INSTALL MANUAL

MultiPort-USB

2009.10.26

Version 2.4

Serial Communication Experts

SystemBase

Since 1987

Revision History

Revision Date	Version	Pages	Description
2006-07-14	2.0	All	Initial Release by shlee
2007-08-02	2.1	Partial	Vista x32 added khheo
2008-05-13	2.2	Partial	Multi-1 & Win2008 added by hjnoh
2009-05-26	2.3	Partial	Auto Install Added by hjnoh
2009-10-26	2.4	Partial	Corrected by ymwon

Website: http://www.sysbas.com/

Tel: 82-2-855-0501

Fax: 82-2-855-0580

16th Fl. Daerung Post Tower-1, 212-8, Guro-dong, Guro-gu, Seoul, Korea

For any inquiries or comments, contact **tech@sysbas.com**

Contents

What is USB MultiPort?

USB is a complex word of “Universal”, meaning all peripheral devices use the same connector, and “Serial”, meaning devices are connected as a daisy chain through serial transmission. USB is an interface suggesting a solution to inconvenience and inefficiency caused by slow speed and limited device connection of existing external ports(serial or parallel). Compared to external ports that were only used to connect devices such as modems, printers and scanners, USB is powerful in that it connects all types of basic peripheral devices that were each connected via different types. Also, when a new device is plugged, it’s auto-detected without any rebooting or setup process, enabling 127 connections maximum. Installation is handy since PnP is perfectly supported. No extra equipment is needed since most of the main-board chipsets include the USB controller. USB to Serial Converter(Multi-4/8 USB) supports 4 or 8 RS-232 ports rooted from one USB port, via DB9/Male connector. USB cable type supported is type A, which can utilize the USB port of the PC or the USB hub. This product obtains power from USB, and this makes the product powerful since no external power supply is required.

Multi-4/8 USB Specifications

- Hardware

- Number of Ports: 4, 8
- USB Interface: USB Spec 1.1/2.0
- Serial Interface: RS232/422/485
- LED: Tx and Rx per each port
- Serial Connector: DB9 (female)
- Serial Communication Speed: 921.6Kbps maximum
- External Power: Selectable/Disable(*1)

- Software

- Supports Windows 98/2000/XP/Vista/2008, and Linux Driver (*2)

*1: You can connect external power supply to USB MultiPort H/W ver. 1.5 or above only.

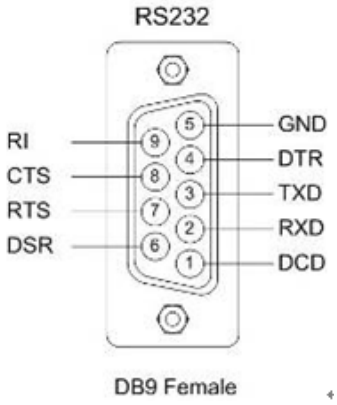
*2: If you would like to use USB Multiport for Linux, please contact **tech@sysbas.com**

Multi-4/8 USB v1.2

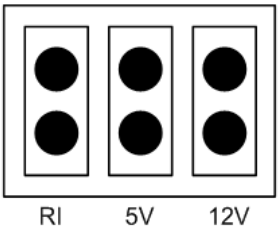
Multi-4/8 USB V1.2 can work with USB power only, so does not need external adapter. It can supply +5V or +12V when the device needs. This feature is useful when small devices such as cash box, bar-code reader and printer are to connected to PC POS system. +5V or +12V adapter don't affect the operation of USB MultiPort because this part is separated from serial communication part. This voltage is supplied through 9th pin of DB9 connector.

1. RS232 Model

- DB9 Female Pin Assignment



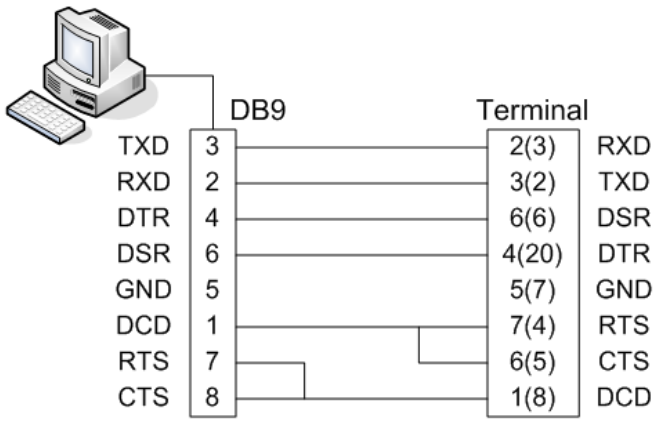
- External Voltage Supply Jumper



There are jumpers for each port when opening the case. Users can select 1 of 3.

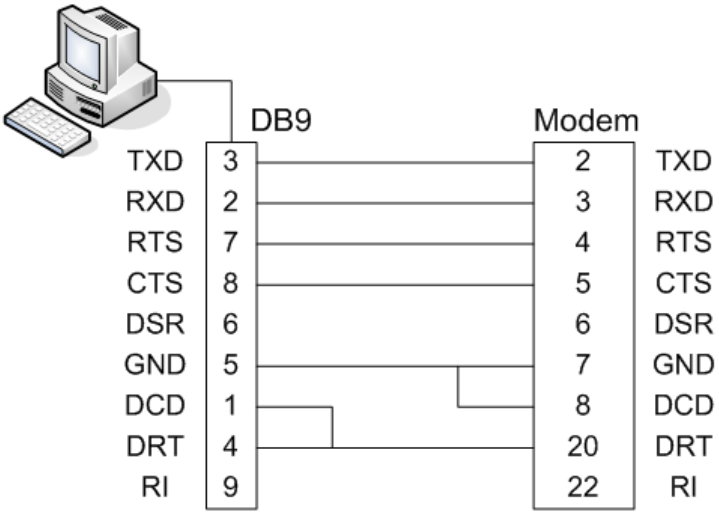
- RI: Use 9th pin of DB9 connector as RI signal (Default)
- 5V: Use 9th pin of DB9 connector as +5V supply (needs adapter)
- 12V: Use 9th pin of DB9 connector as +12 supply (needs adapter)

- How to connect to a Terminal



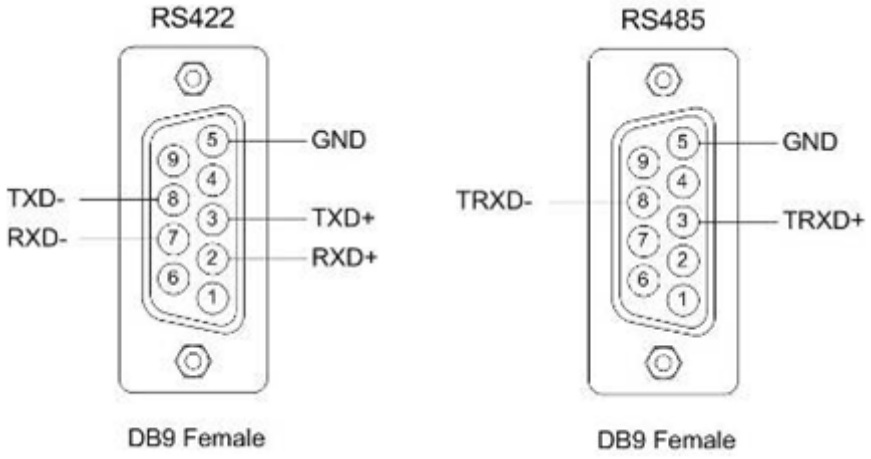
When using 2, 3, 5 only, loop-back each 7-8(4-5), 1-4-6(6-8-20). (numbers in parentheses are for DB25 connector.)

