HX3 Blaster Plus User Guide

Doc. No. 001-90185 Rev. *D

Cypress Semiconductor
198 Champion Court
San Jose, CA 95134-1709
www.cypress.com

© Cypress Semiconductor Corporation, 2014-2017. This document is the property of Cypress Semiconductor Corporation and its subsidiaries, including Spansion LLC (“Cypress”). This document, including any software or firmware included or referenced in this document (“Software”), is owned by Cypress under the intellectual property laws and treaties of the United States and other countries worldwide. Cypress reserves all rights under such laws and treaties and does not, except as specifically stated in this paragraph, grant any license under its patents, copyrights, trademarks, or other intellectual property rights. If the Software is not accompanied by a license agreement and you do not otherwise have a written agreement with Cypress governing the use of the Software, then Cypress hereby grants you a personal, non-exclusive, nontransferable license (without the right to sublicense) (1) under its copyright rights in the Software (a) for Software provided in source code form, to modify and reproduce the Software solely for use with Cypress hardware products, only internally within your organization, and (b) to distribute the Software in binary code form externally to end users (either directly or indirectly through resellers and distributors), solely for use on Cypress hardware product units, and (2) under those claims of Cypress’s patents that are infringed by the Software (as provided by Cypress, unmodified) to make, use, distribute, and import the Software solely for use with Cypress hardware products. Any other use, reproduction, modification, translation, or compilation of the Software is prohibited.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS DOCUMENT OR ANY SOFTWARE OR ACCOMPANYING HARDWARE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. To the extent permitted by applicable law, Cypress reserves the right to make changes to this document without further notice. Cypress does not assume any liability arising out of the application or use of any product or circuit described in this document. Any information provided in this document, including any sample design information or programming code, is provided only for reference purposes. It is the responsibility of the user of this document to properly design, program, and test the functionality and safety of any application made of this information and any resulting product. Cypress products are not designed, intended, or authorized for use as critical components in systems designed or intended for the operation of weapons, weapons systems, nuclear installations, life-support devices or systems, other medical devices or systems (including resuscitation equipment and surgical implants), pollution control or hazardous substances management, or other uses where the failure of the device or system could cause personal injury, death, or property damage (“Unintended Uses”). A critical component is any component of a device or system whose failure to perform can be reasonably expected to cause the failure of the device or system, or to affect its safety or effectiveness. Cypress is not liable, in whole or in part, and you shall and hereby do release Cypress from any claim, damage, or other liability arising from or related to all Unintended Uses of Cypress products. You shall indemnify and hold Cypress harmless from and against all claims, costs, damages, and other liabilities, including claims for personal injury or death, arising from or related to any Unintended Uses of Cypress products.

Cypress, the Cypress logo, Spansion, the Spansion logo, and combinations thereof, WICED, PSoC, CapSense, EZ-USB, F-RAM, and Traveo are trademarks or registered trademarks of Cypress in the United States and other countries. For a more complete list of Cypress trademarks, visit cypress.com. Other names and brands may be claimed as property of their respective owners.

Contents

1. Introduction 4

1.1 Getting Started 4
1.2 Additional Learning Resources 4
1.3 Technical Support 4
1.4 Document Conventions 4

2. Software Installation 6

2.1 HX3 Blaster Plus Software 6
2.2 Install Hardware 7
2.3 Uninstall Hardware 7

3. HX3 Blaster Plus Tool 8

3.1 Overview 8
3.2 Setup 8
3.3 Procedure to Run HX3 Blaster Plus 9
3.3.1 Connect HX3-Based Hardware to a PC 9
3.3.2 Install CYUSBHX3 Vendor Driver on a PC 9
3.3.3 Configure Using the HX3 Blaster Plus Tool 14
3.3.4 Generate an I^2C Slave Mode File to Configure HX3 Hardware in I^2C Slave Mode 20
3.3.5 Generate an HX3 Firmware + Configuration Settings File 21
3.3.6 Manage Save and Load Settings 22
3.3.7 Backup EEPROM and Restore from Backup 22
3.3.8 Uninstall CYUSBHX3 Vendor Driver 22

4. Troubleshooting 23

4.1 Troubleshooting Guide 23

Revision History 24

1. Introduction

Thank you for your interest in the HX3 Blaster Plus tool. This is a Windows-based tool that enables configuring HX3 features on hardware with an I²C EEPROM attached to HX3.

1.1 Getting Started

This user guide describes the features of the HX3 Blaster Plus tool and how to use it. The HX3 Blaster Plus Tool section explains the procedure to use the tool. The **Error! Reference source not found.** section lists the troubleshooting procedure.

1.2 Additional Learning Resources

Visit the HX3 webpage at www.cypress.com/hx3 for additional learning resources including datasheets and application notes.

1.3 Technical Support

For assistance, go to www.cypress.com/go/support or contact our live customer support at +1 (800) 858-1810 (in the U.S.) or +1 (408) 943-2600 (international) and follow the voice prompt.

1.4 Document Conventions

Table 1-1. Document Conventions for the Guide

Convention	Usage
`Courier New`	Displays file locations, user-entered text, and source code: `C:\ ...cd\icc\`
Italics	Displays file names and reference documentation: The “Configuration Options” section of the *HX3 datasheet* gives more details about the use of pin straps
File > Open	Represents menu paths: File > Open > New Project
Bold	Displays commands, menu paths, and icon names in procedures: Click the **File** icon and then click **Open**.
Times New Roman	Displays an equation: 2 + 2 = 4
Text in gray boxes	Describes Cautions or unique functionality of the product.

Table 1-2. List of Abbreviations

Abbreviation	Meaning
BC	Battery charging
CDP	Charging downstream port
DCP	Dedicated charging port
DVK	Development kit
ESD	Electrostatic discharge
GUI	Graphical user interface
I^2C	Inter-integrated circuit
KB	Kilobyte
PC	Personal computer
PID	Product ID
RDK	Reference design kit
ROM	Read-only memory
USB	Universal Serial Bus
USB-IF	Universal Serial Bus Implementers Forum
VID	Vendor ID

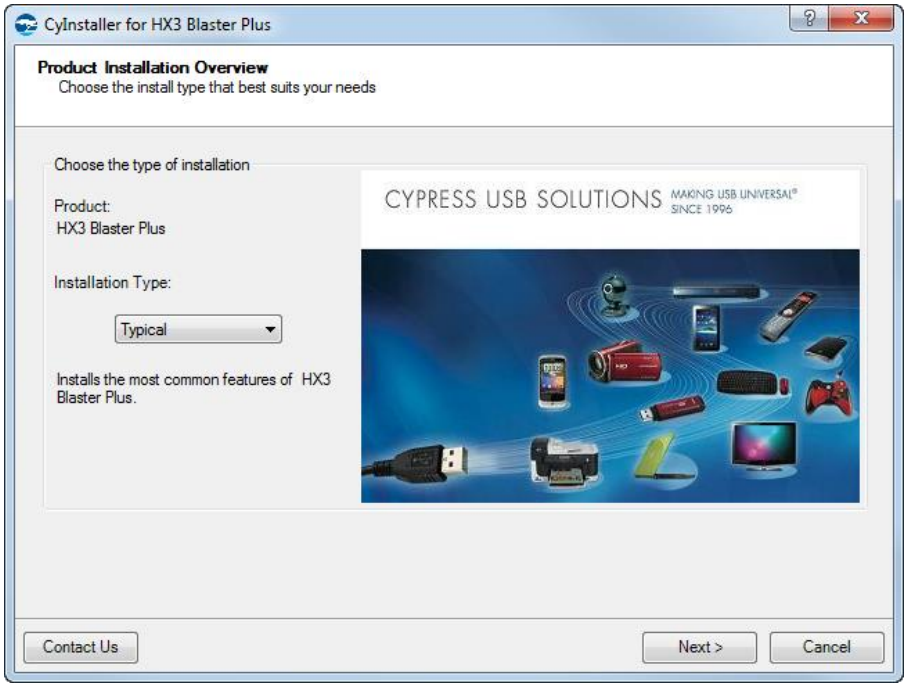
2. Software Installation

2.1 HX3 Blaster Plus Software

Follow these steps to install the HX3 Blaster Plus tool on a Windows PC:

