

Prizmatix

Multi-LED-Ctrl

Software

User Manual

Software Ver: 10.2
User Manual Ver 1.1

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2 Prizmatix Multi-LED-Ctrl Software Description

The Prizmatix Multi-LED-Ctrl (Control) software was developed to enable convenient control of USB enabled Prizmatix Multi Wavelength systems on Windows based computers via a USB connection.

This software can be used with products such as UHP-M-LED, FC-LED, Combi-LED and most multi wavelength custom product.

One of important features of Multi-LED-Ctrl software is automatic detection of the hardware type connected to the computer USB port and opening appropriate number of control sliders to fit the number of installed LED channels.

The USB enabled Prizmatix LED light sources can be also operated by sending a simple text string via serial communication COM port from various software packages such as MicroManager, MetaMorph, LabView, Matlab, HyperTerminal and many other software packages. API and code examples are available upon request.

3 Health and Safety

Prizmatix products are NOT authorized for use as components in life support devices or systems.

The Prizmatix Multi-LED-Ctrl is intended for use as laboratory equipment only.

It is not cleared or authorized for clinical use.

4 Setup of the Hardware

For setup of the hardware (LED head, LED controller etc.) please refer to the specific LED illuminator User-Manual. In this document only software related aspect will be discussed.

Please ensure that you have received appropriate USB cable to connect the LED controller to the computer.

5 Software Setup

The Prizmatix Multi-LED-Ctrl system setup is performed in following steps:

- Download of the compressed software (ZIP file).
- Setup of Prizmatix Multi-LED-Ctrl software
- Setup of USB device drivers

Do not connect the USB cable to the computer until completing the software setup process

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5.1 Download of the Compressed Software

The software is available at Prizmatix website:

prizmatix.com/software.htm

Please refer to the software related label on the bottom of the LED controller. The label indicates the specific link that shall be used for download.

Click on the link, you will see the ZIP file inside Dropbox.

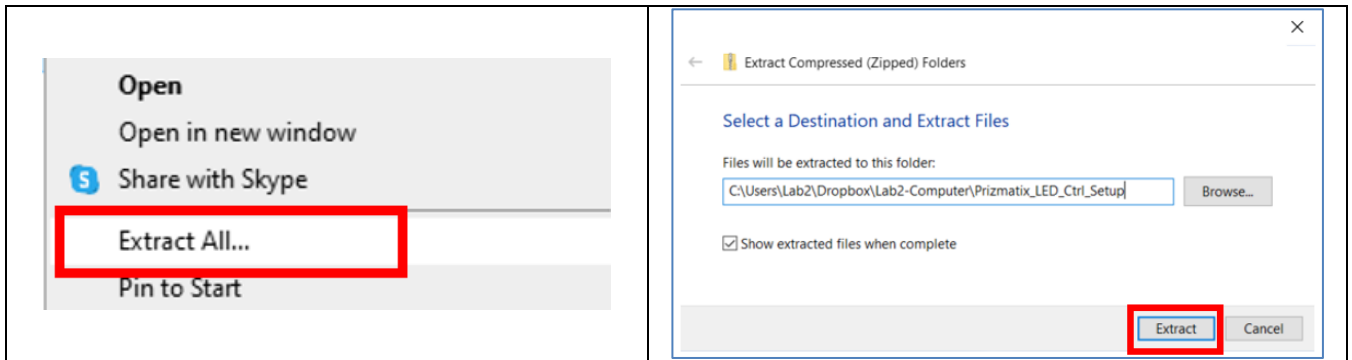
Click on the small menu [...] at right side of the ZIP file name. As the menu opens chose Download.

The ZIP file will download to your default download folder

Typically: C:\Users\YourName\Downloads

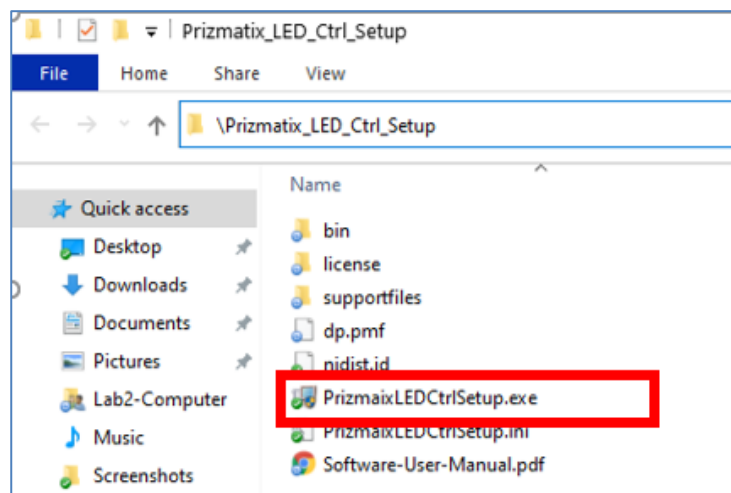
Open the download folder and right click on the ZIP file, a popup menu will open.

