MultiPort-USB

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
2009-03-24	2.3	Partial	Multi-1 corrected by msbaek
2009-12-21	2.4	Partial	Window7 added ghpark

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-1 USB Specifications

- Hardware

- Number of Ports: 1
- USB Interface: USB Spec 1.1/2.0
- Serial Interface: RS232/422/485
- LED: Tx and Rx per each port
- Serial Connector: DB9 (male)
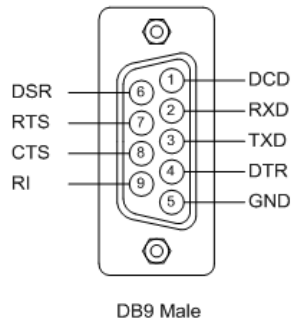- Serial Communication Speed: 921.6Kbps maximum
- External Power: Unable

- Software

- Supports Windows 98/2000/2003/XP/Vista/2008/7,
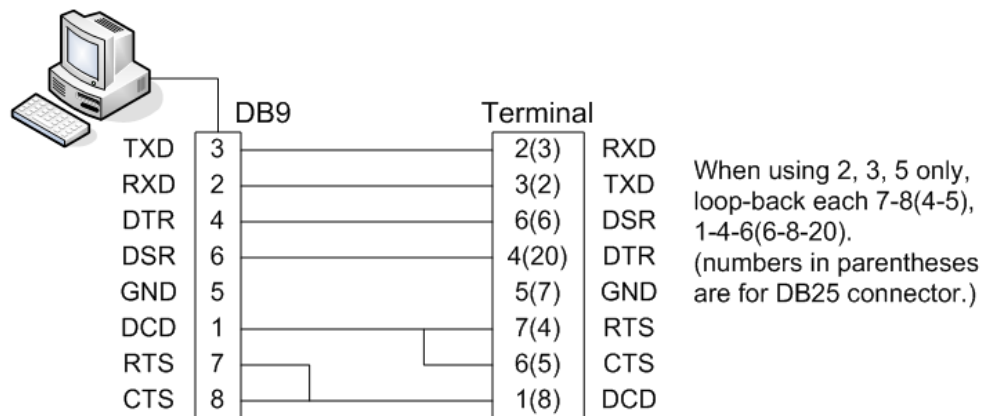- Supports Windows 2003/XP/Vista/2008/7 x64
- Supports Linux(*1)

*1: If you would like to use USB Multiport for Linux, please contact **tech@sysbas.com**
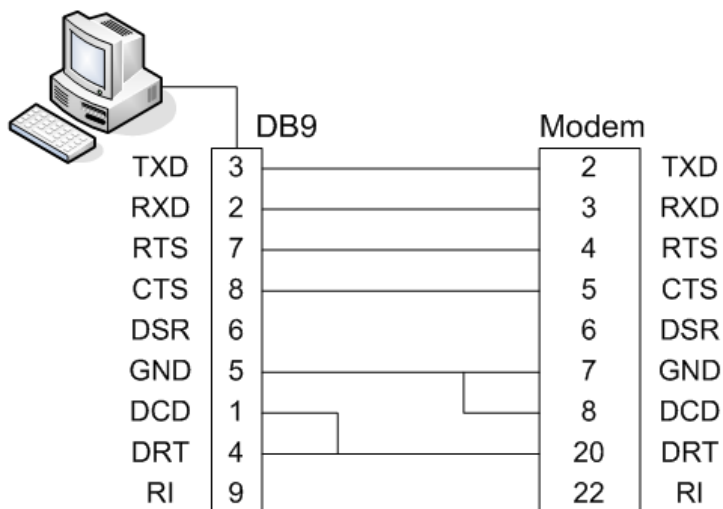
Multi-1 USB RS-232 Settings
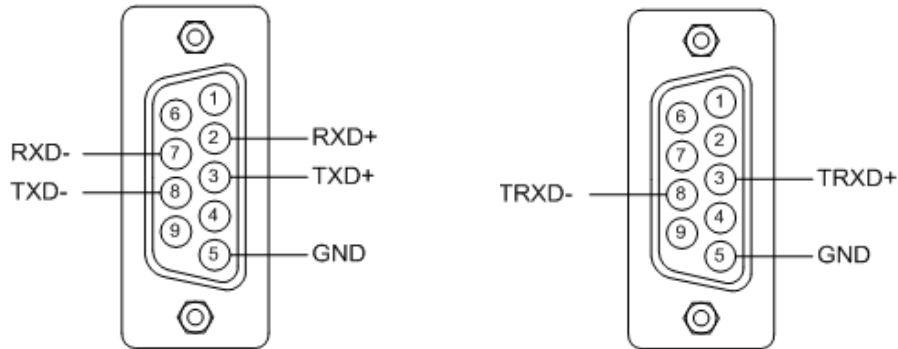
- DB9 Male Connector

DB9 Male

- Line Connection for Terminal

DB9				Terminal	
TXD	3			2(3)	RXD
RXD	2			3(2)	TXD
DTR	4			6(6)	DSR
DSR	6			4(20)	DTR
GND	5			5(7)	GND
DCD	1			7(4)	RTS
RTS	7			6(5)	CTS
CTS	8			1(8)	DCD

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.)

- Line Connection for Modem

DB9				Modem	
TXD	3			2	TXD
RXD	2			3	RXD
RTS	7			4	RTS
CTS	8			5	CTS
DSR	6			6	DSR
GND	5			7	GND
DCD	1			8	DCD
DRT	4			20	DRT
RI	9			22	RI

Multi-1 USB Combo (RS422/485) Settings

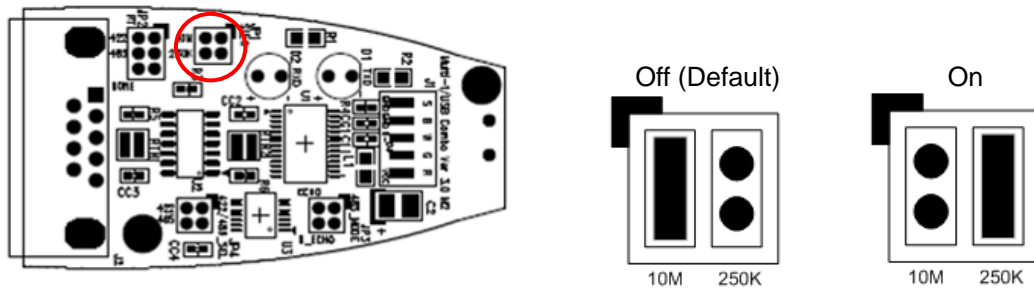## - DB9 Male Connector

RS422 → DB9 Male RS485 → DB9 Male

## - JP1 Slew: RS422/RS485 Slew Rate Limit Function Settings

Off (Default)   On

- ◆ Select 'Slew Rate Limit function on' to reduce electromagnetic waves. Maximum serial communication speed is restricted to 250Kbps when this function is on.
- ◆ 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.
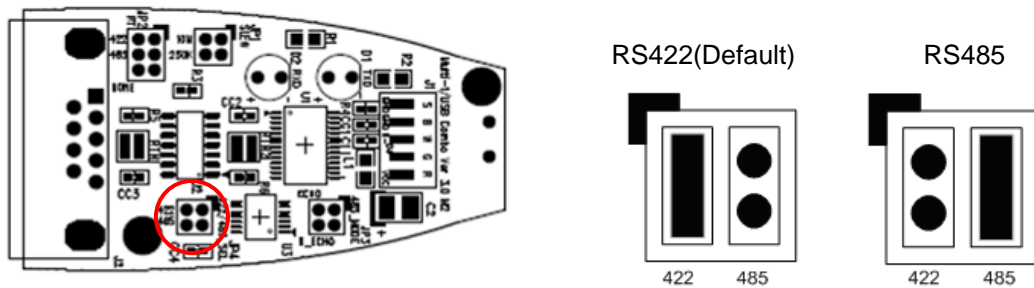
- JP2 RT: RS422/RS485 Terminal Resistor Settings

