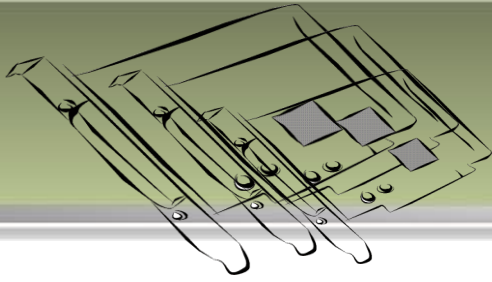


# I/O CARD QUICK START GUIDE

## For PIO-821LU/HU

English/ July 2015/ Version 1.0



## 1 Check the Supplied Items

The package includes the following items:



One PIO-821LU/HU Series Board.



One Software Utility CD (V6.2 or later)



One Quick Start Guide (This Document)



One CA-4002 D-Sub connectors

## 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/unidag/dll/driver/>

- The PIO-821 series classic driver supports Windows 98/NT/2K and 32-bit XP/ 2003/ Vista/7/8. Recommended to install this driver for have been used PIO-821 series boards of regular user, please refer to :  
<http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/pio-821/manual/quickstart/classic/>

**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.

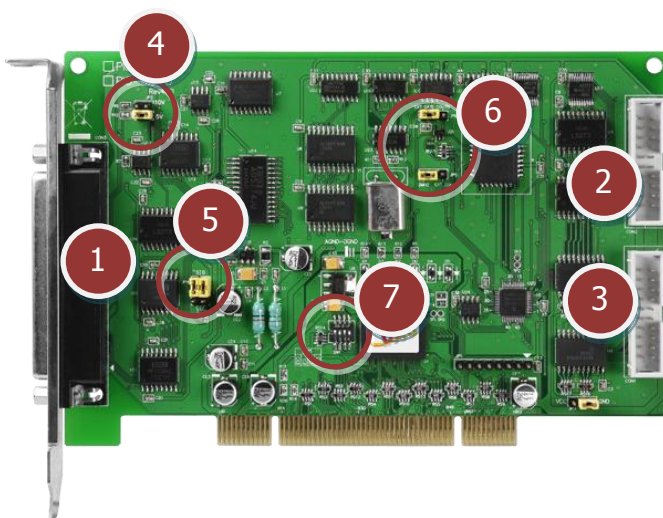
**Step 6:** Click the "**Next>**" button on the **Select Additional Tasks** window.

**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.

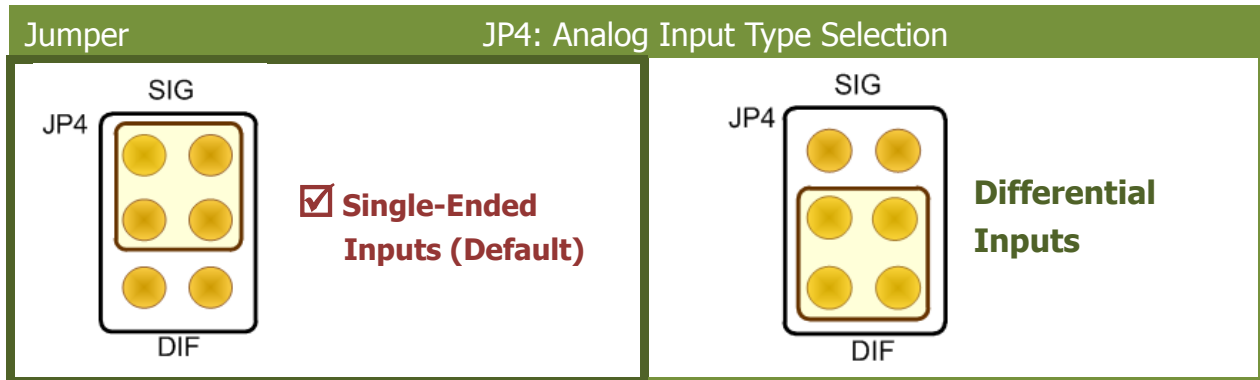
*For detailed information about the driver installation, please refer to Chapter 2.1 "Getting the UniDAQ Driver DLL Installer package" of the UniDAQ SDK user manual.*

