Future Technology Devices International Ltd.

Application Note AN_103

FTDI Drivers Installation guide for Windows VISTA

Document Reference No.: FT_000080

Version 1.0

Issue Date: 2008-09-23

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

Future Technology Devices International Limited (FTDI)

373 Scotland Street, Glasgow G5 8QB United Kingdom
Tel.: +44 (0) 141 429 2777 Fax: + 44 (0) 141 429 2758
E-Mail (Support): support1@ftdichip.com Web: http://www.ftdichip.com

Copyright © 2008 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 16
5 Troubleshooting 17
5.1 Windows VISTA cannot find drivers for my device 17
5.2 Devices not shown in Device Manager for uninstalling 18
5.3 Windows Vista shows a warning that the driver is not certified 19
5.4 Driver will not install on VISTA x64 20
6 Contact Information 21
Appendix A – Revision History 22

Copyright © 2008 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 VISTA.

Copyright © 2008 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 or VISTA 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 and FT2232D devices. In the case of FT232BM, FT245BM, devices, the CDM driver will default to always installing a COM port.

This behaviour can be changed and EEPROM settings ignored by changing the driver INF files as detailed in FTDI Application Note AN232B-10 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 © 2008 Future Technology Devices International Limited

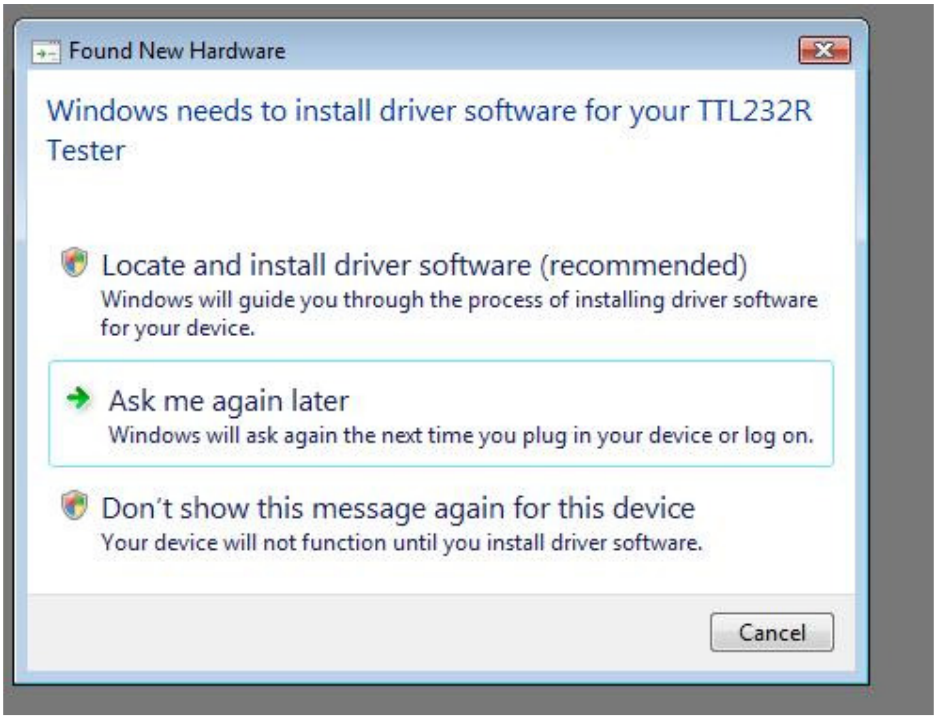
3 Installing CDM Drivers

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

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

If there is an available Internet connection, Windows VISTA will silently connect to the Windows Update website and install any suitable driver it finds for the device in preference to the driver manually selected. If no suitable driver is automatically found then the following procedure should be followed.

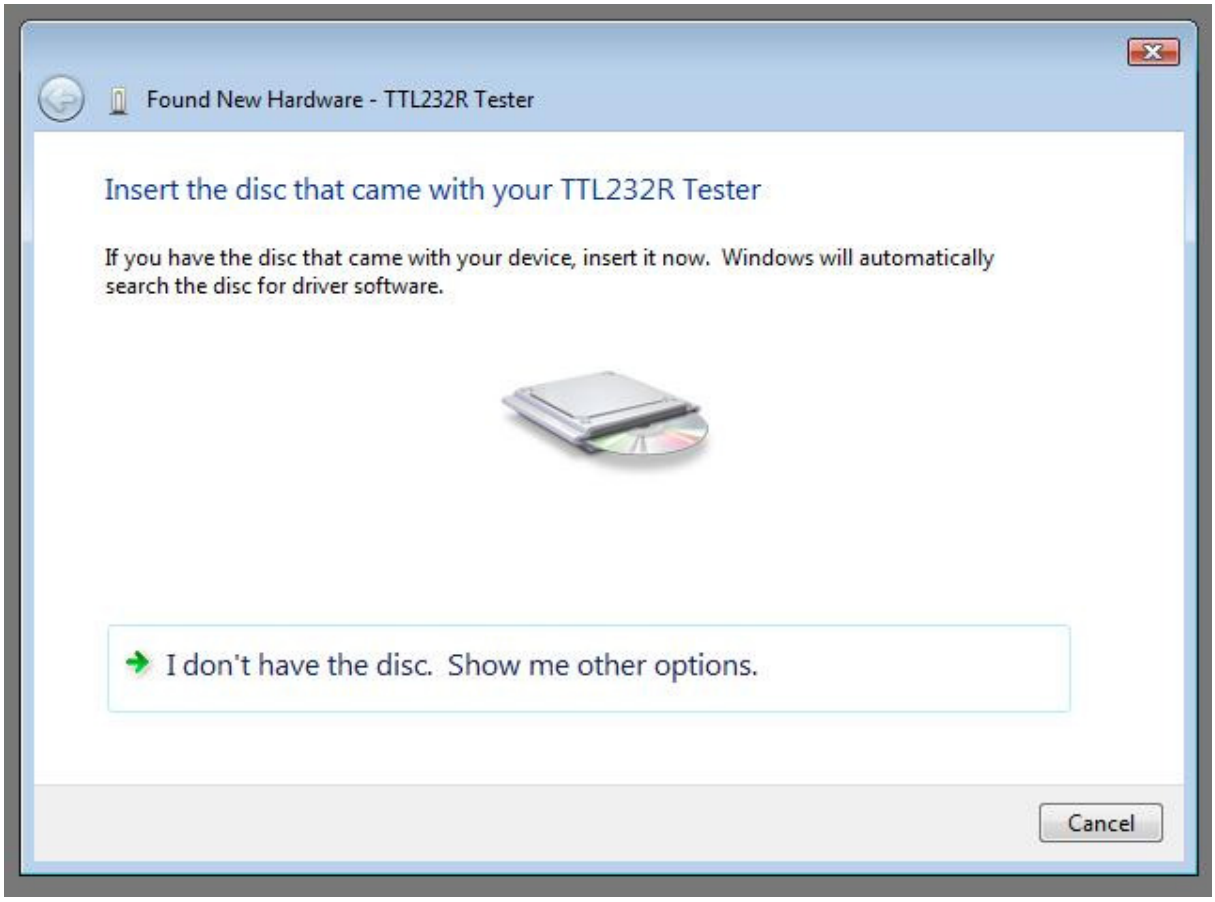
If the device is based on the FT2232D, the Microsoft composite device driver is automatically loaded silently in the background. Once the composite driver has been installed Windows Found New Hardware Wizard will launch. If there is no available Internet connection or Windows VISTA is configured to ask before connecting to Windows Update, the screen below is shown. Select "Locate and install driver software (recommended)" from the options available to proceed with the installation.