RS422 Terminal Resistor   RS485 Terminal Resistor   Unused (Default)
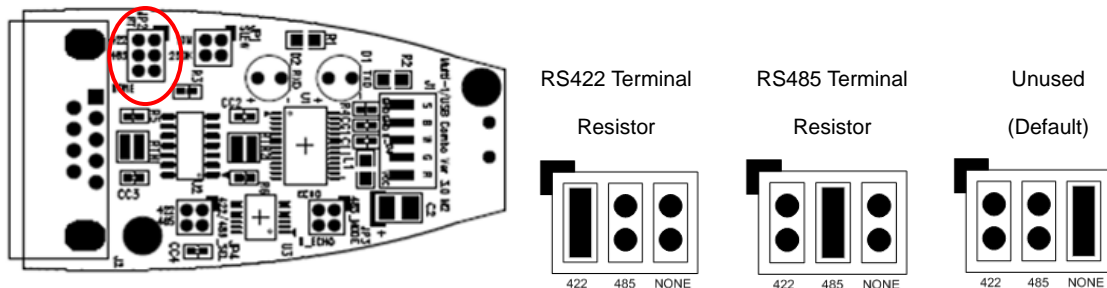
- JP3 RT: RS485 Echo/Non-echo Mode Settings

Echo-Mode   Non-Echo Mode
(Default)
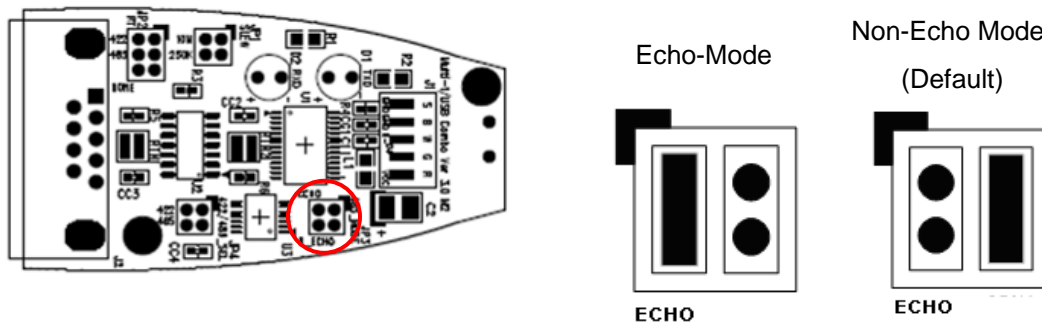
- JP4 422/485 SEL: RS422/RS485 Interface Settings
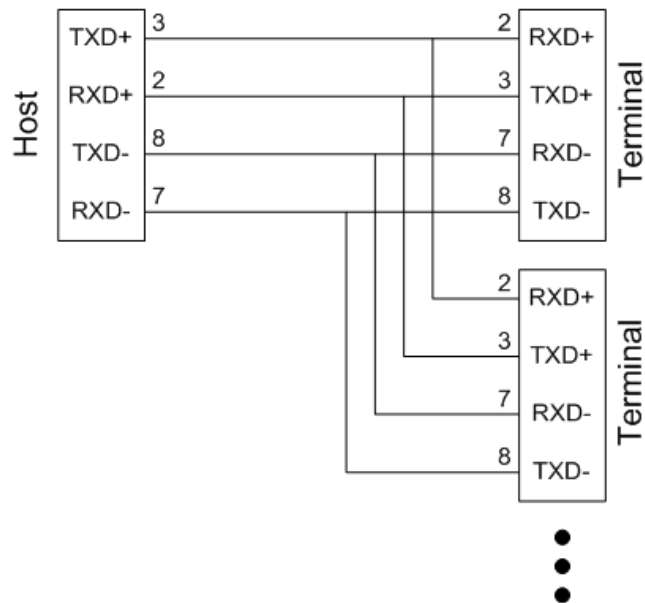

RS422(Default)   RS485

- RS422 Point-to-Point/Multi-Drop Settings

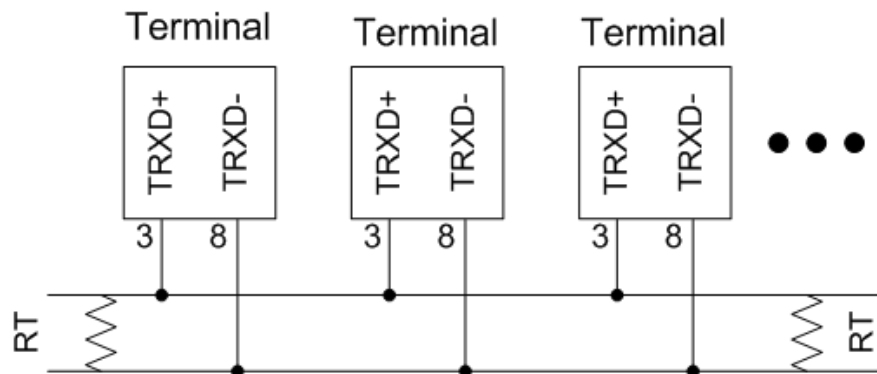- Multi-1 USB support auto-toggling data transfer, so there are no hardware settings.

- Line Connection for RS422 Point-to-Point
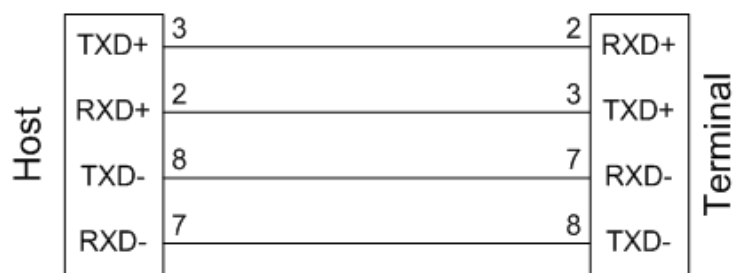
- Line Connection for RS422 Multi-Drop

- Line Connection for RS485

- ⬧ Terminal Resistor: 120 Ohm
- ⬧ There is no distinction of host and terminal in RS485

Driver Installation in Windows 98

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".
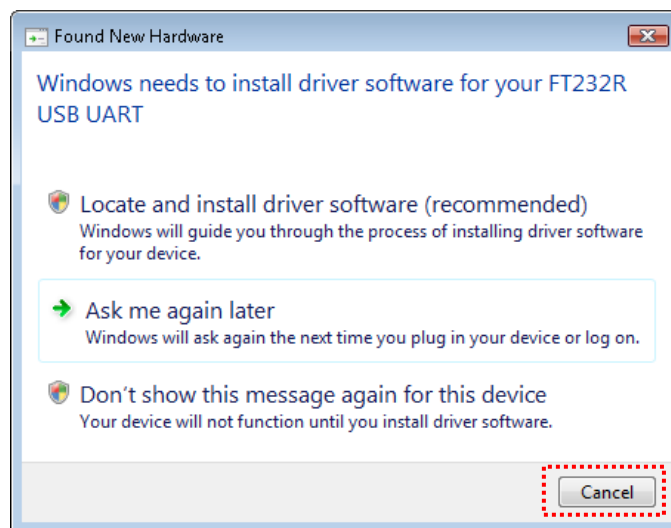