Chose Extract All...



The following dialog box will appear. By default, it will suggest creating a new folder in your Downloads folder, which is typically good practice. Press **Extract** button to continue.

The ZIP extraction will create new folder Prizmatix_LED_Ctrl_Setup in your Downloads directory.



Now we are ready to proceed to the setup of the software on this PC.

Remark: after completion of the setup you can delete the

Downloads\Prizmatix_LED_Ctrl_Setup*. * directory.

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5.2 Setup of Prizmatix Multi-LED-Ctrl PC Software

Locate the "PrizmatixMultiLEDCtrlSetup.exe" file.

Run the "PrizmatixMultiLEDCtrlSetup.exe" file and follow the instructions as they appear during the setup process.

Remark: During the installation you will be asked to accept National Instruments license agreement.

Remark: National Instruments advise to disable Windows Fast Startup feature as it can cause problems with hardware install and remove. During the setup process you will be asked to disable this feature.

At the end of the setup you will be asked to re-boot the system to complete the software installation.

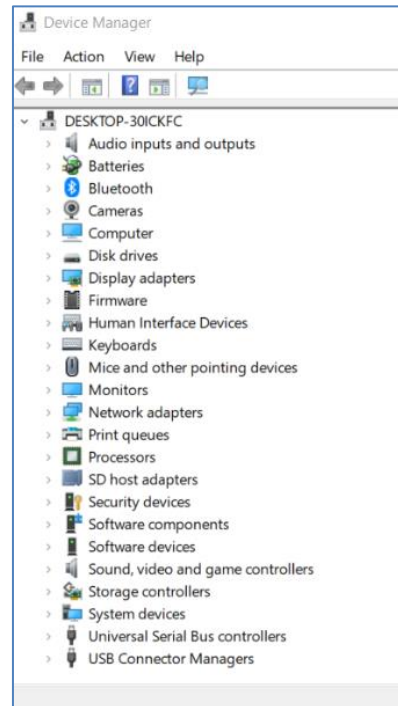
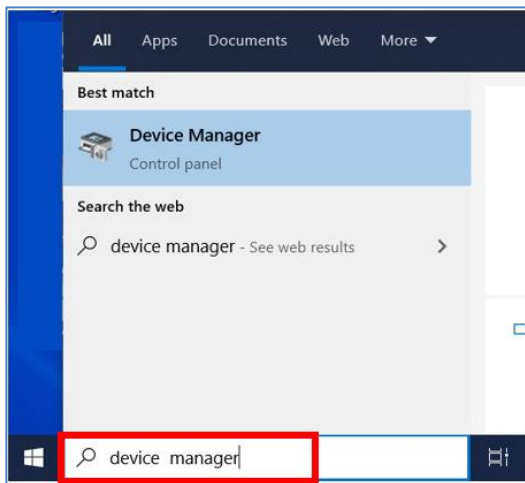
5.3 Setup of USB Device Drivers

The following description is for Windows 10 users.

Users of previous versions of Windows shall refer to Appendix B: Setup of USB Device Drivers for Win 7 and Win 8.

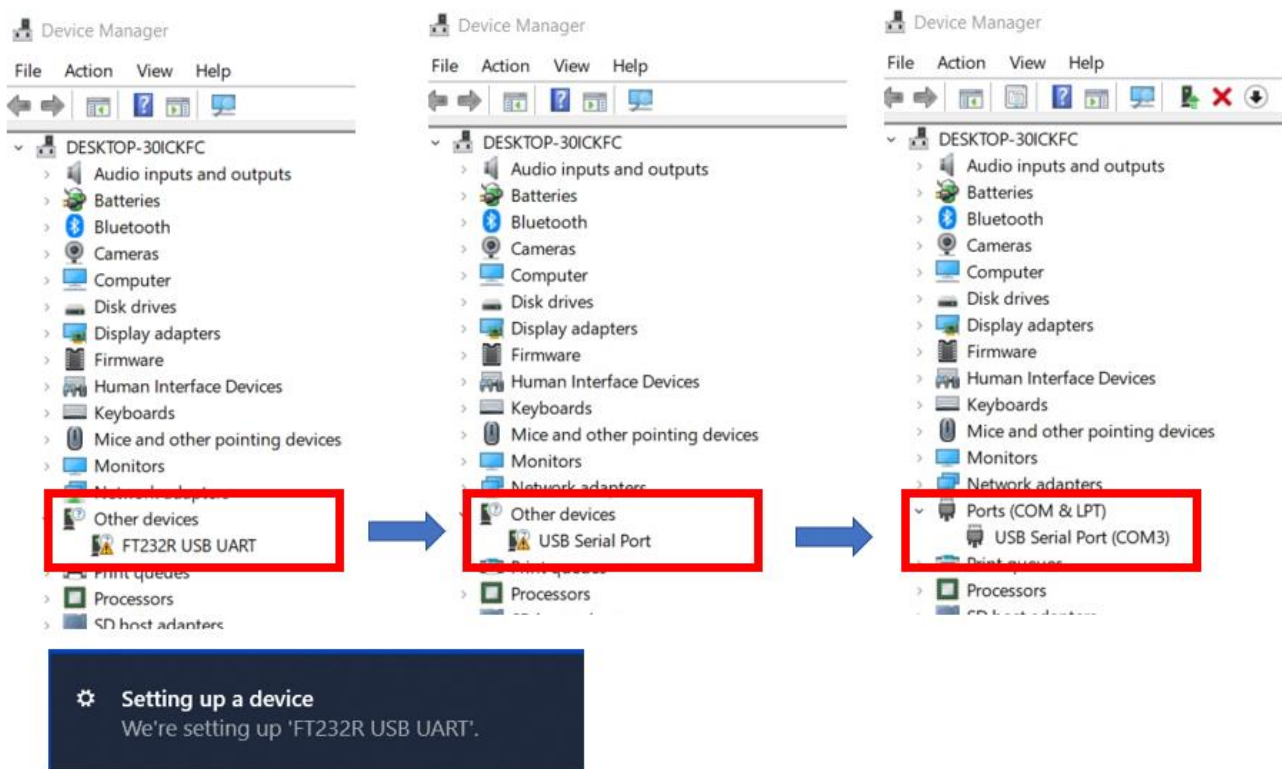
The Windows 10 users with updated and Internet connected PC system can experience fully automatic setup of the USB drivers. Please follow these simple steps:

- Please connect the Prizmatix hardware according the hardware user manual and switch the power switch to ON. If the hardware is LED illuminator decrease the output power to minimum.
- Type in Search Field: "device manager" and click on it to run this application.
- Connect the hardware to the computer by the USB cable.



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- d. Immediately after connecting the USB cable Windows will start the standard driver installation procedure. After few seconds you will see FT232R USB UART device appear in the Device Manager list and a rectangular message “Setting up a device” will appear at lower right corner of the screen. After few additional seconds, this device will be replaced by USB Serial Port then eventually USB Serial Port (COM3) will appear as shown at following picture. Please notice the COM port number (3 in this example). Please remember this COM port number for future use.

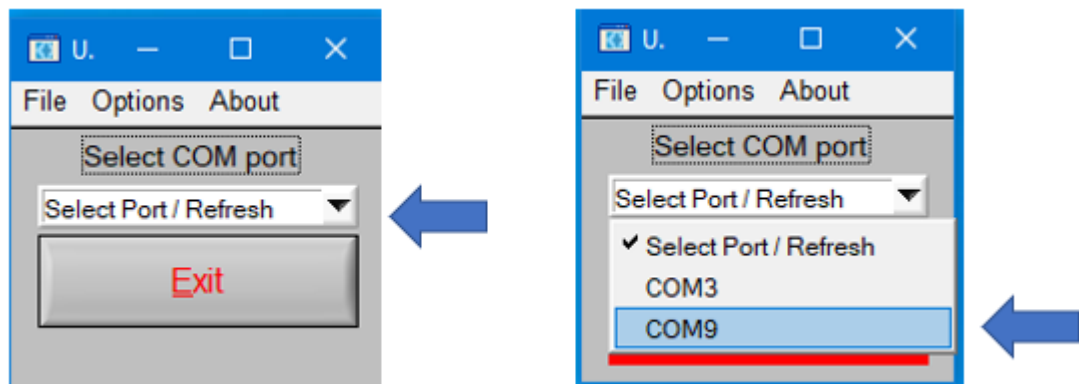


Once the driver installation is complete, please close the Device Manager. Now the Prizmatix Multi-LED-Ctrl software can be used.

