PCI-1758UDO

128-ch Isolated Digital Output Card

Packing List

Before installation, please make sure that you have received the following:

• PCI-1758UDO card
• Driver CD
• Quick Start User 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-1758U User Manual on the CD-ROM (PDF format).

CD:\Documents\Hardware Manuals\PCI\PCI-1758U

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-1758UDO card enables powerful data acquisition (DAS) for the PCI bus. It features a unique circuit design, and complete functions for data acquisition and control. The PCI-1758UDO card provides specific functions for different user requirements.

Notes

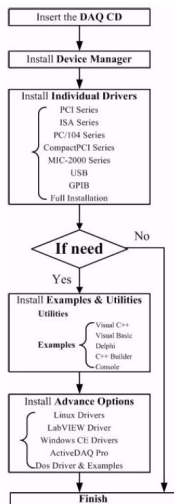For more information on this and other Advantech products, please visit our websites at:

http://www.advantech.com/eAutomation

For technical support and service:

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

This startup manual is for PCI-1758UDO

Software Installation

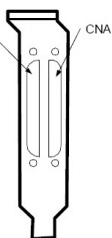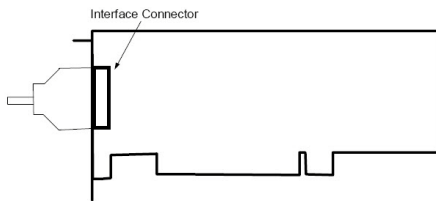## Hardware Installation

1. Turn off your computer and unplug the power cord and cables. TURN OFF your computer before installing or removing any components on the computer.
2. Remove the cover of your computer.
3. Remove the slot cover on the back panel of your computer.
4. Touch the metal part on the surface of your computer to neutralize the static electricity that might be on your body.
5. Insert the PCI-1758UDO card into a PCI slot. Hold the card only by its edges and carefully align it with the slot. Insert the card firmly into place. Use of excessive force must be avoided; otherwise, the card might be damaged.
6. Fasten the bracket of the PCI card on the back panel rail of the computer with screws.
7. Connect appropriate accessories (68-pin cable, wiring terminals, etc. if necessary) to the PCI card.
8. Replace the cover of your computer chassis. Reconnect the cables you removed in step 2.
9. Plug in the power cord and turn on the computer.

ADVANTECH

Pin Assignments

The I/O connector on PCI-1758UDO is one MINI-SCSI HDRA-E100 Female connector.

Note: The PCL-101100S-1 (1m) shielded cable is especially designed for the PCI-1758U series to reduce noise in the analog signal lines.

Interface Connector

CNB   CNA

Signal Name	Reference	Direction	Description
P0_IDO00~ 07	P01_COMM	Output	Isolated Digital Output of port 0
P1_IDO00~ 07	P01_COMM	Output	Isolated Digital Output of port 1
P2_IDO00~ 07	P23_COMM	Output	Isolated Digital Output of port 2
P3_IDO00~ 07	P23_COMM	Output	Isolated Digital Output of port 3
P4_IDO00~ 07	P45_COMM	Output	Isolated Digital Output of port 4
P5_IDO00~ 07	P45_COMM	Output	Isolated Digital Output of port 5
P6_IDO00~ 07	P67_COMM	Output	Isolated Digital Output of port 6
P7_IDO00~ 07	P67_COMM	Output	Isolated Digital Output of port 7
P8_IDO00~ 07	P89_COMM	Output	Isolated Digital Output of port 8
P9_IDO00~ 07	P89_COMM	Output	Isolated Digital Output of port 9
PA_IDO00~ 07	PAB_COMM	Output	Isolated Digital Output of port A
PB_IDO00~ 07	PAB_COMM	Output	Isolated Digital Output of port B
PC_IDO00~ 07	PCD_COMM	Output	Isolated Digital Output of port C
PD_IDO00~ 07	PCD_COMM	Output	Isolated Digital Output of port D
PE_IDO00~ 07	PEF_COMM	Output	Isolated Digital Output of port E
PF_IDO00~ 07	PEF_COMM	Output	Isolated Digital Output of port F
P01_COMM	-		Negative external power supply
P23_COMM	-		Negative external power supply
P45_COMM	-		Negative external power supply
P67_COMM	-		Negative external power supply
P89_COMM	-		Negative external power supply
PAB_COMM	-		Negative external power supply
PCD_COMM	-		Negative external power supply
PEF_COMM	-		Negative external power supply
P01_COMP	-		Positive external power supply
P23_COMP	-		Positive external power supply
P45_COMP	-		Positive external power supply
P67_COMP	-		Positive external power supply
P89_COMP	-		Positive external power supply
PAB_COMP	-		Positive external power supply
PCD_COMM	-		Positive external power supply
PEF_COMM	-		Positive external power supply
NC	-	-	Not used