6. Click "Finish" to complete the installation process.
7. Repeat steps 3-6 when "Add New Hardware Wizard" restarts.

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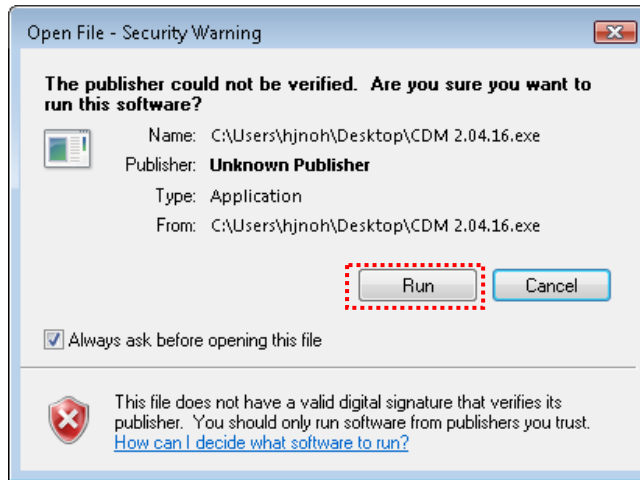
1. Run Windows.
2. Connect USB MultiPort to your PC's USB port.
3. Insert install CD into the CD-ROM drive.
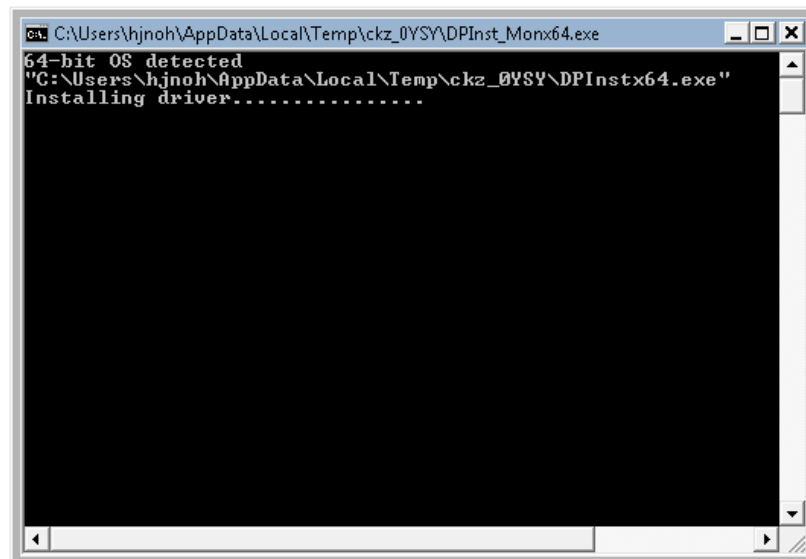4. If a "Found New Hardware" window appears, click "Cancel".

5. Go to "[CD]\Win2000,XP,2003,Vista,2008,7". Execute "CDM20600".

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.

Manual Driver Installation in Windows 2000/XP/2003

- ◆ 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 install CD into the CD drive.

4. Select "Install software automatically (Recommended)", then click "Next".
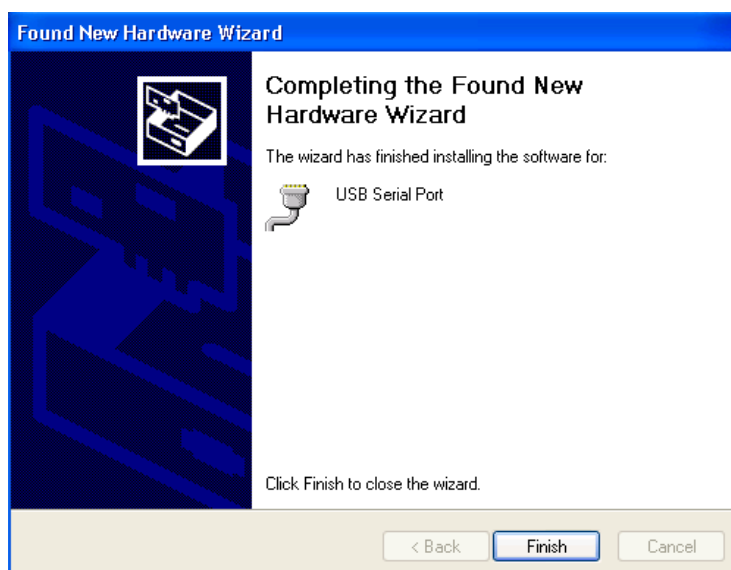

5. Click "Finish".

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"
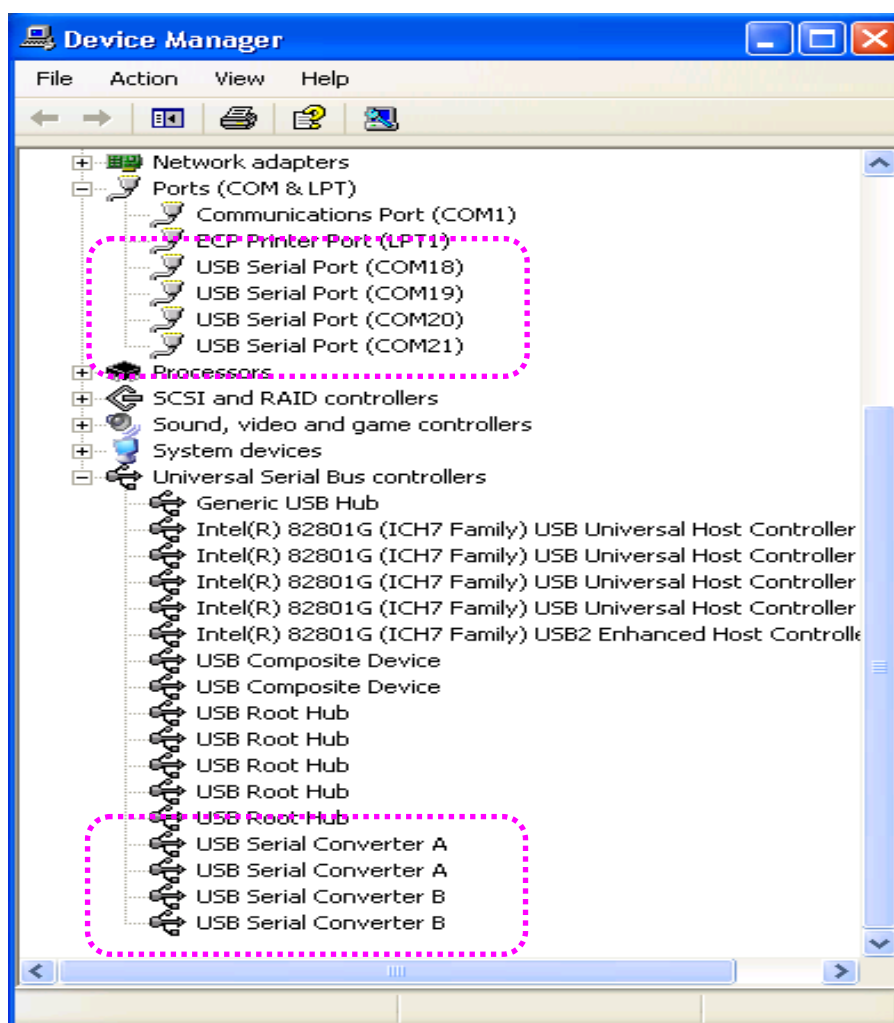

8. Click "Finish"

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.


