ADVANTECH card

PCI-1612B

(RS422/RS485 – 4 ports)

Configuration

- Technical instructions-
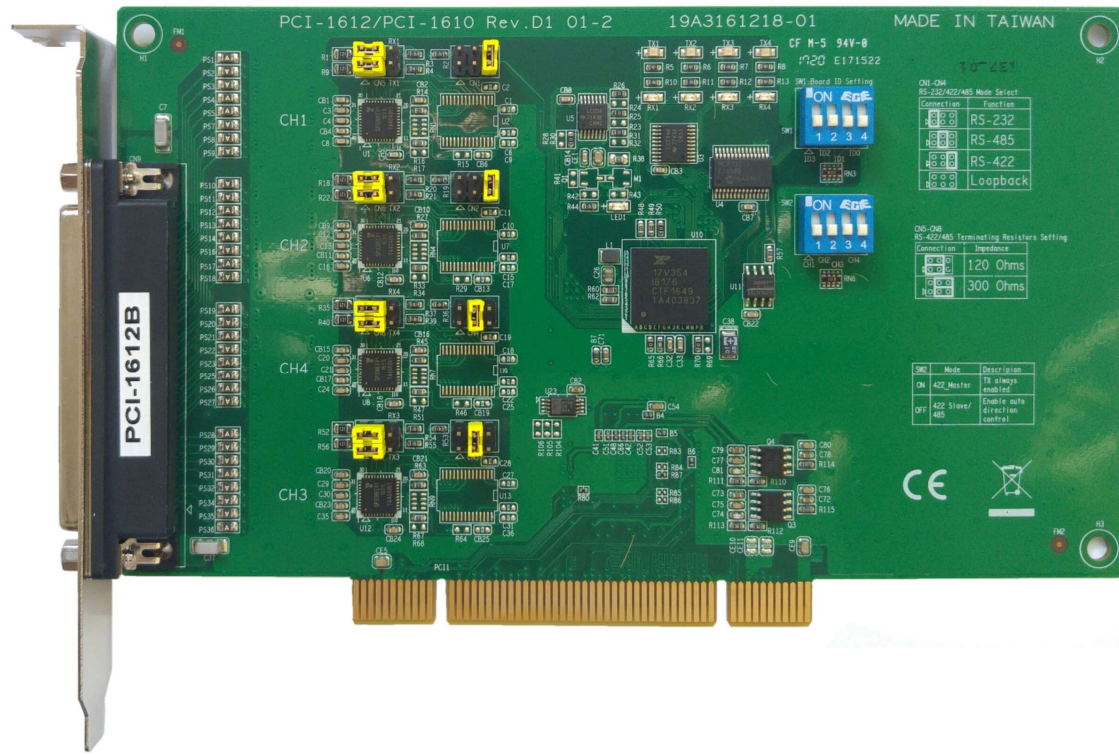
| Date | Version | Descriptions |
|------|---------|--------------|
| 13/10/2017 | Original | Création du document (FC) |
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**SOMMAIRE**

## 1. Introduction

This card should be installed in a computer to communicate through RS422 or RS485 with electronic devices.

## 2. Precautions

**Warning!** Discharge your body's static electric charge by touching the back of the grounded chassis of the system unit (metal) before handling the board.
You should avoid contact with materials that hold a static charge such as plastic, vinyl and Styrofoam. Handle the board only by its edges to avoid static damage to its integrated circuits. Avoid touching the exposed circuit connectors. We also recommend that you use a grounded wrist strap and place the card on a static dissipative mat whenever you work with it.

## 3. Hardware configuration

First of all, make sure the switches are set to the appropriate position:

### 3.1. SW1 and SW2 dip switches:
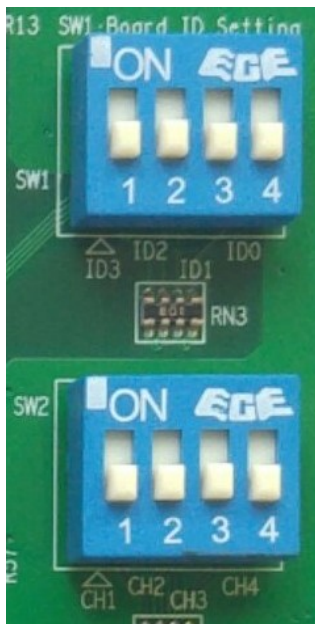
**SW1** define the address of the PCI card (see bellow)
**SW2 : Always OFF** = auto direction control

Address setting for SW1:

The PCIE-1816/1816H has a built-in DIP switch (SW1), which is used to define each card's board ID. When there are multiple cards on the same chassis, this board ID switch is useful for identifying each card's device number.

