



Cypress USB-Serial Windows Driver Installation Guide

Doc. No. 001-87770 Rev *E

Cypress Semiconductor
198 Champion Court
San Jose, CA 95134-1709
Phone (USA): +1880.858.1810
Phone (Intl): +1408.943.2600
<http://www.cypress.com>

Copyrights

© Cypress Semiconductor Corporation, 2013-2015. The information contained herein is subject to change without notice. Cypress Semiconductor Corporation assumes no responsibility for the use of any circuitry other than circuitry embodied in a Cypress product. Nor does it convey or imply any license under patent or other rights. Cypress products are not warranted nor intended to be used for medical, life support, life saving, critical control or safety applications, unless pursuant to an express written agreement with Cypress. Furthermore, Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress products in life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

Trademarks

PSoC Designer™, and Programmable System-on-Chip™ are trademarks and PSoC® is a registered trademark of Cypress Semiconductor Corp. All other trademarks or registered trademarks referenced herein are property of the respective corporations.

Source Code

Any Source Code (software and/or firmware) is owned by Cypress Semiconductor Corporation (Cypress) and is protected by and subject to worldwide patent protection (United States and foreign), United States copyright laws and international treaty provisions. Cypress hereby grants to licensee a personal, non-exclusive, non-transferable license to copy, use, modify, create derivative works of, and compile the Cypress Source Code and derivative works for the sole purpose of creating custom software and or firmware in support of licensee product to be used only in conjunction with a Cypress integrated circuit as specified in the applicable agreement. Any reproduction, modification, translation, compilation, or representation of this Source Code except as specified above is prohibited without the express written permission of Cypress.

Disclaimer

CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Cypress reserves the right to make changes without further notice to the materials described herein. Cypress does not assume any liability arising out of the application or use of any product or circuit described herein. Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress' product in a life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

Use may be limited by and subject to the applicable Cypress software license agreement.

Contents



1. Introduction.....	4
Operating Systems	4
2. Cypress CDC Driver Installation.....	5
Windows Update.....	5
Start Windows Update Search in Windows XP	5
Start Windows Update Search in Windows 7	8
Driver Installer Setup	10
Manual Installation.....	12
Windows 2000	12
Windows 7	23
3. Cypress Generic USB3 Driver Installation	26
Windows Update.....	26
Start Windows Update Search in Windows XP	26
Start Windows Update Search in Windows 7	28
Driver Installer Setup	30
Manual Installation.....	30
4. Revision History	32
Document History	32

1. Introduction



The Cypress USB-Serial device can be configured as UART, SPI, I2C, or JTAG. The following drivers are required for the functioning of the USB-Serial devices:

- Virtual COM port driver. (CDC UART)
- Vendor peripheral device drivers (SPI, PHDC SPI, I2C, Vendor UART, PHDC UART, JTAG, GPIO, User Flash Access, and so on)

The Virtual COM port driver works seamlessly with the Windows serial communication API. Any serial terminal application, such as Tera Term, HTerm, or Microsoft® Hyper Terminal, will work with this driver. You have the option to use Windows Serial Communication APIs to communicate with the device UART port.

Vendor driver along with Cypress USB-Serial application library is used to communicate with peripheral devices such as SPI, I2C, Vendor UART, JTAG, GPIO, User Flash Access etc.

This user guide describes the steps to install the Cypress drivers for USB-Serial devices in Windows. For instructions on driver installation on Linux, MAC, and Android refer to the *readme.txt* in the respective SDK installation. The following table describes the drivers shipped with USB-Serial.

Table 1: Cypress Drivers

#	Driver Name	Description
1	CypressUsbConsoleWindowsDriver.sys	Cypress UART CDC class driver for x86 platform
2.	CypressUsbConsoleWindowsDriver64.sys	Cypress UART CDC class driver for x64 platform
3	cyusb3.sys	Cypress generic USB 3.0 driver for vendor interfaces(x86 & x64)

Operating Systems

The following operating systems support the Cypress driver installation.

#	Operating system	Architecture
1	Windows 2000	x86 (only Cypress UART CDC driver)
2	Windows XP	x86 and x64
3	Windows Vista	x86 and x64
4	Windows 7	x86 and x64
5	Windows 8	x86 and x64
6	Windows 8.1	x86 and x64
7	Windows 10	x86 and x64

2. Cypress CDC Driver Installation



The Cypress CDC driver installation has two parts: the Cypress USB adapter driver installation and the Cypress USB serial port driver installation. The CDC driver installation starts with the installation of the Cypress USB adapter driver. The Cypress USB adapter driver is responsible for creating and enumerating USB Serial Virtual COM ports device. After the USB adapter driver is installed, the installation proceeds with the installation of the Cypress serial ports (Virtual COM Port). The driver installation creates two device nodes – one under USB Controller and another under Ports, in the Device Manager.

You can install the Cypress CDC driver using three methods:

1. Windows Update
2. Driver Installer Setup
3. Manual Installation

The following sections explain each of these three methods of installation.

Windows Update

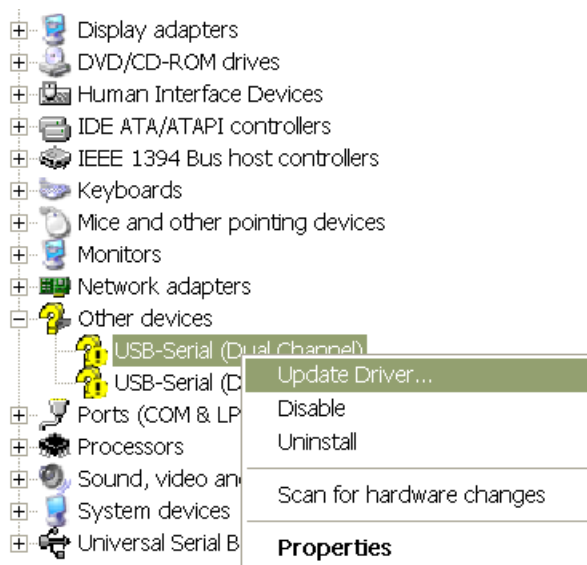
If the machine is connected to the internet, Windows automatically searches for a compatible driver in the Windows update repository web site and installs the latest version of the driver. If Windows does not automatically start the search, the search can be triggered manually. The following sections describe the steps to start the driver search in the Windows XP and the Windows 7 operating systems. The procedure is similar for other supported operating systems. Contact the Cypress support team for help.

Start Windows Update Search in Windows XP

Follow these steps to start the Windows Update search:

1. Connect the USB-Serial device to the machine
2. Open **Window Device Manager**. To open Window Device Manager, go to **Start > Control Panel**. Double-click on **System**. On the Hardware tab, click **Device Manager**.
3. Right-click on the USB-Serial device and select **Update Driver...** from the context menu (as shown in [Figure 2-1](#)) to launch the **Hardware Update Wizard**.

Figure 2-1: Open Hardware Update Wizard



4. In the **Hardware Update Wizard**, select **Install the software automatically (Recommended)** (as shown in [Figure 2-2](#)) and click **Next** to start the search on Windows Update site ([Figure 2-3](#)).

Figure 2-2: Hardware Update Wizard

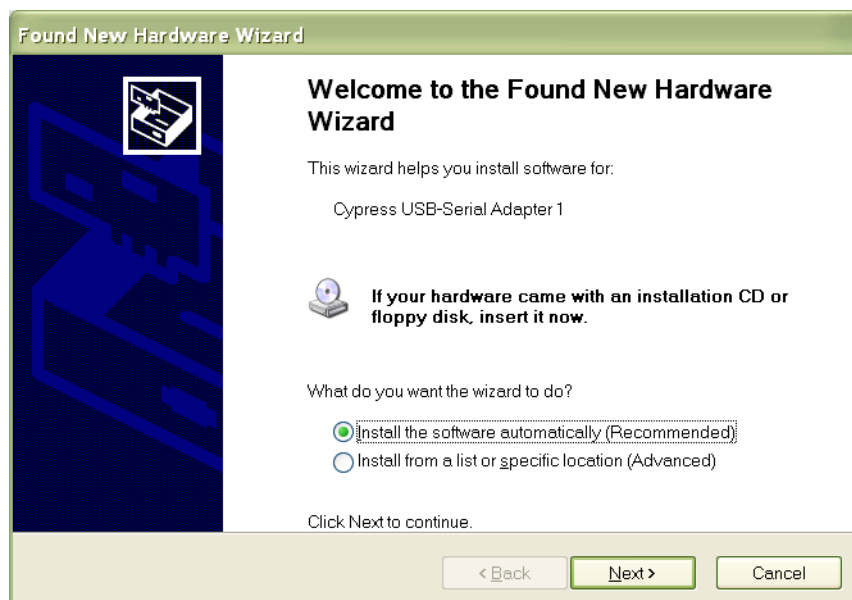
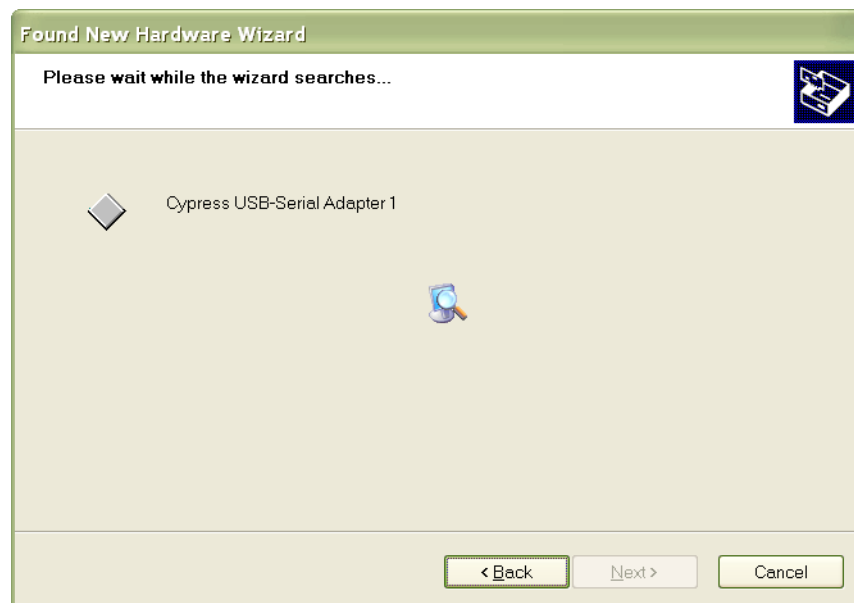
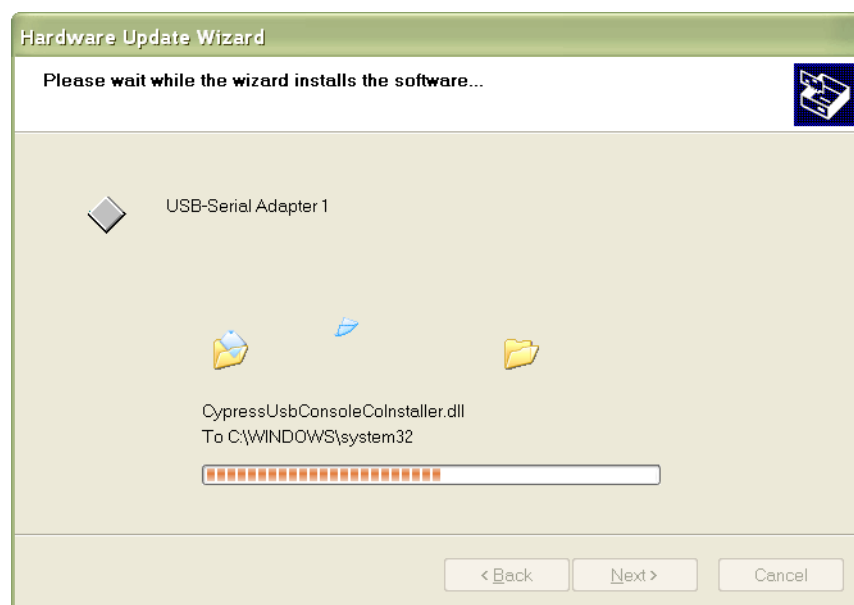


