Future Technology Devices International Ltd.

Application Note AN_119

FTDI Drivers Installation guide for

Windows 7

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1 Introduction

The purpose of this application note is to provide users of FTDI chips with a simple procedure for installing FTDI drivers for their devices under Windows 7.

2 Installing FTDI Device Drivers

FTDI have previously provided two types of driver for Windows OS: a D2XX direct driver and a virtual COM port (VCP) driver. Previously, these drivers were mutually exclusive and could not be installed at the same time. The new Windows combined driver model (CDM) which may be installed on Windows 2000, XP, VISTA or Windows 7 allows applications to access FTDI devices through either the D2XX DLL or a COM port without having to change driver type. However, it should be noted that an application can only communicate through one of these interfaces at a time and cannot send commands to the D2XX DLL and the associated COM port at the same time.

The CDM driver comes in two parts. The first part is the bus layer that provides D2XX style functionality and is always installed. The second part is the serial COM port layer and the CDM driver will determine whether a COM port should be exposed by reading the EEPROM of FT232R, FT245R, FT2232D, FT232H, FT2232H, FT4232H and FT-X devices. In the case of FT232BM, FT245BM, devices, the CDM driver will default to always installing a COM port.

3   Installing CDM Drivers

To install CDM drivers for an FTDI device under Windows 7, follow the instructions below:

Connect the device to a spare USB port on your PC.

If there is an available Internet connection, Windows 7 will silently connect to the Windows Update website and install any suitable driver it finds for the device.
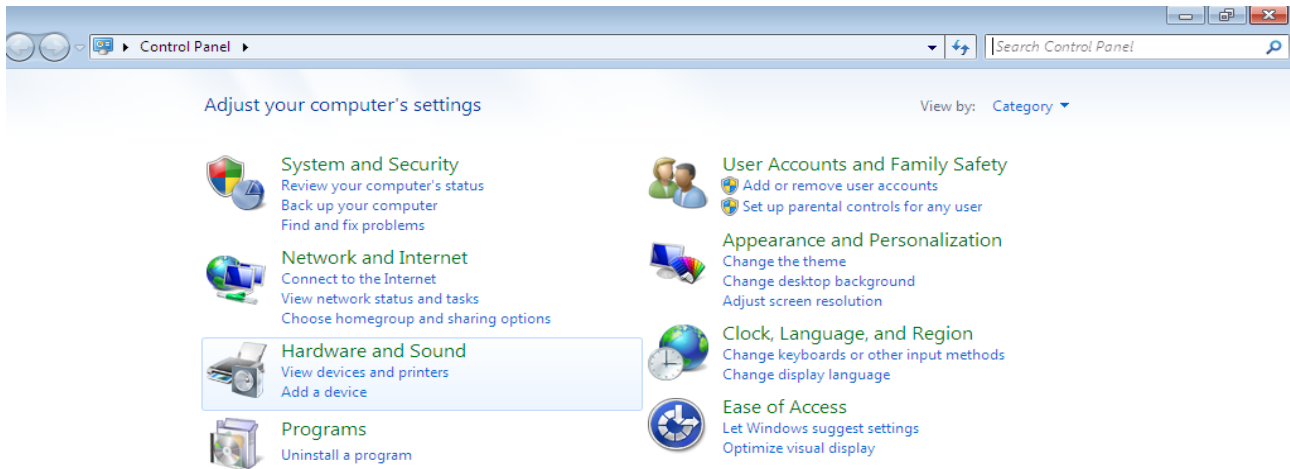
If the automatic installation takes place there is no need to continue with the procedure outlined below.

