

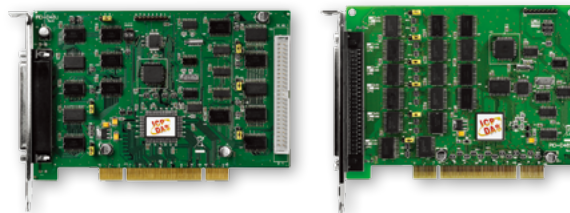
# PIO-D48U/PIO-D48SU

Universal PCI, 48-channel Digital I/O Board



PIO-D48U

PIO-D48SU



## Features

- Universal PCI (3.3 V/5 V) Interface, Plug & Play
- 48 Buffered TTL Digital I/O Lines
- Six 8-bit Bi-directional Programmable I/O Ports
- Emulates two Industrial-standard 8255 PPI Ports (Mode 0)
- All I/O Lines Buffered on the Board
- 4-channel Interrupt Source
- Buffer Output for Higher Driving Capability
- Supports Card ID (SMD Switch)
- Supports DO Status Readback (Register Level)
- DI/O Response Time is about 1  $\mu$ s (1 MHz)

## Introduction

The PIO-D48U/D48SU card is designed to be fully compatible with the PIO-D48, meaning that a PIO-D48 card can be directly replaced with a PIO-D48U/D48SU without requiring any modification to the software or the driver.

The PIO-D48U provides two connectors for I/O wiring, while the PIO-D48SU provides a single high-density connector that reduces the amount of installation space required for the card in the computer.

The PIO-D48U/D48SU supports the 3.3 V/5 V PCI bus, and provides 48 TTL Digital I/O lines that are grouped into six 8-bit bi-directional ports. Each group of three 8-bit ports is arranged on the connector as Port A (PA), Port B (PB) and Port C (PC), and Port C can be split into two nibble-wide (4-bit) parts. All ports are configured as inputs on power-up or after a reset.

The PIO-D48U/D48SU card also includes an onboard Card ID switch and pull-high/low resistors for the Digital Input. The Card ID switch can be set so that the board is able to be recognized via software if two or more boards are installed in the same computer. The pull-high/pull-low resistors allow the DI status to be predefined as either high or low instead of remaining floating if the DI channels are disconnected or interrupted.

## Hardware Specifications

Model	PIO-D48U	PIO-D48SU
<b>Programmable DIO</b>		
Channels	48	
<b>Digital Input</b>		
Compatibility	5 V/TTL	
Input Voltage	Logic 0: 0.8 V Max.; Logic 1: 2.0 V Min.	
Response Speed	1 MHz	
<b>Digital Output</b>		
Compatibility	5 V/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	
Response Speed	1 MHz	
<b>Timer/Counter</b>		
Channels	2 (Event timer x1/ 32-bit Timer x1)	
Resolution	16-bit	
Reference Clock	Internal: 4 MHz	
<b>General</b>		
Bus Type	3.3 V/5 V Universal PCI, 32-bit, 33 MHz	
Card ID	Yes (4-bit)	
Connectors	Female DB37 x 1 50-pin Box Header x 1	Female SCSI II 100-pin x 1
Power Consumption	900 mA @ +5 V	
Operating Temperature	0°C to +60°C	
Humidity	5 to 85% RH, Non-condensing	

## Ordering Information

PIO-D48U CR	Universal PCI, 48-channel Digital I/O Board (RoHS).
PIO-D48SU CR	Universal PCI, 48-channel Digital I/O Board (SCSI II Connector, RoHS).

## Software

### Drivers

- 32/64-bit Windows XP/2003/2008/Vista/7/8
- Linux
- DASYLab

### Sample Programs

- DOS Lib and TC Demo
- LabVIEW Toolkit
- VB/VC/Delphi/BCB/MATLAB Demo
- VB.NET/C#.NET/VC.NET Demo

## Pin Assignments

PIO-D48U			PIO-D48SU					
Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment			
N.C.	01	20	+5 V	PA_00	01	51	PA_10	
N.C.	02	21	GND	PA_01	02	52	PA_11	
PB_7	03	22	PC_7	PA_02	03	53	PA_12	
PB_6	04	23	PC_6	PA_03	04	54	PA_13	
PB_5	05	24	PC_5	PA_04	05	55	PA_14	
PB_4	06	25	PC_4	PA_05	06	56	PA_15	
PB_3	07	26	PC_3	PA_06	07	57	PA_16	
PB_2	08	27	PC_2	PA_07	08	58	PA_17	
PB_1	09	28	PC_1	PB_00	09	59	PB_10	
PB_0	10	29	PC_0	PB_01	10	60	PB_11	
GND	11	30	PA_7	PB_02	11	61	PB_12	
N.C.	12	31	PA_6	PB_03	12	62	PB_13	
GND	13	32	PA_5	PB_04	13	63	PB_14	
N.C.	14	33	PA_4	PB_05	14	64	PB_15	
GND	15	34	PA_3	PB_06	15	65	PB_16	
N.C.	16	35	PA_2	PB_07	16	66	PB_17	
GND	17	36	PA_1	PC_00	17	67	PC_10	
+5 V	18	37	PA_0	PC_01	18	68	PC_11	
GND	19			PC_02	19	69	PC_12	
				PC_03	20	70	PC_13	
				PC_04	21	71	PC_14	
				PC_05	22	72	PC_15	
				PC_06	23	73	PC_16	
				PC_07	24	74	PC_17	
				GND	25	75	GND	
					26	76		
					27	77		
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