Future Technology Devices International Ltd.

Application Note AN_119

FTDI Drivers Installation guide for Windows 7

Document Reference No.: FT_000160

Version 1.0

Issue Date: 2009-10-29

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

Future Technology Devices International Limited (FTDI)

Unit 1, 2 Seaward Place, Centurion Business Park, Glasgow G41 1HH, United Kingdom
Tel.: +44 (0) 141 429 2777 Fax: + 44 (0) 141 429 2758
E-Mail (Support): Support1.support@ftdichip.com Web: http://www.ftdichip.com
Copyright © 2009 Future Technology Devices International Limited

Table of Contents

1 Introduction 2
2 Installing FTDI Device Drivers 3
3 Installing CDM Drivers 4
4 Uninstalling FTDI Devices 13
5 Troubleshooting 14
5.1 Windows 7 cannot find drivers for my device 14
5.2 Devices not shown in Device Manager for uninstalling 15
5.3 Windows 7 shows a warning that the driver is not certified 16
5.4 Driver will not install on Windows 7 x64 17
6 Contact Information 18
Appendix A – Abbreviations 20
Appendix B – Revision History 21

Copyright © 2009 Future Technology Devices International Limited

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.

Copyright © 2009 Future Technology Devices International Limited

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, FT2232H and FT4232H devices. In the case of FT232BM, FT245BM, devices, the CDM driver will default to always installing a COM port.

This behavior can be changed and EEPROM settings ignored by changing the driver INF files as detailed in FTDI Application Note AN-107, Advanced Driver Options. Please note that modifying the INF files of a Microsoft WHQL certified driver will invalidate the Windows certification.

The driver is downloadable from the FTDI website by clicking the word download: download.

Copyright © 2009 Future Technology Devices International Limited

3 Installing CDM Drivers

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

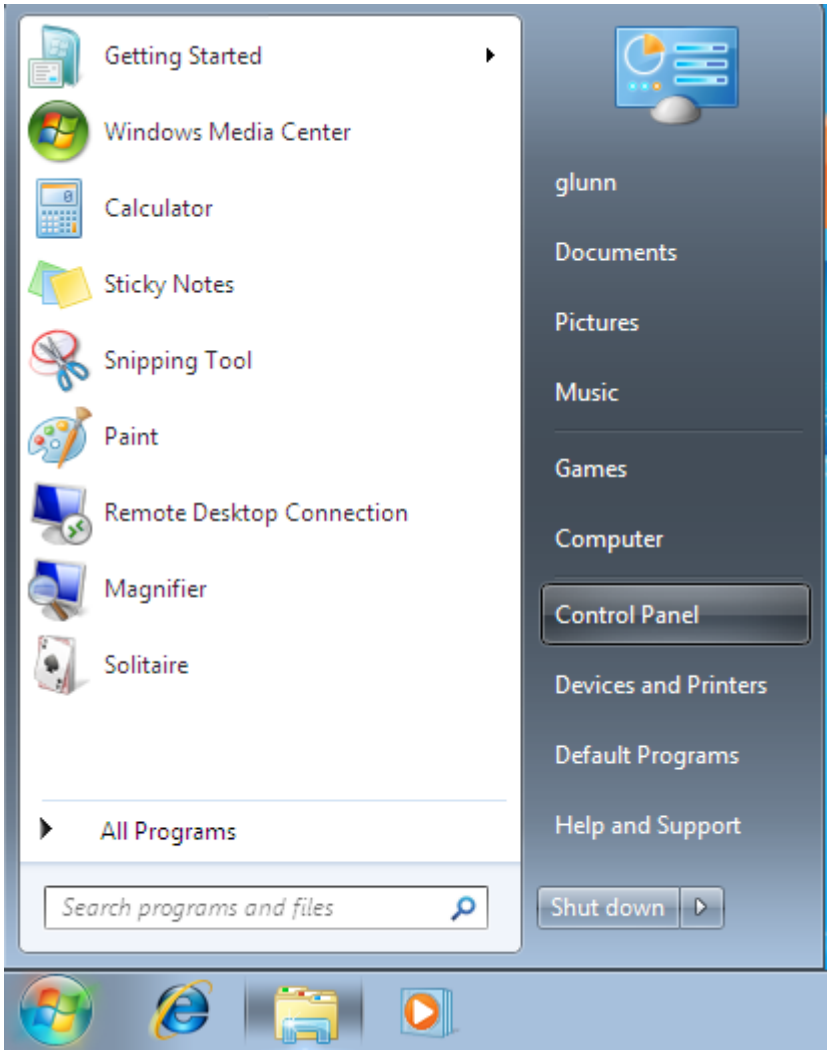
Connect the device to a spare USB port on your PC.

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.

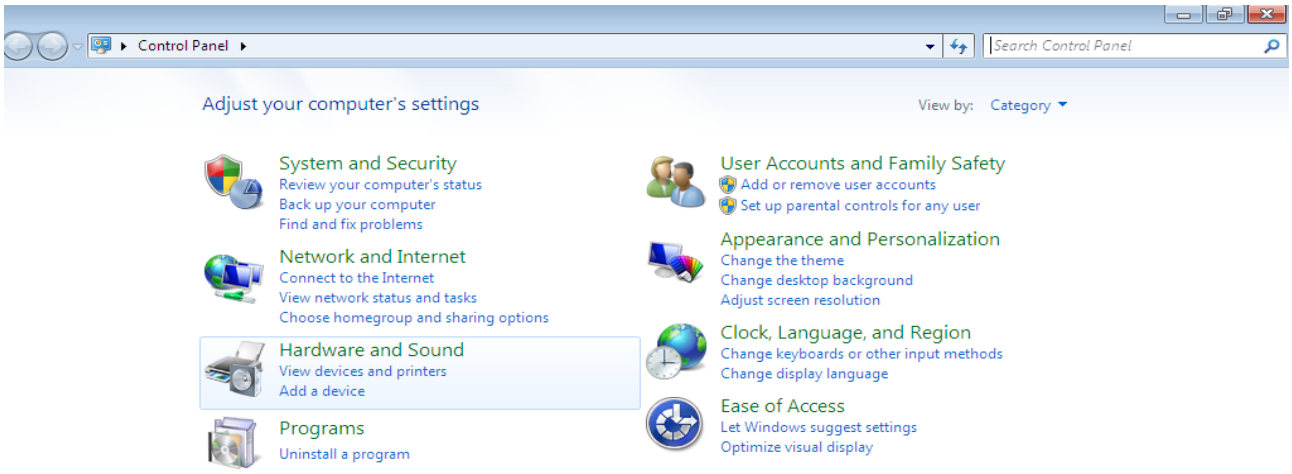
If no suitable driver is automatically found then the following procedure should be followed.