Figure 2-3: Search Windows Update for Compatible Driver



5. On finding a compatible driver, the wizard downloads and completes the driver installation.

Figure 2-4: Driver installation from Windows Update

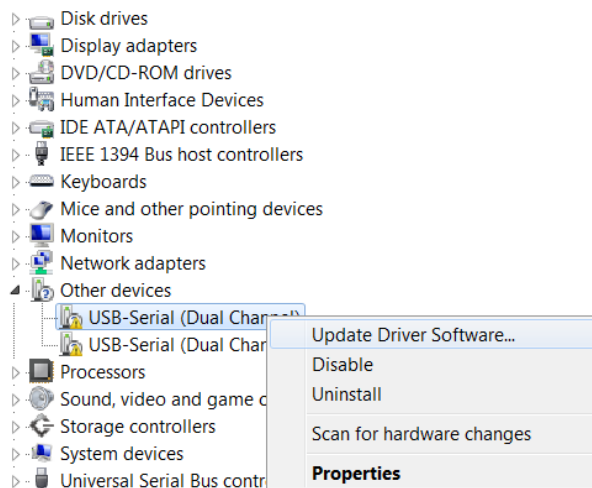


Start Windows Update Search in Windows 7

Follow these steps to start the search in Windows 7 operating system:

1. Connect the USB-Serial device to the machine
2. Open **Device Manager**. To open **Device Manager**, click **Start**. In the search box, type **Device Manager**, and then, in the list of results, click **Device Manager**
3. Right-click on the USB-Serial device, and then, in the context menu, click **Update Driver Software...** to launch the Update Driver Software dialog (Figure 2-5).

Figure 2-5: Open Update Driver Software Wizard



4. In the Update Driver Software dialog (Figure 2-6), click **Search automatically for updated driver software** to begin the search for the driver online (Figure 2-7).

Figure 2-6: Update Driver Software Wizard

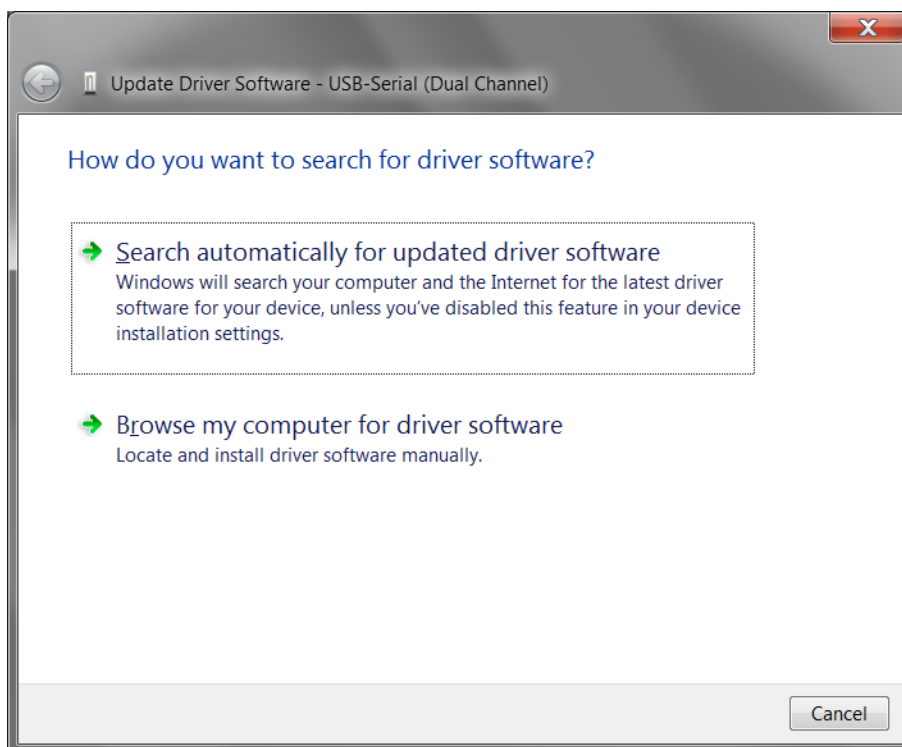
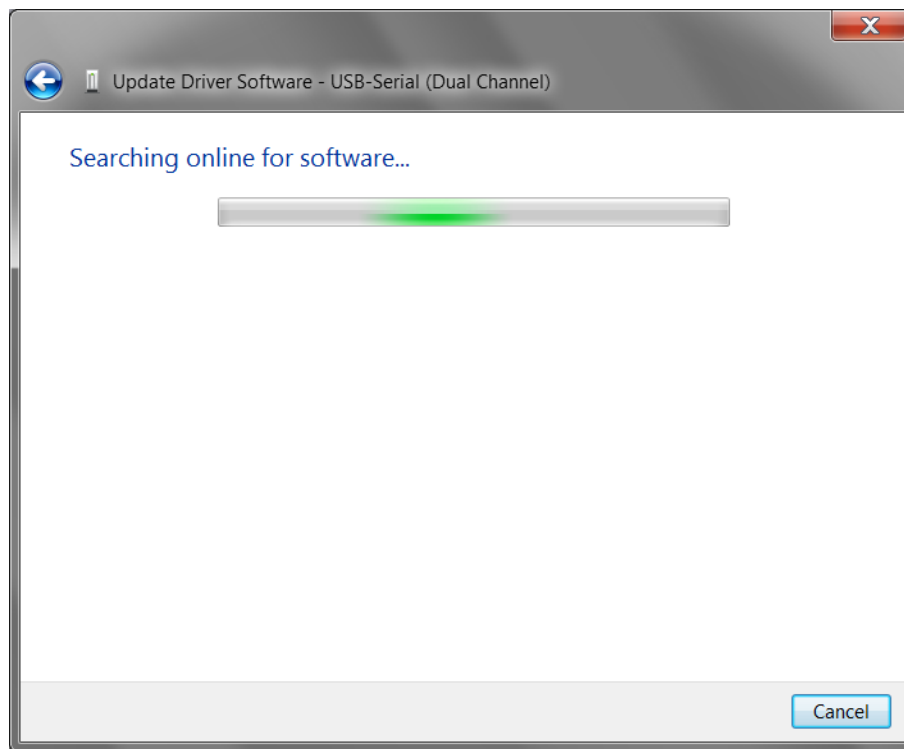
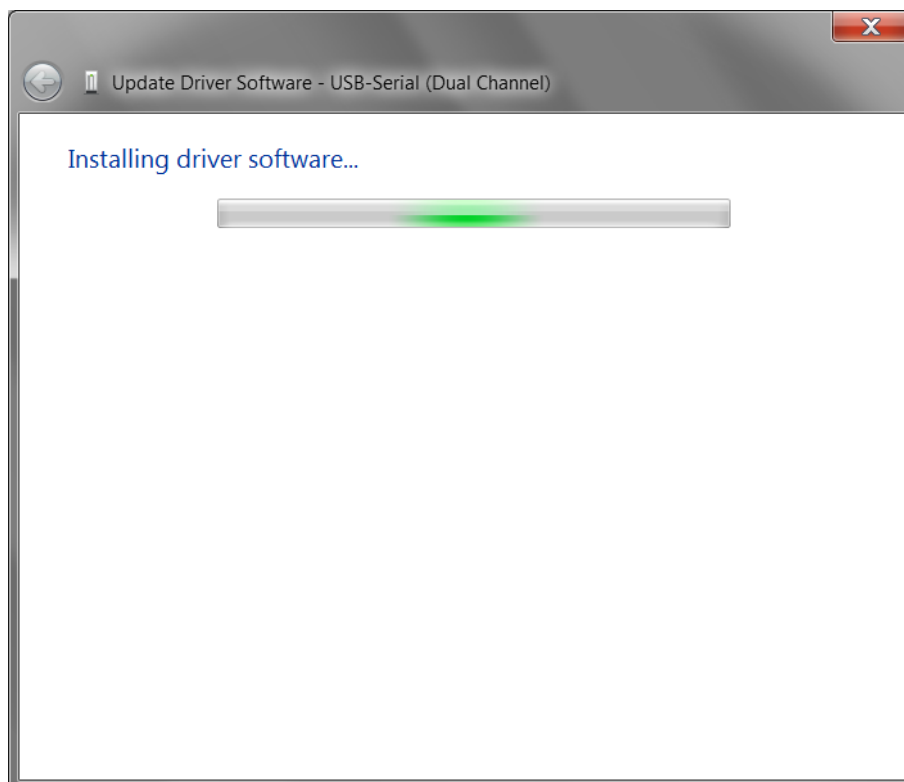


Figure 2-7: Search Online for Driver



5. On finding a compatible driver, the wizard downloads the driver and completes the installation.

Figure 2-8: Driver installation in-Progress



Driver Installer Setup

The Cypress USB-Serial Software installer packages contain automatic Cypress CDC driver installation procedure build into this installation package. Users just need follow installation wizard to complete the driver installation. This tool will also install configuration utility, documentation and other essential tools required by USB-Serial product.

There is also a separate stand-alone windows driver installation package available for distribution. This package is called USB-Serial Windows Driver Installer. This tool just installs cypress driver. End-user who distributes the cypress driver with their product can use this stand-alone driver installer along with their product installer. This windows stand-alone driver installer works in silent mode and in driver installation Wizard mode. Figure 2-9 displays the driver installer in “Installation Wizard” mode.

