安裝 PCL-812 & PCL-833 卡使用手册

- 本安裝手冊是在作業系統為 Windows XP (SP2)下作業,所有的 Driver 及其他附屬 程式也僅配合 Win_XP(SP2),若有新的作業系統,請先上研華(Advantech)網站 Download 新版的 Driver 及 Device Manager
- 2. 先將 USB 擴充卡拔除,以避免 IRQ 被 USB 吃掉的問題,再確認 PCL-812 卡上的 jump 設定如下圖 1, PCL-833 卡上的 jump 設定如下圖 2,或參照 812 & 833 的操作手冊 調整也可。請注意操作手冊上 Jump 順序與實際卡上面所對應之 Jump 順序並不相同, 在設定時要對應其功能性(如 IRQ, Base Address, AD, DA…)而非 Jump 順序,在 本安裝手冊後面有附錄可供對照。





圖 1(b) PCL-812 jump 設定圖-1



圖 1(c) PCL-812 jump 設定圖-2





圖 2(b) PCL-833 jump 設定圖-1



圖 2(b) PCL-833 jump 設定圖-2

- 在 BIOS 的設定裏,記得將"Assign IRQ for VGA"的選項設為 Enable,這樣才能 成功的安裝顯示卡。
- 在工業電腦 PCA-6176 的環境下,其 IRQ 只有給到 15,因此有可能 IRQ 會不足,請 在 BIOS 內將 COM1 和 COM2 的 IRQ 設為 Disable,即將 IRQ3 和 IRQ4 空出來。
- 在將工業電腦內的 WinXP 及 LabView7.1 安裝完成之後,請安裝光碟內『1_Device Manager』資料夾。
- 6. 安裝光碟內『2_812 卡本身 Driver』。
- 7. 安裝光碟內『3_833 卡本身 Driver』。
- 在我的電腦上按右鍵→內容→硬體→裝置管理員→檢視→資源(依連線),如下頁圖 3,再將插斷要求(IRQ)點開,查看 ISA5 及 ISA7 為空的 IRQ,即在該畫面不會出現 ISA5 和 ISA7,以確定將 ISA5 和 ISA7 指定給 812 & 833 不會與其他硬體衝突,如 下頁圖 4。



圖 3

| | 日 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | |
| | □ → 插斷要求 (IRQ) |
| | 白 🗰 輸入 輸出 (IO) |
| | □ 100000000 - 0000000FI 直接記憶體存取控制器 |
| ⇒) 致直官程具 | 💆 [00000000 - 00000CF7] PCI bus |
| | |
| 備菜(生) 執行(品) (軟硯(生)) 説明(且) | |
| | |
| | |
| | |
| | — 🦢 [00000060 - 00000060] 標準 101/102 鍵或 Microsoft Natural PS/2 鍵盤 |
| 生 🛄 直接記憶電仔取 (DMA) | 夏 [00000061 - 00000061] 系統揚聲器 |
| □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ | [00000062 - 00000063] 主機板資源 |
| 🕞 🗰 插斷要求 (IRQ) | |
| | |
| | |
| (ISA) I FC/ATEnnanced FS/2 Keydoard (IOI/IO2-Key) | □ [00000074 - 00000077] 土俵饭食源 □ 100000000 000000000000000000000000000 |
| (ISA) 3 通訊連接埠 (COM2) | □ [00000000 - 00000090] 直接記憶電行机控制器 |
| - 📝 (ISA) 4 通訊連接埠 (COM1) | |
| | ☐ [0000004 - 00000031] 直接記憶量行來注意器 |
| | □ [000000042 - 000000BE] 主機板溶液 |
| (IAA) 0 惊年飘辉线控制下 | ◎ [000000012 00000001] 上級低貨幣 |
| | 1000000E0 - 000000EF1 主機板資源 |
| - 🚽 (ISA) 8 系統 CMOS/即時時鐘 | |
| (ISA) 12 Microsoft PS/2 Mouse | |
| | - 🔄 [000001F0 - 000001F7] 主要 IDE 通道 |
| | |
| (ISA) 14 土姜 IDE 通道 | |
| - 🔄 (ISA) 15 次要 IDE 通道 | |
| | |
| | — 🝠 [000002F8 - 000002FF] 通訊連接埠 (COM2) |
| A THE THE THE TAKE AND A STATE | [00000376 - 00000376] 次要 IDE 通道 |
| (rcl) II Intel(K) 82371 KB/EB rcl to 0.5B Ontversal Host Controller | |
| | [U00003B0 - 000003BB] Intel(R) 82845G/GL/GE/PE/GV Graphics Controller |
| 🗉 🗰 輸入輸出(IO) | - 1991 - 1995 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 199 |
| | [000003P0 - 000003P5] 標準軟條係控制下 |
| 国 1_1 | 图 1-9(Basa Addross) |
| 画 4-1 | 國 4 2(Dase Address) |