Press the Windows start button to bring up the start menu and select "Control Panel".

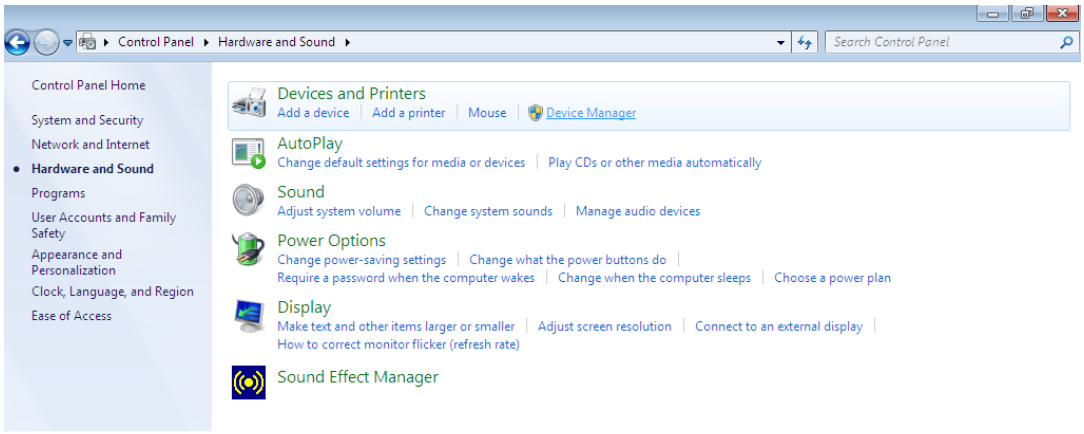


Copyright © 2009 Future Technology Devices International Limited

From the Control Panel window select Hardware and Sound

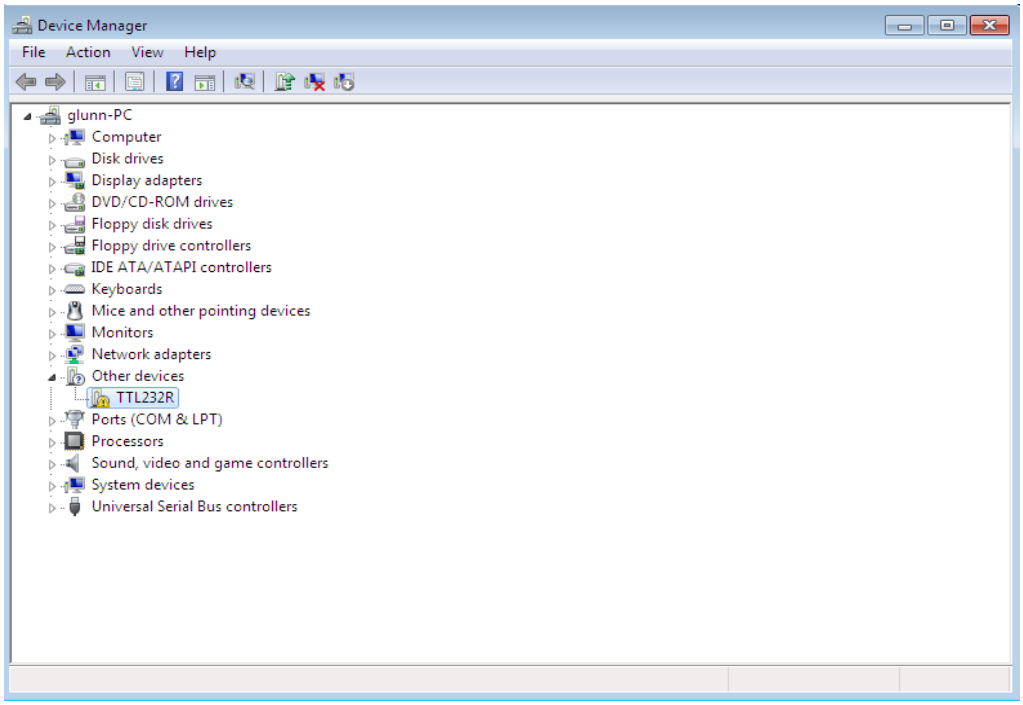


At the next screen select Device Manager:

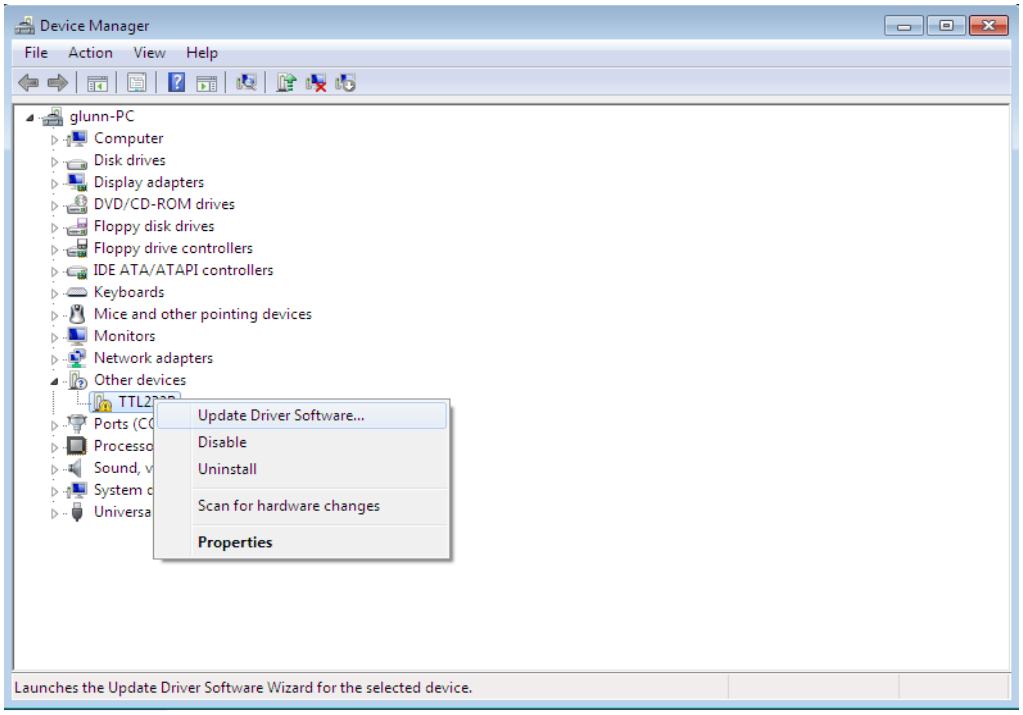


Copyright © 2009 Future Technology Devices International Limited

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.