## 3 Jumper Setting



- CON3:** AD/DA and Timer/Counter
- CON2:** Digital Output
- CON1:** Digital Input
- JP2:** D/A Reference Voltage setting
- JP4:** A/D Input Type Selection
- JP5:** External Clock/Internal Clock (2 MHz) setting  
**JP6:** External Gate/Counter0 Setting
- SW1:** Card ID function

Please make sure JP4 jumper is kept in default setting before self-test, as follows:



### Setting Reference:

Analog Input Range		Card Type
+/- 5 V	Bipolar	PIO-821LU (Low-Gain)
+/- 2.5 V	Bipolar	
+/- 1.25 V	Bipolar	
+/- 0.625 V	Bipolar	
+/- 5 V	Bipolar	PIO-821HU (High-Gain)
+/- 0.5 V	Bipolar	
+/-0.05 V	Bipolar	
+/- 0.005 V	Bipolar	

*For more detailed jumper information, please refer to manual section 2.3 and 2.4. (CD:|NAPDOS|PCI|PIO-821|manual|)*

# 4 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 slot.**

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

# 5

## Pin Assignments


- **CON1/CON2 Digital Input/Output Connector** (20-pin box header)
- **CON3 AD, DA and Timer/Counter Connector** (Female DB37)

Pin Assignment	Terminal No.	Pin Assignment
AI_0	01	20 AI_8
AI_1	02	21 AI_9
AI_2	03	22 AI_10
AI_3	04	23 AI_11
AI_4	05	24 AI_12
AI_5	06	25 AI_13
AI_6	07	26 AI_14
AI_7	08	27 AI_15
A.GND	09	28 A.GND
A.GND	10	29 A.GND
N.C.	11	30 DAOUT
N.C.	12	31 N.C.
+12V	13	32 GATE0
A.GND	14	33 N.C.
D.GND	15	34 GATE2
COUT0	16	35 COUT2
N.C.	17	36 EXT_INT
COUT1	18	37 EXT_CLK
VCC	19	




CON3

Pin Assignment	Terminal No.	Pin Assignment
DI 0	01	02 DI 1
DI 2	03	04 DI 3
DI 4	05	06 DI 5
DI 6	07	08 DI 7
DI 8	09	10 DI 9
DI 10	11	12 DI 11
DI 12	13	14 DI 13
DI 14	15	16 DI 15
GND	17	18 GND
+5V	19	20 +12V



CON1

Pin Assignment	Terminal No.	Pin Assignment
DO 0	01	02 DO 1
DO 2	03	04 DO 3
DO 4	05	06 DO 5
DO 6	07	08 DO 7
DO 8	09	10 DO 9
DO 10	10	12 DO 11
DO 12	12	14 DO 13
DO 14	14	16 DO 15
GND	16	18 GND
+5V	18	20 +12V



CON2

# 6 Self-Test

## ■ DIO Test Wiring:

1. Use CA-2002 (optional) cable to connect the CON1 with CON2.

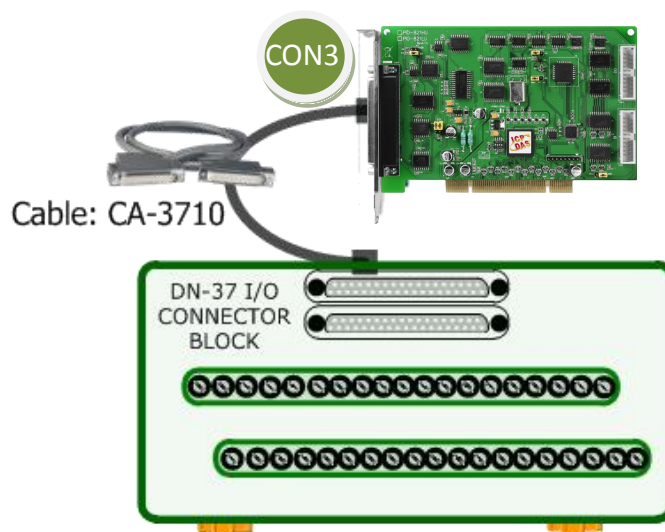


## ■ Analog Input Test Wiring:

2. Prepare for device:

- DN-37 (optional) Wiring terminal board.
- Provide a stable signal source. (For example, dry battery)