Copyright © 2008 Future Technology Devices International Limited

When Locate and install driver software (recommended)" is selected the following screen will appear.

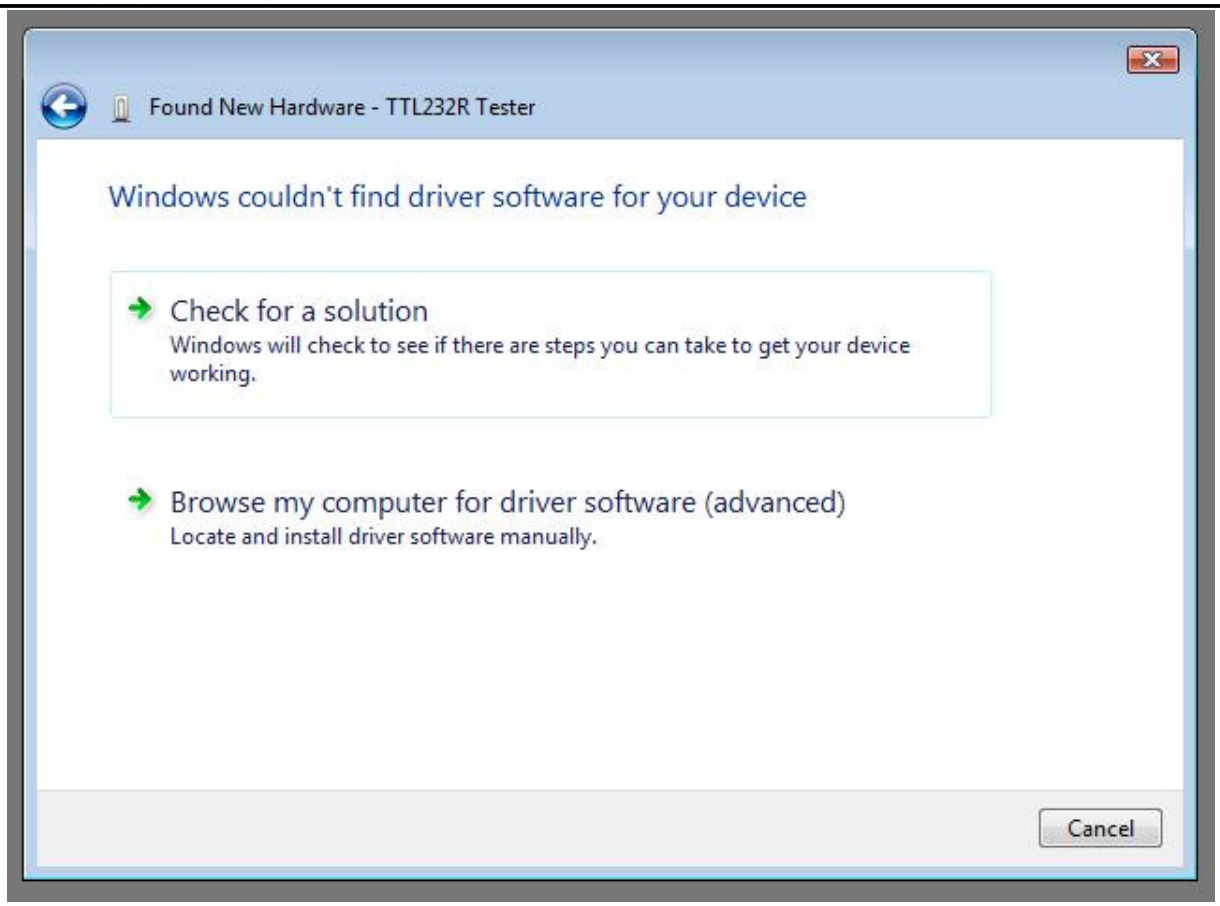
Note: the text "TTL Tester" is replaced with the description of the customer hardware.



Select "I don't have the disk. Show me other options"

The next screen will appear.