To use this driver installer in silent mode, please use the following command.

Silent Installation:

`CypressDriverInstaller.exe /S /D=<PathToInstallDriverBinary>`

'/D' is optional and the default driver installation path is (C:/Program Files/Cypress)

'/S' is the silent mode enabler switch

GUI based Installation:

Just run the executable `CypressDriverInstaller.exe`. GUI wizard will help the user to install the driver.

Figure 2-9(a) Cypress CDC Driver Stand-alone Installer Setup



Figure 2-10(b) Cypress CDC Driver Stand-alone Installer Setup

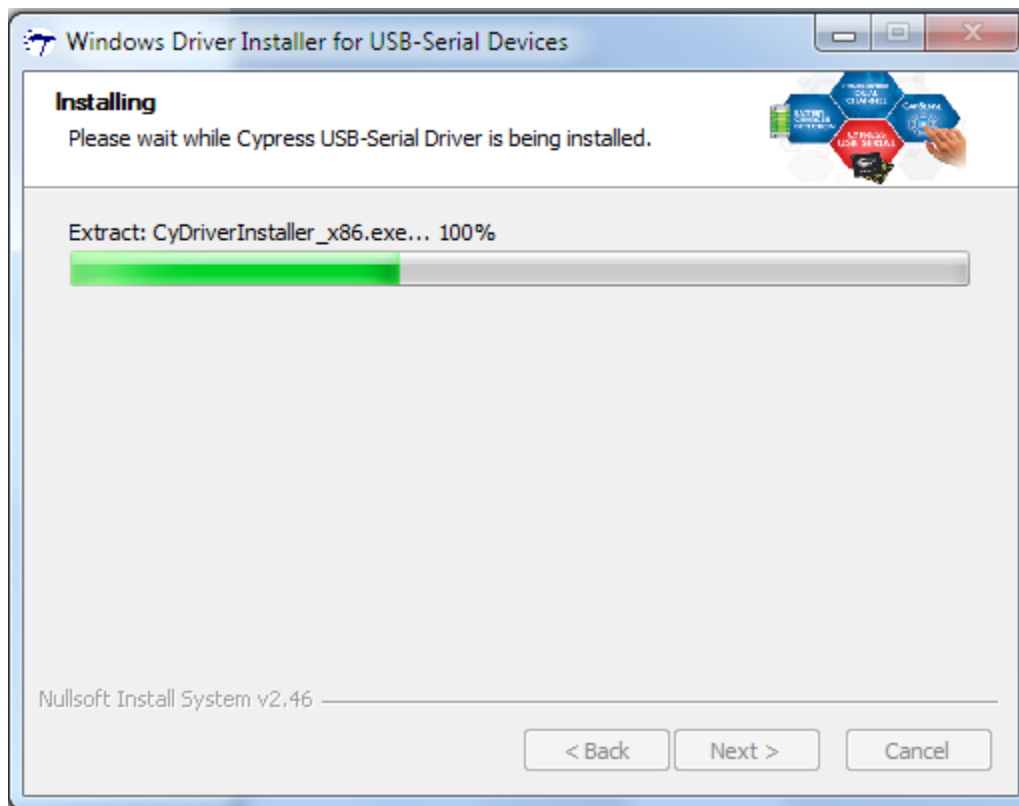
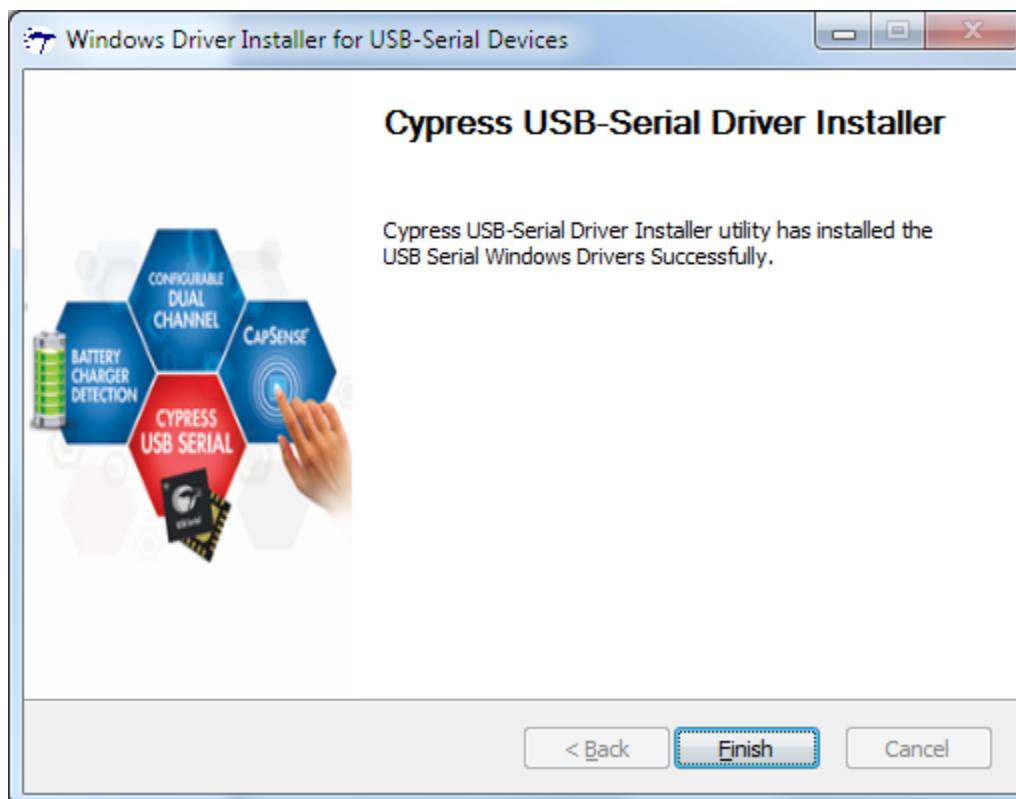


Figure 2-11(c) Cypress CDC Driver Stand-alone Installer Setup



Manual Installation

You do not need to perform manual installation, but for advanced users who prefer manual installation, the option is provided.

Windows 2000

Follow these steps to install the driver manually on Windows 2000:

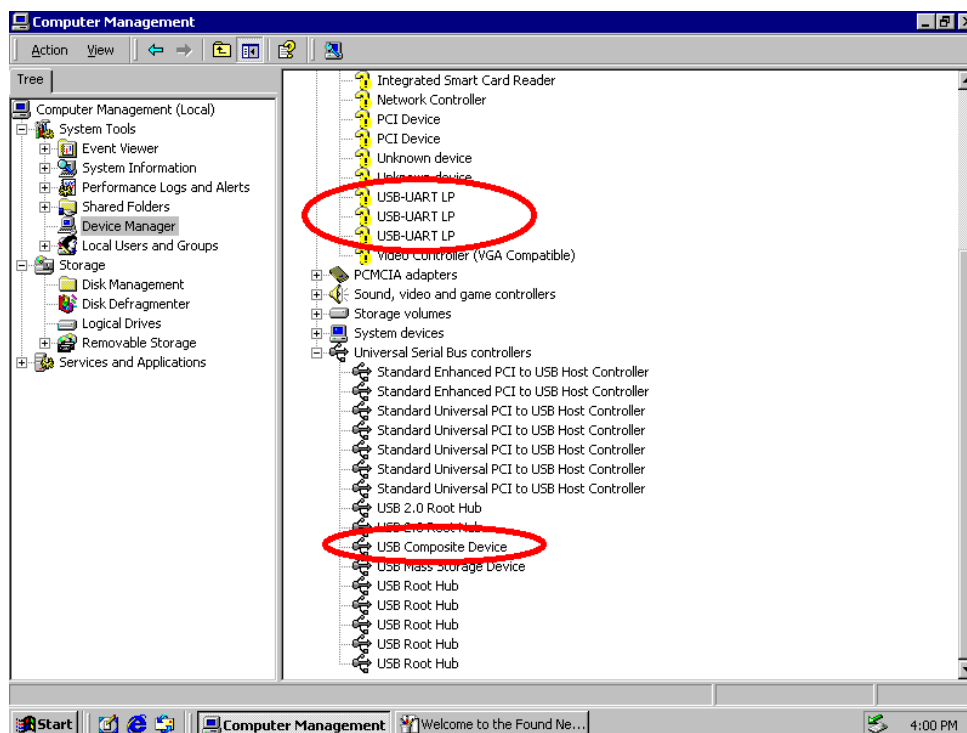
1. Connect the USB-Serial Bridge Controller device to the Host PC. The “Found New Hardware Wizard” window will appear. Click **Cancel**. The Wizard will appear a total of three times. Click **Cancel** on all three occasions.



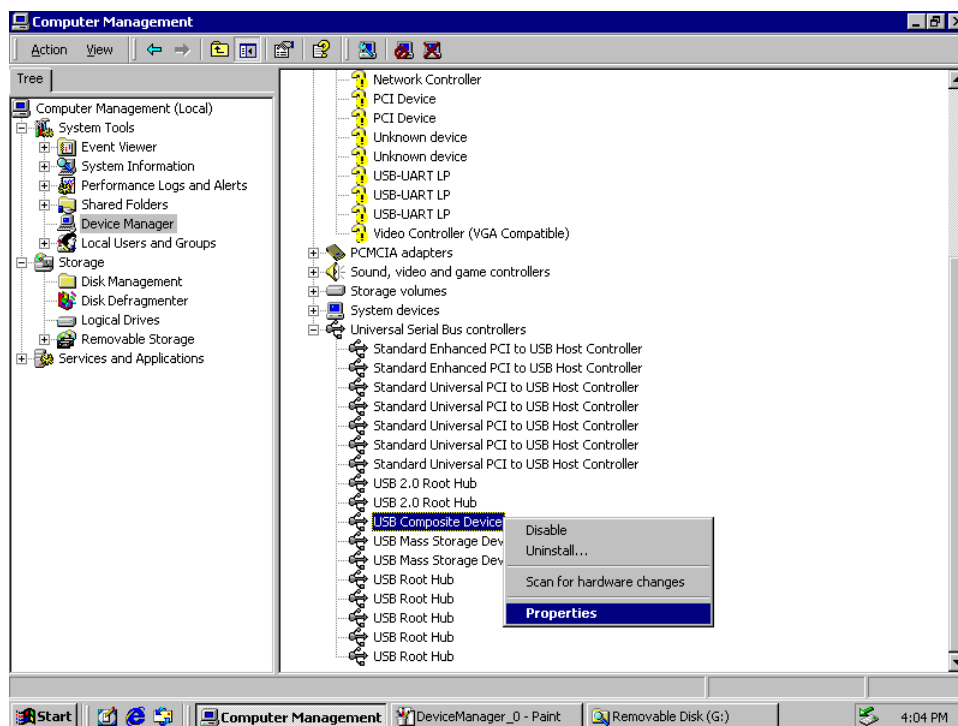


Cypress CDC Driver Installation

2. Open **Device Manager**. The USB-Serial Bridge Controller device will come up as “Composite Device”. Also, you will find three “USB-UART LP” interfaces.



