

# PCI-7296/7248/7224

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

### Features

- Supports a 32-bit 5 V PCI bus
- 96-CH digital TTL/DTL inputs/outputs (PCI-7296)
- 48-CH digital TTL/DTL inputs/outputs (PCI-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
- Windows CE (call for availability)

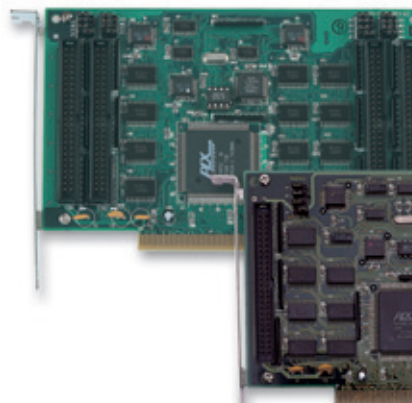
#### Recommended Software

- VB.NET/VC.NET/VB/VC++/BCB/Delphi
- DAQBench

#### Driver Support

- DAQPilot for Windows
- DAQ-LVIEW PnP for LabVIEW™
- DAQ-MTLB for MATLAB®
- PCIS-DASK for Windows
- PCIS-DASK/X for Linux

PCI-7296



PCI-7248



### Introduction

ADLINK PCI-7296/7248/7224 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. Therefore, PCI-7296/48/24 can utilize the Opto-22 external devices. The PCI-7296/7248/7224 devices emulate mode 0 of the industry standard 8255 programmable peripheral interface (PPI) chips. The PCI-7296/7248/7224 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 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 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-7296)
  - 48 inputs/outputs (PCI-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-7248)
  - 50-pin ribbon male x 4 (PCI-7296)
- Operating temperature: 0 to 60 °C
- Storage temperature: -20 to 80 °C
- Relative humidity: 5 to 95%, non-condensing

#### Power requirements

Device	+5 V
PCI-7296	860 mA typical
PCI-7248	500 mA typical
PCI-7224	330 mA typical

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

### Termination Boards

- **TB-24R-01\***  
Termination Board with 24-CH Relay Outputs
- **TB-24P-01\***  
Termination Board with 24-CH Isolated Digital Inputs
- **TB-16P8R-01\***  
Termination Board with 16-CH Isolated DI & 8-CH Relay Outputs
- **DIN-24G-01**  
Termination Board with 24-CH Grayhill I/O Modules and DIN-Rail Mounting
- **DIN-24R-01\***  
Termination Board with 24-CH Relay Outputs
- **DIN-24P-01\***  
Termination Board with 24-CH Isolated Digital Inputs and DIN-Rail Mounting

\* Cables are not included. For information on mating cables, refer to Section 12.

### Pin Assignment

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

### 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

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