

Платы аналогового вывода серии PCI-17 XX

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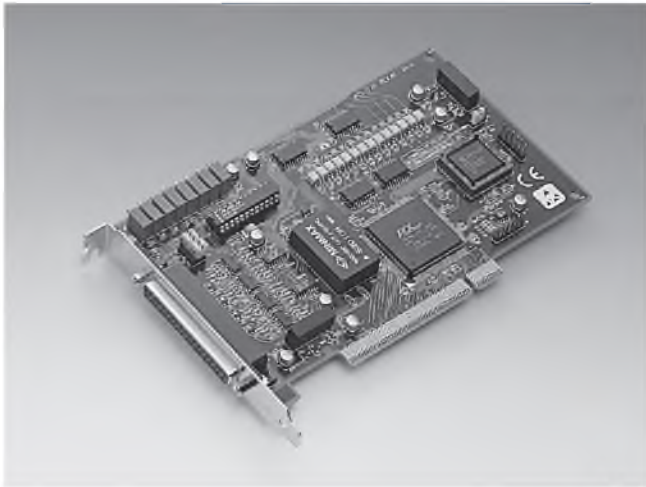
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PCI-1720 PCI-1720U

4-ch Isolated Analog Output Card

4-ch Universal Isolated Analog Output Card



CE

Features

- Four 12-bit D/A output channels
- Multiple output ranges
- 2,500 V_{DC} isolation between the outputs and the PCI bus
- Keeps the output settings and values after system reset
- One DB37 connector for easy wiring
- Universal PCI and BoardID switch (PCI-1720U only)

Introduction

The PCI-1720 provides four 12-bit isolated digital-to-analog outputs for the PCI bus. With isolation protection of 2500 V_{DC} between the outputs and the PCI bus, the PCI-1720 is ideal for industrial applications where high-voltage protection is required.

Keeping the Output Settings and Values after System Reset

Users can independently set the four outputs to different ranges: 0 to +5 V, 0 to +10 V, ±5 V, ±10 V, 0 to 20 mA (sink) or 4 to 20 mA (sink). When the system is hot reset, (power is not shut off), the PCI-1720 can either retain the last analog output settings and values, or return to its default configuration, depending on jumper setting. This practical function eliminates danger caused by misoperation during an unexpected system reset.

PCI-Bus Plug & Play

The PCI-1720 uses a PCI controller to interface the card to the PCI bus. The controller fully implements the PCI bus specification Rev 2.1. All bus relative configurations, such as base address and interrupt assignment, are automatically controlled by software.

Specifications

- **Channels** 4 isolated D/A channels
- **Resolution** 12 bits
- **Output Range** Unipolar: 0 – +5 V, 0 – +10 V
Bipolar: ±5 V, ±10 V
Current loop (sink): 0– 20 mA, 4 – 20 mA
- **Throughput** 15 kHz min. @ full-scale output range
- **Accuracy** ±0.024%
- **Isolation Voltage** 2,500 V_{DC} between the outputs and the PCI bus
- **Output Drive** ±5 mA max.
- **Current Loop Excitation Voltage** 50 V (max.)
- **On-board 12 VDC Excitation Voltage** 80 mA (max.)
- **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) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -20 – +70° C (-4 – 158° F)
- **Operating Humidity** 5 – 95% RH non-condensing (refer to IEC 68-2-3)
- **Connector** DB-37 connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")

- **ADAM-3937** DB37 Wiring terminal for DIN-rail mounting
- **PCLD-880** Screw terminal board

Applications

- Process control
- Programmable voltage source
- Programmable current sink
- Servo control