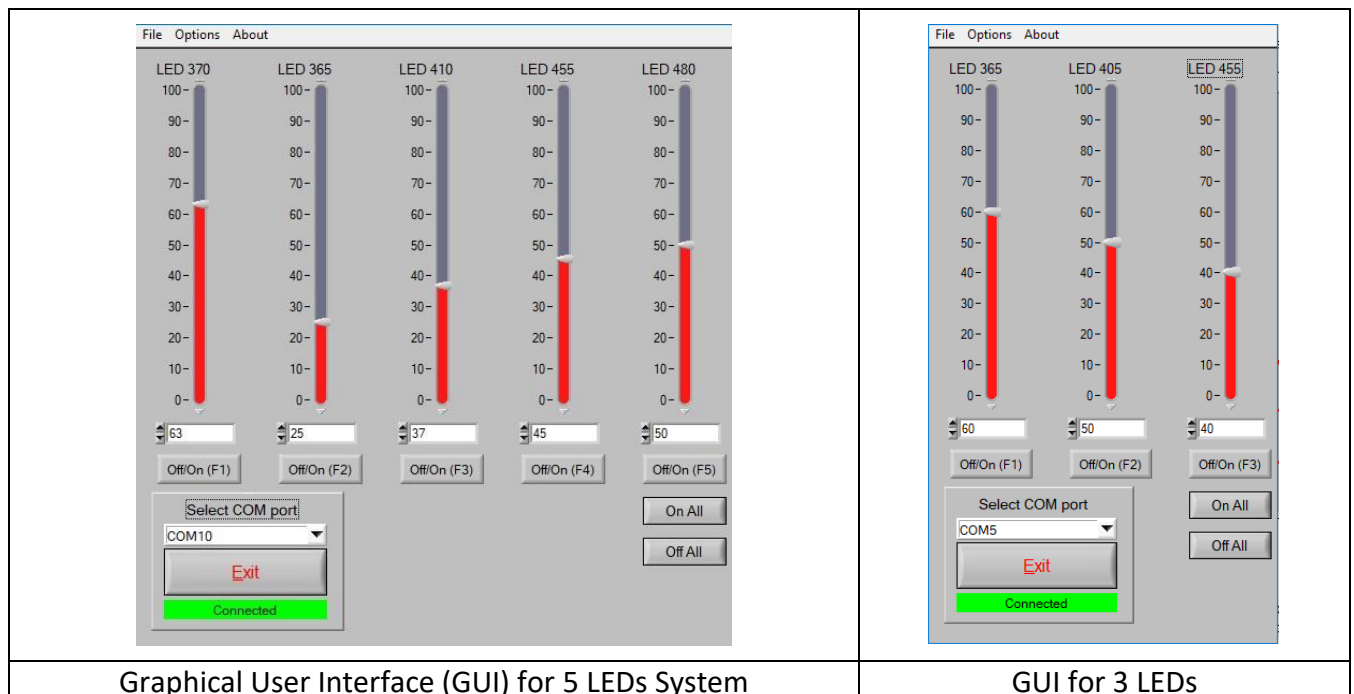
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6 System Usage

Choose Prizmatix Multi-LED-Ctrl from Start menu to launch the control software. At the beginning the small dialog will appear and request to indicate the COM Port number. Please select the correct COM Port (in this example COM9). See above on finding the COM port by browsing the Device Manager - If the COM Port does not appear in the list select Refresh (at the top of the list). After few seconds, the software will establish communication with the device and this dialog box will be closed.



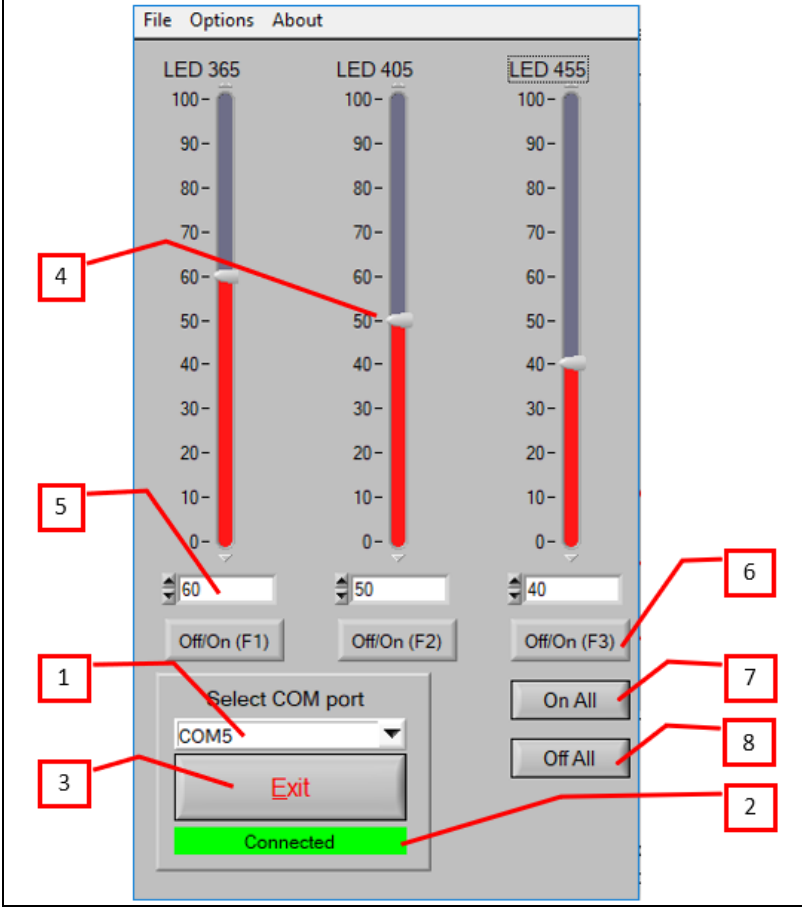
The software has several Graphical User Interfaces (GUI) depending on system specific configuration as shown in following picture:



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After first time use, the software will open next time with the last settings of COM Port and GUI.

