

# Платы дискретного ввода/вывода серии PCI-17 XX

## ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

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Ставрополь (8652)20-65-13  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
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Ульяновск (8422)24-23-59  
Уфа (347)229-48-12  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Ярославль (4852)69-52-93

# PCI-1730

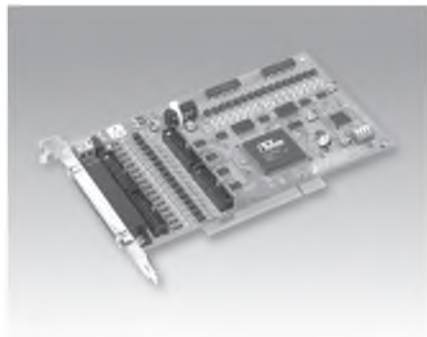
# PCI-1733

# PCI-1734

## 32-ch Isolated Digital I/O Card (ISA Compatible)

## 32-ch Isolated Digital Input Card (ISA Compatible)

## 32-ch Isolated Digital Output Card (ISA Compatible)



PCI-1730



### Features

- 32 isolated DIO ch. (16 inputs and 16 outputs)
- 32 TTL-level DIO ch. (16 inputs and 16 outputs)
- High output driving capacity
- Interrupt capability
- Two 20-pin connectors for isolated digital I/O channels and two for TTL digital I/O channels
- D-type connector for isolated input and output ch.

### Specifications

#### Isolated Digital Input

- **Input Channels** 16 (16-ch/group)
- **Interrupt Inputs** 4 (IDIO, IDI1, DIO, DI1)
- **Interrupt Levels** 2 - 7
- **Input Voltage** 5 - 30 V<sub>DC</sub>
- **Input Resistance** 2.7 kΩ @ 1 W
- **Optical Isolation** 2,500 V<sub>DC</sub>
- **Throughput** 10 kHz max.

#### Isolated Digital Output

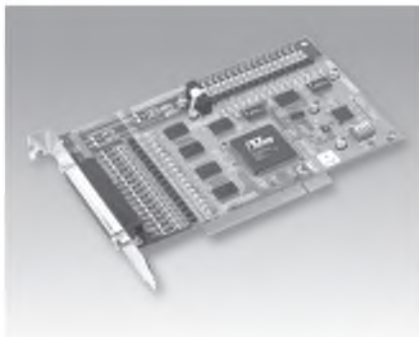
- **Output Channels** 16 (16-ch/group)
- **Optical Isolation** 2,500 V<sub>DC</sub>
- **Throughput** 10 kHz
- **Supply Voltage** 5 - 40 V<sub>DC</sub>
- **Sink Current** 200 mA max./channel

#### General

- **I/O Connector Type** 37-pin D-type female
- **Dimensions (L x H)** 185 x 100 mm (7.3" x 3.9")
- **Power Consumption** Typical: +5 V @ 330 mA  
Max: +5 V @ 500 mA
- **Operating Temperature** 0 - 60° C (32 - 140° F)
- **Storage Temperature** -20 - 70° C (-4 - 158° F)
- **Relative Humidity** 5 - 95% (IEC 68-2-3) non-condensing

### Ordering Information

- **PCI-1730** Card, manual and driver CD-ROM (cable not included.)



PCI-1733



### Features

- 32 isolated, bidirectional digital input channels
- High-voltage isolation (2,500 V<sub>DC</sub>)
- Interrupt capability
- D-type connectors for isolated input channels
- Reverse voltage protection for isolated input channels (up to 24 V<sub>DC</sub>)

### Specifications

#### Isolated Digital Input

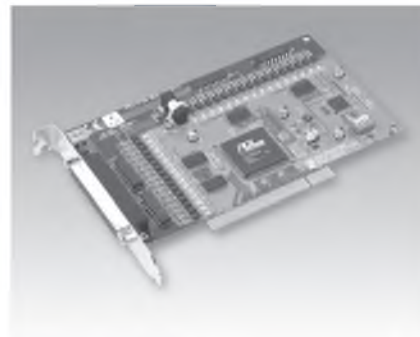
- **Input Channels** 32 (16-ch/group)
- **Interrupt Inputs** 4 (IDIO, IDI1, IDI16, IDI17)
- **Interrupt Levels** 2, 3, 5, 7, 10, 11, 12, 15
- **Input Voltage** 5 - 30 V<sub>DC</sub>
- **Input Resistance** 2.7 kΩ @ 1 W
- **Optical Isolation** 2,500 V<sub>DC</sub>
- **Throughput** 10 kHz max.

#### General

- **I/O Connector Type** 37-pin D-type female
- **Dimensions (L x H)** 185 x 100 mm (7.3" x 3.9")
- **Power Consumption** Typical: +5 V @ 320 mA  
Max: +5 V @ 500 mA
- **Operating Temperature** 0 - 60° C (32 - 140° F)
- **Storage Temperature** -20 - 70° C (-4 - 158° F)
- **Relative Humidity** 5 - 95% (IEC 68-2-3) non-condensing

### Ordering Information

- **PCI-1733** 32-channel isolated digital input card, manual and driver CD-ROM (cable not included)



PCI-1734



### Features

- 32 isolated digital output channels
- High output driving capacity
- High-voltage isolation on output channels (2,500 V<sub>DC</sub>)
- High sink current on isolated output channels (200 mA/channel)
- Integral suppression diodes for inductive loads
- Wide output range (5 - 40 V<sub>DC</sub>)
- D-type connectors for isolated output channels

### Specifications

#### Isolated Digital Output

- **Output Channels** 32 (16-ch/group)
- **Optical Isolation** 2,500 V<sub>DC</sub>
- **Throughput** 10 kHz
- **Supply Voltage** 5 - 40 V<sub>DC</sub>
- **Sink Current** 200 mA max./channel

#### General

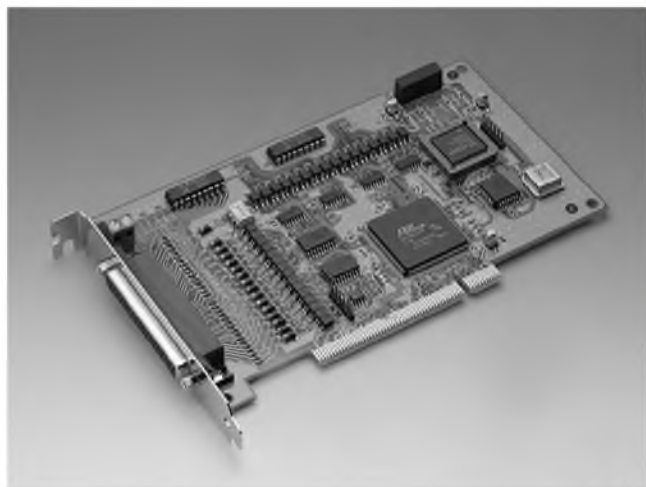
- **I/O Connector Type** 37-pin D-type female
- **Dimensions (L x H)** 185 x 100 mm (7.3" x 3.9")
- **Power Consumption** Typical: +5 V @ 330 mA  
Max: +5 V @ 500 mA
- **Operating Temperature** 0 - 60° C (32 - 140° F)
- **Storage Temperature** -20 - 70° C (-4 - 158° F)
- **Relative Humidity** 5 - 95% (IEC 68-2-3) non-condensing

### Ordering Information

- **PCI-1734** 32-channel Isolated digital output card, user's manual and driver CD-ROM (cable not included)

# PCI-1750

## 32-ch Isolated Digital I/O and Counter Card



CE

### Features

- 16 isolated DI and 16 isolated DO channels
- High voltage isolation on all isolated channels (2,500 V<sub>DC</sub>)
- High sink current on isolated output channels (200 mA/channel)
- Supports dry contact or 5 – 50 V<sub>DC</sub> isolated inputs
- Interrupt handling
- Timer/counter interrupt capability

### Introduction

PCI-1750 offers 16 isolated digital input channels, 16 isolated digital output channels, and one isolated counter/timer for the PCI bus. With isolation protection of 2,500 V<sub>DC</sub>, and dry contact support, PCI-1750 is ideal for industrial applications where high-voltage protection is required. Each I/O channel of the PCI-1750 corresponds to a bit in a PC I/O port. This makes PCI-1750 very easy to program. This card also offers a counter or timer interrupt and two digital input interrupt lines to a PC. So you can then easily do configurations by software.

### Plug & Play

PCI-1750 uses a PCI controller to interface the card to the PCI bus. The controller fully implements PCI bus specification Rev 2.1. All bus relative configurations, such as base address and interrupt assignment, are automatically controlled by the software. No jumper or DIP switch is required for user configuration.

### On-board Programmable Counter/Timer

PCI-1750 provides a programmable counter/timer for generating periodic interrupts to the host computer. The counter/timer chip is an 82C54, which includes three 16-bit counters based on a 10 MHz clock. One counter is used to count events coming from the isolated input channel. The other two are cascaded together to make a 32-bit timer.