- How to connect to a Modem

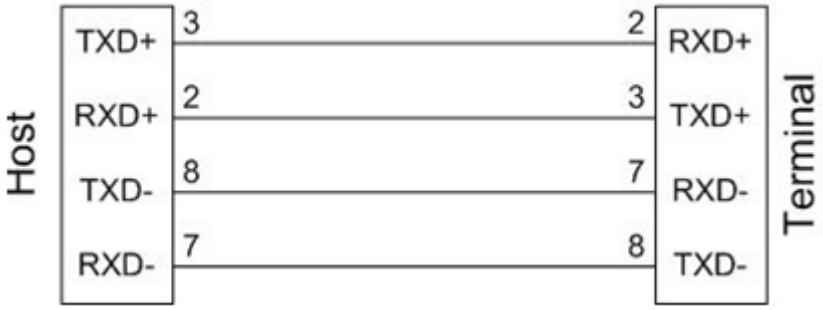


2. RS422, RS485 Model

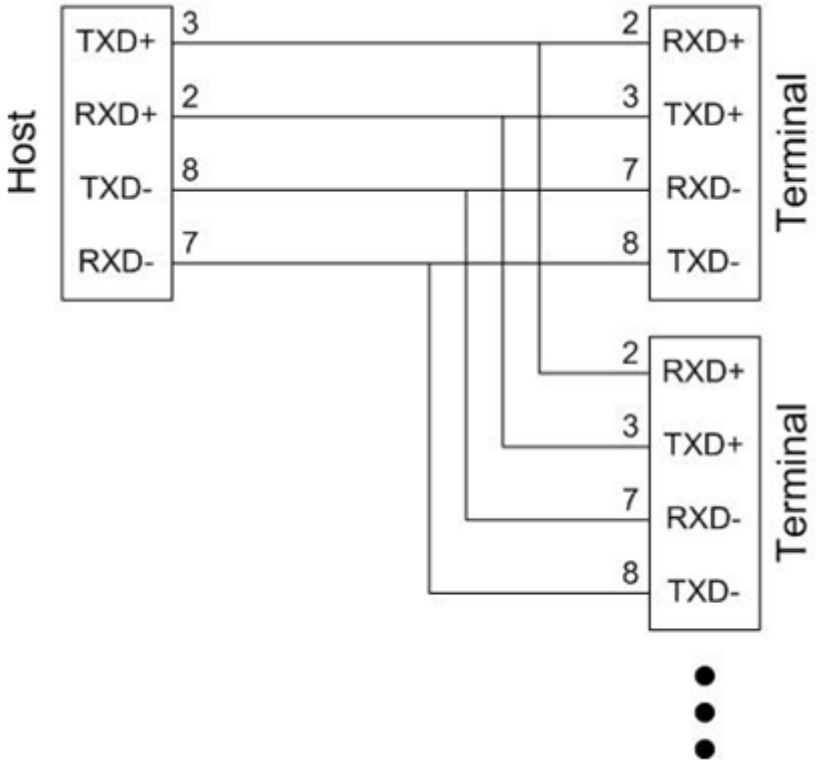
- DB9 Female Pin



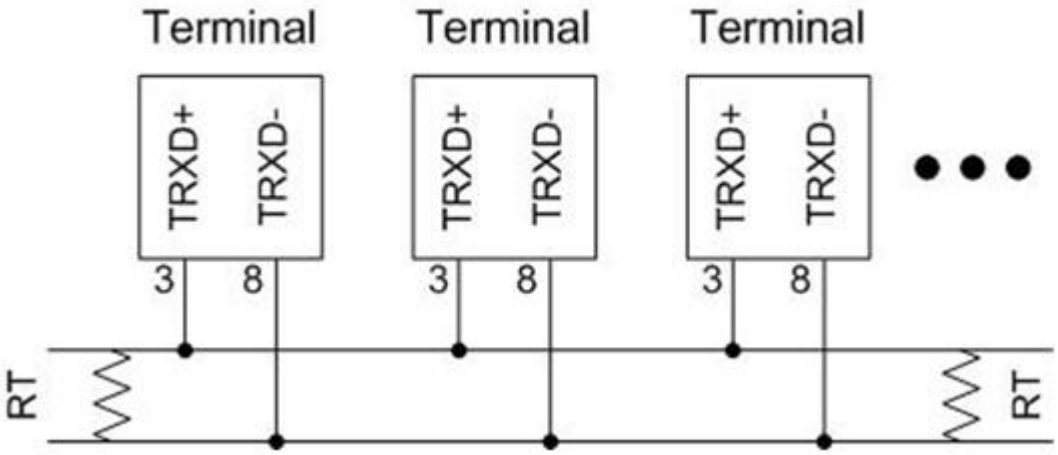
- How to connect RS422 Point-to-point signal line



- How to connect S422 Multi-drop signal line



- How to connect RS485 signal line



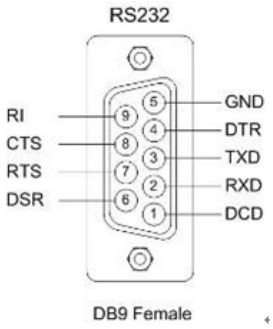
- RT(Terminal Resistor) : 120 Ohm (Not necessary)
- In RS485 mode, there is no discrimination between Host and Terminal.

Multi-4/8 USB v1.5

Multi-4/8 USB V1.5 can work with USB power, so does not need external adapter. But it can work with external adapter when it needs more stable power supply. It can supply +5V when the device needs. This feature is useful when small devices such as cash box, bar-code reader and printer are to connected to PC POS system. +5V can be supplied even when Multi-4/8 USB don't use external adapter. This supply voltage is supplied through 9th pin of DB9 connector.
(Caution: Never use adapter except +5V. It may damage the MultiPort.)

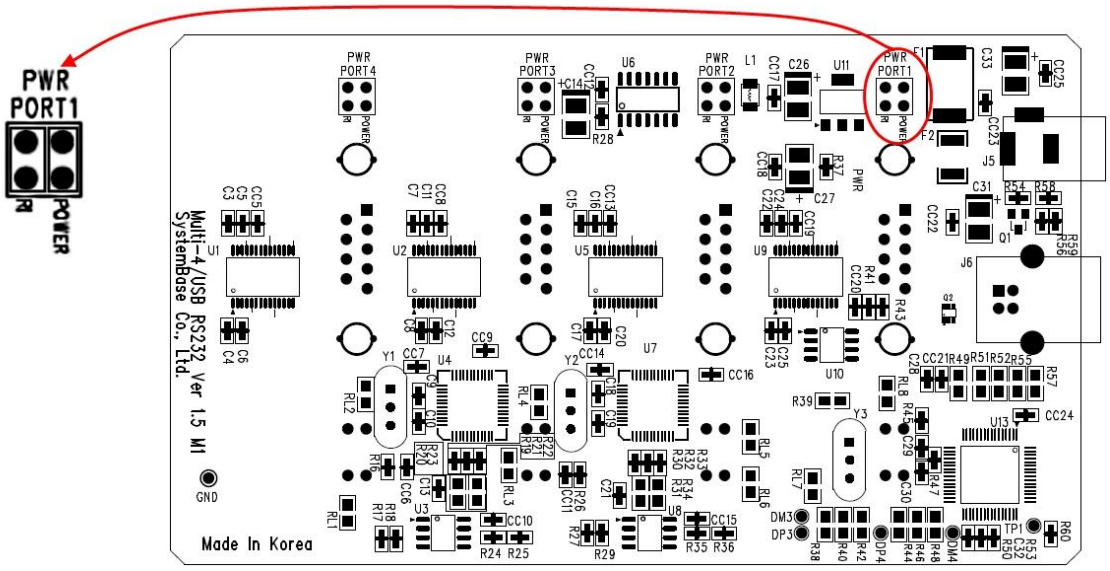
1. RS232 Model

- DB9 Female Pin Assignment

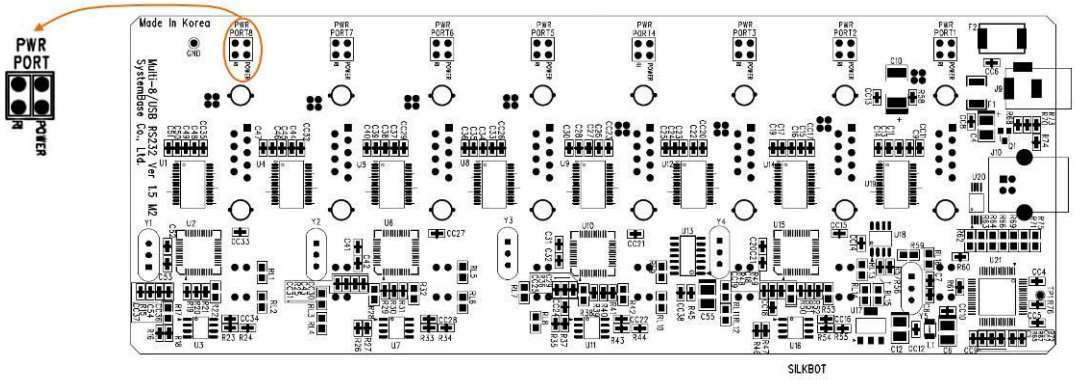


- External Voltage Supply Jumper

Multi-4U RS232 Ver1.5



Multi-8U RS232 Ver1.5

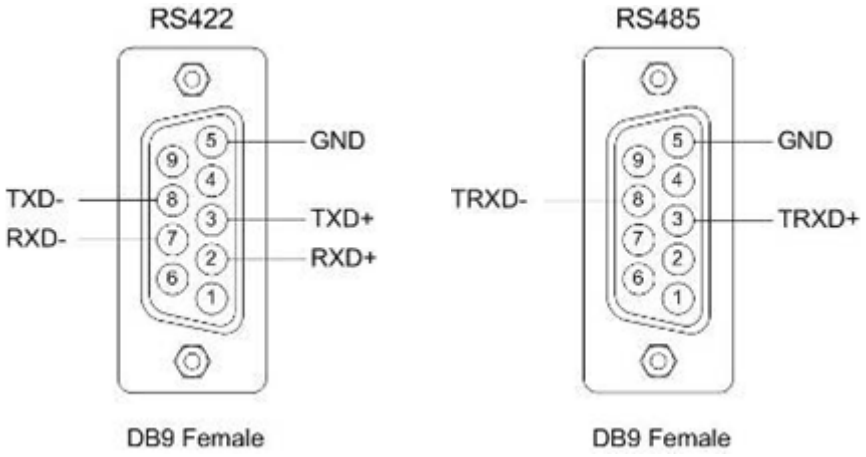


There are jumpers for each port when opening the case. Users can select 1 of 2.