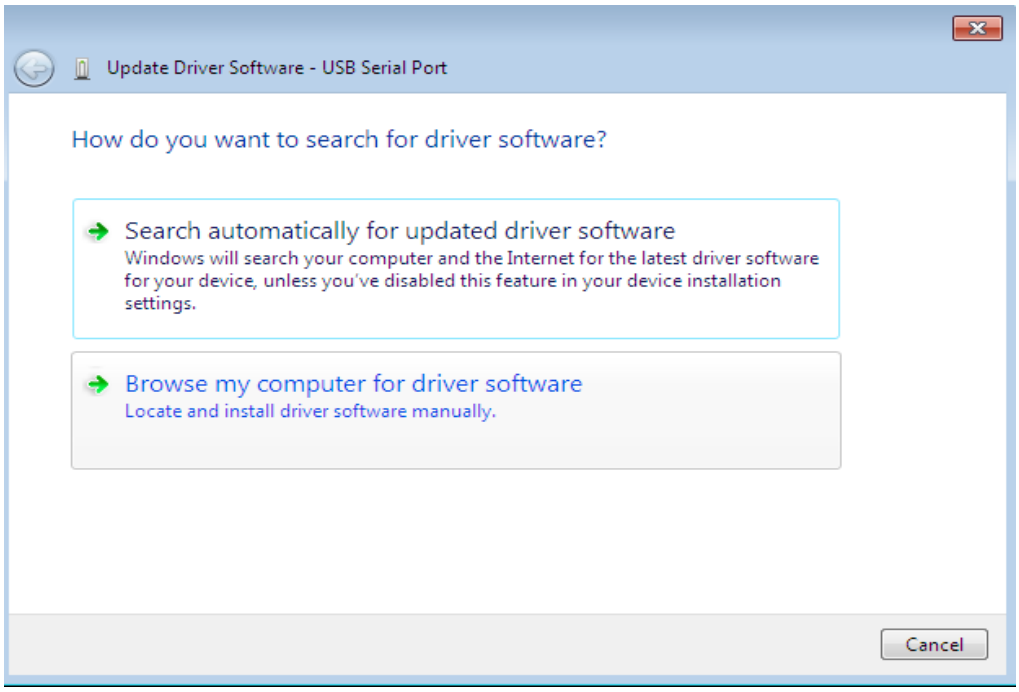
Right click on the other device (TTL232R in this example) to bring up a menu as shown below.



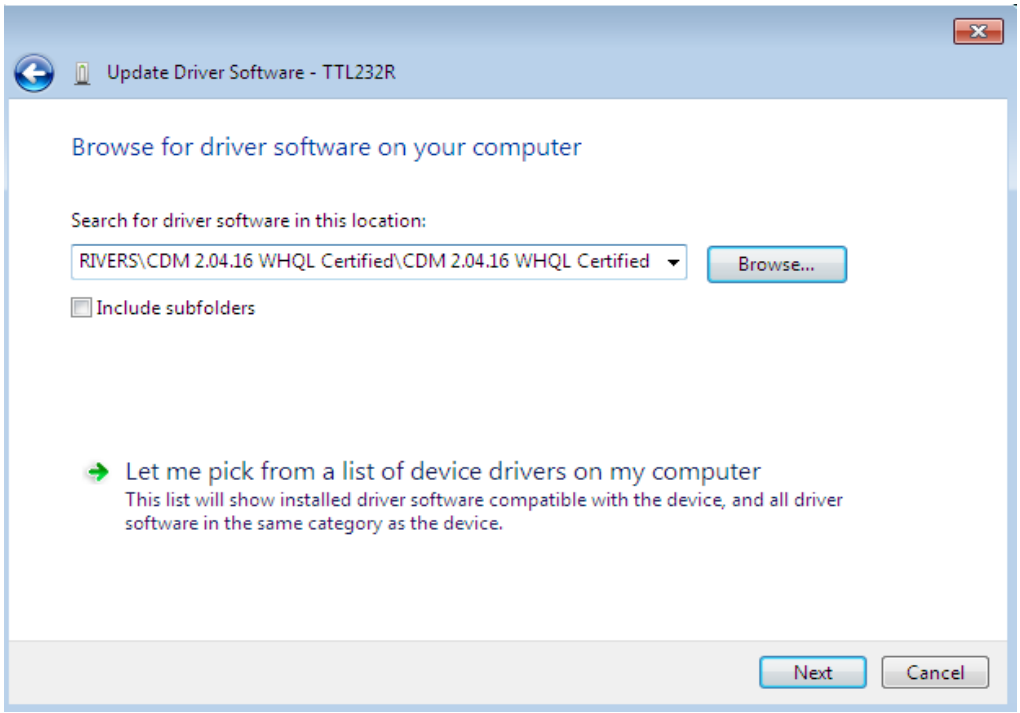
From the displayed menu select "Update Driver Software…"