### Specifications

#### Digital Input

- 16 Optically-isolated Inputs
- Input Range 5 – 50 V<sub>DC</sub> or dry contact
- Isolation Voltage 2,500 V<sub>DC</sub>
- Throughput 10 kHz

#### Digital Output

- 16 Optically-isolated Outputs
- Output Range Open collector 5 – 40 V<sub>DC</sub>
- Sink Current 200 mA max. per channel
- Isolation Voltage 2,500 V<sub>DC</sub>
- Throughput 10 kHz

#### Programmable Counter/Timer

- One 32-bit timer
- One 16-bit optically-isolated Counter
  - Shares pin with isolated input 15
  - Throughput: 1 MHz max.
  - Isolation voltage: 2,500 V<sub>DC</sub>

#### General

- Interrupt Source Isolated input 0, 8, counter and timer
- Power Consumption 5 V @ 850 mA (typical), 5 V @ 1.0 A (max.)
- Operating Temperature 0 – 70° C (32 – 158° F)
- Storage Temperature -20 – 80° C (-4 – 176° F)
- Operating Humidity 5 – 95% RH non-condensing (refer to IEC 68-2-3)
- Connectors One 37-pin D-type female connector  
One 2-pin terminal block for extended ground
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")

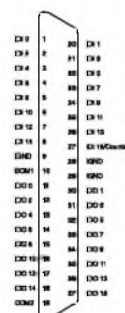
### Ordering Information

- PCI-1750 32-channel Isolated DIO and Counter Card, user's manual and driver CD-ROM. (cable not included)
- PCL-10137-1 DB37 cable assembly, 1m
- PCL-10137-2 DB37 cable assembly, 2m
- PCL-10137-3 DB37 cable assembly, 3m
- ADAM-3937 37-pin D-type cable wiring terminal for DIN-rail mounting

### Applications

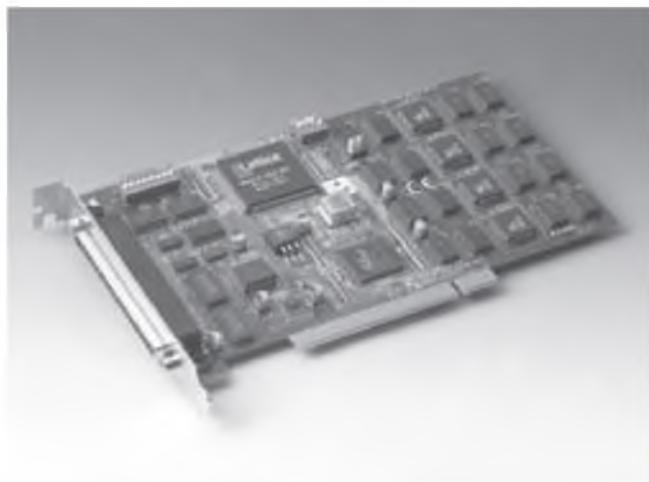
- Industrial on/off control
- Contact closure monitoring
- Switch status sensing
- BCD interfacing
- Digital I/O control
- Industrial and lab automation

### Pin Assignments



# PCI-1755

## Ultra-Speed 32-ch Digital I/O Card



FCC CE

### Features

- Bus-mastering DMA data transfer with scatter gather technology
- 32/16/8-bit Pattern I/O with start and stop trigger function, 2 modes Handshaking I/O Interrupt handling capability
- Onboard active terminators for high speed and long distance transfer
- Pattern match and Change state detection interrupt function
- General-purpose 8-ch DI/O

### Introduction

The PCI-1755 supports PCI-bus mastering DMA for high-speed data transfer. By setting aside a block of memory in the PC, the PCI-1755 performs bus-mastering data transfers without CPU intervention, setting the CPU free to perform other more urgent tasks such as data analysis and graphic manipulation. The function allows users to run all I/O unctons simultaneously at full speed without losing data.

### Specifications

|                                  |   |  |   |
|----------------------------------|---|--|---|
| <b>Channels</b>                  | 32 TTL compatible   |  |   |
| <b>Number of Ports</b>           | Port A, Port B, Port C and Port D (8 bits/port)   |  |   |
| <b>I/O Configuration</b>         | 32DI (PA-PD) (default), 32DO (PA-PD), 16DI (PA-PB) & 16DO (PC-PD); 8DI (PA) & 8DO (PC) (Programmable)   |  |   |
| <b>Onboard FIFO</b>              | 16 KB for DI & 16 KB DO channels  |  |   |
| <b>Transfer Characteristics</b>  | Data Transfer Mode  | Bus Mastering DMA with Scatter-Gather  |   |
|                                  | Data Transfer Bus Width   | 8/16/32 bits (programmable)  |   |
|                                  | <b>Max. Transfer Rate</b>   | DI: 80 M bytes/sec, 32-bit @ 20 MHz<br>120 M bytes/sec, 32-bit @ 40 MHz external pacer when data length is less than FIFO size<br>DO: 80 MBytes/sec, 32-bit @ 20 MHz |   |
| <b>Handshaking Mode</b>          | <b>Operation Mode</b>   | Handshaking  |   |
|                                  | <b>Direction</b>  | I/O  | Samples No. Finite transfer, Continuous I/O |
|                                  | <b>Asynchronous</b>   | 8255 Emulation   | <b>Synchronous</b> Burst Handshaking        |
| <b>Normal Mode</b>               | <b>Clock source for Burst Handshaking</b>   | Internal: 30 MHz, 20 MHz, 15 MHz, 12 MHz, 10 MHz, Timer#0 for DI & Timer#1 for DO<br>External: EXT_CLKIN for DI & EXT_CLKOUT for DO                                  |   |
|                                  | <b>Input</b>  | Data Acquisition at a predetermined rate by internal/external clock  |   |
|                                  | <b>Output</b>   | Waveform Generation at a predetermined rate by internal/external clock   |   |
|                                  | <b>Clock Source for DI</b>  | Internal: 30 MHz, 20 MHz, 15 MHz, 12 MHz, 10 MHz, Timer#0<br>External: EXT_CLKIN   |   |
|                                  | <b>Clock Source for DO</b>  | Internal: 30 MHz, 20 MHz, 15 MHz, 12 MHz, 10 MHz, Timer#1<br>External: EXT_CLKOUT  |   |
|                                  | <b>Start Mode</b>   | Software command/Trigger signal occurred from DI_STR or DO_STR/Pattern DI  |   |
|                                  | <b>Stop Mode</b>  | Software command/Trigger signal occurred from DI_STP (for DI) or DO_STP (for DO)/Pattern DI/"Finite transfers"   |   |
| <b>Chang Detection (DI only)</b> | Monitor the selected input channel and capture data whenever there is a transition on one of the channels, and then issue a IRQ   |  |   |
|                                  | <b>Clock Source for DI</b>  | Internal: 30 MHz, 20 MHz, 15 MHz, 12 MHz, 10 MHz, Timer#0<br>External: EXT_CLKIN   |   |
|                                  | <b>Start Mode</b>   | Software command/Trigger signal occurred from DI_STP/Pattern DI  |   |
|                                  | <b>Stop Mode</b>  | Software command/Trigger signal occurred from DI_STP/Pattern DI/"Finite transfers"   |   |
| <b>Trigger Capability</b>        | <b>DI trigger signal</b>  | DI_STR, DI_STP   | DO trigger signal<br>DO_STR, DO_STP         |
|                                  | <b>Low</b>  | 0.8 V max.   | High<br>2.0 V min.                          |
|                                  | <b>Trigger Type</b>   | Rising or falling edge, or digital pattern (for DI only)   |   |
|                                  | <b>Pulse width for edge triggers</b>  | 10 ns min.   |   |
|                                  | <b>Pattern trigger detection capabilities</b>   | Detect pattern match or mismatch on user-selected data lines   |   |
| <b>Terminator</b>                | Onboard Schottky diode termination  |  |   |
| <b>Messaging</b>                 | The messages can be generated when 1. A specified number of bytes have been transferred, 2. When a specified input pattern is matched, 3. When a measurement operation completes. |  |   |
| <b>Input Voltage</b>             | Low   | 0 V min., 0.8 V max.   | High<br>2.0 V min., 5 V max.                |

|                             |  |                                  |  |
|-----------------------------|--|----------------------------------|--|
| <b>Input Load</b>           | Terminator OFF: TTL compatible   |                                  |  |
|                             | Low  | +0.5 V @ ±20 mA                  | High<br>+2.7 V @ ±1 mA max.                                    |
|                             | Terminator ON  |                                  |  |
|                             | Terminator Resistor  | 110 Ω                            | Termination Voltage<br>2.9 V                                   |
| <b>Output Voltage</b>       | Low  | +0.5 V @ ±22.4 mA                | High<br>+2.7 V @ ±1 mA max.                                    |
|                             | <b>Driving Capacity</b>  | Low                              | 0.5 V max @ +48 mA (sink)<br>High 2.4 V min. @ -15 mA (source) |
| <b>Hysteresis</b>           | 500 mV   | Power Available at I/O connector | +4.65 ~ +5.25 Vcc @ 1A   |
| <b>General-purpose DI/O</b> | DI Channels  | DI0 ~ DI7 (TTL compatible)       |  |
|                             | DO Channels  | DO0 ~ DO7 (TTL compatible)       |  |
| <b>Interrupt Source</b>     | DI0~7 and Timer#2, Pattern match and Change detection, DI FIFO overflow and DO FIFO underflow, DI_STP and DO_STP |                                  |  |

### Pacer

- **Channels** Timer#0, Timer#1 and Timer#2
- **Timer#0** Timer pacer for digital input
- **Timer#1** Timer pacer for digital output
- **Timer#2** Interrupt source
- **Resolution** 16-bit
- **Base Clock** 10 MHz

### General

|                           |  |   |   |
|---------------------------|--|---|---|
| <b>I/O Connector Type</b> | 100-pin SCSI-II female                             |   |   |
| <b>Dimensions (L x H)</b> | 175 x 100 mm (6.9" x 3.9")                         |   |   |
| <b>Power Consumption</b>  | Typical  | Terminator OFF:<br>+5 V @ 1 A<br>Terminator ON:<br>+5 V @ 1 A   | Max.<br>Terminator OFF:<br>+5 V @ 1 A<br>Terminator ON:<br>+5 V @ 1 A |
|                           | <b>Temperature</b>                                 | Operating<br>0 ~ 60° C (32 ~ 140° F)<br>(refer to IEC 68-2-1,2) | Storage<br>-20 ~ 85° C<br>(-4 ~ 185° F)                               |
| <b>Relative Humidity</b>  | 5 ~ 95% RH non-condensing<br>(refer to IEC 68-2-3) |   | Cert. FCC, CE certified   |