- RI: Use 9th pin of DB9 connector as RI signal (Default)
- Power: Use 9th pin of DB9 connector as +5V supply

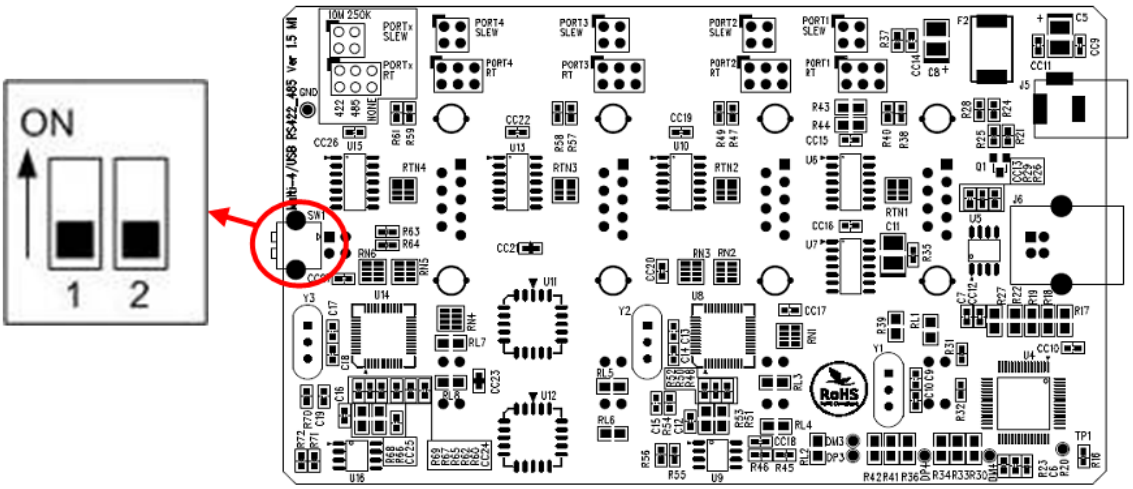
2. Combo (RS422/RS485) Model

- DB9 Female Pin Assignment

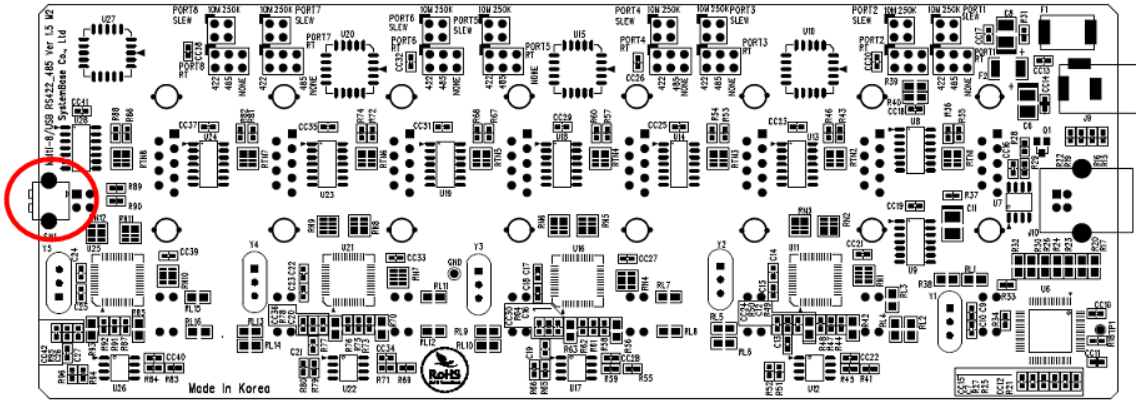


- Switch for selecting RS422/RS485 line interface

- **Multi-4/USB Combo V1.5**



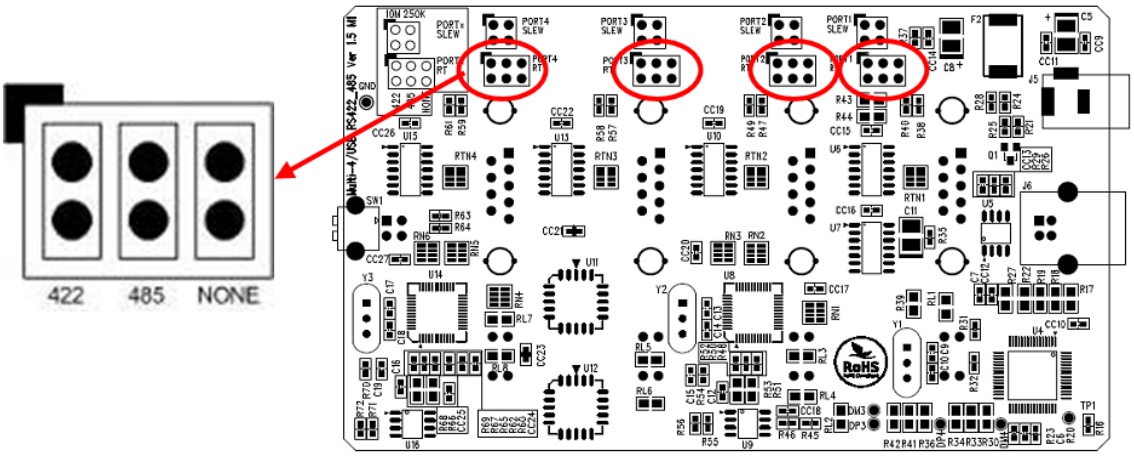
- **Multi-8/USB Combo V1.5**



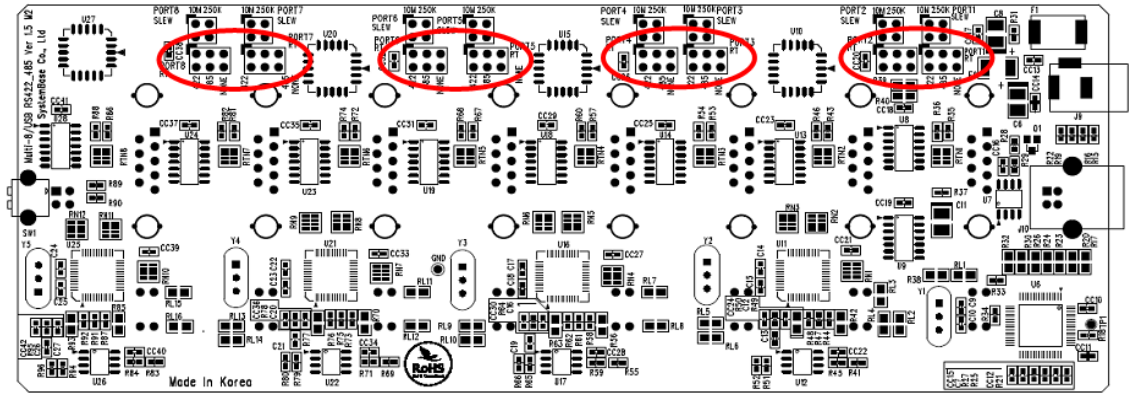
1	2	Interface	Mode
OFF	OFF	RS422	Point-to-Point
OFF	ON	RS422	Multi-Drop
ON	OFF	RS485	Non-Echo
ON	ON	RS485	Echo

- Portx RT: RS422, RS485 Terminal Resistor

- **Multi-4/USB Combo V1.5**



- **Multi-8/USB Combo V1.5**



- 422: RS422 Terminal Resistor
- 485: RS485 Terminal Resistor
- NONE: No Terminal Resistor

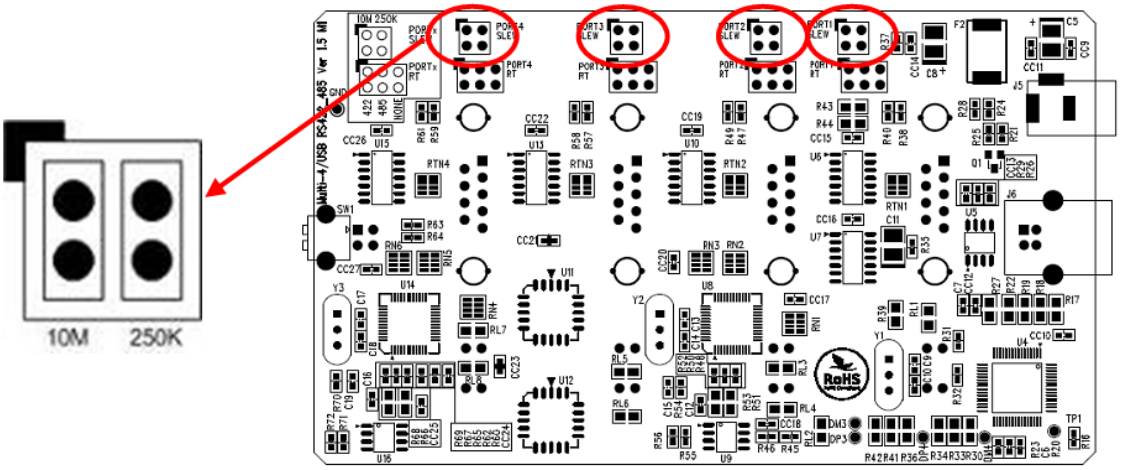
- External Voltage Supply

- In Multi-4/8 USB Combo model, +5V is always supplied through the 9th pin of DB9 connector. Users can connect 9th pin to the device if they are to supply +5V to the device.

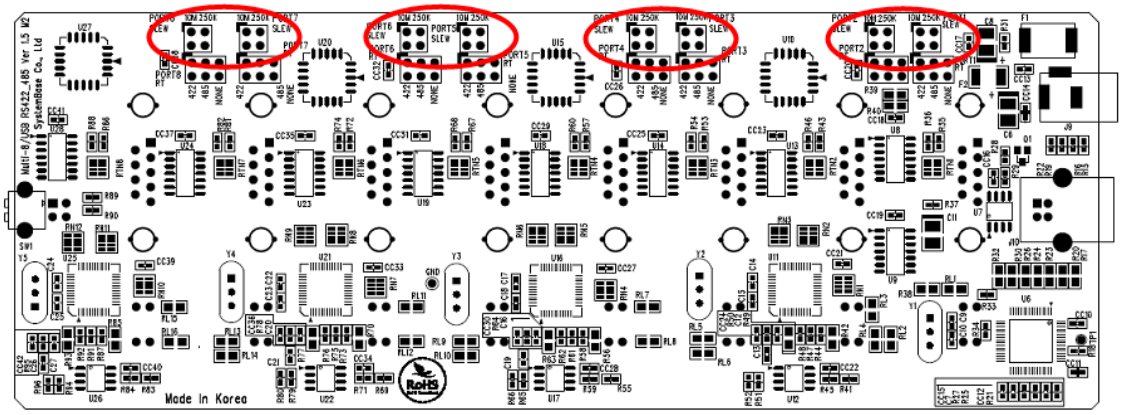
- Jumper for Slew Rate setting

Slew Rate Limit allows communication without errors by activating slew-rate driver to reduce reflection waves and EMI electromagnetic waves. However, communication speed is limited when it is used.

