



Making Data Acquisition Easy

CAGE/NCAGE CODE: 3FNFO

PIO-D48U

Universal PCI Board with 48 Digital I/O channels, OPTO-22 Compatible

Quick Start Guide

Product Website:

https://www.icpdas-usa.com/pio_d48u.html

Introduction

The PIO-D48U is the new generation product that ICP DAS provides to meet RoHS compliance requirement and is designed as completely compatible with the PIO-D48. Users can replace the PIO-D48 by the PIO-D48U directly without software/driver modification.

The PIO-D48U supports 3.3 V/5 V PCI bus, while the PEX-D48 supports PCI Express bus. These cards provide 48 TTL digital I/O lines, and these lines are grouped into six 8-bit bi-direction ports. Every three 8-bit ports are grouped as port A (PA), port B (PB) and port C (PC) on a connector, and the port C can be split into 2 nibble-wide(4-bit) parts. All ports are configured as inputs upon power-up or reset.

The PIO-D48U also adds a Card ID switch and pull-high/ pull-low resistors for DI on board. Users can set Card ID on a board and recognize the board by the ID via software when using two or more PIO-D48U cards in one computer. The pull-high/ pull-low resistors allow the DI status to be specified when the DI channels are unconnected; the DI status will remain in high or low status other than floating.

The PIO-D48/D48U supports various OS such as Linux, DOS, Windows 98, Windows 2000, Windows NT, Windows XP 32-Bit, Vista 32-Bit and 32-bit Windows 7. It also provides the DLL and Active X control, and various language sample programs in Turbo C++, Borland c++, Microsoft C++, Visual C++, Borland Delphi, Borland C++ Builder, Visual Basic, C#.NET, Visual Basic.NET and LabVIEW to help users to quickly and easily develop their applications.

1

What's in the shipping package?

The package includes the following items:



PIO-D48U /



PIO-D48SU /



PEX-D48

Software Utility CD
(V5.2 or later)Quick Start Guide
(This Document)

2

Installing Windows Driver

Step 1: Setup the Windows driver. The driver is located at:

- The UniDAQ driver supports 32-/64-bit Windows 2K/XP/2003/Vista/7/8; it is recommended to install this driver for new user:

CD: \NAPDOS\PCI\UniDAQ\DLL\Driver

<http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/unidaq/dll/driver/>

Step 2: Click the "Next>" button to start the installation.

Step 3: Check your DAQ Card is or not on supported list, then click the "Next>" button.

Step 4: Select the installed folder, the default path is C:\ICPDAS\UniDAQ, confirm and click the "Next>" button.

Step 5: Check your DAQ Card on list, then click the "Next>" button.

Step 6: Click the "Next>" button on the Select Additional Tasks window.

Step 7: Click the "Next>" button on the Download Information window.

Step 8: Select "No, I will restart my computer later" and then click the "Finish" button.

For detailed information about the driver installation, please refer to Chapter 4 "Software Installation" of the user manual.



3

Installing Hardware on PC

Step 1: Shut down and power off your computer.

Step 2: Remove the cover from the computer.

Step 3: Select an unused PCI/PCI Express slot.

Step 4: Carefully insert your I/O card into the PCI/PCI Express slot.

Step 5: Replace the PC cover.

Step 6: Power on the computer.

After powering-on the computer, please finish the Plug&Play steps according to the prompted messages.

For detailed information about the driver installation, please refer to Chapter 3 "Hardware Installation" of the user manual.

4 Pin Assignments

PIO-D48SU:
 PA00-07: Port 0 PA10-17: Port 3
 PB00-07: Port 1 PB10-17: Port 4
 PC00-07: Port 2 PC10-17: Port 5

PIO-D48U/PEX-D48:
 CN1_PA0-7: Port 0 CN2_PA0-7: Port 3
 CN1_PB0-7: Port 1 CN2_PB0-7: Port 4
 CN1_PC0-7: Port 2 CN2_PC0-7: Port 5

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

Female DB37 (CN1)

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
PA_7	33	34 GND
PA_6	35	36 GND
PA_5	37	38 GND
PA_4	39	40 GND
PA_3	41	42 GND
PA_2	43	44 GND
PA_1	45	46 GND
PA_0	47	48 GND
+5V	49	50 GND

50-pin box header (CN2)