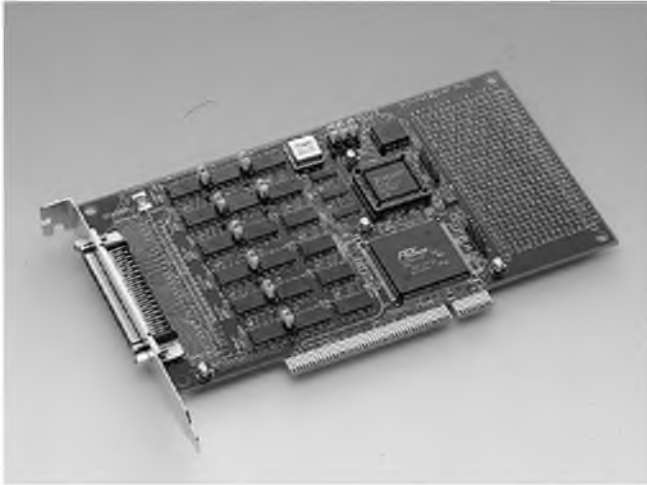
### Ordering Information

- **PCI-1755** Ultra-speed 32-ch Digital I/O Card
- **ADAM-39100** PCI-1755 Wiring Terminal for DIN-rail Mounting
- **PCL-101100-1** 100-pin SCSI-II cable with male connectors on both ends and special shielding for noise reduction, 1 m

# PCI-1751 PCI-1751U

48-bit Digital I/O Card and Counter Card

48-bit Universal Digital I/O and Counter Card



CE

## Features

- 48 TTL digital I/O lines
- Emulates mode 0 of 8255 PPI
- Buffered circuits for higher driving capacity than 8255
- Interrupt handling
- Timer/Counter interrupt capability
- Supports both dry and wet contact
- Keeps the I/O port setting and DO state after system reset
- Universal PCI & BoardID switch (PCI-1751U only)

## Introduction

PCI-1751 is a 48-bit digital I/O card for the PCI bus. Its 48 bits are divided into six 8-bit I/O ports and users can configure each port as input or output via software. The PCI-1751 also provides one event counter and two 16-bit timers, which can be cascaded to become a 32-bit timer.

### Fulfilling the True Requirements of Industrial Applications

With two practical functions, the PCI-1751 fulfills the true requirements of industrial applications. When the system is hot reset, (power is not shut off), the PCI-1751 can either retain the last I/O port setting and output value, or reset to its default configuration, depending on jumper settings. This function protects the system from wrong operations during unexpected system resets. Additionally, the PCI-1751 supports both dry and wet contacts so that it can easily interface with other devices.

### Interrupt Handling Capability

Two lines in each I/O port (C0 and C4) and two of the three counter outputs (Timer 1 and Counter 2) are connected to the interrupt circuitry. Two interrupt request signals can be generated at the same time and the software can service the two request signals by ISR. Moreover, a pin in the connector can output a digital signal simultaneously with the card generating an interrupt, and users can utilize this function to trigger external devices with the interrupt.

## Specifications

- **I/O Channels** 48 digital I/O lines
- **Programming Mode** 8255 PPI mode 0
- **Digital Output**
  - **Logic Level 0** 0.4 V max. @ 24 mA (sink)
  - **Logic Level 1** 2.4 V min. @ 15 mA (source)
- **Digital Input**
  - **Logic Level 0** 0 ~ 0.8 V
  - **Logic Level 1** 2 ~ 5.25 V
- **Programmable timer/counter**
  - **Frequency Range** 0 ~ 10 MHz
  - **Counters** Two 16-bit counters or one 32-bit counter  
One 16-bit event counter
- **General**
  - **Power Consumption** 5 V @ 850 mA (typical)  
5 V @ 1.0 A (max.)
  - **Operating Temperature** 0 ~ 70° C (32 ~ 158° F)
  - **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
  - **Operating Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
  - **Connectors** 68-pin SCSI-II female connector (Centronics type)
  - **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")

## Applications

- Industrial AC/DC I/O monitoring and controlling
- Relay and switch monitoring and controlling
- Parallel data transfer
- TTL, DTL and CMOS logic signal sensing
- Indicator LED driving

## Ordering Information

- **PCI-1751** 48-bit digital I/O card and Counter Card, user's manual and driver CD-ROM. (cable not included)
- **PCI-1751U** 48-bit universal digital I/O card and Counter Card, user's manual and driver CD-ROM. (cable not included)
- **PCL-10168** 68-pin SCSI cable, 1 and 2m
- **ADAM-3968** 68-pin SCSI cable wiring terminal for DIN-rail mounting
- **ADAM-3968/20** 68-pin SCSI-II to three 20-pin Wiring Terminal Module for DIN-Rail Mounting
- **ADAM-3968/50** 68-pin SCSI to 2 x 50-pin box headers converter module
- **PCLD-8751** 48-ch Isolated DI Board
- **PCLD-8761** 24-ch Replay and 24-IDI Board

## Pin Assignments

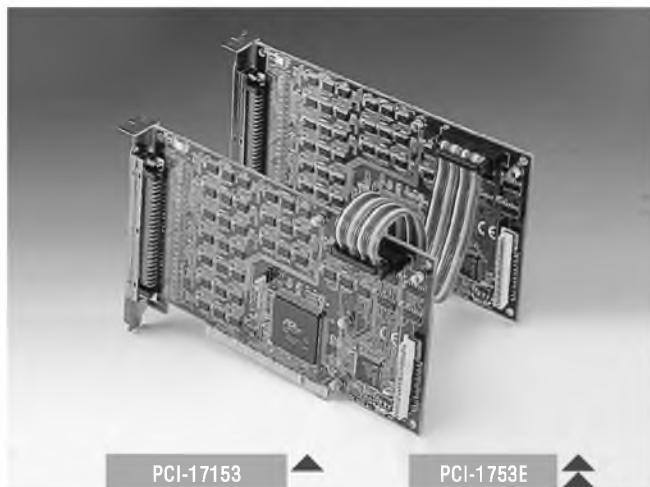




# PCI-1753 PCI-1753E

## 96-ch Digital I/O Card

## 96-ch Digital I/O Extension Card for PCI-1753



### Features

- Up to 192 (96+96) TTL digital I/O lines
- Emulates mode 0 of 8255 PPI
- Buffered circuits for higher driving capacity than 8255
- Multiple-source interrupt handling
- Interrupt output pin for simultaneously triggering external devices with the interrupt
- Output status read-back
- "Pattern match" and "Change of state" interrupt functions for critical I/O monitoring
- Keeps I/O setting and digital output values when hot system reset
- Supports dry contact and wet contact
- High-density 100-pin SCSI connector

### Introduction

PCI-1753 is a 96-bit digital I/O card for the PCI bus, which can be extended to 192 digital I/O channels by connecting with its extension board, PCI-1753E. The card emulates mode 0 of the 8255 PPI chip, but the buffered circuits offer a higher driving capability than the 8255. The 96 I/O lines are divided into twelve 8-bit I/O ports: A0, B0, C0, A1, B1, C1, A2, B2, C2, A3, B3 and C3. You can configure each port as input or output via software.

### Specifications

- I/O Channels** 96 digital I/O lines for PCI-1753  
192 digital I/O lines if extending with PCI-1753E
- Programming Mode** 8255 PPI mode 0
- Input Signal** logic level 0: 0.8 V max.  
logic level 1: 2.0 V min.
- Output Signal** logic level 0: 0.44 V max. @ 24 mA (sink)  
logic level 1: 3.76 V min. @ 24 mA (source)
- Power Consumption** +5 V @ 400 mA (typical)  
+5 V @ 2.7 A (max.)
- Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- Storage Temperature** -20 ~ 70° C (-4 ~ 158° F) (refer to IEC 68-2-3)
- Operating Humidity** 5 ~ 95% RH non-condensing
- Connector** One 100-pin SCSI female connector (Centronics™ type)
- Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")

### Ordering Information

- PCI-1753** 96 ch. Digital I/O Card, user's manual and driver CD-ROM. (cable not included)
- PCI-1753E** Extension Board for PCI-1753
- PCL-10268** 100-pin to 2x68-pin SCSI cable, 1 and 2m (PCL-10268 100-pin SCSI-II male connector P/N: 16549A0000)
- ADAM-3968** 68-pin SCSI wiring terminal for DIN-rail mounting
- ADAM-3968/20** 68-pin SCSI-II to Three 20-pin Wiring Terminal Module for DIN-Rail Mounting
- ADAM-3968/50** 68-pin SCSI wiring terminal for DIN-rail mounting
- PCLD-8751** 48-ch Isolated DI Board
- PCLD-8761** 24-ch Replay and 24-IDI Board

### Applications

- Industrial AC/DC I/O devices for monitoring and controlling
- Relay and switch monitoring and controlling
- Parallel data transfer
- TTL, DTL and CMOS logic signal sensing
- Indicator LED driving