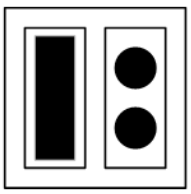
- **Multi-4/USB Combo V1.5**



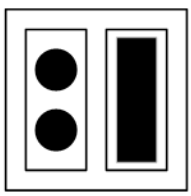
- **Multi-8/USB Combo V1.5**



Slew Rate Limit Off



Slew Rate Limit On



Installing Windows 98 Device Driver

1. Run Windows 98.

2. Connect Multi-USB to the USB connector of the PC.

3. Click “Next”.

4. Click “Next”

5. Check “Specify a location” and specify correct location of Windows 98 device driver. If you have the driver CD provided with MultiPort product, put it into the CD-ROM drive and specify the location of the driver as “D:\Win98”. Then click “Next”.

6. Click “Finish” to complete the installation process.
7. Repeat steps 3-6 when “Add New Hardware Wizard” restarts.

Installing Windows 2000/XP/2003 Device Driver

- Install procedures for 64bit drivers are identical to 32bit drivers

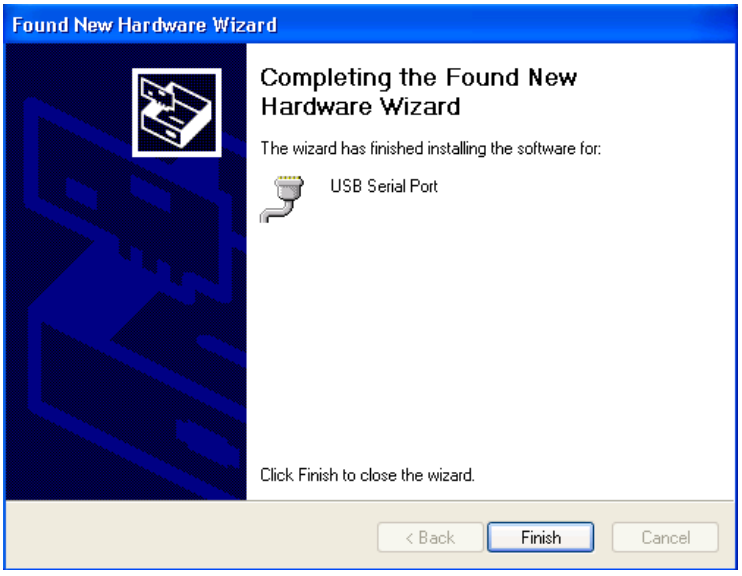
1. Run Windows 2000/XP/2003.
2. Connect USB MultiPort to your PC's USB port.
3. Insert media CD (provided with MultiPort) into the CD drive.
4. Select "Install software automatically (Recommended)", then click "Next".

5. Click "Finish".

6. Steps 4 through 6 automatically install drivers in the CD. "USB Serial Converter" will all be automatically installed.

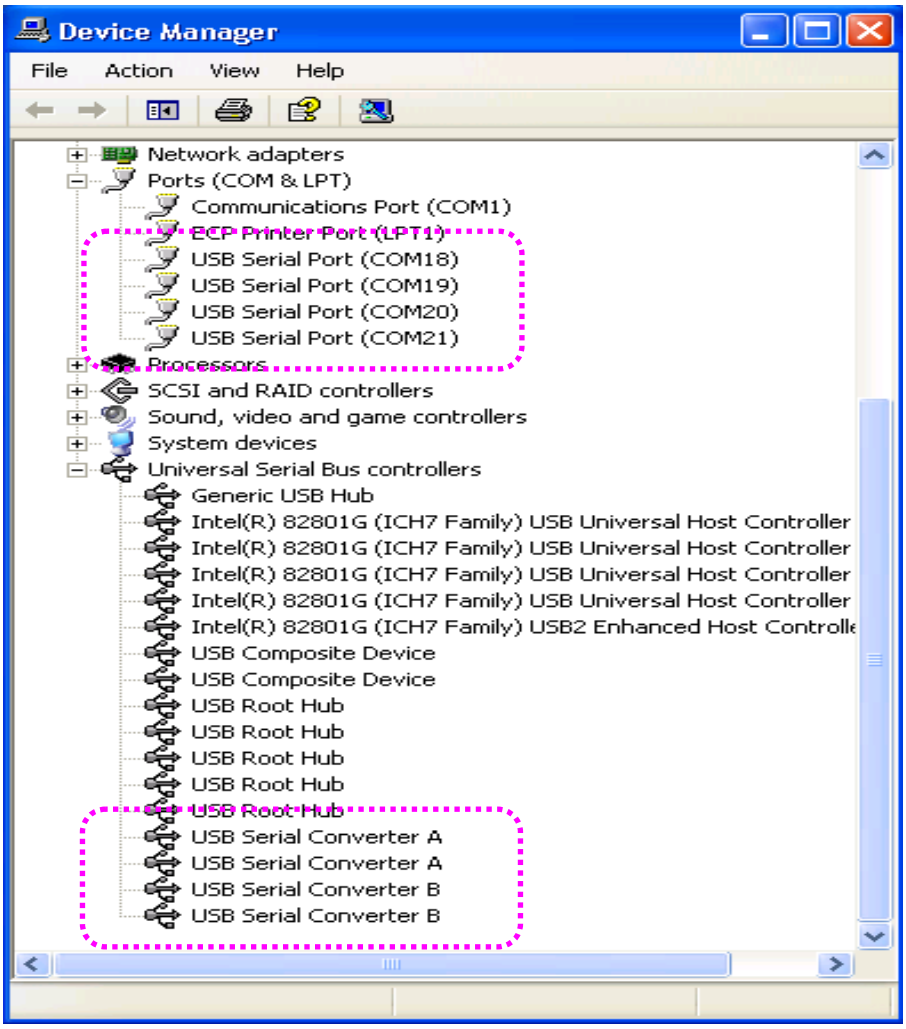
7. Following procedures will guide you through installing “USB Serial Port”. Select “No. Do not connect now”, and then click “Next”

8. Click “Finish”



9. Steps 7 through 8 automatically install drivers in the CD. “USB Serial Port” will all be automatically installed.

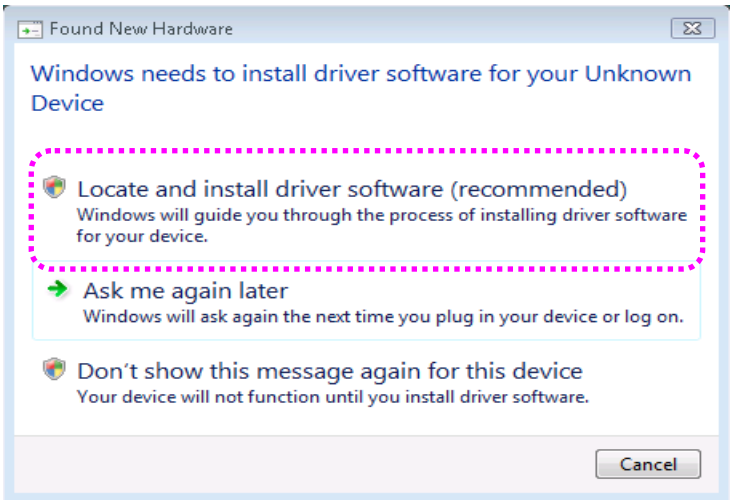
10. Following picture depicts “Device Manager” after carrying out all steps. As can be seen “USB Serial Converters” and “USB Serial Ports” are successfully installed. The number of lines may vary depending on the product you are using.



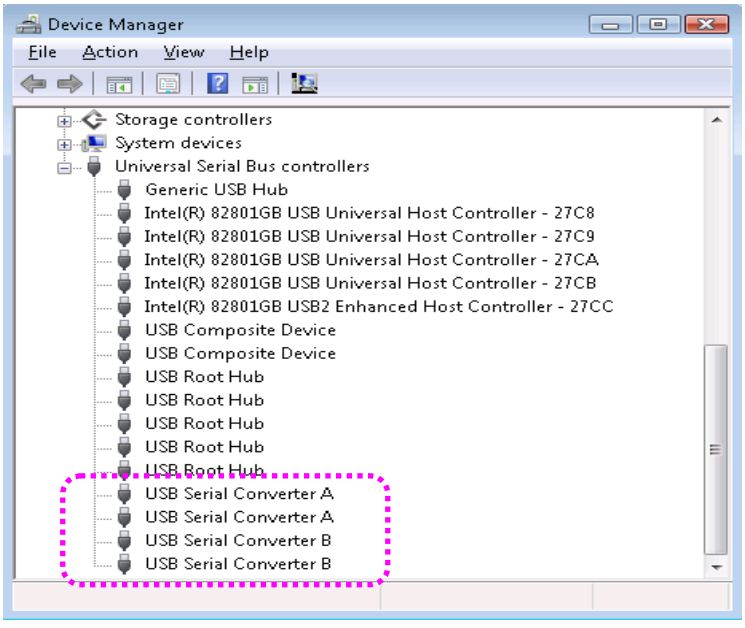
11. USB Multiport installation on Window 2000/XP/2003 is now finished

Installing Window Vista/2008 Device Driver

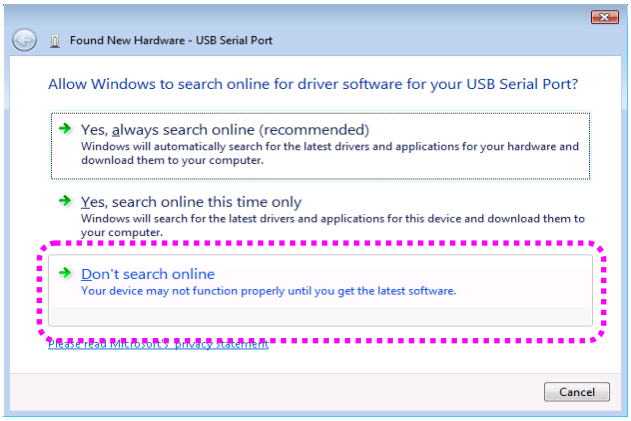
1. Run Windows Vista/2008
2. Connect USB MultiPort to your PC's USB port.
3. Insert media CD(provided with MultiPort) into the CD drive
4. Click "Locate and install driver software (recommended)" on the "Found New Hardware" window.