After setting each PCIE-1816/1816H, you can identify each card in system with different device numbers. The default value of board ID is 0 and if you need to adjust it to other value, please set the SW1 by referring to Table 3.1.

| Table 3.1: Board ID Setting (SW1) | | | | |
|---|---|---|---|---|
| **SW1** | **Position 1** | **Position 2** | **Position 3** | **Position 4** |
| **BoardID** | **BID0** | **BID1** | **BID2** | **BID3** |
| 15 | ON | ON | ON | ON |
| 14 | ON | ON | ON | OFF |
| 13 | ON | ON | OFF | ON |
| 12 | ON | ON | OFF | OFF |
| 11 | ON | OFF | ON | OFF |
| 10 | ON | OFF | ON | OFF |
| 9 | ON | OFF | OFF | ON |
| 8 | ON | OFF | OFF | OFF |
| 7 | OFF | ON | ON | ON |
| 6 | OFF | ON | ON | OFF |
| 5 | OFF | ON | OFF | ON |
| 4 | OFF | ON | OFF | OFF |
| 3 | OFF | OFF | ON | ON |
| 2 | OFF | OFF | ON | OFF |
| 1 | OFF | OFF | OFF | ON |
| 0 | OFF | OFF | OFF | OFF |

Default Setting is 0

if there is already **one** Advantech board in the computer (PCI-1612 or PCI-1610), it should be configure at address 0 and for this card the SW1 must be configured at address 1 (or vice versa)
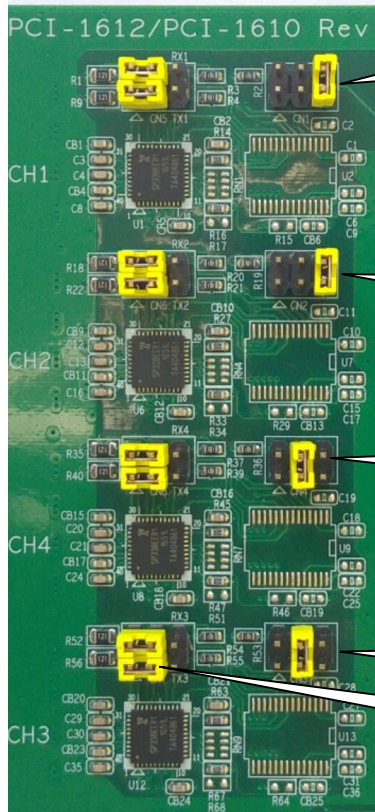
3.2. *Jumpers Cn1 to Cn4 (RS422/485) and Jumpers Cn5 to Cn8 (Terminator)*

8 jumpers are provided with the card.
See in the black bubble pack of the card:

By default,
- Port 1 and 2 must be setup as RS422
- Port 3 and 4 must be setup as RS485



**Ports 1 = by default RS422 = Right**

**Ports 2 = by default RS422 = Right**

**Ports 4 = by default RS485 = Center**

**Ports 3 = by default RS485 = Center**

**All ports = Internal terminating 120 Ohms resistors**
2 jumpers must be set to the left of each port

⚠️ **Channel 3 is the last one** and channel 4 is located to just **above the last one**.

**RS232 settings:** If needed, this card can be configured in RS232 mode.
In that case, the jumpers of the left column (Cn5 to Cn8) must be removed and the jumpers of the right column (Cn1 to Cn4) must be moved to the left.

4. *Driver installation*

The driver is the same as the one use for the PCI-1610B card (RS232)
**If it is already installed, it is not necessary to re-install it.**

Install the software driver before you install the hardware into your system, since this will guarantee a smooth and trouble-free installation process.

Follow the steps below for PCI communication card Windows OS driver installation.
1. Insert your companion DVD-ROM disc into your DVD-ROM drive.
2. The driver setup program will be launched automatically. If the auto-play function is not enabled on your system, use Windows Explorer or the Windows Run command to execute autorun.exe on the companion DVD-ROM.