If no suitable driver is automatically found then the following procedure should be followed.
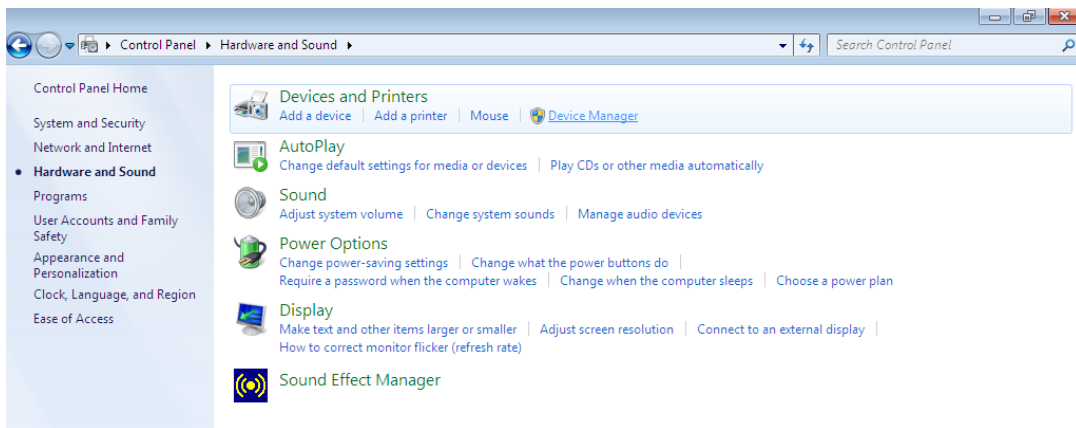
Press the Windows start button to bring up the start menu and select "Control Panel".
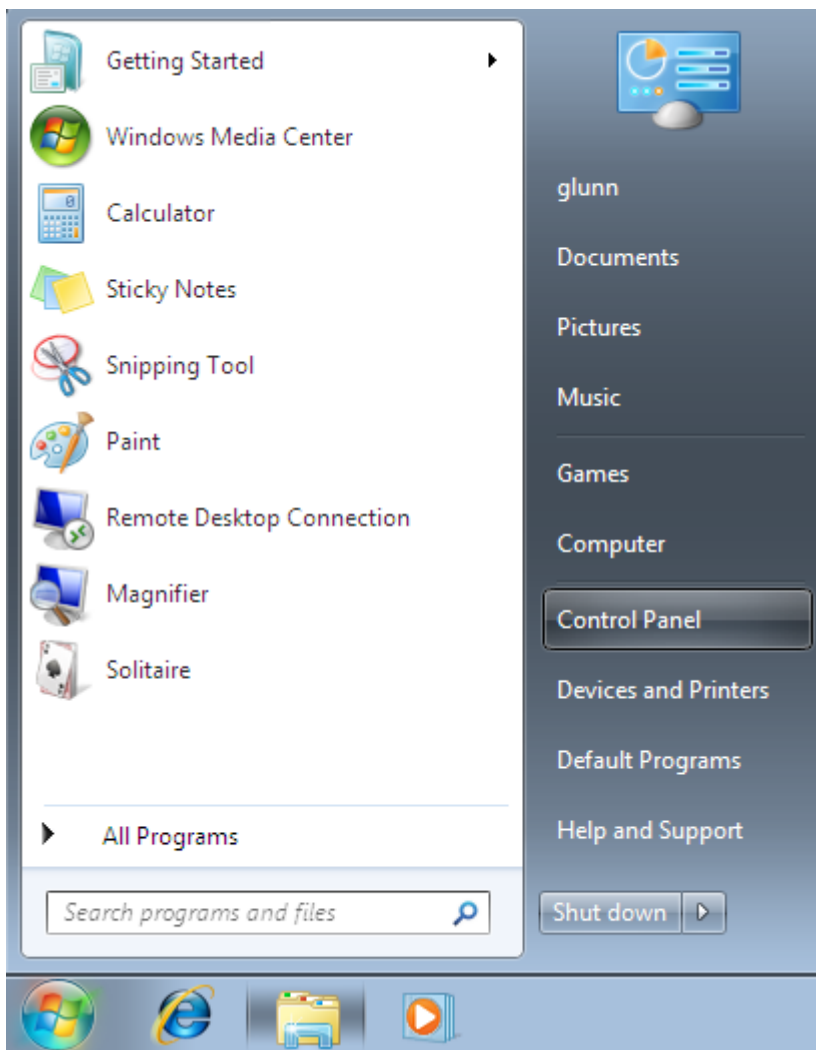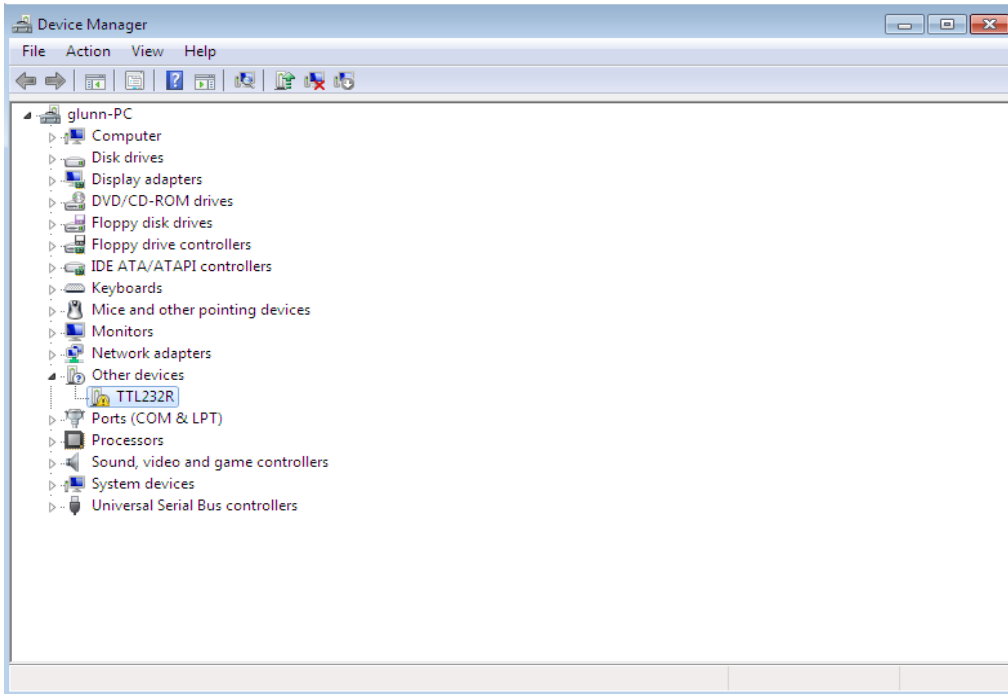
From the Control Panel window select Hardware and Sound

At the next screen select Device Manager:

In the Device Manager window there will be a device under Other Devices with a yellow warning symbol to indicate a problem ie no driver installed. The text next to this device will depend on the device attached. In this example the device was a TTL232R device.
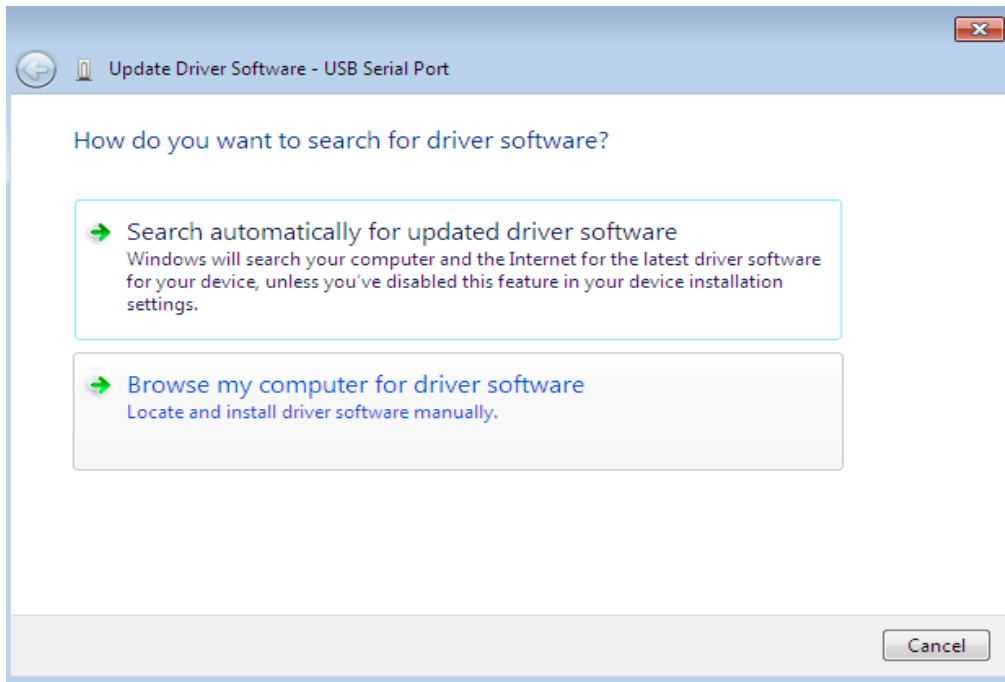

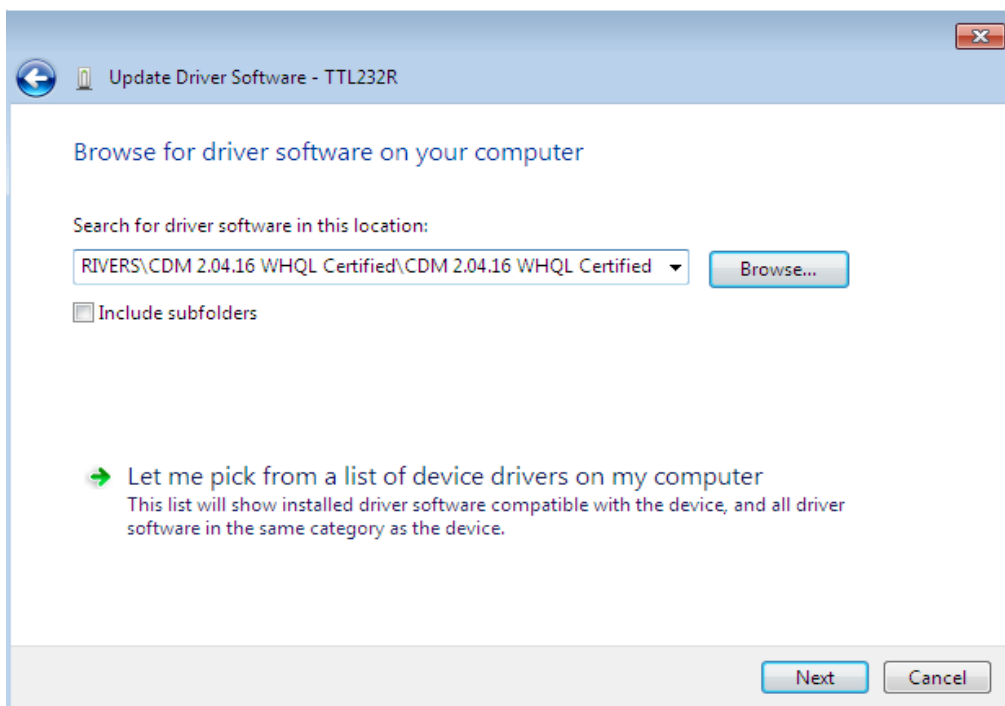Right click on the other device (TTL232R in this example) to bring up a menu as shown below.
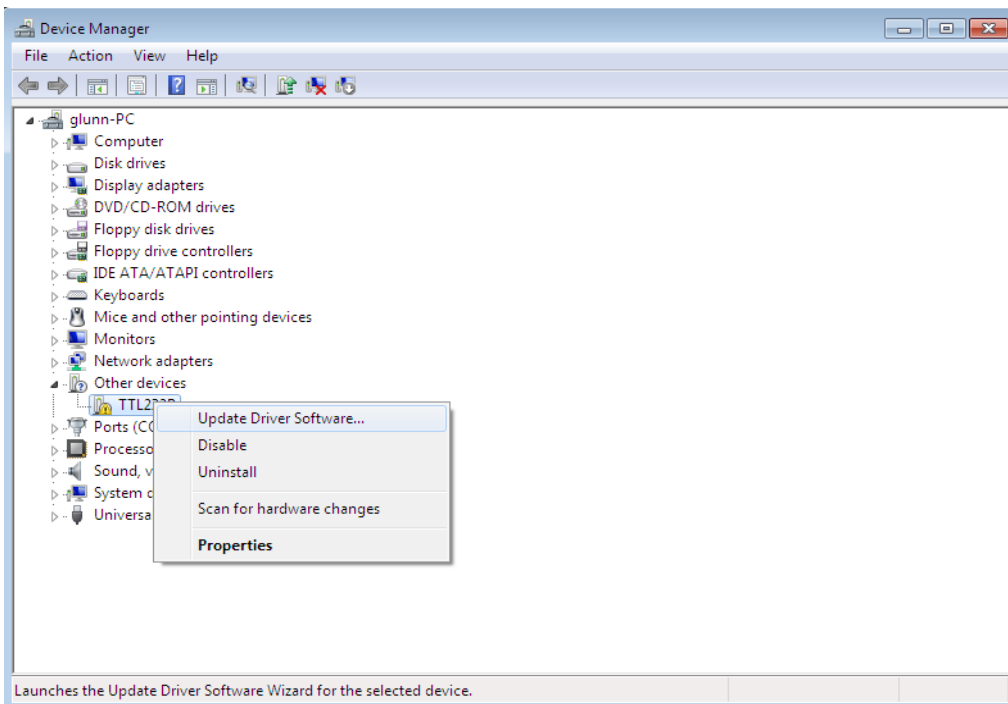
From the displayed menu select "Update Driver Software…"

This then displays the option for an automatic search or a manual search.