3. Right-click the **USB Composite Device** and then click **Properties**.



4. Under the **Driver** Tab, click the **Update Driver** button.

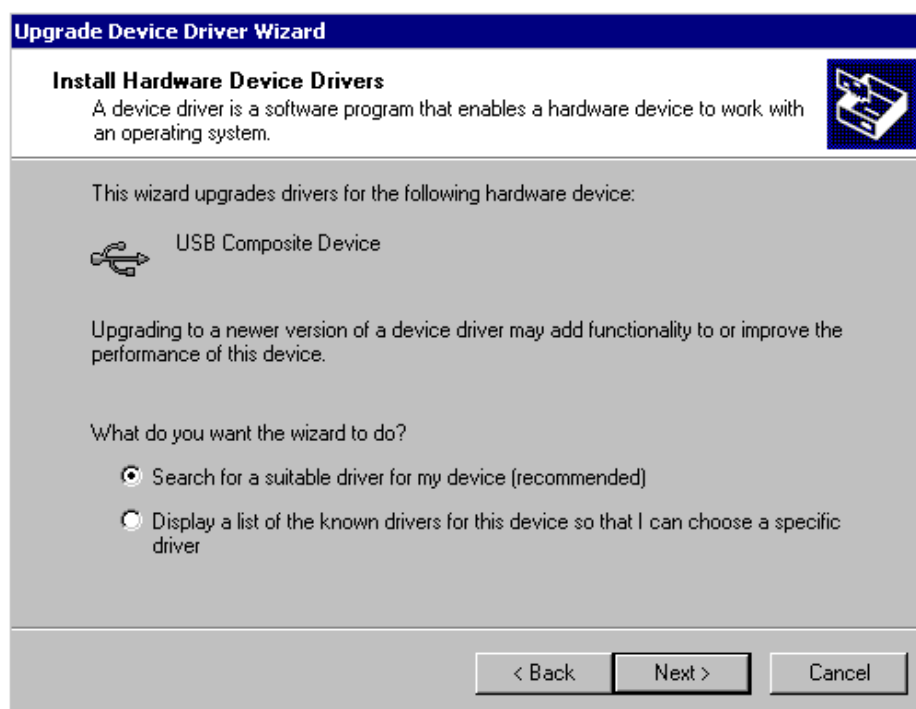


5. The "Update Device Driver Wizard" window will appear. Click **Next**.



Cypress CDC Driver Installation

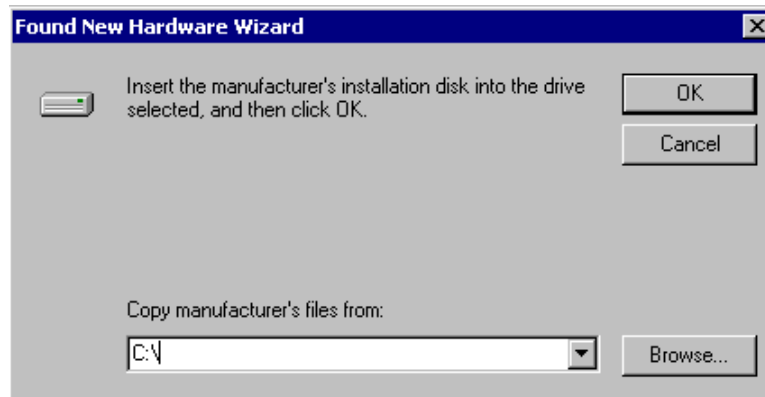
6. Select the “Search for a suitable driver for my device (recommended)” option and click **Next**.



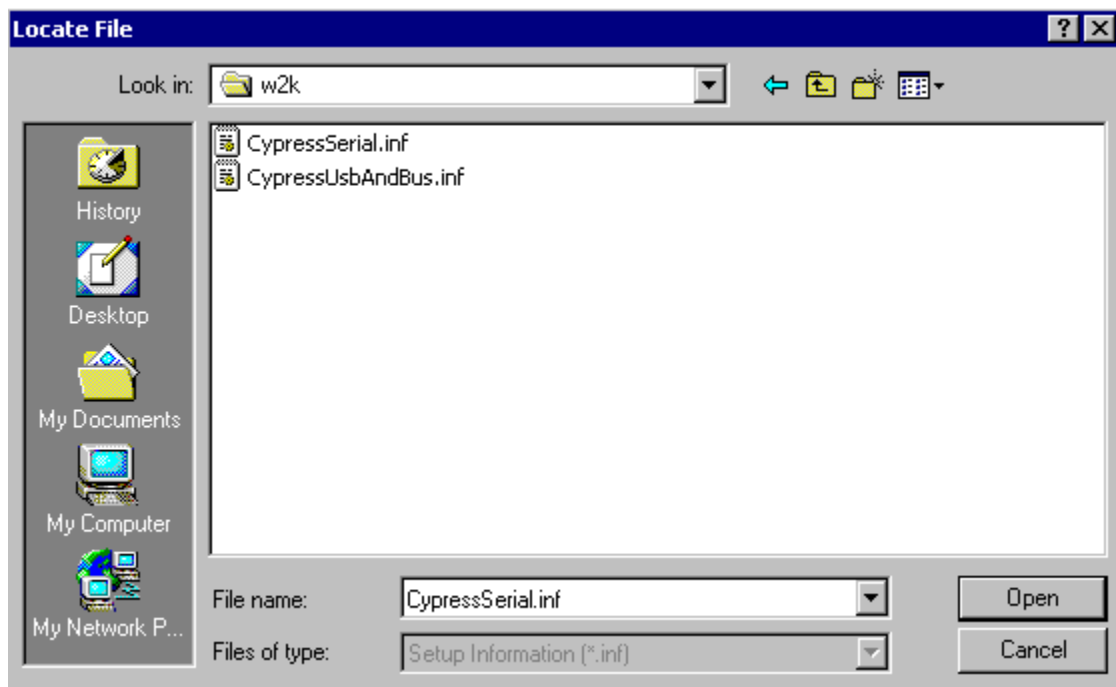
7. Check the “Specify a location” option and uncheck the rest. Click **Next**.



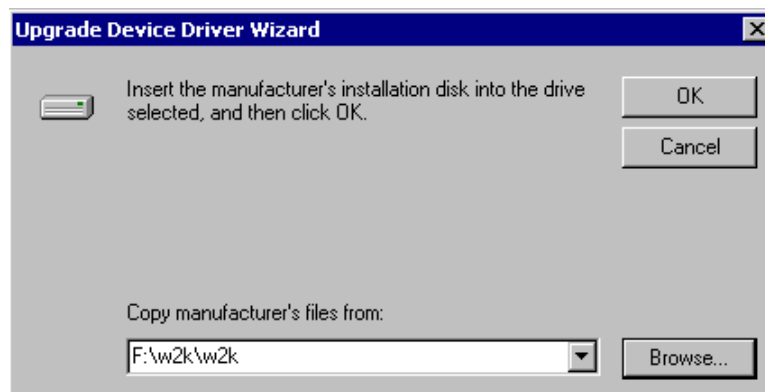
8. A dialog box asking for the location of the driver will appear. Click **Browse**.



9. Point to the folder containing the latest Windows 2000 drivers for USB-Serial Bridge Controller downloaded from the Cypress Website and click **Open**. Windows will auto-select the correct .inf file (in this case, the file is *CypressUsbAndBus.inf*).

