



PIO-D24U

Universal PCI, 24-ch Digital I/O Board

PIO-D56U

Universal PCI, 56-ch Digital I/O Board

Introduction

The PIO-D24U/D56U cards are designed to be fully compatible with PIO-D24/D56 boards. The PIO-D24U/D56U series can be used as a direct replacement for PIO-D24/D56 boards without requiring any modification to the software or the driver.

The PIO-D24U/D56U supports the 3.3 V/5 V PCI bus, and contains three 8-bit bi-directional I/O ports, referred to as Port A (PA), Port B (PB) and Port C (PC), respectively. Each port is configured as an input on power-up or after a reset. In addition, the PIO-D56U also provides 16 Digital Input channels and 16 Digital Output channels.

The PIO-D24U/D56U cards also include an onboard Card ID switch that enables the board to be recognized via software if two or more boards are installed in the same computer.

Pin Assignments

| Pin Assignment | Terminal No. | Pin Assignment | Pin Assignment | Terminal No. | Pin Assignment |
|----------------|--------------|----------------|----------------|----------------------|----------------|
| N.C | 01 | 20 | +5 V | DI 0 | 01 |
| N.C | 02 | 21 | GND | DI 2 | 03 |
| PB_7 | 03 | 22 | PC_7 | DI 4 | 05 |
| PB_6 | 04 | 23 | PC_6 | DI 6 | 07 |
| PB_5 | 05 | 24 | PC_5 | DI 8 | 09 |
| PB_4 | 06 | 25 | PC_4 | DI 10 | 11 |
| PB_3 | 07 | 26 | PC_3 | DI 12 | 13 |
| PB_2 | 08 | 27 | PC_2 | DI 14 | 15 |
| PB_1 | 09 | 28 | PC_1 | GND | 17 |
| PB_0 | 10 | 29 | PC_0 | +5 V | 19 |
| GND | 11 | 30 | PA_7 | CON2 (PIO-D56U only) | |
| N.C | 12 | 31 | PA_6 | Pin Assignment | Terminal No. |
| GND | 13 | 32 | PA_5 | DO 0 | 01 |
| N.C | 14 | 33 | PA_4 | DO 2 | 03 |
| GND | 15 | 34 | PA_3 | DO 4 | 05 |
| N.C | 16 | 35 | PA_2 | DO 6 | 07 |
| GND | 17 | 36 | PA_1 | DO 8 | 09 |
| +5 V | 18 | 37 | PA_0 | DO 10 | 10 |
| GND | 19 | | | DO 12 | 12 |
| | | | | DO 14 | 14 |
| | | | | DO 16 | 16 |
| | | | | DO 18 | 18 |
| | | | | DO 20 | 20 |
| | | | | GND | 18 |
| | | | | +5 V | 18 |
| | | | | | 20 |

Features

- Universal PCI (3.3 V/5 V) Interface
- 24/56 Buffered TTL Digital I/O Lines
- Three 8-bit Bi-directional Programmable I/O Ports
- Emulates two Industrial-standard 8255 PPI Ports (Mode 0)
- 4-channel Interrupt Source
- Supports Card ID (SMD Switch)
- Supports DO Status Readback (Register Level)
- DI/O Response Time approximately 1 μ s (1 MHz)



Software

Drivers

- 32/64-bit Windows 10/11
- Linux
- DASyLab

Sample Programs

- DOS Lib and TC/BC/MSX Demo
- VB/VC/Delphi/VB.NET/C#.NET/VC.NET/LabVIEW/Python/MATLAB

Hardware Specifications

| Model | PIO-D24U | PIO-D56U |
|-------------------------|--|--|
| Programmable DIO | | |
| Channels | 24 | |
| Digital Input | | |
| Channels | - | 16 |
| Compatibility | 5V/TTL | |
| Input Voltage | Logic 0: 0.8 V Max. Logic 1: 2.0 V Min. | |
| Response Speed | 1 MHz | |
| Digital Output | | |
| Channels | - | 16 |
| Compatibility | 5V/TTL | |
| Output Voltage | Logic 0: 0.4 V Max. Logic 1: 2.4 V Min. | |
| Output Capability | Sink: 64 mA @ 0.8 V Source: 32 mA @ 2.0 V | CN1 Sink: 2.4 mA @ 0.8 V Source: 0.8 mA @ 2.0 V CN3 Sink: 64 mA @ 0.8 V Source: 32 mA @ 2.0 V |
| Response Speed | 1 MHz | |
| General | | |
| Bus Type | 3.3 V/5 V Universal PCI, 32-bit, 33 MHz | |
| Card ID | Yes (4-bit) | |
| Connectors | Female DB37 x 1 | Female DB37 x 1, 20-pin Male Box Header x 2 |
| Power Consumption | 420 mA @ +5 V | 580 mA @ +5 V |
| Operating Temperature | 0°C to +60°C | |
| Humidity | 5 to 85% RH, Non-condensing | |

Ordering Information

| | |
|--------------------|---|
| PIO-D24U CR | Universal PCI, 24-ch Digital I/O Board (RoHS) |
| PIO-D56U CR | Universal PCI, 56-ch Digital I/O Board (RoHS) |

Accessories

| | | |
|---|--------------------|--|
|  | CA-2010 CR | 20-pin flat cable, 1 M (RoHS) |
|  | CA-2020 CR | 20-pin flat cable, 2 M (RoHS) |
|  | CA-3710 CR | DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°)) (RoHS) |
|  | CA-3710D CR | DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°)) (RoHS) |
|  | CA-3715DM-H CR | DB-37 Male-Male Cable, 1.5 M, 180° (RoHS) |
|  | CA-3730DM-H CR | DB-37 Male-Male Cable, 3.0 M, 180° (RoHS) |
|  | CA-3750DM CR | DB-37 Male-Male Cable, 5.0 M, 180° (RoHS) |
|  | CA-4002 CR | 37-pin Male D-sub connector with plastic cover (RoHS) |
|  | DB-24PD CR | 24-channel of isolated D/I board (RoHS) |
|  | DB-24RD CR | 24-channel of relay board (RoHS) |
|  | DB-24PRD CR | 24-channel of power relay board (RoHS) |
|  | DB-24POR CR | 24-channel of PhotoMos Relay output board (RoHS) |
|  | DB-24SSR CR | 24-channel Photo Mos relay output board (RoHS) |
|  | DB-24C CR | 24-channel of open-collector output board (RoHS) |
|  | DN-20/DN-20-381 CR | I/O Connector Block with DIN-Rail Mounting and two 20-Pin Header (RoHS) |
|  | DN-37/DN-37-381 CR | I/O Connector Block with DIN-Rail Mounting and 37-Pin D-Sub Connector (RoHS) |