Select the second option to browse manually.

In the address box put the exact location where the drivers have been saved to. This may be on a CD or in a folder on the PC. It is not necessarily the exact same location as shown in the screenshot. The drivers could have been saved anywhere of the users choosing.

After entering the address select "NEXT" to start the installation.
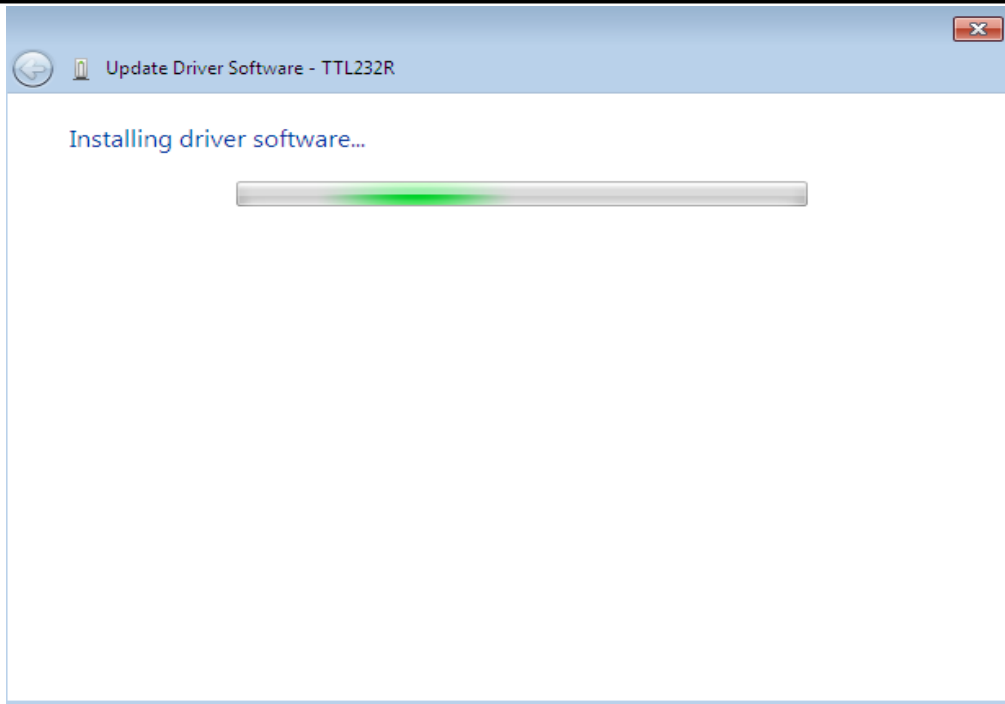
When the installation has finished a completion screen is displayed.
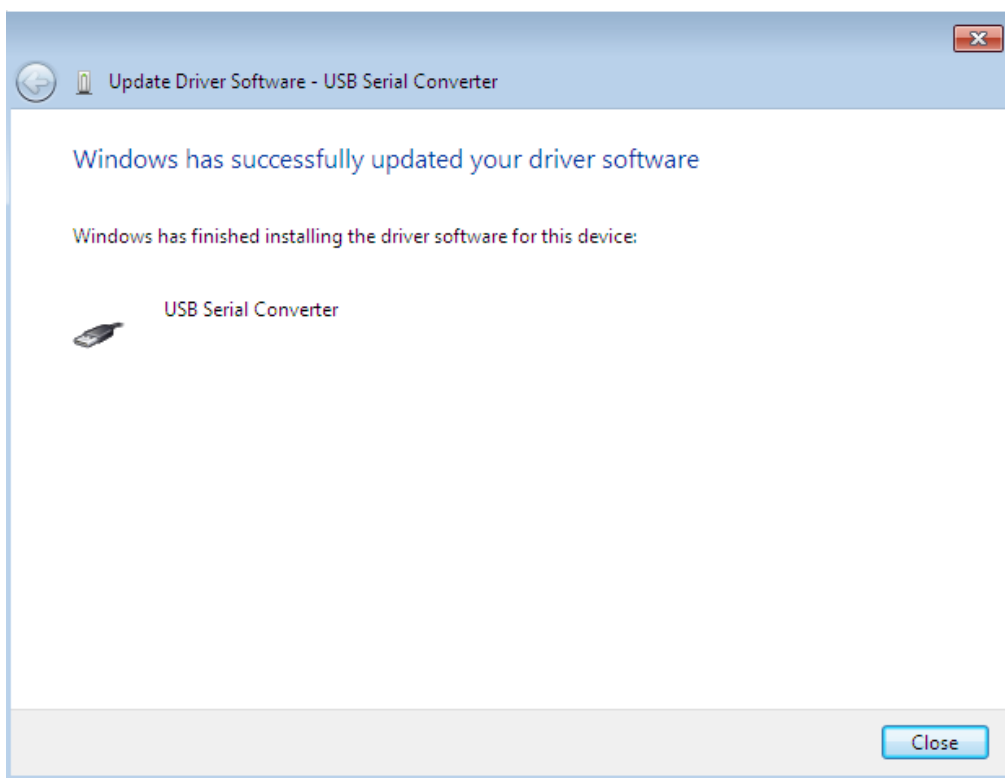
Press Close to close this window and go back to the Device Manager Window.

