USB to RS-232 Converter	**CommFront**®
Part Number: USB-232-1 CE FC	Communications made easy

CONTENTS

■ **INTRODUCTION**

The USB-232-1 is a port-powered USB to RS-232 converter that can be used to convert any standard USB port (USB 2.0 - backward compatible) into a RS-232C port. The unit uses the latest FTDI chipset and is fully compatible with Windows 7/Vista/XP/Server2008/Server2003/2000/98 (32-bit), Windows 7/Vista/XP/Server2008/Server2003 (64-bit), Win CE, Mac, and Linux.

Note: the latest drivers (chipset FT232B) are available at http://www.ftdichip.com/Drivers/VCP.htm.

■ **FEATURES**

- Adds one RS-232 port to your USB port.
- RS-232 data & signals: TX, RX, RTS, CTS, DTR, DSR, DCD, RI, and GND.
- Supports Windows 7/Vista/XP/Server2008/Server2003/2000/98 (32-bit), Windows 7/Vista/XP/ Server2008/Server2003 (64-bit), Win CE, Mac, and Linux.
- Supports remote wakeup and power management.
- Port-powered, no external power required.
- Plug and play (hot-pluggable, data format auto-sensing and self-adjusting).
- No IRQs required, no IRQ conflicts.
- Surface Mount Technology manufactured to RoHS and ISO-9001 standards.
- Safety: Strictly certified by SGS / 5-year manufacturer's warranty.

■ **SPECIFICATIONS**

Compatibility:	USB 2.0 (backward compatible) and EIA/TIA RS-232C standards
Power Source:	From USB port
Current Consumption:	Under 100mA
Output Power on Pin 3 (TX):	About -9VDC
RS-232 Data Rate:	300 to 128,000bps (auto-sensing and self-adjusting)
Distance:	USB side: 10ft (3m); RS-232 side: 16ft (5m)
Connectors:	USB side: Type A Female; RS-232 side: DB-9 Male
LEDs:	TX, RX and Power
Dimensions (H x W x D):	0.6 x 1.4 x 2.2 in (15 x 35 x 55 mm) (excluding cable)
Cable Length:	3.3 ft (1 m)
Weight:	2.6 oz (73 g)
Operating Temperature:	32ºF to 95ºF (0ºC to 35ºC)
Operating Humidity:	Up to 90% RH (no condensation)

■ **PIN ASSIGNMENT**

RS-232 Side (DB-9 Male Connector / DTE):

Pin	Function	Description
1	DCD	Data Carrier Detect
2	RX	Receive Data
3	TX	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground (Signal)
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator

■ **DB-9 ⇔ DB-25 CONVERSION TABLE (DTE)**

DB-9 Pin Assignment:	1	2	3	4	5	6	7	8	9
DB-25 Pin Assignment:	8	3	2	20	7	6	4	5	22
Function:	DCD	RX	TX	DTR	GND	DSR	RTS	CTS	RI

■ **DRIVER INSTALLATION – QUICK GUIDE**

- Drivers are included on the CD supplied with the converter; insert the CD into the drive.
- Connect the USB-232-1 to an available USB port, and the "Found New Hardware

Wizard" will guide you through the installation process. When prompted to connect to Windows Updates to search for drivers, select "No, not at this time", and follow the instructions for installing from the CD.

- Once the drivers are successfully installed, the USB-232-1 will show up in the Windows Device Manager: under "Ports (COM & LPT)" – labeled as "USB Serial Port (COMx)", and under "Universal Serial Bus controllers" - labeled as "USB Serial Converter" (Figure 1).
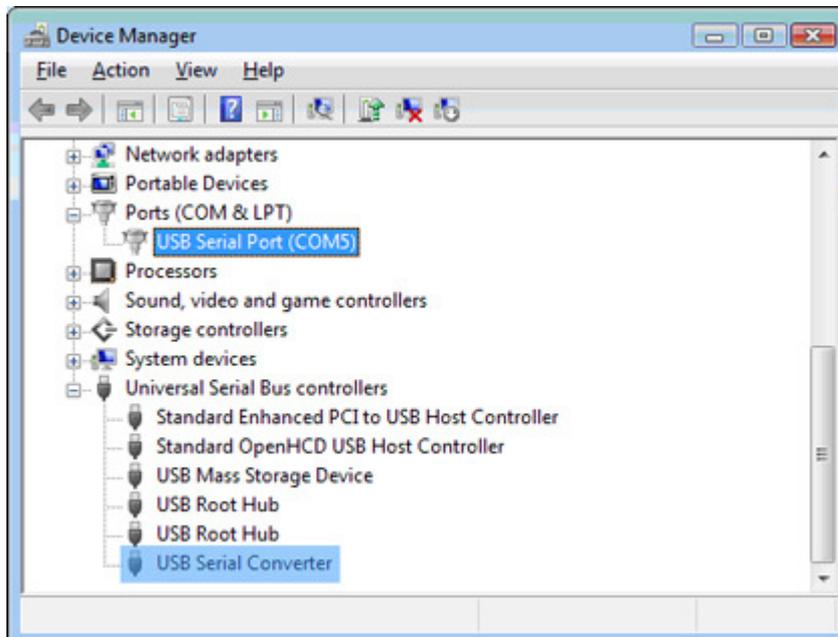
(Figure 1)

- The USB-232-1 uses DB-9 Male connector and function as a DTE device; the pin-outs are available on the PIN ASSIGNMENT table above.