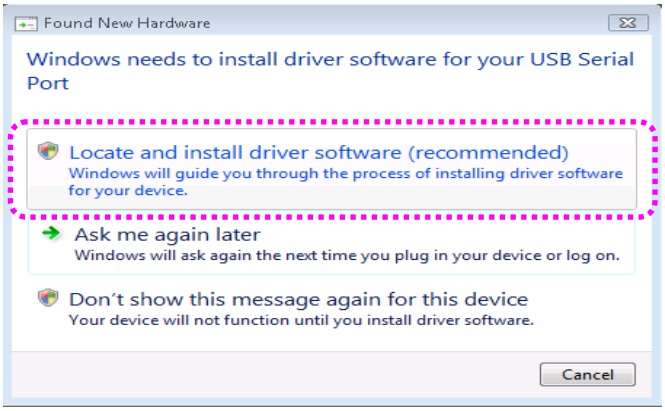
5. Step 4 will automatically install drivers in the CD. Dual RS232 will automatically be installed.
6. Following picture depicts Device Manager after carrying out step 4. As can be seen, all "USB Serial Converters" are successfully installed. The number of lines may vary depending on the product you are using.



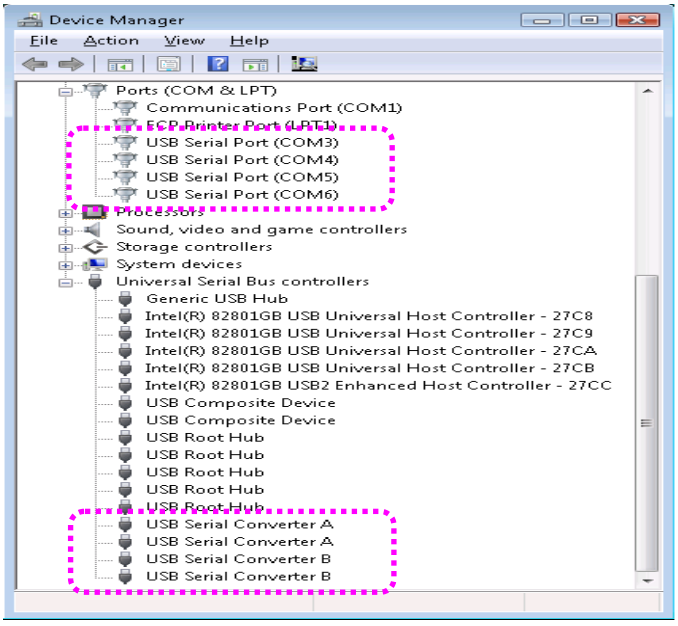
7. Following procedures will guide you through installing “USB Serial Port”. Select ‘Don’t search online’



8. Click “Locate & Install driver software (recommended)” on the “New hardware found” window



9. Following picture depicts “Task Manager” after carrying out step 8. As can be seen, all “USB Serial Converters” and “USB Serial Ports” are successfully installed.

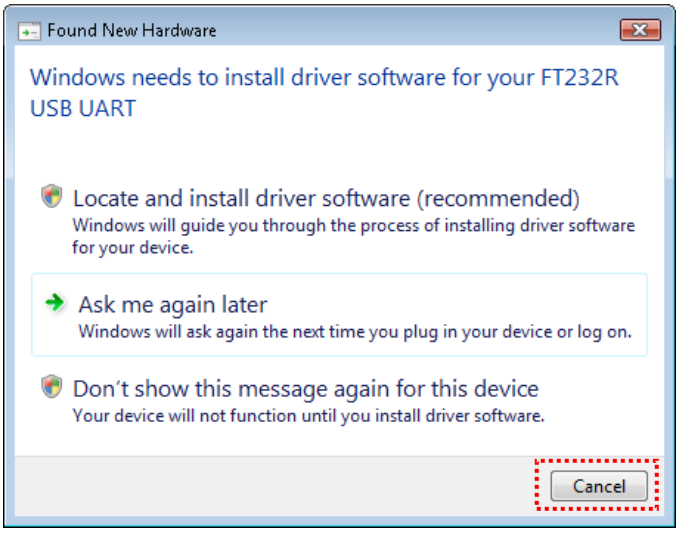


10. “USB Multiport” installation on Window Vista/2008 is now finished

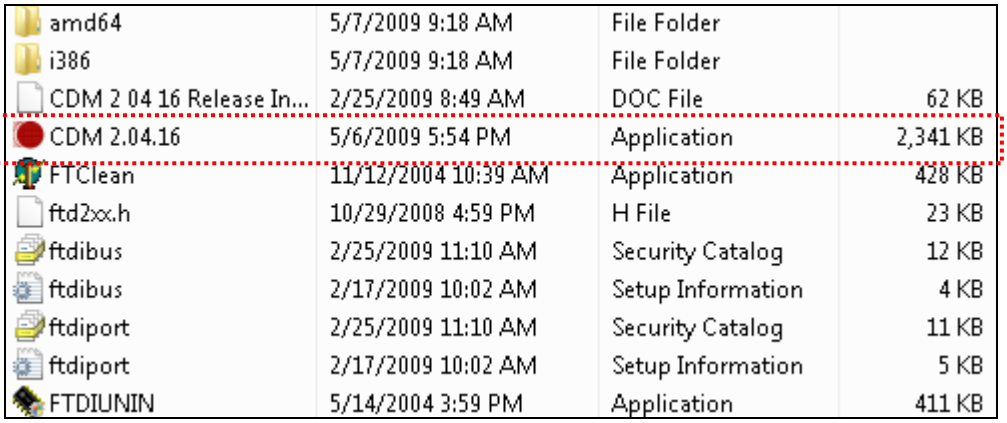
Automatic Driver Installation in Windows

This procedure applies to Windows 2000, XP, 2003, Vista, 2008 and Windows XP, 2003, Vista, 2008 x64. If you want to install device drivers manually, please refer to manual installation pages.

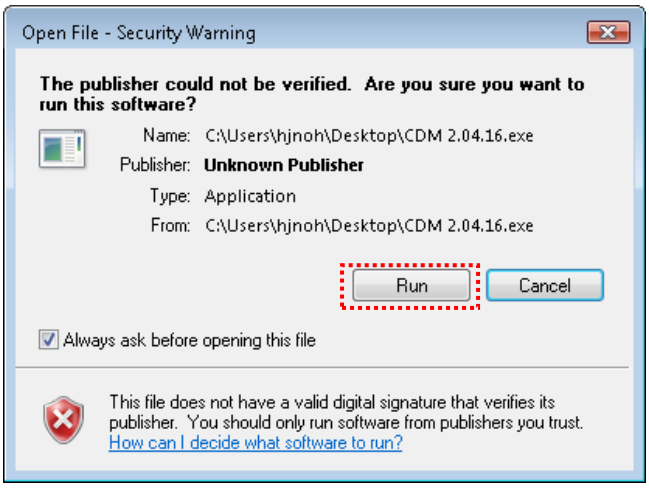
1. Run Windows.
2. Connect USB MultiPort to your PC's USB port.
3. Insert install CD into the CD-ROM drive.
4. If a "Found New Hardware" window appears, click "Cancel".



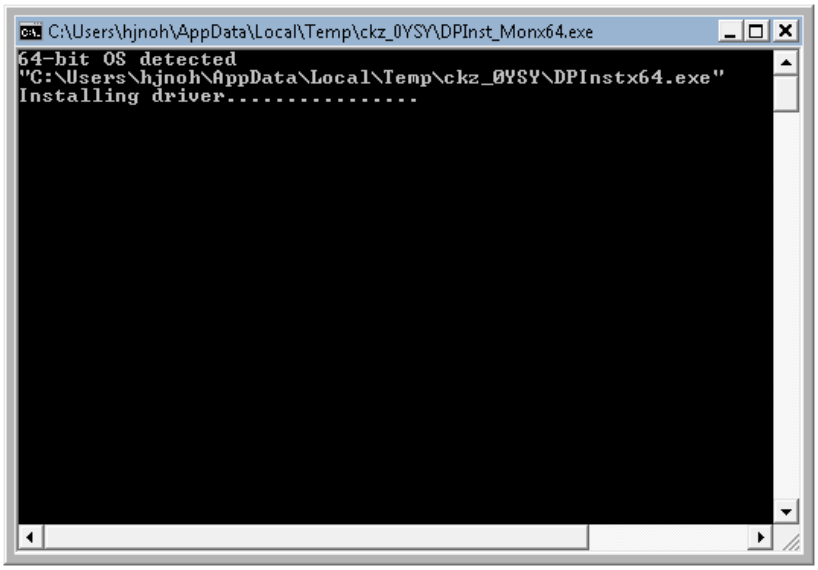
5. Go to "[CD]\Win2000,XP,2003,Vista,2008". Execute "CDM 2.04.16".



