

## PIO-D144U/PIO-D144LU

通用 PCI, 144 通道數位 I/O 卡

## PIO-D168U

通用 PCI, 168 通道數位 I/O 卡

### 介紹

PIO-D144U / D144LU / D168U 卡設計為直接取代 PIO-D144/D168 卡，無需對軟體或驅動程式進行任何修改。

PIO-D144U / D144LU / D168U 通用 PCI 卡支援 3.3V/5V PCI 匯流排，並提供 144/168 TTL 數位 I/O 線，分為 18/21 個 8 位元雙向埠。連接器上每組三個 8 位元連接埠分別排列為連接埠 A (PA)、連接埠 B (PB) 和連接埠 C (PC)，所有連接埠在上電或重設後均配置為輸入通道。

PIO-D144U 使用 5V/TTL 提供高 DO 驅動能力。PIO-D144LU 使用 5V/CMOS 來提供低功耗並產生更少的熱量。

PIO-D144U / D144LU / D168U 卡還包括一個板載卡 ID 開關，如果同一台電腦上安裝了兩個或更多閘卡，則可以透過軟體識別該板卡。

### 接腳定義

| Pin Assignment | Terminal No. | Pin Assignment |
|----------------|--------------|----------------|
| N.C            | 01           | 20             |
| N.C            | 02           | 21             |
| PB_7           | 03           | 22             |
| PB_6           | 04           | 23             |
| PB_5           | 05           | 24             |
| PB_4           | 06           | 25             |
| PB_3           | 07           | 26             |
| PB_2           | 08           | 27             |
| PB_1           | 09           | 28             |
| PB_0           | 10           | 29             |
| GND            | 11           | 30             |
| N.C            | 12           | 31             |
| GND            | 13           | 32             |
| N.C            | 14           | 33             |
| GND            | 15           | 34             |
| N.C            | 16           | 35             |
| GND            | 17           | 36             |
| +5 V           | 18           | 37             |
| GND            | 19           |                |

CON1

### 特色

- 通用 PCI (3.3 V/5 V) 介面
- 144/168 數位 I/O 通道
- 18/21 8 位元雙向可編程 I/O 端口
- 類比 6/7 個工業標準 8255 PPI 連接埠 (模式 0)
- 所有 I/O 線路均在板上緩衝
- 4 通道中斷源
- 支援卡 ID (SMD 開關)
- 支援 DO 狀態讀回 (暫存器等級)
- DI/O 反應時間約 1  $\mu$ s (1 MHz)



### 軟體

#### 驅動程式

- ☒ 32/64-bit Windows 10/11
- ☒ Linux
- ☒ DASyLab

#### 範例程式

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

| 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)

## 規格

| 模式       | PIO-D144LU                                   | PIO-D144U                                    | PIO-D168U                                |
|----------|----------------------------------------------|----------------------------------------------|------------------------------------------|
| 硬體       |                                              |                                              |                                          |
| 板卡 ID    | Yes (4-bit)                                  |                                              |                                          |
| 接頭       | Female DB37 x 1<br>50-pin box header x 5     |                                              | Female DB37 x 1<br>50-pin box header x 6 |
| 數位輸入     |                                              |                                              |                                          |
| 通道數      | 144 (Bi-Direction)                           |                                              | 168 (Bi-Direction)                       |
| 類型       | 5 V/CMOS                                     | 5 V/TTL                                      |                                          |
| ON 電壓準位  | 2.0 V Min.                                   |                                              |                                          |
| OFF 電壓準位 | 0.8 V Max.                                   |                                              |                                          |
| 反應速度     | 500 kHz (Typical)                            |                                              |                                          |
| 觸發模式     | Static Update                                |                                              |                                          |
| 數位輸出     |                                              |                                              |                                          |
| 通道數      | 144 (Bi-Direction)                           |                                              | 168 (Bi-Direction)                       |
| 類型       | 5 V/CMOS                                     | 5 V/TTL                                      |                                          |
| 工作模式     | Static Update                                |                                              |                                          |
| 負載電壓     | Logic 0: 0.1 V Max.<br>Logic 1: 4.4 V Min.   | Logic 0: 0.4 V Max.<br>Logic 1: 2.4 V Min.   |                                          |
| 負載電流     | Sink: 6 mA @ 0.33 V<br>Source: 6 mA @ 4.77 V | Sink: 64 mA @ 0.8 V<br>Source: 32 mA @ 2.0 V |                                          |
| 反應速度     | 500 kHz (Typical)                            |                                              |                                          |
| PC Bus   |                                              |                                              |                                          |
| 類型       | 3.3 V/5 V Universal PCI, 32-bit, 33 MHz      |                                              |                                          |
| Data Bus | 8-bit                                        |                                              |                                          |
| 電源       |                                              |                                              |                                          |
| 功耗       | 250 mA @ +5 V                                | 600 mA @ +5 V                                | 1300 mA @ +5 V                           |
| 機構       |                                              |                                              |                                          |
| 尺寸 (mm)  | 105 x 180 x 22 (W x L x D)                   |                                              | 105 x 200 x 22 (W x L x D)               |
| 環境       |                                              |                                              |                                          |
| 工作溫度     | 0 ~ +60° C                                   |                                              |                                          |
| 儲存溫度     | -20 ~ +70° C                                 |                                              |                                          |
| 濕度       | 5 ~ 85% RH, Non-condensing                   |                                              |                                          |