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

Copyright © 2009 Future Technology Devices International Limited



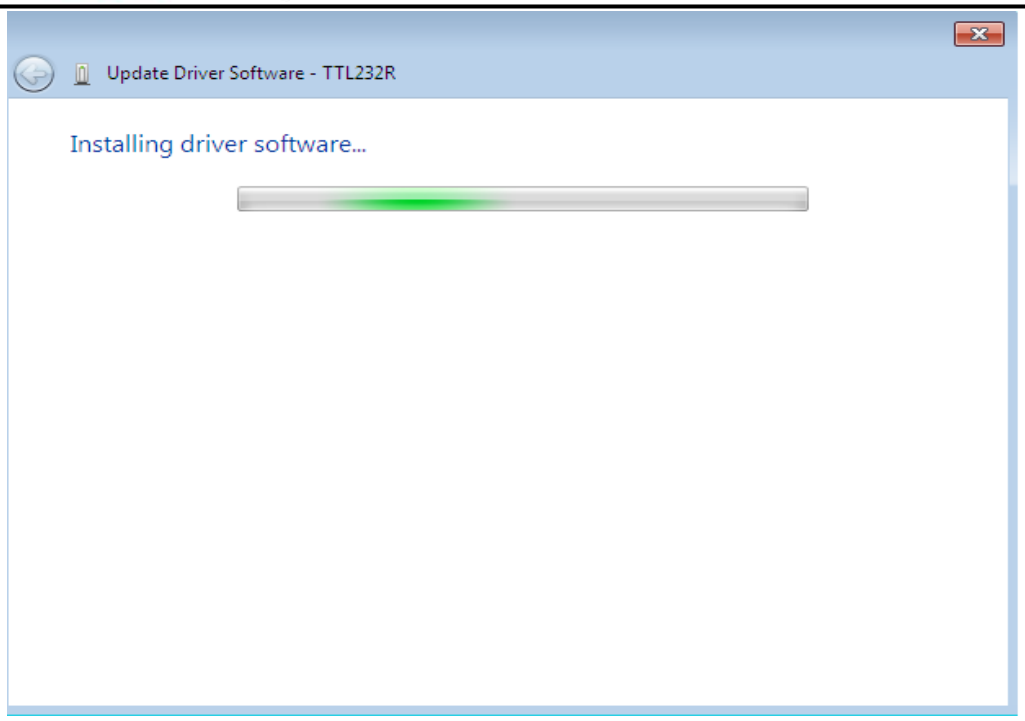
Select the second option to browse manually.



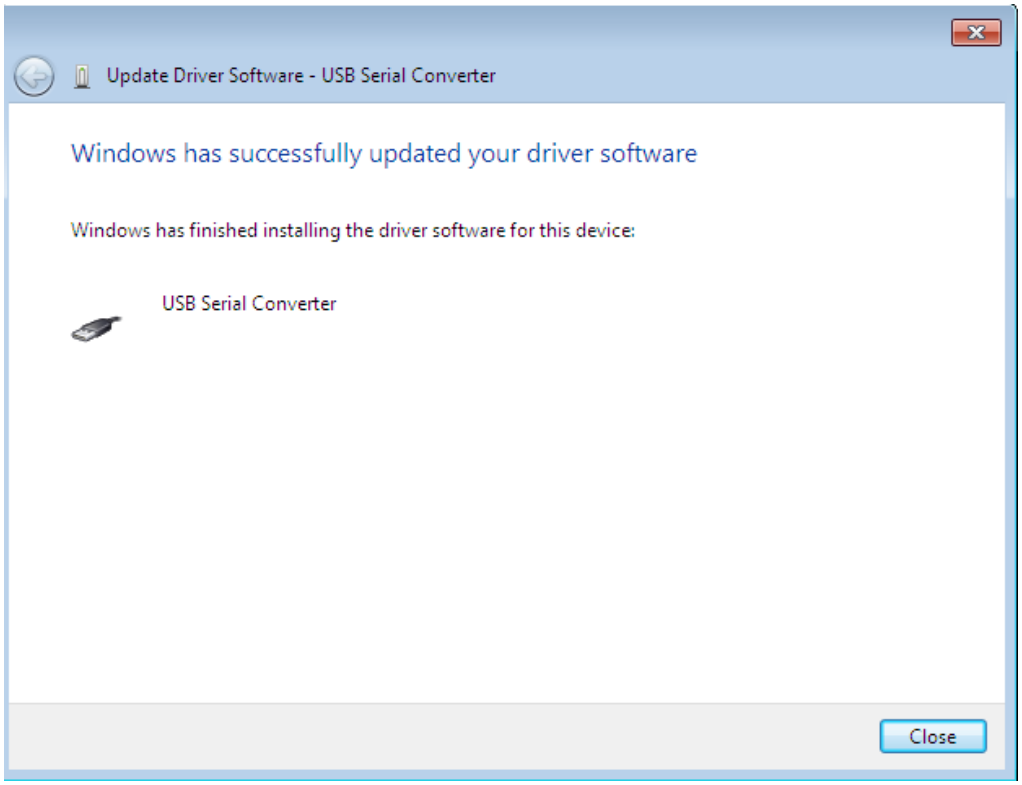
In the address box put the exact location where the drivers have been saved to. This may be on a CD or in a folder on the PC. It is not necessarily the exact same location as shown in the screenshot. The drivers could have been saved anywhere of the users choosing.

