



## PIO-D144U/PIO-D144LU

Universal PCI, 144-ch Digital I/O Board

## PIO-D168U

Universal PCI, 168-ch Digital I/O Board

### Introduction

The PIO-D144U/D144LU/D168U cards are designed as direct replacements for PIO-D144/D168 cards without requiring any modification to the software or the driver.

The PIO-D144U/D144LU/D168U Universal PCI cards support the 3.3 V/5 V PCI bus, and provide 144/168 TTL Digital I/O lines that are grouped into 18/21 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), respectively, and all ports are configured as inputs Channels on power-up or after a reset.

The PIO-D144U uses 5V/TTL to provide high DO driving capability. The PIO-D144LU uses 5V/CMOS to provide low power consumption and producing less heat.

The PIO-D144U/D144LU/D168U 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
N.C	01	
N.C	02	
PB_7	03	20
PB_6	04	21
PB_5	05	22
PB_4	06	23
PB_3	07	24
PB_2	08	25
PB_1	09	26
PB_0	10	27
GND	11	28
N.C	12	29
GND	13	30
N.C	14	31
GND	15	32
N.C	16	33
GND	17	34
+5 V	18	35
GND	19	36
		37

CON1

### Features

- Universal PCI (3.3 V/5 V) Interface
- 144/168 Digital I/O Channels
- 18/21 8-bit Bi-directional Programmable I/O Ports
- Emulates 6/7 Industrial-standard 8255 PPI Ports (Mode 0)
- All I/O Lines Buffered on the Board
- 4-channel Interrupt Source
- Supports Card ID (SMD Switch)
- Supports DO Status Readback (Register Level)
- DI/O Response Time approximately 1  $\mu$ s (1 MHz)



### Software

#### Drivers

- 32/64-bit Windows XP/2003/2008/7/8/10
- Linux  DASYLab

#### Sample Programs

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

Pin Assignment	Terminal No.	Pin Assignment
PC_7	01	02
PC_6	03	04
PC_5	05	06
PC_4	07	08
PC_3	09	10
PC_2	11	12
PC_1	13	14
PC_0	15	16
PB_7	17	18
PB_6	19	20
PB_5	21	22
PB_4	23	24
PB_3	25	26
PB_2	27	28
PB_1	29	30
PB_0	31	32
PB_1	33	34
PB_2	35	36
PB_3	37	38
PB_4	39	40
PB_3	41	42
PB_2	43	44
PB_1	45	46
PB_0	47	48
+5 V	49	50

CN2/CN3/CN4/CN5/CN6  
CN7 (for PIO-D168U only)











## Hardware Specifications











Models	PIO-D144LU	PIO-D144U	PIO-D168U
<b>Hardware</b>			
Card ID	Yes (4-bit)		
Connector	Female DB37 x 1 50-pin box header x 5	Female DB37 x 1 50-pin box header x 6	
<b>Digital Input</b>			
Channels	144 (Bi-Direction)	168 (Bi-Direction)	
Type	5 V/CMOS		
TTL Input, ON Voltage Level	2.0 V Min.		
TTL Input, OFF Voltage Level	0.8 V Max.		
Response Speed	500 kHz (Typical)		
Trigger Mode	Static Update		
<b>Digital Output</b>			
Channels	144 (Bi-Direction)	168 (Bi-Direction)	
Type	5 V/CMOS		
Operation Mode	Static Update		
Voltage	Logic 0: 0.1 V Max. Logic 1: 4.4 V Min.		
Max. Load Current	Sink: 6 mA @ 0.33 V Source: 6 mA @ 4.77 V		
Response Speed	500 kHz (Typical)		
<b>PC Bus</b>			
Type	3.3 V/5 V Universal PCI, 32-bit, 33 MHz		
Data Bus	8-bit		
<b>Power</b>			
Consumption	250 mA @ +5 V	600 mA @ +5 V	1300 mA @ +5 V
<b>Mechanical</b>			
Dimensions (mm)	105 x 180 x 22 (W x L x D)	105 x 200 x 22 (W x L x D)	
<b>Environmental</b>			
Operating Temperature	0 ~ +60°C		
Storage Temperature	-20 ~ +70°C		
Humidity	5 ~ 85% RH, Non-condensing		

## Ordering Information

<b>PIO-D144U CR</b>	Universal PCI, 144-ch Digital I/O Board (RoHS)
<b>PIO-D144LU CR</b>	Universal PCI, 144-ch Digital I/O Board (RoHS)
<b>PIO-D168U CR</b>	Universal PCI, 168-ch Digital I/O Board (RoHS)

## Accessories

	CA-3710	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°))
	CA-3710D	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°))
	CA-3715DM-H	DB-37 Male-Male Cable, 1.5 M, 180°. (RoHS)
	CA-3730DM-H	DB-37 Male-Male Cable, 3.0 M, 180°. (RoHS)
	CA-3750DM	DB-37 Male-Male Cable, 5.0 M, 180°. (RoHS)
	CA-4002	37-pin Male D-sub connector with plastic cover.
	CA-5002	50-pin flat cable 20 cm
	CA-5015	50-pin flat cable 1.5 M
	CA-SCSI100-15	SCSI II 100-pin & 100-pin Male connector cable 1.5 M
	ADP-37/PCI	50-pin connector extender to 37-pin connector

	DB-24PD	24-channel of isolated D/I board
	DB-24RD	24-channel of relay board
	DB-24PRD	24-channel of power relay board
	DB-24POR	24-channel of PhotoMos Relay output board
	DB-24SSR	24-channel Photo Mos relay output board
	DB-24C	24-channel of open-collector output board
	DN-100	I/O Connector Block with DIN-Rail Mounting and 100-Pin SCSI II Connector
	DN-100-CA	I/O Connector Block with DIN-Rail Mounting and 100-Pin SCSI II Connector Include one CA-SCSI100-15 cable
	DN-37/DN-37-381	I/O Connector Block with DIN-Rail Mounting and 37-Pin D-Sub Connector
	DN-50/DN-50-381	I/O Connector Block with DIN-Rail Mounting and 50-Pin Header