3. After the setup program is launched, press the *Continue* **button** and the *Installation* **Button**
4. Click on *ICOM card Driver* and **PCI-1610** into PCI series section
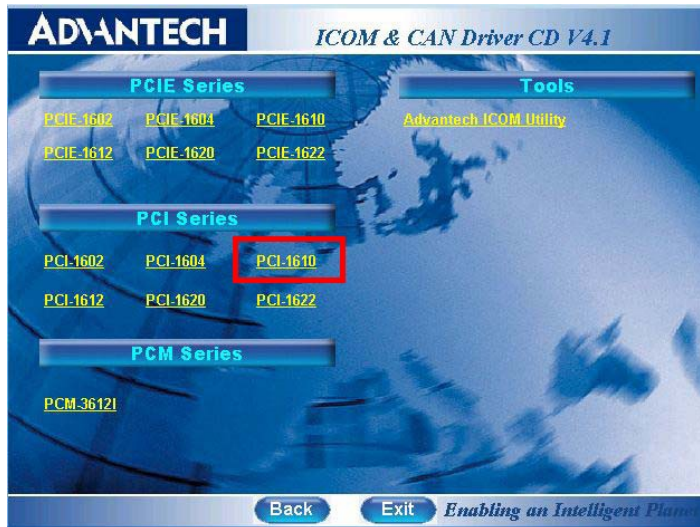


5. Follow the installation software and at the end of the installation, select "**No, I will restart the computer later**"
6. **Turn off** the computer.

## 5. *Card installation*

1. Turn off your PC's power supply whenever you install or remove the PCI communication card or its cables.
2. Disconnect the power cord and any other cables from the back of the computer.
3. Remove the PC cover.
4. Install and plug the PCI communication card into your PCI bus.
5. Replace the PC cover and reconnect the cables disconnected in Step 2.
6. Turn the computer on.
7. The driver will install the PCI communication card automatically

## 6. *Which COM ports are mapped by Advantech ICOM cards?*

Please follow the steps below.
1. Open "Control Panel".
2. Select "Administrative Tools".
3. Open "Computer Management".
4. As shown in the figure below, click "Device Manager".

In "Multi-port serial adapters" folder, you will see "Advantech 's x-Port UART PCI-Express Card " marked red lable 1. All serial ports of  ICOM cards are under the "Ports (COM & LPT)" folder, you will see " Advantech 's Communications Port (COMxxx)" marked red lable 2. These are the serial ports your ICOM cards have been mapped to.
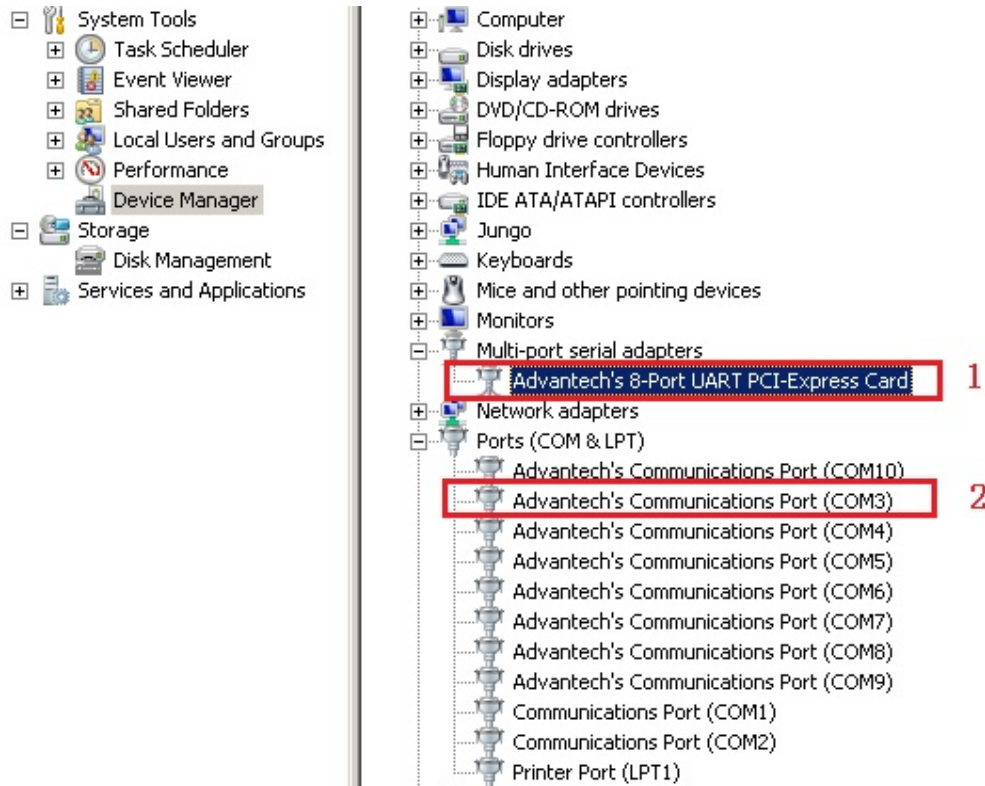
**7. How to determine which card a specified port belongs to?**

