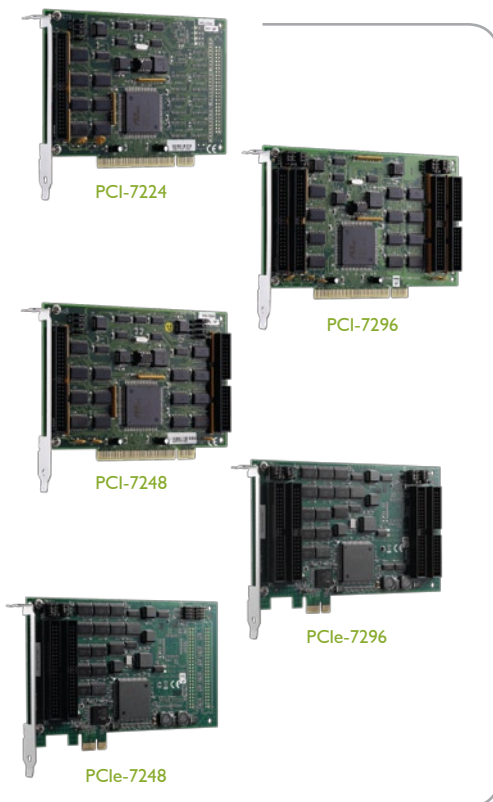


PCI-7296/7248/7224, PCIe-7296/7248

96/48/24-CH Opto-22 Compatible DIO Cards



Introduction

ADLINK's PCI-7296/7248/7224 and PCIe-7248/7296 are high-density parallel digital I/O boards with 96/48/24 I/O channels. The header connectors are fully compatible with industry Opto-22 standard. Thus, PCI-7296/7248/7224 and PCIe-7248/7296 can utilize the Opto-22 external devices. The PCI-7296/7248/7224 and PCIe-7248/7296 devices emulate mode 0 of the industry standard 8255 programmable peripheral interface (PPI) chips. The PCI-7296/7248/7224 and PCIe-7248/7296 provides 4/2/1 PPI chips respectively. Each PPI offers three 8-bit ports: Port A, Port B and Port C. The Port C is divided into 2 nibble-wide (4-bit) ports. The PCI-7296/7248/7224 and PCIe-7248/7296 devices have programmable timer/counters. One 16-bit counter is available for event counting, while the other 32-bit timer is available for timed interrupt generation.

The PCI-7296/7248/7224 and PCIe-7248/7296 devices provide multiple programmable interrupt sources from DIO channels, as well as the output of the timer.

Specifications

Digital I/O

- Number of channels
 - 96 inputs/outputs (PCI/PCIe-7296)
 - 48 inputs/outputs (PCI/PCIe-7248)
 - 24 inputs/outputs (PCI-7224)
- Compatibility: 5 V/TTL
- Digital logic levels
 - Input high voltage: 2-5.25 V
 - Input low voltage: 0-0.8 V
 - Output high voltage: 2.4 V minimum
 - Output low voltage: 0.5 V maximum
- Output driving capacity
 - Source current: 2.6 mA for port A & B, and 15 mA for port C.
 - Sink current: 24 mA
- Data transfers: programmed I/O

General Specifications

- I/O connector
 - 50-pin ribbon male x 1 (PCI-7224)
 - 50-pin ribbon male x 2 (PCI/PCIe-7248)
 - 50-pin ribbon male x 4 (PCI/PCIe-7296)
- Operating temperature: 0°C to 60°C
- Storage temperature: -20°C to 80°C
- Relative humidity: 5% to 95%, non-condensing
- Power requirements

| Device | Power Consumption |
|-----------|--------------------------|
| PCI-7296 | 860 mA @ 5 VDC Typical |
| PCI-7248 | 500 mA @ 5 VDC Typical |
| PCI-7224 | 330 mA @ 5 VDC Typical |
| PCIe-7248 | 350 mA @ 12 VDC Typical |
| | 280 mA @ 3.3 VDC Typical |
| PCIe-7296 | 590 mA @ 12 VDC Typical |
| | 280 mA @ 3.3 VDC Typical |