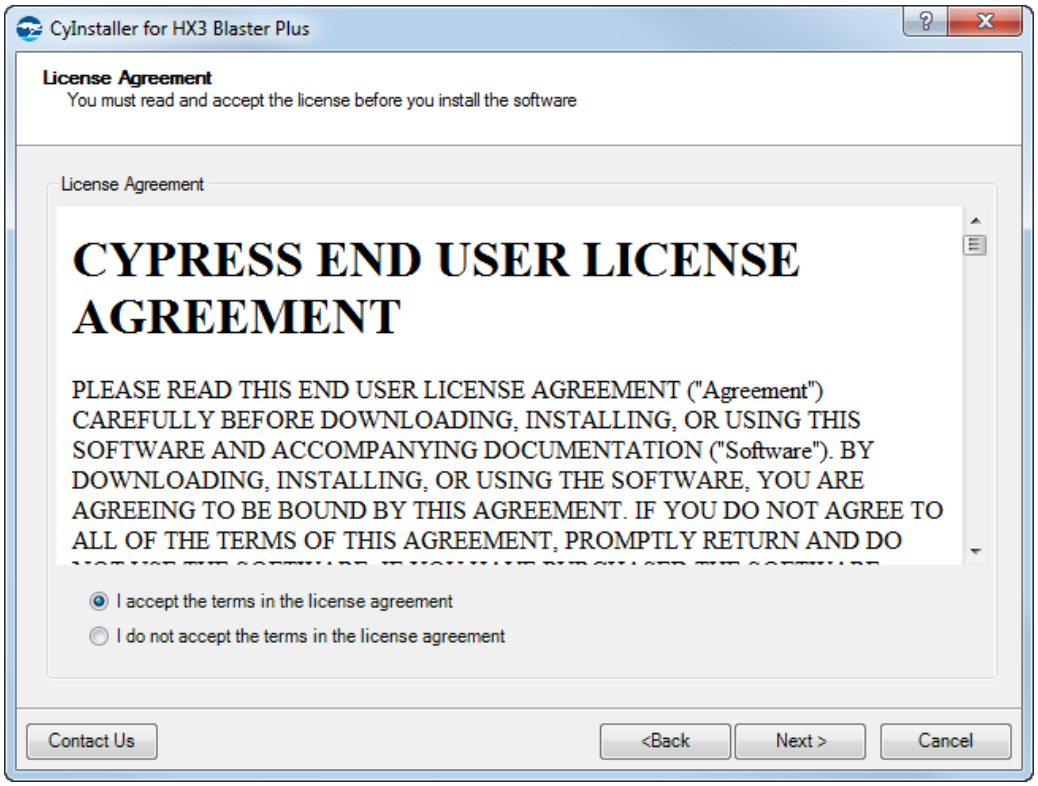
1. Download the tool package from www.cypress.com/go/hx3blasterplus and start the installation. The tool package is available in the following installer formats for download:
   - **HX3 Blaster Plus Setup** (*HX3BlasterPlusSetup.exe*): This installation package contains the files related to the tool. It does not include the Windows installer and Microsoft .NET Framework packages. If these packages are not installed on your computer, the installer automatically redirects to the Internet to download the packages. Run the *.exe* file after downloading to start the installation.
   - **HX3 Blaster Plus ISO** (*HX3BlasterPlus.iso*): This file is a complete package stored in a CD-ROM image format that you can use to create a CD or extract the file using an ISO extraction program such as WinZip or WinRAR, so that you can run *cyautorun.exe* to start the installation. This file includes the HX3 Blaster Plus tool, *HX3 Blaster Plus User Guide*, and Release Notes.
2. Select **Typical** as the **Installation Type** and click **Next,** as shown in Figure 2-1.

Figure 2-1. Initiating HX3 Blaster Plus Installation



3. Read and accept the Cypress End User License Agreement and click **Next** to continue, as shown in Figure 2-2.

Figure 2-2. Cypress End User License Agreement



4. Wait for the installation to complete.
5. After the installation is complete, the contents are available at the following location:

   HX3 Blaster Plus: `<Install Directory>\HX3 Blaster Plus`

   Note: On Windows 32-bit platforms, the default `<Install Directory>` is `C:\Program Files\Cypress`, and on Windows 64-bit platforms, it is `C:\Program Files(x86)\Cypress`.

2.2 Install Hardware

The HX3 Blaster Plus tool does not require any hardware installation.

2.3 Uninstall Hardware

You can uninstall the tool using one of the following methods:

- Go to **Start** > **All Programs** > **Cypress** > **Cypress Update Manager**; click **Uninstall** associated with the HX3 Blaster Plus entry in the Cypress Update Manager table.
- Go to **Start** > **Control Panel** > **Programs and Features**; select the program **HX3 Blaster Plus** from the list and click **Uninstall/Change**.

3. HX3 Blaster Plus Tool

This section describes the capabilities of the HX3 Blaster Plus tool and the procedure to run the tool with an HX3-based hardware or kit. It uses CY4609, CY4603, and CY4613 kit hardware as a reference; however, the same procedure can be used on any HX3-based hardware.

3.1 Overview

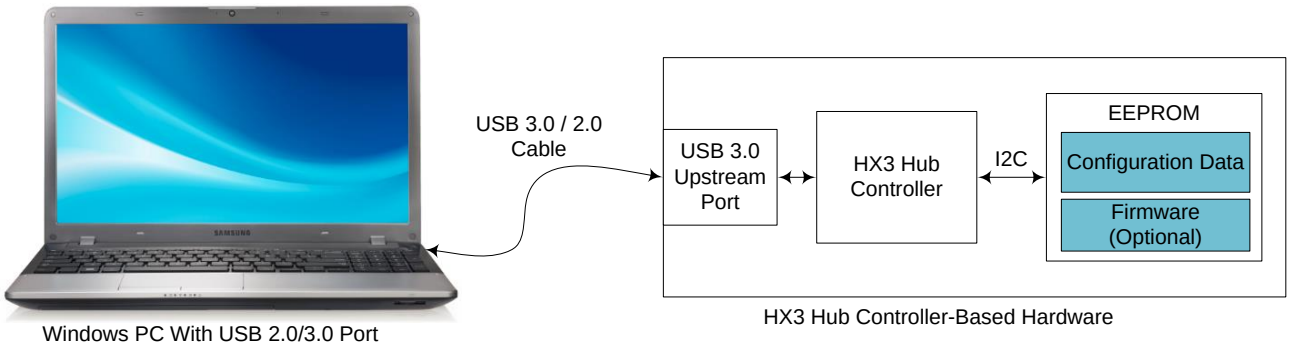
HX3 Blaster Plus is a GUI-based tool to configure the HX3 hub controller. It can be used to configure any HX3-based hardware with a compatible EEPROM connected to HX3 over I^2C. This tool allows you to:

- Read configuration data from the EEPROM and display the values.
- Download custom firmware from a PC via HX3 and store it on the EEPROM.
- Download custom firmware and configuration data together and store it on the EEPROM.
- Configure HX3 and download only the configuration data to the EEPROM.
- Erase the firmware and configuration data from the EEPROM.
- Generate HX3 configuration data to be sent over the I^2C bus when HX3 is configured as an I^2C slave.
- Add configuration data to a HX3 firmware file stored on a PC. This feature can be used to generate the HX3 firmware and configuration settings file which can be directly programmed on the EEPROM without requiring connection to HX3.

3.2 Setup

Figure 3-1 displays the setup to run the HX3 Blaster Plus tool with the HX3-based hardware.

Figure 3-1. HX3 Blaster Plus Tool Setup



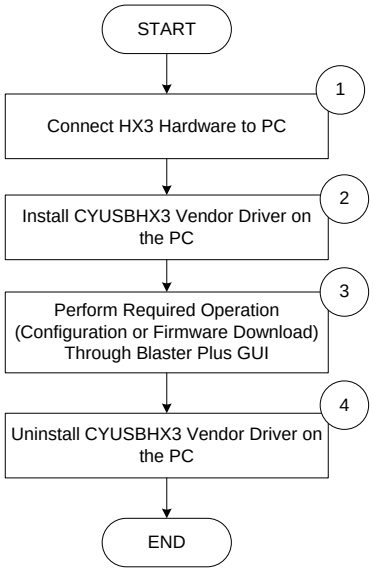
The HX3 Blaster Plus tool is installed on a Windows PC (Windows XP; Windows Vista; Windows 7, 8, 8.1, or 10). The PC needs to have a USB 3.0 or USB 2.0 port. The PC is connected to HX3 using a USB 3.0 or 2.0-certified cable. The HX3-based hardware has an external EEPROM connected to HX3 over I^2C.