9. 安裝及確認 IRQ 完成之後,請進入 Advantech Device Manager 主程式畫面,如下圖 5 及圖 6。



圖 5

| Your ePlatform Partner | |
|-------------------------------|----------------|
| ADANTECH Devic | e Manager |
| | |
| istalled Devices: | |
| 🖃 🧕 My Computer | Setup |
| | |
| | <u>T</u> est |
| | |
| | <u>R</u> emove |
| | |
| | Close |
| | |
| upported Devices: | |
| - 💥 Advantech PCL-733/734/735 | bba 🔊 |
| Advantich PCD 752 | |
| Advantech PCL-812/812PG | About |
| Advaniech FCL-813B/813 | |
| Advantech PCL-816 | Import |
| Advantich PCL 910LALADAIG | |
| Advantech PCL-833 | <u>E</u> xport |
| 💥 Advaniech PCL-830 | |
| Adverter DCL 020 | × |

圖 6

10. 點選圖 6 下方 PCL-812/812PG 選項,按下右方"Add"鍵後,會出現 812 設定畫面, 按照下頁圖 7 加以設定,完成後按"OK"。注意, Interrupt Channel 與 Base
Address 之設定需與卡上之 Jumper 設定相符。以下圖為例,若 Interrupt Channel 設為 5,則在卡上之 Jumper 也必須插至 5 的腳位上,而 Base Address 若設為 300, 則卡上之 Base Address 腳位也必須參照附錄調整至 300 所對應之位置。

| Advantech PCL-81 | 2/812PG Data Acquisition | Card Setup 🔀 |
|----------------------------------------------------------|-----------------------------------------------------------------|----------------------------|
| Interrupt Channel | Base Address | OK <u>C</u> ancel |
| DMA Selection | A/D Range Programmable Non-Programmable Range: +/- 10V | Options Help About |
| D/A Voltage Ref - C C External I I Voltage: 0 - 10 | hannel 1 D/A Voltage R nternal C External Voltage: 0 | ef - Channel 2 Internal |

圖 7

11. 按下 OK 後, 若安裝成功, 應該可出現如下圖 8 畫面, 並可以按下右方的 Test 按鍵, 出現如下頁測試畫面圖 9。

| Your ePlatform Pariner | 137.24 |
|----------------------------|---------------|
| ADANTECH Device | e Manager |
| installed Devices: | 3 |
| 🖃 🧕 My Computer | <u>S</u> etup |
| 001:< PCL-812PG I/O=300H > | <u>T</u> est |
| | Perrou |

| Analog input Analog output | Digital input | Digital output | Cou <u>n</u> ter |
|------------------------------|-------------------------------|---------------------------------------|----------------------------------------------------------------------|
| Channel 0 Waveform output | Manual Output 5 + V Out | put Voltage so .992 ⁻ V | aveform out is nerated by ftware with 100 ints in one cycle |
| Channel 1 Waveform output | Manual Output 5 ÷ v Out | put Voltage | |
| verall waveform period: 10 ; | sec 🔳 | • | |

圖 9

12. 測試完成之後,再回到 Device Manager 程式主畫面,點選 PCL-833 選項如圖 10, 並按下 Add 鍵,同樣會出現 833 設定畫面,按圖 11 所示加以設定,並按下 OK 鍵。

| 💓 Advantech PCL-816 | × |
|----------------------------|----|
| | |
| X Advantech PCL-818L/H/HD/ | HG |
| Advantech PCL-833 | no |

圖 10

| Interrupt Channe | el Base Address | ок | Help |
|------------------|-----------------------|---------------------|------------------|
| | | Cancel | About |
| Sample Clock | Cascade Mode | Timer Latch setting | Interrupt Source |
| 8 MHz | • 24 bit (no cascade) | Time Base : 1 ms 💌 | • DI1 |
| C 4 MHz | C 48 bit (cascade) | Divider (0-255): 1 | C Timer |
| C 2 MHz | | | |

圖 11

13. PCL-812 與 833 皆安裝完成之後,應出現如圖 12 畫面

| Your ePlatform Partner | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| ADVANTECH Devic | e Manager |
| Balace Devices. My Computer Work of the second second | <u>Setup</u> <u>I</u> est <u>R</u> emove |
| upported Devices: | |
| | <u>A</u> dd |
| Advantech PCL-812/812PG Advantech PCL-813B/813 | About |
| - 🗯 Advantech PCL-816 - 💥 Advantech PCL-818L/H/HD/HG | Import |
| - 🛷 Advantech PCL-833 - 💥 Advantech PCL-836 | <u>Export</u> |
| | |