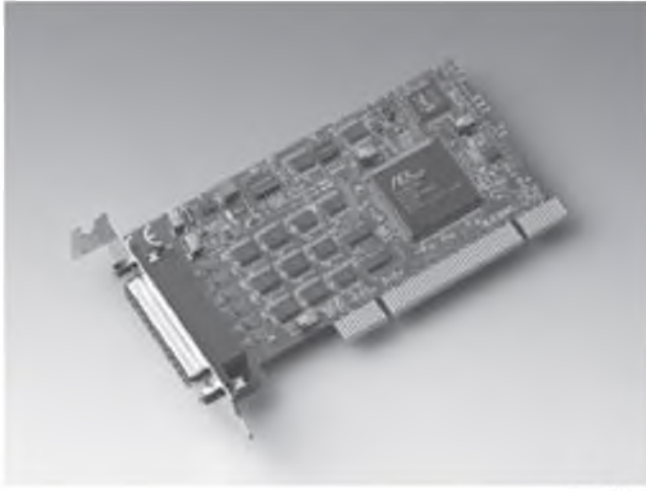
### Pin Assignments

|      |    |     |      |
|------|----|-----|------|
| PA00 | 1  | 51  | PA20 |
| PA01 | 2  | 52  | PA21 |
| PA02 | 3  | 53  | PA22 |
| PA03 | 4  | 54  | PA23 |
| PA04 | 5  | 55  | PA24 |
| PA05 | 6  | 56  | PA25 |
| PA06 | 7  | 57  | PA26 |
| PA07 | 8  | 58  | PA27 |
| PB00 | 9  | 59  | PB20 |
| PB01 | 10 | 60  | PB21 |
| PB02 | 11 | 61  | PB22 |
| PB03 | 12 | 62  | PB23 |
| PB04 | 13 | 63  | PB24 |
| PB05 | 14 | 64  | PB25 |
| PB06 | 15 | 65  | PB26 |
| PB07 | 16 | 66  | PB27 |
| PC00 | 17 | 67  | PC20 |
| PC01 | 18 | 68  | PC21 |
| PC02 | 19 | 69  | PC22 |
| PC03 | 20 | 70  | PC23 |
| PC04 | 21 | 71  | PC24 |
| PC05 | 22 | 72  | PC25 |
| PC06 | 23 | 73  | PC26 |
| PC07 | 24 | 74  | PC27 |
| GND  | 25 | 75  | GND  |
| PA10 | 26 | 76  | PA30 |
| PA11 | 27 | 77  | PA31 |
| PA12 | 28 | 78  | PA32 |
| PA13 | 29 | 79  | PA33 |
| PA14 | 30 | 80  | PA34 |
| PA15 | 31 | 81  | PA35 |
| PA16 | 32 | 82  | PA36 |
| PA17 | 33 | 83  | PA37 |
| PB10 | 34 | 84  | PB30 |
| PB11 | 35 | 85  | PB31 |
| PB12 | 36 | 86  | PB32 |
| PB13 | 37 | 87  | PB33 |
| PB14 | 38 | 88  | PB34 |
| PB15 | 39 | 89  | PB35 |
| PB16 | 40 | 90  | PB36 |
| PB17 | 41 | 91  | PB37 |
| PC10 | 42 | 92  | PC30 |
| PC11 | 43 | 93  | PC31 |
| PC12 | 44 | 94  | PC32 |
| PC13 | 45 | 95  | PC33 |
| PC14 | 46 | 96  | PC34 |
| PC15 | 47 | 97  | PC35 |
| PC16 | 48 | 98  | PC36 |
| PC17 | 49 | 99  | PC37 |
| VCC  | 50 | 100 | VCC  |

PA00 ~PA07: I/O pins of Port A0  
PA10 ~PA17: I/O pins of Port A1  
PA20 ~PA27: I/O pins of Port A2  
PA30 ~PA37: I/O pins of Port A3  
PB00 ~PB07: I/O pins of Port B0  
PB10 ~PB17: I/O pins of Port B1  
PB20 ~PB27: I/O pins of Port B2  
PB30 ~PB37: I/O pins of Port B3  
PC00 ~PC07: I/O pins of Port C0  
PC10 ~PC17: I/O pins of Port C1  
PC20 ~PC27: I/O pins of Port C2  
PC30 ~PC37: I/O pins of Port C3  
GND: Ground  
VCC: +5V voltage output

# PCI-1757UP

## 24-ch Digital Input/Output Low Profile Universal PCI Card



### Features

- Low profile PCI form factor
- Universal PCI bus
- 24 TTL level digital I/O channels
- Emulates mode 0 of 8255 PPI
- Buffered circuits provide higher driving capability
- Output status read-back
- I/O configurable by software or on board DIP switch
- Keeps port I/O settings and digital output states after hot reset
- BoardID™ switch
- Convenient DB-25 connector
- Dry/wet contact support

### Introduction

PCI-1757UP is a 24-channel DI/O low profile PCI card that meets the PCI standard REV.2.2 (universal PCI expansion card). The card also works with 3.3 V and 5 V PCI slots, and provides you with 24 parallel digital input/output channels that emulate mode 0 of the 8255 PPI chip. However, the buffered circuits offer a higher driving capability than the 8255.

### Specifications

#### Digital Input

- **Channels** 24 (shared with output)
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V @ -0.2 mA  
Logic 1: 2.0 V @ 20 mA
- **Interrupt Capable Ch.** 2

#### Digital Output

- **Channels** 24 (shared with input)
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.5 V max. @ -24 mA  
Logic 1: 3.7 V max. @ 24 mA
- **Output Capability** Sink: 24 mA  
Source: 15 mA

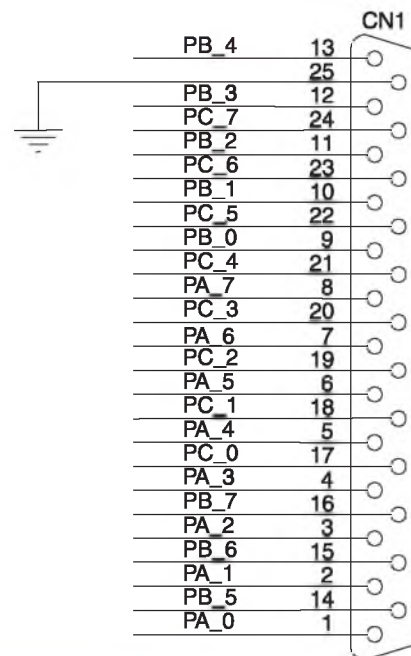
#### General

- **Bus Type** Universal PCI V2.2
- **I/O Connectors** 1 x DB-25 female
- **Dimensions** 119.91 x 64.41 mm (4.721" x 2.536") Low profile MD1
- **Power Consumption** Typical: 5 V @ 140 mA  
Max: 5 V @ 200 mA
- **Operating Temperature** 0 ~ 70° C (32 ~ 158° F)
- **Storing Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Storing Humidity** 5 ~ 95% non-condensing

### Ordering Information

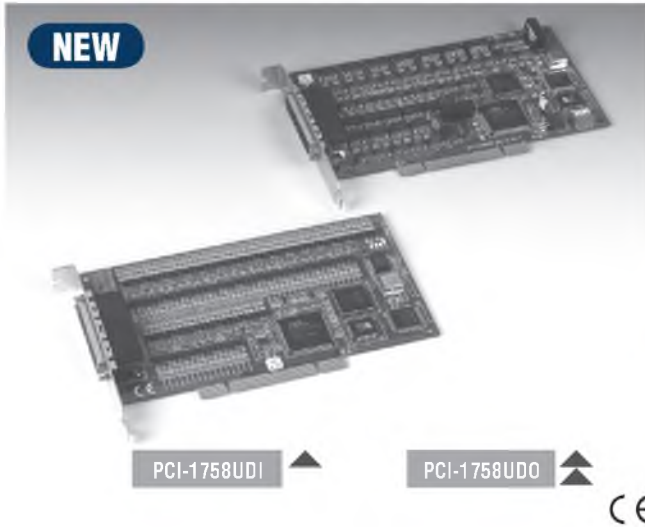
- **PCI-1757UP** 24-channel digital input/output card
- **ADAM-3925** DB25 Wiring terminal for DIN-rail mounting
- **PCL-10125-1** DB25 cable assembly, 1 m
- **PCLD-782B** 24/16-ch. opto-isolated digital input board
- **PCLD-785B** 24/16-ch. relay output board
- **PCL-12125-1** DB25 to IDC50 flat cable for PCI-1757UP, 1 m

### Pin Assignments



# PCI-1758U

128-ch Isolated Digital I/O Card



## Features

### PCI-1758UDO and PCI-1758UDIO cards

- 128 isolated digital output channels (64 for PCI-1758UDIO)
- High-voltage isolation on output channels (2,500 V<sub>DC</sub>)
- Wide output range (5 ~ 40 V<sub>DC</sub>)
- High-sink current for isolated output channels (90 mA max./Channel)
- Current protection for each port
- BoardID™ switch
- Output status read-back
- Digital output value retained after hot system reset
- Programmable Power-Up States
- Watchdog timer

### PCI-1758UDI and PCI-1758UDIO cards

- 128 isolated digital input channels (64 for PCI-1758UDIO)
- Wide input range (5 ~ 25 V<sub>DC</sub>)
- High ESD protection (2,000 V<sub>DC</sub>)
- Digital Filter function
- BoardID™ switch
- Interrupt handling capability for each channel (128-ch)

## Specifications

### Isolated Digital Input

|                             |                            |      |
|-----------------------------|----------------------------|------|
| Model Name                  | PCI-1758UDI / PCI-1758UDIO |      |
| Input Channels              | 128 / 64                   |      |
| Interrupt Input             | 128 / 64                   |      |
| Optical Isolation           | 2,500 V <sub>DC</sub>      |      |
| Opto-Isolator Response Time | 50 μs                      |      |
| Input Voltage               | V <sub>IH</sub> (max)      | 25V  |
|                             | V <sub>IH</sub> (min)      | 5V   |
|                             | V <sub>IL</sub> (max)      | 2.5V |
| Input Resistance            | 3 kΩ                       |      |

### Isolated Digital Output

|                             |                            |  |
|-----------------------------|----------------------------|--|
| Model Name                  | PCI-1758UDO / PCI-1758UDIO |  |
| Output Channels             | 128 / 64                   |  |
| Optical Isolation           | 2,500 V <sub>DC</sub>      |  |
| Opto-Isolator Response Time | 50 μs                      |  |
| Supply Voltage              | 5-40 V                     |  |
| Sink Current                | 90 mA max./Channel         |  |

### General

|                    |   |   |              |
|--------------------|---|---|--------------|
| Model Name         | PCI-1758UDI                                     | PCI-1758UDO                                     | PCI-1758UDIO |
| I/O Connector Type | MINI-SCSI HDRA-E100 Female                      |   |              |
| Dimensions         | 175 x 98 mm (6.9" x 3.9")                       |   |              |
| Power Consumption  | Typical   | +5 V @ 0.3 A                                    | +5 V @ 1.1 A |
|                    | Max.  | +5 V @ 0.6 A                                    | +5 V @ 2.2 A |
| Temperature        | Operating                                       | 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1,2) |              |
|                    | Storage   | -20 ~ 70° C (-4 ~ 158° F)                       |              |
| Relative Humidity  | 5 ~ 95% RH non-condensing (refer to IEC 68-2-3) |   |              |

## Ordering Information

- PCI-1758UDI 128-channel Isolated Digital Input Card
- PCI-1758UDO 128-channel Isolated Digital Output Card
- PCI-1758UDIO 128-channel Isolated Digital Input/Output Card
- PCL-101100S-1 100-pin SCSI Cable, 1m
- ADAM-39100 100-pin SCSI wiring terminal, DIN-rail mounting

## Feature Details

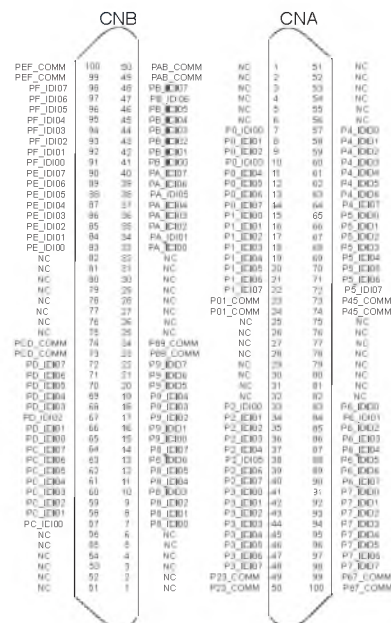
### Interrupt Function (PCI-1758UDI/PCI-1758UDIO)

PCI-1758UDI and PCI-1758UDIO provide an interrupt function for every digital input channel. All the isolated digital input channels are connected to the interrupt circuitry. You can disable/enable the interrupt functions, select trigger type by setting the Rising Edge Interrupt Registers and Falling Edge Interrupt Registers of the card. When the interrupt request signals occur, software will service these interrupt requests by ISR. The multiple interrupt sources provide the card with more capability and flexibility.