Note: The feature of HX3 Blaster Plus which enables adding configuration data to a HX3 firmware file stored on a PC does not require connection to the HX3-based hardware.

3.3 Procedure to Run HX3 Blaster Plus

Figure 3-2 provides the steps to run HX3 Blaster Plus.

Figure 3-2. Steps to Run HX3 Blaster Plus



3.3.1 Connect HX3-Based Hardware to a PC

Follow these steps to connect the HX3-based hardware to a PC:

1. Configure the firmware boot mode to Custom Firmware on the HX3-based hardware.
2. Power on the HX3-based hardware.
3. Connect the HX3-based hardware to a USB 3.0 or 2.0 port on the PC.

3.3.2 Install CYUSBHX3 Vendor Driver on a PC

To run the HX3 Blaster Plus tool, the default Windows hub class driver that is automatically bound to the USB 2.0 interface of the HX3-based hardware needs to be unbound, and the CYUSBHX3 vendor driver needs to be bound.

To install the device driver on Windows 7:

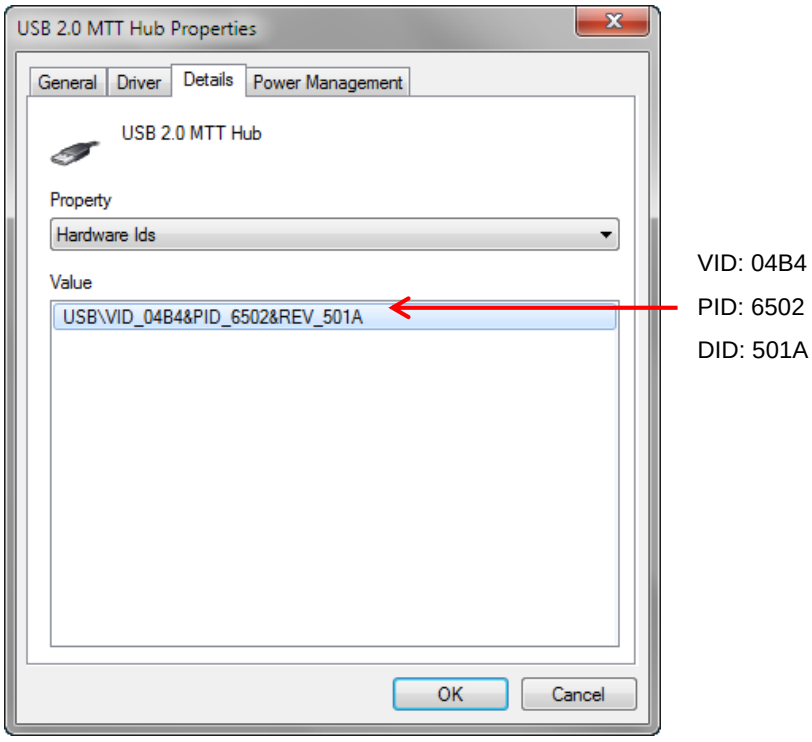
1. Connect the HX3 hardware to one of the USB ports.
   - Invoke the **Device Manager** and search for a USB 2.0 hub device with the properties given in Table 3-1.

Table 3-1. Identifying USB 2.0 Hub

Hardware	VID	PID
CY4609	04B4	6502
CY4603	04B4	6506
CY4613	04B4	650A

   - Check the VID and PID details in **Properties** > **Details tab** > **Hardware Ids,** as shown in Figure 3-3.

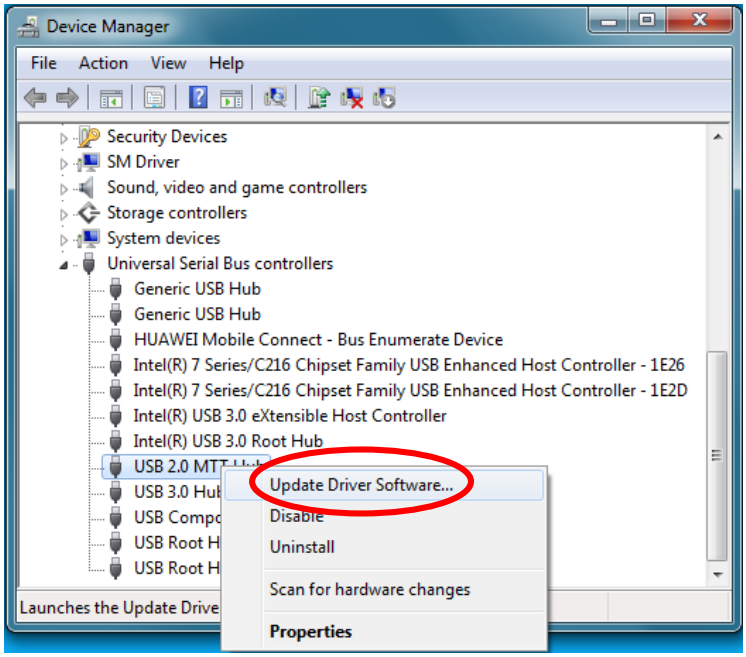
Figure 3-3. Identifying VID and PID



Note: The DID value displayed in Figure 3-3 may vary depending on the HX3 firmware version.

2. Once the device is identified, right-click and select **Update Driver Software,** as shown in Figure 3-4.

Figure 3-4. Updating Driver Software



Note: When HX3-based hardware is connected to a PC over a USB 3.0 port, the **Device Manager** lists one hub with USB 2.0 capability and another hub with USB 3.0 capability. Make sure to invoke **Update Driver Software** only on the hub with USB 2.0 capability, as HX3 Blaster Plus can work only with a hub that has USB 2.0 capability.

3. In the **Update Driver Software** window, click **Browse my computer for driver software,** as shown in Figure 3-5. On the next screen, click **Let me pick from a list of device drivers on my computer** and click **Next**, as shown in Figure 3-6.

Figure 3-5. Searching for CYUSBHX3 Driver

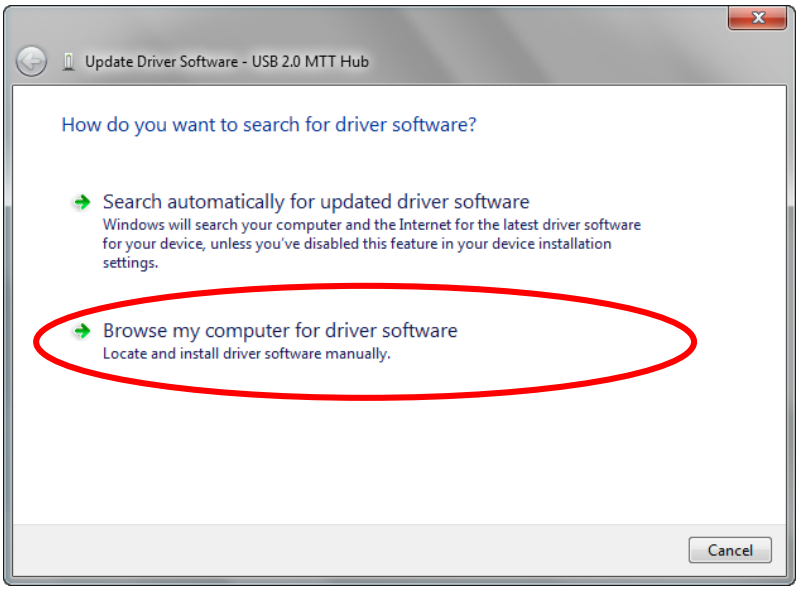
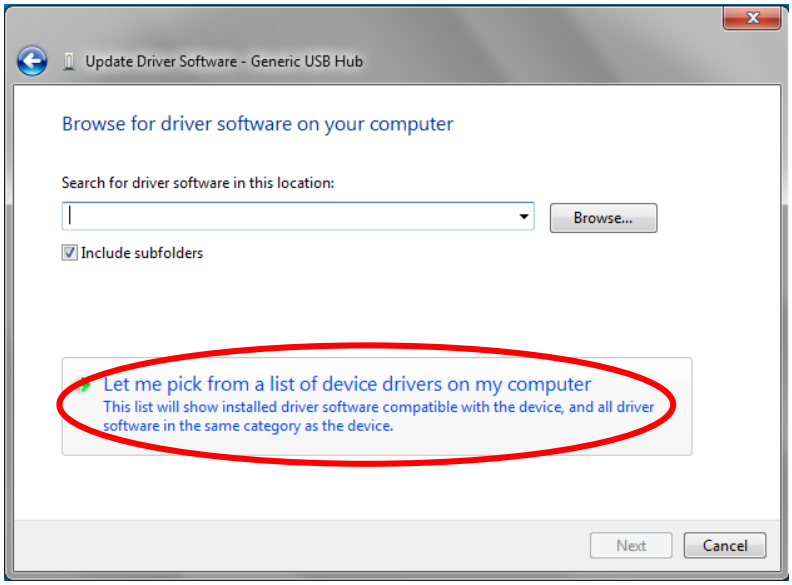
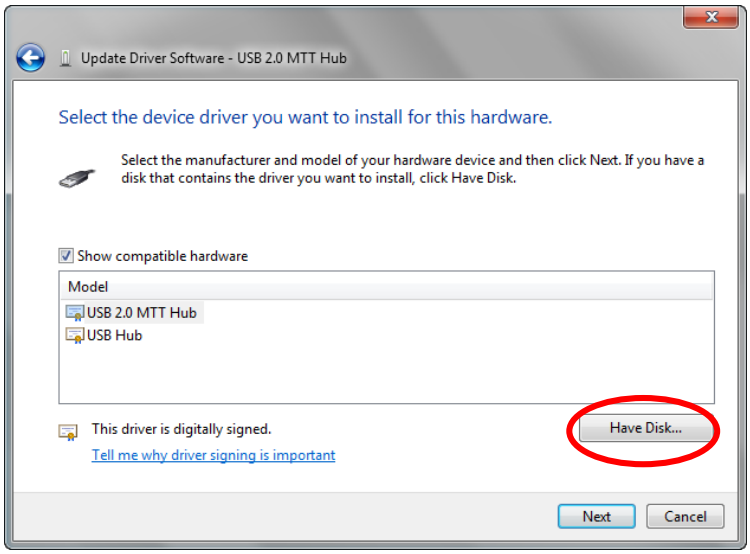