The following picture shows GUI for Multi-LED-Ctrl software:

 The screenshot shows the Multi-LED-Ctrl software interface. It features three vertical sliders for LED 365, LED 405, and LED 455, each with a numerical indicator below it. A 'Select COM port' dropdown menu is set to 'COM5'. A green bar at the bottom indicates 'Connected'. Red callout boxes with numbers 1 through 8 point to specific UI elements: 1 points to the COM port dropdown, 2 points to the 'Connected' bar, 3 points to the 'Exit' button, 4 points to the LED 365 slider, 5 points to the LED 365 numerical indicator, 6 points to the LED 405 'Off/On' button, 7 points to the 'On All' button, and 8 points to the 'Off All' button.	Multi-LED-Ctrl software GUI: [1] - COM Port select control [2] - Connection indicator: Green – connected, Red – not connected [3] - Exit software button [4] - LED power slider. The slider range is 0-100%. The Digital to Analog Converter DAC is 12 bit, so this 0-100% is converted to 0-4095. [5] - LED power numerical indicator [6] - LED On/Off button [7] – Turn all LEDs On button [8] – Turn all LEDs Off button
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6.1 Manual Mode

If the ordered hardware comprising manual power control knobs to set the output power of the device manually, the LED source can be operated without the software. The LED power can be set by the dials.

If the LED source is connected to the computer by USB and user run the software, the connection between the computer and the LED source is established. With first power control command sent from the software the system will switch to Computer Mode.

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6.2 Computer Mode

When user, first time switch the LED on by the ON/OFF button [6], the control is set to the computer. From this time the manual dial on the hardware will no more effect the LED output power. To go back to Manual Mode user needs to switch Off the LED controller and turn it On again.

The Slider [4] enables the user to set the LED output power.

Exit button [3] switches the LED OFF and closes the software.

Menu items:

File>Exit: Switches the LED OFF and closes the software.

Options>Update Firmware: Enables user to update firmware of the USB device. Do not attempt to update without explicit request from Prizmatix technical support.

About>Prizmatix Website: Displays the Prizmatix website in default browser.

About>Software User Manual: Displays the software user manual in default PDF reader

About>Hardware User Manual: Displays the hardware user manual in default PDF reader

About>About Hardware...: Displays the Hardware related information (such as version number)

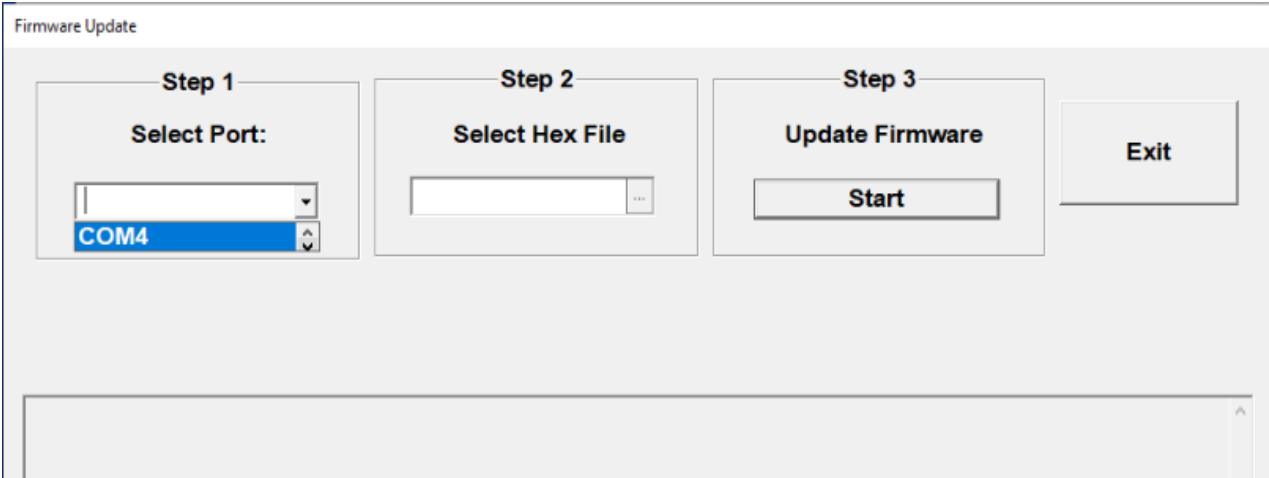
About>About Software...: Displays the Software related information (such as version number)

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Appendix A: Updating Multi-LED-Ctrl Firmware

Don't perform Firmware Update unless you received explicit Instructions from the Prizmatix technical team.

Open the Update Firmware dialog by selecting **File>Update Firmware** from Multi-LED-Ctrl software menu. The firmware updating is three steps procedure:



Step #1: Select the correct COM Port (COM4 in this example). See section “Setup of USB device drivers” in this manual for details how to find the correct COM port.

Step #2: Select firmware update file “Hex File” by browsing. The typical path will be:

C:\Program Files (x86)\Prizmatix-Multi-LED-Ctrl\Firmware\MultiLED_Ctrl-VersionNumber.hex

or other appropriate *.hex file.

Step #3: Click “Start Update” button to begin update.

You will see many messages running in the window. When the update is completed successfully the “Thank You” message will appear:



Click “Exit” button to close the dialog box.