### Digital Filter Function (PCI-1758UDI/PCI-1758UDIO)

The digital filter function is used to eliminate glitches on input data and reduce the number of changes to examine and process. The filter blocks pulses that are shorter than the specified timing interval and passes pulses that are twice as long as the specified interval. Intermediate-length pulses that are longer than half of the interval, but less than the interval, may or may not pass the filter.

## Pin Assignments



I/O Connector Pin Assignment for PCI-1758UDI



| CNB      |     |    | CNA      |    |     |
|----------|-----|----|----------|----|-----|
| FEF_COMP | 110 | 90 | P8E_COMP | 1  | 51  |
| FEF_COMP | 89  | 49 | P8E_COMP | 2  | 52  |
| FE_D007  | 88  | 48 | P8E_COMP | 3  | 53  |
| FE_D008  | 87  | 47 | P8E_COMP | 4  | 54  |
| FE_D009  | 86  | 46 | P8E_COMP | 5  | 55  |
| FE_D010  | 85  | 45 | P8E_COMP | 6  | 56  |
| FE_D011  | 84  | 44 | P8E_COMP | 7  | 57  |
| FE_D012  | 83  | 43 | P8E_COMP | 8  | 58  |
| FE_D013  | 82  | 42 | P8E_COMP | 9  | 59  |
| FE_D014  | 81  | 41 | P8E_COMP | 10 | 60  |
| FE_D015  | 80  | 40 | P8E_COMP | 11 | 61  |
| FE_D016  | 79  | 39 | P8E_COMP | 12 | 62  |
| FE_D017  | 78  | 38 | P8E_COMP | 13 | 63  |
| FE_D018  | 77  | 37 | P8E_COMP | 14 | 64  |
| FE_D019  | 76  | 36 | P8E_COMP | 15 | 65  |
| FE_D020  | 75  | 35 | P8E_COMP | 16 | 66  |
| FE_D021  | 74  | 34 | P8E_COMP | 17 | 67  |
| FE_D022  | 73  | 33 | P8E_COMP | 18 | 68  |
| FE_D023  | 72  | 32 | P8E_COMP | 19 | 69  |
| FE_D024  | 71  | 31 | P8E_COMP | 20 | 70  |
| FE_D025  | 70  | 30 | P8E_COMP | 21 | 71  |
| FE_D026  | 69  | 29 | P8E_COMP | 22 | 72  |
| FE_D027  | 68  | 28 | P8E_COMP | 23 | 73  |
| FE_D028  | 67  | 27 | P8E_COMP | 24 | 74  |
| FE_D029  | 66  | 26 | P8E_COMP | 25 | 75  |
| FE_D030  | 65  | 25 | P8E_COMP | 26 | 76  |
| FE_D031  | 64  | 24 | P8E_COMP | 27 | 77  |
| FE_D032  | 63  | 23 | P8E_COMP | 28 | 78  |
| FE_D033  | 62  | 22 | P8E_COMP | 29 | 79  |
| FE_D034  | 61  | 21 | P8E_COMP | 30 | 80  |
| FE_D035  | 60  | 20 | P8E_COMP | 31 | 81  |
| FE_D036  | 59  | 19 | P8E_COMP | 32 | 82  |
| FE_D037  | 58  | 18 | P8E_COMP | 33 | 83  |
| FE_D038  | 57  | 17 | P8E_COMP | 34 | 84  |
| FE_D039  | 56  | 16 | P8E_COMP | 35 | 85  |
| FE_D040  | 55  | 15 | P8E_COMP | 36 | 86  |
| FE_D041  | 54  | 14 | P8E_COMP | 37 | 87  |
| FE_D042  | 53  | 13 | P8E_COMP | 38 | 88  |
| FE_D043  | 52  | 12 | P8E_COMP | 39 | 89  |
| FE_D044  | 51  | 11 | P8E_COMP | 40 | 90  |
| FE_D045  | 50  | 10 | P8E_COMP | 41 | 91  |
| FE_D046  | 49  | 9  | P8E_COMP | 42 | 92  |
| FE_D047  | 48  | 8  | P8E_COMP | 43 | 93  |
| FE_D048  | 47  | 7  | P8E_COMP | 44 | 94  |
| FE_D049  | 46  | 6  | P8E_COMP | 45 | 95  |
| FE_D050  | 45  | 5  | P8E_COMP | 46 | 96  |
| FE_D051  | 44  | 4  | P8E_COMP | 47 | 97  |
| FE_D052  | 43  | 3  | P8E_COMP | 48 | 98  |
| FE_D053  | 42  | 2  | P8E_COMP | 49 | 99  |
| FE_D054  | 41  | 1  | P8E_COMP | 50 | 100 |

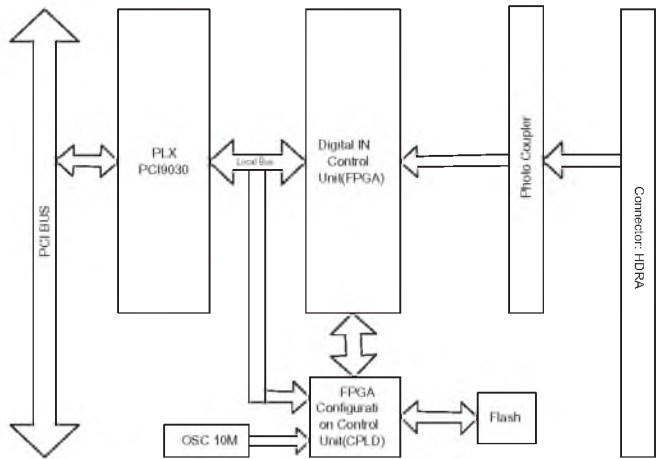
I/O Connector Pin Assignment for PCI-1758UDO

| CNB      |     |    | CNA      |    |    |
|----------|-----|----|----------|----|----|
| P87_COMP | 100 | 50 | P23_COMP | NC | 1  |
| P87_COMP | 99  | 49 | P23_COMP | NC | 2  |
| P7_D007  | 98  | 48 | P1_D007  | NC | 3  |
| P7_D008  | 97  | 47 | P1_D008  | NC | 4  |
| P7_D009  | 96  | 46 | P1_D009  | NC | 5  |
| P7_D010  | 95  | 45 | P1_D010  | NC | 6  |
| P7_D011  | 94  | 44 | P1_D011  | NC | 7  |
| P7_D012  | 93  | 43 | P1_D012  | NC | 8  |
| P7_D013  | 92  | 42 | P1_D013  | NC | 9  |
| P7_D014  | 91  | 41 | P1_D014  | NC | 10 |
| P8_D007  | 90  | 40 | P2_D007  | NC | 11 |
| P8_D008  | 89  | 39 | P2_D008  | NC | 12 |
| P8_D009  | 88  | 38 | P2_D009  | NC | 13 |
| P8_D010  | 87  | 37 | P2_D010  | NC | 14 |
| P8_D011  | 86  | 36 | P2_D011  | NC | 15 |
| P8_D012  | 85  | 35 | P2_D012  | NC | 16 |
| P8_D013  | 84  | 34 | P2_D013  | NC | 17 |
| P8_D014  | 83  | 33 | P2_D014  | NC | 18 |
| P8_D015  | 82  | 32 | P2_D015  | NC | 19 |
| P8_D016  | 81  | 31 | P2_D016  | NC | 20 |
| P8_D017  | 80  | 30 | P2_D017  | NC | 21 |
| P8_D018  | 79  | 29 | P2_D018  | NC | 22 |
| P87_COMP | 78  | 28 | P23_COMP | NC | 23 |
| P87_COMP | 77  | 27 | P23_COMP | NC | 24 |
| NC       | 76  | 26 | NC       | 25 | 75 |
| NC       | 75  | 25 | NC       | 26 | 76 |
| P45_COMP | 74  | 34 | P38_COMP | NC | 27 |
| P45_COMP | 73  | 33 | P38_COMP | NC | 28 |
| P5_D007  | 72  | 22 | P1_D007  | NC | 29 |
| P5_D008  | 71  | 21 | P1_D008  | NC | 30 |
| P5_D009  | 70  | 20 | P1_D009  | NC | 31 |
| P5_D010  | 69  | 19 | P1_D010  | NC | 32 |
| P5_D011  | 68  | 18 | P1_D011  | NC | 33 |
| P5_D012  | 67  | 17 | P1_D012  | NC | 34 |
| P5_D013  | 66  | 16 | P1_D013  | NC | 35 |
| P5_D014  | 65  | 15 | P1_D014  | NC | 36 |
| P4_D017  | 64  | 14 | P1_D017  | NC | 37 |
| P4_D018  | 63  | 13 | P1_D018  | NC | 38 |
| P4_D019  | 62  | 12 | P1_D019  | NC | 39 |
| P4_D020  | 61  | 11 | P1_D020  | NC | 40 |
| P4_D021  | 60  | 10 | P1_D021  | NC | 41 |
| P4_D022  | 59  | 9  | P1_D022  | NC | 42 |
| P4_D023  | 58  | 8  | P1_D023  | NC | 43 |
| P4_D024  | 57  | 7  | P1_D024  | NC | 44 |
| P45_COMP | 56  | 6  | P38_COMP | NC | 45 |
| P45_COMP | 55  | 5  | P38_COMP | NC | 46 |
| P45_COMP | 54  | 4  | P38_COMP | NC | 47 |
| P45_COMP | 53  | 3  | P38_COMP | NC | 48 |
| P45_COMP | 52  | 2  | P38_COMP | NC | 49 |
| P45_COMP | 51  | 1  | P38_COMP | NC | 50 |

