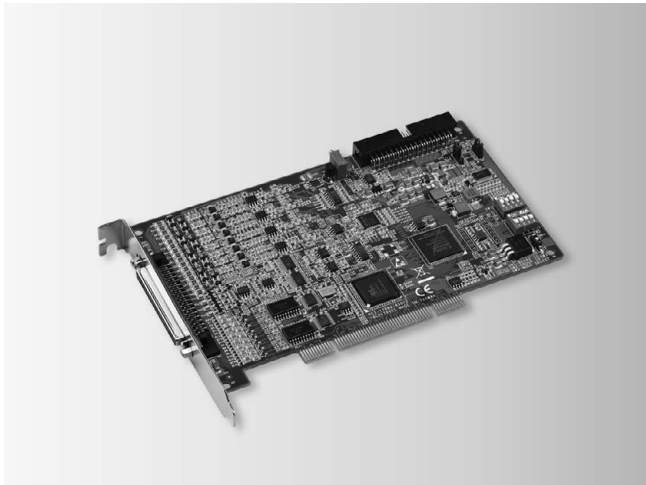


PCI-1706U/UL

250 kS/s, 16-bit, Simultaneous 8-ch
Universal PCI Multifunction Card



RoHS
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2002/95/EC

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Introduction

PCI-1706U is an advanced high-performance multifunction card based on the Universal PCI Bus. With a large FIFO of 8K Sample, the maximum sampling rate of PCI-1706U is up to 250 kS/s with 8 A/D converters simultaneously sampling on each channel. If more than 8 analog input channels are required, multiple cards can be synchronized through the Device-to-Device Bus to support more AI channels simultaneously sampling. The PCI-1706U has two 12-bit D/A output channels, 16 digital input/output channels, and two 32-bit Time/counter channels so that it can provide specific functions for different application requirements.

Specifications

Analog Input

- Channels 8 differential
- Resolution 16 bits
- Max. Sampling rate 250 kS/s per channel
- FIFO Size 8K samples (shared by all AI channels)
- Overvoltage Protection 30 Vp-p
- Sampling Mode Delay to Start, Delay to Stop, None
- Trigger Source Software, Digital, Analog
- Input Range (V, software programmable) & Absolute Accuracy

Bipolar	±10	±5	±2.5	±1.25
Absolute Accuracy (% of FSR)*	0.04	0.04	0.06	0.08

* ±1 LSB is added as the derivative for absolute accuracy

Analog Output (PCI-1706U only)

- Channels 2
- Resolution 12 bits
- Output Rate Static update
- Output Range (V/A, software programmable)

Voltage	0 ~ +10V, 0 ~ +5 V, -5V ~ +5V -10V ~ +10V
Current	0~20mA, 0~24mA, 4~20mA

- Slew Rate 1 V/μs, 2 mA/μs
- Driving Capability 10 mA
- Output impedance 5 Ω (max)
- Operation Mode Software polling
- Accuracy ±1LSB

Digital Input

- Channels 16 (Share with Output)
- Compatibility 5 V/TTL
- Input Voltage Logic 0: 0.8V max; Logic 1: 2.0V min

Features

- 8 differential analog inputs
- 8 A/D converters simultaneously sampling
- 16-bit A/D converter, with up to 250kHz sampling rate for each channel
- Programmable gain
- Onboard FIFO memory up to 8K Sample
- Multiple A/D triggering modes
- Programmable pacer/counter
- BoardID™ switch
- Universal PCI Bus (supports 3.3V or 5V PCI bus signals)

Digital Output

- Channels 16 (Share with Input)
- Compatibility 5 V/TTL
- Output Voltage Logic 0: 0.4V max; Logic 1: 2.4V min
- Output Capability Sink: 0.8 mA @ 0.4V
Source: -0.4mA @ 2.4V

Timer/Counter

- Channels 2
- Resolution 32 bits
- Mode IN: Event Counting, Frequency In, PWM In
OUT: OneShot, Pulse Out, PWM Out
- Compatibility 5 V/TTL
- Max. Input Frequency 10 MHz
- Reference Clock Internal: 20 MHz
External Clock Frequency: 1 Hz ~ 10 MHz

General

- Bus Type Universal PCI V2.2
- I/O Connector 1 x 68-pin SCSI female connector
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Power Consumption Typical: 5 V @ 850 mA; Max.: 5 V @ 1 A
- Operating Temperature 0 ~ 60°C (32 ~ 140°F) (refer to IEC 60068-2-1,2)
- Storage Temperature -20 ~ 70°C (-4 ~ 158°F)
- Storage Humidity 5 ~ 95% RH non-condensing (refer to IEC 60068-2-3)

Ordering Information

- PCI-1706U 250 KS/s, 16-bit Simultaneous Multi. Card
- PCI-1706UL 250 KS/s, 16-bit Simultaneous Multi. Card w/o AO
- PCL-10168-1 68-pin SCSI Shielded Cable, 1 m
- PCL-10168-2 68-pin SCSI Shielded Cable, 2 m
- ADAM-3968 68-pin DIN-rail SCSI Wiring Board

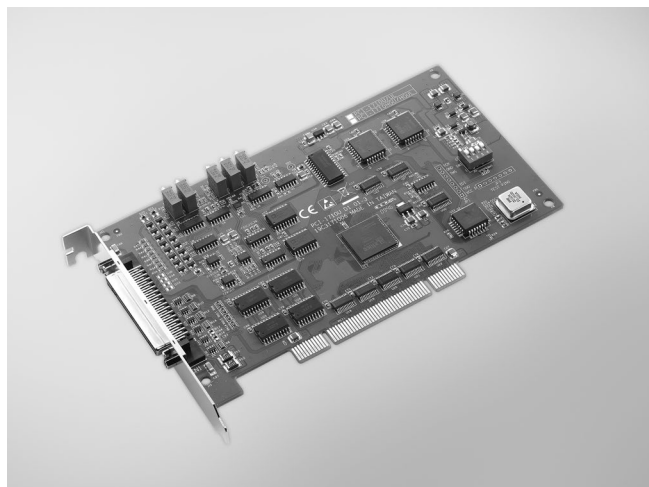
- 1 Motion Control
- 2 Hazardous Location
- 3 Energy Automation
- 4 Building Automation Systems
- 5 Automation Software
- 6 Operator Panels
- 7 Automation Panel PCs
- 8 Industrial Monitors
- 9 Industrial Ethernet
- 10 Device Servers & Gateways
- 11 Serial Communication Cards
- 12 Embedded Auto. Computers
- 13 PACs
- 14 M2M I/O
- 15 Distributed Nano Controllers
- 16 RS-485 I/O
- 17 Ethernet I/O
- 18 DAQ Boards

PCI-1710U/UL

PCI-1710HGU

100 kS/s, 12-bit, 16-ch Universal PCI Multifunction DAQ Card

100 kS/s, 12-bit, 16-ch Universal PCI Multifunction DAQ Card with High Gain



FCC CE RoHS

Features

- 16-ch single-ended or 8-ch differential or a combination of analog input
- 12-bit A/D converter, with up to 100 kHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (4,096 samples)
- Two 12-bit analog output channels (PCI-1710U/HGU only)
- 16-ch digital input and 16-ch digital output
- Onboard programmable counter
- BoardID™ switch

Specifications

Analog Input

- Channels** 16 single-ended/ 8 differential (software programmable)
- Resolution** 12 bits
- FIFO Size** 4,096 samples
- Overvoltage Protection** 30Vp-p
- Input Impedance** 1 GΩ
- Sampling Modes** Software, onboard programmable pacer and external
- Input Range (V, software programmable) & Absolute Accuracy**

PCI-1710U/UL					
Gain	0.5	1	2	4	8
Bipolar	±10	±5	±2.5	±1.25	±0.625
Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Absolute Accuracy (% of FSR)*	0.1	0.1	0.2	0.2	0.4

PCI-1710HGU								
Gain	0.5	1	5	10	50	100	500	1000
Bipolar	±10	±5	±1	±0.5	±0.1	±0.05	±0.01	±0.005
Unipolar	N/A	0 ~ 10	N/A	0 ~ 1	N/A	0 ~ 0.1	N/A	0 ~ 0.01
Absolute Accuracy (% of FSR)*	0.1	0.1	0.2	0.2	0.4	0.4	0.8	0.8

* ±1 LSB is added as the derivative for absolute accuracy

Maximum Sampling Rate

Model	Gain	Max. Sampling Rate
PCI-1710U/UL	0.5, 1, 2, 4, 8	100 kS/s
PCI-1710HGU	0.5, 1	100 kS/s
	5, 10	35 kS/s
	20, 100	7 kS/s
	500, 1000	770 S/s

Note: The sampling rate for each channels will be affected by used channel number. For example, if 4 channels of PCI-1710U are used, the sampling rate is 100k/4 = 25 kS/s per channel.

Analog Output (PCI-1710U/HGU only)

- Channels** 2
- Resolution** 12 bits
- Output Rate** Static update
- Output Range** (Software programmable)

Internal Reference	Unipolar	0 ~ 5 V 0 ~ 10 V
External Reference		0 ~ +x V @ -x V (-10 ≤ x ≤ 10)

- Slew Rate** 10 V/μs
- Driving Capability** 3 mA
- Operation Mode** Static update
- Accuracy** INLE: ±1 LSB, DNLE: ±1 LSB

Digital Input

- Channels** 16
- Compatibility** 5 V/TTL
- Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.

Digital Output

- Channels** 16
- Compatibility** 5 V/TTL
- Output Voltage** Logic 0: 0.4 V max.
Logic 1: 2.4 V min.
Sink: 8.0 mA @ 0.8 V
Source: 0.4 mA @ 2.0 V
- Output Capability**

Pacer/Counter

- Channels** 1
- Resolution** 16 bits
- Compatibility** 5 V/TTL
- Max. Input Frequency** 1 MHz

General

- Bus Type** Universal PCI V2.2
- I/O Connector** 1 x 68-pin SCSI female connector
- Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- Power Consumption** Typical: 5 V @ 850 mA
Max.: 5 V @ 1.0 A
- Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

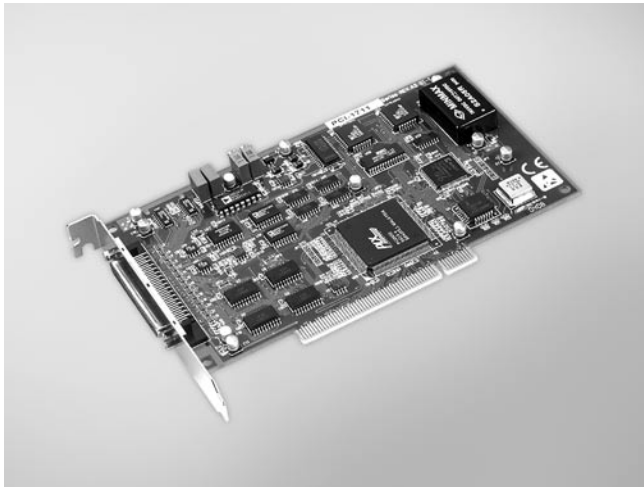
- PCI-1710U** 100 kS/s, 12-bit Multifunction Card
- PCI-1710UL** 100 kS/s, 12-bit Multifunction Card w/o AO
- PCI-1710HGU** 100 kS/s, 12-bit High-gain Multifunction Card

Accessories

- PCLD-8710** DIN-rail Wiring Board w/ CJC
- PCL-10168-1E** 68-pin SCSI Shielded Cable, 1 m
- PCL-10168-2E** 68-pin SCSI Shielded Cable, 2 m
- ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

PCI-1711/L

Entry-level 100 kS/s, 12-bit, 16-ch PCI Multifunction Card



Features

- 16-ch single-ended analog input
- 12-bit A/D converter, with up to 100 kHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (1,024 samples)
- Two 12-bit analog output channels (PCI-1711 only)
- 16-ch digital input and 16-ch digital output
- Onboard programmable counter

Introduction

PCI-1711 and PCI-1711L are powerful, but low-cost multifunction cards for the PCI bus. PCI-1711 comes with 2 analog output channels, while the PCI-1711L doesn't. Thus, PCI-1711L represents a cost saver for those that do not need analog output.

Specifications

Analog Input

- **Channels** 16 single-ended
- **Resolution** 12 bits
- **Max. Sampling Rate** 100 kS/s
- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 2 M Ω /5 pF
- **Sampling Modes** Software, onboard programmable pacer, or external
- **Input Range** (V, software programmable)

Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Accuracy (% of FSR ± 1LSB)	0.1	0.1	0.2	0.2	0.4

Analog Output (PCI-1711 only)

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

Internal Reference	Unipolar	0 ~ +5, 0 ~ +10
External Reference		0 ~ +x V @ -x V (-10 $\leq$ x $\leq$ 10)

- **Slew Rate** 11 V/ μ s
- **Driving Capability** 3 mA
- **Output Impedance** 0.81 Ω
- **Operation Mode** Software polling
- **Accuracy** INLE: ± 1 LSB
DNLE: ± 1 LSB

Digital Inputs

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.

