



Cypress HX2VL Configuration Utility Blaster User Guide

Spec. # 001- Rev. **

Cypress Semiconductor
198 Champion Court
San Jose, CA 95134-1709
Phone (USA): 800.858.1810
Phone (Intl): 408.943.2600
<http://www.cypress.com>

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Contents



1. Getting Started	5
1.1 Purpose	5
1.2 Components	7
1.3 Supported Platforms	8
1.4 Installation	8
1.5 Introduction	9
1.6 User Interface	9
1.7 Auto-programming	9
1.8 Manufacturing Driver	9
1.9 Document Revision History	10
1.10 Documentation Conventions	10

1. Getting Started



1.1 Purpose

The purpose of this document is to assist in the use of the Cypress HX2VL Configuration Utility Blaster. The software described in this document is specifically for use with Cypress HX2VL-based products.

1.2 Components

The software consists of the executable utility (*Blaster.exe*), manufacturing driver (*CYUSB.sys* and *CYUSB.inf*) and user's guide (this file).

1.3 Supported Platforms

The Cypress HX2VL Configuration Utility has been tested and is supported on Windows XP and Windows 2000 Professional.

1.4 Installation

The utility may be installed locally by copying the entire software directory to the desired location on the host PC. Once copied, the directory may be renamed.

1.5 Introduction

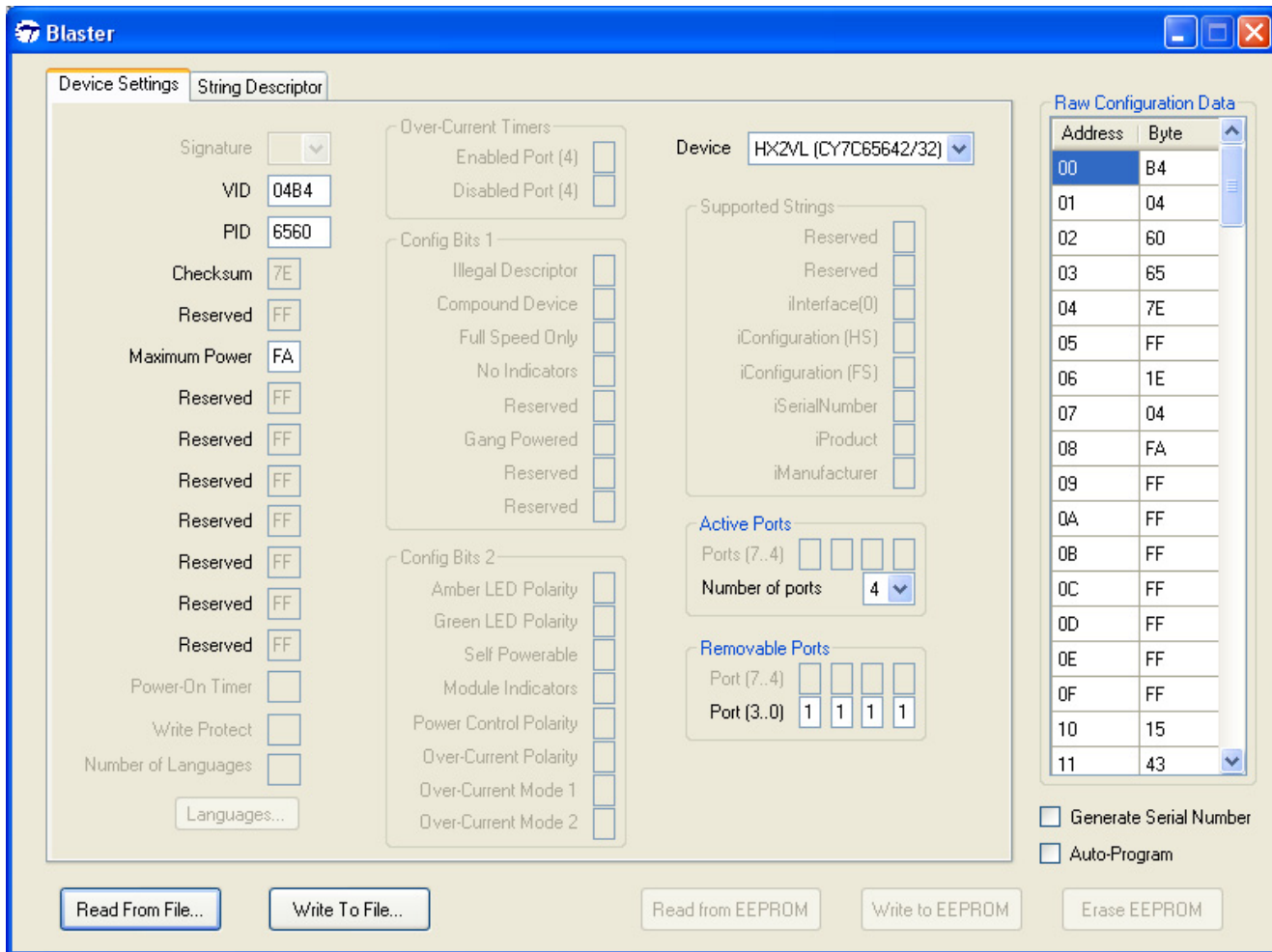
The Cypress HX2VL uses 16 bytes of configuration settings, which define how the part interacts with the attached USB device(s) and the USB host. The HX2VL also uses a standard set of USB string descriptors to provide information about the product to the USB host. The HX2VL contains default configuration settings in its internal ROM. Circuit designs using the Cypress HX2VL may store the configuration settings and USB string descriptors externally on a I²C or SPI EEPROM.