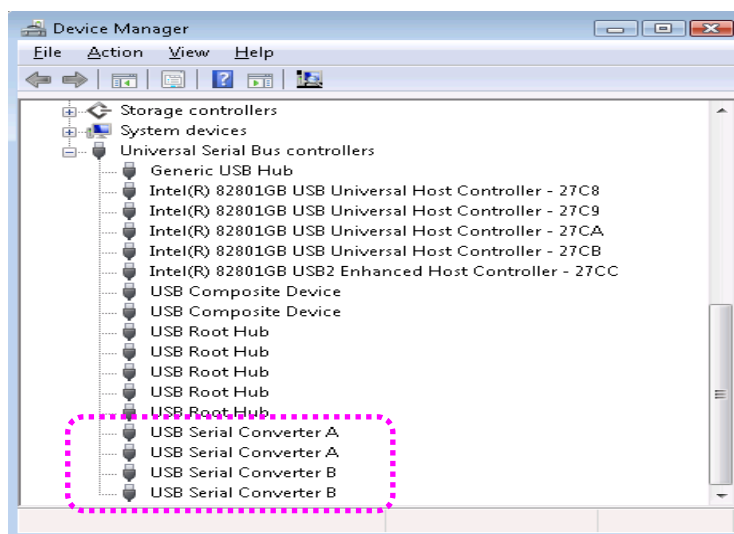11. USB Multiport installation on Window 2000/XP/2003 is now finished

Manual Driver Installation in Windows Vista/2008

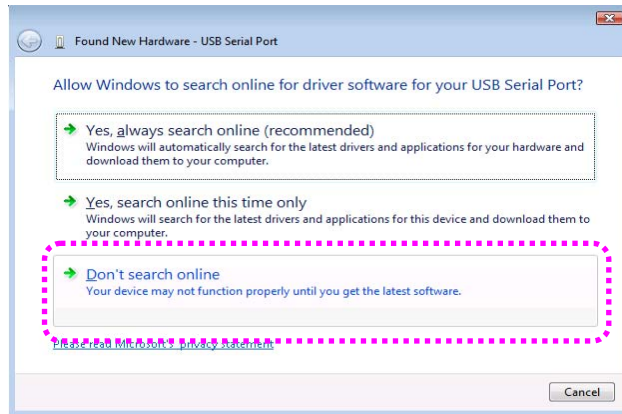❖ Install procedures for 64bit drivers are identical to 32bit drivers

1. Run Windows Vista
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.
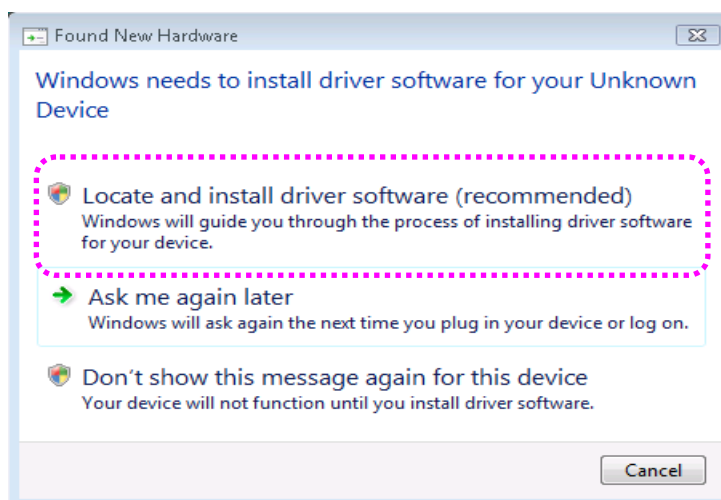

5. Step 4 will automatically install drivers in the CD. Dual RS232 will automatically be installed.
6. Following picture depicts Device Manager after carrying out step 4. As can be seen, all "USB Serial Converters" are successfully installed. The number of lines may vary depending on the product you are using.
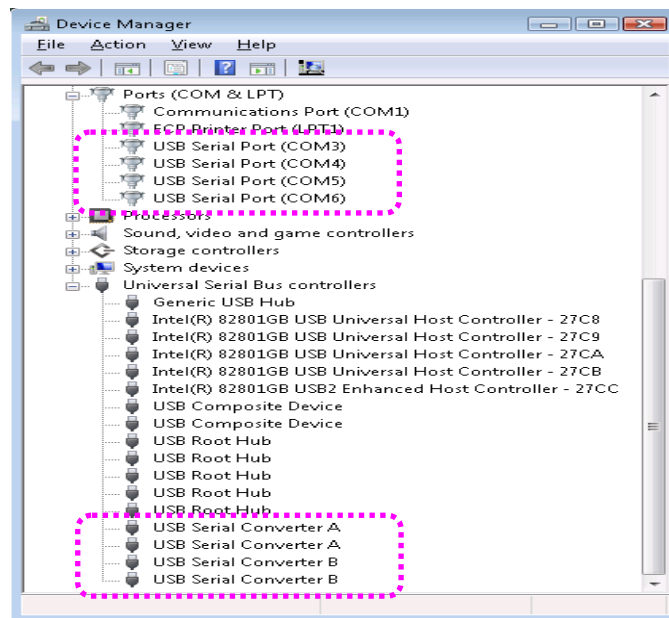
7. Following procedures will guide you through installing "USB Serial Port". Select 'Don't search online'

8. Click "Locate & Install driver software (recommended)" on the "New hardware found" window
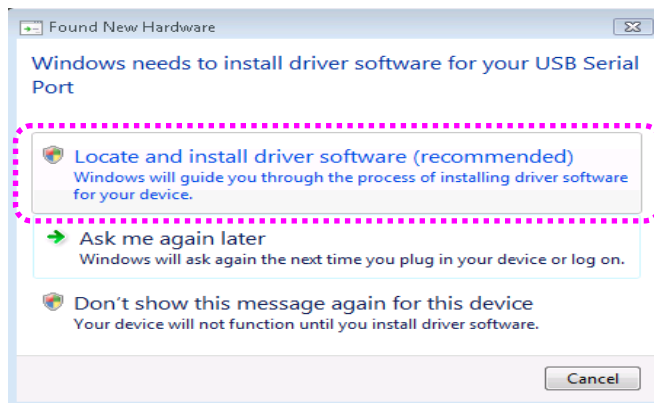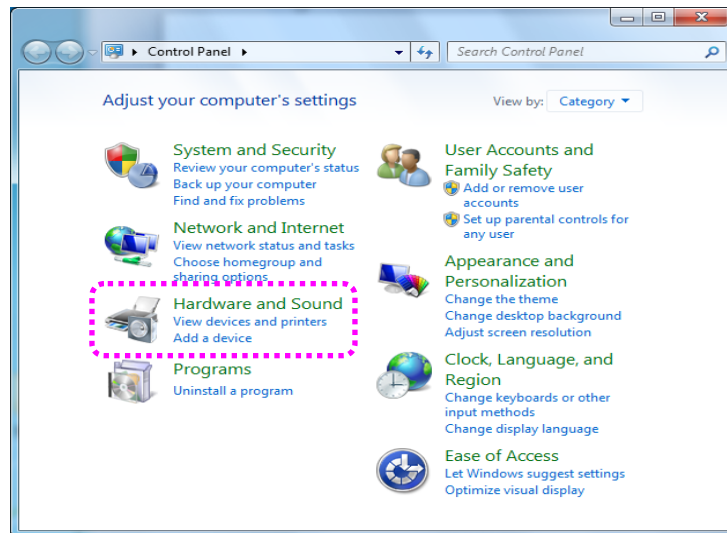
9. Following picture depicts "Task Manager" after carrying out step 8. As can be seen, all "USB Serial Converters" and "USB Serial Ports" are successfully installed.