## 訂購資訊

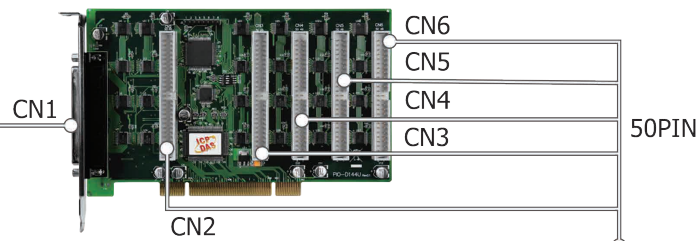
|               |                                |
|---------------|--------------------------------|
| PIO-D144U CR  | 通用 PCI, 144 通道 數位 I/O 卡 (RoHS) |
| PIO-D144LU CR | 通用 PCI, 144 通道 數位 I/O 卡 (RoHS) |
| PIO-D168U CR  | 通用 PCI, 168 通道 數位 I/O 卡 (RoHS) |

## 選購指南

|                                                                                     |                |                                                                         |
|-------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------|
|  | CA-3710 CR     | DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°))(RoHS)  |
|  | CA-3710D CR    | DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°))(RoHS) |
|  | CA-3715DM-H CR | DB-37 Male-Male Cable, 1.5 M, 180° (RoHS)                               |
|  | CA-3730DM-H CR | DB-37 Male-Male Cable, 3.0 M, 180° (RoHS)                               |
|  | CA-3750DM CR   | DB-37 Male-Male Cable, 5.0 M, 180° (RoHS)                               |
|  | CA-4002 CR     | 37-pin Male D-sub connector with plastic cover (RoHS)                   |

|                                                                                     |             |                                                  |
|-------------------------------------------------------------------------------------|-------------|--------------------------------------------------|
|  | DB-24PD CR  | 24-channel of isolated D/I board (RoHS)          |
|  | DB-24RD CR  | 24-channel of relay board (RoHS)                 |
|  | DB-24PRD CR | 24-channel of power relay board (RoHS)           |
|  | DB-24POR CR | 24-channel of PhotoMos Relay output board (RoHS) |
|  | DB-24SSR CR | 24-channel Photo Mos relay output board (RoHS)   |
|  | DB-24C CR   | 24-channel of open-collector output board (RoHS) |
|  | CA-5002 CR  | 50-pin flat cable 20 cm (RoHS)                   |
|  | CA-5015 CR  | 50-pin flat cable 1.5 M (RoHS)                   |

**PIO-D144U  
PIO-D144LU**



**Cable (37PIN)**



CA-3710 (1M) CA-3710D (1M) CA-3715DM-H (1.5M) CA-3730DM-H (3M) CA-3750DM-H (5M)

37PIN

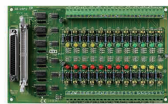
**Cable (50PIN)**



CA-5002 (20CM) CA-5015 (1.5M)

50PIN

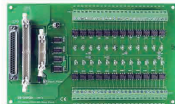
**Daughter Boards**



DB-24PD



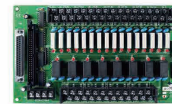
DB-24RD



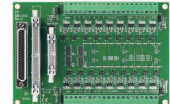
DB-24POR



DB-24SSR

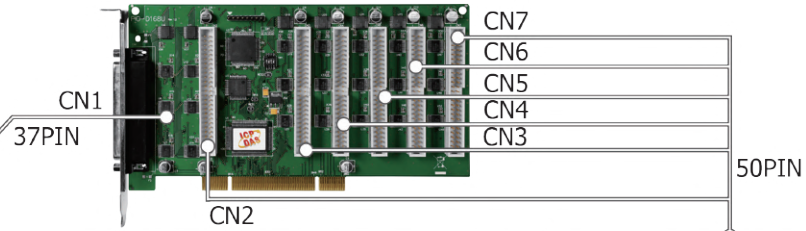


DB-24PRD



DB-24C

**PIO-D168U**



**Cable (37PIN)**



CA-3710 (1M) CA-3710D (1M) CA-3715DM-H (1.5M) CA-3730DM-H (3M) CA-3750DM-H (5M)

37PIN

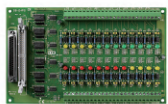
**Cable (50PIN)**



CA-5002 (20CM) CA-5015 (1.5M)

50PIN

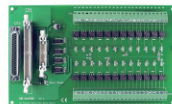
**Daughter Boards**



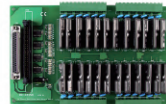
DB-24PD



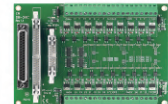
DB-24RD



DB-24POR



DB-24SSR



DB-24C