HX2VL supports field-programming of the I²C EEPROM connected to it. The Cypress HX2VL Configuration Utility Blaster is used to edit the configuration settings and USB descriptors for the HX2VL stored in the I²C EEPROM. The configuration settings and USB string descriptors can be stored in a HX2VL config (.iic) file on the PC, or the utility can work directly with settings and descriptors from the I²C EEPROM of a USB-attached HX2VL-based hub.

The utility is intended to give developers an opportunity to develop an optimal set of HX2VL configuration settings and USB string descriptors by experimenting with those settings and descriptors on their product. Once an optimal configuration is developed, it can be used with the utility for mass production.

1.6 User Interface

The user interface of the utility is shown with a valid HX2VL configuration (HX2VL.iic) loaded in the image below



Blaster

Device Settings | String Descriptor

Signature: VID: PID: Checksum: Reserved: Maximum Power: Reserved: Reserved: Reserved: Reserved: Reserved: Reserved: Reserved: Power-On Timer: ☐ Write Protect: ☐ Number of Languages: Languages:...

Over-Current Timers: Enabled Port (4): ☐ Disabled Port (4): ☐

Config Bits 1: Illegal Descriptor: ☐ Compound Device: ☐ Full Speed Only: ☐ No Indicators: ☐ Reserved: ☐ Gang Powered: ☐ Reserved: ☐ Reserved: ☐

Config Bits 2: Amber LED Polarity: ☐ Green LED Polarity: ☐ Self Powerable: ☐ Module Indicators: ☐ Power Control Polarity: ☐ Over-Current Polarity: ☐ Over-Current Mode 1: ☐ Over-Current Mode 2: ☐

Device: Supported Strings: Reserved: ☐ Reserved: ☐ iInterface(0): ☐ iConfiguration (HS): ☐ iConfiguration (FS): ☐ iSerialNumber: ☐ iProduct: ☐ iManufacturer: ☐

Active Ports: Ports (7..4): ☐ ☐ ☐ ☐ Number of ports:

Removable Ports: Port (7..4): ☐ ☐ ☐ ☐ Port (3..0):

Raw Configuration Data

Address	Byte
00	B4
01	04
02	60
03	65
04	7E
05	FF
06	1E
07	04
08	FA
09	FF
0A	FF
0B	FF
0C	FF
0D	FF
0E	FF
0F	FF
10	15
11	43

☐ Generate Serial Number ☐ Auto-Program

Read From File... Write To File... Read from EEPROM Write to EEPROM Erase EEPROM

Configuration settings can be stored in a file on the PC. The **Read From File...** button at the bottom-left of the window opens a file browser and allows the user to select a HX2VL config (.iic) file to load. The **Write To File...** button at the bottom-right of the window opens a file browser and allows the user to save the HX2VL config (.iic) file.

Alternatively, the utility can work with configuration settings directly from a USB-attached HX2VL part. The **Write to EEPROM** button writes the current configuration to the I²C EEPROM of an attached HX2VL part. The **Read from EEPROM** button reads the configuration settings from the I²C EEPROM of an attached HX2VL part and updates the settings shown with the configuration read. The **Erase EEPROM** button erases the configuration data stored in the I²C EEPROM of an attached HX2VL.

The title bar of the utility displays the VID, PID and friendly name (name assigned to the device in the inf file) of the target device. This can be used to identify the target device.