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

Manual Driver Installation in Windows 7

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

1. Run Windows 7

2. Connect USB MultiPort to your PC's USB port.

3. Insert media CD(provided with MultiPort) into the CD drive

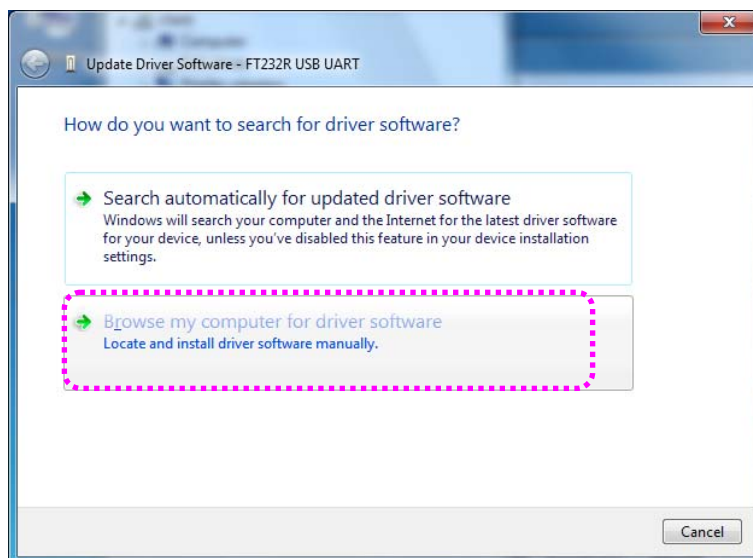4. Click "Hardware and Sound" in "Control Panel"

5. Following picture depicts Device Manager after carrying out step 4.
   Click "Device Manager".
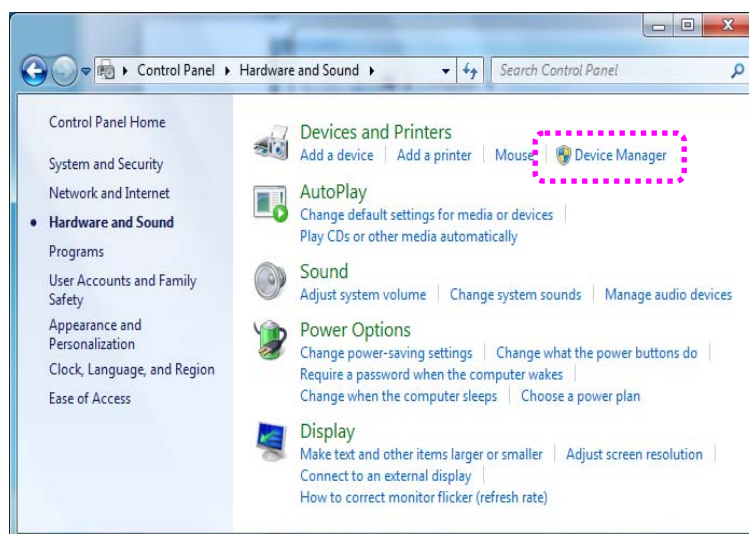
6. Right click "FT232R USB UART" in "Device Manager". then Choose "Update Driver Software"
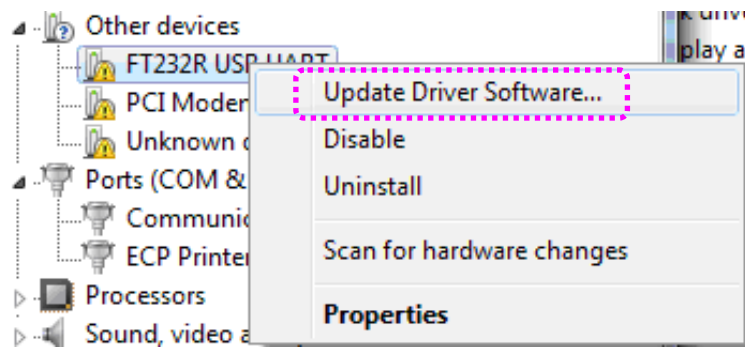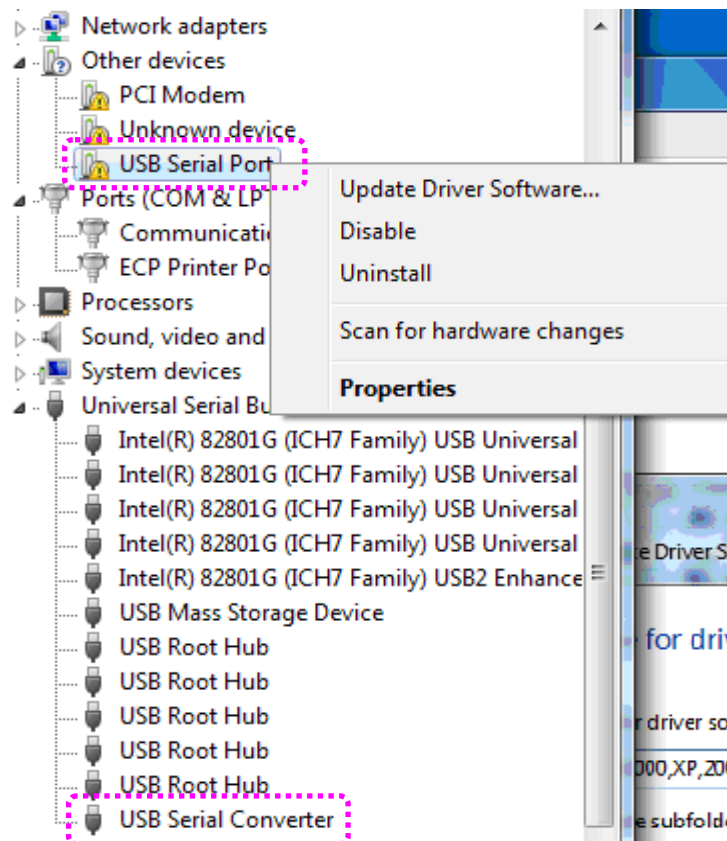

7. Click "Browse my computer for driver software" in order to install driver manually.

8.　Click "Browse" and set driver software's location to
　　"[CD]:\Win2000,XP,2003,Vista,2008,7"

9.　Confirm that "USB Serial Converter" is installed normally. then, right click "USB Serial
　　Port" and follow the same process from number 6 again.