    Important notes:
    1) If it's the first time you install the driver for CommFront's USB to Serial device, you will need to install the driver twice. One is for "USB Serial Converter", and the other one is for "USB Serial Port". **DO NOT close the 2nd "Found New Hardware Wizard" window while installing the driver**.
    2) Upon completion of driver installations, remember to check the Windows Device Manager to make sure that the drivers are installed properly (Figure 1). If the drivers are not installed correctly, there will be a yellow exclamation icon displayed under the "Ports (COM & LPT)" or "USB Serial Bus controllers", right-click on the yellow exclamation icon and select "Update driver". Then search for the driver in the CD supplied.
    3) The drivers are not available via Microsoft Windows Updates, however, Windows Vista will search for the drivers via Microsoft Windows Updates by default, so **disconnect your Vista PC from the internet before the driver installation**.
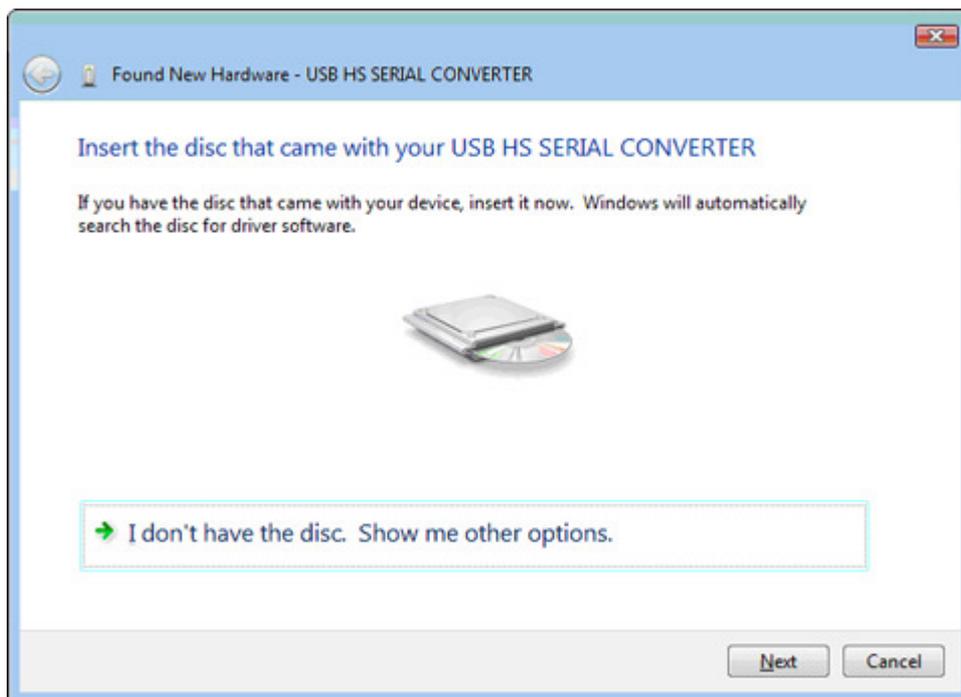
■ **DRIVER INSTALLATION - EXAMPLES**
- **Example 1 (Windows Vista)**
    1) **Disconnect your PC from the internet before driver installation.** This is because the drivers are not available via Microsoft Windows Updates, but Windows Vista will search for the drivers via Microsoft Windows Updates by default.
    2) Insert the CD into the drive and connect the USB-232-1 to an available USB port, the "Found New Hardware" window will pop up. Click on the "Locate and install driver software (recommended)" button to continue (Figure 2).
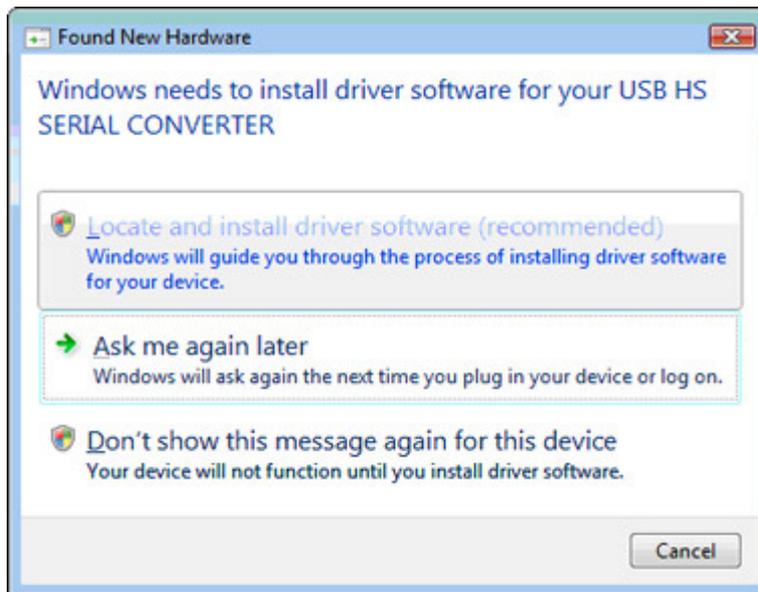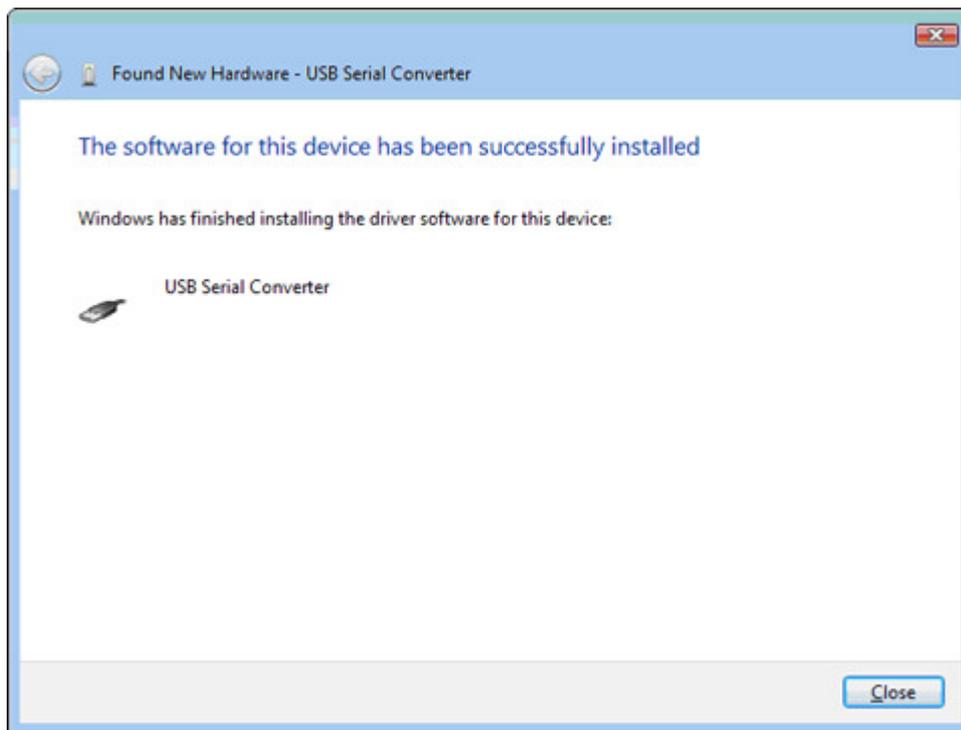
(Figure 2)