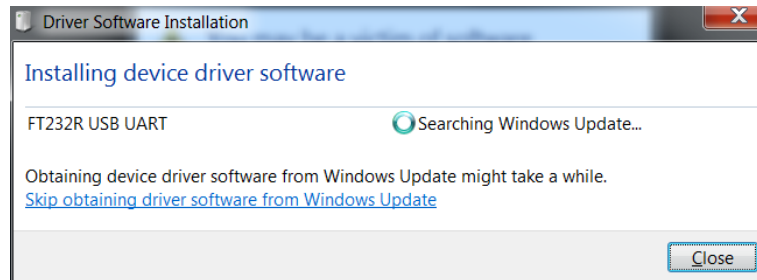
Your controller is now updated with the latest firmware and ready to go.

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Appendix B: Setup of USB Device Drivers for Win 7 and Win 8

Prizmatix USB device uses Virtual COM port (VCP) by FTDI (www.ftdichip.com) to communicate with the computer. VCP drivers cause the USB device to appear as an additional COM port available to the PC.

After successful setup of the Prizmatix PC software, connect the hardware to the computer with the supplied USB cable. If there is an available Internet connection, Windows will 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.

In case you need to install the drivers manually, please download VCP drivers from:

<http://www.ftdichip.com/Drivers/VCP.htm>

Chose the correct file version from the table Currently Supported VCP Drivers and download the driver.

The file name of the driver will be like:

CDM v2.12.24 WHQL Certified.zip

Extract the ZIP file to a directory, like:

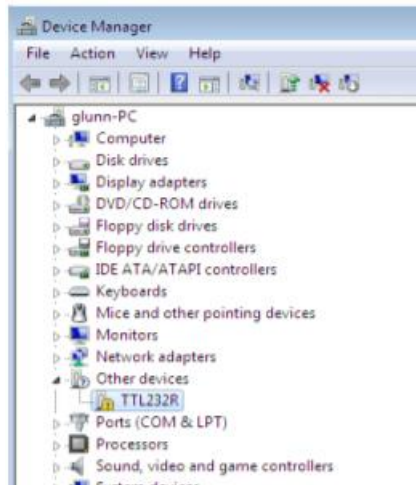
<C:\Users\user\Downloads\CDM v2.12.24 WHQL Certified\>

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

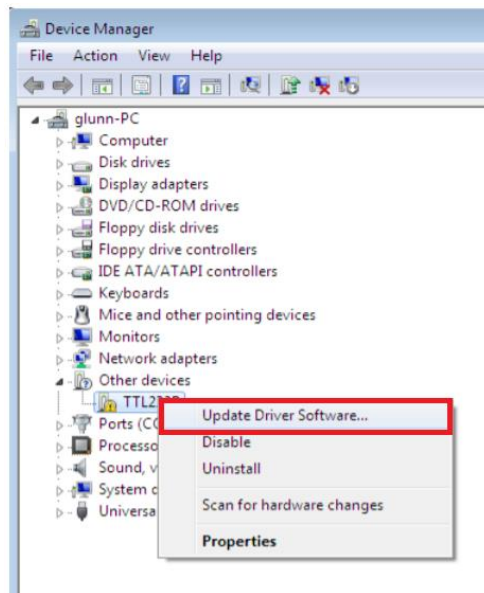
From the Control Panel window select Hardware and Sound and at the next screen select Device Manager.

In the Device Manager window there will be a device under Other Devices with a yellow warning symbol to indicate a problem - no driver installed. The text next to the device will be FT232R device.

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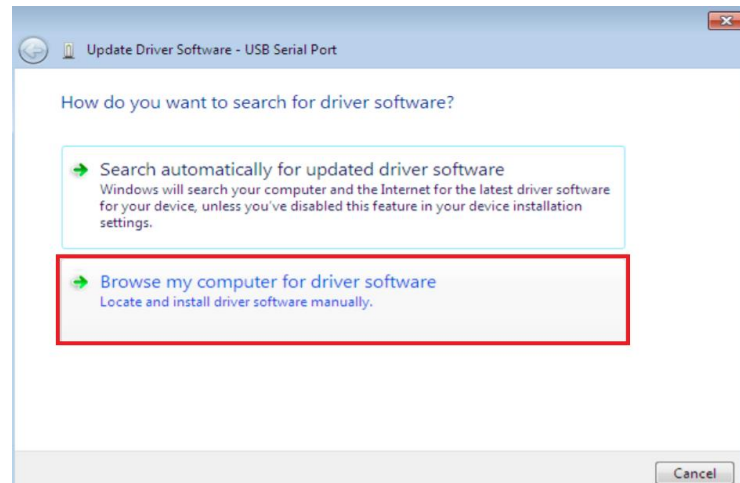


Right click on the other device (TTL232R in this example) to bring up a menu as shown below.