The Device Manager will still show a device under Other Devices but in addition to this there is a new entry under Universal Serial Bus Controllers indicated in the screenshot above as the USB Serial Converter. This indicates the bus layer of the driver is installed. Installing the Virtual Com Port layer of the driver is almost a repeat of the last few steps.

Right click on the other device (TTL232R in this example) to bring up a menu as shown below.

From the displayed menu select "Update Driver Software…"

This then displays the option for an automatic search or a manual search.
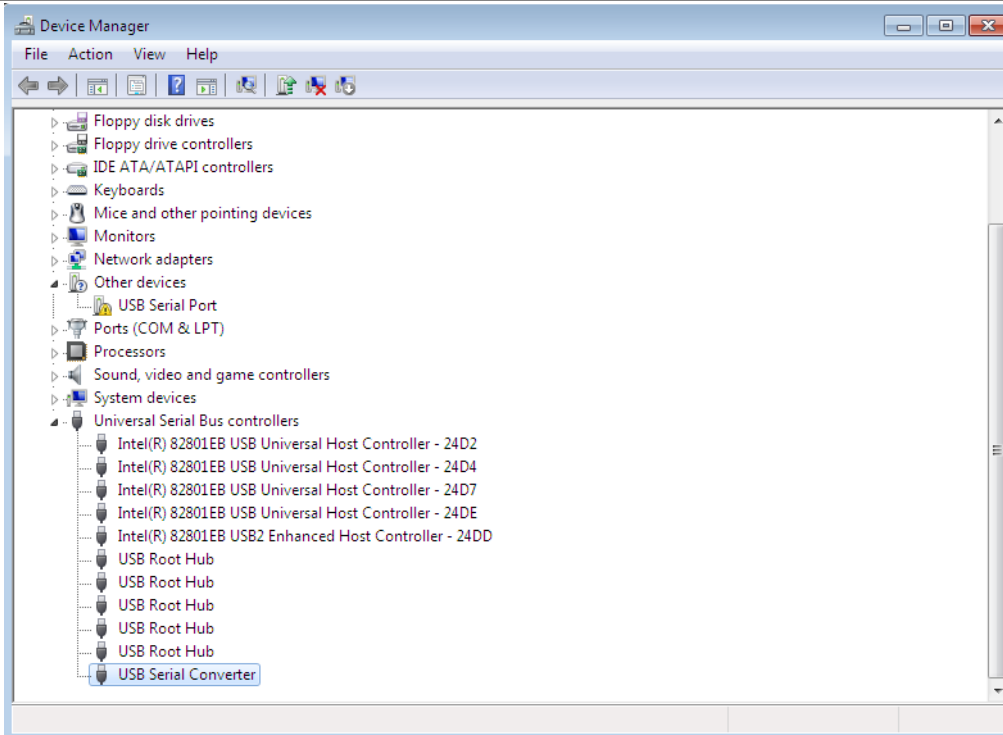
Select the second option to browse manually.

In the address box put the exact location where the drivers have been saved to. This may be on a CD or in a folder on the PC. It is not necessarily the exact same location as shown in the screenshot. The drivers could have been saved anywhere of the users choosing.

After entering the address select "NEXT" to start the installation.