3) Windows Vista will look for the driver in the CD, click on the "Next" button to continue. This will start the driver installation for "USB Serial Converter" (Figure 3).

(Figure 3)

4) When the driver is successfully installed, the following window will pop up - confirming that the driver installation of "USB Serial Converter" has been completed successfully. Click on the "Close" button to continue (Figure 4).
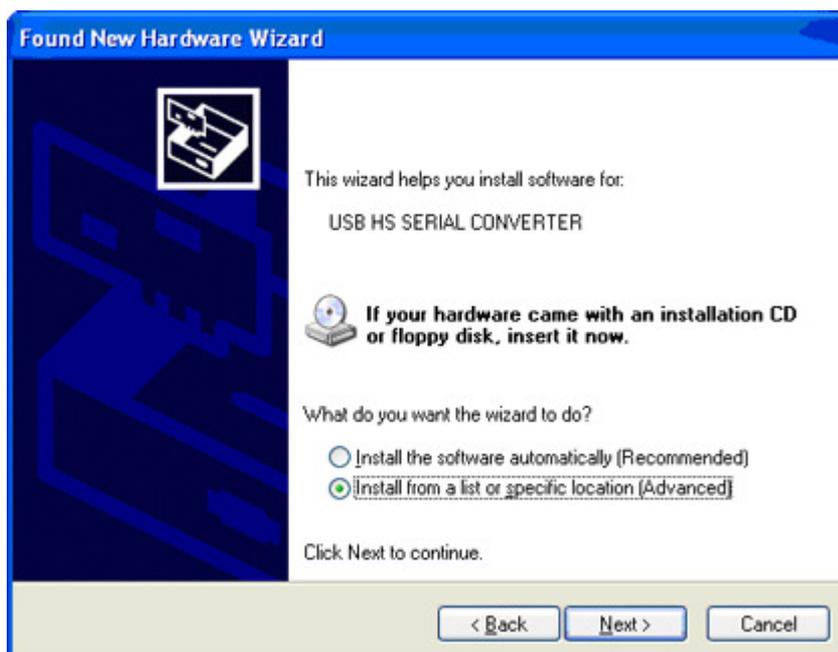
(Figure 4)

5) The 2nd "Found New Hardware" window will pop up, prompting you to install the driver for "USB Serial Port". **DO NOT close this window!** And repeat steps 1) to 4) to install the driver for "USB Serial Port".

6) When the 2nd driver installation is completed, remember to check the Windows Device Manager to confirm that the drivers are installed successfully (Figure 1). The USB-232-1 will show up in the Windows Device Manager: under the "Ports (COM & LPT)" – labeled as "USB Serial Port (COMx)", and "Universal Serial Bus controllers" - labeled as "USB Serial Converter".