Digital Outputs

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.8 V
Logic 1: 2.0 V
- **Output Capability** Sink: 8.0 mA @ 0.8 V
Source: -0.4 mA @ 2.0 V

Pacer/Counter

- **Channels** 1
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Reference Clock** Internal: 10 MHz

General

- **Bus Type** PCI V2.2
- **I/O Connector** 1 x 68-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption**
PCI-1711 Typical: +5 V @ 850 mA
Max: +5 V @ 1.0 A
PCI-1711L Typical: +5 V @ 700 mA
Max: +5 V @ 1.0 A

- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)

Ordering Information

▪ PCI-1711	Entry-level 100 kS/s, 12-bit Multifunction Card
▪ PCI-1711L	Entry-level 100 kS/s, 12-bit Multi. Card w/o AO
▪ PCLD-8710	DIN-rail Wiring Board w/ CJC
▪ PCL-10168-1	68-pin SCSI Shielded Cable, 1 m
▪ PCL-10168-2	68-pin SCSI Shielded Cable, 2 m
▪ ADAM-3968	68-pin DIN-rail SCSI Wiring Board

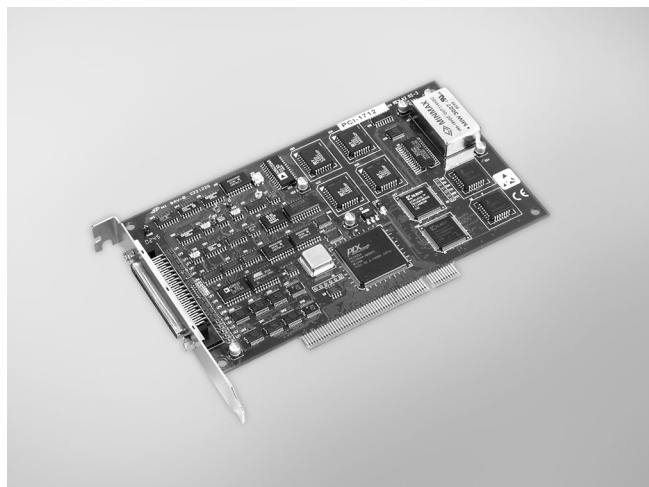
Pin Assignments

AI0	68	34	AI1
AI2	67	33	AI3
AI4	66	32	AI5
AI6	65	31	AI7
AI8	64	30	AI9
AI10	63	29	AI11
AI12	62	28	AI13
AI14	61	27	AI15
AIGND	60	26	AIGND
AO0_REF	59	25	AOI_REF
AO0_OUT	58	24	AOI_OUT
AOGND	57	23	AOGND
DI0	56	22	DI1
DI2	55	21	DI3
DI4	54	20	DI5
DI6	53	19	DI7
DI8	52	18	DI9
DI10	51	17	DI11
DI12	50	16	DI13
DI14	49	15	DI15
DGND	48	14	DGND
DO0	47	13	DO1
DO2	46	12	DO3
DO4	45	11	DO5
DO6	44	10	DO7
DO8	43	9	DO9
DO10	42	8	DO11
DO12	41	7	DO13
DO14	40	6	DO15
DGND	39	5	DGND
CNT0_CLK	38	4	PACER_OUT
CNT0_OUT	37	3	TRG_GATE
CNT0_GATE	36	2	EXT_TRG
+12V	35	1	+5V

*: Pins 23~25 and pins 57~59 are not defined for PCI-1711L

PCI-1712/L

1 MS/s, 12-bit, 16-ch PCI Multifunction DAQ Card



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Specifications

Analog Input

- **Channels** 16 single-ended/ 8 differential (software programmable)
- **Resolution** 12 bits
- **Max. Sampling Rate** Multi-channel, single gain: 1 MS/s
Multi-channel, multi gain: 600 kS/s
Multi-channel, multi gain, unipolar/bipolar: 400 kS/s
- **FIFO Size** 1,024 samples

Note: The sampling rate for each channels will be affected by used channel number. For example, if 4 channels are used, the sampling rate is $600\text{k}/4 = 125\text{ kS/s}$ per channel. (multi gain, without unipolar/bipolar mixed)

- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 100 M Ω /10 pF (Off), 100 M Ω /100 pF (On)
- **Sampling Modes** Software, onboard programmable pacer and external
- **Trigger Modes** Pre-trigger, post-trigger, delay-trigger and about-trigger

Input Range (V, software programmable) & Absolute Accuracy

Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Absolute Accuracy (% of FSR)*	0.1	0.1	0.2	0.2	0.4

* ± 1 LSB is added as the derivative for absolute accuracy

Analog Output (PCI-1712 only)

- **Channels** 2
- **Resolution** 12 bits
- **Output Rate** 1 MS/s max.
- **FIFO Size** 32,768 samples
- **Output Range** (Software programmable)

Internal Reference	Bipolar	$\pm 5\text{ V}, \pm 10\text{ V}$
	Unipolar	0 ~ 5 V, 0 ~ 10 V
External Reference		0 ~ +x V @ +x V (-10 $\leq x \leq 10$)
		-x ~ +x V @ +x V (-10 $\leq x \leq 10$)

- **Slew Rate** 20 V/ μs
- **Driving Capability** 10 mA
- **Output Impedance** 0.1 Ω max.
- **Operation Mode** Static update, waveform generation
- **Accuracy** INLE: ± 1 LSB
DNLE: ± 1 LSB

Features

- 16 single-ended or 8 differential or a combination of analog inputs
- 12-bit A/D converter, with up to 1 MHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (AI: 1,024 samples AO: 32,768 samples)
- Two 12-bit analog output channels with continuous waveform output function (PCI-1712 only)
- 16-ch digital input or output (programmable)
- Three 16-bit programmable multifunction counter/timers on 10 MHz
- Auto-calibration (AI/AO)
- PCI-Bus mastering data transfer
- Pre-, post-, about- and delay-trigger data acquisition modes for analog input channels
- Flexible triggering and clocking capabilities

Digital I/O

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- **Output Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min
- **Output Capability** Sink: 8.0 mA @ 0.8 V
Source: 0.4 mA @ 2.0 V

Pacer/Counter

- **Channels** 3
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Reference Clock** Internal: 10 MHz, 1 MHz, 100 kHz, 10 kHz
External Frequency: 10 MHz max.

General

- **Bus Type** PCI V 2.2
- **I/O Connector** 1 x 68-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA, 12 V @ 600 mA
Max.: 5 V @ 1.0 A, 12 V @ 700 mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 85°C (-4 ~ 185°F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

- **PCI-1712** 1 MS/s, 12-bit High-speed Multifunction PCI Card
- **PCI-1712L** 1 MS/s, 12-bit High-speed Multi. PCI Card w/o AO

Accessories

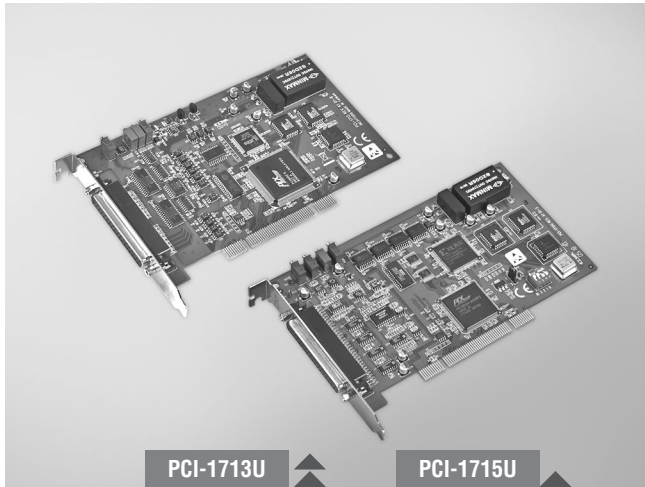
- **PCLD-8712** DIN-rail Wiring Board for PCI-1712/L
- **PCL-10168-1E** 68-pin SCSI Shielded Cable, 1 m
- **PCL-10168-2E** 68-pin SCSI Shielded Cable, 2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

PCI-1713U

PCI-1715U

100 kS/s, 12-bit, 32-ch Isolated Analog Input Universal PCI Card

500 kS/s, 12-bit, 32-ch Isolated Analog Input Universal PCI Card



PCI-1713U

PCI-1715U



Features

- 2,500 V_{DC} isolation protection
- 32-ch single-ended or 16-ch differential or a combination of analog input
- 12-bit resolution for A/D conversion
- Programmable gain for each input channel
- Onboard FIFO memory (PCI-1713U: 4,096 samples; PCI-1715U: 1,024 samples)
- Software, internal or external pacer sampling modes supported
- Universal PCI bus
- BoardID™ switch

Specifications

Analog Input

- **Channels** 32 single-ended/16 differential (software programmable)
- **Resolution** 12 bits
- **Max. Sampling Rate** PCI-1713U: 100 kS/s
PCI-1715U: 500 kS/s

Note: The sampling rate for each channels will be affected by used channel number. For example, if 4 channels of PCI-1713U are used, the sampling rate is 100k/4 = 25 kS/s per channel.

- **FIFO Size** PCI-1713U: 4,096 samples
PCI-1715U: 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Isolation Protection** 2,500 V_{DC}
- **Input Impedance** 1 GΩ
- **Sampling Modes** Software, onboard programmable pacer and external clock (TTL level)

Input Range (V, software programmable) & Absolute Accuracy

Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Bipolar	±10	±5	±2.5	±1.25	±0.625
Absolute Accuracy (% of FSR)*	0.1	0.1	0.2	0.2	0.4

* ±1 LSB is added as the derivative for absolute accuracy

General

- **Bus Type** Universal PCI V2.2
- **I/O Connector** 1 x DB37 female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA
Max.: 5 V @ 1.0 A
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

- **PCI-1713U** 100 kS/s, 12-bit, 32-ch Isolated AI PCI Card
- **PCI-1715U** 500 kS/s, 12-bit, 32-ch Isolated AI PCI Card

Accessories

- **ADAM-3937** DB37 DIN-rail Wiring Board
- **PCL-10137-1E** DB37 Cable, 1 m
- **PCL-10137-2E** DB37 Cable, 2 m
- **PCL-10137-3E** DB37 Cable, 3 m

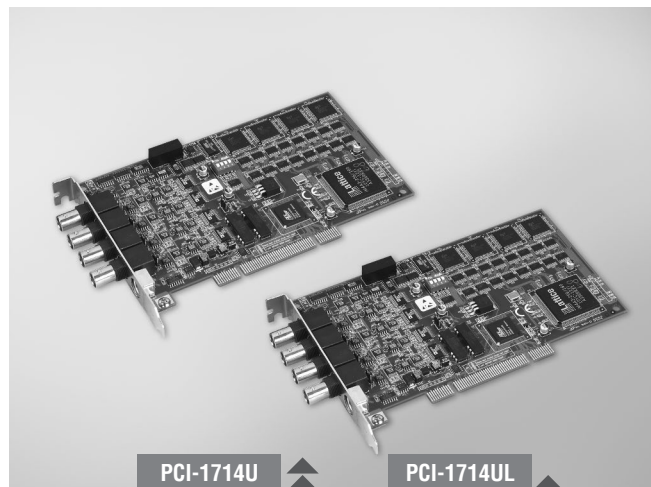
Pin Assignments

AI0	1	20	AI1
AI2	2	21	AI3
AI4	3	22	AI5
AI6	4	23	AI7
AI8	5	24	AI9
AI10	6	25	AI11
AI12	7	26	AI13
AI14	8	27	AI15
GND	9	28	GND
GND	10	29	GND
AI16	11	30	AI17
AI18	12	31	AI19
AI20	13	32	AI21
AI22	14	33	AI23
AI24	15	34	AI25
AI26	16	35	AI27
AI28	17	36	AI29
AI30	18	37	AI31
EXT_TRG	19		

PCI-1714U PCI-1714UL

**30 MS/s, 12-bit, Simultaneous 4-ch
Analog Input Universal PCI Card**

**10 MS/s, 12-bit, Simultaneous 4-ch
Analog Input Universal PCI Card**



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Features

- 4 single-ended analog input channels
- 12-bit A/D converter, with up to 30 MHz sampling rate
- Programmable gain
- Onboard FIFO memory (PCI-1714U: 32,768 samples each channel; PCI-1714UL: 8,192 samples, each channel)
- 4 A/D converters simultaneously sampling
- Multiple A/D triggering modes
- Programmable pacer/counter
- BoardID™ switch
- Universal PCI Bus (supports 3.3 V or 5 V PCI bus signals)

Introduction

PCI-1714U and PCI-1714UL are advanced high-performance data acquisition cards based on the PCI bus. With a large FIFO of 32,768 for each channel, the maximum sampling rate of PCI-1714U can get up to 30 MS/s, on each channel, with an emphasis on continuous, non-stop, high-speed, streaming data of samples to host memory. The low-cost PCI-1714UL offers 10 MS/s on each channel at a stable rate, and has also been equipped with a universal PCI interface.

Specifications

Analog Input

- **Channels** 4 single-ended
- **Resolution** 12 bits
- **Max. Sampling Rate** PCI-1714U: 30 MS/s per channel
PCI-1714UL: 10 MS/s per channel
- **FIFO Size** PCI-1714U: 32,768 samples each channel
PCI-1714UL: 8,192 samples each channel
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 50 Ω /1 M Ω /Hi Z jumper selectable/100 pF
- **Sampling Modes** Software polling, pacer
- **Trigger Modes** Post-trigger, pre-trigger, delay-trigger, about-trigger
- **Input Range (V, software programmable) & Absolute Accuracy**

Bipolar	± 5	± 2.5	± 1	± 0.5
Absolute Accuracy (% of FSR)*	0.1	0.2	0.2	0.4

* ± 1 LSB is added as the derivative for absolute accuracy

General

- **Bus Type** Universal PCI V2.2
- **I/O Connectors** 4 x BNC connector (for AI)
1 x PS/2 connector (for Ext. clock and trigger)
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA ; 12 V @ 600 mA
Max.: 5 V @ 1 A; 12 V @ 700mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 85°C (-4 ~ 185°F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

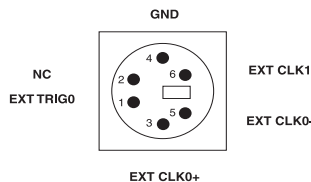
Ordering Information

- **PCI-1714U** 30 MS/s, 12-bit, Simultaneous 4-ch AI PCI Card
- **PCI-1714UL** 10 MS/s, 12-bit, Simultaneous 4-ch AI PCI Card

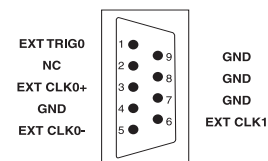
Accessories

- **ADAM-3909** DB9 DIN-rail Wiring Board
- **PCL-1010B-1E** BNC to BNC Wiring Cable, 1 m
- **PCL-10901-1E** DB9 to PS/2 Cable, 1 m
- **PCL-10901-3E** DB9 to PS/2 Cable, 3 m

Pin Assignments



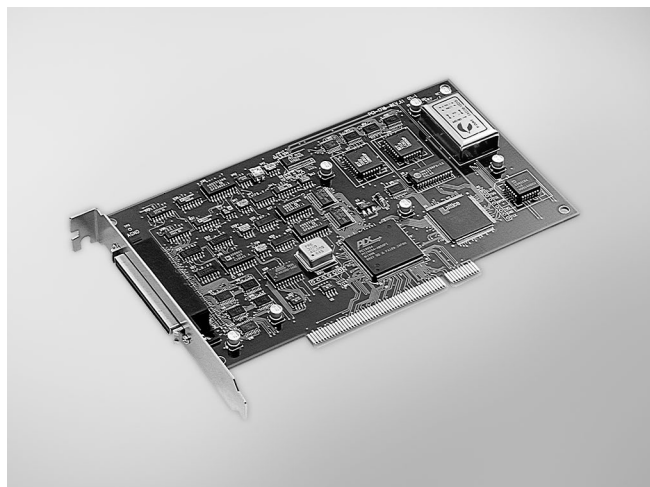
Onboard PS/2 Connector



PS/2 To DB9 Cable Connector

PCI-1716/L

250 kS/s, 16-bit, 16-ch PCI Multifunction DAQ Card



FCC CE RoHS

Features

- 16 single-ended or 8 differential or a combination of analog inputs
- 16-bit A/D converter, with up to 250 kHz sampling rate
- Onboard FIFO memory (1,024 samples)
- Auto-calibration
- PCI-Bus mastering data transfer
- 2 analog output channels (PCI-1716 only)
- 16-ch digital input and 16-ch digital output
- Onboard programmable counter
- BoardID switch

Specifications

Analog Input

- **Channels** 16 single-ended/ 8 differential (software programmable)
- **Resolution** 16 bits
- **Max. Sampling Rate** 250 kS/s

Note: The sampling rate for each channels will be affected by used channel number. For example, if 4 channels are used, the sampling rate is $250k/4 = 62.5$ kS/s per channel.

- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 100 M Ω /10 pF (off), 100 M Ω /100 pF (on)
- **Sampling Modes** Software, onboard programmable pacer and external
- **Input Range (V, software programmable) & Absolute Accuracy**

Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Absolute Accuracy (% of FSR)*	0.05	0.03	0.03	0.05	0.1

* ± 1 LSB is added as the derivative for absolute accuracy

Analog Output (PCI-1716 only)

- **Channels** 2
- **Resolution** 16 bits
- **Output Rate** Static update
- **Output Range** (Software programmable)

Internal Reference	Unipolar	0 ~ 5 V, 0 ~ 10 V
	Bipolar	± 5 V, ± 10 V
External Reference	0 ~ +x V @ +x V (-10 $\leq$ x $\leq$ 10) -x ~ +x V @ +x V (-10 $\leq$ x $\leq$ 10)	

- **Slew Rate** 20 V/ μ s
- **Driving Capability** 20 mA
- **Output Impedance** 0.1 Ω max.
- **Operation Mode** Static update
- **Accuracy** INLE: ± 1 LSB

Digital Input

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.

Digital Output

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.4 V max.
Logic 1: 2.4 V min.
- **Output Capability** Sink: 0.8 mA @ 0.8 V
Source: 2.4 mA @ 2.0 V

Pacer/Counter

- **Channels** 1
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 1 MHz
- **Reference Clock** Internal: 10 MHz
External Clock Frequency: 10 MHz max.

General

- **Bus Type** PCI V2.2
- **I/O Connector** 1 x 68-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA, 12 V @ 600 mA
Max.: 5 V @ 1 A, 12 V @ 700 mA
- **Operating Temperature** 0 ~ 70°C (32 ~ 158°F)
- **Storage Temperature** -20 ~ 85°C (-4 ~ 185°F)
- **Operating Humidity** 5 ~ 85% RH non-condensing
- **Storage Humidity** 5 ~ 95% RH non-condensing

Ordering Information

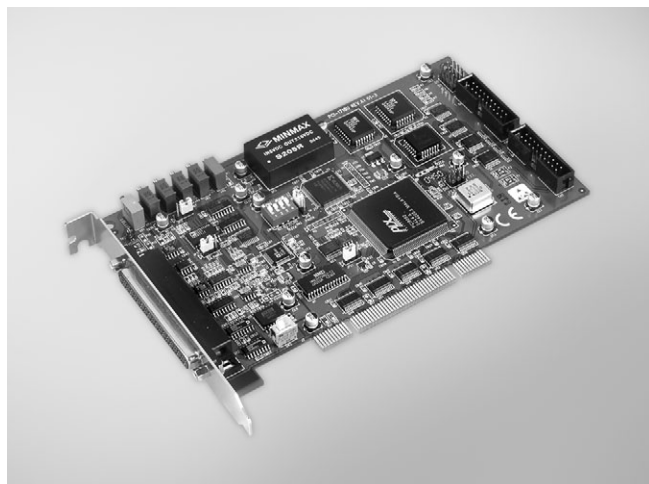
- **PCI-1716** 250 kS/s, 16-bit High-resolution Multi. Card
- **PCI-1716L** 250 kS/s, 16-bit High-res. Multi. Card w/o AO

Accessories

- **PCLD-8710** DIN-rail Wiring Board w/ CJC
- **PCL-10168-1E** 68-pin SCSI Shielded Cable, 1 m
- **PCL-10168-2E** 68-pin SCSI Shielded Cable, 2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

PCI-1718HDU

100 kS/s, 12-bit, 16-ch Universal PCI Multifunction Card



Specifications

Analog Input

- Channels 16 single-ended/8 differential (software programmable)
- Resolution 12 bits
- Max. Sampling Rate 100 kS/s
- FIFO Size 1,024 samples
- Overvoltage Protection 30 Vp-p
- Input Impedance 100 M Ω
- Sampling Modes Software, onboard or external programmable pacer
- Input Range

PCI-1718HDU	Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
	Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
	Accuracy (% of FSR ± 1 LSB)	0.1	0.1	0.2	0.2	0.4

Analog Output

- Channels 1
- Resolution 12 bits
- Output Rate Static update
- Output Range (V, software programmable)

Internal Reference	Unipolar	0 ~ 5, 0 ~ 10
External Reference		0 ~ x V @ x V (-10 $\leq$ x $\leq$ 10)

- Slew Rate 10 V/ μ s
- Driving Capability 10 mA
- Output Impedance 0.1 W max.
- Operation Mode Software polling
- Accuracy INLE: ± 1 LSB

Digital Input

- Channels 16
- Compatibility 5 V/TTL
- Input Voltage Logic 0: 0.8 V max., Logic 1: 2 V min.

Features

- ISA-Compatible with PCL-818HD
- 16-ch single-ended or 8-ch differential analog input
- 12-bit A/D converter, with up to 100 kHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (1,024 samples)
- One 12-bit analog output channel
- 16-ch digital input and 16-ch digital output
- Universal PCI bus (support 3.3 V or 5 V PCI bus signal)
- BoardID™ switch

Digital Output

- Channels 16
- Compatibility 5 V/TTL
- Output Voltage Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- Output Capability Sink: 8.0 mA @ 0.8 V
Source: -0.4 mA @ 2.0 V

Counter/Timer

- Channels 1
- Resolution 16 bits
- Compatibility 5 V/TTL
- Max. Input Frequency 10 MHz
- Reference Clock Internal: 10 MHz
External Clock Frequency: 10 MHz

General

- Bus Type Universal PCI V2.2
- I/O Connector 1 x DB37 female connector
2 x 20-pin box header
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Power Consumption Typical: 5 V @ 850 mA
Max.: 5 V @ 1 A
- Operating Temperature 0 ~ 60 °C (32 ~ 140 °F)
- Storage Temperature -20 ~ 70 °C (-4 ~ 158 °F)
- Operating Humidity 5 ~ 85% RH non-condensing (refer to IEC 68-1, -2, -3)
- Storage Humidity 5 ~ 95% RH non-condensing (refer to IEC 68-1, -2, -3)

Ordering Information

- PCI-1718HDU 100 kS/s, 12-bit, 16-ch Univ. PCI Multi. Card

Accessories

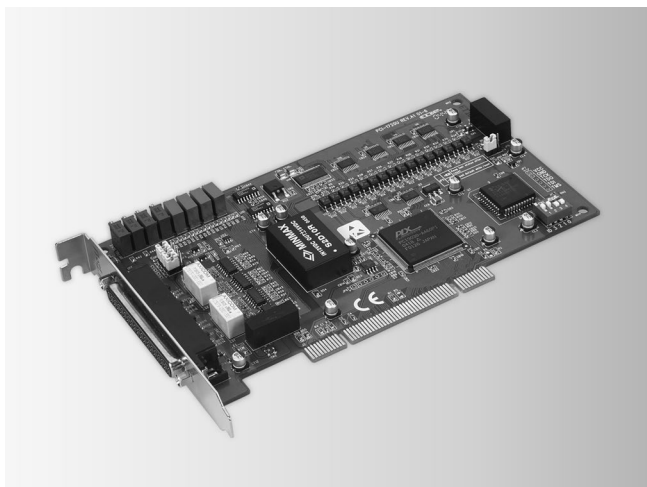
- PCL-10120-1 20-pin Flat Cable, 1 m
- PCL-10120-2 20-pin Flat Cable, 2 m
- PCL-10137-1 DB37 Cable, 1 m
- PCL-10137-2 DB37 Cable, 2 m
- PCL-10137-3 DB37 Cable, 3 m
- ADAM-3920 20-Pin Flat Cable Terminal, DIN-rail Mount
- ADAM-3937 DB37 DIN-rail Wiring Board

PCI-1720U

PCI-1724U

12-bit, 4-ch Isolated Analog Output
Universal PCI Card

14-bit, 32-ch Isolated Analog Output
Universal PCI Card



PCI-1720U

FCC CE RoHS

Specifications

Analog Output

- Channels 4 isolated
- Resolution 12 bits
- Output Rate Static update
- Output Range

Bipolar (V)	$\pm 5, \pm 10$
Unipolar (V)	0 ~ 5, 0 ~ 10
Current Loop (mA)	0 ~ 20, 4 ~ 20 (software programmable)

- Slew Rate 2 V/ μ s
- Isolation Protection 2,500 V_{DC}
- Driving Capability 5 mA
- Operation Modes Software polling
- Accuracy Relative: ± 1 LSB; Differential Non-Linearity: ± 1 LSB (monotonic)
- Excitation Voltage 50 V (max.)

General

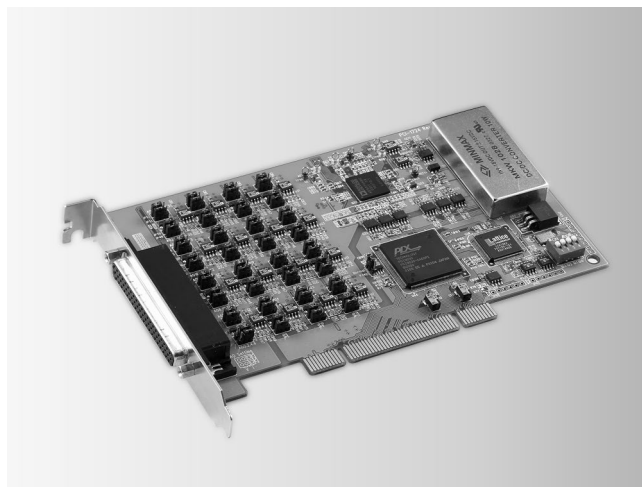
- Bus Type Universal PCI V2.2
- I/O Connectors 1 x DB37 female connector
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Power Consumption 5 V @ 350 mA (typical), 500 mA (max.)
12 V @ 200 mA (typical), 350 mA (max.)
- Operating Temperature 0 ~ 60°C (32 ~ 140°F)
- Storage Temperature -20 ~ 70°C (-4 ~ 158°F)
- Storage Humidity 5 ~ 95% RH, non-condensing

Ordering Information

- PCI-1720U 12-bit, 4-ch Isolated AO Universal PCI Card

Accessories

- PCL-10137-1E DB37 Cable, 1 m
- PCL-10137-2E DB37 Cable, 2 m
- PCL-10137-3E DB37 Cable, 3 m
- ADAM-3937 DB37 DIN-rail Wiring Board



PCI-1724U

FCC CE RoHS

Specifications

Analog Output

- Channels 32 isolated
- Resolution 14 bits
- Output Rate Static update
- Output Range

Bipolar (V)	± 10
Current Loop (mA)	0 ~ 20, 4 ~ 20 (software programmable)

- Isolation Protection 1,500 V_{DC} system isolation
- Output Impedance 0.1 Ω max.
- Operation Modes Software polling, synchronized output
- Accuracy Relative: ± 4 LSB
Differential Non-linearity: ± 2 LSB (monotonic)
- Driving Capacity 10 mA

General

- Bus Type Universal PCI V2.2
- I/O Connectors 1 x DB62 female connector
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Power Consumption 5 V @ 400 mA, 12 V @ 270 mA max.
- Operating Temperature 0 ~ 60°C (32 ~ 140°F)
- Storage Temperature -20 ~ 70°C (-4 ~ 158°F)
- Storage Humidity 5 ~ 95 % RH, non-condensing

Ordering Information

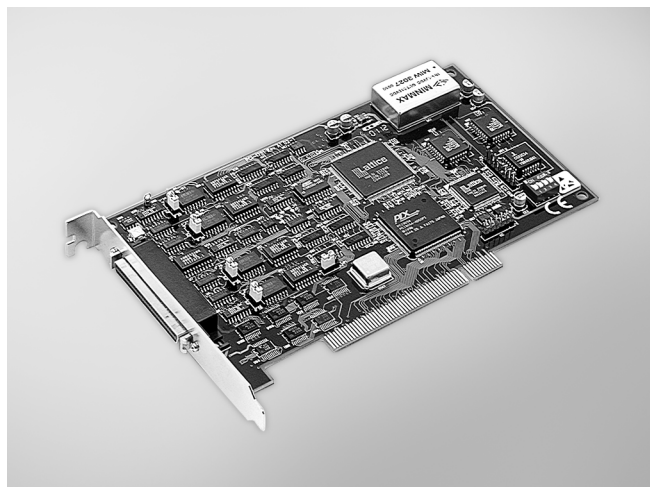
- PCI-1724U 14-bit, 32-ch Isolated AO Universal PCI Card

Accessories

- PCL-10162-1E DB62 Cable, 1 m
- PCL-10162-3E DB62 Cable, 3 m
- ADAM-3962 DB62 DIN-rail Wiring Board

PCI-1721

12-bit, 4-ch Analog Output PCI Card with 16-ch Digital I/O



FCC CE RoHS

Features

- 10 MHz maximum digital update rate
- Auto calibration function
- Four analog output channels with 1,024 samples FIFO buffer
- A 12-bit DAC is equipped for each of analog output channels
- Real-time waveform output function with internal/external pacer
- Synchronized output function
- Flexible output types and range settings
- Keeps the output settings and values after system hot reset
- 16-ch DI/O and one 10 MHz 16-bit resolution counter
- BoardID™ switch

Introduction

PCI-1721 is an advanced high-speed analog output card for the PCI bus, and each of analog output channels are equipped with a 12-bit, double-buffered DAC. It features many powerful and unique functions, like a waveform output function with 10 MHz maximum update rate, auto-calibration and a BoardID switch. PCI-1721 is an ideal solution for industrial applications where high-speed continuous analog output or real-time waveform output functions are required.