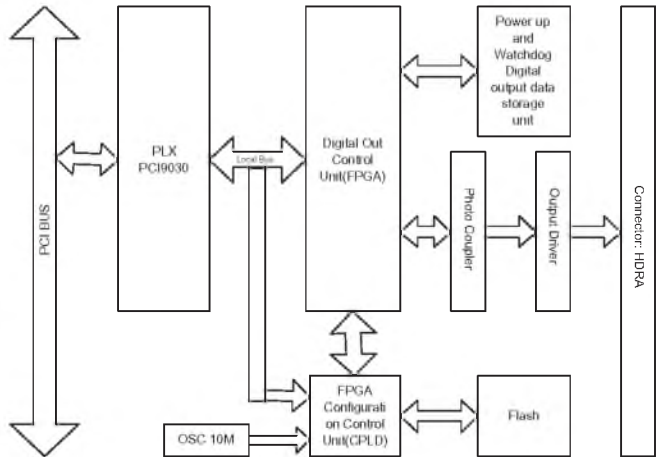
I/O Connector Pin Assignment for PCI-1758UDIO

## Block Diagram

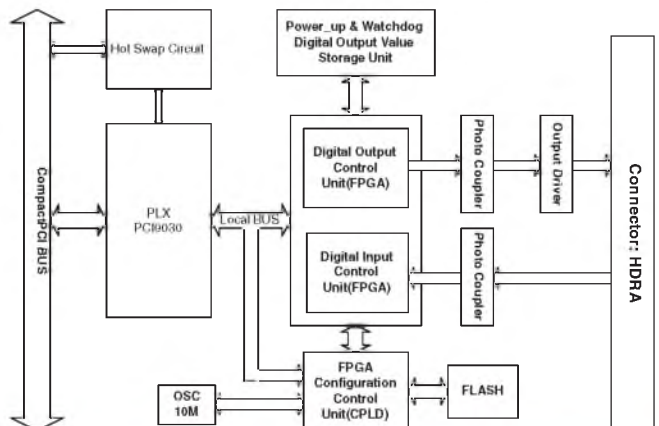
PCI-1758UDI Block Diagram



PCI-1758UDO Block Diagram

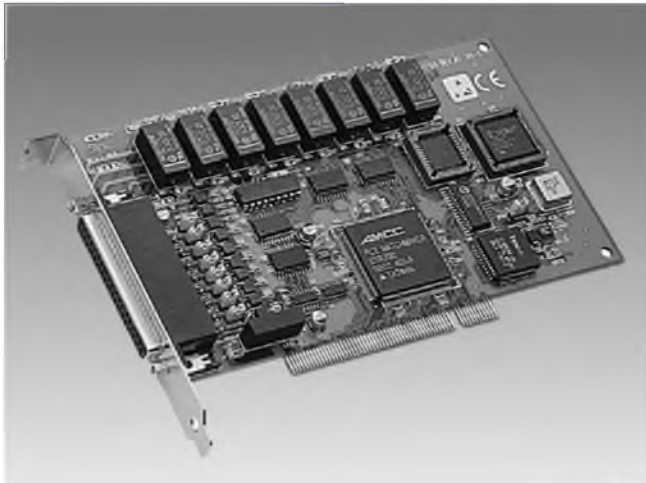


PCI-1758UDIO Block Diagram



# PCI-1760 PCI-1760U

## 8-ch Relay Actuator and Isolated D/I Card



FCC CE

### Features

- Universal PCI card, for 3.3 V and 5 V PCI slot
- 8 opto-isolated digital input channels
- 8 relay actuator output channels
- 2 opto-isolated PWM outputs
- LED indicators to show activated relays
- Jumper selectable dry contact/wet contact input signals
- Up event counters for DI
- Programmable digital filter function for DI
- Pattern match interrupt function for DI
- "Change of State" interrupt function for DI
- Universal PCI and BoardID switch (PCI-1760U only)

### Introduction

The PCI-1760U relay actuator and isolated D/I card is a PC add-on card for the PCI bus. It meets the PCI standard Rev. 2.2 (Universal PCI expansion card), and works with both 3.3 V and 5 V PCI slots. It provides 8 opto-isolated digital inputs with isolation protection of 2,500 V<sub>DC</sub> for collecting digital inputs in noisy environments, 8 relay actuators that can be used as a on/off control devices or small power switches, and 2 isolated PWM (Pulse Width Modulation) outputs for custom applications.

For easy monitoring, each relay is equipped with one red LED to show its on/off status. Each isolated input supports both dry contact and wet contact so that it can easily interface with other devices when no voltage is present in the external circuit.

### Specifications

#### Isolated Digital Input

- **Channels** 8 (Sink)
- **Opto-isolator** PC354
- **Input Voltage** 5 – 12 V<sub>DC</sub>  
High: > 4.5 V  
Low: < 1.0 V  
Uncertain: 1.0 V ≥ V<sub>in</sub> ≥ 4.5 V
- **Input Resistance** 1 kΩ 1/4 W
- **Isolation Voltage** 2,500 V<sub>DC</sub>
- **Digital Filter** Minimum effective high input period ≥ [(2 – 65535) x 5 ms] + 5 ms  
Minimum effective low input period ≥ [(2 – 65535) x 5 ms] + 5 ms
- **16-bit UP Counter** Maximum effective input frequency: 500 Hz  
Minimum High period ≥ 1 ms  
Minimum Low period ≥ 1 ms

#### Relay Output

- **Channels** 8
- **Relay Type** Single-pole double-throw (SPDT, Form C)
- **Output Type** CH0 and CH1: NC and NO outputs  
CH2 – CH7: NC or NO outputs (selected by jumper)
- **Rating Contact Load** 120 V<sub>DC</sub> @ 0.5 A or 30 V<sub>DC</sub> @ 1 A
- **Contact Resistance** Less than 100 mΩ initially
- **Dielectric Strength** Coil to contacts (deenergized): 1,500 V<sub>RMS</sub> (1 minute)  
Between open contacts (deenergized & energized): 1,000 V<sub>RMS</sub> (1 minute)
- **Life Expectancy** 200,000 operations @ 0.5 A 120 V<sub>AC</sub>  
500,000 operations @ 1.0 A 30 V<sub>DC</sub>
- **Operating Time** 5 ms max.
- **Releasing Time** 5 ms max.

#### Isolated PWM output

- **Channels** 2
- **Isolation Voltage** 2,500 V<sub>DC</sub>
- **Scaling Resolution** 16 bits (100 ms for each step)  
High period = [(1 – 65535) x 100 ms] + 50 ms (max.)  
Low period = [(1 – 65535) x 100 ms] + 50 ms (max.)
- **Output Level** High: (5 ± 0.5) V  
Low: < 0.8 V

#### General

- **Power Consumption** +5 V @ 450 mA (typical), 850 mA (max.)
- **Operating Temperature** 0 – 60° C (32 – 140° F) (IEC 68-2-1, 2)
- **Storage Temperature** -20 – 70° C (-4 – 158° F)
- **Operating Humidity** 5 – 95 % RH non-condensing (IEC 68-2-3)

#### Physical

- **Connector** One 37-pin D-type connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")

### Ordering Information

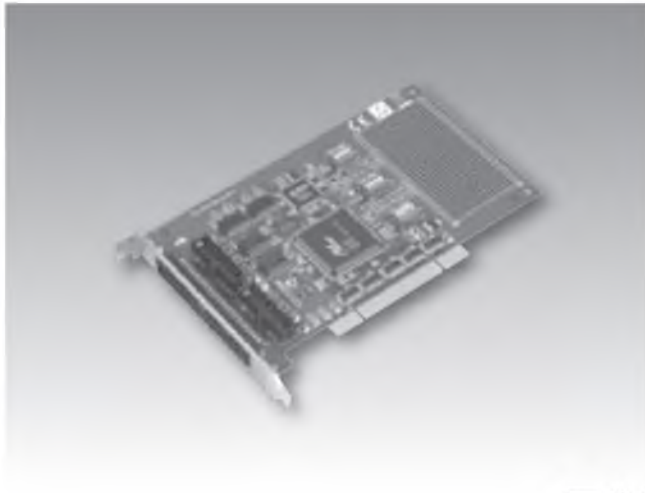
- **PCI-1760U** Relay Actuator and Isolated D/I Card, user's manual and driver CD-ROM (cable not included)
- **PCI-1760** 8-ch Relay Actuator and Isolated D/I card
- **PCL-10137-1** DB37 cable assembly, 1m
- **PCL-10137-2** DB37 cable assembly, 2m
- **PCL-10137-3** DB37 cable assembly, 3m
- **ADAM-3937** DB37 wiring terminal for DIN-rail mounting

### Applications

- Digital signal and contact status monitoring
- Industrial On/Off control
- Signal switching
- External relay driving

# PCI-1737U

24-ch Digital I/O Card



## Features

- 24 TTL digital I/O channels
- Emulates mode 0 of 8255 PPI
- Interrupt handling
- Opto-22 compatible 50-pin connectors
- Output status readback
- PCI universal card

## Specifications

### Digital Input

- Channels 24 (shared with output)
- Compatibility 5 V/TTL
- Input Voltage Logic 0: 0.8 V max.  
Logic 1: 2.0 V min.
- Interrupt Capable Ch. 1

### Digital Output

- Channels 24 (shared with input)
- Compatibility 5 V/TTL
- Output Voltage Logic 0: 0.4 V max.  
Logic 1: 2.4 V min.
- Output Capability Sink: 0.4 V max. @ 24 mA  
Source: 2.4 V min. @ 15 mA