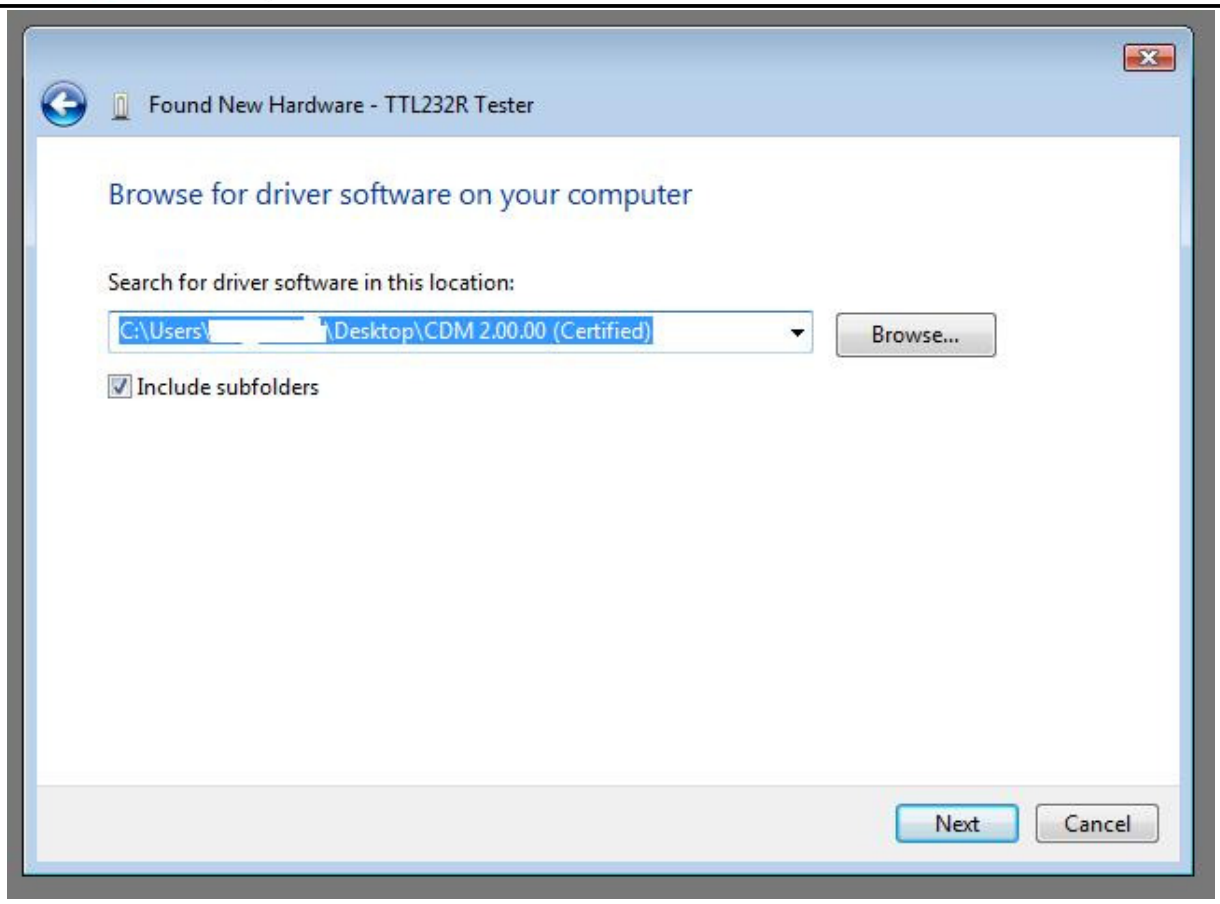
Copyright © 2008 Future Technology Devices International Limited



Select "Browse my computer for driver software (advanced)".

The next screen will appear.

Copyright © 2008 Future Technology Devices International Limited

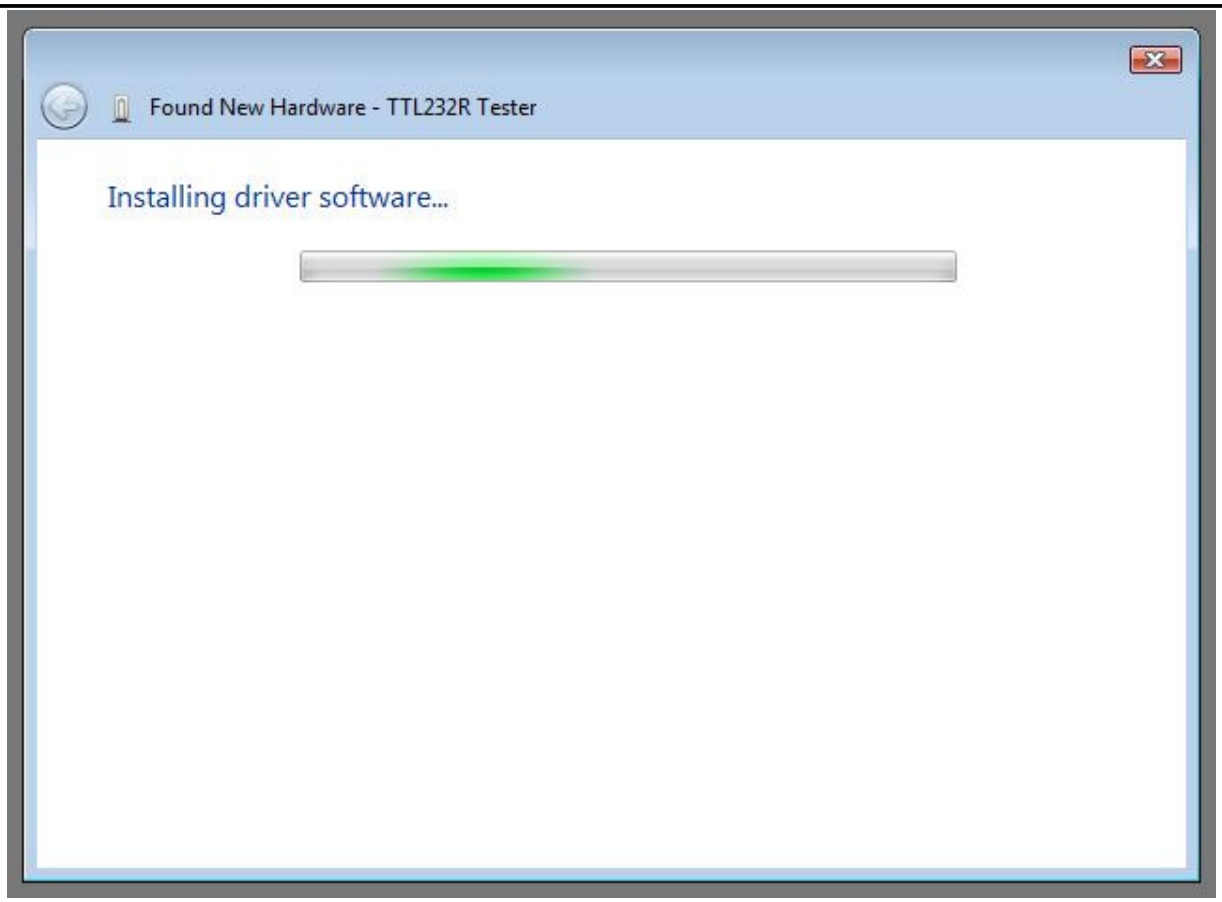


Browse to the folder where the CDM driver has been stored (when uncompressed) and press "Next"

The example shown above uses a folder on the desktop.