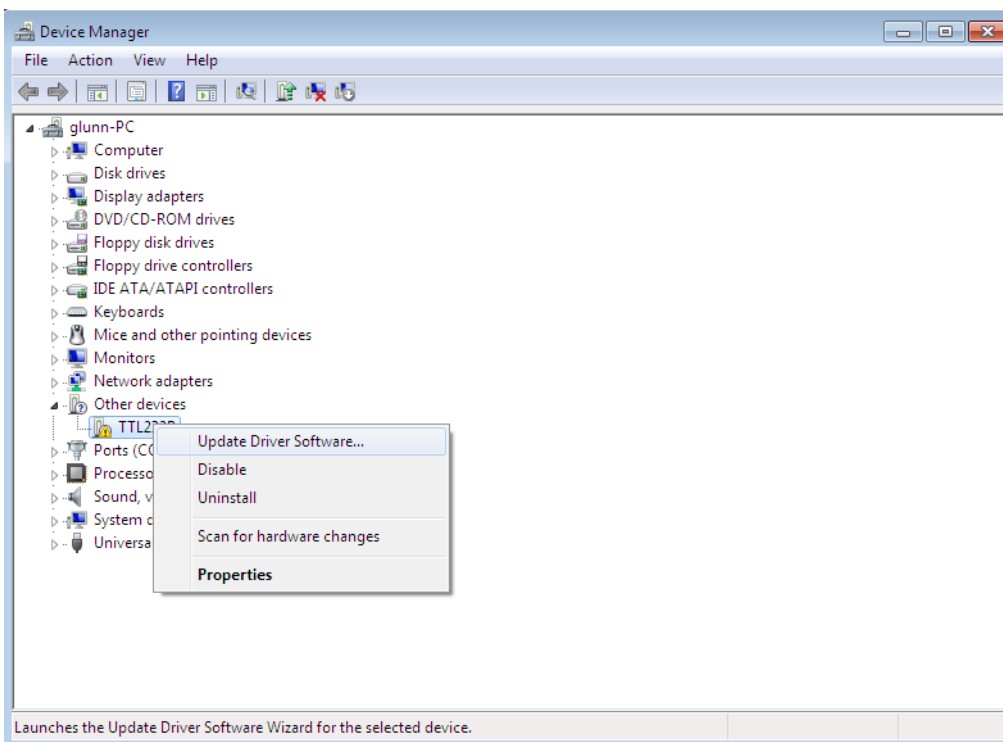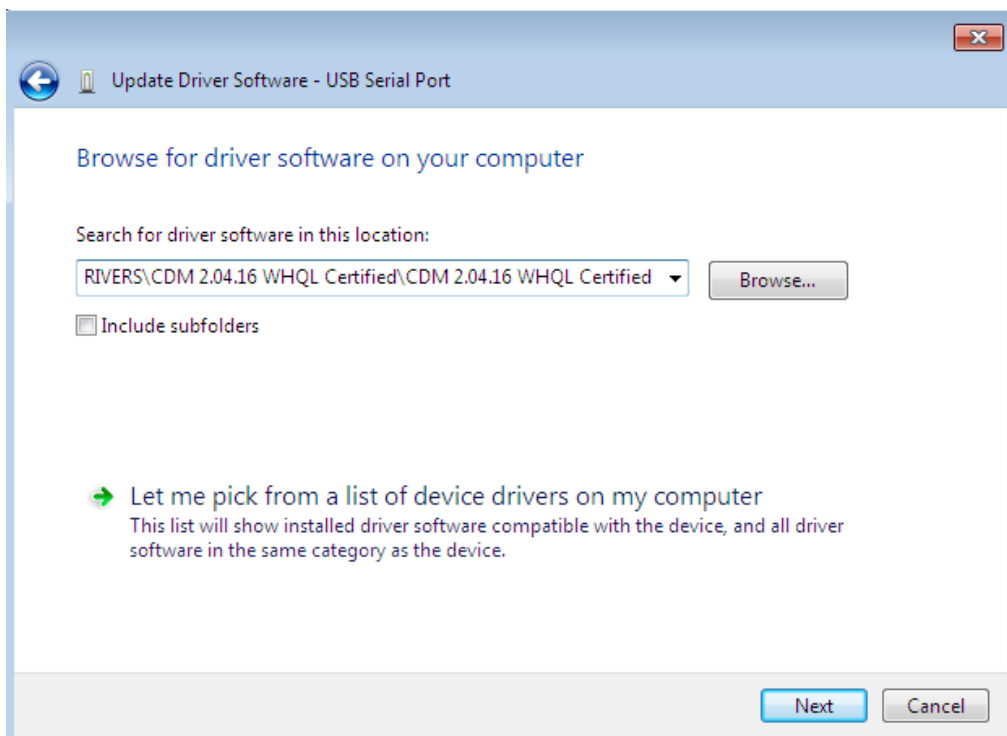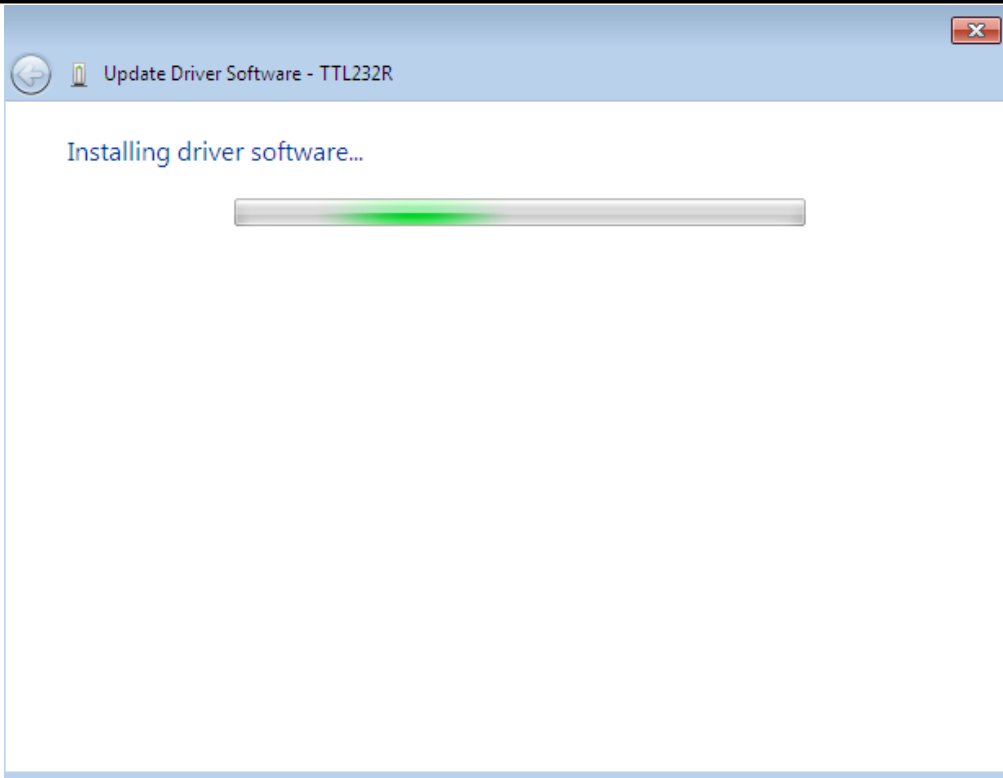When the installation is finished a completion screen is displayed.
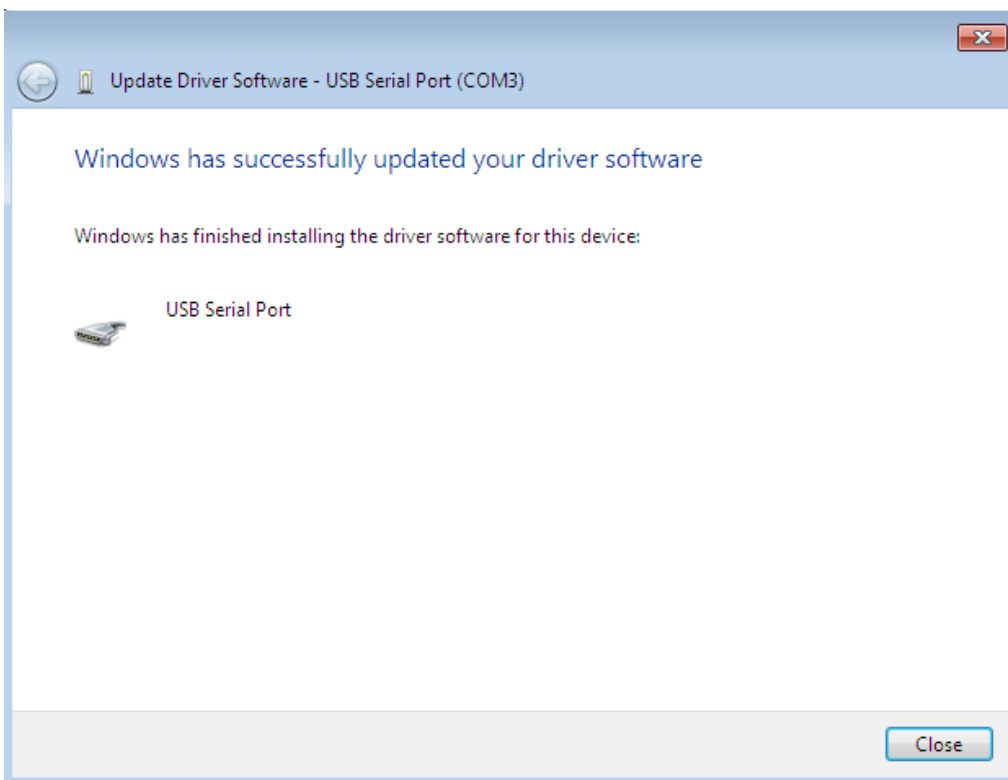
Note this screen also displays the COM port assigned to the device.
Press Close to close this window and go back to the Device Manager Window.