6. When the following windows appears, click “Run”.



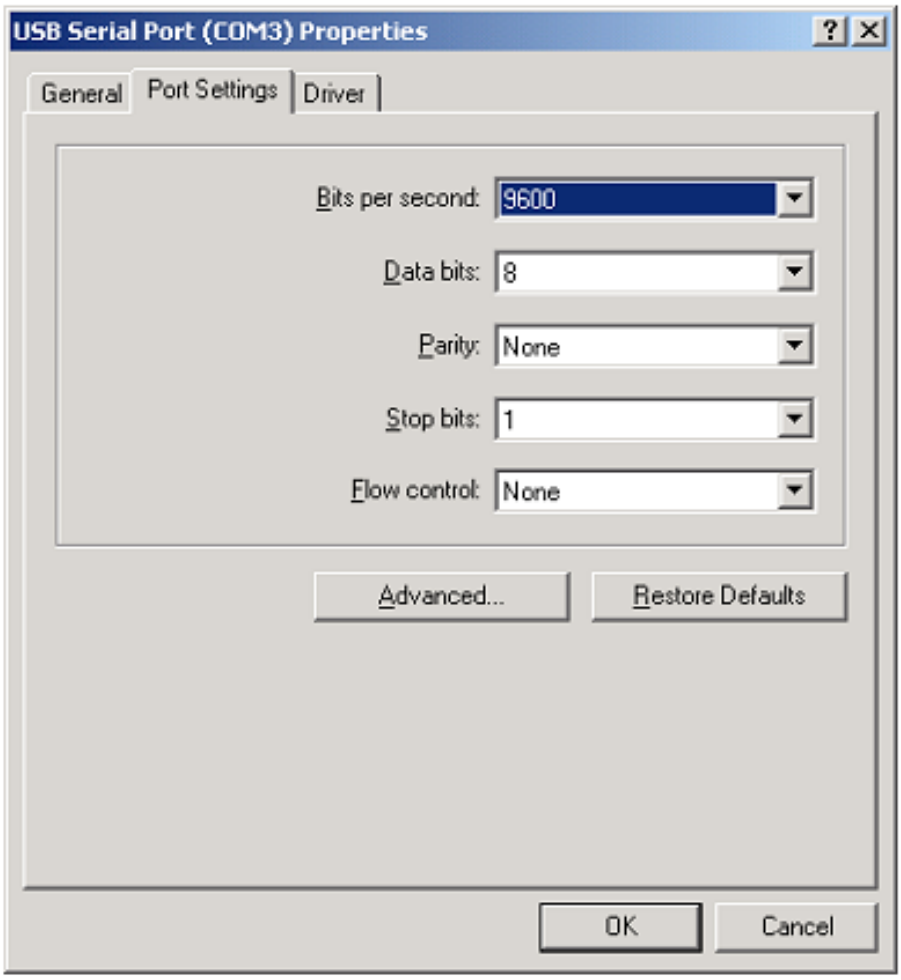
7. Device drivers will be installed automatically.



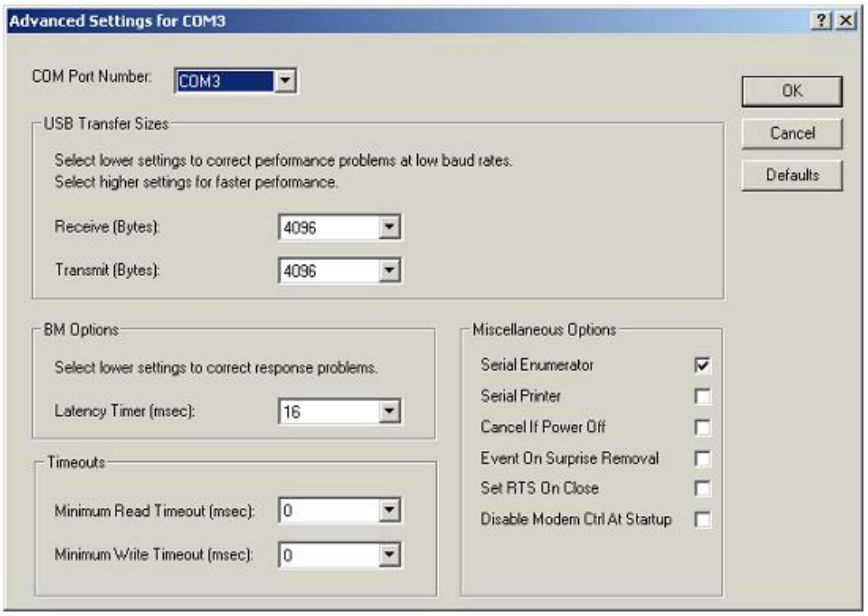
8. After the installation is completed, the program will terminate. Go to “Control Panel” → “Device Manager” or right click “Computer” → “Device Manager” to open Device Manager. You will be able to see that “USB Serial Converter” and “USB Serial Port” is successfully installed.

Windows Device Driver Setup

1. An advanced properties page is available for devices using the device. To access the advanced properties page, open "Device Manager" in Control Panel. Find the USB serial port you want to change the properties of and right-click on it. Select "Properties" from the menu then select the "Port Settings" tab to get the window below.



2. This page allows configuration of the basic device parameters (i.e. Baud rate, data bits, parity, stop bits and flow control). To access more advanced settings, click on the "Advanced…" button to display the advanced properties page (shown below).



3. This page will allow the following parameters to be altered:
   - COM port number
   - USB buffer sizes
   - Latency timer
   - Alter this to correct compatibility problems for obsolete applications.
   - Read and write timeout values
   - You can alter this for timing of timeout event if there are no more Tx/Rx data.
   - Miscellaneous options
   - Serial Emulator : The function of the serial enumerator is to detect a Plug-and-Play enabled device (such as a serial mouse or serial modem) that is attached to the USB serial port.
   - Serial Printer : If enabled, serial printer will disable timeouts to allow for long delays associated with paper loading.
   - Cancel If Power Off : The Cancel If Power Off option can be used to assist with problems encountered when going into a hibernate or suspend condition. This will cancel any requests received by the driver when going into hibernate or suspend.
   - Event on Surprise Removal : The Event On Surprise Removal option is generally left

unselected. If an application sets SERIAL_EV_EVENT2 (refer Windows DDK) in it's event bitmask and this feature is enabled, the device driver will signal this event on surprise removal.

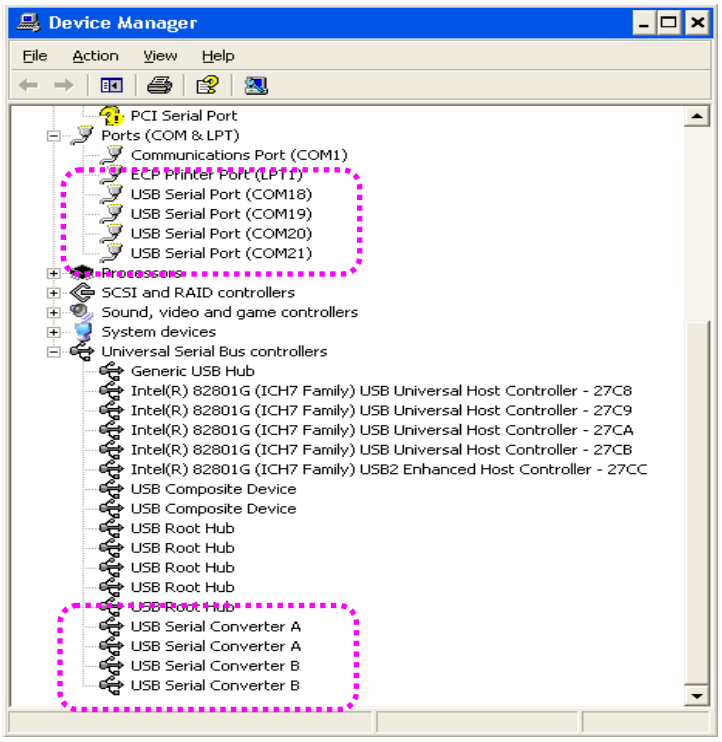
- Set RTS on Close : Selecting the Set RTS On Close option will set the RTS signal on closing the port.
- Disable Modem Control at Startup : This option is used to control the modem control signals DTR and RTS at startup. In normal operation, the modem control signals at startup follow the behavior of the legacy port. However, due to timing differences between a legacy COM port and a virtual COM port, a "spike" on one of these signals in the legacy port can appear as an assertion of the signal in the virtual COM port.
- Devices that monitor these signals can enter the wrong state after an unplug-replug cycle on USB. Note that if \ the "Serial Enumerator" option in the property page is selected, then the enumeration sequence causes the modem control signals to change at startup. So if it is necessary to select "Disable Modem Ctrl At Startup", then it is likely that "Serial Enumerator" should be unchecked in the property page.

- **Don't adjust these parameters if you can use the device normally. If not, please contact us (tech@sysbas.com) about these parameters first.**

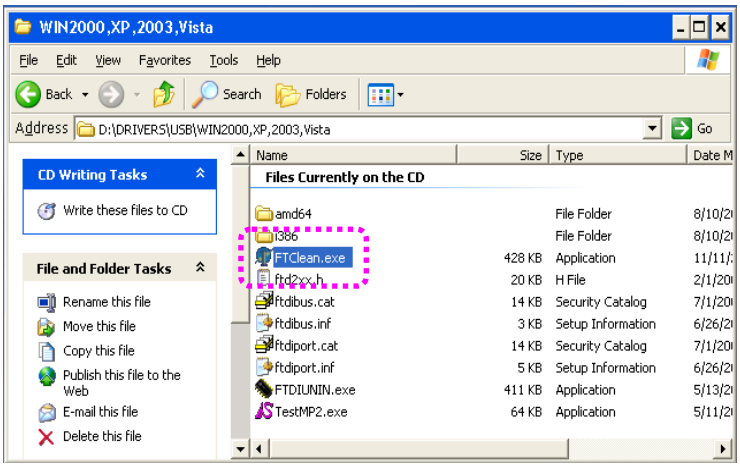
Removing Windows 98/2000/XP/2003 Driver

- USB Multiport will be removed after all removal processes are completed.