Pin Assignments

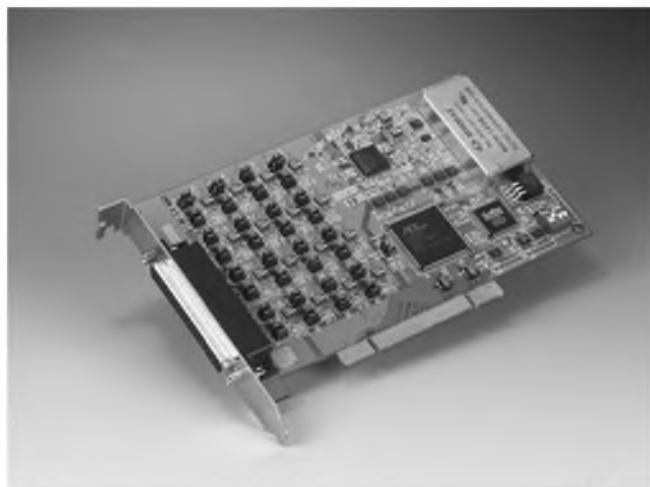
NC	1	20	NC
+12 Vout	2	21	NC
AGND	3	22	NC
AGND	4	23	NC
Vout 0	5	24	NC
AGND	6	25	NC
Isink 0	7	26	NC
AGND	8	27	NC
AGND	9	28	NC
Isink 1	10	29	NC
Vout 2	11	30	NC
AGND	12	31	NC
Isink 2	13	32	NC
Vout 3	14	33	NC
AGND	15	34	NC
Isink 3	16	35	NC
NC	17	36	NC
NC	18	37	NC
NC	19		

Ordering Information

- **PCI-1720** 4-channel Isolated Output 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
- **PCI-1720U** 4-channel Isolated Output Card, user's manual and driver CD-ROM. (cable not included)

PCI-1724U

14-bit, 32-ch Isolated Analog Output Card



FCC CE

Features

- High-density 32-channel analog output channels
- Flexible Output Range: +/-10 V, 0 ~ 20 mA and 4 ~ 20 mA
- Synchronized output function
- Keeps output values after system hot reset
- BoardID™ switch

Introduction

The PCI-1724U is an isolated high-density multiple channel analog output card for the PCI bus, where each analog output channel is equipped with a 14-bit DAC. It features optional voltages, current output and a BoardID™ switch. The PCI-1724U is an ideal solution for industrial applications where multiple analog output channels are required.

Specifications

Analog Output

- **Channels** 32 ch isolation
- **Resolution** 14-bit
- **Operation Mode** Single output, synchronized output
- **Output Range** -10 ~ +10 V, 0 ~ 20 mA, 4 ~ 20 mA (Internal Reference only)
- **Accuracy** Relative +/- 4 LSB
Differential Non-linearity +/- 2 LSB (monotonic)
- **Offset** < 2 LSB
- **Output Impedance** 0.1 Ω max.
- **Throughput** PC dependent, Software update (Direct AO)
- **Settling Time** 60 μ s
- **Isolation** 1,500 V_{DC} system isolation

General

- **I/O Connector Type** One 62-pin D-type connector
- **Dimensions (L x H)** 175 x 100 mm (6.9" x 3.9")
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
- **Storage Temperature** -20 ~ 70° C (-4 ~ 158° F)
- **Operating Humidity** 5 ~ 95 % RH non-condensing (refer to IEC 68-2-3)

Ordering Information

- **PCI-1724U** 14-bit, 32-ch Isolated Analog Output Card
- **PCI-10162** DB62 Cable Assembly (1m, 3m)
- **ADAM-3962** DB62 Cable Wiring Terminal for Din-Rail Mounting