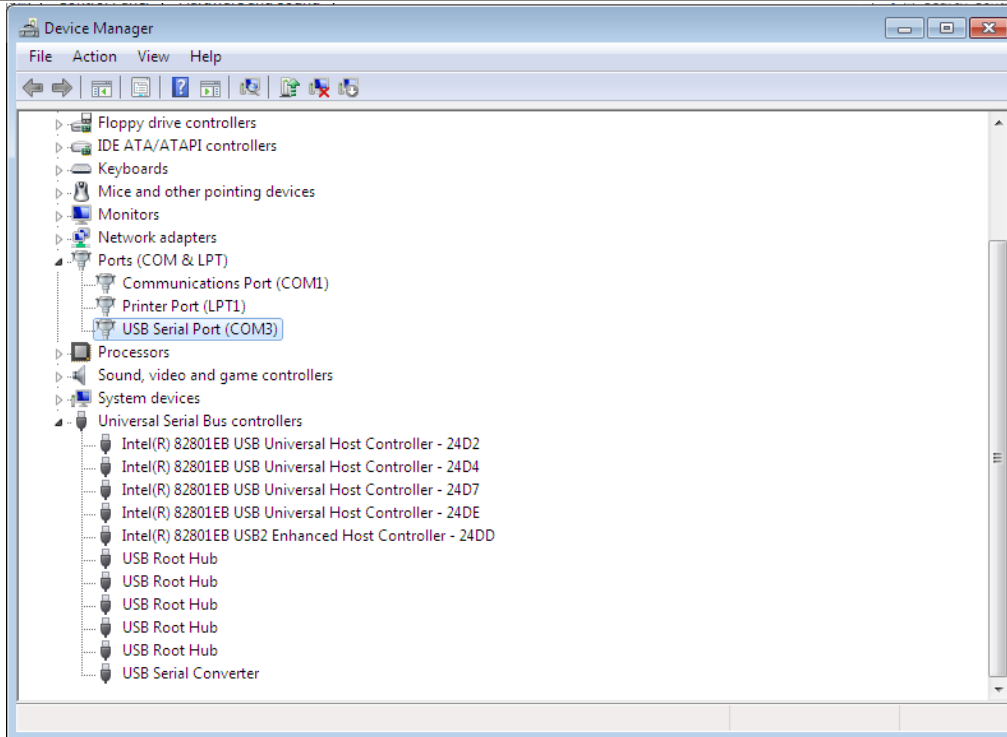
This time the Device Manager does not have a TTL232R entry under Other Devices but does show entries under Universal Serial Bus Controllers and Ports (COM & LPT). The above screen shot displays a correct installation. The device is now ready to use on COM3.