- **Example 2 (Windows XP)**
    1) Insert the CD into the drive and connect the USB-232-1 to an available USB port, the "Found New Hardware Wizard" window will pop up. Select "No, not this time" and click on the "Next" button to continue (Figure 5).
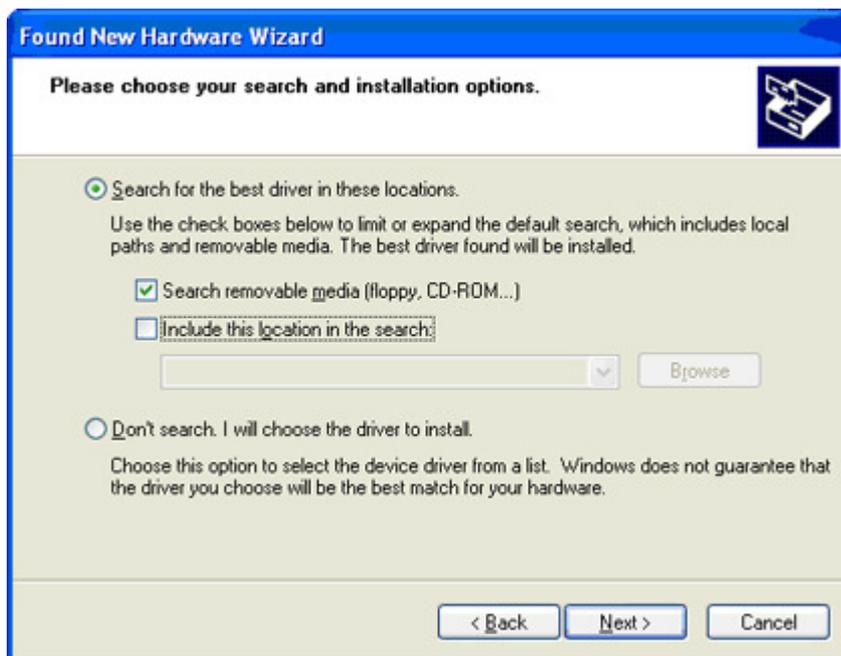
(Figure 5)

2) Select "Install from a list or specific location (Advanced)" to install the driver from CD (Figure 6).

(Figure 6)

3) Select "Search for the best driver in these locations" and check the box of "Search removable media (floppy, CD-ROM…)". Then click on the "Next" button (Figure 7).

(Figure 7)

4) When the driver is successfully installed, the following window will pop up, confirming that the driver installation of "USB Serial Converter" has been completed. Click on the "Finish" button to continue (Figure 8).

(Figure 8)

5) The 2nd "Found New Hardware" window will pop up, prompting you to install the driver for "USB Serial Port". **DO NOT close this window!** And repeat steps 1) to 4) to install the driver for "USB Serial Port".

6) When the 2nd driver installation is completed, remember to check the Windows Device Manager to confirm that the drivers are installed successfully (Figure 1). The USB-232-1 will show up in the Windows Device Manager: under "Ports (COM & LPT)" – labeled as "USB Serial Port (COMx)", and under "Universal Serial Bus controllers" - labeled as "USB Serial Converter".

- **Example 3 (Windows 2000)**
  1) Insert the CD into the drive and connect the USB-232-1 to an available USB port, the "Found New Hardware Wizard" window will pop up. Click on the "Next" button to continue (Figure 9).

(Figure 9)

  2) Select "Search for a suitable driver for my device (recommended)" and click on the "Next" button to continue (Figure 10).

(Figure 10)

  3) Check the box of "CD-ROM drives", and then click on the "Next" button to continue (Figure 11).

(Figure 11)

4) Windows will automatically locate the driver, for example, "e:\drivers\windows 2000_server 2003_xp_vista x32\ftdibus.inf". Click on the "Next" button to continue (Figure 12).

(Figure 12)

5) When the driver is successfully installed, the following window will pop up, confirming that the driver installation of "USB Serial Converter" has been completed. Click on the "Finish" button to continue (Figure 13).
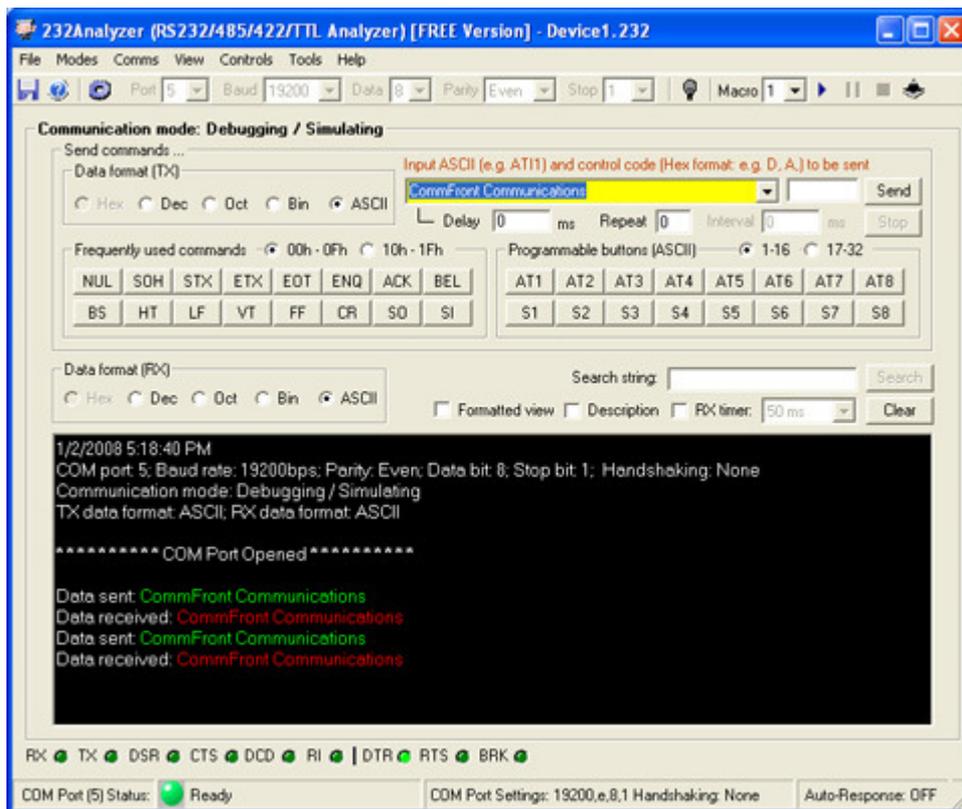
(Figure 13)