### General

- Bus Type PCI-1737: Universal PCI V2.2  
PCL-724: ISA
- I/O Connectors 50-pin male ribbon-cable connector
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Power Consumption Max: +5 V @ 294.9 mA
- Operating Temperature 0 ~ 65° C (32 ~ 149° F)
- Storing Temperature -25 ~ 80° C (-13 ~ 176° F)
- Storing Humidity 5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)

## Ordering Information

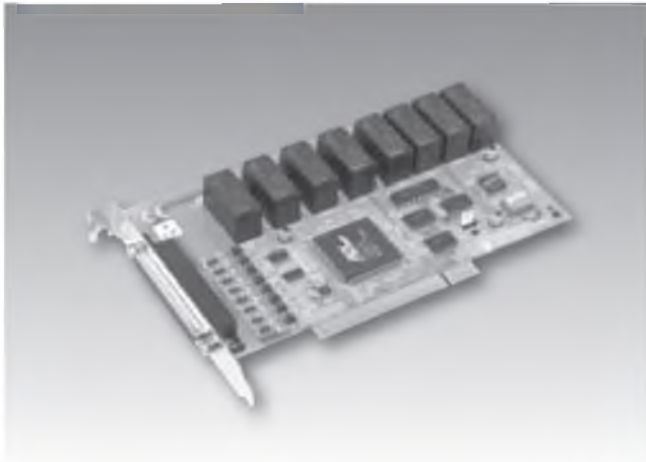
- PCI-1737U 24-ch TTL Digital I/O Card
- PCL-10150-1.2 IDC-50 Flat Cable, 1.2 m
- PCLD-782B 16/24-ch Opto-isolated DI Board
- PCLD-785B 24/16-ch. relay output board
- PCLD-7216 16-ch SSR Carrier Module Board
- PCLD-885 16-ch Power Relay Output Terminal
- ADAM-3950 50-Pin Flat Cable Terminal, DIN-rail Mount

## Pin Assignments

|      |    |    |     |
|------|----|----|-----|
| PC 7 | 1  | 2  | GND |
| PC 6 | 3  | 4  | GND |
| PC 5 | 5  | 6  | GND |
| PC 4 | 7  | 8  | GND |
| PC 3 | 9  | 10 | GND |
| PC 2 | 11 | 12 | GND |
| PC 1 | 13 | 14 | GND |
| PC 0 | 15 | 16 | GND |
| PB 7 | 17 | 18 | GND |
| PB 6 | 19 | 20 | GND |
| PB 5 | 21 | 22 | GND |
| PB 4 | 23 | 24 | GND |
| PB 3 | 25 | 26 | GND |
| PB 2 | 27 | 28 | GND |
| PB 1 | 29 | 30 | GND |
| PB 0 | 31 | 32 | GND |
| PA 7 | 33 | 34 | GND |
| PA 6 | 35 | 36 | GND |
| PA 5 | 37 | 38 | GND |
| PA 4 | 39 | 40 | GND |
| PA 3 | 41 | 42 | GND |
| PA 2 | 43 | 44 | GND |
| PA 1 | 45 | 46 | GND |
| PA 0 | 47 | 48 | GND |
| +5 V | 49 | 50 | GND |

# PCI-1761

## 8-ch Relay Actuator/Isolated DI PCI Card



### Features

- 8 relay output channels and 8 isolated digital input channels
- LED indicators to show activated relays
- 4 Form C and 4 Form A type relay output channels
- Male DB37 matching connector included
- Output status read-back
- Retained relay output values when hot system reset
- High-voltage isolation on input channels (3,750 V<sub>DC</sub>)
- High ESD protection (2,000 V<sub>DC</sub>)
- High over-voltage protection (70 V<sub>DC</sub>)
- Wide input range (10 ~ 50 V<sub>DC</sub>)
- Interrupt handling capability
- BoardID™ switch

### Introduction

The PCI-1761 relay actuator and isolated D/I card is an add-on card for the PCI bus. It provides 8 optically-isolated digital inputs with isolation protection of 3,750 V<sub>DC</sub> for collecting digital inputs in noisy environments and 8 relay actuators for serving as on/off control devices or small power switches. For easy monitoring, each relay is equipped with one red LED to show its on/off status. The PCI-1761's eight optically-isolated digital input channels are ideal for digital input in noisy environments or with floating potentials.

The PCI-1761 digital input channels feature a rugged isolation protection for industrial, lab and machinery automation applications. It durably withstands voltage up to 3,750 V<sub>DC</sub>, protecting your host system from any incidental harms. If connected to an external input source with surge-protection, the PCI-1761 can offer up to a maximum of 2,000 V<sub>DC</sub> ESD (Electrostatic Discharge) protection. Even with an input voltage rising up to 70 V<sub>DC</sub>, the PCI-1761 can still manage to work properly, albeit for only a short period of time.

When the system has undergone a hot reset (i.e. without turning off the system power), the PCI-1761 can either retain output values of each channel, or return to its default configuration as open status, depending on its onboard jumper setting. This function protects the system from unwanted operations during unexpected system resets.

### Specifications

#### Isolated Digital Input

- **Channels** 8
- **Input Voltage** Logic 0: 3 V max.  
Logic 1: 5V min. (50V max.).
- **Interrupt Capable Ch.** 8
- **Isolation Protection** 3,750 V<sub>DC</sub>
- **Overvoltage Protection** 70 V<sub>DC</sub>
- **Opto-Isolator Response** 25 μs
- **Input Resistance** 5600 Ω
- **Input Current** 1.6 mA @ 10 V<sub>DC</sub>, 8.9 mA @ 50 V<sub>DC</sub>

#### Relay Output

- **Channels** 8
- **Relay Type** SPDT (4 x Form C, and 4 x Form A)
- **Contact Rating** 250 V<sub>AC</sub> @ 3 A, or 24 V<sub>DC</sub> @ 3 A
- **Relay on Time** 15 ms max.
- **Relay off Time** 5 ms max.
- **Life Span** 2 x 10<sup>7</sup>
- **Resistance**  
Contact: 50 MΩ  
Insulation: 1 GΩ min.

#### General

- **Bus Type** PCI V2.2
- **I/O Connectors** 1 x 37-pin D-type
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: +5 V @ 220 mA  
Max: +5 V @ 750 mA
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (IEC 68-2-1, 2)
- **Storing Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Storing Humidity** 5 ~ 95 % RH, non-condensing (IEC 68-2-3)

### Ordering Information

- **PCI-1761** 8-ch Relay Actuator/Isolated DI PCI Card
- **PCL-10137-1** DB37 cable assembly, 1 m
- **PCL-10137-2** DB37 cable assembly, 2 m
- **PCL-10137-3** DB37 cable assembly, 3 m
- **ADAM-3937** DB37 Wiring Terminal for Din-rail Mounting
- **PCLD-880** Universal screw terminal board

# PCI-1762

## 16-ch Isolated DI/Relay Output Card



### Features

- 16 relay output channels and 16 isolated digital input channels
- LED indicators to show activated relays
- Jumper selectable Form A/Form B-type relay output channel
- Output status read-back
- Retain relay output values when hot system reset
- High-voltage isolation on input channels (2,500 V<sub>DC</sub>)
- High ESD protection (2,000 V<sub>DC</sub>)
- High over-voltage protection (70 V<sub>DC</sub>)
- Wide input range (10 ~ 50 V<sub>DC</sub>)
- Interrupt handling capability
- High-density DB-62 connector
- BoardID™ switch

### Introduction

The PCI-1762 relay actuator and isolated D/I card is a PC add-on card for the PCI bus. It provides 16 opto-isolated digital inputs with isolation protection of 2,500 V<sub>DC</sub> for collecting digital inputs in noisy environments, 16 relay actuators for serving as on/off control devices or small power switches. For easy monitoring, each relay is equipped with one red LED to show its on/off status. The PCI-1762's sixteen optically-isolated digital input channels are ideal for digital input in noisy environments or with floating potentials.

### Specifications

#### Isolated Digital Input

- **Channels** 16
- **Input Voltage** Logic 0: 3 V max.  
Logic 1: 10 V min. (50 V max.)
- **Interrupt Capable Ch.** 2
- **Isolation Protection** 2,500 V<sub>DC</sub>
- **Overvoltage Protection** 70 V<sub>DC</sub>
- **Opto-Isolator Response** 25 μs
- **Input Resistance** 4.7 KΩ

#### Relay Output

- **Channels** 16
- **Relay Type** SPDT (Form A or Form B, jumper selectable)
- **Contact Rating** 0.5 A @ 125 V<sub>AC</sub> or 1 A @ 30 V<sub>DC</sub>
- **Relay on Time** 6 ms max.
- **Relay off Time** 4 ms max.
- **Life Span** 2 x 10<sup>5</sup> ops. min. (0.5 A @ 125 V<sub>AC</sub>),  
5 x 10<sup>5</sup> ops. min. (1 A @ 30 V<sub>DC</sub>)
- **Resistance** Contact: 50 MW  
Insulation: 1,000 MW min. (at 500 V<sub>DC</sub>)

#### General

- **Bus Type** PCI V2.2
- **I/O Connectors** 1 x DB62 D-type female
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: +5V @ 250 mA  
Max: +5V @ 620 mA
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (IEC 68-2-1,2)
- **Storing Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Storing Humidity** 5 ~ 95 % non-condensing (IEC 68-2-3)

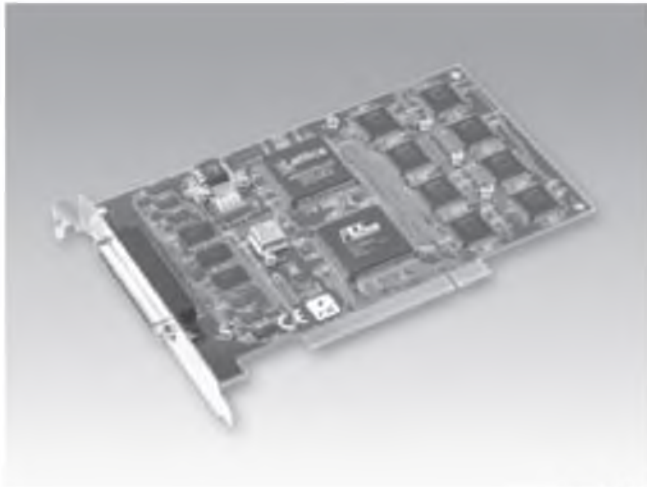
### Ordering Information

- **PCI-1762** 16-ch Isolated DI/Relay Output Card
- **PCL-10162-1** PCL-10162-1 DB-62 cable assembly, 1 m
- **PCL-10162-3** PCL-10162-3 DB-62 cable assembly, 3 m
- **PCL-10162-5** PCL-10162-5 DB-62 cable assembly, 5 m
- **ADAM-3962** DB62 Wiring Terminal for Din-rail Mounting



# PCI-1780U

## 8-ch Counter/Timer Card



### Features

- 8 independent 16-bit counters
- 8 programmable clock source
- 8 digital TTL outputs and 8 digital TTL inputs
- Up to 20 MHz input frequency
- Multiple counter clock source selectable
- Counter output programmable
- Counter gate function
- Flexible interrupt source select
- BoardID™ switch

### Introduction

PCI-1780 is a general purpose multi-channel counter/timer card for the PCI bus. It targets the AM9513 to implement the counter/timer function by CPLD. It provides eight 16-bit counter channels, 8 digital outputs and 8 digital inputs. Its powerful counter functions cater to a broad range of industrial and laboratory applications.

