

PCI-1710U Series

12-bit Multifunction Cards with Universal PCI Bus

Packing List

Before installation, please make sure that you have:

- PCI-1710U Series Card
- Driver CD
- Startup Manual

If anything is missing or damaged, contact your distributor or sales representative immediately.

User Manual

For more detailed information on this product, please refer to the PCI-1710U User Manual on the CD-ROM (PDF format).

Documents\Hardware Manuals\PCI\PCI-1710U

Declaration of Conformity

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user is required to correct interference at his own expense.

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

Overview

The PCI-1710U Series are multifunction cards for the PCI bus. Their advanced circuit design provides higher quality and more functions, including 12-bit A/D conversion, D/A conversion, digital input, digital output, and counter/timer.

Notes

For more information on this and other Advantech products, please visit our websites at:

<http://www.advantech.com/eAutomation>

For technical support and service:

<http://www.advantech.com/support/>

This startup manual is for PCI-1710U.

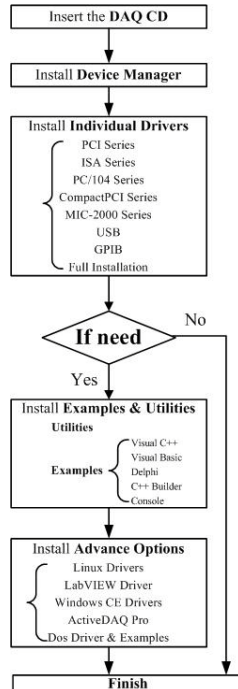
Part No. 2003171071

2nd Edition

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Installation

Software Installation



Hardware Installation

After the device driver installation is completed, you can now go on to install the PCI-1710U series card in PCI slot on your computer.

Follow the steps below to install the module on your system:

1. Touch the metal part on the surface of your computer to neutralize the static electricity that might be in your body.
2. Plug your card into a PCI slot. Use of excessive force must be avoided; otherwise the card might get damaged.

Pin Assignments

A10	68	34	A11
A12	67	33	A13
A14	66	32	A15
A16	65	31	A1F
A18	64	30	A1B
A110	63	29	A111
A112	62	28	A113
A114	61	27	A115
A1GN	60	26	A1GN
DA0_REF	59	25	DA1_REF
DA0_OUT	58	24	DA1_OUT
AOGND	57	23	AOGND
D10	56	22	D11
D12	55	21	D13
D14	54	20	D15
D18	53	19	D1F
D19	52	18	D1B
D110	51	17	D111
D112	50	16	D113
D114	49	15	D115
DGN	48	14	DGN
D00	47	13	D01
D02	46	12	D03
D04	45	11	D05
D06	44	10	D07
D08	43	9	D09
D010	42	8	D011
D012	41	7	D013
D014	40	6	D015
DGN	39	5	DGN
CNT0_CLK	38	4	PACER_OUT
CNT0_OUT	37	3	TRG_GATE
CNT0_GATE	36	2	EXT_TRG
+12V	35	1	+5V

*Note: Pins 23~25 and pins 57~59 are not defined for PCI-1710UL.

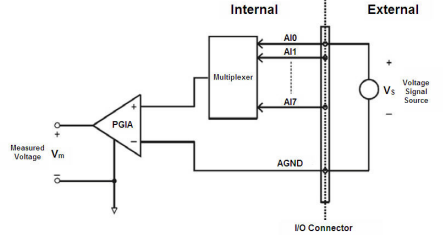
Signal Name	Reference	Direction	Description
A1<0...15>	AIGN	Input	Analog Input Channels 0 through 15.
AIGN	-	-	Analog Input Ground.
AO0_REF AO1_REF	AOGND	Input	Analog Output Channel 0/1 External Reference.
AO0_OUT AO1_OUT	AOGND	Output	Analog Output Channels 0/1.
AOGND	-	-	Analog Output Ground.
DI<0...15>	DGN	Input	Digital Input Channels 0 through 15.
DO<0...15>	DGN	Output	Digital Output Channels 0 through 15.
DGN	-	-	Digital Ground. This pin supplies the reference for the digital channels at the I/O connector as well as the +5VDC and +12 VDC supply.
CNT0_CLK	DGN	Input	Counter 0 Clock Input.
CNT0_OUT	DGN	Output	Counter 0 Output.
CNT0_GATE	DGN	Input	Counter 0 Gate Control.
PACER_OUT	DGN	Output	Pacer Clock Output.
TRG_GATE	DGN	Input	A/D External Trigger Gate. When TRG_GATE is connected to +5 V, it will enable the external trigger signal to input.
EXT_TRG	DGN	Input	A/D External Trigger. This pin is external trigger signal input for the A/D conversion. A low-to-high edge triggers A/D conversion to start.
+12V	DGN	Output	+12 VDC Source.
+5V	DGN	Output	+5 VDC Source.

*Note: The three ground references (AIGN, AOGND, and DGN) are connected together.

Input Connections

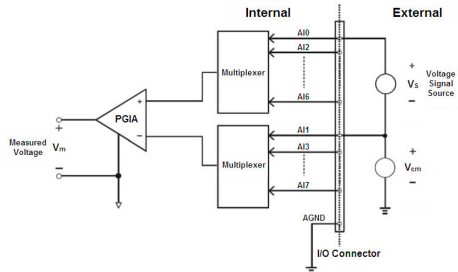
Analog Input - Single-ended Channel Connections

The single-ended input configuration has only one signal wire for each channel, and the measured voltage (V_m) is the voltage referring to the common ground.



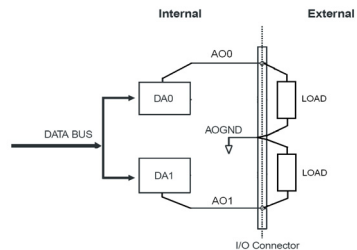
Analog Input - Differential Channel Connections

The differential input channels operate with two signal wires for each channel, and the voltage difference between both signal wires is measured. On PCI-1710U, when all channels are configured to differential input, up to 8 analog channels are available.



Analog Output Connections

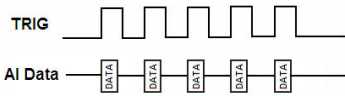
PCI-1710U provides two analog output channels, AO0 and AO1. The figure below shows how to make analog output connections on PCI-1710U.



External Trigger Source Connection

In addition to pacer triggering, PCI-1710U also allows external triggering for A/D conversions. A low-to-high edge coming from TRIG will trigger an A/D conversion on the PCI-1710U board.

External Trigger Mode:



Note!: Don't connect any signal to the TRIG pin when the external trigger function is not being used.

Note!: If you use external triggering for A/D conversions, we recommend you choose differential mode for all analog input signals, so as to reduce the cross-talk noise caused by the external trigger source.