圖 12

14. 重新開機,到裝置管理員,按照步驟6,確認 IRQ5為 PCL-812, IRQ7為 PCL-833, 再將 USB 擴充卡安裝完成之後,確認 IRQ5、7 沒有被 USB 卡吃掉,而 IRQ11 則是保 留給顯示卡,如下圖 13 所示。



圖 13

- 15. 安裝光碟內『4_Labview Driver』資料夾。
- 16. 安裝完成後,將Labview 主程式開啟,在Block Diagram 的 Function Pallette 右 下角,可看到綠色『AAC』方塊,代表安裝成功,如圖 14 所示。



附註:

- A. IRQ 11 則是給顯示卡,由於工業電腦的 IRQ 不足,插上 USB 介面卡,切勿再插網路 卡。
- B. 若安裝 812 & 833 時出現 與裝置衝突(Conflict)的訊息
 - I. 確認 812 與 833 卡的設定無誤
 - II. 確認介面卡上的 jump 之 IRQ 設定是否正確
 - III. 確認 Driver 版本為最新版
 - IV. 换一張別的卡試試看吧~~
- C. 812 不一定要裝在 IRQ5,只要有空的 IRQ 即可安裝,833 也是如此,不過若是要將
 833 安裝在 IRQ7 以外的 IRQ,切記將 833 卡上的 IRQ 設定的 jump 改為你要設定的
 IRQ。
- D. 如果以上方法都不行,那就是你太@#\$%!!!

附錄 812、833 中斷以及位址調整對照表

PCL 812 對照表



2.2.1. Base Address Selection

Switch name: SW1

Most PC peripheral devices and interface cards are controlled through the input/output (I/O) ports. These ports are addressed using the I/O port address space. Appendix A provides a PC I/O port address map to help you locate appropriate addresses for different devices.

The I/O port base address for the PCL-812 is selectable via an 8 position DIP switch. The PCL-812 requires 16 consecutive address locations in I/O space. Valid addresses are from Hex 200 to Hex 3F0, however you might have used some of these addresses for other devices. Your PCL-812 base address switch setting is set to Hex 220 in the factory. If you need to adjust it to some other address range, the switch settings for various base addresses are illustrated as below:

| I/O Address | | Swite | ch Pos | sitio | n | | |
|-------------|---------|-------|--------|-------|----|----|----|
| Range (Hex) | | 1 | 2 | 3 | 4 | 5 | 6 |
| | A9 | A8 | A7 | A7 | A5 | A4 | A3 |
| (F | ixed) · | | | | | | |
| 200-20F | 1 | 0 | 0 | 0 | 0 | 0 | Х |
| 210-21F | 1 | 0 | 0 | 0 | 0 | 1 | х |
| 220-22F* | 1 | 0 | 0 | 0 | 1 | 0 | х |
| 230-23F | 1 | 0 | 0 | 0 | 1 | 1 | х |
| 300-30F | 1 | 1 | 0 | 0 | 0 | 0 | х |
| 3FO-3FF | 1 | 1 | 1 | 1 | 1 | 1 | Х |
| | | | | | | | |

Note : -

. . .

- ON = 0, OFF = 1

- A4...A9 correspond to PC bus address lines.

- * means factory setting.

2.2.2. Wait State Selection

Some high speed PC's may require that a wait state is added to the PCL-812 to achieve stable data transfer. The PCL-812 can be configured with 0, 2, 4, or 6 wait state delays for each transfer of data. The length of the wait state can be selected with the pins 7 and 8 on SW1, as shown below :

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| Switch | Position | Time |
|--------|----------|-------|
| 7 | 8 | Delay |
| 0 | 0 | 0 |
| 1 | 0 | 2 |
| 0 | 1 | 4 |
| 1 | 1 | 6 |

2.2.3. Bipolar Input Range Selection

Switch name: SW2

The specific analog input range within the bipolar group is selected by this 5 position DIP switch. The following table illustrates the switch setting and corresponding input ranges.

| Swit | ch Po 2 | sitio 3 | n 4 | 5 | Bipolar Range | |
|------------------------|------------------------|------------------------|------------------------|------------------|---------------------------------------|--------|
| ON OFF ON OFF | OFF ON OFF ON | ON ON OFF OFF | OFF OFF ON ON | X X X X | +/- 10V +/- 5V +/- 2V +/- 1V | 1299 × |
| DM. | A Cha | nnel S | Selecti | on | | - |
| r nar | ne. ID | 5 IP6 | | | ~ | |

2.2.4. DMA Channel Selection

Jumper name: JP5, JP6

The PCL-812 provides DMA data transfer capability. The selection of DMA level 1 or level 3 is controlled by this jumper.

| 1 | 3 | Х | 1 | 3 | Х |
|----------|----------|--------|---------|-----------|----|
| 0 | 0 | 0 0 | 0 0 | 00 | 00 |
| JI DI | 26 RQ | | J) D | P5 ACI | K |

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2.2.5. Trigger Source Selection



Jumper name : JP1

| | JPI |
|------------|-----|
| INT TRG | 0 0 |
| EXT | 0 |

The PCL-812 provides software trigger, pacer trigger and external trigger for A/D conversion. When using software and pacer trigger, jumper should be put on "INT" side. For external trigger, put it on "EXT" side.