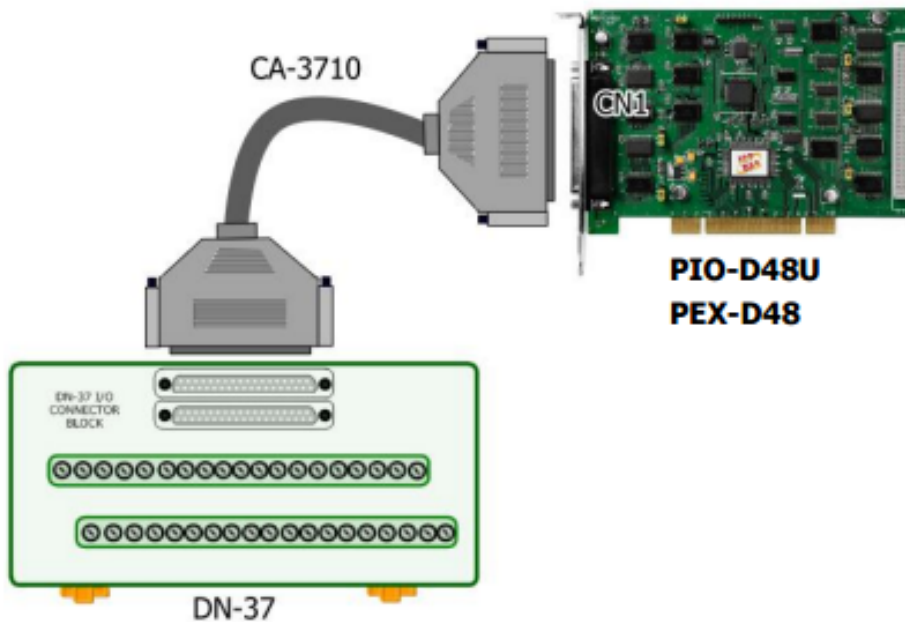
Pin Assignment	Terminal No.	Pin Assignment
PA_00	01	51 PA_10
PA_01	02	52 PA_11
PA_02	03	53 PA_12
PA_03	04	54 PA_13
PA_04	05	55 PA_14
PA_05	06	56 PA_15
PA_06	07	57 PA_16
PA_07	08	58 PA_17
PB_00	09	59 PB_10
PB_01	10	60 PB_11
PB_02	11	61 PB_12
PB_03	12	62 PB_13
PB_04	13	63 PB_14
PB_05	14	64 PB_15
PB_06	15	65 PB_16
PB_07	16	66 PB_17
PC_00	17	67 PC_10
PC_01	18	68 PC_11
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 -
-	28	78 -
-	29	79 -
-	30	80 -
-	31	81 -
-	32	82 -
-	33	83 -
-	34	84 -
-	35	85 -
-	36	86 -
-	37	87 -
-	38	88 -
-	39	89 -
-	40	90 -
-	41	91 -
-	42	92 -
-	43	93 -
-	44	94 -
-	45	95 -
-	46	96 -
-	47	97 -
-	48	98 -
-	49	99 -
+5V	50	100 +5V

Female SCSI 100-pin (CON1)

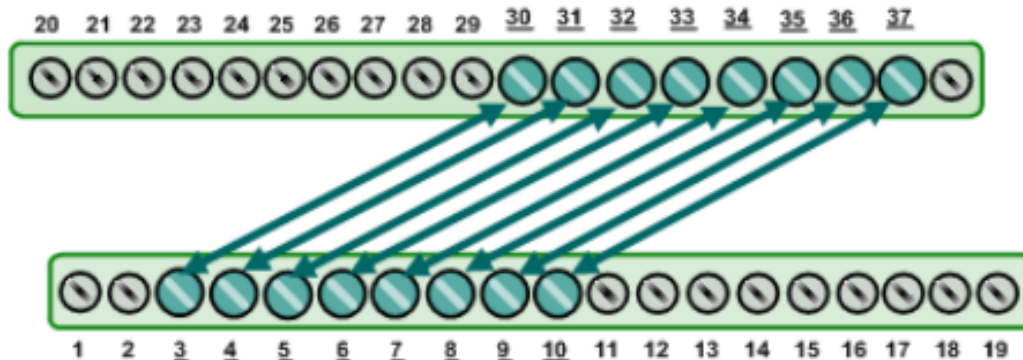
5 Self-Test

- Self-test wiring of the PIO-D48U and PEX-D48 as follows:

1. Use the DN-37 (optional) to connect the CN1 on the board.

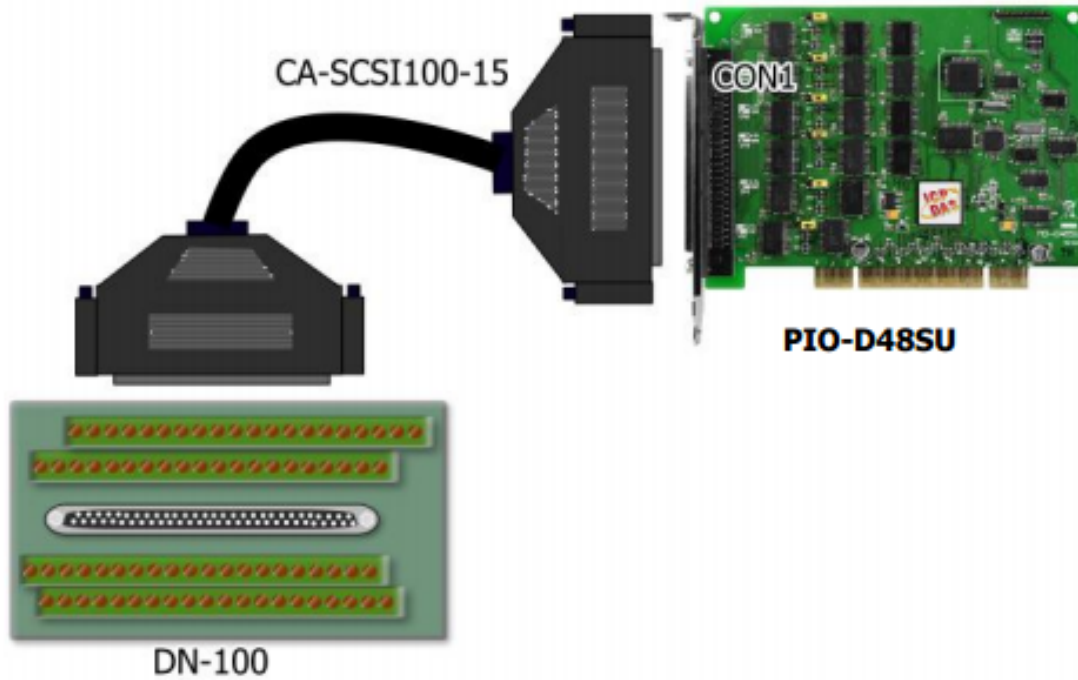


2. Connect the Port0 (PA0~PA7) with Port1 (PB0~PB7).

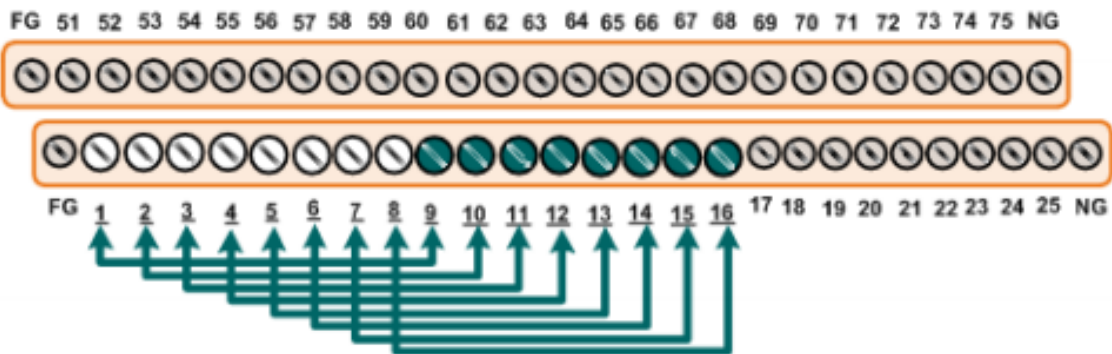


■ **Self-test wiring of the PIO-D48SU as follows:**

1. Use the DN-100 (optional) to connect the CON1 on the board.



2. Connect the Port0 (PA00~PA07) with Port1(PB00~PB07).



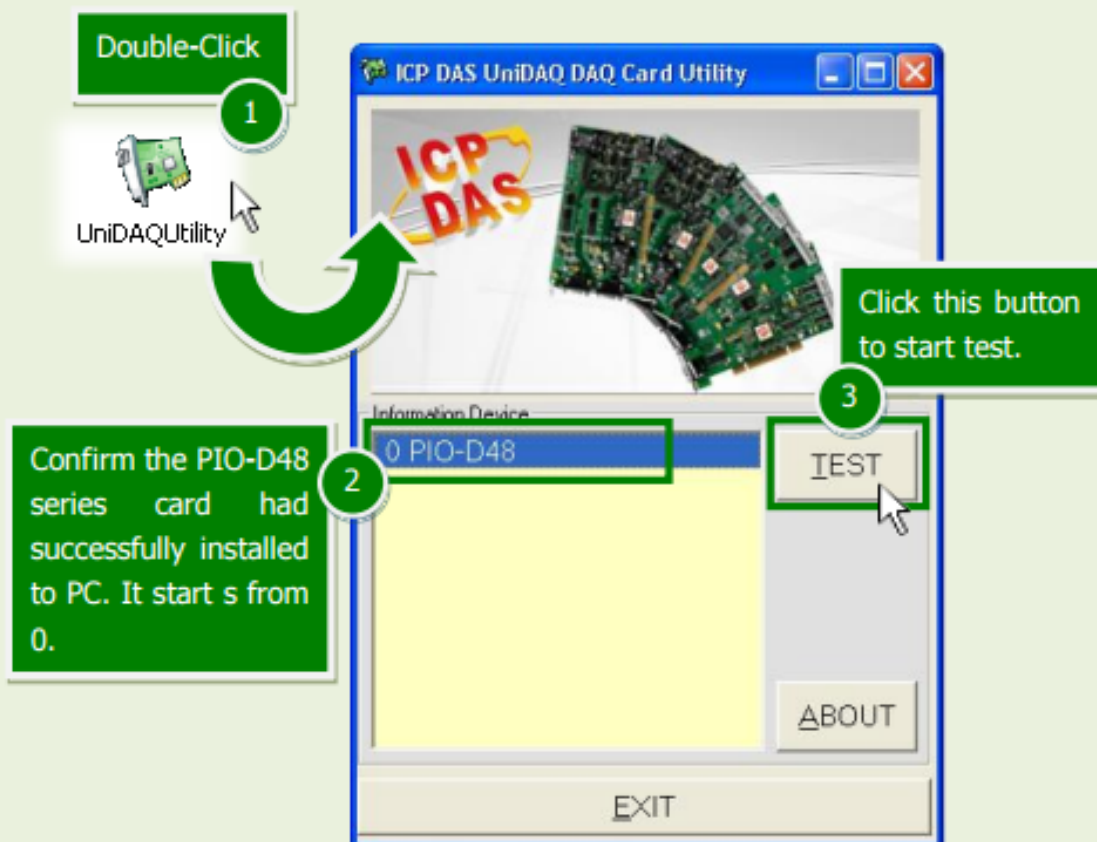
3. The UniDAQ Utility.exe is located in:

This program (UniDAQ Utility) will be placed in the default path after completing installation.

Default Path: C:\ICPDAS\UniDAQ\Driver\
Double click the "UniDAQUtility.exe"



4. Execute the UniDAQ Utility Program.



1 Double-Click
UniDAQUtility

2 Confirm the PIO-D48 series card had successfully installed to PC. It starts from 0.

3 Click this button to start test.

ICP DAS UniDAQ DAQ Card Utility

Information Device
0 PIO-D48

TEST

ABOUT

EXIT

5. Get DIO function test result.

Click "Digital Output" item.

4

7 6 5 4 3 2 1 0

6 Check channel 0, 2, 4, 6

5 Select the "Port 1"

Port Number 1 HEX 55

ON(1)
OFF(0)

EXIT

Click "Digital Input" item.

7

7 6 5 4 3 2 1 0

9 The corresponding D/I becomes red for channel 0, 2, 4, 6 of D/O is ON.

8 Select the "Port 0"

Port Number 0 HEX 55

ON(1)
OFF(0)

EXIT

-Complete-