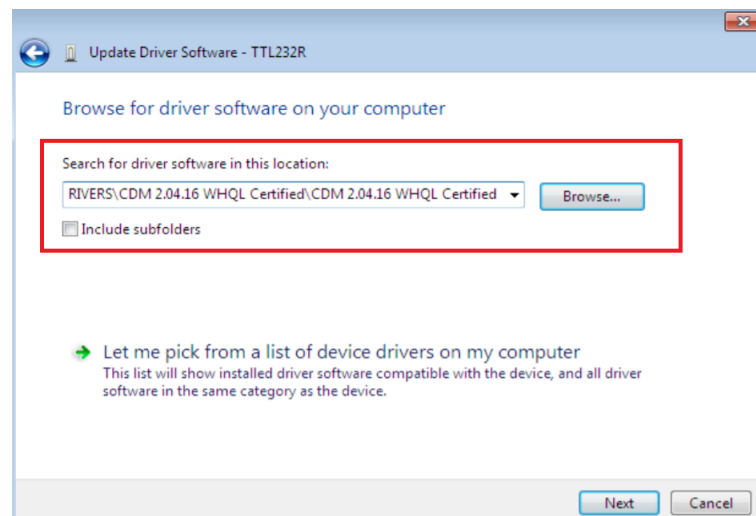


From the displayed menu select “Update Driver Software...” This then displays the option for an automatic search or a manual search.

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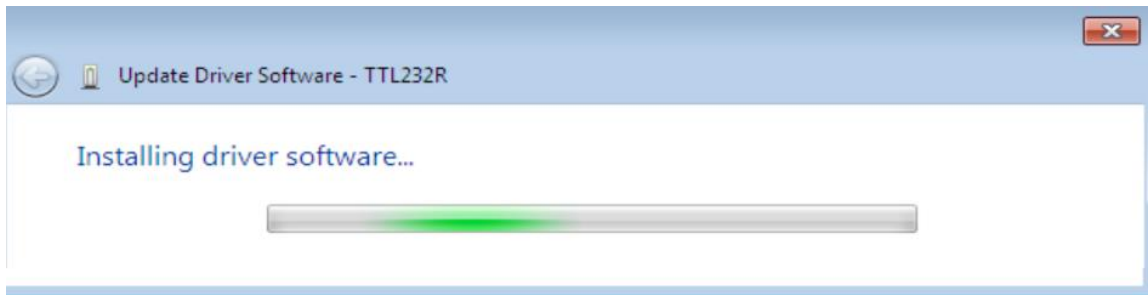


Select the second option to browse manually.



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.

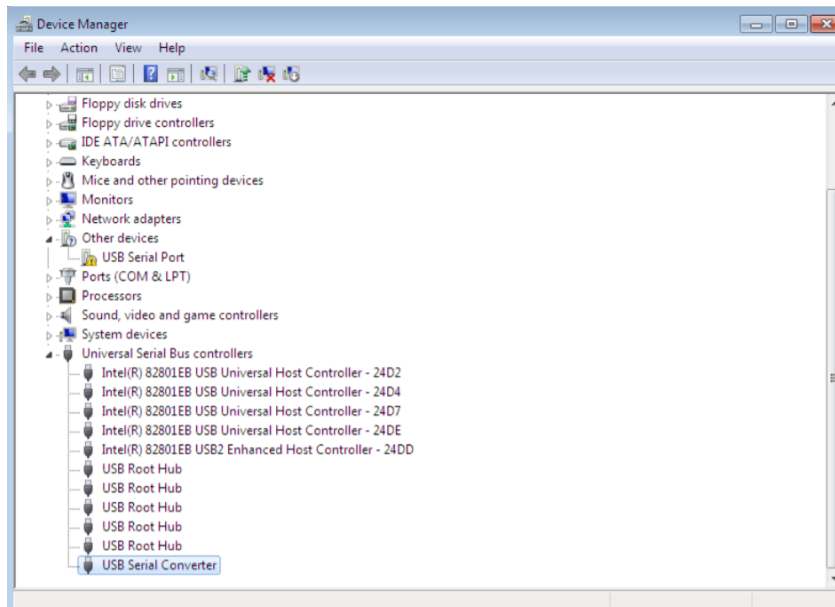
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When the installation has finished a completion screen is displayed.



