



Protouch2 Release Notes


<div>  <div> MICROCHIP Microchip Technology, Inc. </div> </div> <div> Microchip Technology, Incorporated 2355 W. Chandler Boulevard Chandler, Arizona 85224 480/792-7416 </div>			
REV	DATE	ORIGINATOR	DESCRIPTION OF CHANGE
0.2	9/2/2014	Vishnu P	Initial version
0.3	9/26/2014	Vishnu P	DLL is newly added to this release
0.4	10/15/2014	Vishnu P	Changes from version 0.3
0.5	11/17/2014	Vishnu P	Changes from version 0.4
0.6	11/26/2014	Vishnu P	Changes from version 0.5
0.9	23/12/2014	Vishnu P	Changes from version 0.6 to 0.9
1.2	04/20/2015	Riyas K	Changes from version 1.0 to 1.2
1.3	04/30/2015	Vishnu P	Changes from version 1.2 to 1.3
1.4	05/14/2015	Vishnu P	Changes from version 1.3 to 1.4
1.41	06/16/2015	Vishnu P	Changes from version 1.4 to 1.41
1.44	08/06/2015	Vishnu P	Changes from version 1.41 to 1.44
1.5	08/20/2015	Vishnu P	Changes from version 1.44 to 1.5
1.54	09/23/2015	PrasannaV	Changes from version 1.5 to 1.54
1.55	10/01/2015	Karpagam A	Changes from version 1.54 to 1.55
1.6	4/8/2016	Karpagam A	Changes from version 1.5 to 1.6
1.7	09/09/2016	Rathika K	Changes from version 1.6 to 1.7
1.8	09/30/2016	Karpagam A	Changes from version 1.7 to 1.8

Table of Contents

1	Introduction.....	8
2	Legal Information	8
3	OS supported.....	9
4	USB Controllers supported.....	9
5	Supported SKU List.....	9
5.1	CLI/DLL.....	9
5.1.1	USB 2.0 Hub.....	9
5.1.2	USB 3.0 Hub.....	9
5.1.3	USB to Ethernet Controller.....	10
5.2	GUI.....	10
5.2.1	USB 2.0 Hub.....	10
5.2.2	USB 3.0 Hub.....	10
5.2.3	USB to Ethernet Controller.....	10
6	Protouch2 Components.....	11
7	Package Content.....	11
7.1	Drivers.....	11
7.2	CLI	11
7.3	DLL	11
7.4	GUI.....	12
7.5	Sample CFG.....	12
8	Release History	13
8.1	Version 1.8	13
8.1.1	Command Line Interface (CLI)	13
8.1.1.1	Changes	13
8.1.1.2	Feature Addition	13
8.1.1.3	Known limitations	13
8.1.2	DLL.....	13
8.1.2.1	Changes	13
8.1.2.2	Feature Addition	13
8.1.2.3	Known limitations	13
8.1.3	Graphical User Interface (GUI)	13
8.1.3.1	Changes	13
8.1.3.2	Feature Addition	13
8.1.3.3	Bug Fix	13
8.1.3.4	Known limitations	13
8.1.4	Known limitations for CLI, DLL, GUI.....	14
8.2	Version 1.7	15
8.2.1	Command Line Interface (CLI)	15
8.2.1.1	Changes	15
8.2.1.2	Feature Addition	15
8.2.1.3	Known limitations	15
8.2.2	DLL.....	15
8.2.2.1	Changes	15