Applications

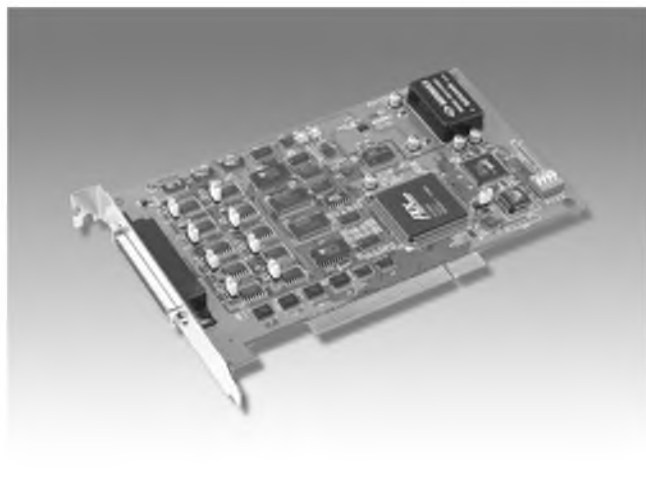
- Process control
- Programmable voltage source
- Programmable current sink
- Servo control
- Multiple loop PID control
- V-command motion control

Pin Assignments

AGND					
AO8	AGND	1	22	43	AGND
AGND	AO0	2	24	44	AO16
AO9	AGND	3	25	45	AGND
AGND	AO1	4	26	46	AO17
AO10	AGND	5	27	47	AGND
AGND	AO2	6	28	48	AO18
AO11	AGND	7	29	49	AGND
AGND	AO3	8	30	50	AO19
AO12	AGND	9	31	51	AGND
AGND	AO4	10	32	52	AO20
AO13	AGND	11	33	53	AGND
AGND	AO5	12	34	54	AO21
AO14	AGND	13	35	55	AGND
AGND	AO6	14	36	56	AO22
AO15	AGND	15	37	57	AGND
AGND	AO7	16	38	58	AO23
AGND	AO24	17	39	59	AO28
AGND	AO25	18	40	60	AO29
AGND	AO26	19	41	61	AO30
AGND	AO27	20	42	62	AO31
NC					
	NC	21			

PCI-1723

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



CE

Features

- Auto calibration function
- A 16-bit DAC is equipped for each analog output channel
- Synchronized output function
- Output values retained after system hot reset
- 2-port (16-channel) user-defined digital input/output
- BoardID™ switch

Introduction

The PCI-1723 is a non-isolated multiple channel analog output card for the PCI bus, and each analog output channel is equipped with a 16-bit, double-buffered DAC. It also features an auto-calibration function and a BoardID™ switch. The PCI-1723 is an ideal solution for industrial applications where multiple analog output channels are required.

Specifications

Analog Output

- **Output Channels** 8
- **Resolution** 16-bit
- **Operation Mode** Single output, Synchronized output
- **Output Range** -10 ~ +10 V, 0 ~ 20 mA, 4 ~ 20 mA (Internal Reference only)
- **Accuracy**
 - Relative ±6 LSB
 - Differential Non-linearity ±6 LSB (monotonic)
- **Offset** < 6 LSB
- **Output Impedance** 0.1 Ω max.
- **Throughput** PC dependent, Software update (direct AO)
- **Settling time** 50 μs (to ±6 LSB of FSR)

Digital Input/Output

- **Channels** 16 (bi-directional)
- **Number of Ports** 2
- **Input Voltage**
 - Low 0.8 V max.
 - High 2.0 V min.
- **Output Voltage**
 - Low 0.5 V max. @ 24 mA (sink)
 - High 2.4 V min. @ -15 mA (source)

General

- **I/O Connector Type** 68-pin SCSI-II female
- **Dimensions** 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) (IEC 68-2-1,2)
- **Storage Temperature** -20 ~ 85° C (-4 ~ 185° F)
- **Relative Humidity** 5 ~ 95 % RH non-condensing (IEC 68-2-3)
- **Certifications** CE

Ordering Information

- **PCI-1723** 16-bit, 8-ch Non-isolated Analog Output Card
- **PCL-10168** 68-pin SCSI-II cable with male connectors on both ends and special shielding for noise reduction, 1 and 2m
- **ADAM-3968** 68-pin SCSI-II Wiring Terminal Board for DIN-rail mounting

Applications

- Process control, Programmable voltage source, Programmable current sink, Servo control, Multiple loop PID control, V-command motion control