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

Copyright © 2009 Future Technology Devices International Limited

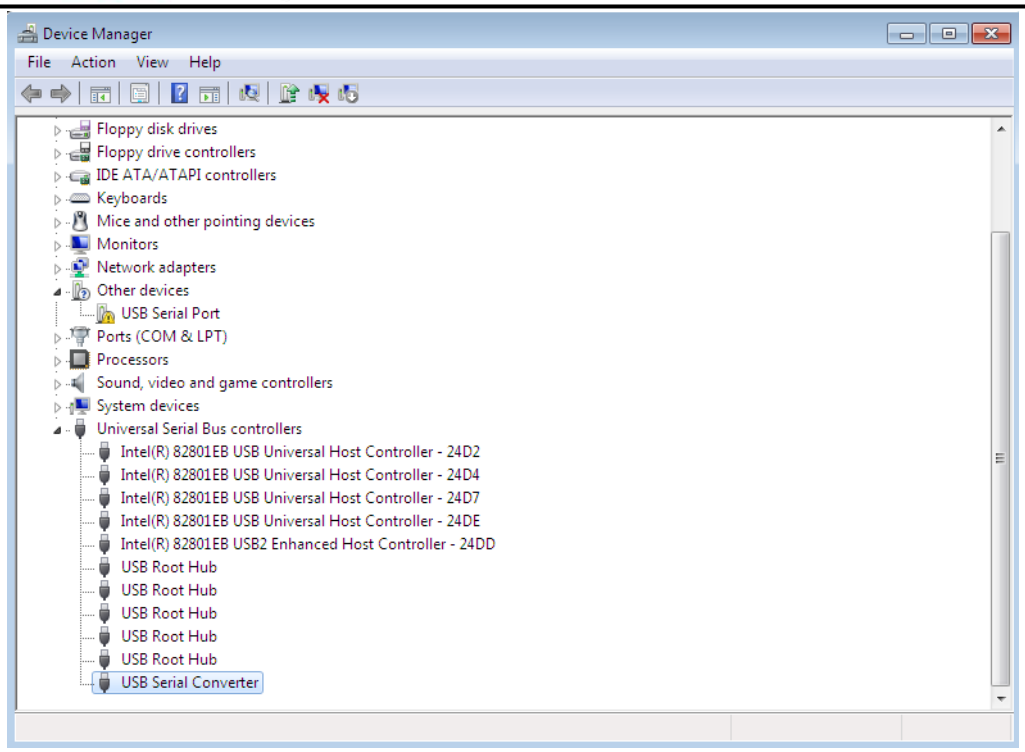


When the installation has finished a completion screen is displayed.



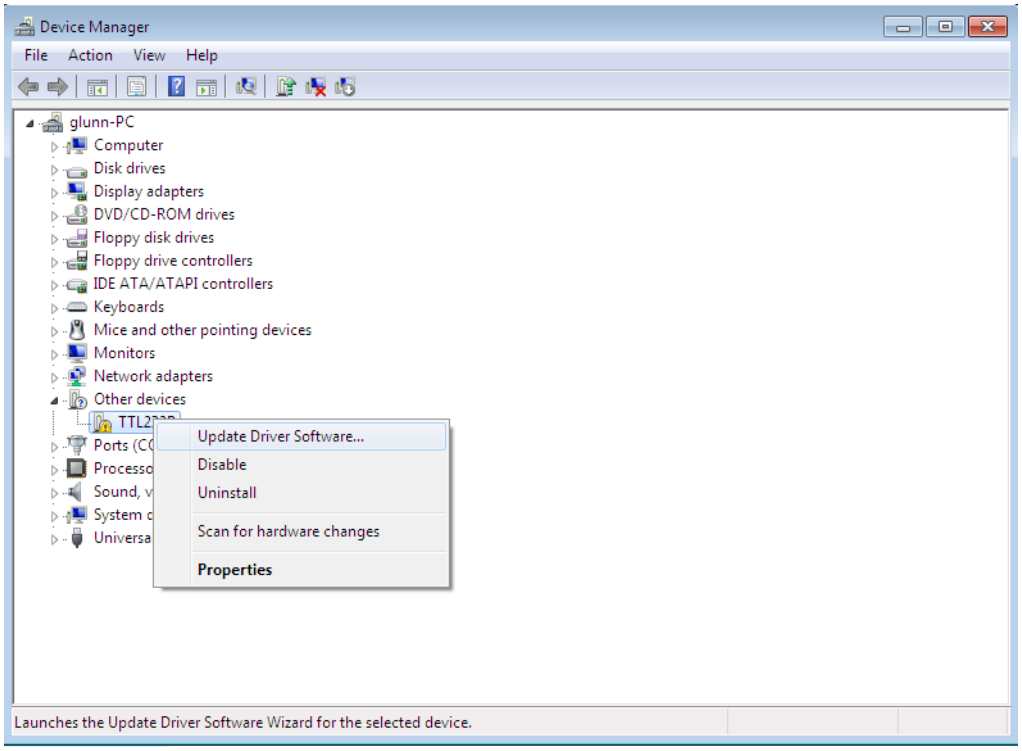
Press Close to close this window and go back to the Device Manager Window.

Copyright © 2009 Future Technology Devices International Limited



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.

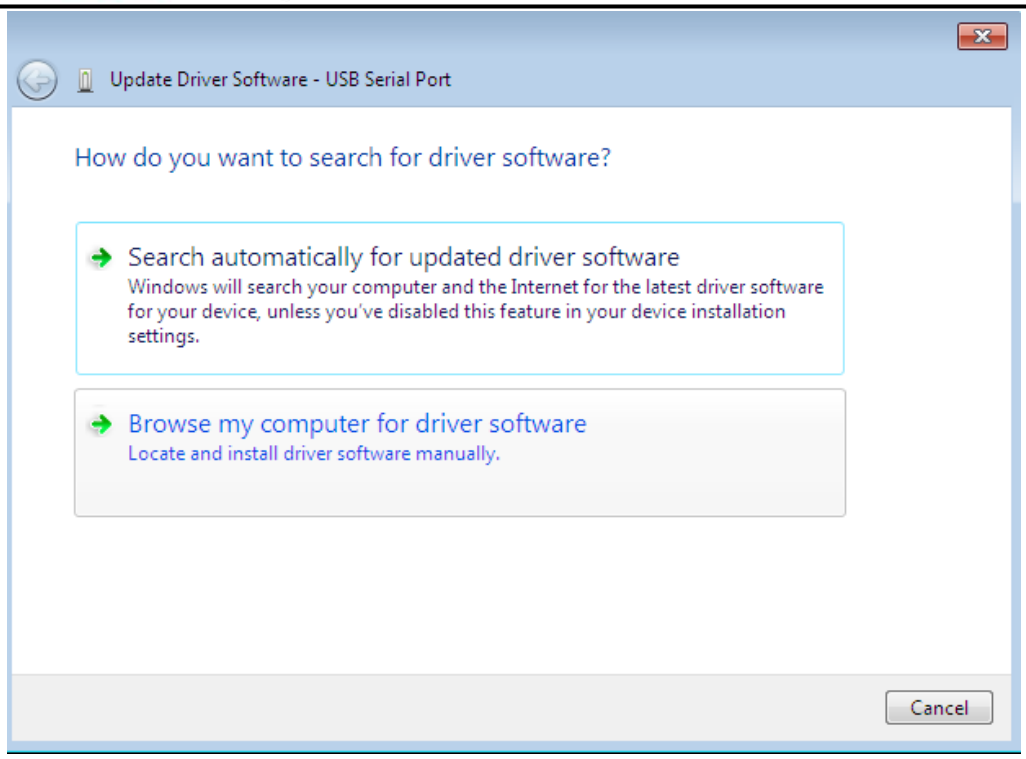
Right click on the other device (TTL232R in this example) to bring up a menu as shown below.