10. Following picture depicts "Device Manager" after carrying out all step. As can be seen, all "USB Serial Converters" and "USB Serial Ports" are successfully installed.
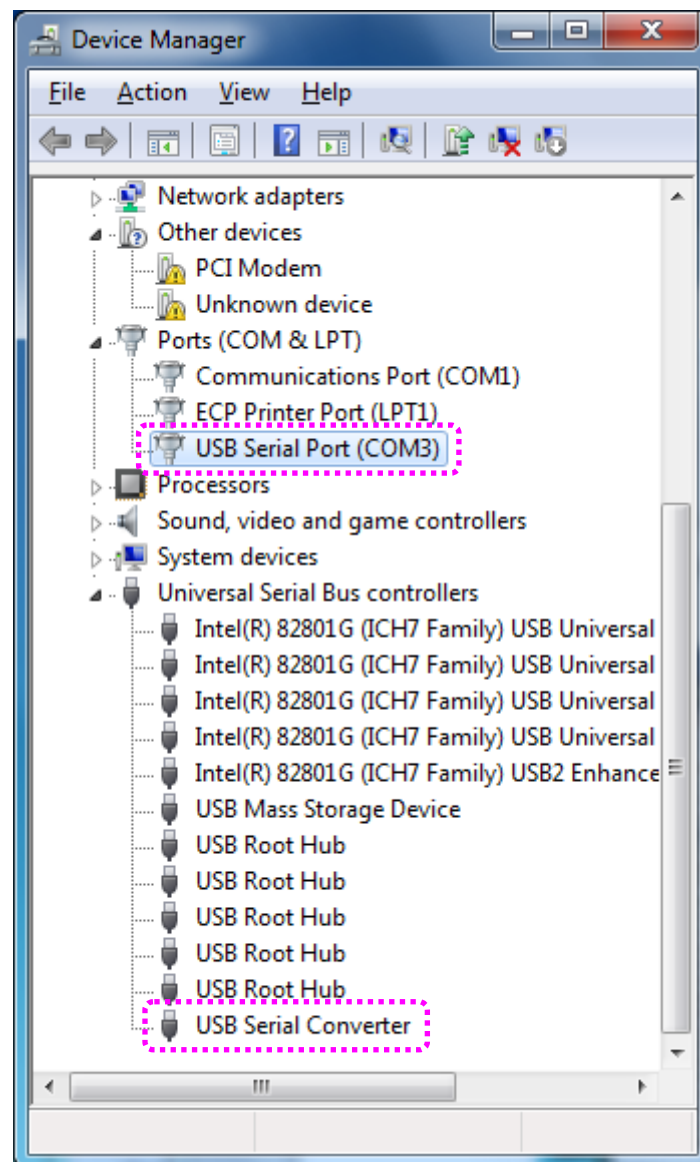