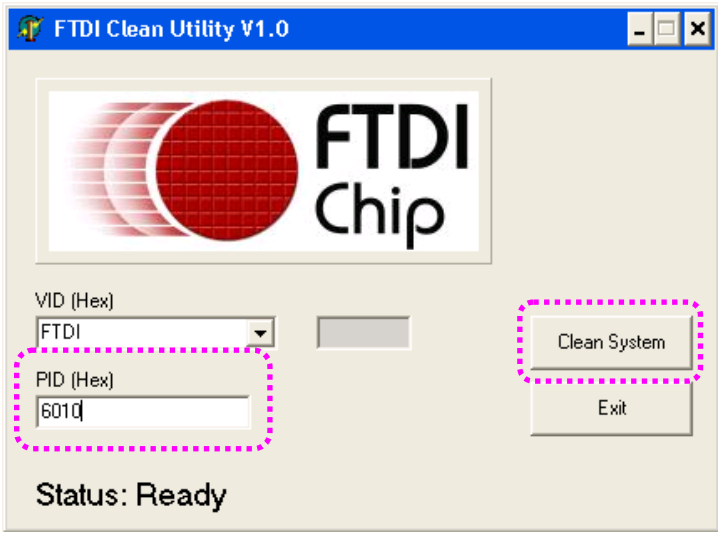
1. Execute “Task Manager”. “USB Serial Converter A/B” controllers and “USB Serial Port (COM3~6)” Serial Ports can be seen. The number of ports may vary depending on the product you are using. These devices must all be removed.



2. Insert install CD in the CD-Rom. Open the folder named “Win2000,XP,2003,Vista,2008”.



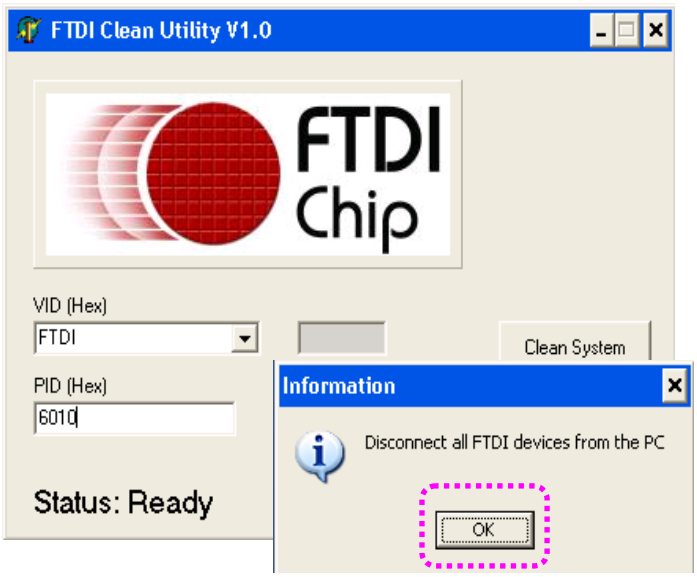
3. Execute “FTClean.exe”. Type the correct PID under “PID(Hex)” box, and then click “Clean System”.



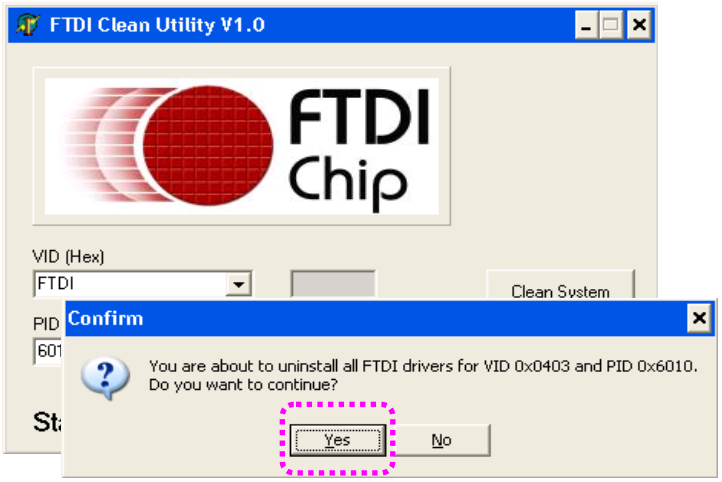
“PID” refers to the Product ID

- **Multi-1 PID: 6001**
- **Multi-4/8 PID: 6010**

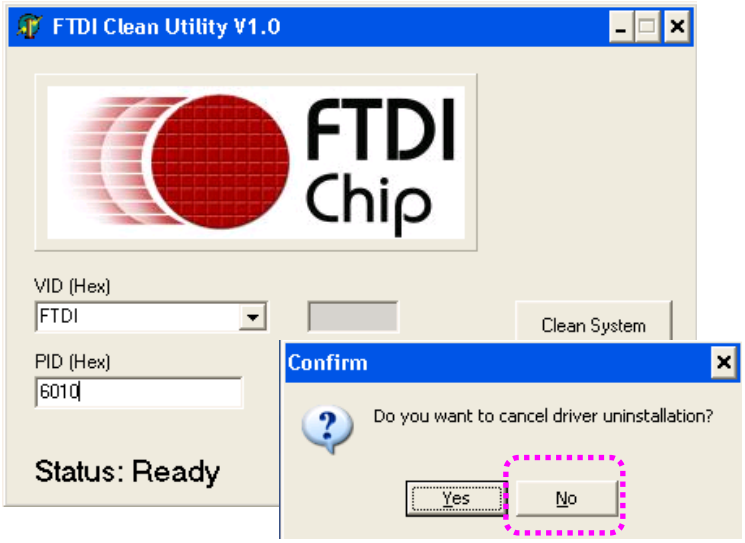
4. Click “OK”.



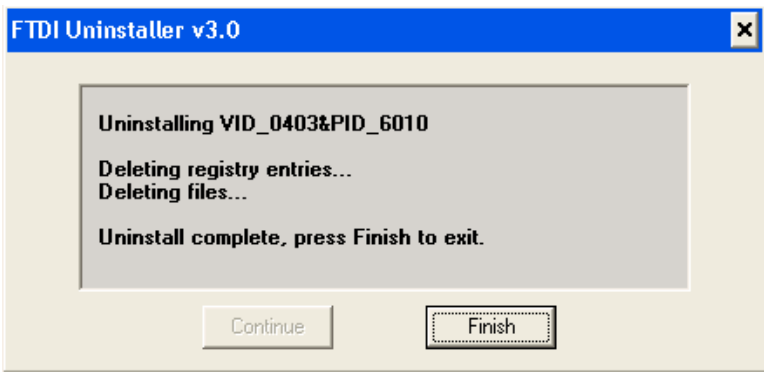
5. Click “Yes”.



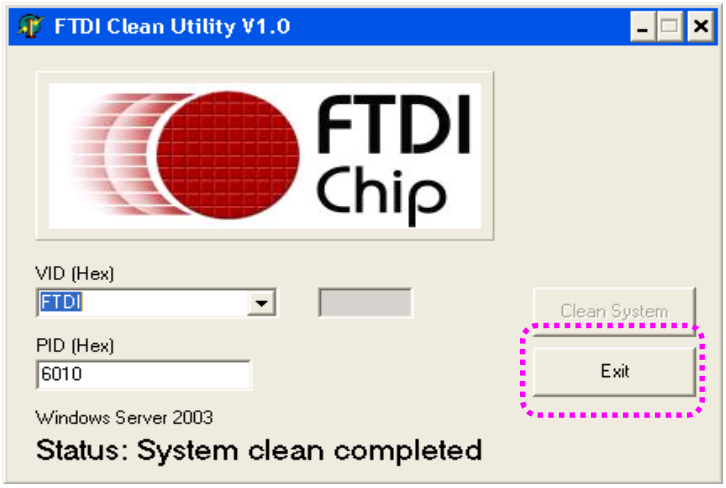
6. Click “No”.



7. “FTDI Uninstaller v3.0” window will appear & disappear several times. This is a normal uninstall process so wait until this window does not appear.



8. Driver removal is completed when the following window('FTDI Clean Utility) remains activated without any action.



9. Remove USB MultiPort from USB connection port.

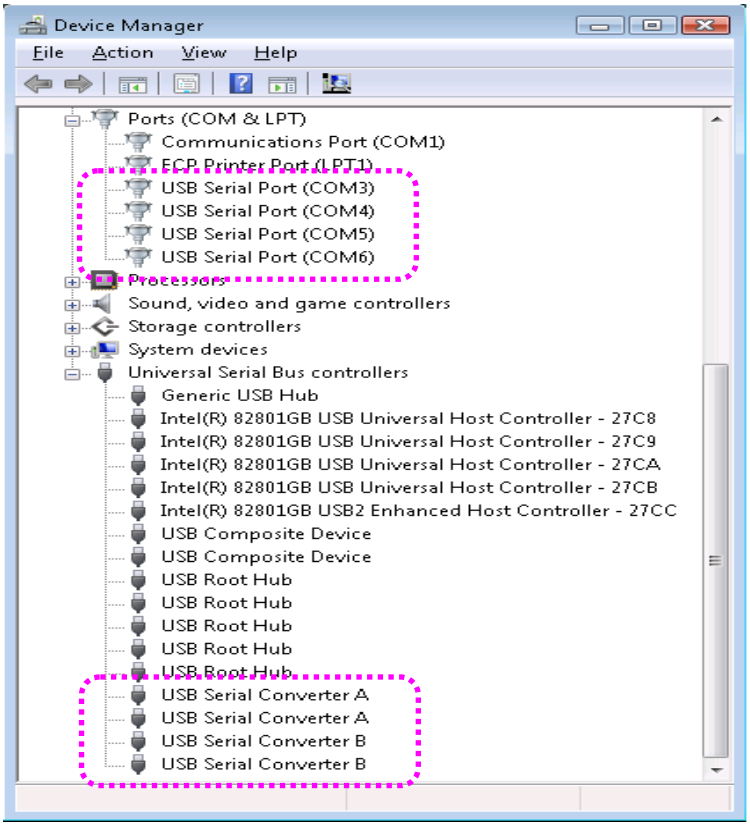
10. The driver removal process is now completed.