The card features 12 programmable counter modes, to provide one shot output, PWM output, periodic interrupt output, time-delay output, and to measure the frequency and the pulse width. The PCL-10168 shielded cable works well with PCI-1780 to reduce noise. Its wires are all twisted pairs, and the input signals and output signals are separately shielded, providing minimal cross talk between signals and the best protection against EMI/EMC problems.

For easier configuration, PCI-1780 supports Plug & Play, and have also been equipped with an Advantech BoardID™ DIP switch that helps define each card's unique identity when multiple identical PCI cards have been installed in the same computer. The BoardID switch is very useful when you build your system with multiple identical PCI cards. With the correct BoardID switch settings, you can easily identify and access each card during hardware configuration and software programming.

### Specifications

#### Digital Input

- Channels 8
- Compatibility 5 V/TTL
- Input Voltage Logic 0: 0.8 V max.  
Logic 1: 2.0 V min.
- Interrupt Capable Ch. CH0

#### Digital Output

- Channels 8
- Compatibility 5 V/TTL
- Output Voltage Logic 0: 0.8 V  
Logic 1: 2.0 V
- Output Capability Sink: 24 mA @ 0.8 V  
Source: -15 mA @ 2.0 V

#### Counter/Timer

- Channels 8 (independent)
- Resolution 16 bits
- Compatibility 5 V/TTL
- Max. Input Frequency 20 MHz
- Reference Clock Internal: 20 MHz  
External clock: 20 MHz max.
- Counter Modes 12 (programmable)
- Interrupt Capable Ch. 8
- PWM Channels 8

#### General

- Bus Type PCI V2.2
- I/O Connectors 1 x 68-pin SCSI-II female
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Power Consumption Typical: +5 V @ 900 mA  
Max.: +5 V @ 1.2 A
- Operating Temperature 0 – 60° C (32 – 140° F) (IEC 68-2-1, 2)
- Storing Temperature -20 – 70° C (-4 – 158° F)
- Storing Humidity 5 – 95 % RH, non-condensing (IEC 68-2-3)

### Ordering Information

- PCI-1780 8-ch Counter/Timer Card
- PCL-10168-1 SCSI-68 shielded cable, 1 m
- ADAM-3968 SCSI-68 wiring terminal, DIN-rail mount

# PCI-1752U/1752US0

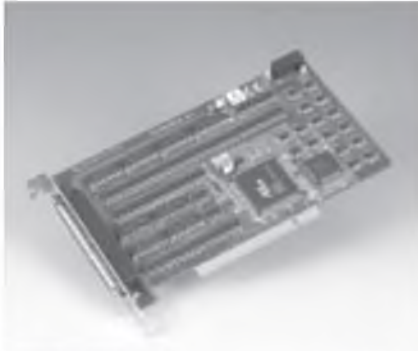
## PCI-1754

## PCI-1756

64-ch Isolated Digital Output Card

64-ch Isolated Digital Input Card

64-ch Isolated Digital I/O Card



PCI-1752



PCI-1754



PCI-1756



### Features

- 64 isolated digital output channels
- High-voltage isolation on output channels (2500 V<sub>DC</sub>)
- 2000 V<sub>DC</sub> ESD protection
- Wide output range (5 – 40 V<sub>DC</sub>)
- High-sink current on isolated output channels (200 mA max./channel)
- Output status read-back
- Keeps digital output values when hot system reset
- Channel-freeze function
- High-density 100-pin SCSI connector
- Support sink (1752U) & Source (1752US0) DO type

### Specifications

#### Isolated Digital Output

- Channels** 64 (16-ch/group)
- Output Type** Sink (NPN)
- Isolation Protection** 2,500 V<sub>DC</sub>
- Output Voltage** 5 – 40 V<sub>DC</sub>
- Sink Current** 200 mA max./channel
- Opto-isolator Response** 25  $\mu$ s

#### General

- Bus Type** Universal PCI V2.2
- I/O Connectors** 1 x 100-pin SCSI-II female
- Dimensions (L x H)** 175x100mm (6.9" x 3.9")
- Power Consumption** Typical: +5 V @ 230 mA  
Max.: +5 V @ 500 mA
- Operating Temperature** 0 – 60° C (32 – 140° F)  
(IEC 68-2-1, 2)
- Storing Temperature** -20 – 70° C (-4 – 158° F)
- Storing Humidity** 5 – 95% RH, (IEC 68-2-3)  
non-condensing

### Ordering Information

- PCI-1752U** PCI-1752U 64-ch isolated PCI card (Sink type)
- PCI-1752US0** 64-ch isolated PCI card (Source type)
- PCI-10250-1** 1w-pin to two 50-pin SCSI Castle, 1m
- ADAM-3951** Wiring terminal module with LED-indicators for DIN-rail Mounting

### Features

- 64 isolated digital input channels
- Either +/- voltage input for DI by group
- High-voltage isolation on input channels (2500 V<sub>DC</sub>)
- High over-voltage protection (70 V<sub>DC</sub>)
- Wide input range (10 – 50 V<sub>DC</sub>)
- Interrupt handling capability
- High-density 100-pin SCSI connector

### Specifications

#### Isolated Digital Input

- Channels** 64 (16-ch/group)
- Input Voltage** Logic 0: 3 V max.  
Logic 1: 10 V min.  
(50 V max.)
- Input Current (Typical)** 10 V<sub>DC</sub> @ 1.7 mA, 12 V<sub>DC</sub> @ 2.1 mA  
24 V<sub>DC</sub> @ 4.4 mA, 48 V<sub>DC</sub> @ 9.0 mA  
50 V<sub>DC</sub> @ 9.4 mA
- Interrupt Capable Ch.** 4
- Isolation Protection** 2,500 V<sub>DC</sub>
- Overvoltage Protection** 70 V<sub>DC</sub>
- ESD** 2,000 V<sub>DC</sub>
- Opto-isolator Response** 25  $\mu$ s

#### General

- Bus Type** PCI V2.2
- I/O Connectors** 100-pin SCSI-II female
- Dimensions (L x H)** 175 x 100mm (6.9" x 3.9")
- Power Consumption** Typical: +5 V @ 340 mA  
Max.: +5 V @ 450 mA
- Operating Temperature** 0 – 60° C (32 – 140° F)  
(IEC 68-2-1, 2)
- Storing Temperature** -20 – 70° C (-4 – 158° F)
- Storing Humidity** 5 – 95% RH (IEC 68-2-3)  
non-condensing

### Ordering Information

- PCI-1754** 64-ch isolated digital input card
- PCI-10250-1** 1w-pin to two 50-pin SCSI Castle, 1m
- ADAM-3951** Wiring terminal module with LED-indicators for DIN-rail Mounting

### Features

- Either +/- voltage input for DI by group
- Output status read-back for output channels
- Keeps digital output values after hot system reset

### Specifications

#### Isolated Digital Input

- Channels** 32 (16-ch/group)
- Input Voltage** Logic 0: 3 V max.  
Logic 1: 10 V min.  
(50 V max.)
- Interrupt Capable Ch.** 2 (ID10, ID116)
- Isolation Protection** 2,500 V<sub>DC</sub>
- Overvoltage Protection** 70 V<sub>DC</sub>
- ESD** 2,000 V<sub>DC</sub>
- Opto-isolator Response** 25  $\mu$ s
- Input Current** 10 V<sub>DC</sub> @ 1.7 mA, 12 V<sub>DC</sub> @ 2.1 mA  
24 V<sub>DC</sub> @ 4.4 mA, 48 V<sub>DC</sub> @ 9.0 mA  
50 V<sub>DC</sub> @ 9.4 mA

#### Isolated Digital Output

- Channels** 32 (16-ch/group)
- Output Type** Sink (NPN)
- Isolation Protection** 2,500 V<sub>DC</sub>
- Output Voltage** 5 – 40 V<sub>DC</sub>
- Sink Current** 200 mA max./channel
- Opto-isolator Response** 25  $\mu$ s

#### General

- Bus Type** PCI V2.2
- I/O Connectors** 1 x 100-pin SCSI-II female
- Dimensions (L x H)** 175x100mm (6.9" x 3.9")
- Power Consumption** Typical: +5 V @ 285 mA  
Max.: +5 V @ 475 mA
- Operating Temperature** 0 – 60° C (32 – 140° F)  
(IEC 68-2-1, 2)
- Storing Temperature** -20 – 70° C (-4 – 158° F)
- Storing Humidity** 5 – 95% (IEC 68-2-3)  
non-condensing

### Ordering Information

- PCI-1756** 64-ch Isolated Digital I/O Card
- PCI-10250-1** 1w-pin to two 50-pin SCSI Castle, 1m
- ADAM-3951** Wiring terminal module with LED-indicators for DIN-rail Mounting

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