11. "USB Multiport" installation on Window 7 is now finished

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.
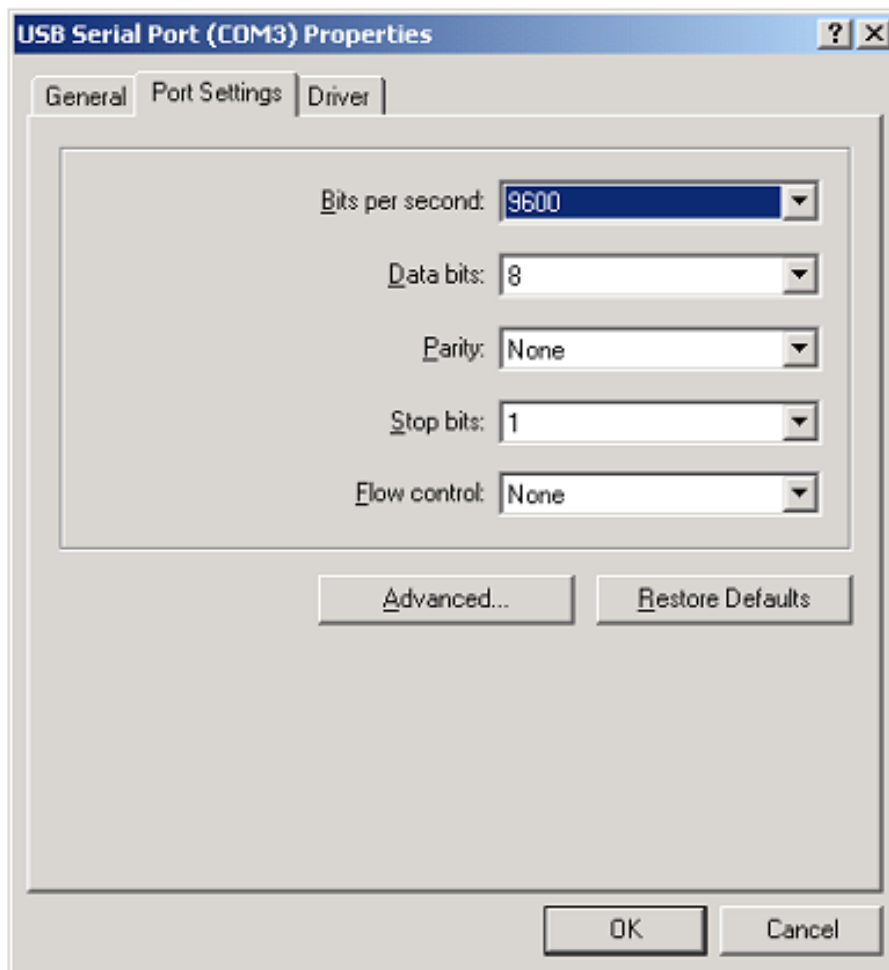
2. This page allows configuration of the basic device parameters (i.e. Baud rate, data bits, parity, stop bits and flow control).   To access more advanced settings, click on the "Advanced…" button to display the advanced properties page (shown below).
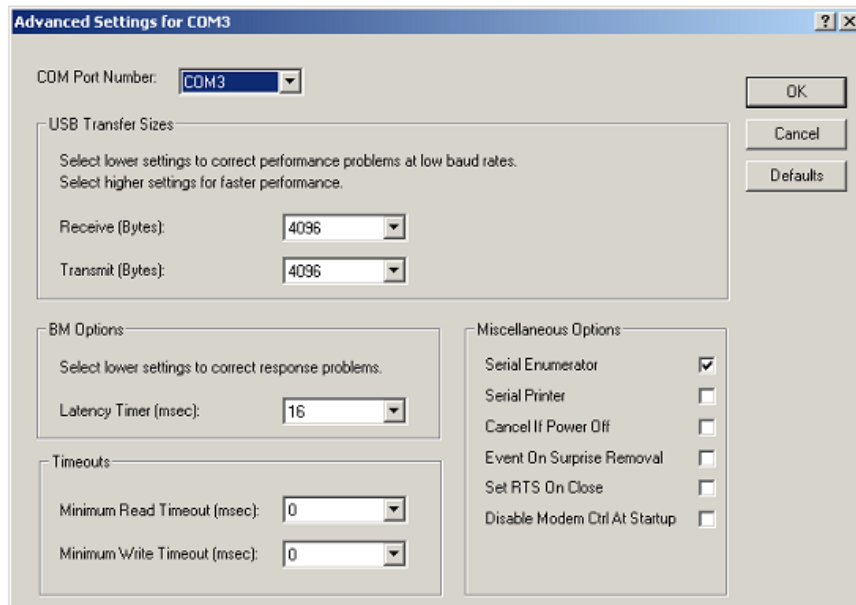
3. This page will allow the following parameters to be altered:
    - COM port number
    - USB buffer sizes
    - Latency timer
    - Alter this to correct compatibility problems for obsolete applications.
    - Read and write timeout values
    - You can alter this for timing of timeout event if there 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.
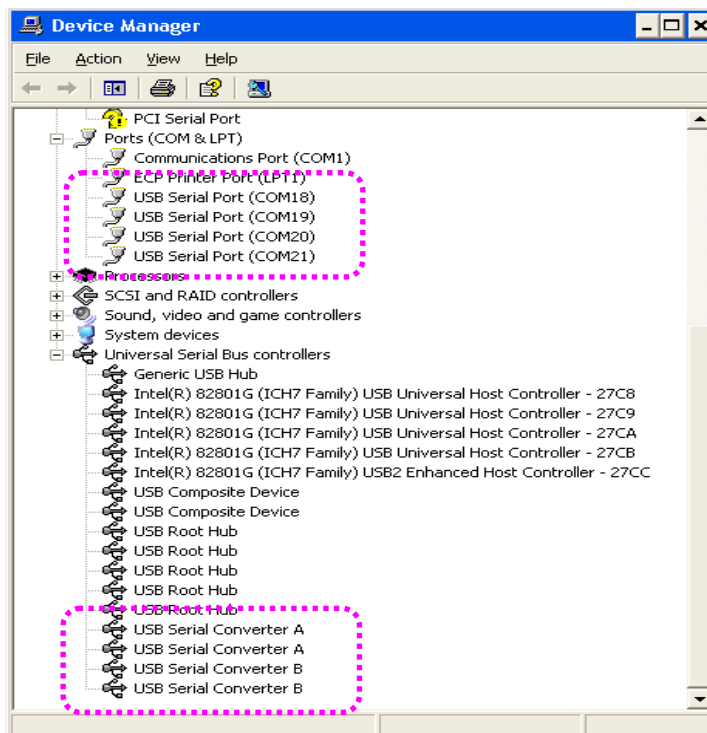
2. Insert install CD in the CD-Rom. Open the folder named "Win2000,XP,2003,Vista,2008,7".
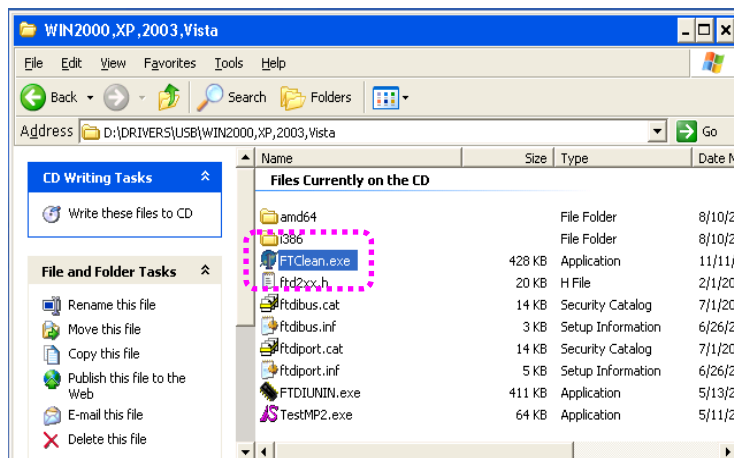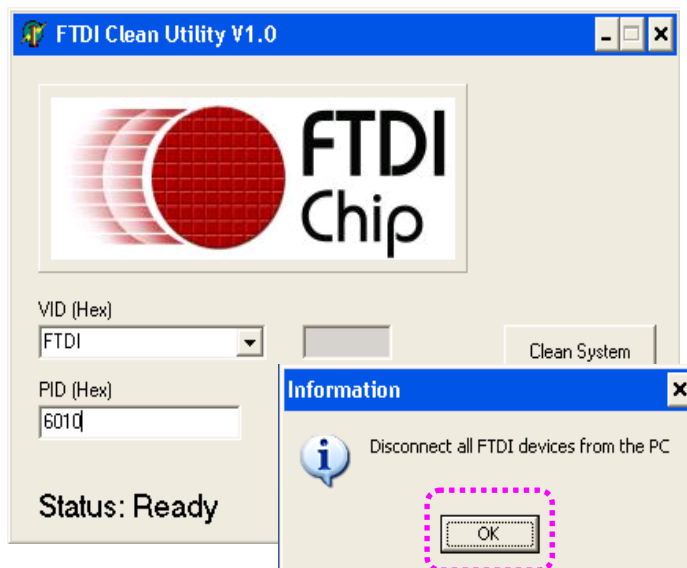
3. Execute "FTClean.exe". Type the correct PID under "PID(Hex)" box, and then click "Clean System".
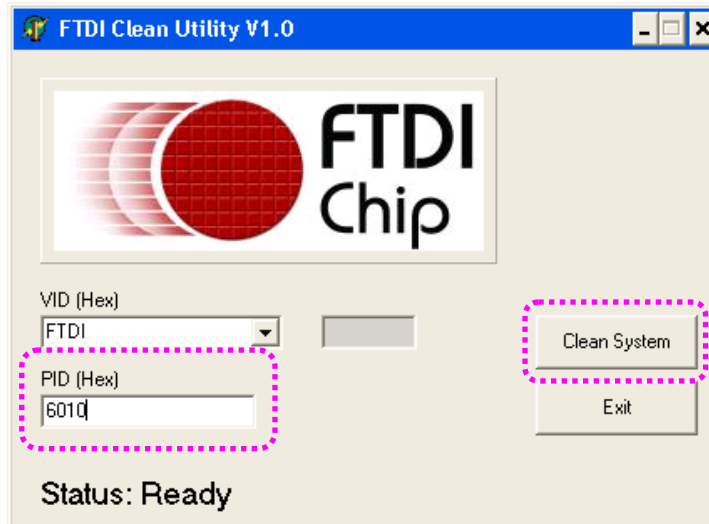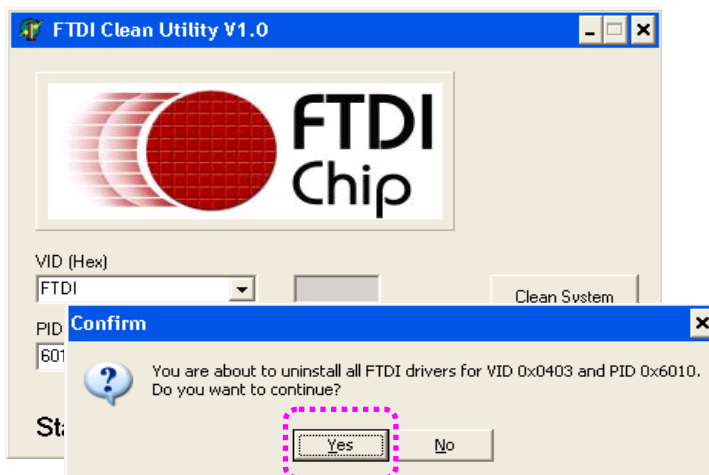