Specifications

Analog Output

- **Channels** 4
- **Resolution** 12 bits
- **FIFO Size** 1,024 samples
- **Output Rate** 10 MHz or static update
- **Reference Clock** Internal: 10 MHz
External Clock Frequency: 10 MHz max.
External Voltage Range: 0.8 V max., 2 V min.

Output Range

Internal Reference	Unipolar	0 ~ 5 V, 0 ~ 10 V,
	Bipolar	±5 V, ±10 V
	Current Loop	0 ~ 20 mA, 4 ~ 20 mA (software programmable)
External Reference		0 ~ +x V @ +x V (-10 ≤ x ≤ 10) -x ~ +x V @ +x V (-10 ≤ x ≤ 10)

- **Slew Rate** 10 V/μs
- **Driving Capability** 10 mA
- **Output Impedance** 0.1 Ω max.
- **Operation Modes** Single/continuous/waveform/synchronized output
- **Accuracy** Relative: ±1 LSB
Differential Non-linearity: ±1 LSB (monotonic)

Digital Input/Output

- **Channels** 16 (shared by input/output)
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- **Output Capability** Sink: 0.5 V @ 24 mA
Source: 2.0 V @ -15 mA

Counter/Timer

- **Channels** 1
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Reference Clock** Internal: 10 MHz
External Clock Frequency: 10 MHz max.
External Voltage Range: 0.8 V max, 2.0 V min.

General

- **Bus Type** PCI V2.2
- **I/O Connectors** 1 x 68-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA, 12 V @ 600 mA
Max.: 5 V @ 1 A, 12 V @ 700 mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 85°C (-4 ~ 185°F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **PCI-1721** 12-bit, 4-ch Advanced PCI Analog Output Card

Accessories

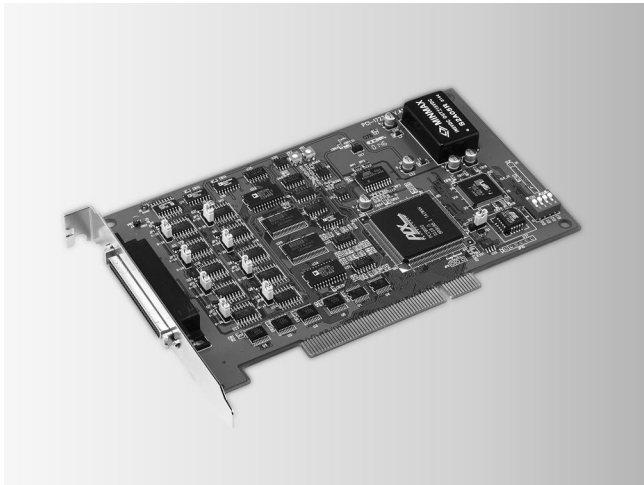
- **PCL-10168-1E** 68-pin SCSI Shielded Cable, 1 m
- **PCL-10168-2E** 68-pin SCSI Shielded Cable, 2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

PCI-1723

PCI-1727U

16-bit, 8-ch Analog Output PCI Card with
16-ch Digital I/O

14-bit, 12-ch Analog Output Universal
PCI Card with 32-ch Digital I/O



PCI-1723

FCC CE RoHS

Specifications

Analog Output

- Channels 8
- Resolution 16 bits
- Output Rate Static update
- Output Range

Bipolar (V)	±10
Current Loop (mA)	0 ~ 20, 4 ~ 20 (software programmable)

- Driving Capability 5 mA
- Output Impedance 0.1 Ω max.
- Operation Modes Software polling, synchronized output
- Accuracy Relative: ± 6 LSB
Differential Non-linearity: ± 6 LSB (monotonic)

Digital Input/Output

- Channels 16 (shared by input/output)
- Compatibility 5 V/TTL
- Input Voltage Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- Output Capability Sink Sink: 0.5 V @ 24 mA
Source: 2.0 V @ 15 mA

General

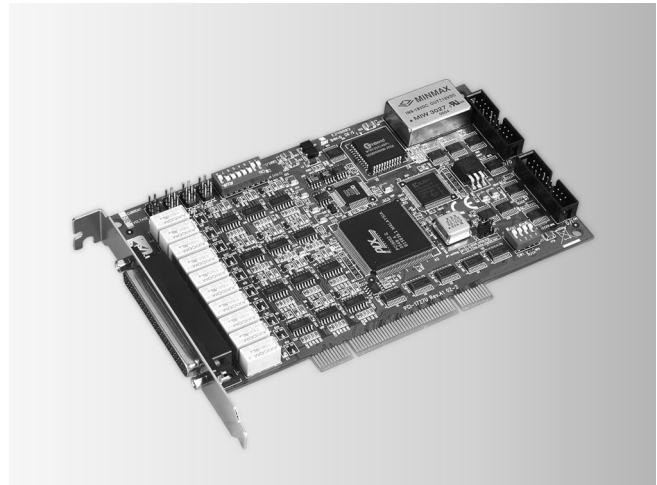
- Bus Type PCI V2.2
- I/O Connectors 1 x 68-pin SCSI female connector
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Power Consumption Typical: 5 V @ 850 mA, 12 V @ 600 mA
Max.: 5 V @ 1 A, 12 V @ 700 mA
- Operating Temperature 0 ~ 60°C (32 ~ 158°F)
- Storage Temperature -20 ~ 85°C (-4 ~ 185°F)
- Storage Humidity 5 ~ 95% RH non-condensing

Ordering Information

- PCI-1723 16-bit, 8-ch Non-isolated Analog Output PCI Card

Accessories

- PCL-10168-1E 68-pin SCSI Shielded Cable, 1 m
- PCL-10168-2E 68-pin SCSI Shielded Cable, 2 m
- ADAM-3968 68-pin DIN-rail SCSI Wiring Board



PCI-1727U

FCC CE RoHS

Specifications

Analog Output

- Channels 12
- Resolution 14 bits
- Output Rate Static update
- Output Range

Bipolar (V)	±5
Unipolar (V)	0 ~ 5, 0 ~ 10
Current Loop (mA)	0 ~ 20

- Slew Rate 0.7 V/ μ s
- Driving Capability 15 mA
- Operation Modes Software polling, synchronized output
- Current Loop Excitation 8 ~ 36 V

Digital Input

- Channels 16
- Compatibility 5 V/TTL
- Input Voltage Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- Input Loading 0.5 V @ 0.4 mA max. (low)
2.7 V @ 50 μ A max. (high)

Digital Output

- Channels 16
- Compatibility 5 V/TTL
- Output Voltage Logic 0: 0.5 V, Logic 1: 2.4 V
- Output Capability Sink: 0.5 V @ 8 mA
Source: 2.4 V @ 0.4 mA

General

- Bus Type Universal PCI V2.2
- I/O Connectors 1 x 37-pin D-type female connector
2 x 20-pin box header
- Power Consumption 5 V @ 460 mA typical, 500 mA max
12 V @ 150 mA typical, 100 mA max
175 x 100 mm (6.9" x 3.9")
- Dimensions (L x H) 175 x 100 mm (6.9" x 3.9")
- Operating Temperature 0 ~ 50°C (32 ~ 122°F)
- Storing Temperature -20 ~ 65°C (-4 ~ 149°F)
- Storing Humidity 5 ~ 95% RH, non-condensing

Ordering Information

- PCI-1727U 14-bit, 12-ch Universal Analog Output Card

Accessories

- PCL-10120-1E 20-pin flat cable, 1 m
- PCL-10137-1E DB37 cable assembly, 1 m
- ADAM-3937 DB37 wiring terminal for DIN-rail mounting

PCI-1730U

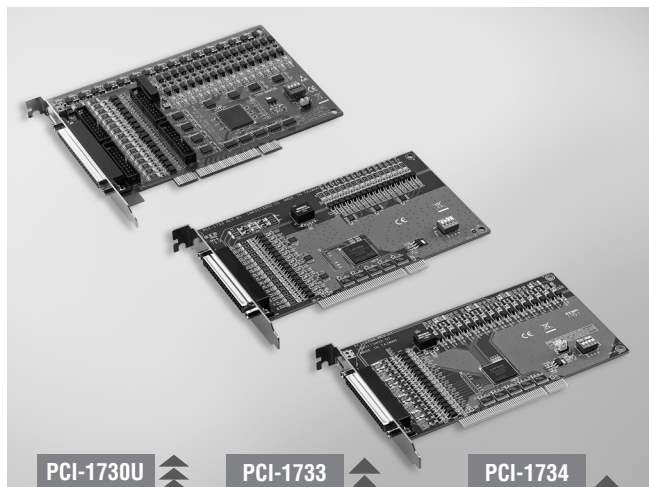
PCI-1733

PCI-1734

32-ch Isolated Digital I/O Universal PCI Card

32-ch Isolated Digital Input PCI Card

32-ch Isolated Digital Output PCI Card



Features

- ISA-compatible with PCL-730/733/734
- 32-ch isolated DI/O (16-ch digital input, 16-ch digital output) (PCI-1730U only)
- 32-ch TTL DI/O (16-ch digital input, 16-ch digital output) (PCI-1730U only)
- High output driving capacity
- Interrupt handling capability
- 2 x 20-pin connectors for isolated DI/O channels (PCI-1730U only)
- 2 x 20-pin connectors for TTL DI/O channels (PCI-1730U only)
- D-type connector for isolated input and output channels
- High-voltage isolation on output channels

Introduction

PCI-1730U, PCI-1733, and PCI-1734 offer isolated digital input channels as well as isolated digital output channels with isolation protection up to 2,500 V_{DC}, which makes them ideal for industrial applications where high-voltage isolation is required. There are also 32 TTL digital I/O channels on PCI-1730U.

Specifications

Digital Input (PCI-1730U only)

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- **Interrupt Capable Ch.** 2 (ID10, ID11)

Isolated Digital Input (PCI-1730U/ PCI-1733)

- **Channels** 16,32
- **Input Voltage** Logic 0: 1 V max. (2 V max.)
Logic 1: 5V min. (30 V max.)
- **Interrupt Capable Ch.** PCI-1730U: 2 (ID10, ID11)
PCI-1733: 4 (ID10, ID11, ID116, ID117)
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 100 us

Digital Output (PCI-1730U only)

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- **Output Capability** Sink: 0.5 V max. @+24mA
Source: 2.4 V min. @-15mA

Isolated Digital Output (PCI-1730U/ PCI-1734)

- **Channels** 16,32
- **Output Type** Sink type (NPN)
- **Isolation Protection** 2,500 V_{DC}
- **Output Voltage** 5 ~ 40 V_{DC}
- **Sink Current** PCI-1730U: 300 mA max./channel
PCI-1734: 200 mA max./channel
- **Opto-Isolator Response** 100 us

General

- **Bus Type** PCI V2.2 (Universal PCI V2.2 for PCI-1730U)
- **I/O Connectors** 1 x DB37 female connector
4 x 20-pin box header (PCI-1730U only)
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 250 mA, 12 V @ 35 mA
Max.: 5 V @ 400 mA, 12 V @ 60 mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -25 ~ 85°C (-4 ~ 185°F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **PCI-1730U** 32-ch Isolated Digital I/O Univ. PCI Card
- **PCI-1733** 32-ch Isolated Digital Input PCI Card
- **PCI-1734** 32-ch Isolated Digital Output PCI Card

Accessories

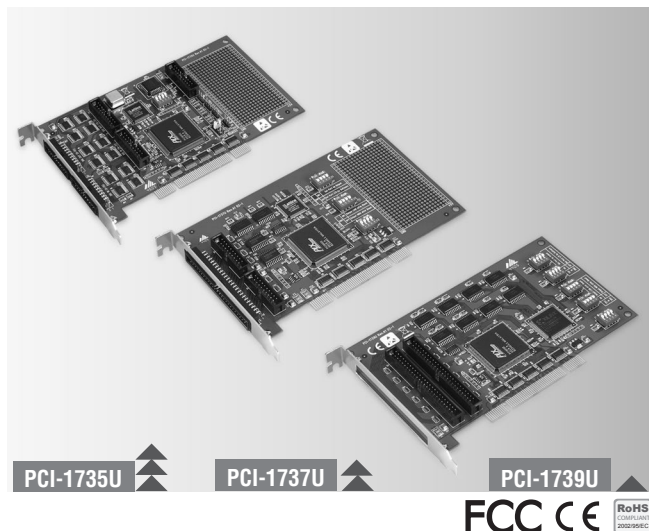
- **PCL-10120-1E** 20-pin Flat Cable, 1 m
- **PCL-10120-2E** 20-pin Flat Cable, 2 m
- **ADAM-3920** 20-pin DIN-rail Flat Cable Wiring Board
- **PCLD-782** 16-ch Isolated DI Board w/ 1m 20-pin Flat Cable
- **PCLD-885** 16-ch Power Relay Board w/ 20p & 50p Flat Cables
- **PCLD-785** 16-ch Relay Board w/ One 1m 20-pin Flat Cable
- **ADAM-3937** DB37 DIN-rail Wiring Board
- **PCL-10137-1E** DB37 Cable, 1 m
- **PCL-10137-2E** DB37 Cable, 2 m
- **PCL-10137-3E** DB37 Cable, 3 m

PCI-1735U PCI-1737U PCI-1739U

64-ch Digital I/O and Counter Universal PCI Card

24-ch Digital I/O Universal PCI Card

48-ch Digital I/O Universal PCI Card



Features

- ISA-Compatible with PCL-720+ (PCI-1735U), PCL-724 (PCI-1737U) and PCL-731 (PCI-1739U)
- TTL-level digital input and output compatibility
- Emulates mode 0 of 8255 PPI (PCI-1737U and PCI-1739U)
- Interrupt handling capability (PCI-1737U and PCI-1739U)
- Output status readback (PCI-1737U and PCI-1739U)
- 3 programmable counter/timer channels and User configurable clock source (PCI-1735U)
- Breadboard area for custom circuits (PCI-1735U and PCI-1739U)
- PCI universal card

Specifications

Digital Input

- **Channels** PCI-1735U: 32
PCI-1737U: 24 (shared with output)
PCI-1739U: 48 (shared with output)
- **Compatibility** 5 V/TTL
- **Input Voltage** PCI-1735: Logic 0: 0.8V max.
Logic 1: 2.0V min.
PCI-1737U/1739U: Logic 0: 0.4V max.
Logic 1: 2.4V min.
- **Interrupt Capable Ch.** PCI-1737U: 1
PCI-1739U: 2