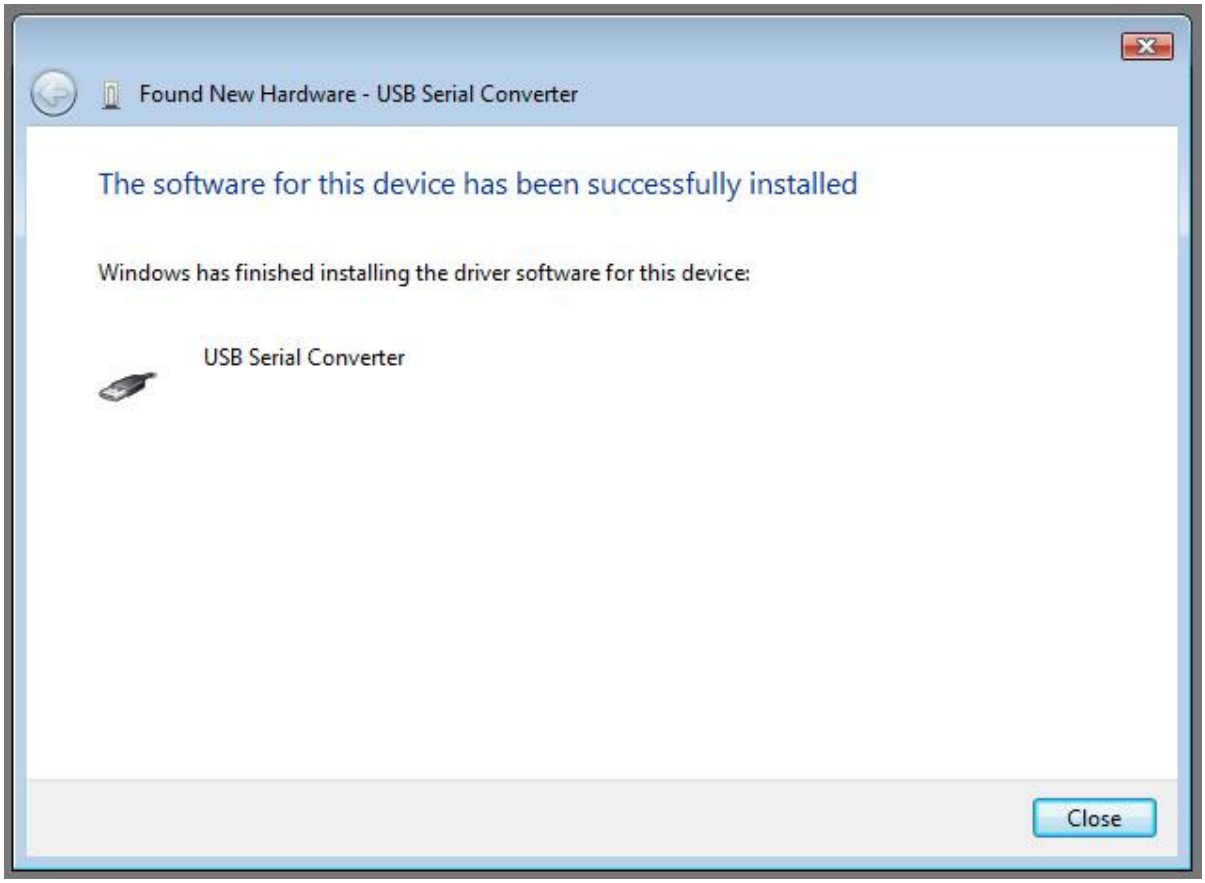
The next screen will appear.