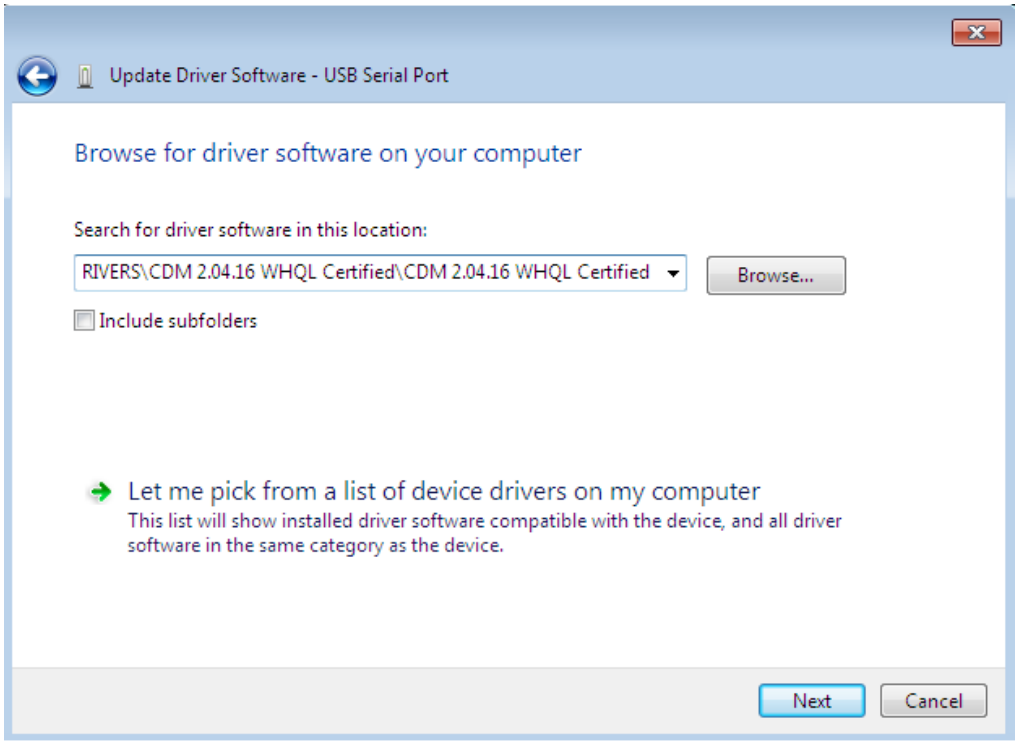
From the displayed menu select "Update Driver Software…"

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

Copyright © 2009 Future Technology Devices International Limited



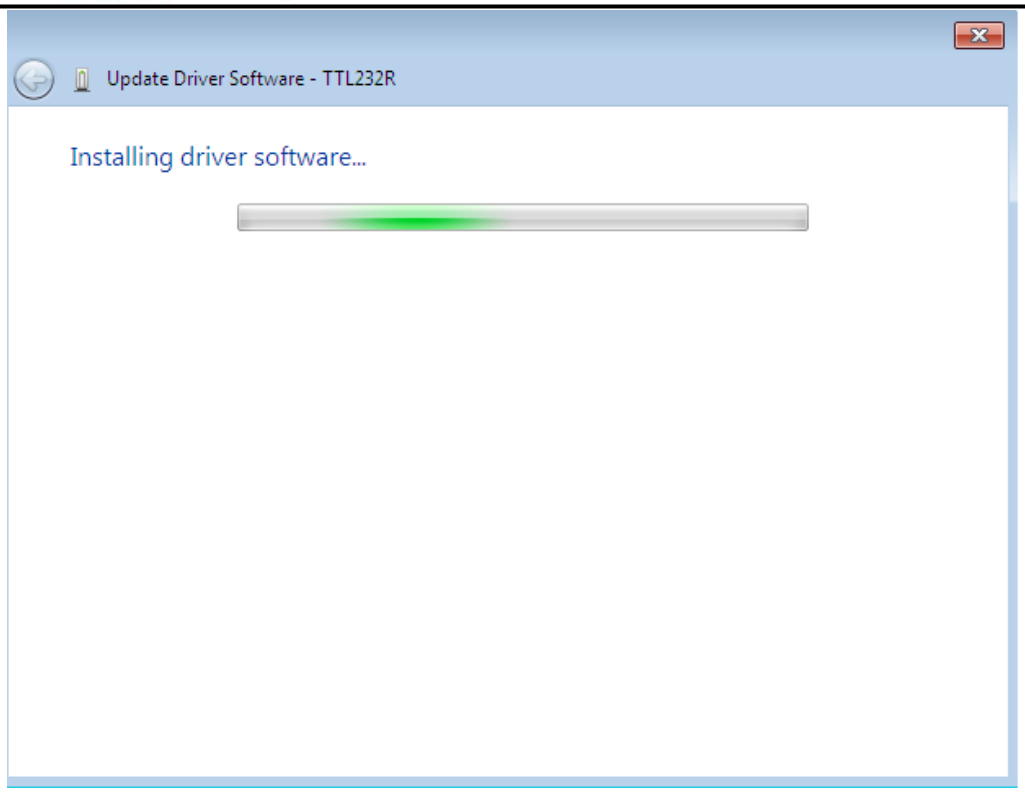
Select the second option to browse manually.