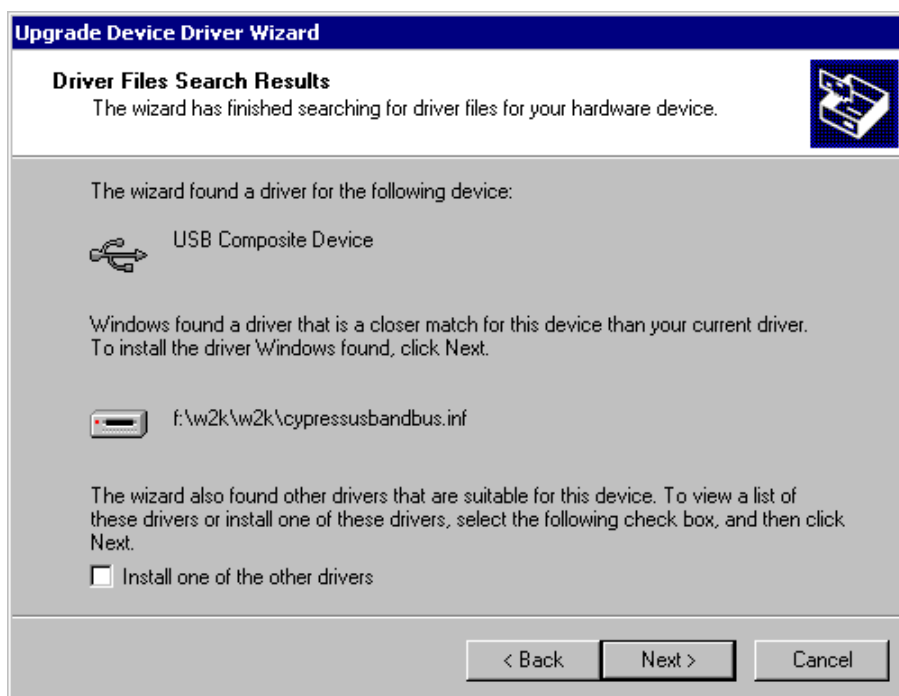


10. Click **OK**.

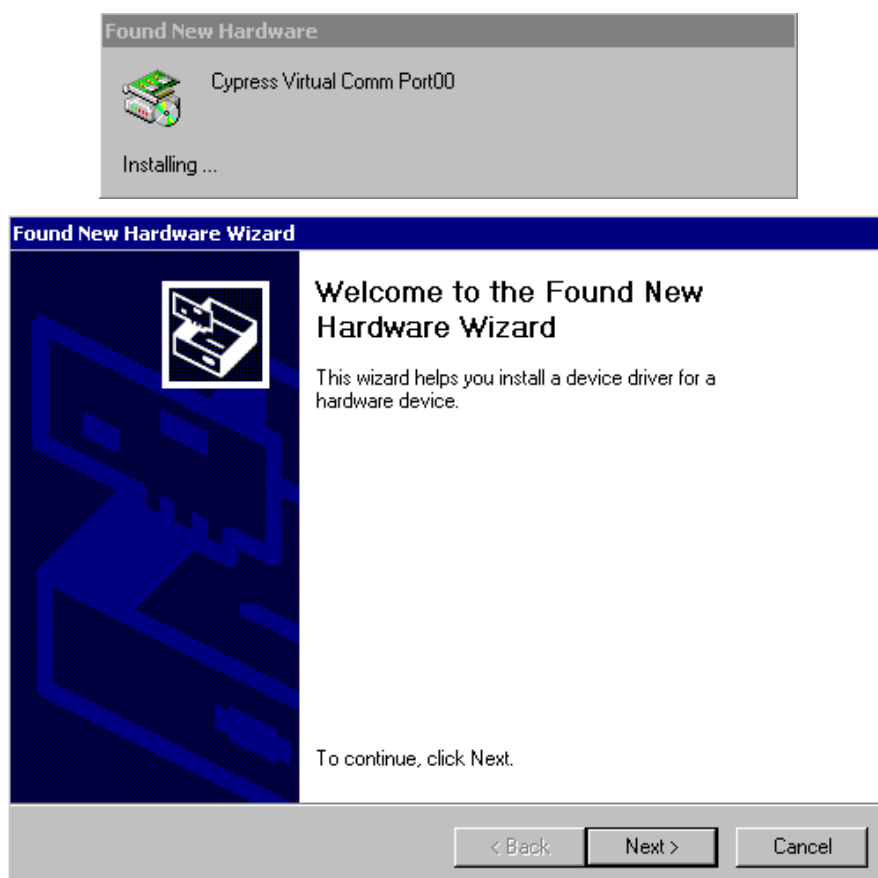


Cypress CDC Driver Installation

11. After Windows has successfully found the required driver, click **Next**.



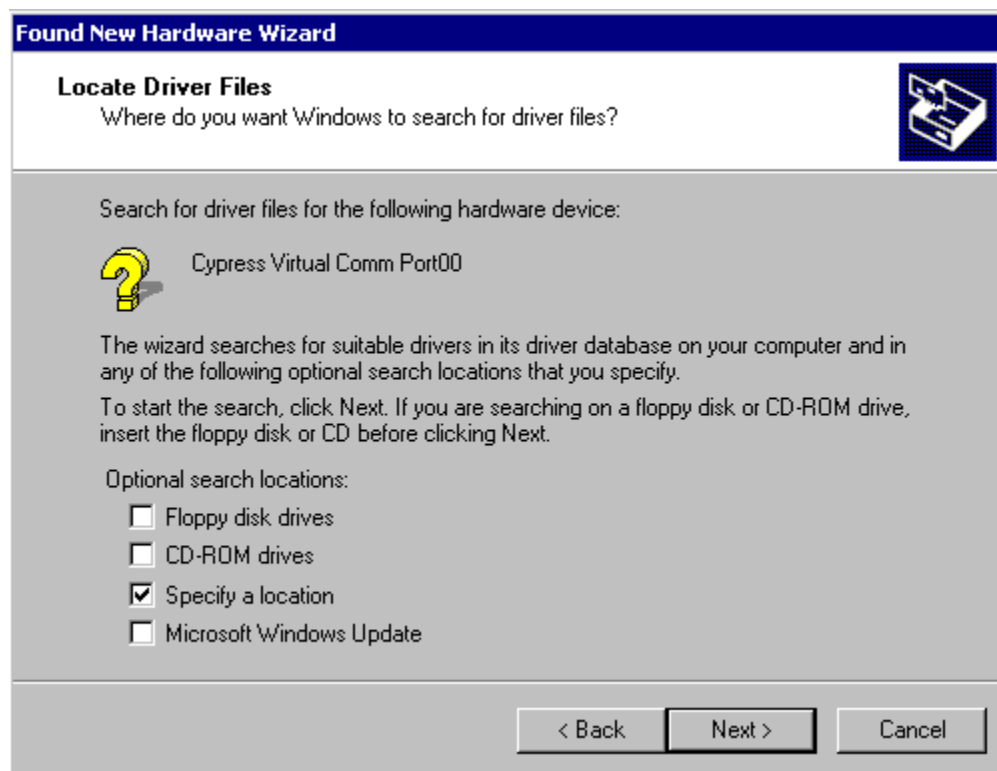
12. Now the installation for the Cypress Virtual Comm Port Driver will begin. The procedure for installing the Comm Port driver is similar to the procedure followed above. One more "Found New Hardware Wizard" will come up. Click **Next**.



13. Select the “Search for a suitable driver for my device (recommended)” option and click **Next**.

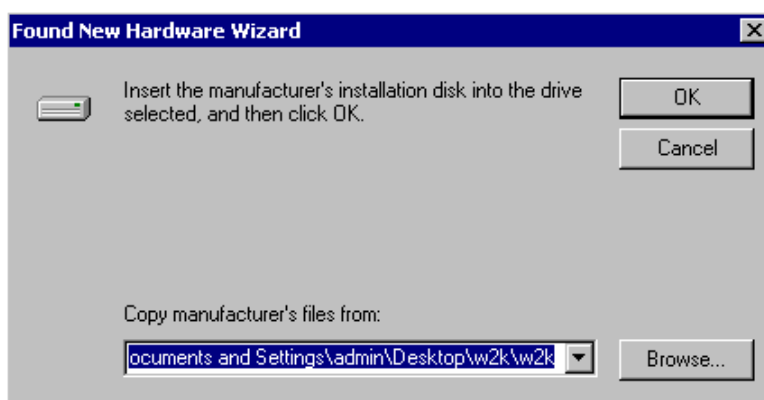


14. Check the “Specify a location” option and uncheck the rest. Click **Next**.

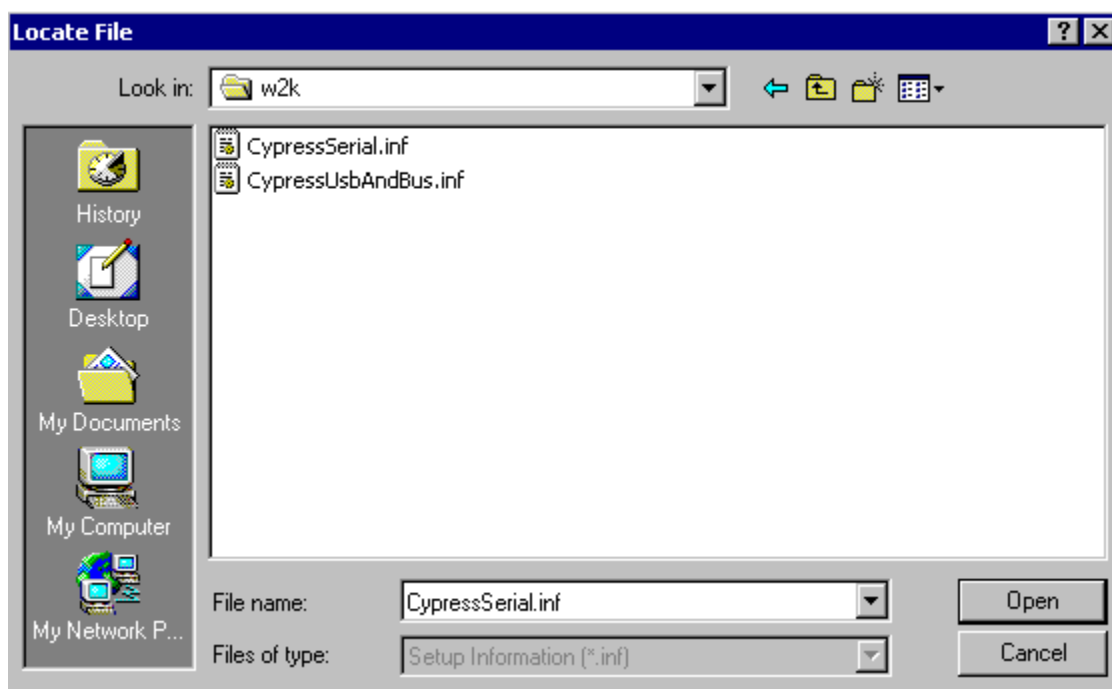


Cypress CDC Driver Installation

15. A dialog box asking for the location of the driver will appear. Click **Browse**.



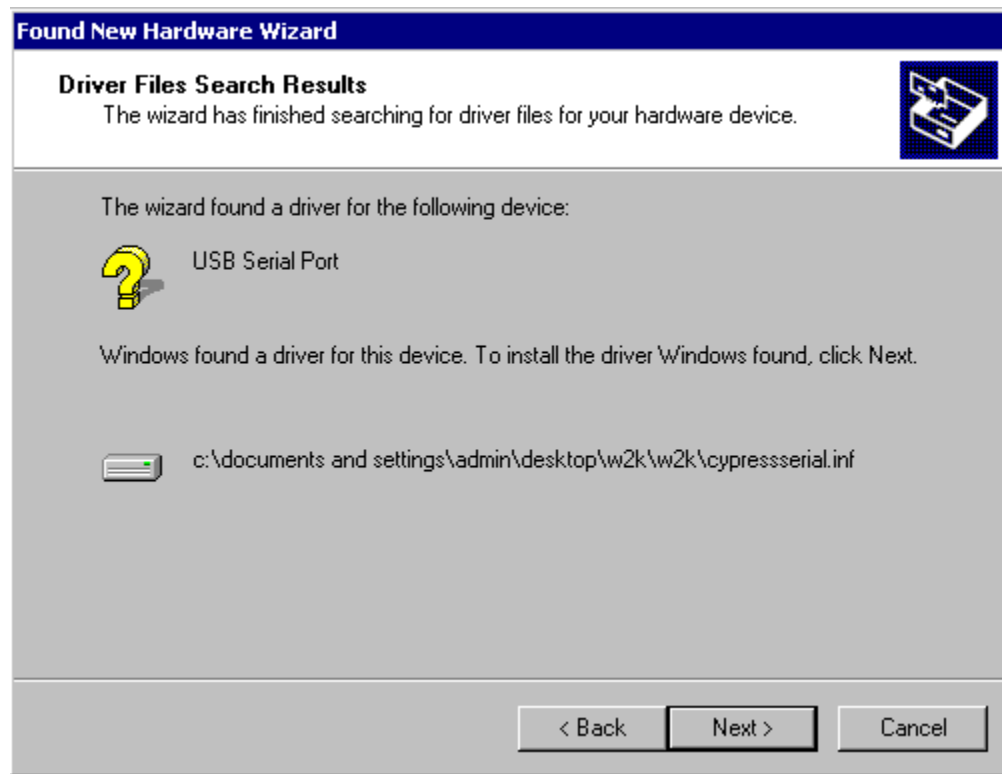
16. Point it to the folder containing the latest Windows 2000 drivers downloaded from the Cypress Website and click **Open**. The Windows will auto-select the correct *.inf* file (in this case, the file is *CypressSerial.inf*).