Pin Assignments

NC	68	34	NC
Vout0	67	33	Vout1
AGND	66	32	AGND
Iout0	65	31	Iout1
NC	64	30	NC
AGND	63	29	AGND
Vout2	62	28	Vout3
AGND	61	27	AGND
Iout2	60	26	Iout3
NC	59	25	NC
AGND	58	24	AGND
Vout4	57	23	Vout5
AGND	56	22	AGND
Iout4	55	21	Iout5
NC	54	20	NC
AGND	53	19	AGND
Vout6	52	18	Vout7
AGND	51	17	AGND
Iout6	50	16	Iout7
NC	49	15	NC
AGND	48	14	AGND
DIO0	47	13	DIO1
DIO2	46	12	DIO3
DIO4	45	11	DIO5
DIO6	44	10	DIO7
DIO8	43	9	DIO9
DIO10	42	8	DIO11
DIO12	41	7	DIO13
DIO14	40	6	DIO15
DGND	39	5	DGND
NC	38	4	NC
NC	37	3	NC
NC	36	2	NC
+12V	35	1	+5V

PCI-1721

12-bit, 4-ch Advanced Analog Output Card



FCC CE

Features

- 10 MHz maximum digital update rate
- PCI-bus mastering for data transfer
- Auto calibration function
- Four analog output channels with 1 K FIFO
- 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 reset
- 16-ch DI/O and one 10 MHz 16-bit resolution counter
- BoardID™ switch

Introduction

The PCI-1721 is an advanced high-speed analog output card for 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. The 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-bit
- FIFO Size 1 K Samples
- Operation Mode Single/ Continuous/ Waveform /Synchronized output

Output Range (Internal & External Reference)	Using Internal Reference	0 ~ +5 V, 0 ~ +10 V, -5 ~ +5 V, -10 ~ +10 V, 0 ~ 20 mA, 4 ~ 20 mA
	Using External Reference	0 ~ +x V @ +x V (-10 ≤ x ≤ 10) -x ~ +x V @ +x V (-10 ≤ x ≤ 10)
Accuracy	Relative	±1 LSB
	Differential Non-linearity	±1 LSB (monotonic)

- Offset <1 LSB
- Slew Rate 10 V/μs
- Driving Capability ±10 mA
- Output Impedance 0.1Ω max.
- Max. Update Rate 10 MHz (max. for one channel)
- Settling Time 5 μs (to ±1/1 LSB of FSR)

External Clock Input (Max. 10 MHz)	Low	0.8 V max.
	High	2.0 V min.
External TTL Trigger Input	Low	0.8 V max.
	High	2.0 V min.

Counter/Timer

- Channels 1
- Resolution 16-bit
- Compatibility TTL level
- Base Clock 10 MHz
- Max. Input Frequency 10 MHz

Clock Input	Low	0.8 V max.
	High	2.0 V min.
Gate Input	Low	0.8 V max.
	High	2.0 V min.
Counter Output	Low	0.4 V max. @ +2.5 mA
	High	3.0 V min. @ -2.5 mA

General

I/O Connector Type	68-pin SCSI-II female	
Dimensions	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
Temperature	Operation	0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)
	Storage	-20 ~ 85° C (-4 ~ 185° F)
Relative Humidity	5 ~ 95% RH non-condensing (refer to IEC 68-2-3)	
Certifications	CE certified	

Digital Input /Output

Input Channels	16 (bi-directional)	
Number of Ports	2	
Input Voltage	Low	0.8 V max.
	High	2.0 V min.
Input Load	Low	0.5 V max. @ +24 mA (sink)
	High	2.0 V min. @ -15 mA (source)

Ordering Information

- **PCI-1721** 12-bit, 4-ch Advanced Analog Output Card, user's manual and driver CD-ROM. (cable not included)
- **PCL-10168** 68-pin SCSI-II cable with male connectors on both ends and special shielding for noise reduction, 1 and 2 m
- **ADAM-3968** 68-pin SCSI-II Wiring Terminal Board for DIN-rail Mounting

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