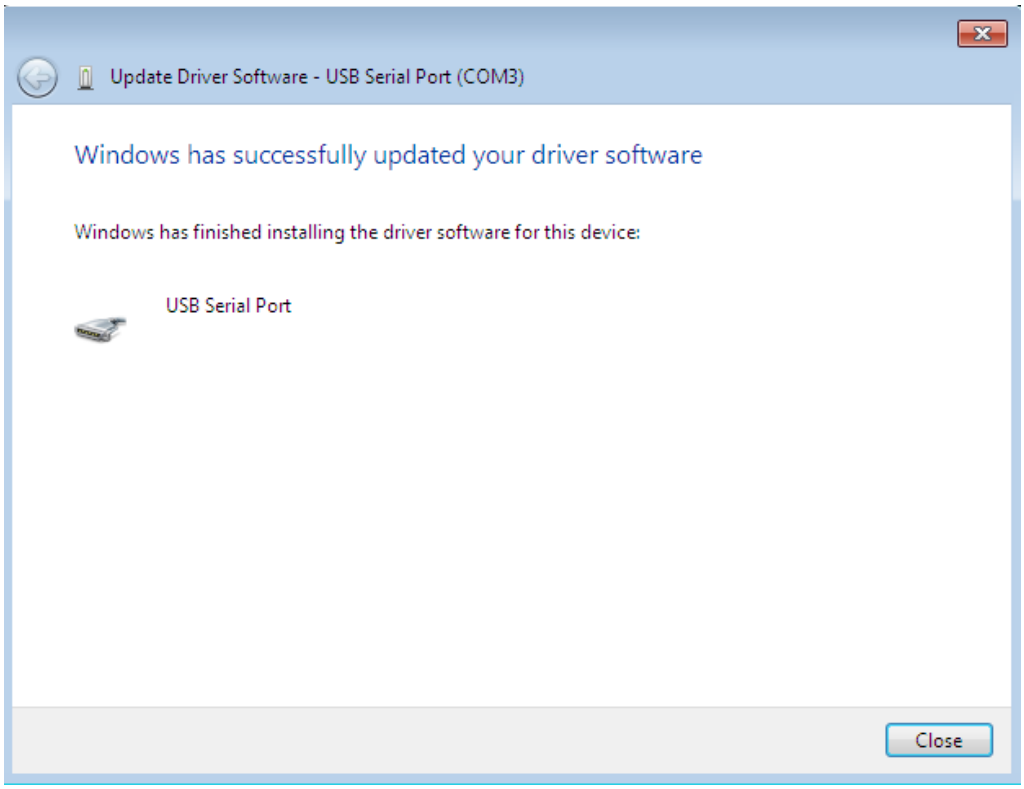
In the address box put the exact location where the drivers have been saved to. This may be on a CD or in a folder on the PC. It is not necessarily the exact same location as shown in the screenshot. The drivers could have been saved anywhere of the users choosing.

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

Copyright © 2009 Future Technology Devices International Limited

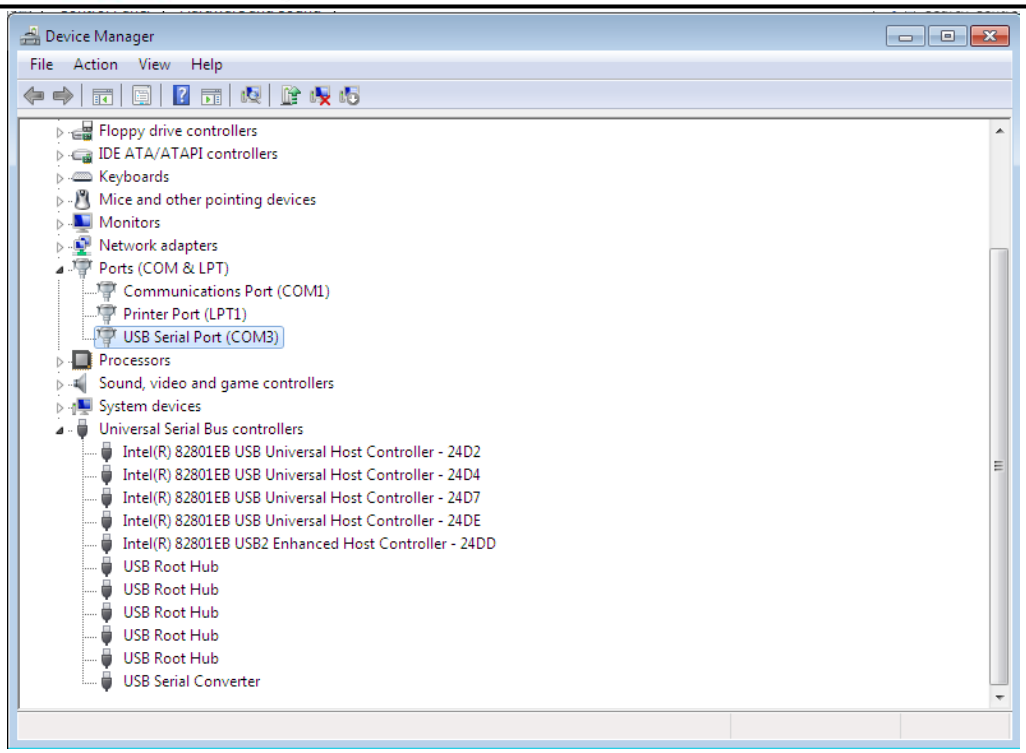


When the installation is finished a completion screen is displayed.



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.

Copyright © 2009 Future Technology Devices International Limited



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.

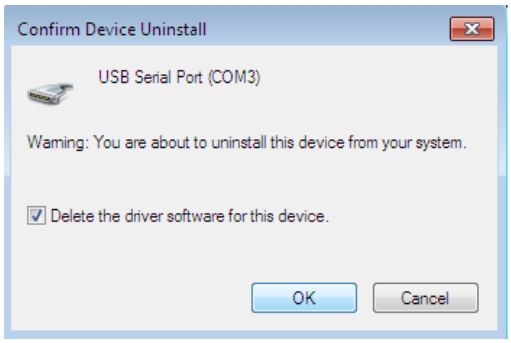
NOTE: Not all devices will install to COM3. The COM port allocation is determined by the installation wizard on the basis of the next free com port as designated in the PC registry.

Copyright © 2009 Future Technology Devices International Limited

4 Uninstalling FTDI Devices

With the release of Microsoft Windows 7, the FTDI uninstaller has been rendered unusable due to Windows Resource Protection preventing the executable from deleting driver files and associated registry values. Windows 7 will only allow the system itself to modify files and registry values in these locations.

Devices can be removed 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.

Copyright © 2009 Future Technology Devices International Limited

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.