Removing Windows Vista/2008 Driver

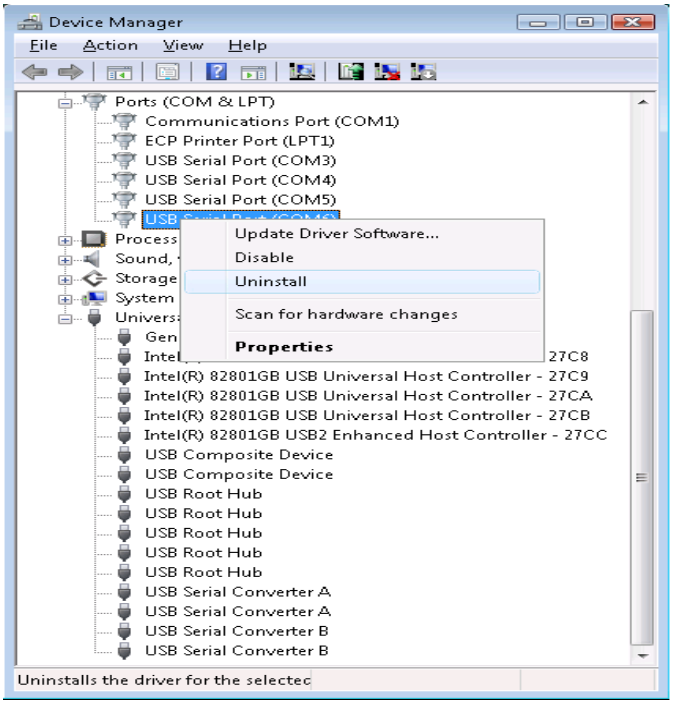
- Please note that device driver removal procedure under Windows Vista/2008 is different from other Window versions.

1. Execute “Device Manager”. Do not remove USB MultiPort form USB port. USB Multiport will be removed after all removal processes are completed.

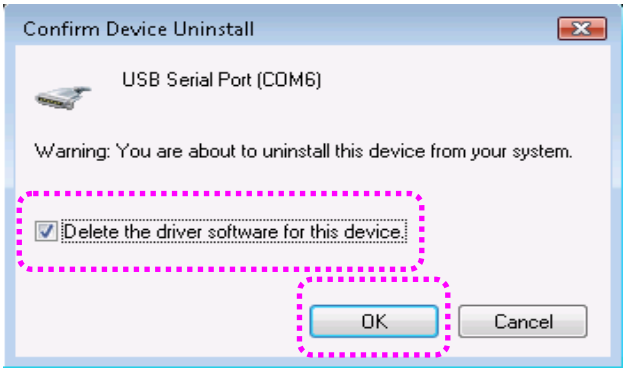
2. “USB Serial Converter A/B” controllers and “USB Serial Port(COM4~7)” serial ports can be found. The number of lines may vary depending on the product you are using. Serial ports will be removed first.



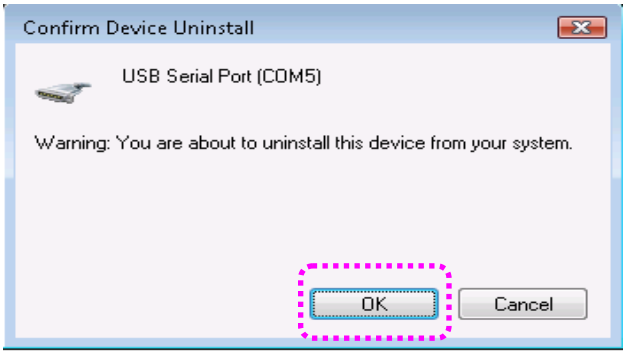
3. Find ‘USB Serial Port(COM#)’ under “Device Manager->Ports->USB Serial Port(COM#)” and right click on any “USB Serial Port”. Click “Uninstall”.



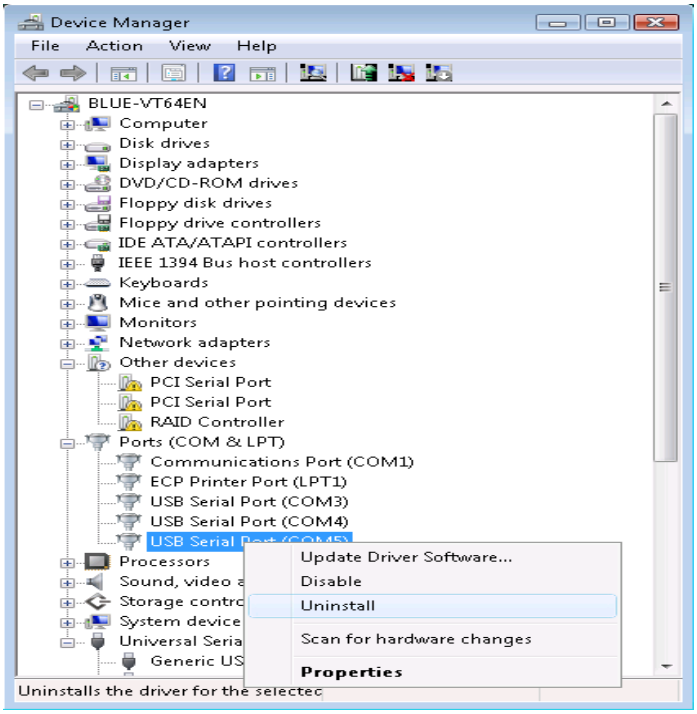
4. Check the following check box, and click “OK”.



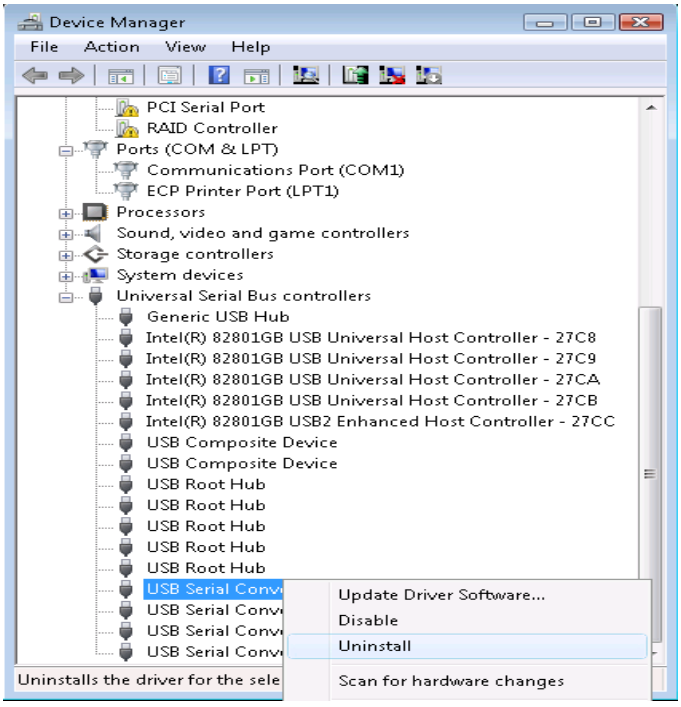
5. Remove rest of the USB Serial Ports.



6. Unlike the first Device Removal Window, check box can not be found. Click “OK” to remove current port. Repeat step 5~6 until all Serial ports are removed.

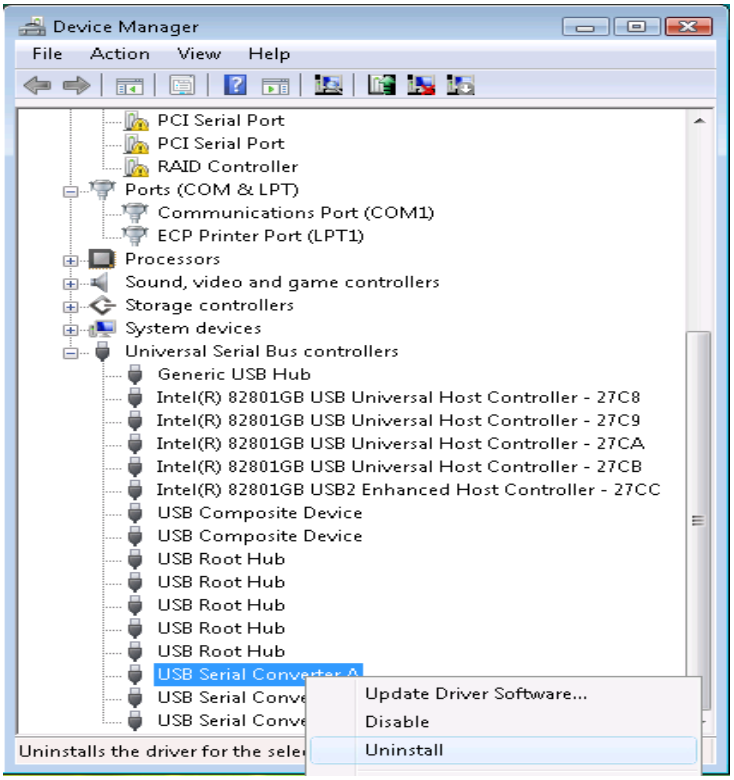


7. “USB Serial Port” removal is now completed. We will now continue with “USB Serial Converter” removal.
8. Right click on one of the “USB Serial Converter” and click “Uninstall”.



9. Check the “check box” and click “OK”.

10. Remove rest of “USB Serial Converters”.



11. Repeat steps 10~11 until all USB Serial Converters are removed.

12. Remove USB MultiPort from USB connection port.
13. USB MultiPort drivers are now completely removed from your system.