Please follow the steps below:
1. Select one port in the Device Manager window,
2. Right click and select "Properties" or double click the icon to open the property window,
3. Select the Port Settings tab, the location information about this port will be shown on the top of the window,as the following Figure
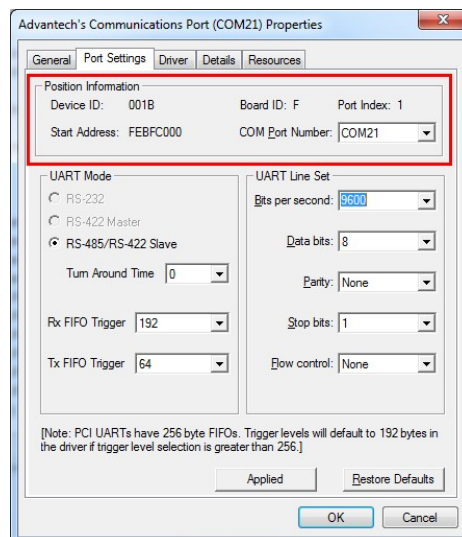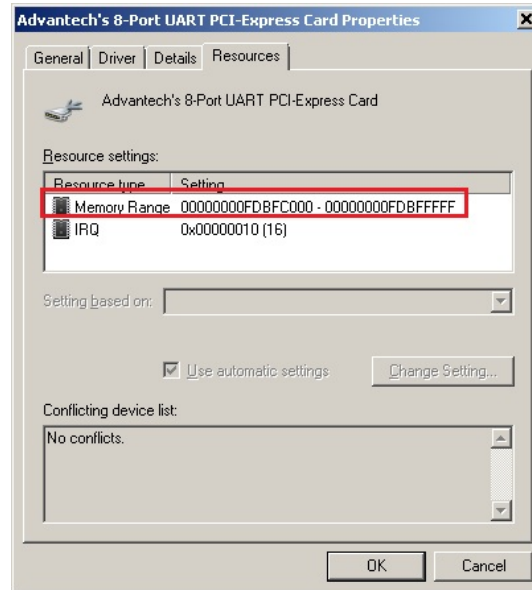


FC                     **Configuration card PCI-1612B**                4- 516124
                              **(RS422/485)**

You will see "Start Address: xxxxxxxx". Click cards **Resources** tab, you can see the window as:



If the Start Address is in the Memory Range, the port belongs to the card.
E.g. "Start Address" is FDBFC000 in figure 2, and "Memory Range" is 00000000FDBFC000--00000000FDBFFFFF."Start Address" is in "Memory Range", so the port belongs to the card."Port Index" label indicates the port index in the card."Port Index" is 1 in figure 2, so it is the first port in the card.