Copyright © 2008 Future Technology Devices International Limited



Copyright © 2008 Future Technology Devices International Limited

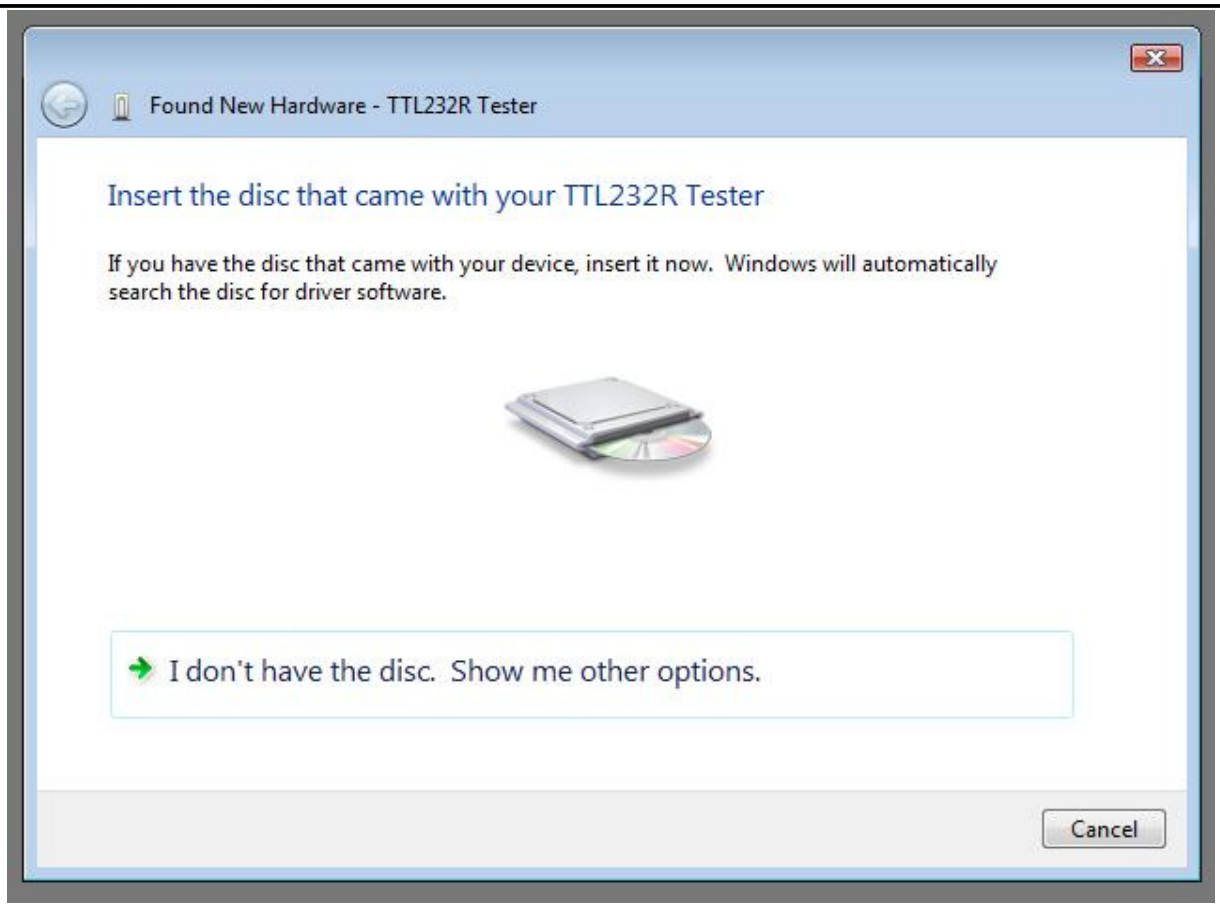
This screen will automatically complete and then change to the one below:



The bus layer of the driver is now installed.

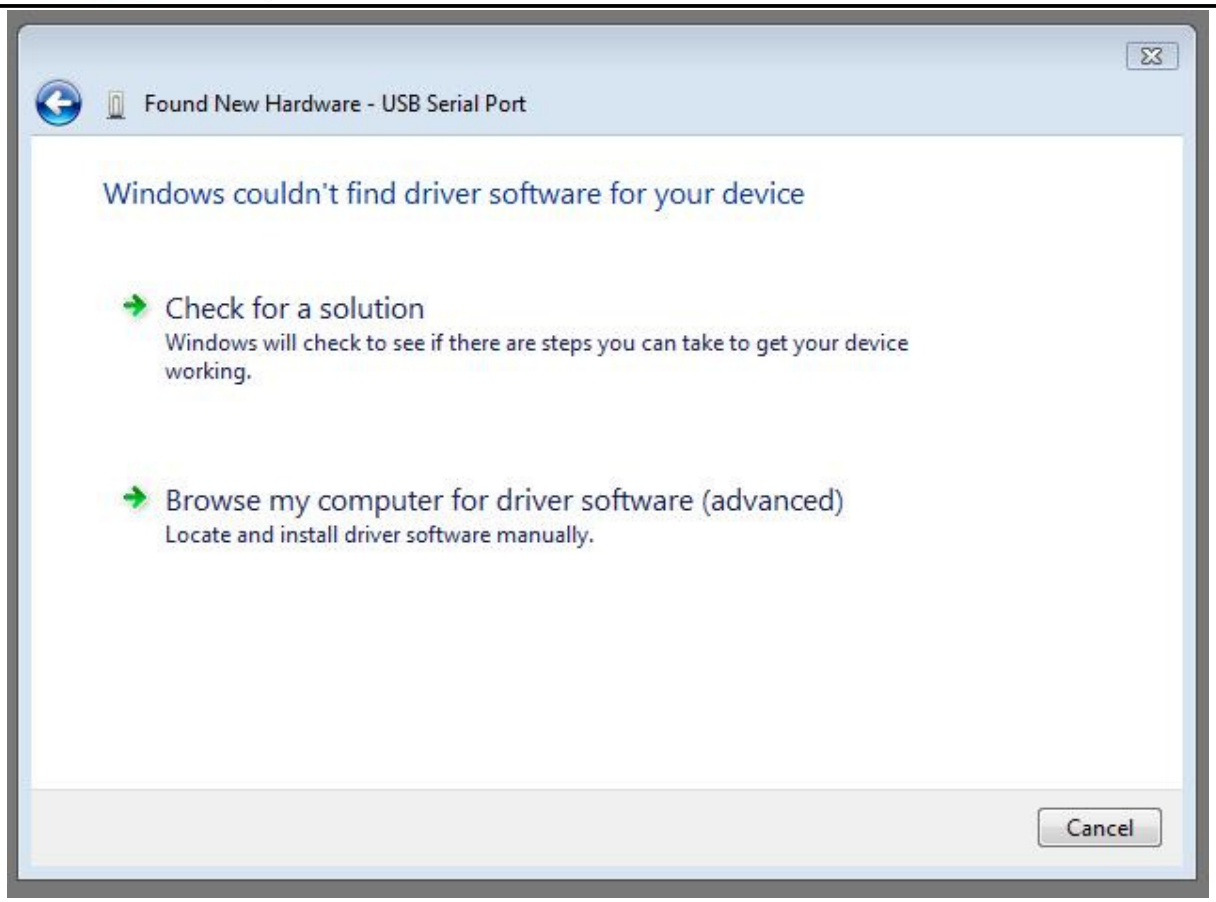
When the bus driver has completed, the process is repeated for the serial port layer of the driver. That is, Windows will automatically detect a serial port device as a new device. It will then prompt, as before, for the location of the device driver by displaying the "Found new hardware" wizard again and it is necessary to repeat the same process to install the serial port driver.