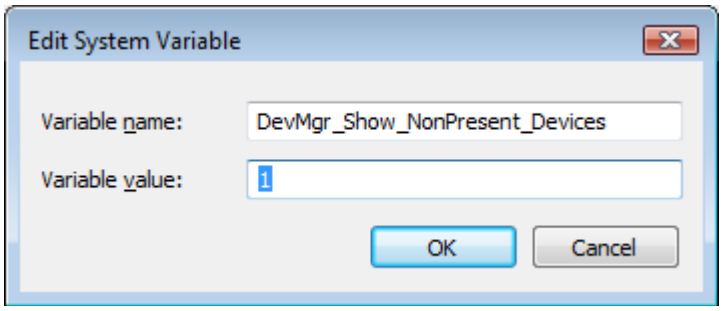
End customers should obtain modified drivers from the OEM of the device, and not necessarily edit the files themselves.

Copyright © 2009 Future Technology Devices International Limited

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:



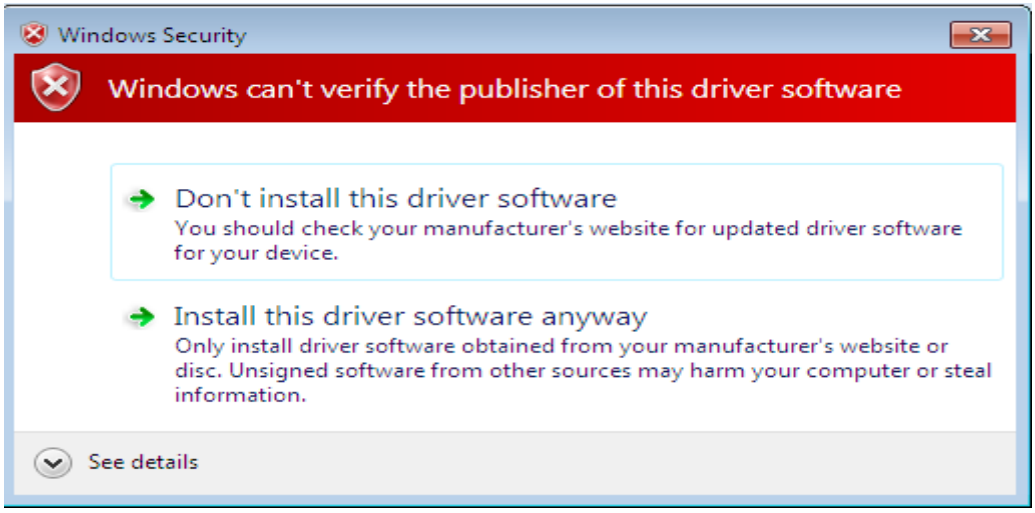
Create a new System Variable called "DevMgr_Show_NonPresent_Devices" and set the value to 1, then click OK.

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.

Copyright © 2009 Future Technology Devices International Limited

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.

Copyright © 2009 Future Technology Devices International Limited

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 VID 0403 and PID 6010 for FT2232 devices and VID 0403 and PID 6011 for FT4232.

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.

Copyright © 2009 Future Technology Devices International Limited

6 Contact Information

Head Office – Glasgow, UK

Future Technology Devices International Limited
Unit 1, 2 Seaward Place,
Centurion Business Park
Glasgow G41 1HH
United Kingdom

Tel: +44 (0) 141 429 2777
Fax: +44 (0) 141 429 2758

E-mail (Sales) sales1@ftdichip.com
E-mail (Support) support1@ftdichip.com
E-mail (General Enquiries) admin1@ftdichip.com
Web Site URL http://www.ftdichip.com
Web Shop URL http://www.ftdichip.com

Branch Office – Taipei, Taiwan

Future Technology Devices International Limited (Taiwan)
2F, No 516, Sec. 1 NeiHu Road
Taipei 114
Taiwan, R.O.C.
Tel: +886 (0) 2 8797 1330
Fax: +886 (0) 2 8751 9737

E-mail (Sales) tw.sales1@ftdichip.com
E-mail (Support) tw.support1@ftdichip.com
E-mail (General Enquiries) tw.admin1@ftdichip.com
Web Site URL http://www.ftdichip.com

Branch Office – Hillsboro, Oregon, USA

Future Technology Devices International Limited (USA)
7235 NW Evergreen Parkway, Suite 600
Hillsboro, OR 97123-5803
USA
Tel: +1 (503) 547 0988
Fax: +1 (503) 547 0987

E-Mail (Sales) us.sales@ftdichip.com
E-Mail (Support) us.support@ftdichip.com
Web Site URL http://www.ftdichip.com

Branch Office – Shanghai, China

Future Technology Devices International Limited (China)
Room 408, 317 Xianxia Road,
ChangNing District,
ShangHai, China

Tel: +86 (21) 62351596
Fax: +86(21) 62351595

E-Mail (Sales): cn.sales@ftdichip.com
E-Mail (Support): cn.support@ftdichip.com
E-Mail (General Enquiries): cn.admin1@ftdichip.com
Web Site URL: http://www.ftdichip.com

Copyright © 2009 Future Technology Devices International Limited

Distributor and Sales Representatives

Please visit the Sales Network page of the FTDI Web site for the contact details of our distributor(s) and sales representative(s) in your country.

Neither the whole nor any part of the information contained in, or the product described in this manual, may be adapted or reproduced in any material or electronic form without the prior written consent of the copyright holder. This product and its documentation are supplied on an as-is basis and no warranty as to their suitability for any particular purpose is either made or implied. Future Technology Devices International Ltd will not accept any claim for damages howsoever arising as a result of use or failure of this product. Your statutory rights are not affected. This product or any variant of it is not intended for use in any medical appliance, device or system in which the failure of the product might reasonably be expected to result in personal injury. This document provides preliminary information that may be subject to change without notice. No freedom to use patents or other intellectual property rights is implied by the publication of this document. Future Technology Devices International Ltd, Unit 1, 2 Seaward Place, Centurion Business Park, Glasgow G41 1HH United Kingdom. Scotland Registered Number: SC136640

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

Copyright © 2009 Future Technology Devices International Limited

Appendix B – Revision History

Version 0.1	First Draft	21/08/2009
Version 1.0	First Release	29/10/2009

Copyright © 2009 Future Technology Devices International Limited