PIO-D144U/PIO-D144LU

PIO-D168U

PIO-D144U/PIO-D144LU

Universal PCI, 144-ch Digital I/O Board

PIO-D168U

Universal PCI, 168-ch Digital I/O Board

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 µs (1 MHz)

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.

Software

Drivers

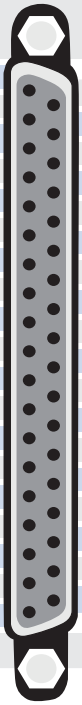
- ☑ 32/64-bit Windows XP/2003/2008/7/8/10
- ☑ Linux
- ☑ DASYLab

Sample Programs

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

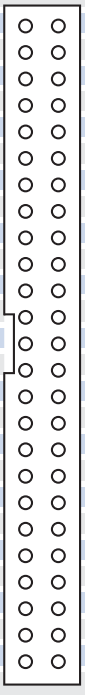
Pin Assignments

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



CON1

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



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

Hardware Specifications

Models	PIO-D144LU	PIO-D144U	PIO-D168U
Hardware			
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
Digital Input			
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		
Digital Output			
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)		
PC Bus			
Type	3.3 V/5 V Universal PCI, 32-bit, 33 MHz		
Data Bus	8-bit		
Power			
Consumption	250 mA @ +5 V	600 mA @ +5 V	1300 mA @ +5 V
Mechanical			
Dimensions (mm)	105 x 180 x 22 (W x L x D)		105 x 200 x 22 (W x L x D)
Environmental			
Operating Temperature	0 ~ +60°C		
Storage Temperature	-20 ~ +70°C		
Humidity	5 ~ 85% RH, Non-condensing		