17. Click **OK**.



18. After Windows has successfully found the required driver, Click **Next**.



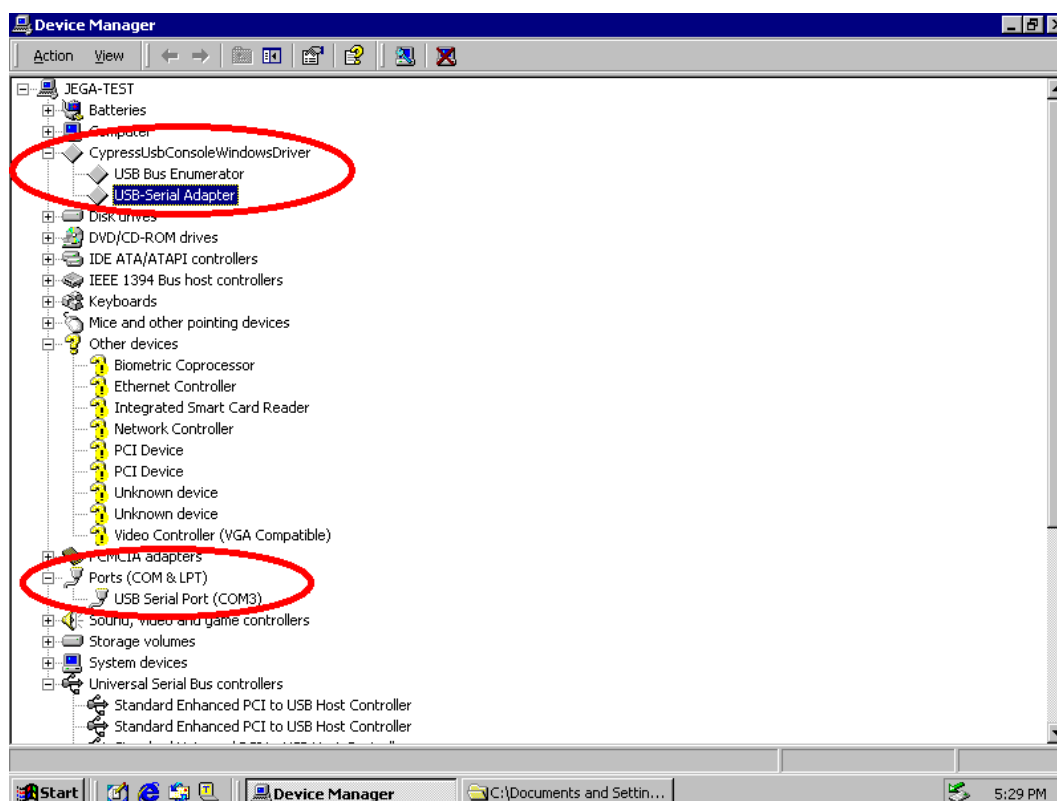
19. A message will display telling that the Driver for the Serial Port has been successfully installed. Click **Finish**.



20. Another message showing the successful installation of driver for USB-Serial Adaptor will appear. Click **Finish**.



21. Open **Device Manager** and click the **Scan for hardware changes** button. The USB-Serial Bridge Controller will come up as "USB Serial Port".



Windows 7

Follow these steps to install the driver manually on Window 7 and other operating systems:

1. Connect the USB-Serial device to the machine.
2. Open **Device Manager**. To open **Device Manager**, click **Start**. In the search box, type **Device Manager**, and then, in the list of results, click **Device Manager**.
3. Right-click on the USB-Serial device, and then, in the context menu, click **Update Driver Software...** to launch the Update Driver Software dialog.
4. Click **Browse my computer for driver software** to select the driver *INF* file location.
5. In the **Search for driver software in this location** field, enter the location of the driver *INF* (Figure 2-12). The driver *INF* can be located at `<installpath>/drivers/cyusbserial/bin/<OS>/<ARCH>`, where `<OS>` is the machine operating system and `<ARCH>` is the operating system architecture. Figure 2-13 shows the CDC driver directory structure.

Figure 2-12: Browse for Driver Software

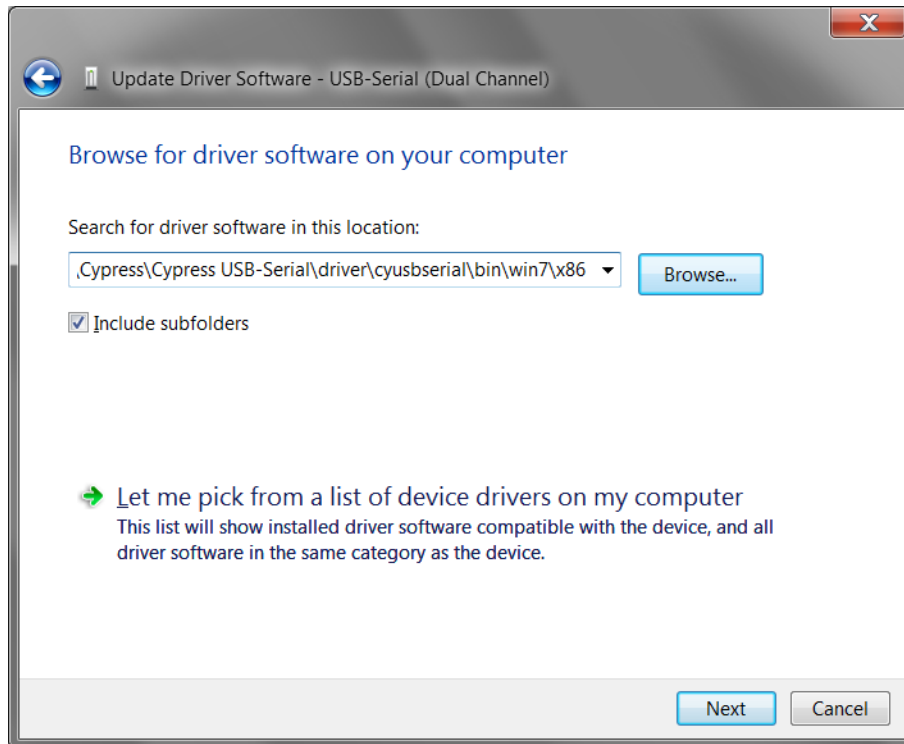
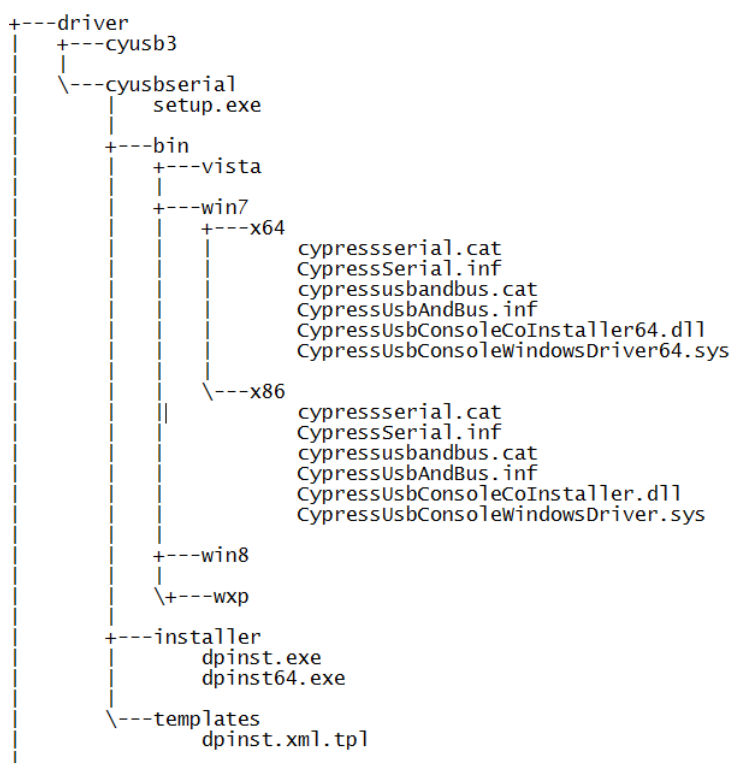


Figure 2-13: Cypress CDC Driver Directory Structure



6. Click **Next** to start the Cypress USB Bus adapter driver installation. After the Cypress USB Bus adapter installation completes (), **USB-Serial Adapter X** node appear under **Universal Serial Bus controller** in the Device Manager, as shown in [Figure 2-15](#).