NOTE: Not all devices will install to COM3. The COM port allocation is determined by the installation wizard on the basis of the next free com port as designated in the PC registry.

4   Uninstalling FTDI Devices

FTDI have produced an uninstaller application called CDM Uninstaller. This can be found at the following link:

http://www.ftdichip.com/Support/Utilities.htm#CDMUninstaller

Devices can also be removed by using the Device Manager by simply right-clicking on the mouse and selecting "Uninstall". This will delete the associated registry entries for that device only. Windows 7 provides an automatic method to delete driver files via a check box to "Delete the driver software for this device" on the uninstall dialog box.

This stage is done twice. Once for the device under Ports(COM & LPT) and once for the device under Universal Serial Bus Controllers.

Windows 2000, XP and Server 2003 do not have this check box, so driver files and OEM INF and PNF files must be removed manually or by using a custom application.

Some points to note about the new un-installation method:

- In the case of FT2232 / FT4232 devices, a composite device is also installed. This can also be removed by right-clicking and selecting "Uninstall". There is no option to delete the driver files when doing this as the driver for the composite device is a native Windows driver.
- If the VCP driver has been installed, the COM port driver should be uninstalled before the bus driver. If the bus is removed first, the COM port will no longer appear in the Device Manager.
- If the files are deleted while other installed devices still require them those devices will not work correctly. This can be fixed by right clicking the device and selecting "Reinstall Driver" which will replace the missing files.
- If a device to be uninstalled is not connected to the PC, the device can still be removed by setting the device manager to show phantom devices . This also allows a virtual COM port to be uninstalled if the bus layer has been removed first.

5 Troubleshooting

5.1 Windows 7 cannot find drivers for my device

This error can occur if the VID and PID programmed into the device EEPROM do not match those listed in the INF files for the driver. The VID and PID programmed into the device EEPROM may be found by using the USBView utility from the FTDI web site. These can then be checked against the VID and PID entries in the driver INF files. If they do not match, that driver cannot be installed for that device without either re-programming the device EEPROM or modifying the list of VID and PID numbers in the INF files. Please note that only your own company VID and PID or FTDI's VID (0x0403) and FTDI PID issued for use by the customer should be used in the EEPROM and INF files.

End customers should obtain modified drivers from the OEM of the device, and not necessarily edit the files themselves.

5.2 Devices not shown in Device Manager for uninstalling

Devices that have been installed on a system but are not currently available are referred to as "phantom devices". These devices are not usually displayed in the device manager, but can be made to be displayed as though they are attached. This allows device properties to be changed or devices to be uninstalled via Device Manger even though the device is not physically connected to the PC.

To display phantom devices in Device Manager, a new system variable is required. Open "Control Panel > System" then select the "Advanced" tab and click "Environment Variables". In the System Variables section (**NOT THE USER VARIABLES SECTION**), click "New..." to display the following window:
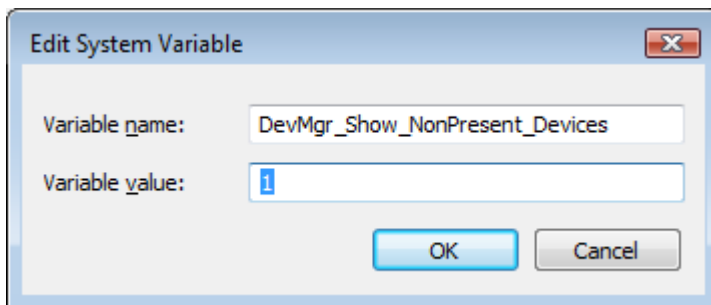
Create a new System Variable called "DevMgr_Show_NonPresent_Devices" and set the value to 1, then click OK.

Open the Device Manager ("Control Panel > System" then select the "Hardware" tab and click "Device Manager…", or "Control Panel > Device Manger" in Windows 7) and select "View > Show Hidden Devices". Device Manager will then show all hidden and phantom devices available on that PC as shaded.

5.3 Windows 7 shows a warning that the driver is not certified

If the driver is not certified then a pop up window such as shown below will be displayed.
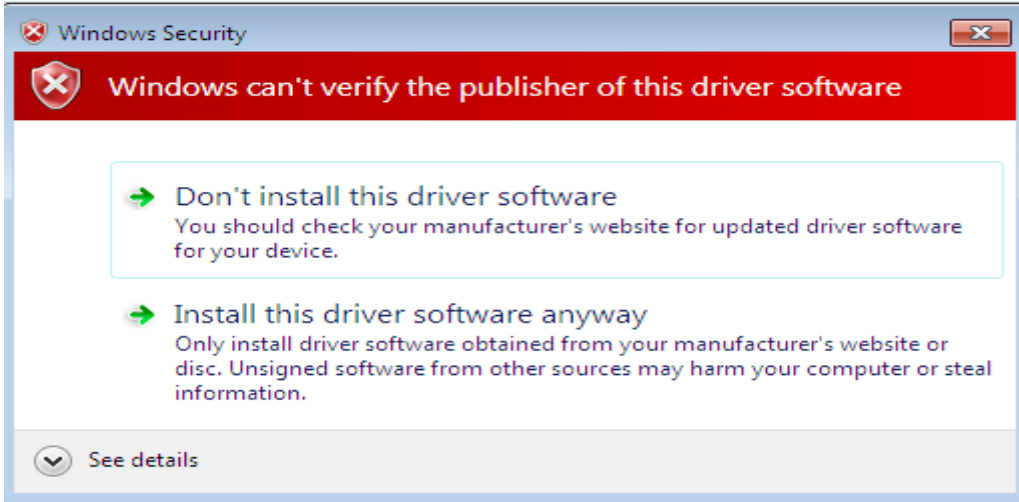
If you are certain of the source of the driver the warning can be ignored and you can continue installation by selecting "Install this driver software anyway".

If you are unsure about the driver source contact your vendor.

5.4 Driver will not install on Windows 7 x64

Windows 7 x64 OS will only allow certified drivers to be installed. The certified driver supplied by FTDI will work with VID 0403 and PID 6001 for FT232 and FT245 devices. It will also work with other FTDI VID and PID combinations.

If you have a product where the manufacture has customised the driver but has not re-certified it, then the driver will not load. You should contact your vendor to determine if they will support Windows 7 x64.

Appendix A – Abbreviations

Terms	Description
PID	Product ID, a unique product identification issued by the holder of the
VID	Vendor ID, a unique vendor identification number issued by the USB
USB	USB Universal Serial Bus
WHQL	WHQL Microsoft Windows® Hardware Quality Labs
OS	Operating System

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