3. Connect the DN-37 to the CON3 on the board using the CA-3710 (optional) cable.

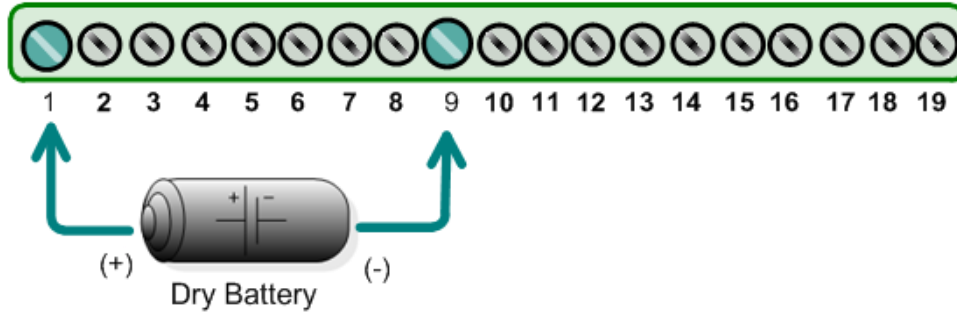




**4. Wire the signal source to channel 0, and then keep set the JP4 jumper to Single-Ended (page 3), and wire the signals as follows:**

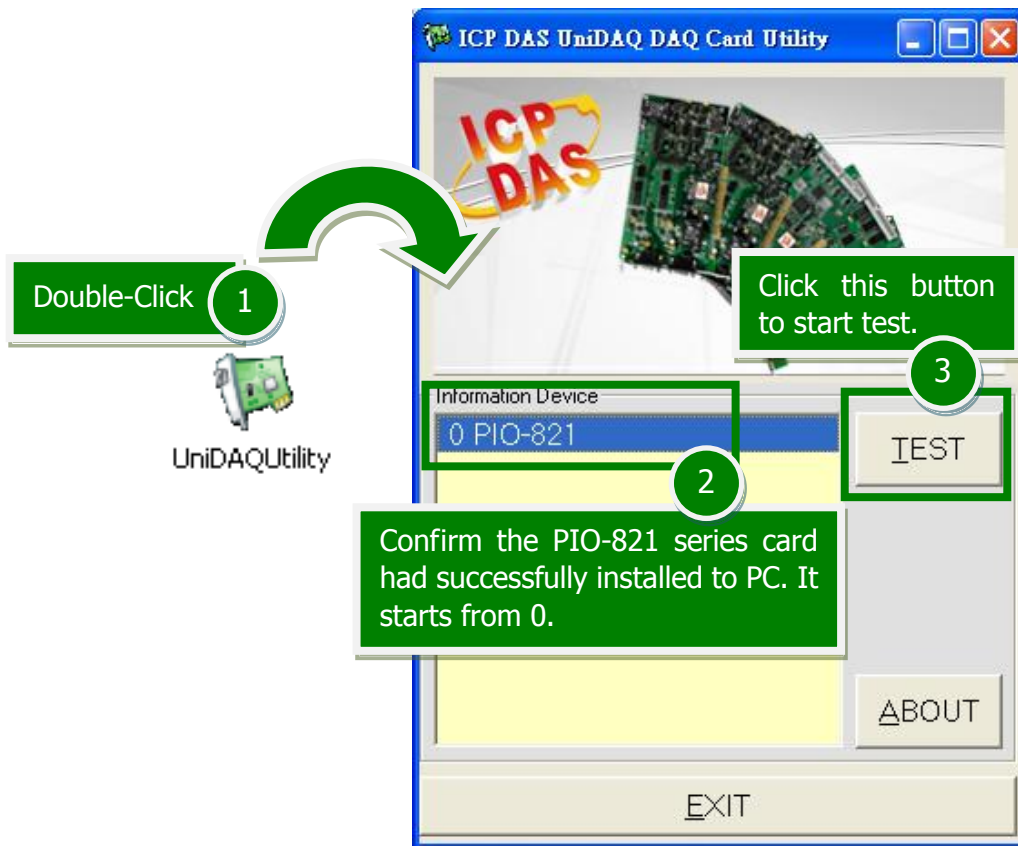
**Connect the AI 0 (Pin01) to signal positive (+)**