Figure 2-14: Cypress USB-Serial Adapter Installation Complete

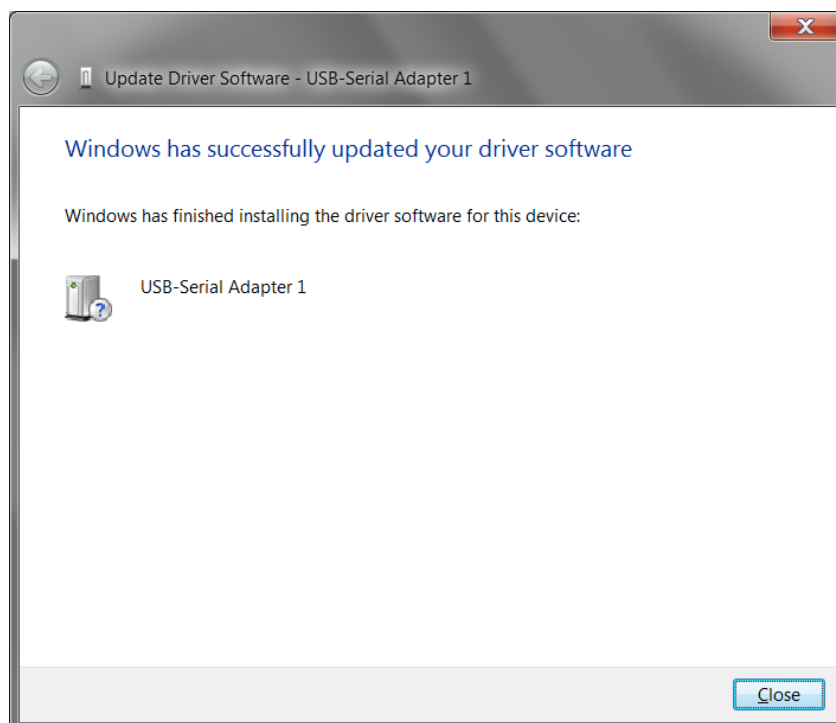
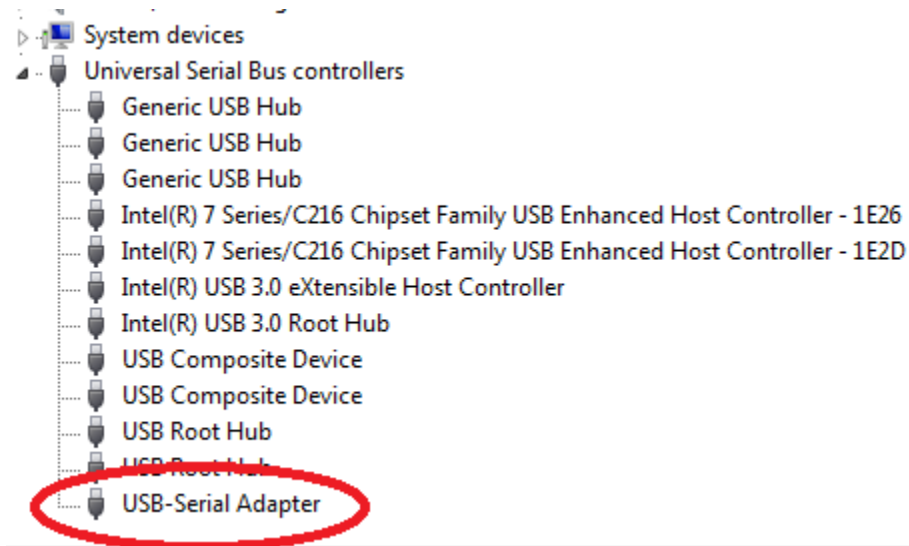
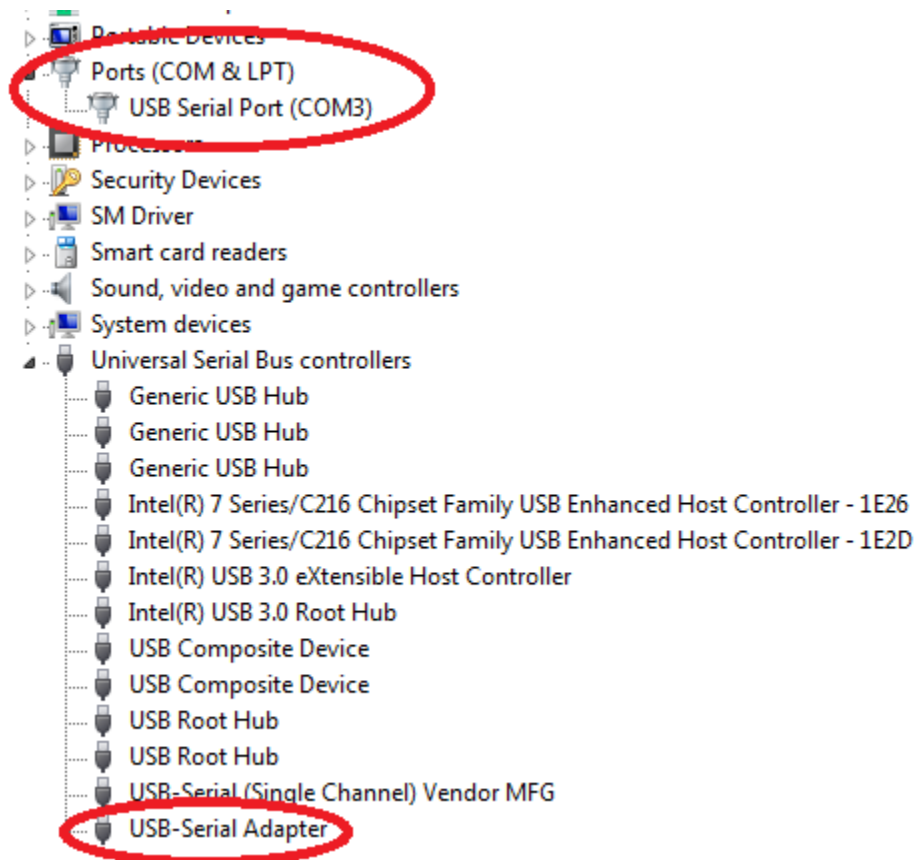


Figure 2-15: Cypress USB-Serial Adapter Node in Device Manager



7. Now another node, **Cypress Virtual Comm Port00**, appears under **other devices** in the Device Manager. This is the Cypress USB Serial port. Follows steps 4 to 6 to install the driver for the Cypress USB Serial port. [Figure 2-16](#) shows the Device Manager after successful installation of the Cypress CDC driver.

Figure 2-16: Cypress Serial port installation complete



8. Repeat steps 3 to 7 for all USB-Serial CDC-class interfaces.

3. Cypress Generic USB3 Driver Installation



The Cypress USB 3.0 driver can be installed for all USB-Serial vendor device interfaces. This is a generic vendor-class driver. The driver can be installed using three methods:

1. Windows Update
2. Driver Installer Setup
3. Manual Installation

The following sections of the document explain each of these three methods.

Windows Update

For machines that are connected to the internet, Windows automatically searches for a compatible driver in the Windows update site and installs the latest version of the driver. During rare occasions, Windows does not automatically start the search; in such cases, the search can be triggered manually. The following sections describe the steps to start the driver search in Windows XP and Windows 7 operating systems. The procedure should be similar for other supported operating systems.

Start Windows Update Search in Windows XP

Follow these steps to start the Windows Update search:

1. Connect the USB-Serial device to the machine.
2. Open **Window Device Manager**. To open **Window Device Manager**, click **Start**, and then click **Control Panel**. Double-click **System**. On the Hardware tab, click **Device Manager**.
3. Right-click on the USB-Serial device and select **Update Driver...** from the context menu (as shown in [Figure 3-1](#)) to launch the **Hardware Update Wizard**.

Figure 3-1: Open Hardware Update Wizard



4. In the **Hardware Update Wizard**, select **Install the software automatically (Recommended)** (as shown in [Figure 3-2](#)) and click **Next** to start the search on Windows Update site ([Figure 3-3](#)).

Figure 3-2: Hardware Update Wizard

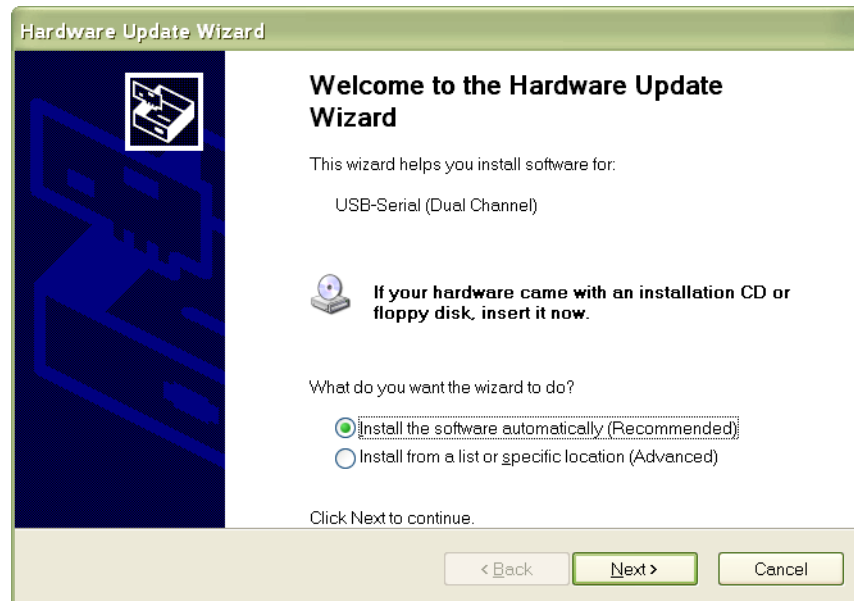
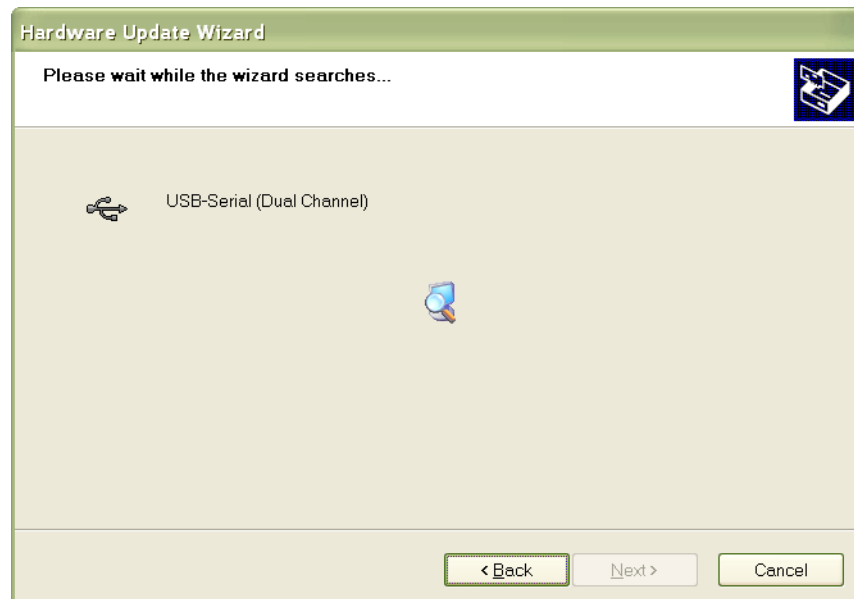


Figure 3-3: Search Windows Update for compatible driver



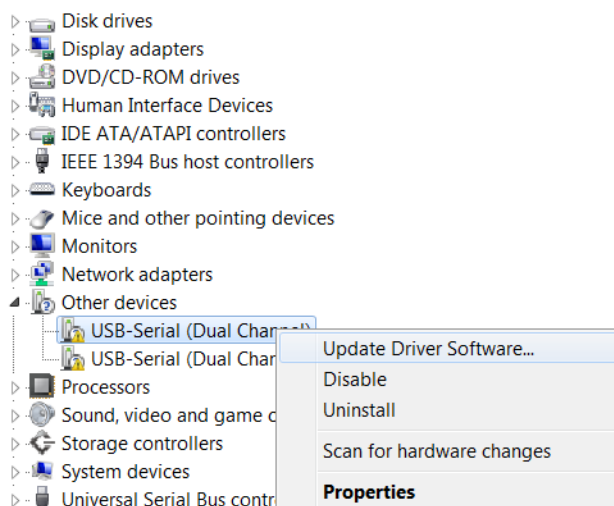
5. On finding a compatible driver, the wizard downloads and completes the driver installation.

Start Windows Update Search in Windows 7

Follow these steps to start the search in a Windows 7 operating system:

1. Connect the USB-Serial device to the machine.
2. Open **Device Manager**. To open **Device Manager**, click **Start**. In the search box, type **Device Manager**, and then, in the list of results, click **Device Manager**.
3. Right-click on the USB-Serial device, and then, in the context menu, click **Update Driver Software...** to launch the Update Driver Software dialog (Figure 3-4).