- Dimensions (not including connectors)
 - 148 mm x 102 mm (PCI-7248 and PCI-7224)
 - 166 mm x 102 mm (PCI-7296)
 - 168 mm x 112 mm (PCIe-7248/7296)

Terminal Boards

- TB-24R-01*
Terminal Board with 24-CH Relay Outputs
- TB-24P-01*
Terminal Board with 24-CH Isolated Digital Inputs
- TB-16P8R-01*
Terminal Board with 16-CH Isolated DI & 8-CH Relay Outputs
- DIN-24R-01*
Terminal Board with 24-CH Relay Outputs
- DIN-24P-01*
Terminal Board with 24-CH Isolated Digital Inputs and DIN-Rail Mounting

Ordering Information

- **PCI-7296**
96-CH Opto-22 Compatible DIO Card
- **PCI-7248**
48-CH Opto-22 Compatible DIO Card
- **PCI-7224**
24-CH Opto-22 Compatible DIO Card
- **PCIe-7248**
48-CH Opto-22 Compliant PCIe DIO Card
- **PCIe-7296**
96-CH Opto-22 Compliant PCIe DIO Card

Note:
The PCI-7224 is the 24-CH version of the PCI-7248. The software drivers of the PCI-7224 are exactly the same as those of the PCI-7248

Pin Assignment

PCI-7224/7248/7296 & PCIe-7248/7296

| | | | |
|--------|----|----|------------------------------|
| PnC7 | 1 | 2 | +12Vout/GND (User Selection) |
| PnC6 | 3 | 4 | +12Vout/GND (User Selection) |
| PnC5 | 5 | 6 | GND |
| PnC4 | 7 | 8 | GND |
| PnC3 | 9 | 10 | GND |
| PnC2 | 11 | 12 | GND |
| PnC1 | 13 | 14 | GND |
| PnC0 | 15 | 16 | GND |
| PnB7 | 17 | 18 | GND |
| PnB6 | 19 | 20 | GND |
| PnB5 | 21 | 22 | GND |
| PnB4 | 23 | 24 | GND |
| PnB3 | 25 | 26 | GND |
| PnB2 | 27 | 28 | GND |
| PnB1 | 29 | 30 | GND |
| PnB0 | 31 | 32 | GND |
| PnA7 | 33 | 34 | GND |
| PnA6 | 35 | 36 | GND |
| PnA5 | 37 | 38 | GND |
| PnA4 | 39 | 40 | GND |
| PnA3 | 41 | 42 | GND |
| PnA2 | 43 | 44 | GND |
| PnA1 | 45 | 46 | GND |
| PnA0 | 47 | 48 | GND |
| +5Vout | 49 | 50 | GND |

* Cables are not included. For more information about mating cables, please refer to P2-61/62.

Features

- Supports a 32-bit 5 V PCI bus (PCI-7224/7248/7296)
- x1 PCI Express® interface (PCIe-7248/7296)
- 96-CH digital TTL/DTL inputs/outputs (PCI/PCIe-7296)
- 48-CH digital TTL/DTL inputs/outputs (PCI/PCIe-7248)
- 24-CH digital TTL/DTL inputs/outputs (PCI-7224)
- Emulates 4/2/1 industry standard 8255 PPI (mode 0)
- Direct interface with OPTO-22 compatible I/O modules
- Output status read back
- Onboard 8254 timer/counter chip
- One 32-bit timer for timed interrupt generation
- One 16-bit event counter to generate event interrupt
- Programmable interrupt sources
- +12 V and +5 V power available on OPTO-22 connectors
- Onboard resettable fuses for power output protection
- Compact, half-size PCB
- Operating Systems
 - Windows Vista/XP/2000/2003
 - Linux
- Recommended Software
 - AD-Logger
 - VB.NET/VC.NET/VB/VC++/BCB/Delphi
 - DAQBench
- Driver Support
 - DAQPilot for LabVIEW™
 - DAQ-MTLB for MATLAB®
 - PCIS-DASK for Windows
 - PCIS-DASK/X for Linux