Digital Output

- **Channels** PCI-1735U: 32
PCI-1737U: 24 (shared with input)
PCI-1739U: 48 (shared with input)
- **Compatibility** 5 V/TTL
- **Output Voltage** PCI-1735U: Logic 0: 0.5 V max.
Logic 1: 2.4 V min.
PCI-1737U/1739U: Logic 0: 0.4 V max.
Logic 1: 2.4 V min.
- **Output Capability** PCI-1735U: Sink: 0.5 V @ 24 mA
Source: 2.4 V @ 15 mA
PCI-1737U/1739U: Sink: 0.4 V @ 24 mA
Source: 2.4 V @ 15 mA

Counter/Timer (PCI-1735U)

- **Channels** 3
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 1 MHz
- **Re. Clock Internal** Selectable 1 MHz, 100 kHz, or 10 kHz base clock
- **Ext. Clock Frequency** Jumper selectable divider: x2, x1, x0.5, and x0.25

- **Prog.Counter Modes** 6

General

- **Bus Type** Universal PCI V2.2
- **I/O Connectors** PCI-1735U: 5 x 20-pin box header
PCI-1737U: 2 x 20-pin & 1 x 50-pin box header
PCI-1739U: 2 x 50-pin box header
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** PCI-1735U: 5V @365 mA (max.)
PCI-1737U: 5V @300 mA (max.)
PCI-1739U: 5V @720 mA (max.)
- **Operating Temperature** 0 ~ 65°C (32 ~ 149°F)
- **Storage Temperature** -25 ~ 80°C (-13 ~ 176°F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **PCI-1735U** 64-ch Digital I/O and Counter Card
- **PCI-1737U** 24-ch Digital I/O Universal PCI Card
- **PCI-1739U** 48-ch Digital I/O Universal PCI Card

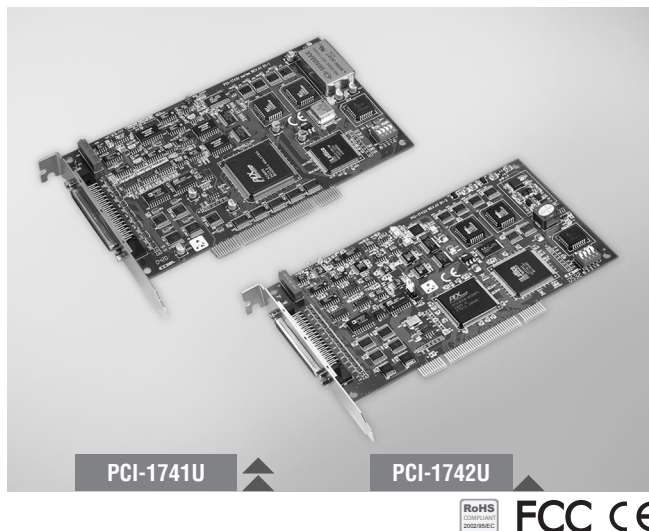
Accessories

- **PCL-10120-1E** IDC-20 Flat Cable, 1 m
- **PCL-10120-2E** IDC-20 Flat Cable, 2 m
- **PCL-10150-1.2E** 50-pin Flat Cable, 1.2 m
- **ADAM-3920** 20-Pin Flat Cable Terminal, DIN-rail Mount
- **ADAM-3950** 50-pin DIN-rail Flat Cable Wiring Board

PCI-1741U PCI-1742U

**200 kS/s, 16-bit, 16-ch Universal PCI
Multifunction Card**

**1 MS/s, 16-bit, 16-ch Universal PCI
Multifunction Card**



Features

- 16-ch single-ended or 8-ch differential analog input
- PCI-1741U: 16-bit A/D converter, with up to 200 kHz sampling rate
PCI-1742U: 16-bit A/D converter, with up to 1 MHz sampling rate
- Onboard FIFO memory (1,024 samples)
- Auto calibration
- PCI-1741U: 1 x 16-bit analog output channel
PCI-1742U: 2 x 16-bit analog output channels
- 16-ch digital input and 16-ch digital output
- Universal PCI bus (support 3.3 V or 5 V PCI bus signal)
- Onboard programmable counter
- BoardID™ switch

Specifications

Analog Input

- Channels** 16 single-ended/8 differential (software programmable)
- Resolution** 16 bits
- Max. Sampling Rate** PCI-1741U: 200 kS/s
PCI-1742U: single-channel - 1 MS/s
multi-channel - 800 kS/s
unipolar bipolar mixed - 250 kS/s
- FIFO Size** 1,024 samples
- Overvoltage Protection** 30 Vp-p
- Input Impedance** 100 M Ω /10pF (Off); 100 M Ω /100pF (On)
- Sampling Mode** Software, onboard programmable pacer and external
- Input Range*** (V, software programmable)

Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Accuracy (% of FSR ± 1 LSB)	0.02	0.02	0.02	0.03	0.04

* Note: All channels should be set to the same range

Analog Output

- Channels** PCI-1741U: 1
PCI-1742U: 2
- Resolution** 16 bits
- Output Rate** Static update
- Output Range** (V, software programmable)

Internal Reference	Bipolar	$\pm 5, \pm 10$
	Unipolar	0 ~ 5, 0 ~ 10
External Reference		0 ~ +xV @ +xV (-10 $\leq x \leq 10$) -x ~ +xV @ +xV (-10 $\leq x \leq 10$)

- Slew Rate** PCI-1741U: 20 V/us
PCI-1742U: 40 V/us
- Driving Capability** ± 20 mA
- Output Impedance** 0.1 W max.
- Operation Mode** Software polling
- Accuracy** INLE: ± 2 LSB

Digital Input

- Channels** 16
- Compatibility** 5 V/TTL
- Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.

Digital Output

- Channels** 16
- Compatibility** 5 V/TTL
- Output Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- Output Capability** Sink: 24 mA @ 0.8 V
Source: -15 mA @ 2.0 V

Counter/Timer

- Channels** 1
- Compatibility** 5 V/TTL
- Resolution** 16 bits
- Max. Input Frequency** 10 MHz
- Reference Clock** Internal: 10 MHz
External Clock Frequency: 10 MHz

General

- Bus Type** Universal PCI V2.2
- I/O Connector Type** 1 x 68-pin SCSI female connector
- Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- Power Consumption** Typical: 5 V @ 850 mA, 12 V @ 600 mA
Max.: 5 V @ 1 A, 12 V @ 700 mA
- Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- Storage Temperature** -20 ~ 70° C (-4 ~ 158° F)
- Storage Humidity** 5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)

Ordering Information

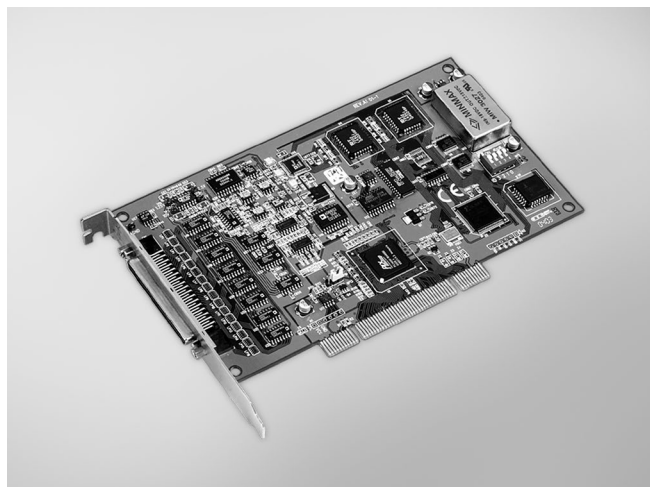
- PCI-1741U** 200 kS/s, 16-bit, 16-ch Univ. PCI Multi. Card
- PCI-1742U** 1 MS/s, 16-bit, 16-ch Univ. PCI Multi. Card

Accessories

- PCL-10168-1** 68-pin SCSI Shielded Cable, 1 m
- PCL-10168-2** 68-pin SCSI Shielded Cable, 2 m
- ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- PCLD-8710** DIN-rail Wiring Board w/ CJC

PCI-1747U

250 kS/s, 16-bit, 64-ch Analog Input Universal PCI Card



Features

- 64-ch single-ended or 32-ch differential or a combination of analog input
- 16-bit A/D converter, with up to 250 kHz sampling rate
- Auto calibration
- Onboard FIFO memory (1,024 samples)
- PCI-Bus mastering data transfer
- Universal PCI Bus (support 3.3 V or 5 V PCI bus signal)
- BoardID™ switch

Introduction

PCI-1747U is a high-resolution, high-channel-count analog input card for the PCI bus. Its sampling rate is up to 250 kS/s and 16-bit resolution provides the resolution needed for most data acquisition applications. PCI-1747U provides 64 single-ended, 32 differential analog input channels or a combination of these. It also has built in a 1,024 FIFO buffer for analog input data.

Specifications

Analog Input

- **Channels** 64 single-ended, 32 differential, or combination
- **Resolution** 16 bits
- **Max. Sampling Rate** 250 kS/s
- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 100 M Ω /10 pF (Off); 100 M Ω /100 pF (On)
- **Sampling Modes** Software and onboard programmable pacer
- **Input Range** (V, software programmable)

Unipolar	N/A	0 ~ 10	0 ~ 5	0 ~ 2.5	0 ~ 1.25
Bipolar	± 10	± 5	± 2.5	± 1.25	± 0.625
Accuracy (% of FSR ± 1 LSB)	0.03	0.02	0.02	0.03	0.04

General

- **Bus Type** Universal PCI V2.2
- **I/O Connector** 1 x 68-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA, 12 V @ 600 mA
Max.: 5 V @ 1 A, 12 V @ 700 mA
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing (refer to IEC 68-2-3)

Ordering Information

- **PCI-1747U** 250 kS/s, 16-bit, 64-ch AI Universal PCI Card

Accessories

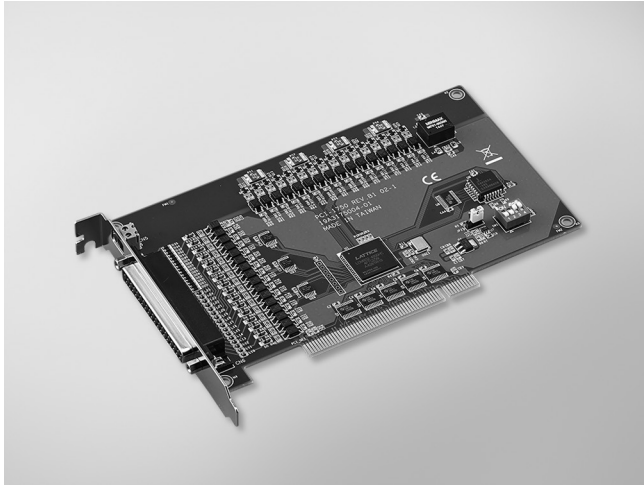
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- **PCL-10168-1** 68-pin SCSI Shielded Cable, 1 m
- **PCL-10168-2** 68-pin SCSI Shielded Cable, 2 m

Pin Assignments

AI0	68	34	AI1
AI2	67	33	AI3
AI4	66	32	AI5
AI6	65	31	AI7
AI8	64	30	AI9
AI10	63	29	AI11
AI12	62	28	AI13
AI14	61	27	AI15
AGND	60	26	AGND
AI16	59	25	AI17
AI18	58	24	AI19
AI20	57	23	AI21
AI22	56	22	AI23
AI24	55	21	AI25
AI26	54	20	AI27
AI28	53	19	AI29
AI30	52	18	AI31
AI32	51	17	AI33
AI34	50	16	AI35
AI36	49	15	AI37
AI38	48	14	AI39
AI40	47	13	AI41
AI42	46	12	AI43
AI44	45	11	AI45
AI46	44	10	AI47
AGND	43	9	AGND
AI48	42	8	AI49
AI50	41	7	AI51
AI52	40	6	AI53
AI54	39	5	AI55
AI56	38	4	AI57
AI58	37	3	AI59
AI60	36	2	AI61
AI62	35	1	AI63

PCI-1750/1750SO

32-ch Isolated Digital I/O and 1-ch Counter PCI Card



FCC CE RoHS

Features

- 16 isolated DI and 16 isolated DO channels
- High voltage isolation on all isolated channels (2,500 V_{DC})
- High source current on isolated output channels (200 mA/channel)
- Supports dry contact or 5 ~ 50 V_{DC} isolated inputs
- Interrupt handling capability
- Timer/counter interrupt capability

Introduction

PCI-1750/1750SO 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_{DC}, and dry contact support, PCI-1750/1750SO is ideal for industrial applications where high-voltage protection is required. Each I/O channel of the PCI-1750/1750SO corresponds to a bit in a PC I/O port. This makes PCI-1750/1750SO 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 configure the card with software.