2.2.6. User's Counter Input Clock Selection

Jumper name : JP2

| | | JP2 |
|---|------------|-----|
| ~ | INT CLK | 00 |
| | EXT | 0 |

"INT" side when using internal 2MHz clock. "EXT" side when connecting to external pulse.

2.2.7. IRQ Level Selection

Jumper name : JP4

| 2 | 3 | 4 | 5 | 6 | 7 | х |
|---|----|-------|------|---|---|---|
| 0 | 0 | 0 | о | о | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | JI | 24 (1 | IRQ) | | | |

2.2.8. D/A Reference Source Selection

Jumper name : JP7, JP8

"INT" side when using internal -5V reference. "EXT" side when applying external DC or AC reference.

2.3. Connector Pin Assignment

The PCL-812 is equipped with two 20-pin insulation displacement (mass termination) connectors, accessible from the rear plate, and three other 20-pin insulation displacement connectors on-board. All these connectors can be connected to the same type of flat cables, or connected to 37-pin D-type connectors through our PCLK-1050 industrial wiring kit. Please refer to Fig. 2.1 for the location of each connector.

The following diagrams illustrate the pin alignment of each connector.

Legend :

| - | Analog input |
|---|---------------------------------|
| - | Analog ground |
| - | Analog output |
| - | Digital output |
| - | Digital input |
| - | Digital and power supply ground |
| - | Clock input for the 8253 |
| - | Gate input for the 8253 |
| - | Signal output of the 8253 |
| - | Voltage reference |
| | |

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Initial inspection

In addition to this manual the shipping container should contain the PCL-833 card and a utility diskette. We carefully inspected the PCL-833 mechanically and electrically before we shipped it. It should be free of marks and scratches and in perfect electrical order on receipt.

As you unpack the card, check it for signs of shipping damage (damaged box, scratches, dents, etc.). If it is damaged or fails to meet its specifications, notify our service department or your local sales representative immediately. You will need to contact the carrier so that it can inspect the shipping carton and packing material. We will then arrange to repair or replace the unit.

Remove the PCL-833 interface card from its protective packaging carefully. Keep the antistatic package. Whenever you are not using the board, please store it in the packaging for protection.

Warning! Discharge any static electric charge on your body by touching grounded metal before you handle the board. You should avoid contact with materials that create static electricity such as plastic, vinyl, and styrofoam. Handle the board by its edges to avoid contacting the board's integrated circuits.

Switch and jumper settings

DIP switch SW1 sets the card's I/O address and jumper JP1 sets the card's interrupt level.

Base I/O address (SW1)

The PCL-833 requires 16 consecutive I/O addresses. DIP switch SW1 (shown below) sets the base I/O address.



Choose a base address that is not in use by any other I/O device. A conflict with another device may cause one or both devices to fail. The factory address setting (hex 200) is usually free as it is reserved for PC prototype boards.

| Range (hex) | Swit | ch posi | lion | | | |
|-------------|------|---------|------|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| * 200 - 20F | • | 0 | 0 | 0 | 0 | 0 |
| 210 - 21F | • | 0 | 0 | 0 | 0 | ٠ |
| 220 - 22F | ٠ | 0 | 0 | 0 | • | 0 |
| 230 - 23F | ٠ | 0 | 0 | 0 | • | ٠ |
| 240 - 24F | ٠ | 0 | 0 | • | 0 | 0 |
| 1 | | | | | | |
| 3F0 - 3FF | • | ٠ | ٠ | ٠ | • | ٠ |

Imper settings for various base addresses appear below:

Note: Switches 1-6 control the PC bus address lines as follows:

| Switch | 1 | 2 | 3 | 4 | 5 | 6 |
|--------|----|----|----|----|----|----|
| Line | A9 | A8 | A7 | A6 | A5 | A4 |

Interrupt level (JP1)

The jumper JP1 selects the card's interrupt level (2, 4, 5, 7, 10, 11, 12 15), as shown below:

Card interrupt (default = 7)

| 082 | 35 | 12 | 11 | 10 | 7 | 5 | 4 | 2 |
|-----|----|----|----|----|---|---|---|---|
| | ō | 0 | 0 | 0 | õ | 0 | 0 | D |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Do not select a level that is being used by another device unless you have performed special programming to share several devices on one interrupt.