6) The 2nd "Found New Hardware" window will pop up, prompting you to install the driver for "USB Serial Port". **DO NOT close this window!** And repeat steps 1) to 5) to install the driver for "USB Serial Port".

7) When the 2nd driver installation is completed, remember to check the Windows Device Manager to confirm that the drivers are installed successfully (Figure 1). The USB-232-1 will show up in the Windows Device Manager: under "Ports (COM & LPT)" – labeled as "USB Serial Port (COMx)", and under "Universal Serial Bus controllers" - labeled as "USB Serial Converter".

■ **TROUBLESHOOTING**
   • **General**
      1) Make sure that the USB-232-1 is connected to your USB port, and the driver is installed correctly (Figure 1); otherwise, please reinstall the driver (Please refer to the "Driver reinstallation examples" below).
      2) Make sure the "Power" LED on USB-232-1 is lit up.
      3) Perform a loopback test by using CommFront's 232Analyzer software (included on the CD supplied with the converter): Connect pin 2 and 3 of the DB-9 connector (RX to TX) and run the program. Then send commands from the software, you should receive an echo of the commands sent. By performing a simple loopback test like this, you can test both the transmitter and receiver of the converter. This is very helpful when you are in doubt about the performance of your converter (Figure 14).
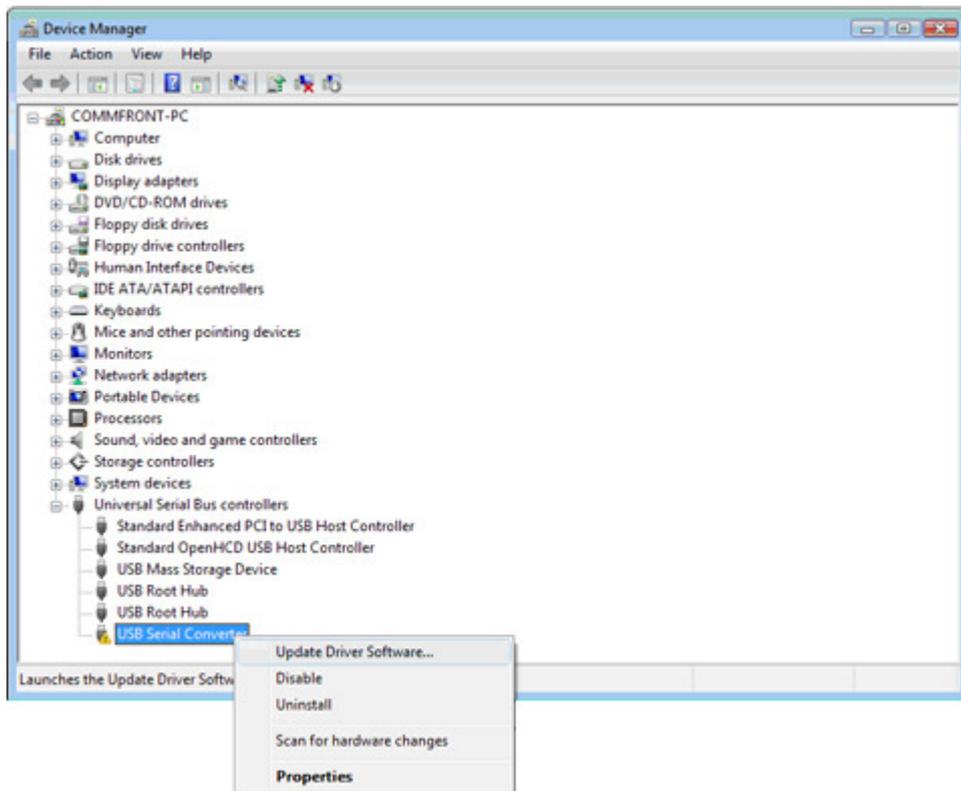
(Figure 14)

- **Driver reinstallation examples**

  Drivers might not be installed properly if the above driver installation procedures were not followed; for example, the user did not disconnect the PC from the internet while installing drivers on Vista machines, or the 2nd "Found New Hardware Wizard" window was closed before the driver installation was completed. Below are some examples showing how to reinstall the drivers.