**Connect the A.GND (Pin09) to signal negative (-)**

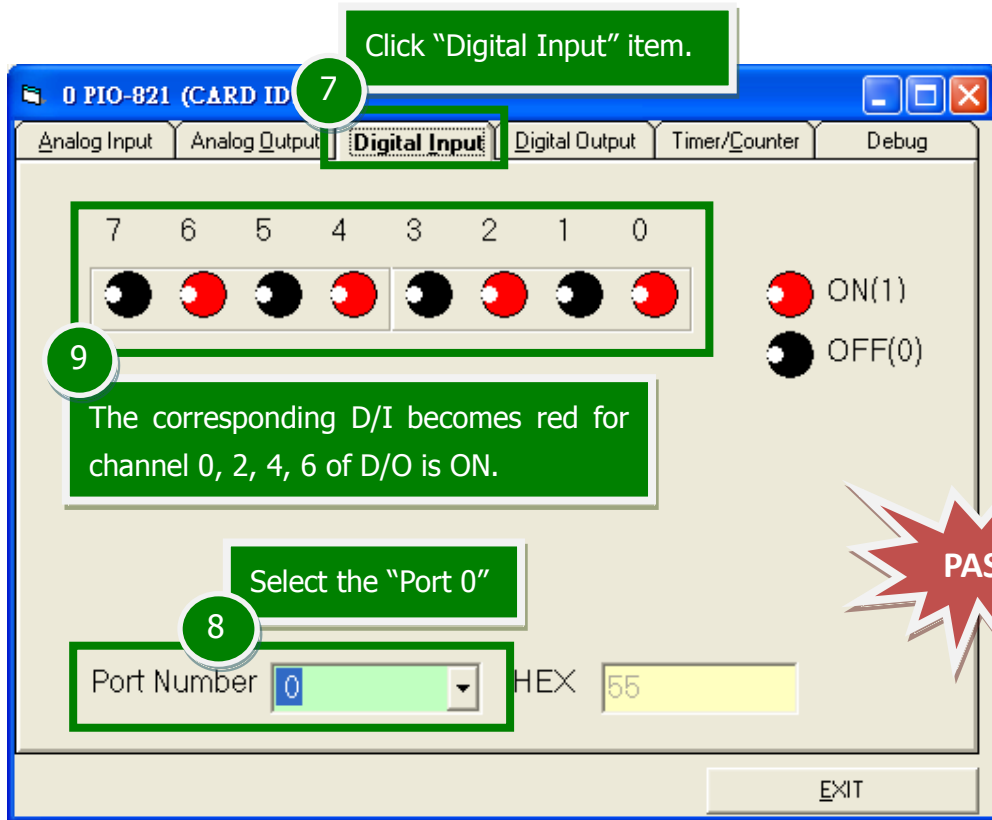
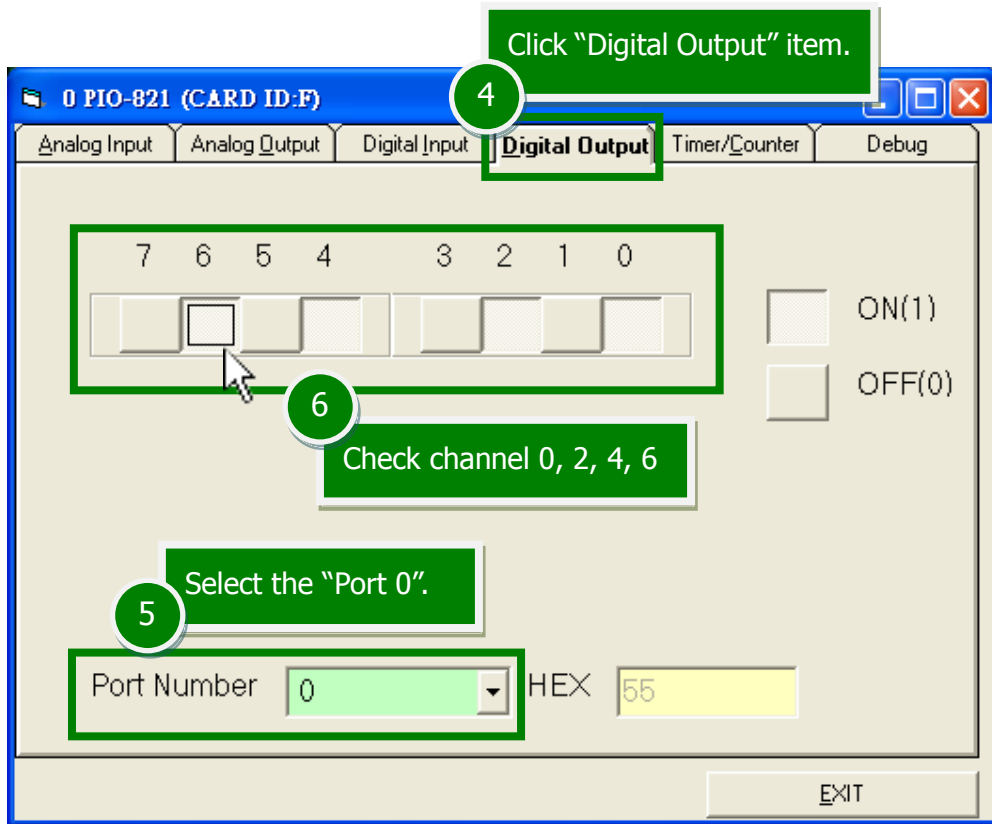