Specifications

Isolated Digital Input

- **Channels** 16
- **Input Voltage** Logic 0: 2 V max.
Logic 1: 5 V min. (50 V_{DC} max.) or dry contact
- **Interrupt Capable Ch.** 2
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 100 µs

Isolated Digital Output

- **Channels** 16
- **Sink Current** 200mA max. / channel (PCI-1750 NPN type)
- **Source Current** 200mA max. / channel (PCI-1750SO PNP type)
- **Isolation Protection** 2,500 V_{DC}
- **Output Voltage** 5 ~ 40 V_{DC}
- **Source Current** 200 mA max. per channel
- **Opto-Isolator Response** 100 µs
- **Sufficient Withstanding current** 1.6A max. per PCOM
- **Over current ground** CN5 (wiring necessary if totally current over 1.6A)

Counter/Timer

- **Channels** 1
- **Resolution** 1 x 16-bit isolated counter
- **Input Voltage** Logic 0: 2V max.
Logic 1: 5V min. (50V_{DC} max.)
- **Max. Input Frequency** 1 MHz
- **Isolation Protection** 2,500 V_{DC}

General

- **Bus Type PCI** V2.2
- **I/O Connectors** 1 x DB37 female connector
1 x 2-pin terminal block for extended ground
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 850 mA
Max.: 5 V @ 1.0 A

- **Operating Temperature** 0 ~ 70°C (32 ~ 158°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **PCI-1750** 32-ch Isolated Digital I/O (NPN DO) and Counter PCI Card
- **PCI-1750SO** 32-ch Isolated Digital I/O (PNP DO) and Counter PCI Card

Accessories

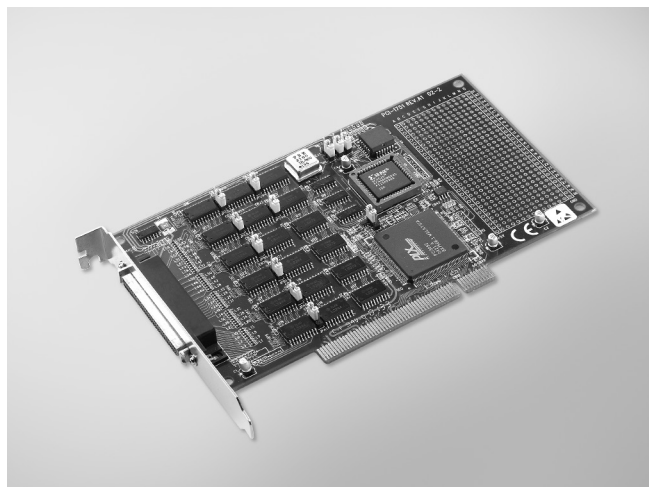
- **PCL-10137-1E** DB37 Cable, 1 m
- **PCL-10137-2E** DB37 Cable, 2 m
- **PCL-10137-3E** DB37 Cable, 3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

Pin Assignments

INT0 / IDI 0	1	20	IDI 1
IDI 2	2	21	IDI 3
INT0_G / IDI 4	3	22	IDI 5
IDI 6	4	23	IDI 7
INT1 / IDI 8	5	24	IDI 9
IDI 10	6	25	IDI 11
INT1_G / IDI 12	7	26	IDI 13
IDI 14	8	27	IDI 15/Counter2
IGND	9	28	IGND
COM1	10	29	IGND
IDO 0	11	30	IDO 1
IDO 2	12	31	IDO 3
IDO 4	13	32	IDO 5
IDO 6	14	33	IDO 7
IDO 8	15	34	IDO 9
IDO 10	16	35	IDO 11
IDO 12	17	36	IDO 13
IDO 14	18	37	IDO 15
COM2	19		

PCI-1751

48-ch Digital I/O and 3-ch Counter PCI Card



FCC CE RoHS

Features

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

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. PCI-1751 also provides one event counter and two 16-bit timers, which can be cascaded to become a 32-bit timer.

Specifications

Digital Input

- Channels 48 (shared with output)
- Compatibility 5 V/TTL
- Interrupt Inputs 2 (PC00, PC10)
- Input Voltage Logic 0 : 0.8 V (max.)
Logic 1 : 2 V (min.)

Digital Output

- Channels 48 (shared with input)
- Compatibility 5 V/TTL
- Output Voltage Logic 0 : 0.8 V max. @+24 mA (sink)
Logic 1 : 2 V min. @-15 mA (source)

Counter/Timer

- Channels 3 channels are free for user applications
- Compatibility 5 V/TTL
- Resolution 16-bit
- Base Clock Channel 0 : Internal 10MHz
External Clock (up to 10MHz)
Channel 1 : Takes input from output of Channel 0
External Clock (up to 10MHz)
Channel 2 : Internal 10MHz
External Clock (up to 10MHz)

- Max. Input Frequency 10 MHz
- Clock Input Logic 0 : 0.8 V (max.)
Logic 1 : 2 V (min.)
- Gate Input Logic 0 : 0.8 V (max.)
Logic 1 : 2 V (min.)
- Counter Output Logic 0 : 0.8 V max. @+24 mA (sink)
Logic 1 : 2 V min. @-15 mA (source)

General

- I/O Connectors 1 x 68-pin SCSI female connector
- Dimensions (L x H) 170 mm x 100 mm (6.9" x 3.9")
- Power Consumption +5V @ 850 mA (typical)
+5V @ 1 A (max.)
- Temperature Operating: 0 ~ 70°C (32 ~ 158°F)
Storage: -20 ~ 80°C (-4 ~ 176°F)
- Relative Humidity 5 ~ 95% RH, non-condensing (refer to IEC 60068-2-3)
- Certification CE/FCC

Ordering Information

- PCI-1751 48-ch Digital I/O and Counter PCI Card

Accessories

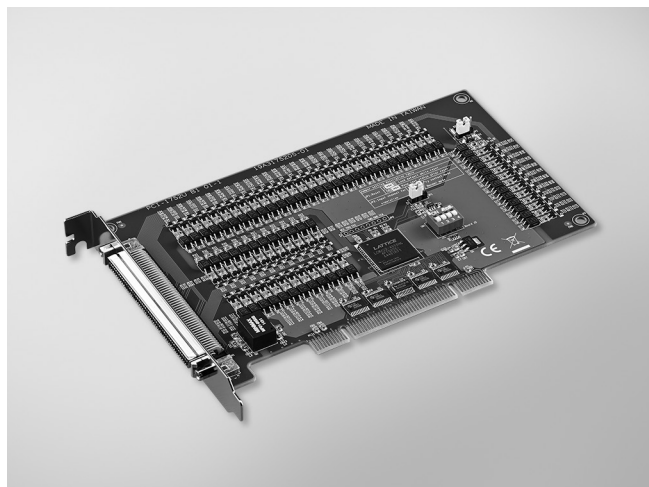
- PCL-10168-1E 68-pin SCSI Shielded Cable, 1 m
- PCL-10168-2E 68-pin SCSI Shielded Cable, 2 m
- ADAM-3968 68-pin DIN-rail SCSI Wiring Board
- ADAM-3968/20 68-pin SCSI to 3 20-pin Box Header Board
- ADAM-3968/50 68-pin SCSI to 2 50-pin Box Header Board
- PCLD-8751 48-ch Isolated Digital Input Board
- PCLD-8761 24-ch Replay/ Isolated Digital Input Board
- PCLD-8762 48-ch Relay Board

Pin Assignments

PA00	1	35	PA10
PA01	2	36	PA11
PA02	3	37	PA12
PA03	4	38	PA13
PA04	5	39	PA14
PA05	6	40	PA15
PA06	7	41	PA16
PA07	8	42	PA17
GND	9	43	GND
PB00	10	44	PB10
PB01	11	45	PB11
PB02	12	46	PB12
PB03	13	47	PB13
PB04	14	48	PB14
PB05	15	49	PB15
PB06	16	50	PB16
PB07	17	51	PB17
GND	18	52	GND
PC00	19	53	PC10
PC01	20	54	PC11
PC02	21	55	PC12
PC03	22	56	PC13
PC04	23	57	PC14
PC05	24	58	PC15
PC06	25	59	PC16
PC07	26	60	PC17
GND	27	61	GND
CNT0_OUT	28	62	CNT0_CLK
GND	29	63	CNT0_G
CNT1_OUT	30	64	CNT1_CLK
GND	31	65	CNT1_G
CNT2_OUT	32	66	CNT2_CLK
INT_OUT	33	67	CNT2_G
VCC	34	68	VCC

PCI-1752U PCI-1752USO

64-ch Sink (NPN) Isolated Digital Output
64-ch Source (PNP) Isolated Digital Output



FCC CE 

Features

- 64-ch Sink Type (NPN) Isolated Digital Output Module (PCI-1752U Only)
- 64-ch Source Type (PNP) Isolated Digital Output Module (PCI-1752USO Only)
- High-voltage isolation on output channels (2,500 V_{DC})
- Wide output range (5 ~ 40 V_{DC})
- High-sink/source current on isolated output channels (200 mA max./channel)
- Output status readback
- Keeps the output settings and values after system hot reset
- Channel-freeze function
- High-density 100-pin SCSI connector

Introduction

The PCI-1752USO is a 64-CH source type isolated digital output which provides a 2,500 V isolation protection. It features a wide output range from 5 to 40V, which makes it suitable for industrial automation applications.

Specifications

Isolated Digital Input

- **Channels** 64 (16-ch/group)
- **Output Type** PCI-1752U: Sink (NPN)
PCI-1752USO: Source (PNP)
- **Isolation Protection** 2,500 V_{DC}
- **Output Voltage** 5 ~ 40 V_{DC}
- **Sink/ Source Current** 200 mA max./channel
- **Opto-isolator Response** 100 µs

General

- **Bus Type Universal** PCI V2.2
- **I/O Connectors** 1 x 100-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100mm (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)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity** 5 ~ 95%, RH non-condensing

Ordering Information

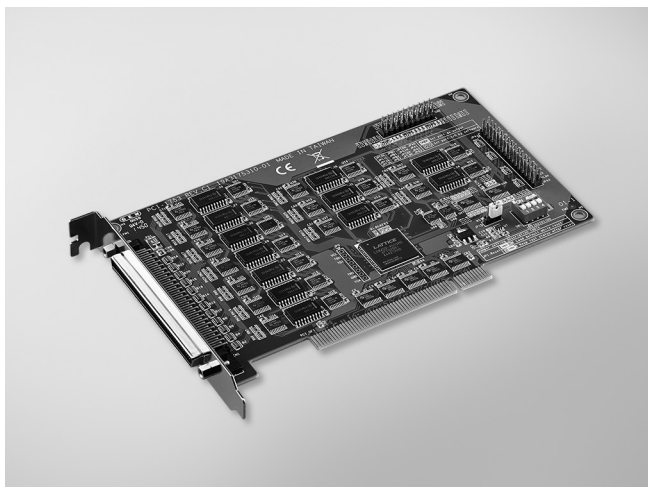
- **PCI-1752U-BE** 64ch Sink(NPN) Type Isolated Digital Output Card
- **PCI-1752USO-BE** 64ch Source(PNP) Type Isolated Digital Output Card

Accessories

- **PCL-10250-1E** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **PCL-10250-2E** 100-pin SCSI to Two 50-pin SCSI Cable, 2 m
- **ADAM-3951-BE** 50-pin DIN-rail Wiring Board w/ LED Indicators

PCI-1753

96-ch Digital I/O PCI Card



FCC CE RoHS

Features

- Up to 96 TTL digital I/O lines
- Emulates mode 0 of 8255 PPI
- Buffered circuits for higher driving capacity than the 8255
- Multiple-source interrupt handling capability
- 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 the output settings and values after system hot reset
- Supports both dry and wet contact
- High-density 100-pin SCSI connector

Introduction

PCI-1753 is a 96-bit digital I/O card for the PCI bus. 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

Digital Input/Output

- **Channels** 96 digital I/O lines for PCI-1753
- **Programming Mode** 8255 PPI mode 0
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max.
Logic 1: 2.0 V min.
- **Output Voltage** Logic level 0: 0.8 V max. @+24mA (Sink)
Logic level 1: 2.0 V min. @-15mA (Source)
- **Interrupt Inputs** 4 (PC00, PC10, PC20, PC30)

General

- **Bus Type** PCI V2.2
- **I/O Connector** 1 x 100-pin SCSI female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 400 mA
Max.: 5 V @ 2.7 A
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **PCI-1753** 96-ch Digital I/O PCI Card
- **PCI-1753E** Extension Board for PCI-1753

Accessories

- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- **ADAM-3968/20** 68-pin SCSI to 3 20-pin Box Header Board
- **ADAM-3968/50** 68-pin SCSI to 2 50-pin Box Header Board
- **PCLD-8751** 48-ch Isolated Digital Input Board
- **PCLD-8761** 24-ch Replay/ Isolated Digital Input Board
- **PCLD-8762** 48-ch Relay Board
- **PCL-10268-2E** 100-pin to Two 68-pin SCSI Cables, 1 m and 2 m

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-1752U

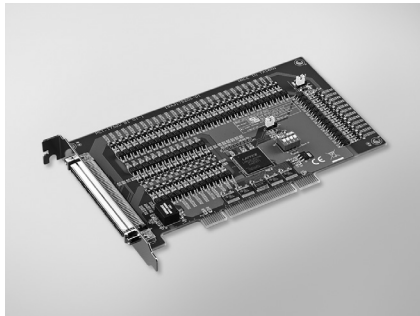
PCI-1754

PCI-1756

64-ch Isolated Digital Output Universal PCI Card

64-ch Isolated Digital Input PCI Card

64-ch Isolated Digital I/O PCI Card



PCI-1752U



Features

- 64 isolated digital output channels
- High-voltage isolation on output channels (2,500 V_{DC})
- Wide output range (5 ~ 40 V_{DC})
- High-sink current on isolated output channels (200 mA max./channel)
- Output status readback
- Keeps the output settings and values after system hot reset
- Channel-freeze function
- High-density 100-pin SCSI connector

Specifications

Isolated Digital Output

- Channels** 64 (16-ch/group)
- Output Type** Sink (NPN)
- Isolation Protection** 2,500 V_{DC}
- Output Voltage** 5 ~ 40 V_{DC}
- Sink Current** 200 mA max./channel
- Opto-isolator Response** 100 µs

General

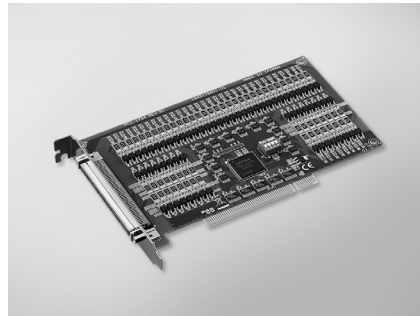
- Bus Type** Universal PCI V2.2
- I/O Connectors** 1 x 100-pin SCSI female connector
- Dimensions (L x H)** 175 x 100mm (6.9" x 3.9")
- Power Consumption** Typical: 5 V @ 230 mA
Max.: 5 V @ 500 mA
- Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage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

Ordering Information

- PCI-1752U** 64-ch Isolated Digital Output Universal PCI Card

Accessories

- PCL-10250-1E** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- ADAM-3951** 50-pin DIN-rail Wiring Board w/ LED Indicators



PCI-1754



Features

- 64 isolated digital input channels
- Either ± voltage input for DI by group
- High-voltage isolation on input channels (2,500 V_{DC})
- High over-voltage protection (70 V_{DC})
- Wide input range (10 ~ 50 V_{DC})
- 2,000 V_{DC} ESD protection
- 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_{DC} @ 1.7 mA
12 V_{DC} @ 2.1 mA
24 V_{DC} @ 4.4 mA
48 V_{DC} @ 9.0 mA
50 V_{DC} @ 9.4 mA
- Interrupt Capable Ch.** 4 (ID10, ID116, ID132, ID148)
- Isolation Protection** 2,500 V_{DC}
- Overvoltage Protection** 70 V_{DC}
- ESD** 2,000 V_{DC}
- Opto-isolator Response** 100 µs

