources	External source (IR INPUT), polarity programmable through PCI9050-1; 1 = active high, 0 = active low (default)

Counter section

Configuration	82C54 w/three 16-bit down counters/82C54 PCI-DIO48H/CTR15 provides five 82C54s
82C54 pinouts:	
Counter 0	
Source:	Available at connector
Gate:	Available at connector
Output:	Available at connector
Counter 1 -	
Source:	Available at connector
Gate:	Available at connector
Output:	Available at connector
Counter 2 -	
Source:	Available at connector
Gate:	Available at connector
Output:	Available at connector

Clock input frequency	10 Mhz max
High pulse width (clk input)	30 ns min
Low pulse width (clk input)	50 ns min
Gate width high or low	50 ns min
Input low voltage	0.8 V max
Input high voltage	2.0 V min
Output low voltage	0.4 V max
Output high voltage	3.0 V min

Clock source oscillator section

Oscillator type	10 MHz crystal
Initial tolerance	±0.005%
Temperature coefficient	±50 ppm/°C

Power consumption

+5 V	1395 mA typical, 1760 mA max

Environmental

Operating temperature	0 to 50°C
Storage temperature	-20 to 70°C
Humidity	0 to 90% non-condensing

Ordering Guide

CPCI-DIO48H/CTR15 48-bit digital I/O, 15 counter/timer board for CPCI-bus computers.