Copyright © 2008 Future Technology Devices International Limited



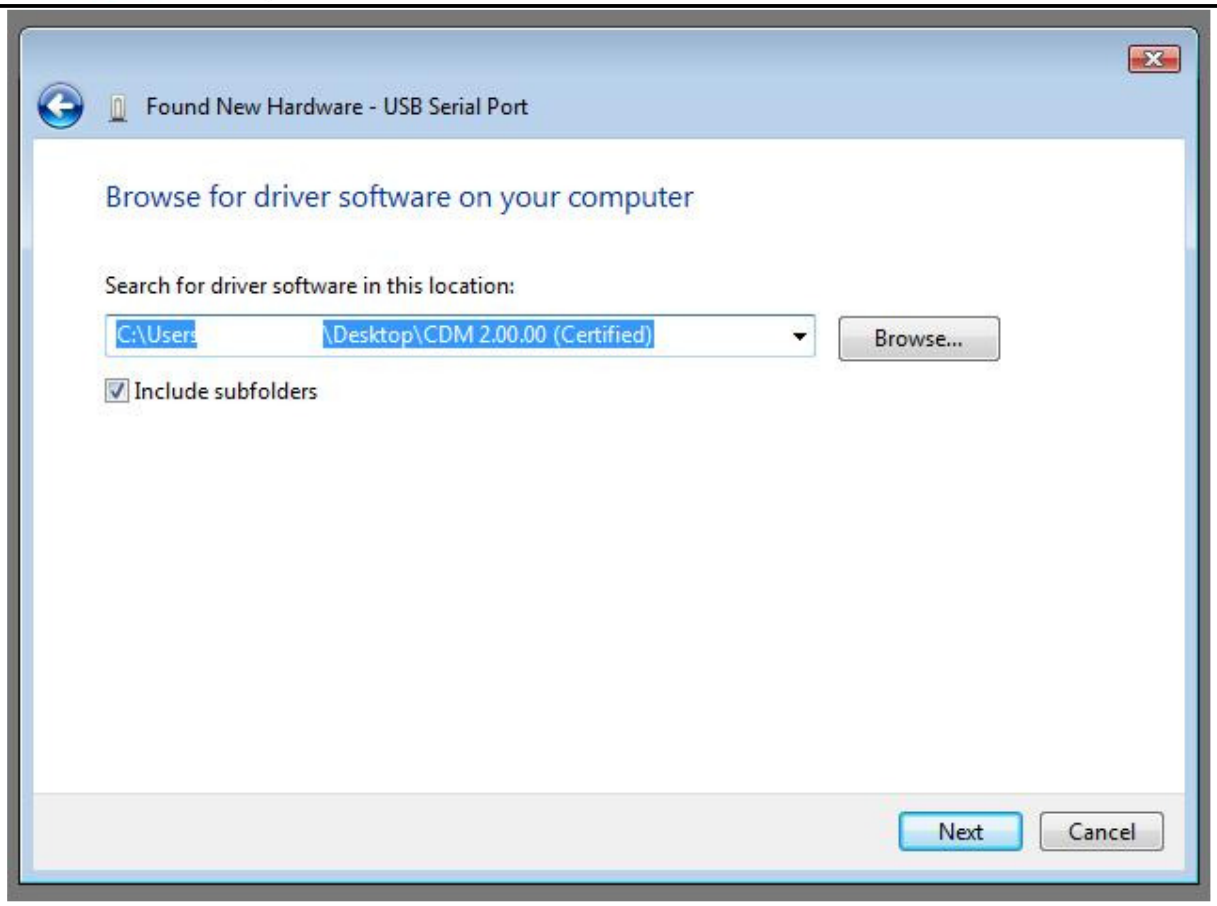
Select "I don't have the disk. Show me other options"

The next screen will appear.



Select "Browse my computer for driver software (advanced)".

The next screen will appear.

