

# PCI-1752USO

## 64-channel Isolated Digital Output Card

### Packing List

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

- PCI-1752USO 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-1752USO User Manual on the CD-ROM (PDF format).

### 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-1752USO offers 64 isolated output channels. With isolation protection of 2,500 V<sub>DC</sub>, the PCI-1752USO is ideal for industrial applications where high voltage protection is required.

### Specifications

#### Isolated Digital Output

|                             |                     |
|-----------------------------|---------------------|
| Number of Channels          | 64                  |
| Optical Isolation           | 2,500 VDC           |
| Opto-isolator response time | 100 $\mu$ s*        |
| Supply Voltage              | 5 to 40 VDC         |
| Source Current              | 200 mA max./channel |

#### General

|                    |   |
|--------------------|---|
| I/O Connector Type | 100-pin SCSI-II female  |
| Dimensions         | 175 mm x 100 mm ( 6.8" x 3.9" )                                     |
| Power Consumption  | +5V @ 230 mA(typical)<br>+5v @ 500 mA(max.)                         |
| Temperature        | Operation 0 ~ +60°C (32~ 140°F )<br>Storage -20 ~ 70°C (-4 ~ 158°F) |
| Relative Humidity  | 5 ~ 95% RH non-condensing<br>(refer to IEC 60068-2-3)               |
| Certification      | CE Class A certified  |

\*Response time depends on the computer hardware architecture and software environment. The rates may vary due to programming language, code efficiency, CPU utilization and so on.

### Notes

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

<http://www.advantech.com>

For technical support and service:

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

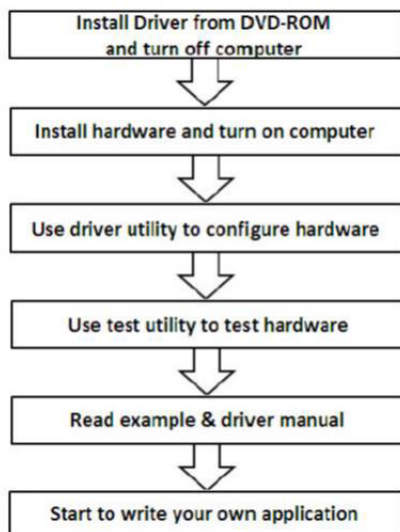
This startup manual is for PCI-1752USO

Part No: 2003175220

1st Edition

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## 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. Adjust DIP switch SW1 on board to set the card's board ID.
6. Insert the PCI-1752USO 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.
7. Fasten the bracket of the PCI card on the back panel rail of the computer with screws.
8. Connect appropriate accessories (100-pin cable, wiring terminals, etc. if necessary) to the PCI card.
9. Replace the cover of your computer chassis. Re-connect the cables you removed in step 2.
10. Plug in the power cord and turn on the computer.

## PIN Assignments

IDO00 ~ IDO15 : Isolated digital output of Group0

IDO16 ~ IDO31 : Isolated digital output of Group1

IDO32 ~ IDO47 : Isolated digital output of Group2

IDO48 ~ IDO63 : Isolated digital output of Group3

PCOM0 : Common pin for IDO00~IDO15 for inductive loads

PCOM1 : Common pin for IDO16~IDO31 for inductive loads

PCOM2 : Common pin for IDO32~IDO47 for inductive loads

PCOM3 : Common pin for IDO48~IDO63 for inductive loads

IGND : Isolated ground

CH\_FRZ\_IN : Channel-Freeze function input pin

CH\_FRZ\_COM : Common pin for Channel-Freeze function input

### I/O Connector Signal Description

| PIN Name   | Reference  | Direction | Description                                    |
|------------|------------|-----------|--|
| IDO<00~15> | PCOM0      | Output    | Isolated digital output of group 0             |
| IDO<16~31> | PCOM1      | Output    | Isolated digital output of group 1             |
| IDO<32~47> | PCOM2      | Output    | Isolated digital output of group 2             |
| IDO<48~63> | PCOM3      | Output    | Isolated digital output of group 3             |
| PCOM0      | -          | Output    | Common pin for IDO00~IDO15 for inductive loads |
| PCOM1      | -          | Output    | Common pin for IDO16~IDO31 for inductive loads |
| PCOM2      | -          | Output    | Common pin for IDO32~IDO47 for inductive loads |
| PCOM3      | -          | Output    | Common pin for IDO48~IDO63 for inductive loads |
| IGND       | -          | -         | Isolated ground                                |
| CH_FRZ_IN  | CH_FRZ_COM | Input     | Channel-Freeze function input pin              |
| CH_FRZ_COM | -          | Input     | Common pin for Channel-Freeze function input   |