Figure 3-6. Locating CYUSBHX3 Driver



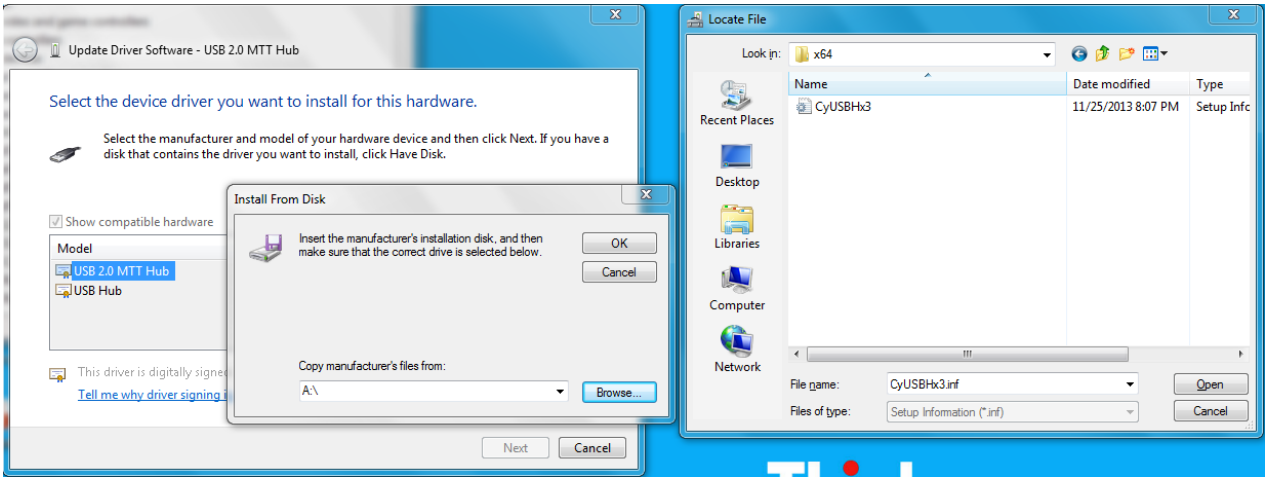
4. Click **Have Disk,** as shown in Figure 3-7.

Figure 3-7. Loading CYUSBHX3 Driver Path



5. Select the driver file by navigating to `<Install Directory>\HX3 Blaster Plus\drivers\<operating system>\<x64/x86>` and click **OK**. You can also click **Browse** and locate the driver file, as shown in Figure 3-8.

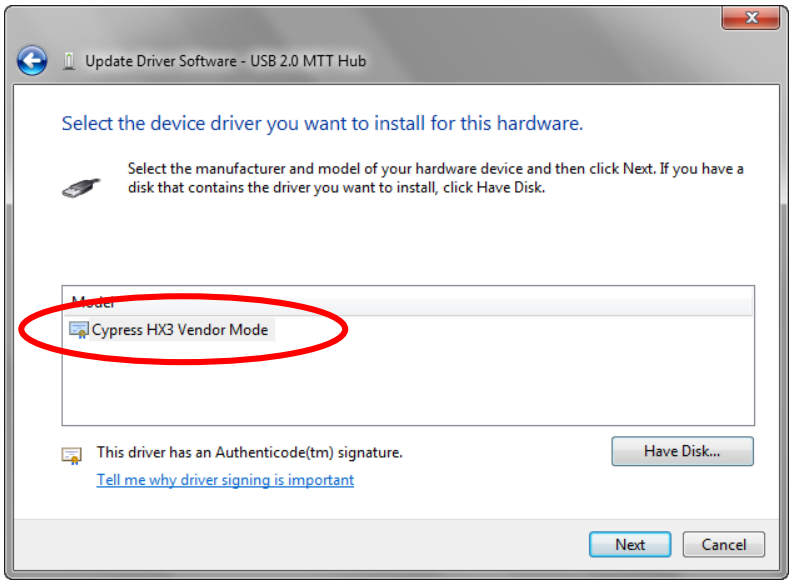
Figure 3-8. Loading CYUSBHX3 Driver



Note: On Windows 32-bit platforms, the default `<Install Directory>` is `C:\Program Files\Cypress`, and on Windows 64-bit platforms, it is `C:\Program Files(x86)\Cypress`.

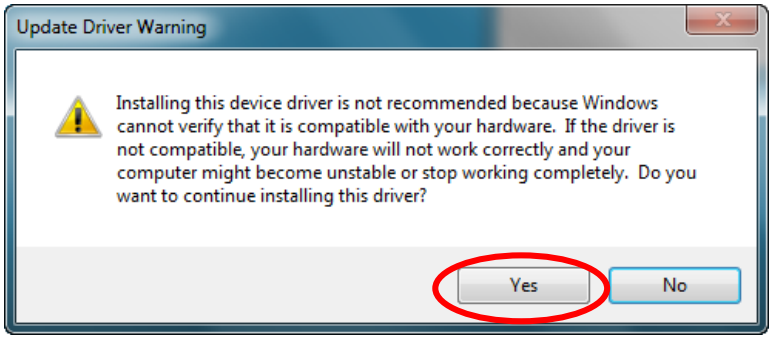
6. Select **Cypress HX3 Vendor Mode**, as shown in Figure 3-9.

Figure 3-9. Selecting Driver Type



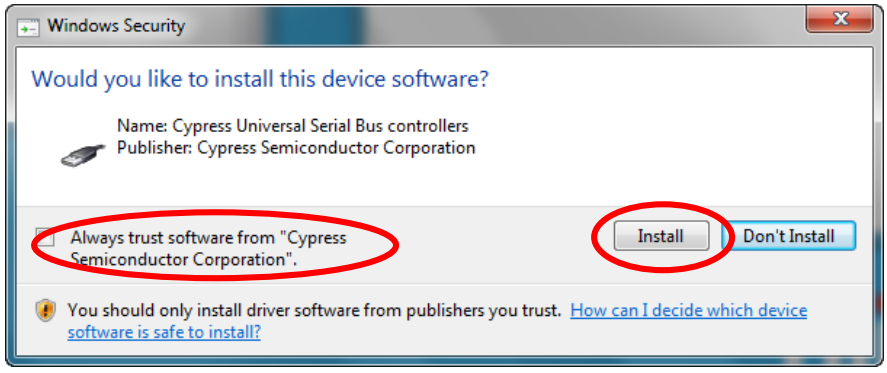
7. Click **Yes** in the **Update Driver Warning** window, as shown in Figure 3-10.