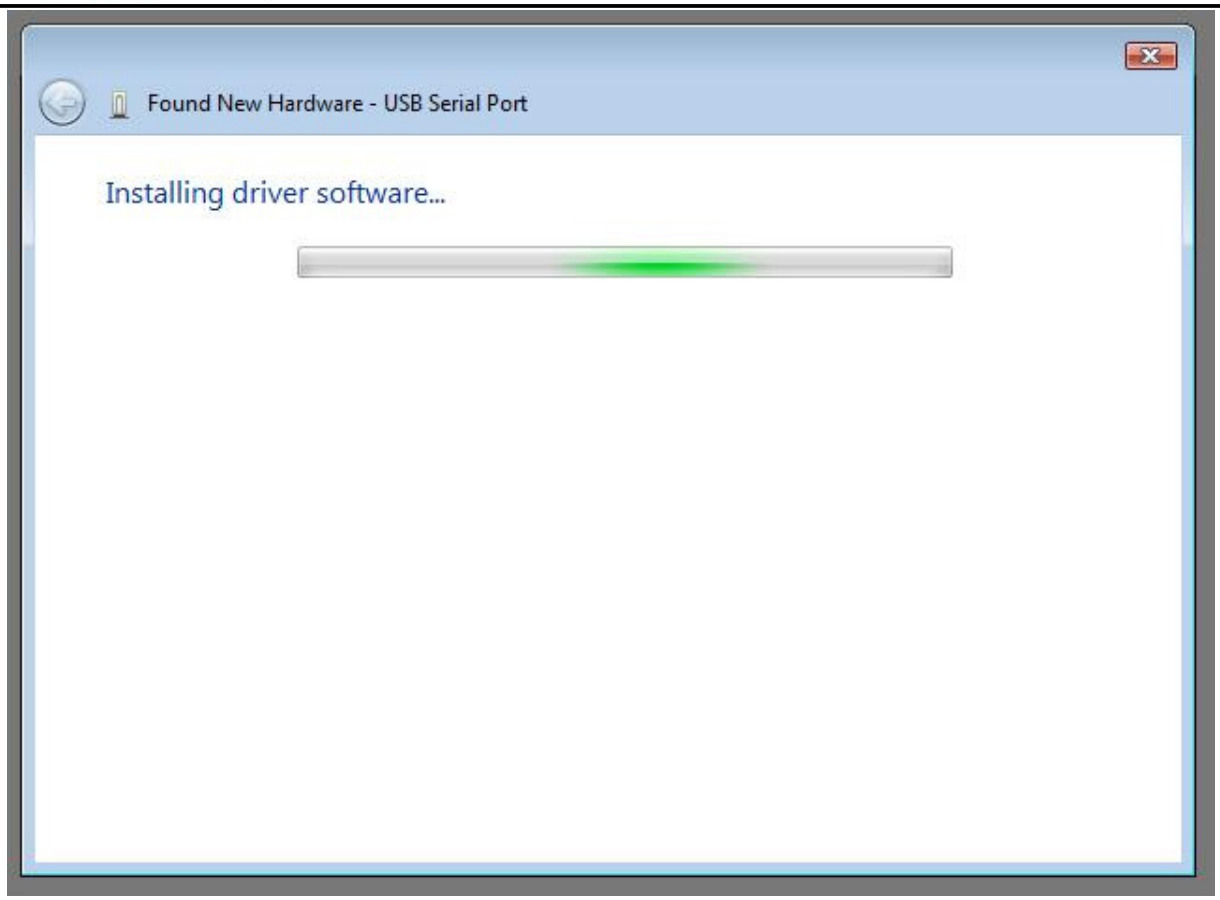


Browse to the folder where the CDM driver has been stored (when uncompressed) and press "Next"

The example shown above uses a folder on the desktop.

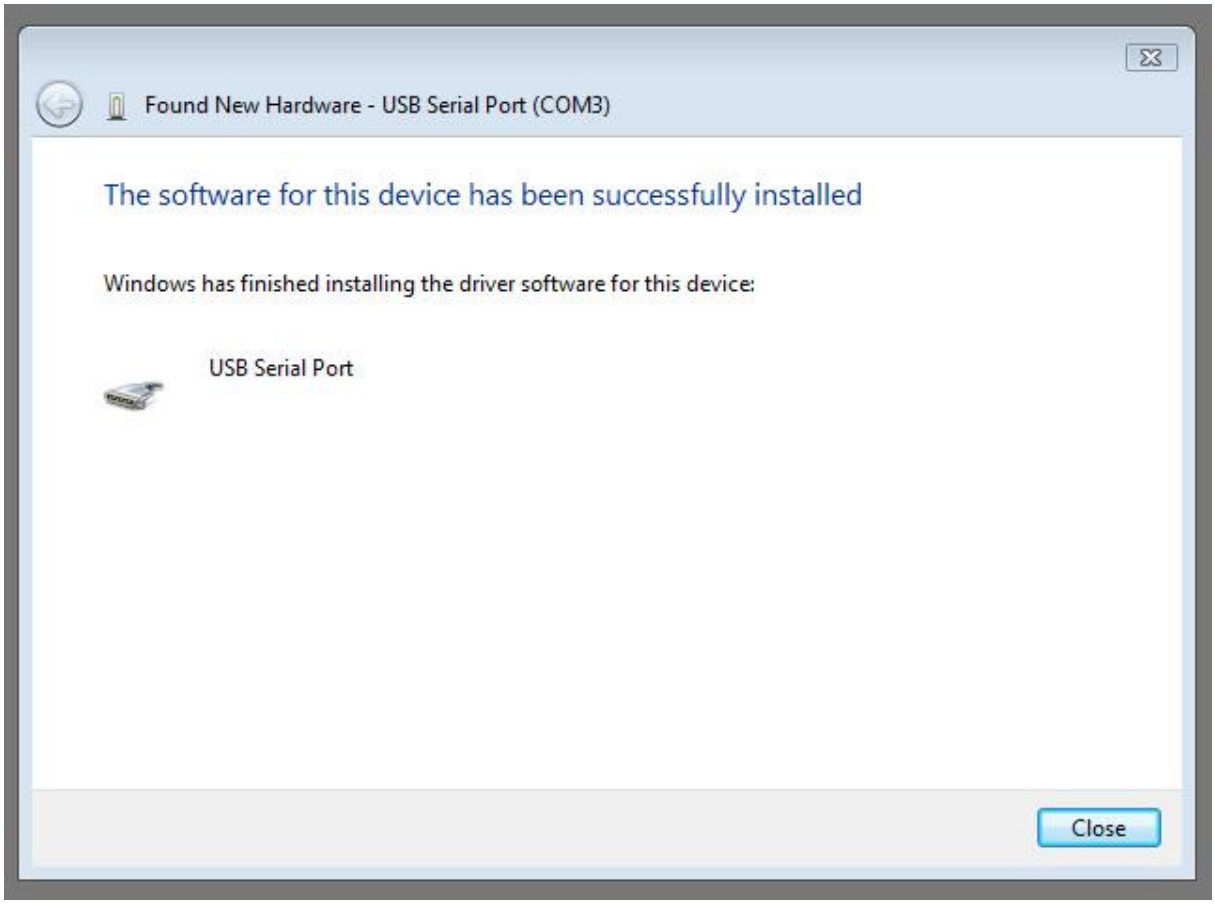
The next screen will appear.

Copyright © 2008 Future Technology Devices International Limited



Copyright © 2008 Future Technology Devices International Limited

This screen will automatically complete and then the following screen will appear.