General

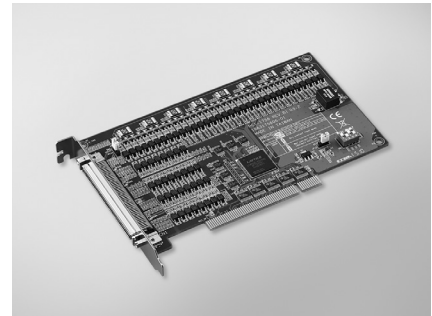
- Bus Type** PCI V2.2
- I/O Connectors** 1 x 100-pin SCSI female connector
- Dimensions (L x H)** 175 x 100mm (6.9" x 3.9")
- Power Consumption** Typical: 5 V @ 340 mA
Max.: 5 V @ 450 mA
- Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage Humidity**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

Ordering Information

- PCI-1754** 64-ch Isolated Digital Input PCI Card

Accessories

- PCL-10250-1E** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- ADAM-3951** 50-pin DIN-rail Wiring Board w/ LED Indicators



PCI-1756



Features

- Either ± voltage input for DI by group
- High-voltage isolation input/output channels (2,500 V_{DC})
- 2,000 V_{DC} ESD protection for DI
- High over-voltage protection (70 V_{DC}) for DI
- High-sink current on isolated output channels (200 mA max./channel)
- Output status readback
- Keeps output settings/ values after system hot reset
- Interrupt handling capability
- High-density 100-pin SCSI connector

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_{DC}
- Overvoltage Protection** 70 V_{DC}
- Opto-isolator Response** 100 µs
- Input Current** 10 V_{DC} @ 1.7 mA
12 V_{DC} @ 2.1 mA
24 V_{DC} @ 4.4 mA
48 V_{DC} @ 9.0 mA
50 V_{DC} @ 9.4 mA

Isolated Digital Output

- Channels** 32 (16-ch/group)
- Output Type** Sink (NPN)
- Isolation Protection** 2,500 V_{DC}
- Output Voltage** 5 ~ 40 V_{DC}
- Sink Current** 200 mA max./channel
- Opto-isolator Response** 100 µs

General

- Bus Type** PCI V2.2
- I/O Connectors** 1 x 100-pin SCSI female connector
- Dimensions (L x H)** 175 x 100mm (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)
- Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage Humidity** 5 ~ 95%, non-condensing

Ordering Information

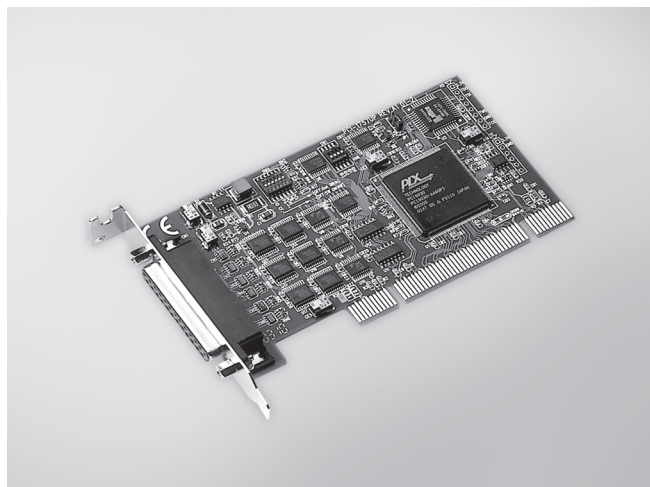
- PCI-1756** 64-ch Isolated Digital I/O PCI Card

Accessories

- PCL-10250-1E** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- ADAM-3951** 50-pin DIN-rail Wiring Board w/ LED Indicators

PCI-1757UP

24-ch Digital I/O 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
- Interrupt handling capability
- Output status read-back
- I/O configurable by software or on board DIP switch
- Keeps the output settings and values after system hot reset
- BoardID™ switch
- Convenient DB25 connector
- Supports both dry and wet contact

Introduction

PCI-1757UP is a 24-channel digital I/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.
Logic 1: 3.7 V min.
- **Output Capability** Sink: 0.5 V @ 24 mA
Source: 3.7 V @ 24 mA

General

- **Bus Type** Universal PCI V2.2
- **I/O Connectors** 1 x DB25 female connector
- **Dimensions (L x H)** 120 x 64 mm (4.7" x 2.5") Low profile MD1
- **Power Consumption** Typical: 5 V @ 140 mA
Max.: 5 V @ 200 mA
- **Operating Temperature** 0 ~ 70°C (32 ~ 158°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Storage Humidity** 5 ~ 95% non-condensing

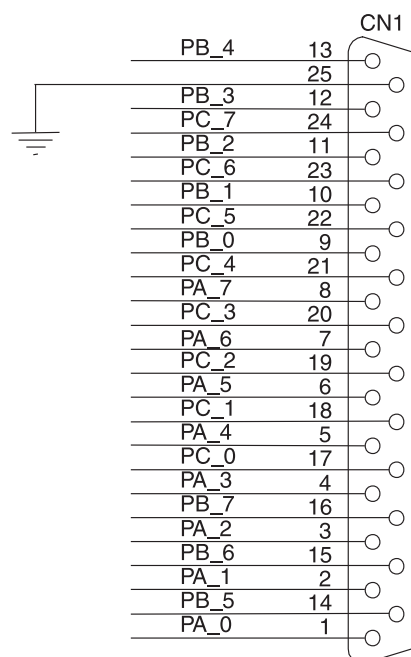
Ordering Information

- **PCI-1757UP** 24-ch Digital I/O Low Profile Universal PCI Card

Accessories

- **ADAM-3925** DB25 DIN-rail Wiring Board
- **PCL-10125-1E** DB25 Cable, 1 m
- **PCL-10125-3E** DB25 Cable, 3 m

Pin Assignments

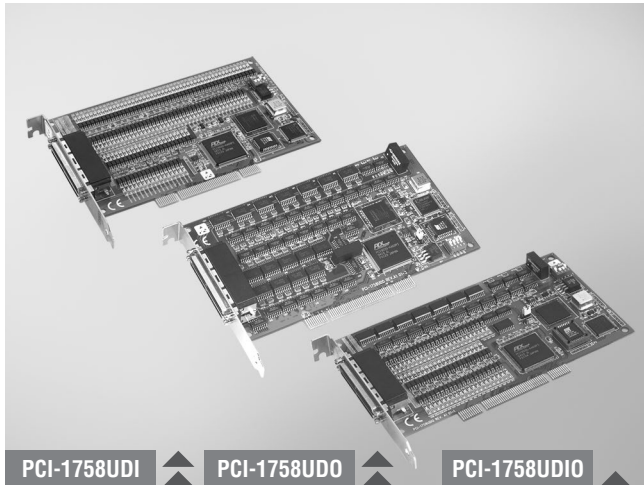


PCI-1758UDI PCI-1758UDO PCI-1758UDIO

128-ch Isolated Digital Input Universal PCI Card

128-ch Isolated Digital Output Universal PCI Card

128-ch Isolated Digital I/O Universal PCI Card



FCC CE RoHS

Features

PCI-1758UDO and PCI-1758UDIO

- 128 isolated digital output channels (64 channels for PCI-1758UDIO)
- High-voltage isolation on output channels (2,500 V_{DC})
- Wide output range (5 ~ 40 V_{DC})
- 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

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

Specifications

Isolated Digital Input

- Channels** PCI-1758UDI: 128
PCI-1758UDIO: 64
- Input Voltage** Logic 0: 2.5 V max.
Logic 1: 5 V min. (25 V max.)
- Interrupt Capable Ch.** PCI-1758UDI: 128
PCI-1758UDIO: 64
- Isolation Protection** 2,500 V_{DC}
- Opto-Isolator Response** 20 µs
- Input Resistance** 3 kΩ

Isolated Digital Output

- Channels** PCI-1758UDO: 128
PCI-1758UDIO: 64
- Output Type** Sink (NPN)
- Isolation Protection** 2,500 V_{DC}
- Output Voltage** 5 ~ 40 V_{DC}
- Sink Current** 90 mA max./channel
- Opto-isolator Response** 20 µs

General

- Bus Type** Universal PCI V2.2
- I/O Connectors** 1 x mini-SCSI HDRA-E100 female connector
- Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- Power Consumption**

	PCI-1758UDI	PCI-1758UDO	PCI-1758UDIO
Typical	5 V @ 0.3 A	5 V @ 1.1 A	5 V @ 1.2 A
Max.	5 V @ 0.6 A	5 V @ 2.2 A	5 V @ 1.8 A

- Operating Temperature** 0 ~ 60°C (32 ~ 140°F) (IEC 68-2-1, 2)
- Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- Storage Humidity** 5 ~ 95% non-condensing

Ordering Information

- PCI-1758UDI** 128-ch Isolated DI Universal PCI Card
- PCI-1758UDO** 128-ch Isolated DO Universal PCI Card
- PCI-1758UDIO** 128-ch Isolated Digital I/O Universal PCI Card

Accessories

- PCL-101100S-1E** 100-pin Mini-SCSI Cable, 1 m
- PCL-101100S-2E** 100-pin Mini-SCSI Cable, 2 m
- ADAM-39100** 100-pin DIN-rail SCSI Wiring Board

Feature Details

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

PCI-1758UDI and PCI-1758UDIO provide an interrupt function for every digital input channel. You can disable/enable the interrupt functions, and select trigger type by setting the Rising Edge Interrupt Registers or 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 flexibility.

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

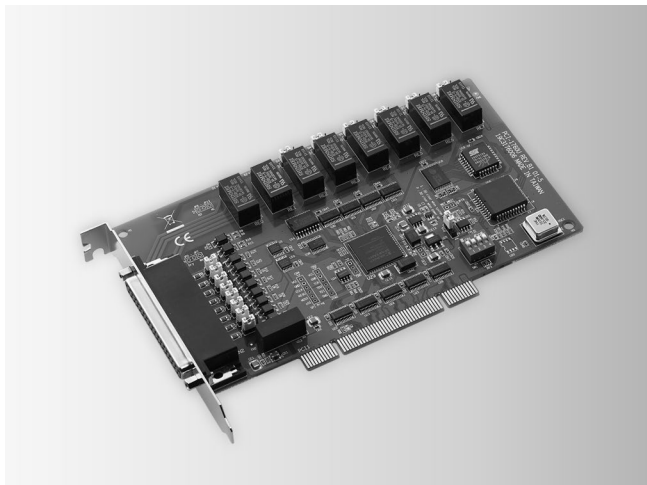
The digital filter function is used to eliminate glitches on input data and reduce the number of changes to examine and process. The filter blocks pulses that are shorter than the specified timing interval and passes pulses that are twice as long as the specified interval. Intermediate-length pulses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