  Example 1 (Windows Vista)

  Symptoms: A yellow exclamation icon appears besides the "USB Serial Converter". Also, there is no display of the "Ports (COM & LPT)" in the Windows Device Manager (Figure 15).
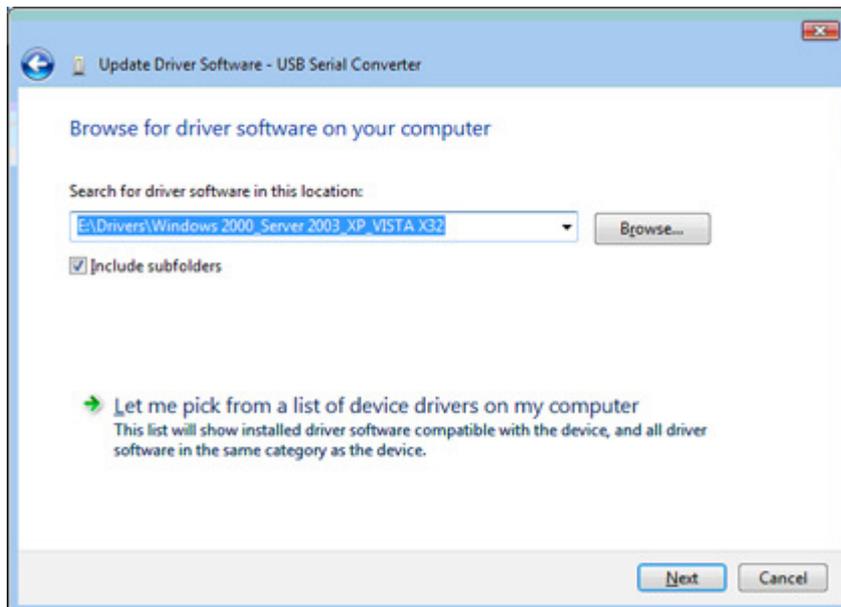
(Figure 15)

1) Right-click on the "USB Serial Converter" that displays with the yellow exclamation icon, and select "Update Driver Software…" (Figure 15).

2) Click on the "Browse my computer for driver software" button to continue (Figure 16).
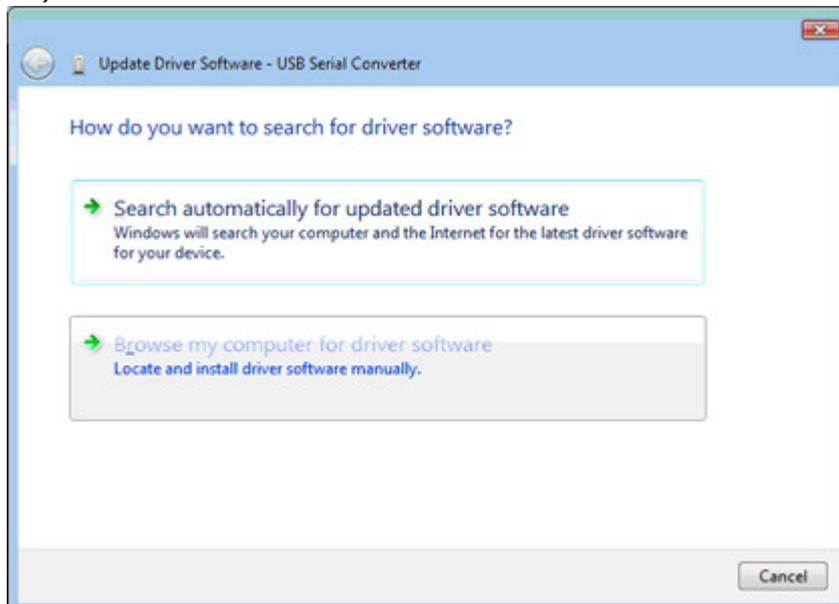
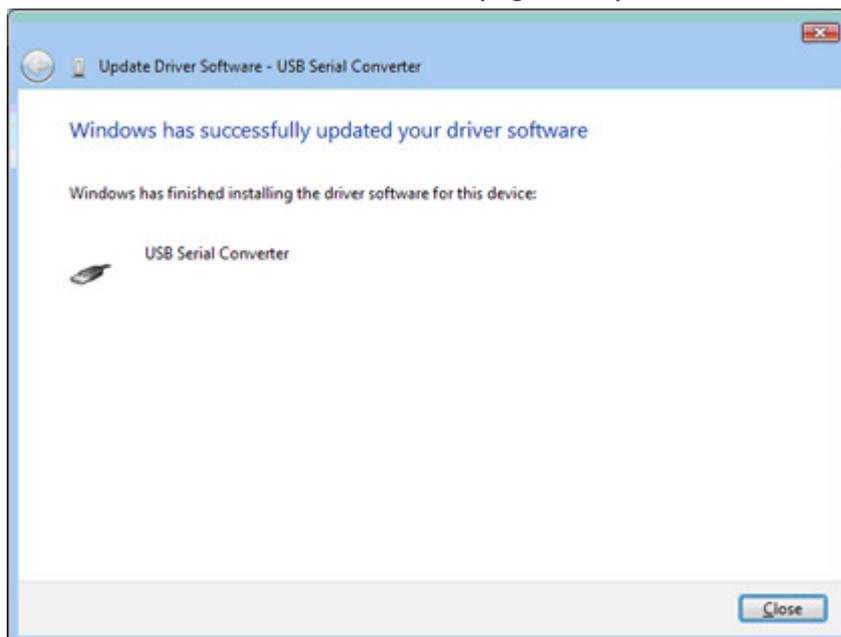

(Figure 16)

3) Locate the driver in the CD provided and click on the "Next" button to continue (Figure 17).