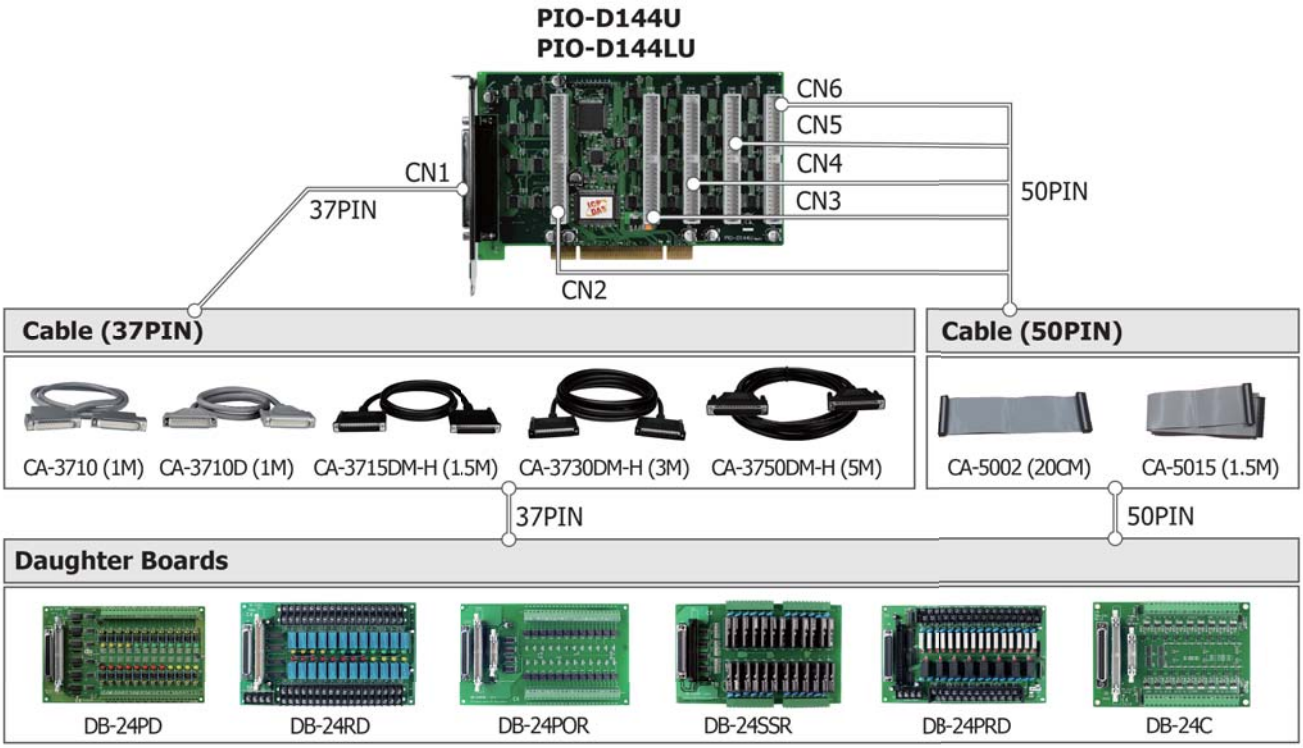
Ordering Information

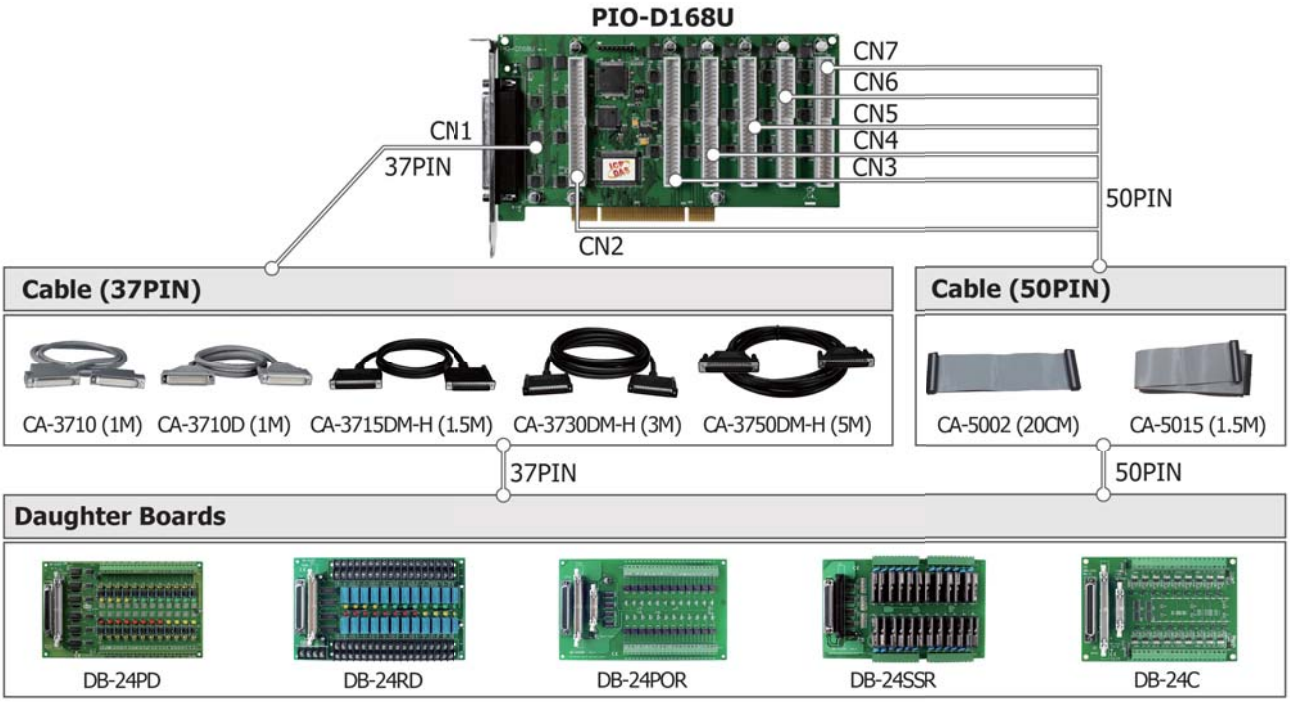
PIO-D144U CR	Universal PCI, 144-ch Digital I/O Board (RoHS)
PIO-D144LU CR	Universal PCI, 144-ch Digital I/O Board (RoHS)
PIO-D168U CR	Universal PCI, 168-ch Digital I/O Board (RoHS)

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.

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
CA-5002	50-pin flat cable 20 cm
CA-5015	50-pin flat cable 1.5 M


PIO-D144U
PIO-D144LU
CN6
CN5
CN4
CN3
CN1
37PIN
50PIN
CN2
Cable (37PIN)
Cable (50PIN)
CA-3710 (1M)
CA-3710D (1M)
CA-3715DM-H (1.5M)
CA-3730DM-H (3M)
CA-3750DM-H (5M)
CA-5002 (20CM)
CA-5015 (1.5M)
37PIN
50PIN
Daughter Boards
DB-24PD
DB-24RD
DB-24POR
DB-24SSR
DB-24PRD
DB-24C


PIO-D168U
CN7
CN6
CN5
CN4
CN3
CN1
37PIN
50PIN
CN2
Cable (37PIN)
Cable (50PIN)
CA-3710 (1M)
CA-3710D (1M)
CA-3715DM-H (1.5M)
CA-3730DM-H (3M)
CA-3750DM-H (5M)
CA-5002 (20CM)
CA-5015 (1.5M)
37PIN
50PIN
Daughter Boards
DB-24PD
DB-24RD
DB-24POR
DB-24SSR
DB-24C