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

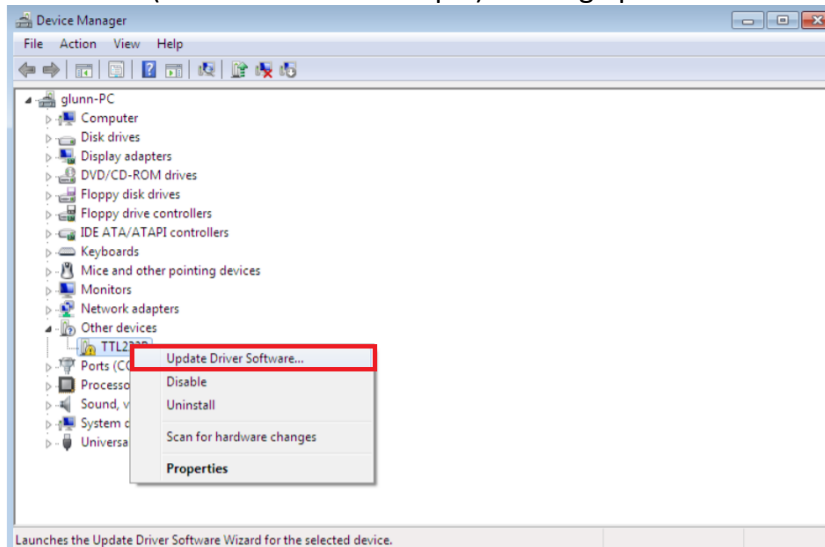


The Device Manager will still show a device under Other Devices but in addition to this there is a new entry under Universal Serial Bus Controllers indicated in the screenshot above as the USB Serial

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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.

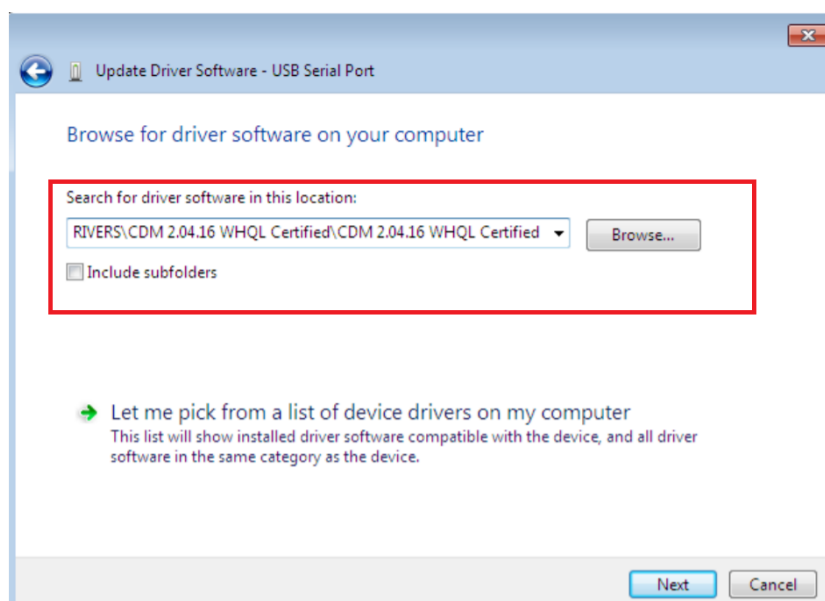
Right click on the other device (TTL232R in this example) to bring up a menu as shown below.



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.

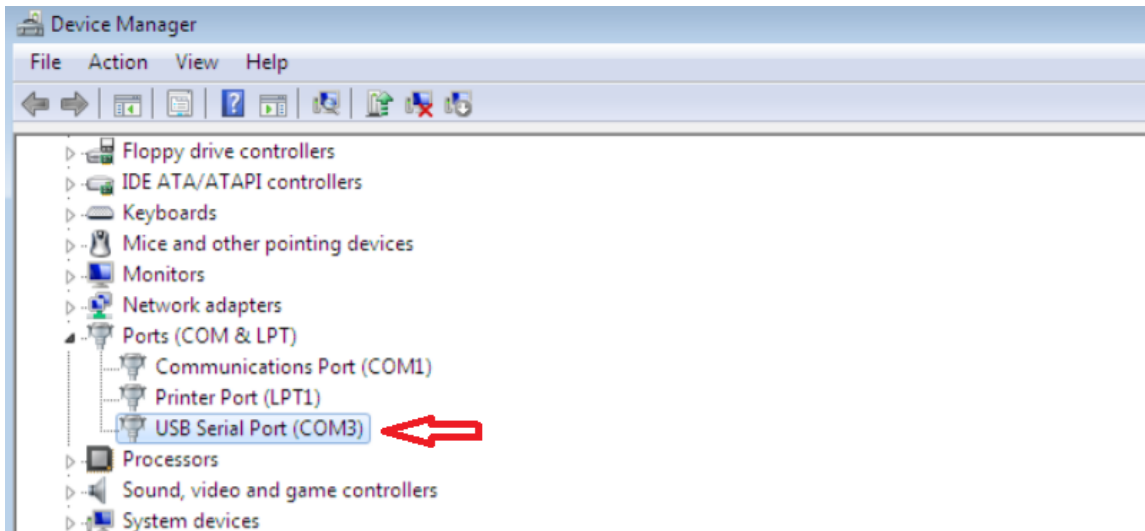
In the address box put the exact location where the drivers have been saved to. This may be on a CD or in a folder on the PC. It is not necessarily the exact same location as shown in the screenshot. The drivers could have been saved anywhere of the users choosing.



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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 FT232R 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

Note: the full installation instructions can be found at
AN_119_FTDI_Drivers_Installation_Guide_for_Windows7.pdf on www.ftdichip.com website.