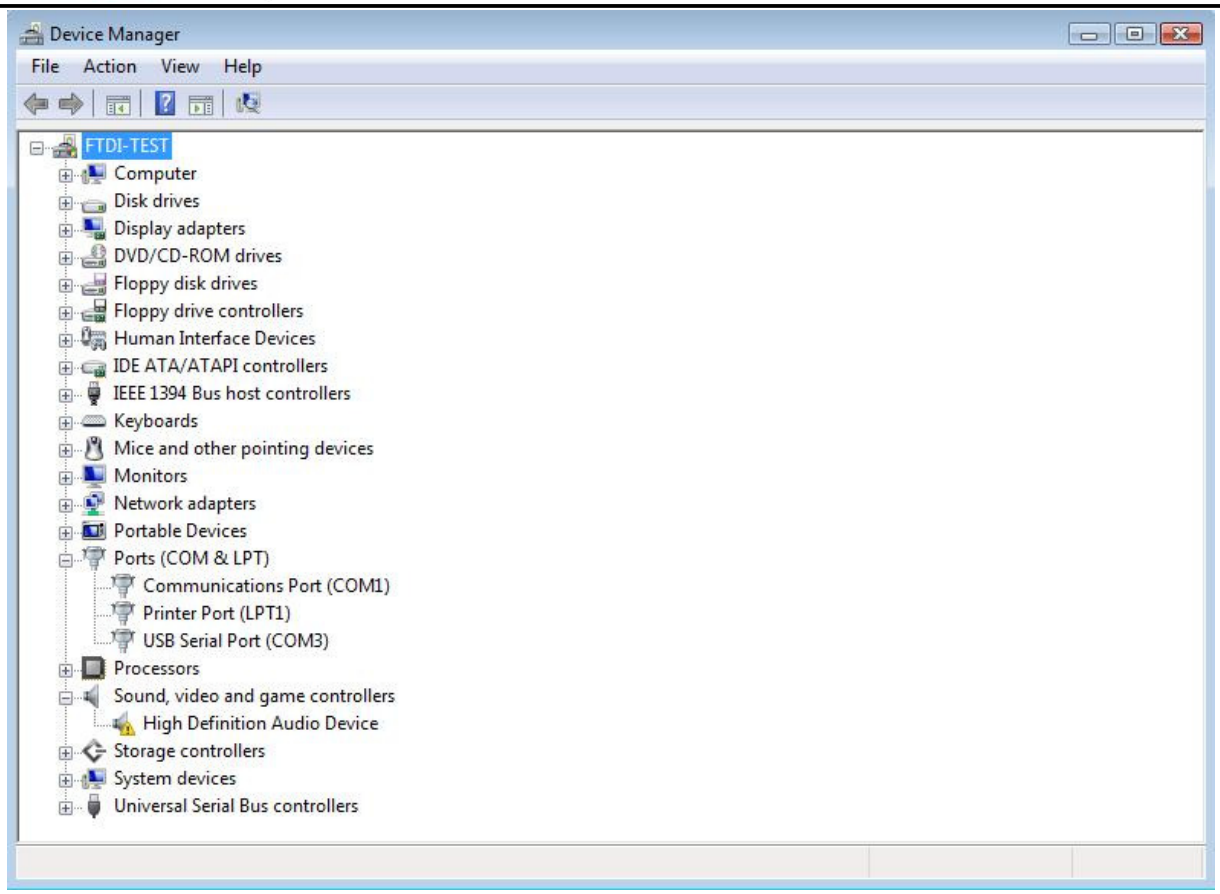


If the device is based on the FT2232D, the second port must also be installed. The procedure for installing the second port is identical to that for installing the first port from the first screen of the Found New Hardware Wizard for the USB Serial Port device. If the driver is Microsoft WHQL certified, this is done automatically.

After the driver is installed it is important to determine which COM port has been assigned to the device for configuring the application that will use the device.

Open the Device Manager (located in "Control Panel\System" then select the "Hardware" tab and click "Device Manager") and select "View > Devices by Connection", the device appears as a" USB Serial Converter" with an additional COM port with the label "USB Serial Port". If the device is based on the FT2232D, two ports will be available from a composite USB device.

Copyright © 2008 Future Technology Devices International Limited



This screen shows the device connected to COM3.

In the case of the FT2232D, port A of the FT2232D will be installed as COMX and port B will be installed as COMX+1 where COMX is the first available COM port number.

Copyright © 2008 Future Technology Devices International Limited

4 Uninstalling FTDI Devices

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

Consequently, a new method for uninstalling is required. 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. Vista 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.

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 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 © 2008 Future Technology Devices International Limited

5 Troubleshooting

5.1 Windows VISTA 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.

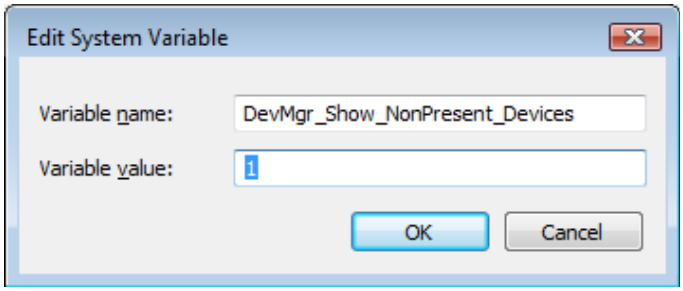
End customers should obtain modified drivers from the OEM of the device, and not necessarily edit the files themselves.

Copyright © 2008 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 Vista) and select "View > Show Hidden Devices". Device Manager will then show all hidden and phantom devices available on that PC as shaded.

Copyright © 2008 Future Technology Devices International Limited

5.3 Windows Vista 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 © 2008 Future Technology Devices International Limited

5.4 Driver will not install on VISTA x64

VISTA 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.

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 VISTA x64.

Copyright © 2008 Future Technology Devices International Limited

6 Contact Information

Head Office – Glasgow, UK

Future Technology Devices International Limited
373 Scotland Street
Glasgow G5 8QB
United Kingdom
Tel: +44 (0) 141 429 2777
Fax: +44 (0) 141 429 2758

E-mail (Sales) vinculum.sales@ftdichip.com
E-mail (Support) vinculum.support@ftdichip.com
E-mail (General Enquiries) admin1@ftdichip.com
Web Site URL http://www.ftdichip.com
Web Shop URL http://www.dftdichip.com

Branch Office – Taipei, Taiwan

Future Technology Devices International Limited (Taiwan)
4F, No 18-3, Sec. 6 Mincyuan East Road
Neihu District
Taipei 114
Taiwan, R.O.C.
Tel: +886 (0) 2 8791 3570
Fax: +886 (0) 2 8791 3576

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.admin@ftdichip.com
Web Site URL http://www.ftdichip.com

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, 373 Scotland Street, Glasgow G5 8QB United Kingdom. Scotland Registered Number: SC136640

Appendix A – Revision History

Version 0.1	First Draft	21/08/2008
Version 1.0	First Release	23/09/2008

Copyright © 2008 Future Technology Devices International Limited