CNB

PEF_COMP	100	50	PAB_COMP		
PEF_COMP	99	49	PAB_COMP		
PF_IDO07	98	48	PB_IDO07		
PF_IDO06	97	47	PB_IDO06		
PF_IDO05	96	46	PB_IDO05		
PF_IDO04	95	45	PB_IDO04		
PF_IDO03	94	44	PB_IDO03		
PF_IDO02	93	43	PB_IDO02		
PF_IDO01	92	42	PB_IDO01		
PF_IDO00	91	41	PB_IDO00		
PE_IDO07	90	40	PA_IDO07		
PE_IDO06	89	39	PA_IDO06		
PE_IDO05	88	38	PA_IDO05		
PE_IDO04	87	37	PA_IDO04		
PE_IDO03	86	36	PA_IDO03		
PE_IDO02	85	35	PA_IDO02		
PE_IDO01	84	34	PA_IDO01		
PE_IDO00	83	33	PA_IDO00		
PEF_COMM	82	32	PAB_COMM		
PEF_COMM	81	31	PAB_COMM		
PEF_COMM	80	30	PAB_COMM		
PEF_COMM	79	29	PAB_COMM		
PEF_COMM	78	28	PAB_COMM		
PEF_COMM	77	27	PAB_COMM		
NC	76	26	NC		
NC	75	25	NC		
PCD_COMP	74	24	P89_COMP		
PCD_COMP	73	23	P89_COMP		
PD_IDO07	72	22	P9_IDO07		
PD_IDO06	71	21	P9_IDO06		
PD_IDO05	70	20	P9_IDO05		
PD_IDO04	69	19	P9_IDO04		
PD_IDO03	68	18	P9_IDO03		
PD_IDO02	67	17	P9_IDO02		
PD_IDO01	66	16	P9_IDO01		
PD_IDO00	65	15	P9_IDO00		
PC_IDO07	64	14	P8_IDO07		
PC_IDO06	63	13	P8_IDO06		
PC_IDO05	62	12	P8_IDO05		
PC_IDO04	61	11	P8_IDO04		
PC_IDO03	60	10	P8_IDO03		
PC_IDO02	59	9	P8_IDO02		
PC_IDO01	58	8	P8_IDO01		
PC_IDO00	57	7	P8_IDO00		
PCD_COMM	56	6	P89_COMM		
PCD_COMM	55	5	P89_COMM		
PCD_COMM	54	4	P89_COMM		
PCD_COMM	53	3	P89_COMM		
PCD_COMM	52	2	P89_COMM		
PCD_COMM	51	1	P89_COMM		

CNA

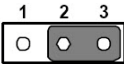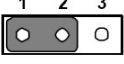|					
P01_COMM	1	51	P45_COMM		
P01_COMM	2	52	P45_COMM		
P01_COMM	3	53	P45_COMM		
P01_COMM	4	54	P45_COMM		
P01_COMM	5	55	P45_COMM		
P01_COMM	6	56	P45_COMM		
P0_IDO00	7	57	P4_IDO00		
P0_IDO01	8	58	P4_IDO01		
P0_IDO02	9	59	P4_IDO02		
P0_IDO03	10	60	P4_IDO03		
P0_IDO04	11	61	P4_IDO04		
P0_IDO05	12	62	P4_IDO05		
P0_IDO06	13	63	P4_IDO06		
P0_IDO07	14	64	P4_IDO07		
P1_IDO00	15	65	P5_IDO00		
P1_IDO01	16	66	P5_IDO01		
P1_IDO02	17	67	P5_IDO02		
P1_IDO03	18	68	P5_IDO03		
P1_IDO04	19	69	P5_IDO04		
P1_IDO05	20	70	P5_IDO05		
P1_IDO06	21	71	P5_IDO06		
P1_IDO07	22	72	P5_IDO07		
P01_COMP	23	73	P45_COMP		
P01_COMP	24	74	P45_COMP		
NC	25	75	NC		
NC	26	76	NC		
P23_COMM	27	77	P67_COMM		
P23_COMM	28	78	P67_COMM		
P23_COMM	29	79	P67_COMM		
P23_COMM	30	80	P67_COMM		
P23_COMM	31	81	P67_COMM		
P23_COMM	32	82	P67_COMM		
P2_IDO00	33	83	P6_IDO00		
P2_IDO01	34	84	P6_IDO01		
P2_IDO02	35	85	P6_IDO02		
P2_IDO03	36	86	P6_IDO03		
P2_IDO04	37	87	P6_IDO04		
P2_IDO05	38	88	P6_IDO05		
P2_IDO06	39	89	P6_IDO06		
P2_IDO07	40	90	P6_IDO07		
P3_IDO00	41	91	P7_IDO00		
P3_IDO01	42	92	P7_IDO01		
P3_IDO02	43	93	P7_IDO02		
P3_IDO03	44	94	P7_IDO03		
P3_IDO04	45	95	P7_IDO04		
P3_IDO05	46	96	P7_IDO05		
P3_IDO06	47	97	P7_IDO06		
P3_IDO07	48	98	P7_IDO07		
P23_COMP	49	99	P67_COMP		
P23_COMP	50	100	P67_COMP		

Signal Connections

Isolated Digital Output Connections

PCI-1758UDO has 128 isolated digital output channels designated

P0_IDO00~7, P1_IDO00~7, P2_IDO00~7,
P3_IDO00~7, P4_IDO00~7, P5_IDO00~7,
P6_IDO00~7, P7_IDO00~7. P8_IDO00~7,
P9_IDO00~7, PA_IDO00~7, PB_IDO00~7,
PC_IDO00~7, PD_IDO00~7, PE_IDO00~7, and
PF_IDO00~7.

Power On Configuration

The default configuration will be set after power is turned on. The hardware reset sets all the isolated output channels to "off" status (The current of the load can not be sink mode). So you do not need to worry about damaging external devices during system startup or reset. When the system is hot reset, the status of the isolated digital output channels can be selected by jumper JP1. The following table shows the configuration of jumper JP1.

JP1 on PCI-1758UDO	Power on configuration after hot reset
1 2 3 ○ ● ●	Keep the last digital output status after hot reset
1 2 3 ● ● ○	Load default configuration while reset (default)

Isolated Output

Each of the isolated output channels is equipped with a Darlington transistor. All of the 16 output channels shares common collectors and integral suppression diodes for induction coil loads.

Note: If an external voltage (5 ~ 40 V_{DC}) is applied to an isolated output channel while it is being used as an output channel, the current will flow from the external voltage source to the card. Please be cautious about that the current flowing through each IDO pin can not exceed 90 mA.