Figure 3-4: Open Update Driver Software Wizard



4. Click **Search automatically for updated driver software** (Figure 3-5) to begin the online search for the driver (Figure 3-6).

Figure 3-5: Update Driver Software Wizard

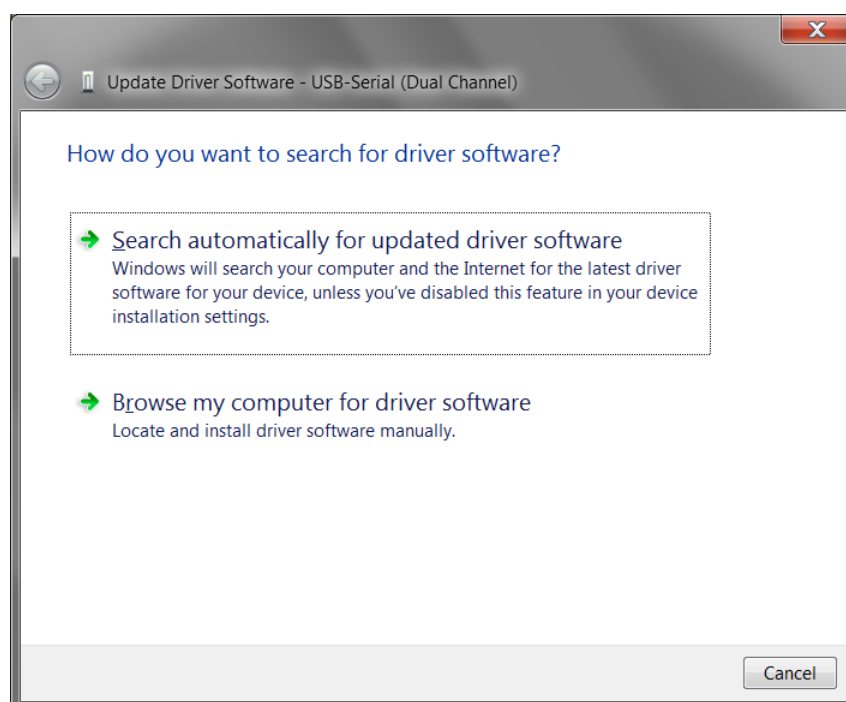
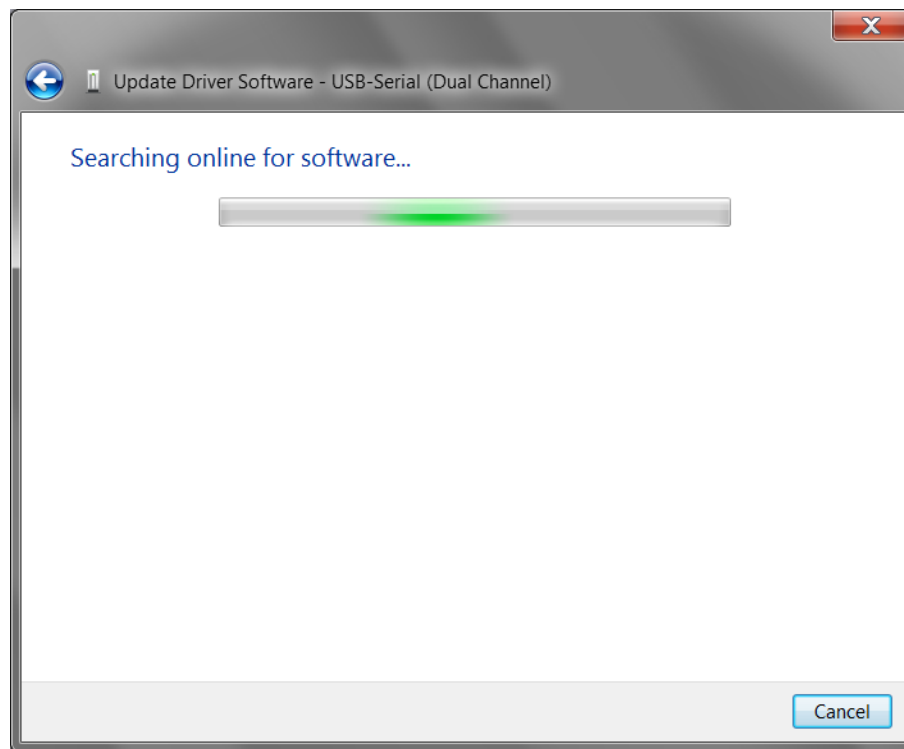
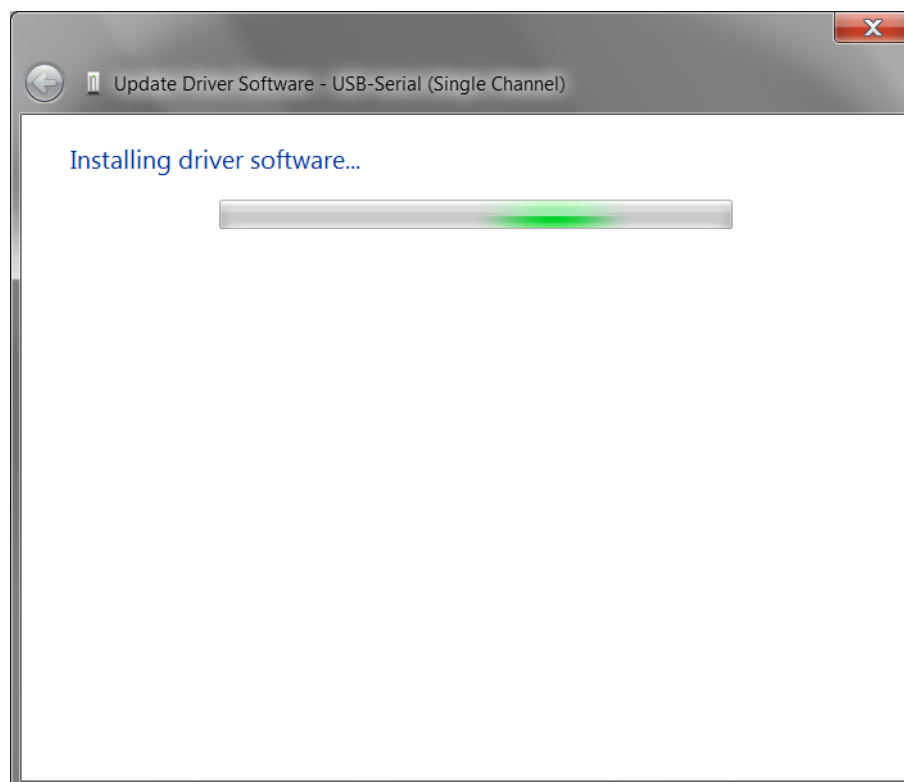


Figure 3-6: Search Online for Driver



5. On finding a compatible driver, the wizard downloads the driver and completes the installation.

Figure 3-7: Driver Installation in-Progress



Driver Installer Setup

If you do not have an active internet connection or choose to install from the setup package, then the driver can be installed using the driver installer setup. The Cypress USB-Serial Software MSI installer packages the generic Cypress USB 3 driver installer setup.

Follow these steps to install the driver using the generic Cypress USB 3 driver installer:

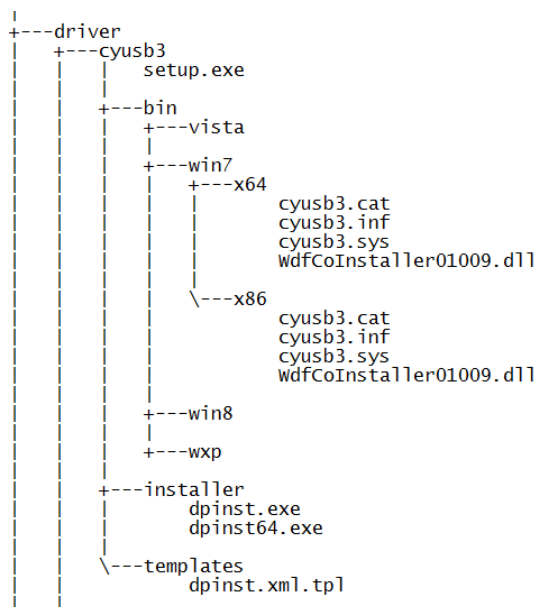
1. Install the Cypress USB-Serial Software package and navigate to the installed location. The USB 3 driver installer can be located at `<installpath>\drivers\cyusb3\setup.exe`. The `setup.exe` file requires administrator privileges to run.
2. Double-click on `setup.exe` to launch the driver installer. The installer copies the required driver files to the system temporary folder and starts the installation. The `setup.exe` console automatically closes after the driver installation completes.

Manual Installation

Advanced users, who choose manual driver installation, must follow these steps to install the driver manually:

1. Connect the USB-Serial device to the machine.
2. Open **Device Manager**. To open **Device Manager**, click **Start**. In the search box, type **Device Manager**, and then, in the list of results, click **Device Manager**.
3. Right-click on the USB-Serial device, and then, in the context menu, click **Update Driver Software...** to launch the Update Driver Software dialog.
4. Click **Browse my computer for driver software** to select the driver *INF* file location.
5. In the **Search for driver software in this location** field, enter the location of the driver *INF*. The driver *INF* can be located at `<installpath>/drivers/cyusb3/bin/<OS>/<ARCH>`, where `<OS>` is the machine operating system and `<ARCH>` is the operating system architecture. Figure 3-8 shows the USB3 driver directory structure.

Figure 3-8: Cypress USB3 Driver Directory Structure



6. Click **Next** to start the vendor-class driver installation. After the installation completes, **USB-Serial XXXX Vendor X** node appears under **Universal Serial Bus controllers** in the Device Manager, as shown in [Figure 3-9](#).

Figure 3-9: Cypress USB-Serial vendor interface device node



7. Repeat steps 3 to 6 for all USB-Serial vendor-class device interfaces.

4. Revision History



Document History

Document Title: Cypress USB-Serial Windows Driver Installation Guide

Document Number: 001-87770

Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	4108462	BAAM	08/29/2013	New document
*A	4131714	BAAM	09/23/2013	Updated sections 2.2 and 3.2.
*B	4146599	LPG	10/04/2013	Corrected document title on the last page to match the title on page 1.
*C	4438010	BAAM	07/11/2014	Updated operating system driver support table. Updated Cypress CDC driver manual installation procedure for 2000.
*D	4559467	JEGA	11/03/2014	Updated Operating Systems support table. Updated Cypress CDC Driver manual Installation screen shots.
*E	4905681	MKRS	09/09/2015	Updated Operating Systems .