8. *How to change port numbers?*


On the **Port Settings** tab page, then you will find a list in which you could simply select the new port you want to change to. Click "Applied" will change port number but not close **Port Settings** tab, Click "OK" will change port number and close **Port Settings** tab, Click "Cancel" will not change port number or close **Port Settings** tab.
**IMPORTANT:** If you select a port number that has been occupied by other ports (indicating "in use"), the original port won't work until you remove and reinstall it.
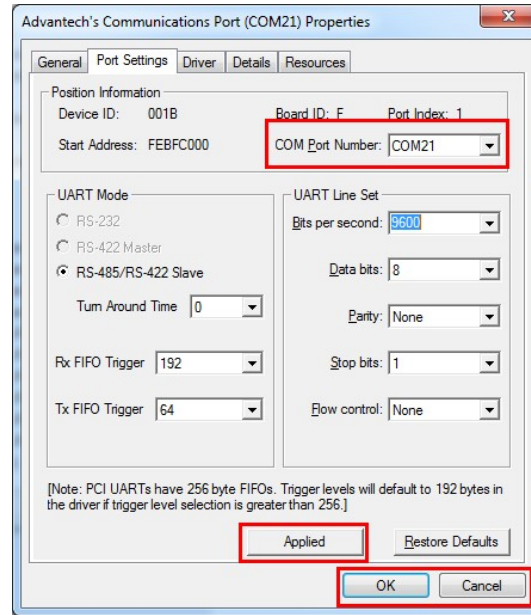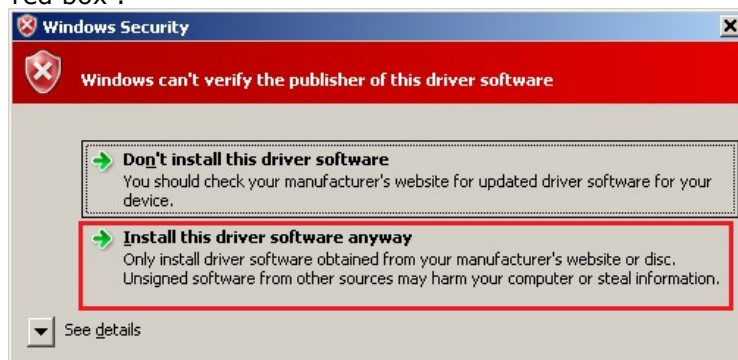
**9.** *How to reinstall Advantech ICOM cards?*

Please follow the steps below:
1. Open "Control Panel",
2. Select "Administrative Tools",
3. Open "Computer Management", select "Device Manager",
4. As shown in following figure, right click the "Advantech ICOM cards",
5. Select "Uninstall" to uninstall cards;
6. Click "Scan for hardware changes" to install cards.

When installing the driver, if you encounter the pop-up window below, please select the option mark by red box .



**10.** *How to uninstall Advantech ICOM cards?*

There are two ways to uninstall Advantech ICOM cards:

**10.1.** *Shortcut*

1. Open "Start menu",
2. Select "All Programs",
3. Select "Advantech Automation\ICOM\ICOM Driver",
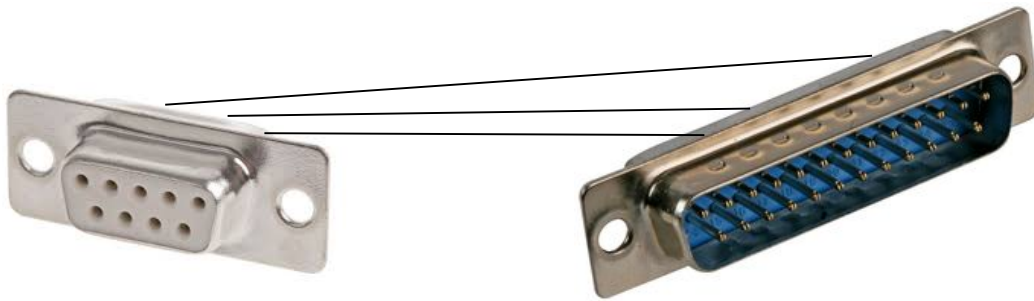4. Select "Uninstall" to uninstall cards;

## 10.2. Control Panel

1. Open "Control Panel",
2. Select "Programs and Features",
3. Right click "Advantech PCI/PCIE ICOM Driver version x.x.x.x",
4. Select "Uninstall" to uninstall cards.

# 11. ANNEXE

## 11.1. RS485 – ADAPTER CABLE

At RIBER, All RS485 devices use a SubD 25 plug (Female), so we need an adapter.



| Plug SubD 9-F (connected to Advantech PCI-1612B) | | Plug SUBD25–M (Connected to the cable of the device) |
|---|---|---|
| 1 | AA' | 3 |
| 5 | GND | 7 |
| 2 | BB' | 16 |

## 11.2. RS422 – ADAPTER CABLE

| Plug SubD 9-F (connected to Advantech PCI-1612B) | | Plug SUBD25–M (Connected to the cable of the device) |
|---|---|---|
| 1 (Tx-) | | 2 (TxA) |
| 2 (Tx+) | | 14 (TxB) |
| 3 (Rx+) | | 16 (RxB) |
| 4 (Rx-) | | 3 (RxA) |
| 5 (GND) | | 7 (GND) |