**5. Execute the UniDAQ Utility Program.**

This program (UniDAQ Utility) will be placed in the default path after completing installation. The UniDAQ Utility.exe is located in (Default path): C:\ICPDAS\UniDAQ\Driver\



**6. Get DIO function test result.**



**PASS**

## 7. Get A/D function test result.

Click "Analog Input" item.

Ch	Voltage(V)	Ch	Voltage(V)
0	4.9646	8	1.72483
1	4.27856	10	1.48315
2	3.61694	11	1.39771
3	3.18726	12	1.22925
4	2.62329	13	1.22925
5	2.21314	14	0.4895
6	1.8103	15	
7	1.51733		

Setting  
Card Type 0:Low(JPx=20V) Gain  
Range 01:Bipolar +/- 5V Sample Rate 100 Hz

Setting  
Card Type 0:Low(JPx=20V) Gain  
Range 01:Bipolar +/- 5V Sample Rate 100 Hz

10 Click "Analog Input" item.

11 Confirm the hardware setting.

12 Click this button to start test.

13 Check analog input on Channel 0 textbox. The other channels value for floating number.

**PASS**

## Related Information

- PIO-821LU/HU Series Card Product Page:  
[http://www.icpdas.com/root/product/solutions/pc\\_based\\_io\\_board/pci/pio-821.html](http://www.icpdas.com/root/product/solutions/pc_based_io_board/pci/pio-821.html)
- DN-37, CA-3710 and CA-2002 page (optional):  
[http://www.icpdas.com/products/DAQ/screw\\_terminal/dn\\_37.htm](http://www.icpdas.com/products/DAQ/screw_terminal/dn_37.htm)  
[http://www.icpdas.com/products/Accessories/cable/cable\\_selection.htm](http://www.icpdas.com/products/Accessories/cable/cable_selection.htm)
- Documentation and Software:  
CD:\NAPDOS\PCI\UniDAQ\  
<http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/unidaq/>