(Figure 17)
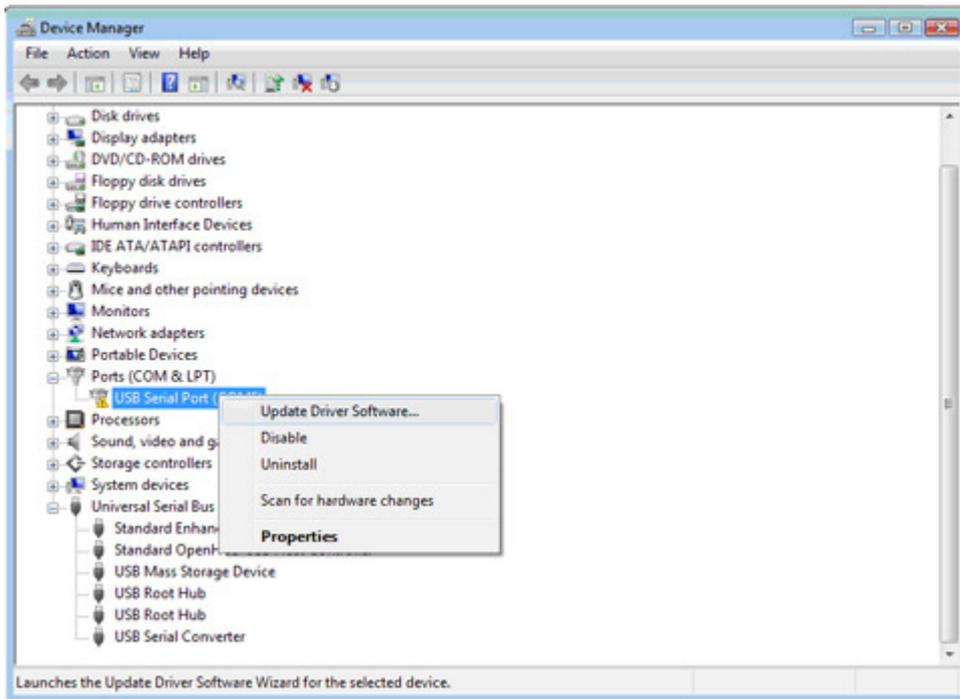
4) When the driver is successfully updated, the following window will pop up, confirming that the driver installation of "USB Serial Converter" has been completed. Click on the "Close" button to exit (Figure 18).
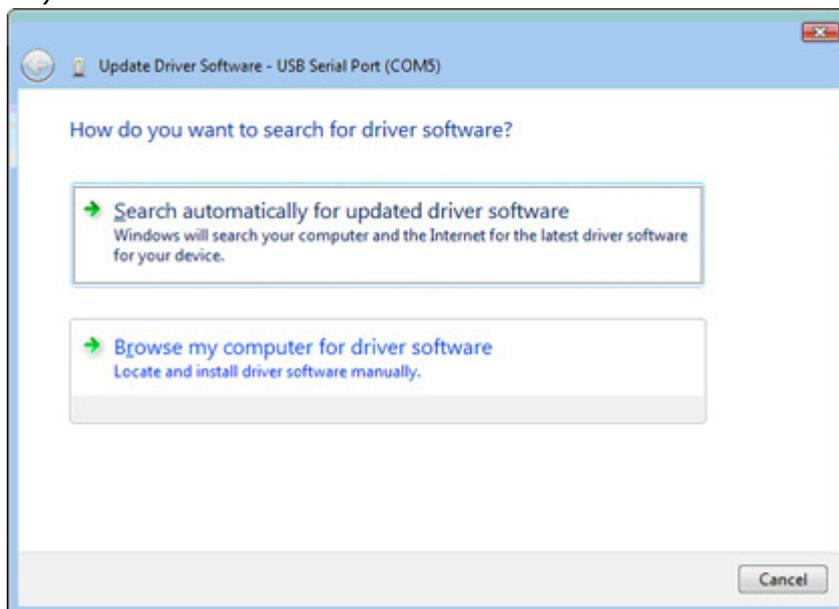

(Figure 18)

Example 2 (Windows Vista)
Symptoms: A yellow exclamation icon appears besides the "USB Serial Port" (Figure 19).

(Figure 19)

1) Right-click on the "USB Serial Port" that displays with the yellow exclamation icon, and select "Update Driver Software…" (Figure 19).

2) Click on the "Browse my computer for driver software" button to continue (Figure 20).