"PID" refers to the Product ID

     ❖   **Multi-1 PID: 6001**
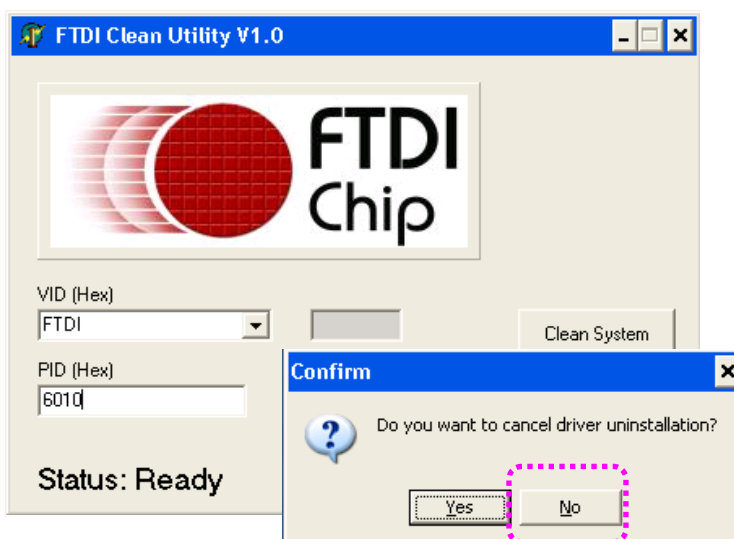
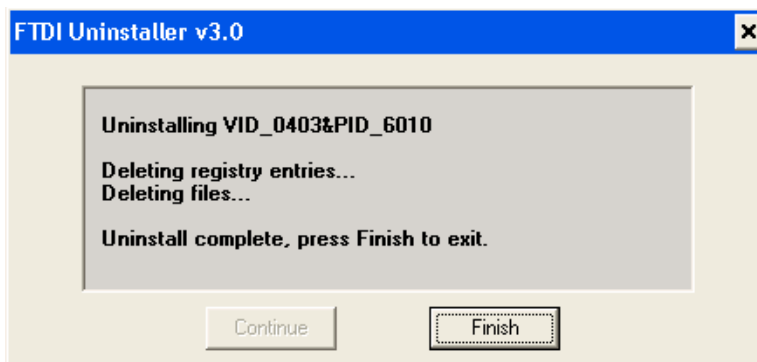   ❖   **Multi-4/8 PID: 6010**
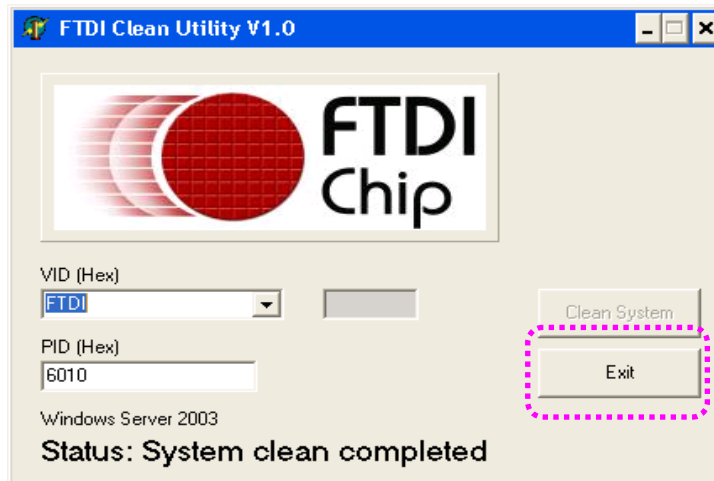
4. Click "OK".

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.

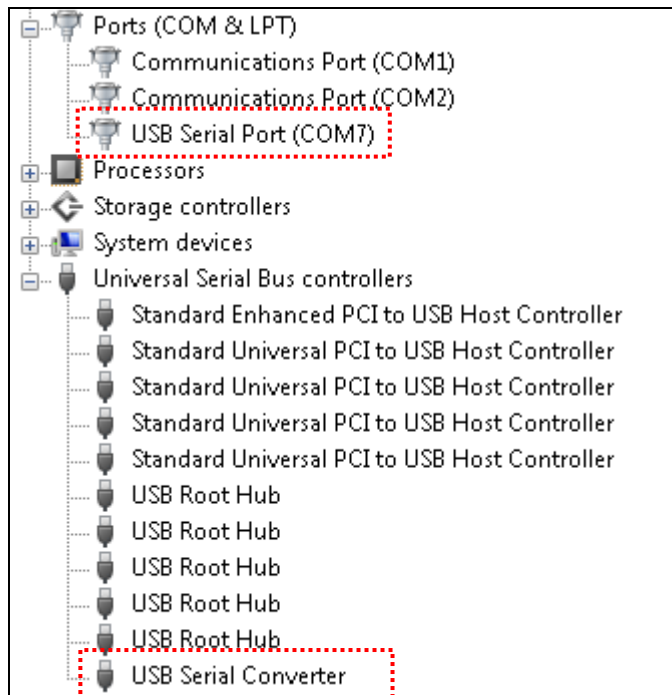8. Driver removal is completed when the following window('FTDI Clean Utility) remains activated without any action.

9. Remove USB MultiPort from USB connection port.

10. The driver removal process is now completed.

Removing Windows Vista/2008/7 Driver

- Please note that device driver removal procedure under Windows Vista/2008/7 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" controllers and "USB Serial Port(COM#)" serial ports can be found.

3. Find 'USB Serial Port(COM#)' under "Ports (COM & LPT)". Right click on "USB Serial Port" and Click "Uninstall".
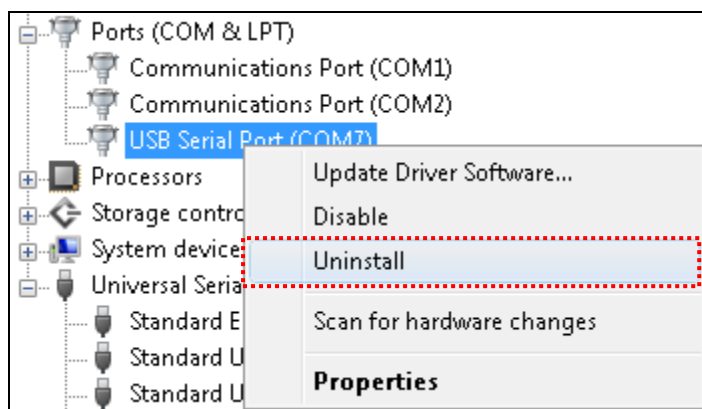
4. Check the following check box, and click "OK".

5. "USB Serial Port" removal is now completed. We will now continue with "USB Serial Converter" removal. Right click on the "USB Serial Converter" and click "Uninstall".
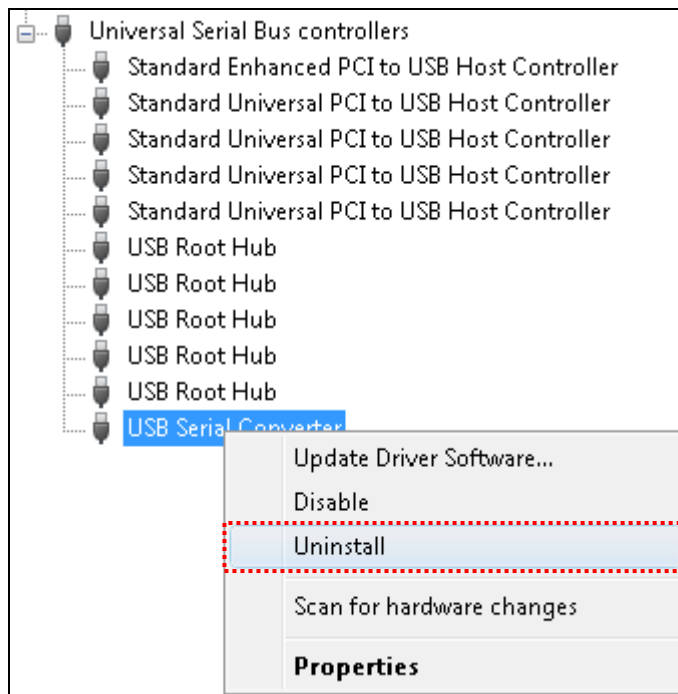
6. Check the "check box" and click "OK".

7. USB MultiPort drivers are now completely removed from your system.