

# ZPCI.4096

## 96 Channel Digital I/O Card

**3U cPCI card with rear-panel I/O**  
**33 MHz 32-bit CPCI interface**  
**meets PICMG 2.0 R3.0**

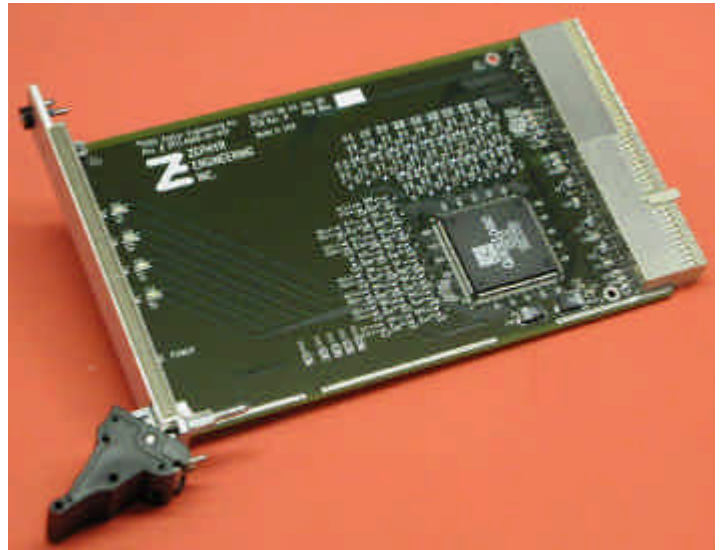
- Each pin individually programmable as input or output
- 5V tolerant LVTTTL inputs
- 3.3V LVTTTL outputs source 12 mA and sink 16 mA
- Transient suppression on all user I/O lines
- Programmable edge detectors on each input can be polled and/or generate interrupts
- Individually maskable interrupts
- Eight user-controllable LEDs
- Programmable watchdog timer
- Early watchdog interrupt at half the watchdog interval
- Rear panel I/O routes to standard transition cards

### Programmable Watchdog Timer

The watchdog timer can be set to interrupt at approximately 125ms, 250ms, 500ms, 1s, 2s, 4s, 8s or 16s. A separate early watchdog interrupt is also available at half the watchdog period. These interrupts are individually maskable. The board can also be configured to reset on expiration of the watchdog timer.

### Rear Panel I/O

Several off-the-shelf cPCI rear panel IO cards are available from Zephyr Engineering, Inc. Custom models are also available. Please contact the factory for further information.



The **ZPCI.4096** 96 Channel Digital I/O board from Zephyr Engineering, Inc provides the user with 96 channels of digital I/O routed to the rear panel via the cPCI P2 connector. Each channel is programmable as either an input or an output.

### Every Pin's Direction is Programmable

The **ZPCI.4096** doesn't use pin groups or banks. Each and every pin can be individually set as either an input or an output. As an output, each pin can source 12 mA and sink 16 mA at LVTTTL levels. Inputs are 5V tolerant LVTTTL. Outputs can be read back to aid in fault isolation.

### Programmable Edge Detectors

Each input has an associated edge detector that can be programmed to respond to either a rising edge, a falling edge or both. These edge detectors are separate from the interrupt logic, so you can still use them even if you are polling for transitions. They even work when the pin is configured as an output, providing a software interrupt capability.

### Versatile User I/O Interrupt Generation

Each edge detector can be programmed to generate an interrupt, allowing you to interrupt on either a rising edge or a falling edge or both. The edge interrupts are individually maskable. In addition, there is a global interrupt mask to disable all **ZPCI.4096** interrupts.

### User Controllable LEDs

The ZPCI.4096 contains one red and seven green LEDs that can be controlled by user software.



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**CompactPCI®**



## **ZPCI.4096 96 Channel Digital I/O Card**

The ZPCI.4096 implements 96 individually programmable LVTTTL digital I/O channels on a single 3U CompactPCI I/O card.

### **Compliance**

CompactPCI Specification, PICMG 2.0 R3.0

PCI Local Bus Specification, R2.1

### **Specifications**

#### **cPCI Interface (ZPCI.4096-01)**

CompactPCI bus: connector J1

User I/O: connector J2

Bus width: 32 bits

PCI Clock: 33 MHz

PCI controller: Quicklogic QL5130 PCI target

Signaling levels: 3.3V (5V tolerant)

Interface type: I/O slot

#### **Input Power Requirements (typical no load, 33MHz)**

+3.3V: < 5 mA

+5.0V: < 1 mA

+12V: n/a

-12V: n/a

#### **User I/O characteristics**

Output source: 12 mA at 2.4V

Output sink: 16 mA at 0.45V

Input high: >2.5V (nom), 5.5V (max)

Input low: <1.5V (nom). -0.5V (min)

Input leakage: -10 (min) to 60 uA (max)

#### **Indicators**

Green LED for +3.3V power

Seven user controllable green LEDs

One user controllable red LED

#### **Mechanical Dimensions**

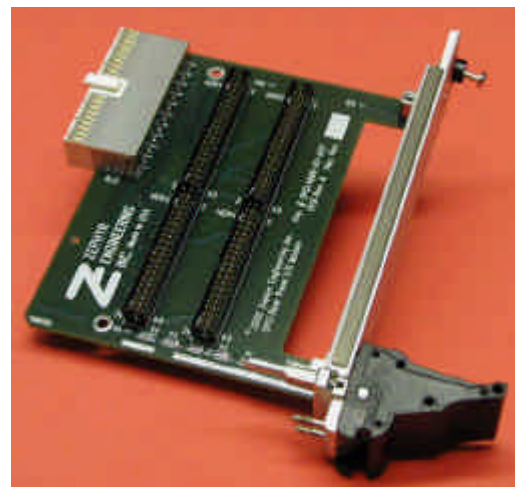
Standard 3U cPCI height: 3.9 inches (100 mm)

Standard cPCI depth: 6.3 inches (160 mm)

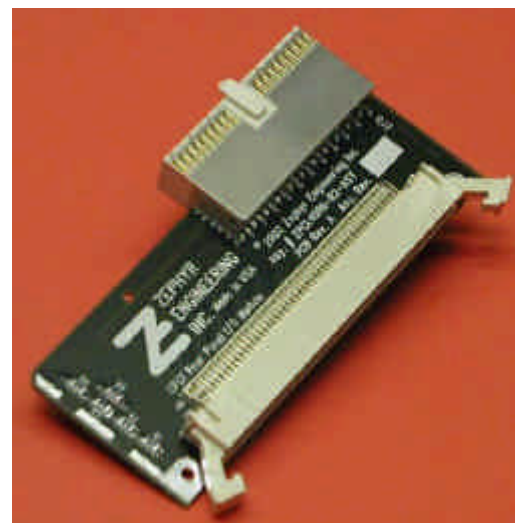
#### **On-board Connectors**

J1 cPCI bus

J2 user I/O



ZPCI.4096-R1 Rear Panel I/O Card



ZPCI.4096-R2 Rear Panel I/O Card

#### **Warranty**

Three year limited warranty.

#### **Ordering Information**

Order number

ZPCI.4096-01 3U, 32-bit, 33 MHz cPCI 96 Channel DIO Card

ZPCI.4096-R1 3U rear panel I/O card, quad 40-pin/2mm

ZPCI.4096-R2 3U rear panel I/O card, single 100 pin/0.050"



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