|           |    |     |            |
|-----------|----|-----|------------|
| IDO00     | 1  | 51  | IDO01      |
| IDO02     | 2  | 52  | IDO03      |
| IDO04     | 3  | 53  | IDO05      |
| IDO06     | 4  | 54  | IDO07      |
| IDO08     | 5  | 55  | IDO09      |
| IDO10     | 6  | 56  | IDO11      |
| IDO12     | 7  | 57  | IDO13      |
| IDO14     | 8  | 58  | IDO15      |
| PCOM0     | 9  | 59  | PCOM0      |
| PCOM0     | 10 | 60  | PCOM0      |
| IGND      | 11 | 61  | IGND       |
| IGND      | 12 | 62  | IGND       |
| IDO16     | 13 | 63  | IDO17      |
| IDO18     | 14 | 64  | IDO19      |
| IDO20     | 15 | 65  | IDO21      |
| IDO22     | 16 | 66  | IDO23      |
| IDO24     | 17 | 67  | IDO25      |
| IDO26     | 18 | 68  | IDO27      |
| IDO28     | 19 | 69  | IDO29      |
| IDO30     | 20 | 70  | IDO31      |
| PCOM1     | 21 | 71  | PCOM1      |
| PCOM1     | 22 | 72  | PCOM1      |
| IGND      | 23 | 73  | IGND       |
| IGND      | 24 | 74  | IGND       |
| CH_FRZ_IN | 25 | 75  | CH_FRZ_COM |
| IDO32     | 26 | 76  | IDO33      |
| IDO34     | 27 | 77  | IDO35      |
| IDO36     | 28 | 78  | IDO37      |
| IDO38     | 29 | 79  | IDO39      |
| IDO40     | 30 | 80  | IDO41      |
| IDO42     | 31 | 81  | IDO43      |
| IDO44     | 32 | 82  | IDO45      |
| IDO46     | 33 | 83  | IDO47      |
| PCOM2     | 34 | 84  | PCOM2      |
| PCOM2     | 35 | 85  | PCOM2      |
| IGND      | 36 | 86  | IGND       |
| IGND      | 37 | 87  | IGND       |
| IDO48     | 38 | 88  | IDO49      |
| IDO50     | 39 | 89  | IDO51      |
| IDO52     | 40 | 90  | IDO53      |
| IDO54     | 41 | 91  | IDO55      |
| IDO56     | 42 | 92  | IDO57      |
| IDO58     | 43 | 93  | IDO59      |
| IDO60     | 44 | 94  | IDO61      |
| IDO62     | 45 | 95  | IDO63      |
| PCOM3     | 46 | 96  | PCOM3      |
| PCOM3     | 47 | 97  | PCOM3      |
| IGND      | 48 | 98  | IGND       |
| IGND      | 49 | 99  | IGND       |
| CH_FRZ_IN | 50 | 100 | CH_FRZ_COM |



## Connections

### Isolated Digital Output Connections

The PCI-1752USO has 64 isolated digital output channels designated IDO00~IDO63.

#### Power On Configuration

Default configuration after power on, and hardware reset is to set all the isolated output channels to open status (the current of the load can't be sink) so that users need not worry about damaging external devices during system startup or reset. When the system is hot reset, then the status of isolated digital output channels are selected by jumper JP1. The following table shows the configuration of jumper JP1.

| JP1   | Power on configuration after hot reset |
|---|--|
|  | Keep last status after hot reset       |
|  | Default configuration                  |

### Isolated Outputs

Each of isolated output channels comes equipped with a MOSFET, polyswitch (for current protection) and integral suppression diodes for inductive loads.

Note: If an external voltage (5 ~ 40 VDC) 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. Take care that the current through each IDO pin not exceed 200 mA.