Figure 3-10. Confirming Installation of Driver



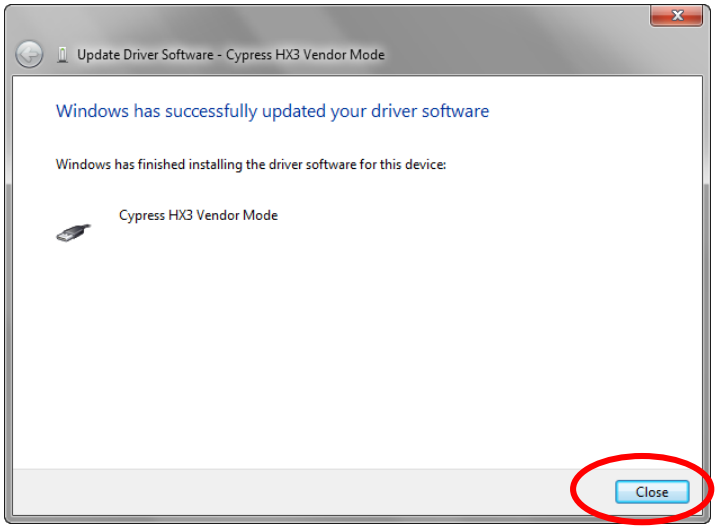
8. Select the **Always trust software from "Cypress Semiconductor Corporation"** check box to accept the driver signature. Then, click **Install**, as shown in Figure 3-11**.**

Figure 3-11. Enabling Installation of the Driver



9. Once the installation is successful, click **Close** to close the window, as shown in Figure 3-12.

Figure 3-12. Successful Installation of CYUSBHX3 Driver

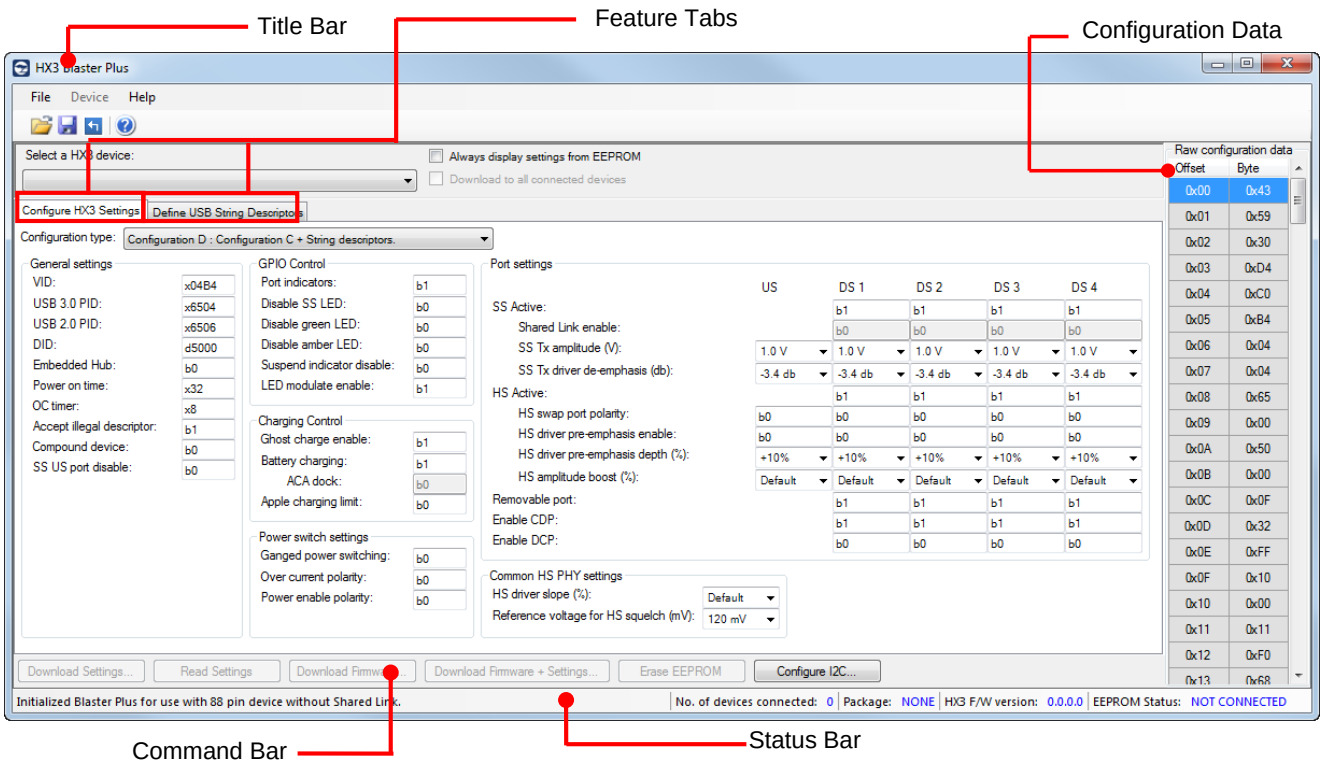


10. Restart the PC, if required.

3.3.3 Configure Using the HX3 Blaster Plus Tool

1. Invoke the HX3 Blaster Plus tool from **Start** > **All Programs** > **Cypress** > **HX3 Blaster Plus** > **HX3 Blaster Plus**. The Blaster Plus GUI is displayed, as shown in Figure 3-13.

Figure 3-13. GUI Layout of HX3 Blaster Plus Tool



HX3 Blaster Plus includes two tabs: **Configure HX3 Settings** and **Define USB String Descriptors**. The title bar of the application shows the currently selected device. The status bar displays the following information:

- Error, warning, and status messages
- Package type of HX3 used on the hardware
- Firmware version stored on the hardware
- EEPROM content status: The EEPROM status displays five status values: NOT CONNECTED, BLANK, F/W, F/W+SETTINGS, and SETTINGS.

The Configuration Data section of the GUI displays the flat view of the current configuration data shown in the feature tabs.

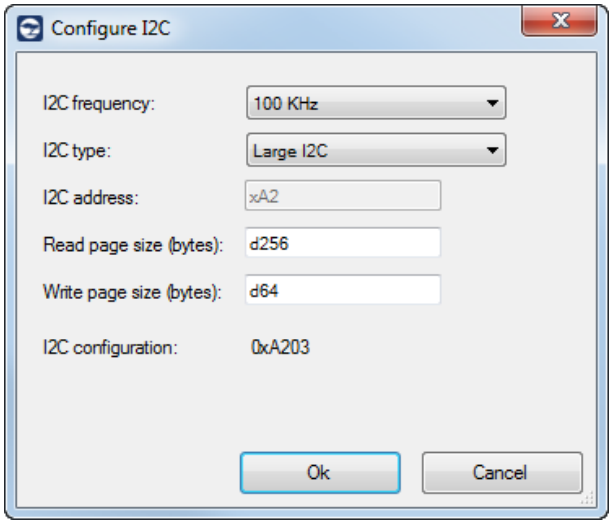
Table 3-2 provides an overview of the seven groups of configuration settings supported by the HX3 Blaster Plus tool.

Table 3-2 Configuration Setting Groups

Configuration Setting Group	Description
General Settings	This group of parameters is related to hub descriptor fields that are sent to the host. These controls are per the USB-IF hub specification and change the enumeration details of HX3.
GPIO Control	This group controls the default behavior of GPIO pins and Port Status Indicator LED pins. The HX3 Blaster Plus tool gives you an option to drop the Port Status Indicator LEDs to free up the GPIOs.
Charging Control	This group consists of configurable parameters related to USB Battery Charging, proprietary charging, and Ghost Charging™.
Power Switch Settings	This group consists of configurable parameters related to HX3 power management controls such as Power Enable polarity, overcurrent polarity, and ganged power switching.
Port Settings	This group consists of configurable parameters related to port-specific features such as Shared Link™, dedicated charging port (DCP), charging downstream port (CDP), and port polarity swapping. Also, the Physical Layer (PHY) parameters for each port can be tuned per the hardware design.
Common HS PHY Settings	This group consists of configurable parameters related to advanced, high-speed PHY settings common to all the downstream and upstream ports.
USB String Descriptors	This group consists of three configurable string descriptors, including manufacturer string descriptor, product string descriptor, and serial number string descriptor.