Pin Assignments

CNB										CNA									
PEF_COMM	100	50	PAB_COMM	NC	1	51	NC			PEF_COMM	100	50	PAB_COMM	NC	1	51	NC		
PEF_COMM	99	49	PAB_COMM	NC	2	52	NC			PEF_COMM	99	49	PAB_COMM	NC	2	52	NC		
PF_IDI07	98	48	PB_IDI07	NC	3	53	NC			PF_IDI07	98	48	PB_IDI07	NC	3	53	NC		
PF_IDI06	97	47	PB_IDI06	NC	4	54	NC			PF_IDI06	97	47	PB_IDI06	NC	4	54	NC		
PF_IDI05	96	46	PB_IDI05	NC	5	55	NC			PF_IDI05	96	46	PB_IDI05	NC	5	55	NC		
PF_IDI04	95	45	PB_IDI04	NC	6	56	NC			PF_IDI04	95	45	PB_IDI04	NC	6	56	NC		
PF_IDI03	94	44	PB_IDI03	P0_IDI03	7	57	P4_IDI00			PF_IDI03	94	44	PB_IDI03	P0_IDI03	7	57	P4_IDI00		
PF_IDI02	93	43	PB_IDI02	P0_IDI02	8	58	P4_IDI01			PF_IDI02	93	43	PB_IDI02	P0_IDI02	8	58	P4_IDI01		
PF_IDI01	92	42	PB_IDI01	P0_IDI01	9	59	P4_IDI02			PF_IDI01	92	42	PB_IDI01	P0_IDI01	9	59	P4_IDI02		
PF_IDI00	91	41	PB_IDI00	P0_IDI00	10	60	P4_IDI03			PF_IDI00	91	41	PB_IDI00	P0_IDI00	10	60	P4_IDI03		
PE_IDI07	90	40	PA_IDI07	P0_IDI04	11	61	P4_IDI04			PE_IDI07	90	40	PA_IDI07	P0_IDI04	11	61	P4_IDI04		
PE_IDI06	89	39	PA_IDI06	P0_IDI05	12	62	P4_IDI05			PE_IDI06	89	39	PA_IDI06	P0_IDI05	12	62	P4_IDI05		
PE_IDI05	88	38	PA_IDI05	P0_IDI06	13	63	P4_IDI06			PE_IDI05	88	38	PA_IDI05	P0_IDI06	13	63	P4_IDI06		
PE_IDI04	87	37	PA_IDI04	P0_IDI07	14	64	P4_IDI07			PE_IDI04	87	37	PA_IDI04	P0_IDI07	14	64	P4_IDI07		
PE_IDI03	86	36	PA_IDI03	P1_IDI00	15	65	P5_IDI00			PE_IDI03	86	36	PA_IDI03	P1_IDI00	15	65	P5_IDI00		
PE_IDI02	85	35	PA_IDI02	P1_IDI01	16	66	P5_IDI01			PE_IDI02	85	35	PA_IDI02	P1_IDI01	16	66	P5_IDI01		
PE_IDI01	84	34	PA_IDI01	P1_IDI02	17	67	P5_IDI02			PE_IDI01	84	34	PA_IDI01	P1_IDI02	17	67	P5_IDI02		
PE_IDI00	83	33	PA_IDI00	P1_IDI03	18	68	P5_IDI03			PE_IDI00	83	33	PA_IDI00	P1_IDI03	18	68	P5_IDI03		
NC	82	32	NC	P1_IDI04	19	69	P5_IDI04			NC	82	32	NC	P1_IDI04	19	69	P5_IDI04		
NC	81	31	NC	P1_IDI05	20	70	P5_IDI05			NC	81	31	NC	P1_IDI05	20	70	P5_IDI05		
NC	80	30	NC	P1_IDI06	21	71	P5_IDI06			NC	80	30	NC	P1_IDI06	21	71	P5_IDI06		
NC	79	29	NC	P1_IDI07	22	72	P5_IDI07			NC	79	29	NC	P1_IDI07	22	72	P5_IDI07		
NC	78	28	NC	P01_COMM	23	73	P45_COMM			NC	78	28	NC	P01_COMM	23	73	P45_COMM		
NC	77	27	NC	P01_COMM	24	74	P45_COMM			NC	77	27	NC	P01_COMM	24	74	P45_COMM		
NC	76	26	NC	NC	25	75	NC			NC	76	26	NC	NC	25	75	NC		
NC	75	25	NC	NC	26	76	NC			NC	75	25	NC	NC	26	76	NC		
PCD_COMM	74	24	P89_COMM	NC	27	77	NC			PCD_COMM	74	24	P89_COMM	NC	27	77	NC		
PCD_COMM	73	23	P89_COMM	NC	28	78	NC			PCD_COMM	73	23	P89_COMM	NC	28	78	NC		
PD_IDI07	72	22	P9_IDI07	NC	29	79	NC			PD_IDI07	72	22	P9_IDI07	NC	29	79	NC		
PD_IDI06	71	21	P9_IDI06	NC	30	80	NC			PD_IDI06	71	21	P9_IDI06	NC	30	80	NC		
PD_IDI05	70	20	P9_IDI05	NC	31	81	NC			PD_IDI05	70	20	P9_IDI05	NC	31	81	NC		
PD_IDI04	69	19	P9_IDI04	NC	32	82	NC			PD_IDI04	69	19	P9_IDI04	NC	32	82	NC		
PD_IDI03	68	18	P9_IDI03	P2_IDI00	33	83	P6_IDI00			PD_IDI03	68	18	P9_IDI03	P2_IDI00	33	83	P6_IDI00		
PD_IDI02	67	17	P9_IDI02	P2_IDI01	34	84	P6_IDI01			PD_IDI02	67	17	P9_IDI02	P2_IDI01	34	84	P6_IDI01		
PD_IDI01	66	16	P9_IDI01	P2_IDI02	35	85	P6_IDI02			PD_IDI01	66	16	P9_IDI01	P2_IDI02	35	85	P6_IDI02		
PD_IDI00	65	15	P9_IDI00	P2_IDI03	36	86	P6_IDI03			PD_IDI00	65	15	P9_IDI00	P2_IDI03	36	86	P6_IDI03		
PC_IDI07	64	14	P8_IDI07	P2_IDI04	37	87	P6_IDI04			PC_IDI07	64	14	P8_IDI07	P2_IDI04	37	87	P6_IDI04		
PC_IDI06	63	13	P8_IDI06	P2_IDI05	38	88	P6_IDI05			PC_IDI06	63	13	P8_IDI06	P2_IDI05	38	88	P6_IDI05		
PC_IDI05	62	12	P8_IDI05	P2_IDI06	39	89	P6_IDI06			PC_IDI05	62	12	P8_IDI05	P2_IDI06	39	89	P6_IDI06		
PC_IDI04	61	11	P8_IDI04	P2_IDI07	40	90	P6_IDI07			PC_IDI04	61	11	P8_IDI04	P2_IDI07	40	90	P6_IDI07		
PC_IDI03	60	10	P8_IDI03	P3_IDI00	41	91	P7_IDI00			PC_IDI03	60	10	P8_IDI03	P3_IDI00	41	91	P7_IDI00		
PC_IDI02	59	9	P8_IDI02	P3_IDI01	42	92	P7_IDI01			PC_IDI02	59	9	P8_IDI02	P3_IDI01	42	92	P7_IDI01		
PC_IDI01	58	8	P8_IDI01	P3_IDI02	43	93	P7_IDI02			PC_IDI01	58	8	P8_IDI01	P3_IDI02	43	93	P7_IDI02		
PC_IDI00	57	7	P8_IDI00	P3_IDI03	44	94	P7_IDI03			PC_IDI00	57	7	P8_IDI00	P3_IDI03	44	94	P7_IDI03		
NC	56	6	NC	P3_IDI04	45	95	P7_IDI04			NC	56	6	NC	P3_IDI04	45	95	P7_IDI04		
NC	55	5	NC	P3_IDI05	46	96	P7_IDI05			NC	55	5	NC	P3_IDI05	46	96	P7_IDI05		
NC	54	4	NC	P3_IDI06	47	97	P7_IDI06			NC	54	4	NC	P3_IDI06	47	97	P7_IDI06		
NC	53	3	NC	P3_IDI07	48	98	P7_IDI07			NC	53	3	NC	P3_IDI07	48	98	P7_IDI07		
NC	52	2	NC	P23_COMM	49	99	P67_COMM			NC	52	2	NC	P23_COMM	49	99	P67_COMM		
NC	51	1	NC	P23_COMM	50	100	P67_COMM			NC	51	1	NC	P23_COMM	50	100	P67_COMM		

PCI-1760U

8-ch Relay and 8-ch Isolated Digital Input Universal PCI Card with 8-ch Counter/Timer



Features

- 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

Introduction

PCI-1760U relay actuator and isolated digital input 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_{DC} 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
- **Input Voltage** Logic 0: 1.0 V max.
Logic 1: 4.5 V min. (12 V max.)
- **Interrupt Capable** Ch. 8 (ID10 ~ ID17)
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 100 μ s
- **Input Resistance** 2 k Ω @ 1/4 W

Counter/Timer

- **Channels** 8
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 500 Hz
- **Isolation Protection** 2,500 V_{DC}
- **PWM Channels** 2
- **Digital Noise Filter** Min. effective high input period $\geq [(2 \sim 65535) \times 5 \text{ ms}] + 5 \text{ ms}$
Min. effective low input period $\geq [(2 \sim 65535) \times 5 \text{ ms}] + 5 \text{ ms}$

Relay Output

- **Channels** 8
- **Relay Type** 2 x Form C, and 6 x Form A
- **Contact Rating** 1 A @ 125 V_{AC}, 2 A @ 30 V_{DC}
- **Max. Switching Power** 125 VA, 60 W
- **Max. Switching Voltage** 250 V_{AC}, 220 V_{DC}
- **Max. Switching Current** 2 A
- **Operate/Release Time** max. 5 / 3.5 ms
- **Resistance** Contact: 50 m Ω max.
- **Life Expectancy (Electrical)** 3 x 10⁶ cycles min.: 2 A @ 30 V_{DC}, 1 A @ 125 V_{AC}
10⁶ cycles min.: 1 A @ 30 V_{DC}, 0.5 A @ 125 V_{AC}

General

- **Bus Type** Universal PCI V2.2
- **I/O Connectors** 1 x DB37 female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 450 mA
Max.: 5 V @ 850 mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity** 5 ~ 95 % RH, non-condensing

Ordering Information

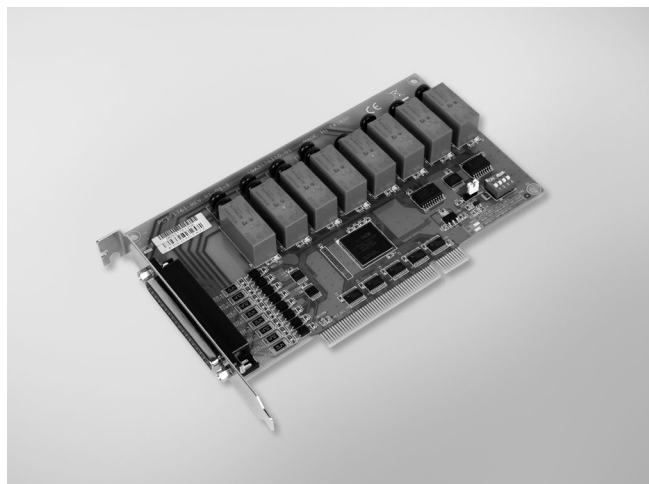
- **PCI-1760U** 8-ch Relay/DI PCI Card w/ 8-ch Counter/Timer

Accessories

- **PCL-10137-1E** DB37 Cable, 1 m
- **PCL-10137-2E** DB37 Cable, 2 m
- **PCL-10137-3E** DB37 Cable, 3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

PCI-1761

8-ch Relay and 8-ch Isolated Digital Input PCI Card



Features

- 8 opto-isolated digital input channels
- 8 relay actuator output channels
- LED indicators to show activated relays
- BoardID switch

Introduction

The PCI-1761 provides 8 opto-isolated digital inputs with isolation protection of 2,500 V_{DC} for collecting digital inputs in noisy environments, 8 relay actuators that can be used as a 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. 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
- **Input Voltage** Logic 0: 3.0 V max.
Logic 1: 10 V min. (50 V max.)
- **Interrupt Capable Ch.** 8 (IDIO ~ IDI7)
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 100 μ s
- **Input Resistance** 5.7 k Ohm @ 1 W

Relay Output

- **Channels** 8
- **Relay Type** 4 x Form C, and 4 x Form A
- **Contact Rating** 2 A @ 250 V_{AC}, 2 A @ 30 V_{DC}
- **Max. Switching Power** 500 VA, 60 W
- **Max. Switching Voltage** 400 V_{AC}, 300 V_{DC}
- **Operating Time** Typical: 7 ms, Max: 15 ms
- **Release Time** Typical: 2 ms, Max: 6 ms
- **Resistance** Contact: 100 m Ohm max.
- **Life Expectancy** 2 x 10⁵ cycles min. @ 2A/ 250V_{AC}

General

- **I/O Connectors** 1 x DB37 female connector
- **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)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity** 5 ~ 95 % RH, non-condensing

Ordering Information

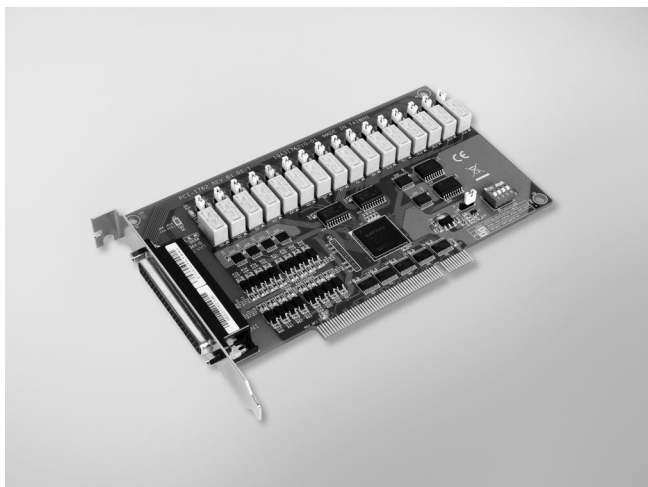
- **PCI-1761** 8-ch Relay and 8-ch Isolated Digital Input PCI Card

Accessories

- **PCL-10137-1E** DB37 Cable, 1 m
- **PCL-10137-2E** DB37 Cable, 2 m
- **PCL-10137-3E** DB37 Cable, 3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

PCI-1762

16-ch Relay and 16-ch Isolated Digital Input PCI Card



Features

- 16 opto-isolated digital input channels
- 16 relay actuator output channels
- LED indicators to show activated relays
- Jumper selectable dry contact/wet contact input signals
- BoardID switch

Introduction

The PCI-1762 provides 16 opto-isolated digital inputs with isolation protection of 2,500 V_{DC} for collecting digital inputs in noisy environments, 16 relay actuators that can be used as a 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. 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** 16
- **Input Voltage** Logic 0: 3.0 V max.
Logic 1: 10 V min. (50 V max.)
- **Interrupt Capable Ch.** 2 (ID10, ID18)
- **Isolation Protection** 2,500 V_{DC}
- **Opto-Isolator Response** 100 μ s
- **Input Resistance** 5.7 k Ohm 1 W

Relay Output

- **Channels** 16
- **Relay Type** Form A or Form B (Jumper selectable)
- **Contact Rating** 0.5 A @ 250 V_{AC}, 0.5 A @ 30 V_{DC}
- **Max. Switching Power** 125 VA, 15 W
- **Max. Switching Voltage** 250 V_{AC}, 220 V_{DC}
- **Operate Time** Typical: 3 ms, Max.: 5 ms
- **Release Time** Typical: 2 ms, Max.: 4 ms
- **Resistance** Contact: 50 m Ohm max.
- **Life Expectancy** 2 x 10⁵ cycles min. @ 0.5A/ 250V_{AC}

General

- **I/O Connectors** 1 x DB62 female connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: 5 V @ 250 mA
Max.: 5 V @ 620 mA
- **Operating Temperature** 0 ~ 60°C (32 ~ 140°F)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity** 5 ~ 95 % RH, non-condensing

Ordering Information

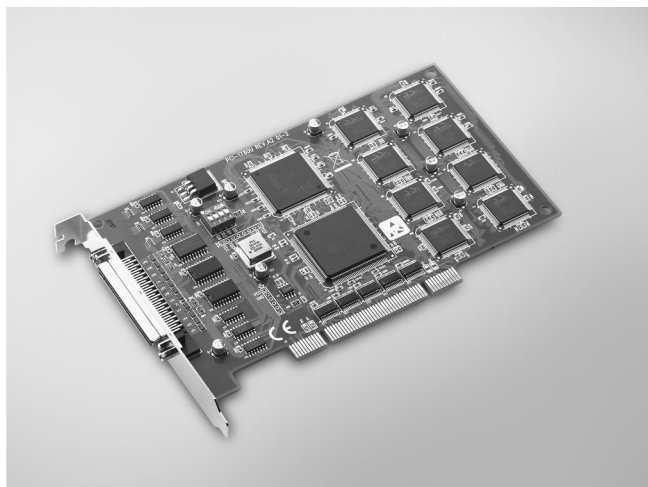
- **PCI-1762** 16-ch Relay and 16-ch Isolated Digital Input PCI Card

Accessories

- **PCL-10162-1E** DB62 Cable, 1 m
- **PCL-10162-3E** DB62 Cable, 3 m
- **ADAM-3962** DB62 DIN-rail Wiring Board

PCI-1780U

8-ch, 16-bit Counter/Timer Universal PCI Card



FCC CE 

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-1780U is a general purpose multi-channel counter/timer PCI card. 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-1780U 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.

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.** Ch. 0

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 @ 0.8V
Source: -15 mA @ 2.0V

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** Universal PCI V2.2
- **I/O Connectors** 1 x 68-pin SCSI female connector
- **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)
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Storage Humidity** 5 ~ 95% RH, non-condensing

Ordering Information

- **PCI-1780U** 8-ch, 16-bit Counter/Timer Universal PCI Card

Accessories

- **PCL-10168-1E** 68-pin SCSI Shielded Cable, 1 m
- **PCL-10168-2E** 68-pin SCSI Shielded Cable, 2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board