The **Auto-program** checkbox enables Auto-programming mode which enables the utility to be used for manufacturing environment. The **Generate Serial Number** checkbox is used to enable auto generation of unique serial number in Auto-programming mode. It also generates unique serial

number everytime write to EEPROM or write to file is performed using **Write to EEPROM** or **Write To File...** respectively. This serial number is generated using the Computer's clock and has a uniqueness window of 24 hours.

The table on the right side of the window displays the configuration settings and USB descriptors in a raw format (as they are stored). The contents of this table can be edited and provide a way for advanced developers to edit settings.

The tabbed area at the top-left of the window provides a parsed display of the configuration settings and USB string descriptors. The definitions of the configuration settings fields on the Device Settings tab can be found in the Cypress HX2VL data sheet.

1.7 Auto-programming

Checking the **Auto-program** checkbox enables the auto-programming mode. First the user loads a valid configuration data then when a device is plugged in the utility programs the configuration data to the target device. Note that the utility assumes only one device is connected at a time so the target device will be device 0 (first device in the list of devices connected to CyUSB.sys).

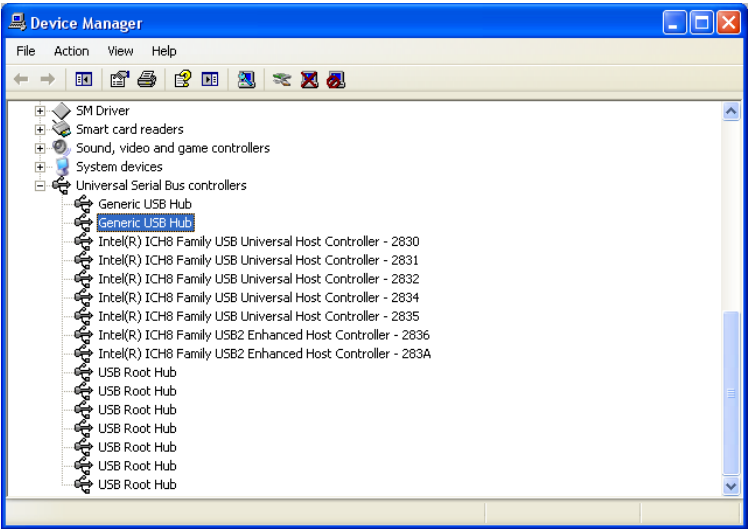
The status of the programming is indicated by the backcolor of the **Auto-program** checkbox. It changes to Green to indicate success and to Red to indicate failure.

1.8 Manufacturing Driver

The Cypress HX2VL Configuration Utility Blaster requires a special device driver in order to upload from and download to HX2VL-based devices. The driver consists of two parts: the device driver (*CYUSB.sys*) and the driver information file (*CYUSB.inf*). Both files are located in the Drivers directory, which can be found in the same directory as the *Blaster.exe* application file.

The driver information file (*CYUSB.inf*) informs the Windows Plug and Play Manager which devices the driver supports. As provided, the driver supports unconfigured HX2VL-based devices. However, if the user will be reprogramming devices that have already been programmed with a different Vendor ID and Product ID combination, the driver information file must be modified so that the driver matches the new VID/PID. The driver information file can be edited in any plain text editor (such as Notepad) to add support for a new VID/PID. Comments are included in the driver information file indicating where to add new entries to enable support for a new VID/PID.

Windows may automatically attempt to use a built-in driver for a device that has already been programmed. As a result, it may be necessary for the user to specify that the Cypress Manufacturing driver should be used. The process for doing this varies depending upon the version of Windows being used.



Windows 2000 and XP use different Windows driver for a HX2VL, and the user needs to specify to Windows that the Cypress Manufacturing Driver should be used instead. This is done from the Device Manager, which is shown in the image on the left.

To access the Device Manager, right-click on **My Computer** and select **Properties**, then click **Device Manager** under the Hardware. In the Device Manager, the Cypress HX2VL-based hub can found under the

heading Universal Serial Bus Controllers, and it will be called Generic USB Hub. By right-clicking on the device and selecting Properties, then clicking Update Driver under the Driver tab, the user can specify which driver to use with the device. Click **Next** at the Update Driver Wizard start screen; after that, the process varies depending upon the version of Windows being used.

1.9 Document Revision History

Table 1-1. Revision History

Revision	PDF Creation Date	Origin of Change	Description of Change
**		AASI	New user guide for Blaster utility

1.10 Documentation Conventions

Table 1-2. Document Conventions for Guides

Convention	Usage
Bold	Displays commands, menu paths, and button names in procedures: Click the File icon and then click Open .