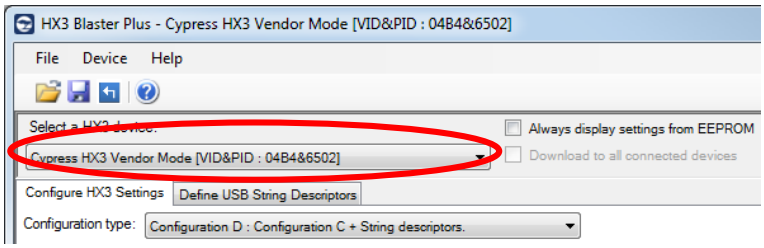
2. Click **Configure I2C**. Select the appropriate values for the **I2C frequency, I2C type**, **Read page size**, and **Write page size** parameters based on the EEPROM used on the HX3 hardware, as shown in Figure 3-14.

Figure 3-14 Setting I²C Parameters



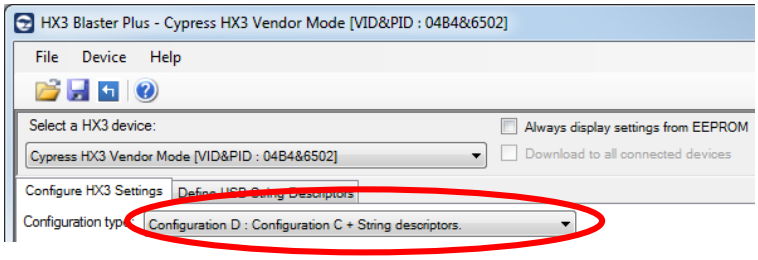
3. Select the HX3 device from the **Select a HX3 device** drop-down list, as shown in Figure 3-15.

Figure 3-15. Selecting HX3 device



4. Select the **Configuration type**, as shown in Figure 3-16.

Figure 3-16. Selecting Configuration Type



The configuration type (Configuration A to Configuration D) determines the number of parameters that can be configured using the HX3 Blaster Plus tool GUI. Configuration A enables a minimum number of parameters, and Configuration D enables a maximum number of parameters. Table 3-3 lists the configurable parameters for each configuration type.

Table 3-3. Configurable Parameters for Each Configuration Type

Configuration Setting Group	Configurable Parameters[a]	Configuration Type			
		A[b]	B[b]	C	D
General Settings	VID	X	X	X	X
	USB 3.0 PID	X	X	X	X
	USB 2.0 PID			X	X
	DID	X	X	X	X
	Embedded hub		X	X	X
	Controller power		X	X	X
	Power-on time		X	X	X
	OC timer		X	X	X
	Accept illegal descriptor		X	X	X
	Compound device		X	X	X
	Legacy host driver support		X	X	X
	SS US port disable		X	X	X
GPIO Control	Port indicators		X	X	X
	Disable SS LED		X	X	X
	Disable green LED		X	X	X

[a] See the EEPROM Map table in the HX3 datasheet for more details about these configuration parameters. The EEPROM Map table lists the location and default value for the configuration parameters.

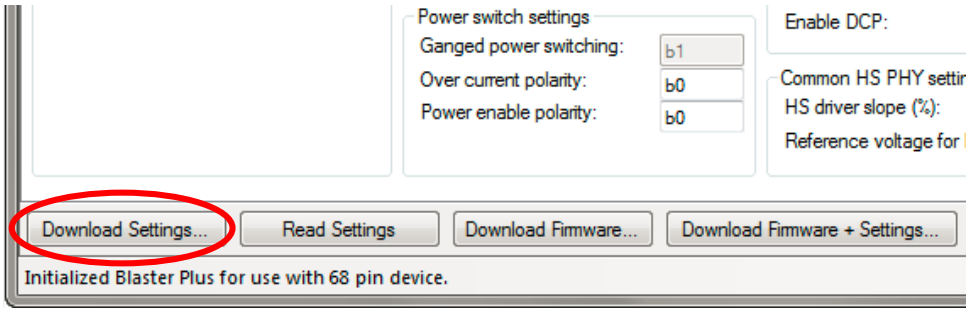
[b] When Configuration Types A and B are selected, the Firmware assigns USB 2.0 PID by incrementing the value assigned to USB 3.0 PID by 2. For example, if you enter ‘6550’ for USB 3.0 PID, the Firmware assigns ‘6552’ for USB 2.0 PID.

Configuration Setting Group	Configurable Parameters[a]	Configuration Type			
		A[b]	B[b]	C	D
	Disable amber LED		X	X	X
	Suspend indicator disable		X	X	X
	LED modulate enable		X	X	X
Charging Control	Ghost charge enable		X	X	X
	Battery charging		X	X	X
	ACA dock		X	X	X
	Apple charging limit		X	X	X
Power Switch Settings	Ganged power switching		X	X	X
	Overcurrent polarity		X	X	X
	Power enable polarity		X	X	X
Port Settings	SS Active		X	X	X
	Shared Link enable		X	X	X
	SS Tx amplitude (V)			X	X
	SS Tx driver de-emphasis (db)			X	X
	HS Active		X	X	X
	HS swap port polarity		X	X	X
	HS driver pre-emphasis enable			X	X
	HS driver pre-emphasis depth (%)			X	X
	HS amplitude boost (%)			X	X
	Removable port		X	X	X
	Enable CDP		X	X	X
	Enable DCP		X	X	X
Common HS PHY Settings	HS driver slope (%)			X	X
	Reference voltage for HS squelch (mV)			X	X
USB String Descriptors	Manufacturer string descriptor				X
	Product string descriptor				X
	Serial number string descriptor				X

5. You can now perform the following operations:
   - Edit and download configuration settings to the EEPROM.
   - Download Firmware to the EEPROM.
   - Erase the contents of the EEPROM.
   - Read the configuration settings from the EEPROM.

6. Follow these steps to change the PID for the USB 3.0 hub interface and verify the updated parameter.
   - Click the **Always display settings from EEPROM** check box located near the menu bar to read the current settings stored on the EEPROM
   - Modify the value of **USB 3.0 PID** under the **General Settings** group to x7500.
   - Click **Download Settings…** in the command bar to write the modified settings to the EEPROM along with custom firmware, as shown in Figure 3-17.

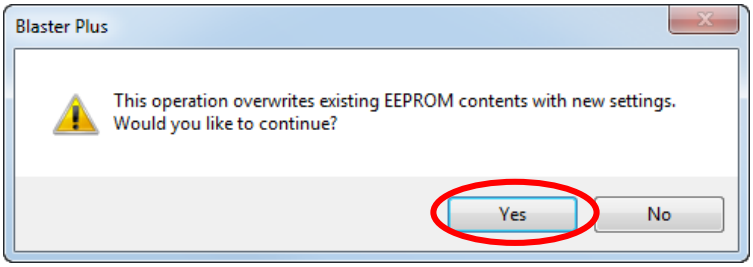
Figure 3-17. Downloading Configuration Settings



Note: For Rev *A silicon-based HX3 hardware, click **Download Firmware + Settings** and download HX3 Firmware Version B3. All versions of the HX3 Firmware are available at www.cypress.com/?rID=92748. The Release Notes *HX3 Firmware Version B5 - Release Notes.pdf,* available along with the Firmware, shows how to differentiate HX3 Rev *A silicon from HX3 Rev *C silicon. If you are using Rev. *C silicon and booting from an external EEPROM, you must use firmware Version B5. Cypress recommends that you boot with internal ROM firmware.

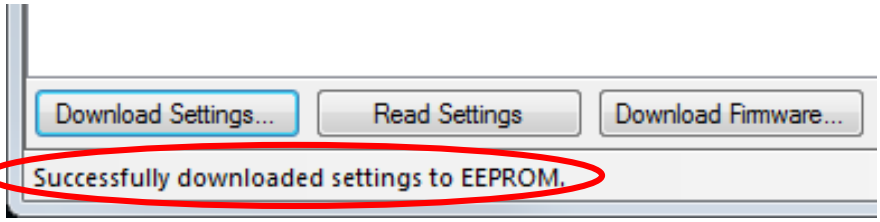
- Click **Yes** to confirm the download operation, as shown in Figure 3-18.