(Figure 20)

3) Locate the driver in the CD provided, and click on the "Next" button to continue (Figure 21).
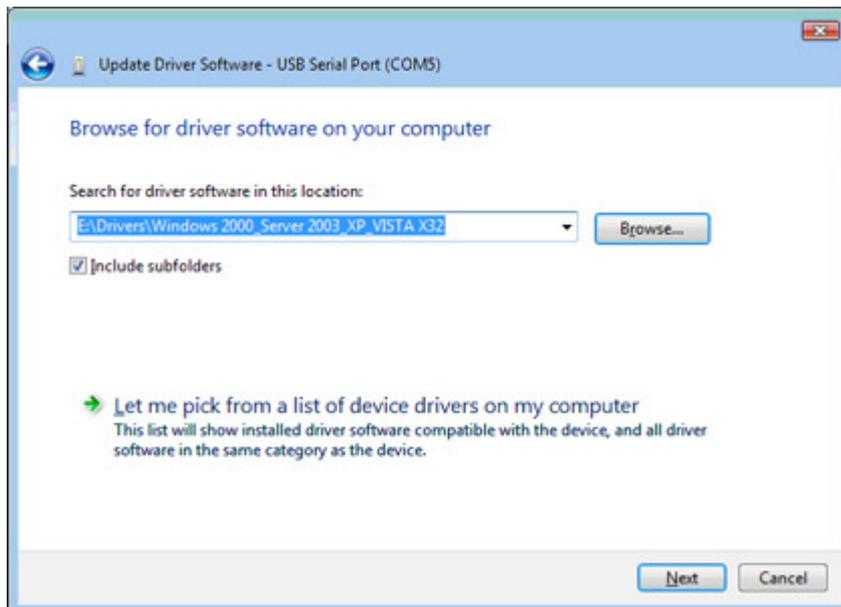
(Figure 21)

4) When the driver is successfully updated, the following window will pop up, confirming that the driver installation of "USB Serial Port" has been completed. Click on the "Close" button to exit (Figure 22).
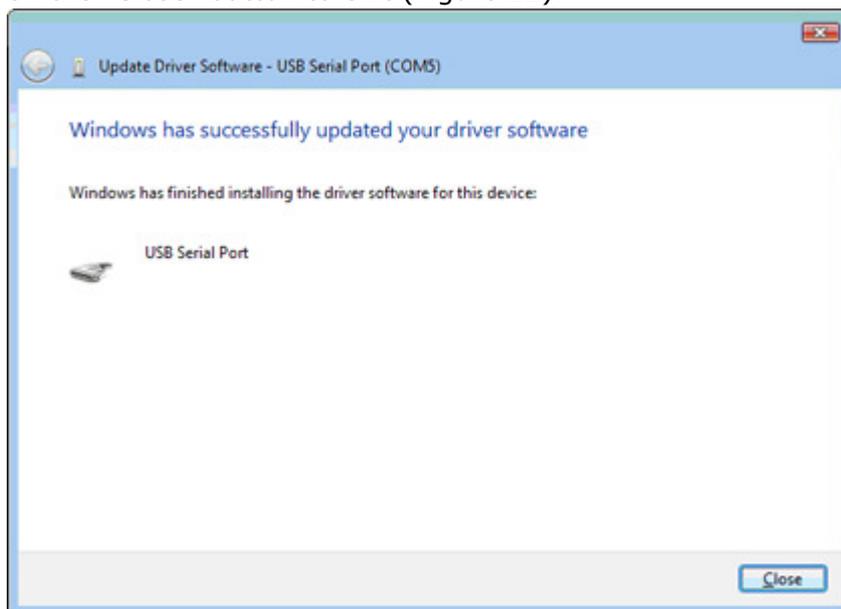
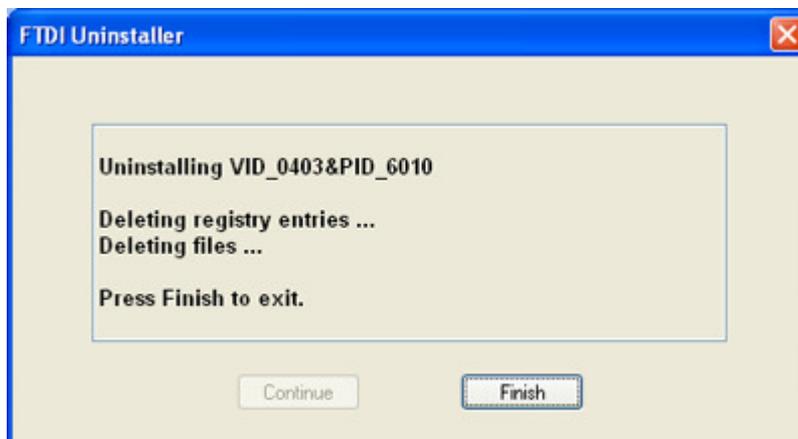(Figure 22)

Example 3 (Windows Vista/XP/2003/2000/98/ME)
Symptoms: No yellow exclamation signs, but COM port does not exist or is not functioning.

1) Locate and execute the driver un-installation program FTDIUNIN.exe in its respective folder. For example, for Windows 2000/Server_2003/XP/Vista 32-bit, the un-installation program is located at "E:\Drivers\Windows 2000_Server 2003_XP_Vista X32\"

2) Unplug the USB-232-1, and click on the "Continue" button to uninstall the drivers (Figure 23).

(Figure 23)

3) Click on the "Finish" button to complete the un-installation of the drivers (Figure 24).

(Figure 24)

4) Follow the correct driver installation procedures above to reinstall the drivers for your USB-232-1 converter.

■ **SUPPORT**

Check out CommFront's website: www.CommFront.com for Product Updates, FAQs, and other Support.