Figure 3-18. Confirmation of Configuration Settings Download



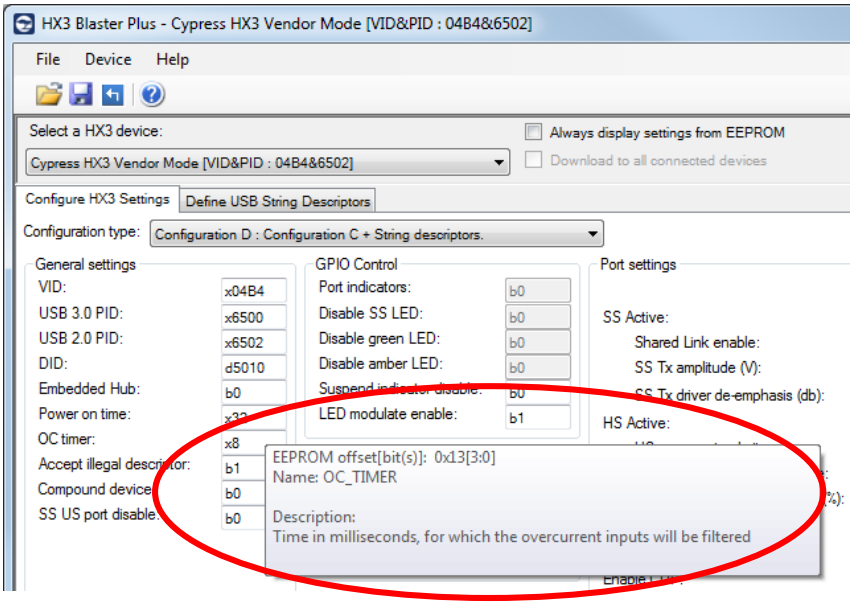
- Wait for the status bar to show the message denoting successful downloading of the configuration parameters to the EEPROM, as shown in Figure 3-19.

Figure 3-19. EEPROM Download Confirmation



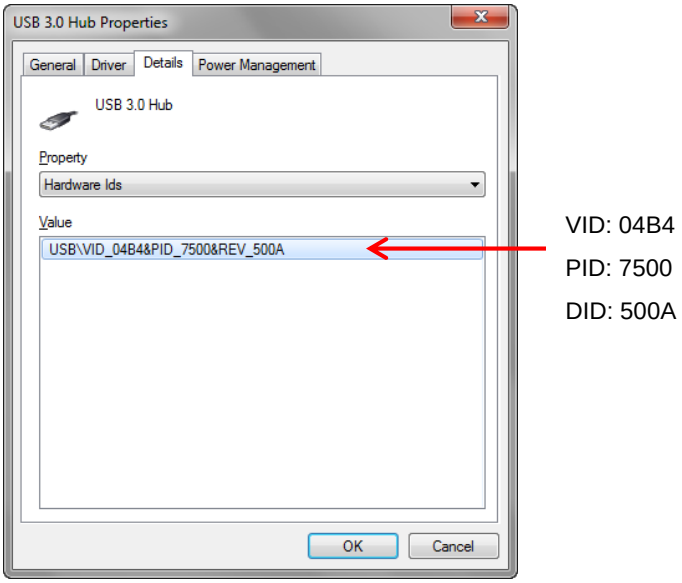
Note: Hover the mouse over the editable area, as shown in Figure 3-20, to view the details (Description, valid values, default value, and so on) of the configuration parameters.

Figure 3-20. Getting details about the configuration parameters



- Press the reset switch (SW1 on CY4603, CY4609, and CY4613) to reset the HX3 hardware and to make the downloaded firmware effective.
- Identify the USB 3.0 hub entry in the **Device Manager** for the HX3 hardware and check the PID, as shown in Figure 3-21.

Figure 3-21. Updated PID



Note 1: When the HX3 Blaster Plus tool is invoked, it identifies the configuration parameters that can be modified for the HX3 part used on the given hardware and disables editing of all other parameters.

Note 2: Some configuration parameters include sub parameters. In these cases, when a configuration parameter is disabled, all the sub parameters are disabled as well. For example, disabling “SS Active” for “DS 1” disables all its sub parameters. These sub parameters are displayed in the GUI under the configuration parameter.

Note 3: Once the configuration data is written to the EEPROM, the pin strap features are disabled, as the configuration data stored in the EEPROM overrides all other settings.

Note 4: When configuration data is downloaded to multiple HX3 devices by enabling **Download to all connected devices**, the same serial number will be used for all devices.

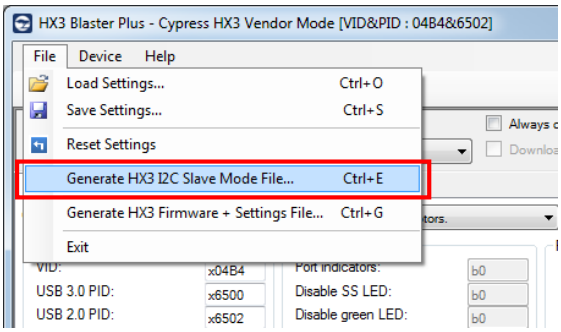
Note 5: While specifying values for the configuration parameters, make sure that the HX3 board design can support the values wherever applicable. For example, if the HX3 board design uses an active LOW signal to indicate an overcurrent state on the downstream port, only 0 can be assigned as the value for the **Over current polarity** parameter in Blaster Plus.

3.3.4 Generate an I²C Slave Mode File to Configure HX3 Hardware in I²C Slave Mode

HX3 supports I²C slave mode operation, which enables HX3 to be configured from an external I²C master. To perform this operation, an HX3 I²C slave mode file needs to be generated using the Blaster Plus tool. This file contains the HX3 configuration parameters. Follow these steps to generate this file:

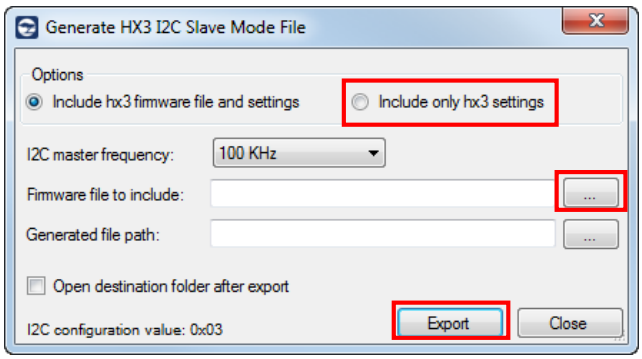
1. Connect the HX3 hardware to a PC running the Blaster Plus tool and specify the required configuration settings in the Blaster Plus GUI.
2. Choose **File** > **Generate HX3 I2C Slave Mode File,** as Figure 3-22 shows.

Figure 3-22. Generating I²C Slave Mode File



3. In the **Generate HX3 I2C Slave Mode File** dialog box, select the **Include only hx3 settings** option, as Figure 3-23 shows. Select **I2C master frequency** based on the frequency to be used by the I²C master device that will be connected to the HX3 hardware. In the **Generated file path** field, mention the path where the output file must be stored. Click **Export**.

Figure 3-23. Dialog Box to Generate HX3 I²C Slave Mode File



Note 1: For Rev *A silicon-based HX3 hardware, always select **Include HX3 firmware file and settings** and provide the path to the HX3 Firmware file (available at www.cypress.com/?rID=92748) in the **Firmware file to include** field. All versions of the HX3 firmware are available at www.cypress.com/?rID=92748. The Release Notes document *HX3 Firmware Version B5 - Release Notes.pdf,* available along with the Firmware, shows how to differentiate HX3 Rev *A silicon from HX3 Rev *C silicon.

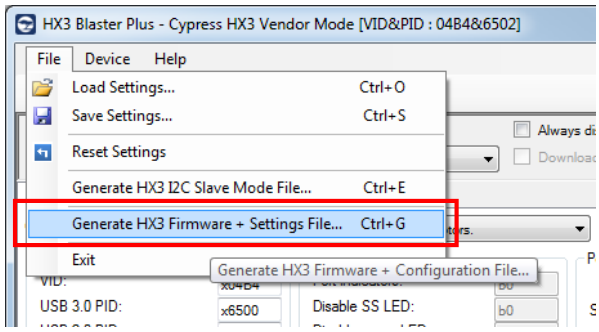
Note 2: After the HX3 I²C slave mode file is generated, the HX3 hardware needs to be configured for I²C slave mode operation and connected to an I²C master to download the HX3 I²C slave mode file.

3.3.5 Generate an HX3 Firmware + Configuration Settings File

This feature can be used to generate the HX3 firmware and configuration settings file which can be directly programmed on the EEPROM without requiring connection to HX3. Note that this feature is supported only for the CYUSB3314 part. Follow these steps to generate the EEPROM binary file containing HX3 firmware and configuration settings:

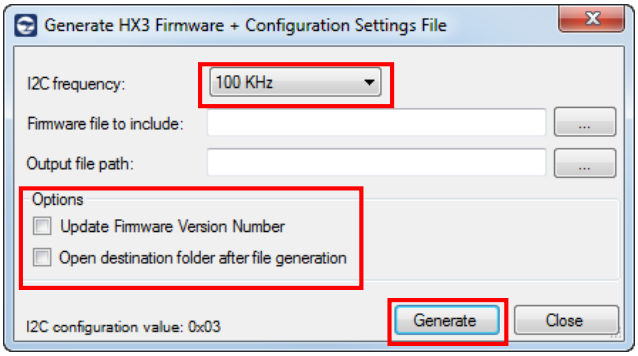
1. Using HX3 Blaster Plus tool specify the required configuration settings in the Blaster Plus GUI.
2. Choose **File** > **Generate HX3 Firmware + Settings File**…, as shown in Figure 3-24.

Figure 3-24. Generating HX3 Firmware + Settings File



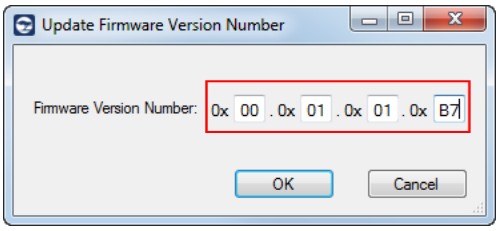
3. In the **Generate HX3 Firmware + Settings File** dialog box, select the I²C master frequency based on the frequency to be used by the HX3 to read from the EEPROM. In the **Firmware file to include** field, mention the path to the source Firmware file to be used on which the configuration settings from Blaster plus tool will be added. In the **Output file path** field, mention the path where the output must be stored. Click **Generate**.

Figure 3-25. Dialog Box to Generate HX3 I²C Slave Mode File



4. To update the Firmware version number while creating the Firmware + Settings binary file, select the **Update Firmware Version Number** check box prior to clicking **Generate**. If this option is selected, then the Firmware version update dialog is displayed (Figure 3-26.) once the current version number from the firmware file has been read. The dialog displays and allows update of the firmware version number as four hexadecimal numbers, each supporting the range 0x00 to 0xFF. To update the version number, click **OK** after editing. Click **Cancel** to retain the existing version number.

Figure 3-26. Firmware Version Update



3.3.6 Manage Save and Load Settings

You can save the current values of all configuration settings to a file on your PC using the menu **File** > **Load Settings**. The settings are stored in *.bin* format. Also, you can load the saved configuration settings on to the HX3 Blaster Plus tool using the menu **File** > **Load Settings**.

Note 1: Invoking the Load Settings feature will overwrite the current values of configuration settings with the new values from the loaded from the *.bin* file.

Note 2: Save and Load Settings feature do not require a HX3 hardware to be connected to the PC running the HX3 Blaster Plus.

3.3.7 Backup EEPROM and Restore from Backup

You can read all contents (Firmware, Settings. Firmware + Settings) stored in the EEPROM connected to HX3 and save the contents in a file on your PC using the menu **Device** > **Backup EEPROM**.

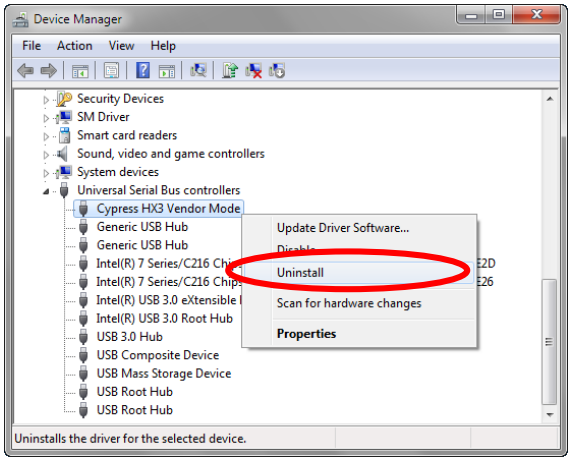
Note that this feature requires the HX3 based hardware to be connected to the PC running HX3 Blaster Plus using USB cable as captured in Figure 3-1 Also, you can download the saved EEPROM content to the EEPROM connected to the HX3 using the menu **Device > Restore from Backup…**.

3.3.8 Uninstall CYUSBHX3 Vendor Driver

Once the CYUSBHX3 driver is installed, the device ceases to function as the HX3 hub, and it can be used with the HX3 Blaster Plus tool only. To bring the device back to hub functionality, you need to uninstall the CYUSBHX3 driver associated with the hardware as follows:

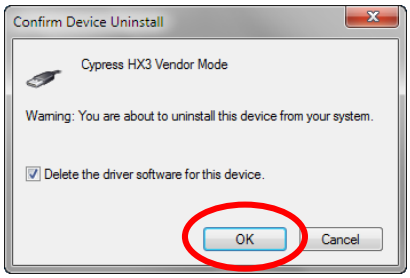
1. Close the HX3 Blaster Plus tool if it is running.
2. Open the **Device Manager** and locate the **Cypress HX3 Vendor Mode** device. Right-click the device and select **Uninstall**, as shown in Figure 3-27.

Figure 3-27. Uninstalling CYUSBHX3 Driver



3. Select **Delete the driver software from this device** and click **OK**, as shown in Figure 3-28.

Figure 3-28. Initiating Uninstall of CYUSBHX3 Driver



4. Restart the PC, if required.

   This procedure restores the hub driver, and the attached hardware can be used as the normal USB 3.0 hub.

4. Troubleshooting

4.1 Troubleshooting Guide

Problem	Possible Cause	Possible Solution
HX3 Blaster Plus tool does not list the HX3 board that is connected to the PC on the tool's title bar.	The CYUSBHX3 vendor driver may not be bound on the USB port to which the HX3 board is connected.	Ensure that the CYUSBHX3 vendor driver is bound before invoking the HX3 Blaster Plus tool.
Configurations set using the HX3 Blaster Plus tool are not enabled after running the tool.	The configuration mode selection jumpers may not have been set correctly.	Ensure that the hardware is configured for custom firmware mode using the configuration mode selection jumpers. Ensure that the configuration mode selection jumpers are fitted tightly. Restart the hardware either by power cycling the hardware or by pressing the reset switch (SW1) after setting the configuration mode selection jumpers.
Installation of the CYUSBHX3 driver that is required to run the HX3 Blaster Plus tool fails with a "code 10" error.	The USB 3.0 host controller on the PC may not be compatible with the CYUSBHX3 driver (for example, ASMedia USB 3.0 host controller based PC).	Try installing the CYUSBHX3 driver on another PC with a different USB 3.0 host controller (such as Intel or Renesas).
After configuring the kit using the HX3 Blaster Plus tool, the enumeration of the hardware fails.	During configuration using the HX3 Blaster Plus tool, DCP may have been enabled on all the downstream ports. When DCP is enabled, a downstream port will work only as a charging port.	Configure the hardware to use ROM firmware. Invoke the HX3 Blaster Plus tool and disable DCP on the required downstream ports using the HX3 Blaster Plus tool. Configure the hardware to use custom firmware
	During configuration using the HX3 Blaster Plus tool, a setting incompatible with to the hardware may have been enabled.	Configure the hardware to use ROM firmware. Invoke the HX3 Blaster Plus tool, erase the EEPROM, and configure new settings. Configure the hardware to use custom firmware
Unable to install CYUSBHX3 driver on Windows XP after changing the USB 2.0 PID using the HX3 Blaster Plus tool.	The new USB 2.0 PID value set may not be supported by the CYUSBHX3 driver on Windows XP.	Configure the hardware to use ROM firmware. Invoke the HX3 Blaster Plus tool and restore USB 2.0 PID to the default value.
The HX3 Blaster Plus tool does not list the HX3 board after the configuration settings are modified.	The change in configuration settings may have caused the CYUSBHX3 vendor driver binding to be lost.	Rebind the CYUSBHX3 vendor driver using the procedure described in Install CYUSBHX3 Vendor Driver on a PC.

Revision History

Document Revision History

Document Title: HX3 Blaster Plus User Guide Document Number: 001-90185			
Revision	**Issue Date**	**Origin of Change**	**Description of Change**
**	02/25/2014	SELV	Initial version.
*A	05/05/2014	SELV	Updates for CY4613 DVK.
*B	07/10/2014	SELV	Updates to revised Blaster Plus GUI interface. Added details about generating HX3 I2C Slave Mode File.
*C	12/05/2014	PRJI	Updated to Rev *C silicon.
*D	09/21/2017	VOM and SELV	Added details about the 'Generate HX3 Firmware + Configuration Settings File' feature. Also updated the template and screenshots Added description for Save/Load Settings and Backup EEPROM/Restore from Backup features