8.2.2.2	Feature Addition	15
8.2.2.3	Known limitations	15
8.2.3	Graphical User Interface (GUI)	16
8.2.3.1	Changes	16
8.2.3.2	Feature Addition	16
8.2.3.3	Bug Fix	16
8.2.3.4	Known limitations	16
8.3	Version 1.6	17
8.3.1	Command Line Interface (CLI)	17
8.3.1.1	Changes	17
8.3.1.2	Feature Addition	17
8.3.1.3	Known limitations	17
8.3.2	DLL	17
8.3.2.1	Changes	17
8.3.2.2	Feature Addition	17
8.3.2.3	Known limitations	18
8.3.3	Graphical User Interface (GUI)	18
8.3.3.1	Changes	18
8.3.3.2	Feature Addition	18
8.3.3.3	Known limitations	18
8.4	Version 1.55	19
8.4.1	Command Line Interface (CLI)	19
8.4.1.1	Changes	19
8.4.1.2	Feature Addition	19
8.4.1.3	Known limitations	19
8.4.2	DLL	19
8.4.2.1	Changes	19
8.4.2.2	Feature Addition	19
8.4.2.3	Known limitations	19
8.1	Version 1.54	20
8.1.1	Command Line Interface (CLI)	20
8.1.1.1	Changes	20
8.1.1.2	Feature Addition	20
8.1.1.3	Known limitations	20
8.2	Version 1.5	20
8.2.1	Command Line Interface (CLI)	20
8.2.1.1	Changes	20
8.2.1.2	Feature Addition	20
8.2.1.3	Known limitations	20
8.2.2	Graphical User Interface (GUI)	21
8.2.2.1	Changes	21
8.2.2.2	Features Addition	21
8.2.2.3	Known limitations	21
8.2.3	DLL	21
8.2.3.1	Changes	21
8.2.3.2	Features Addition	21

8.2.3.3	Known limitations	21
8.3	Version 1.44	22
8.3.1	Command Line Interface (CLI)	22
8.3.1.1	Changes	22
8.3.1.2	Feature Addition	22
8.3.1.3	Known limitations	22
8.3.2	Graphical User Interface (GUI)	22
8.3.2.1	Changes	22
8.3.2.2	Features Addition	22
8.3.2.3	Known limitations	22
8.3.3	DLL.....	23
8.3.3.1	Changes	23
8.3.3.2	Features Addition	23
8.3.3.3	Known limitations	23
8.4	Version 1.41	24
8.4.1	Command Line Interface (CLI)	24
8.4.1.1	Changes	24
8.4.1.2	Feature Addition	24
8.4.1.3	Known limitations	24
8.5	Version 1.4	25
8.5.1	Command Line Interface (CLI)	25
8.5.1.1	Changes	25
8.5.1.2	Feature Addition	25
8.5.1.3	Known limitations	25
8.5.2	Graphical User Interface (GUI)	25
8.5.2.1	Changes	25
8.5.2.2	New Features	25
8.5.2.3	Known Limitations	25
8.5.3	DLL.....	26
8.5.3.1	Changes	26
8.5.3.2	Feature Addition	26
8.5.3.3	Bug Fix	26
8.5.3.4	Known Limitations	26
8.6	Version 1.3	27
8.6.1	Command Line Interface (CLI)	27
8.6.2	Graphical User Interface (GUI)	27
8.6.2.1	Changes	27
8.6.2.2	Features.....	27
8.6.2.3	Known Limitations	27
8.6.3	DLL.....	27
8.7	Version 1.2	28
8.7.1	Command Line Interface (CLI)	28
8.7.1.1	Changes	28
8.7.1.2	Feature Addition	28
8.7.1.3	Known limitations	28
8.8	Version 1.1	29

8.8.1	Command Line Interface (CLI)	29
8.8.1.1	Changes	29
8.8.1.2	Feature Addition	29
8.8.1.3	Bug Fix	29
8.8.1.4	Known limitations	29
8.8.2	DLL	29
8.8.2.1	Changes	29
8.8.2.2	Feature Addition	29
8.8.2.3	Bug Fix	29
8.8.2.4	Known Limitations	29
8.9	Version 1.0	31
8.9.1	Command Line Interface (CLI)	31
8.9.1.1	Changes	31
8.9.1.2	Feature Addition	31
8.9.1.3	Bug Fix	31
8.9.1.4	Known limitations	31
8.10	Version 0.9	32
8.10.1	Command Line Interface (CLI)	32
8.10.1.1	Changes	32
8.10.1.2	Feature Addition	32
8.10.1.3	Bug Fix	32
8.10.1.4	Known limitations	32
8.10.2	Graphical User Interface (GUI)	32
8.10.2.1	Known Limitations	32
8.10.3	DLL	33
8.10.3.1	Changes	33
8.10.3.2	Feature Addition	33
8.10.3.3	Bug Fix	33
8.10.3.4	Known Limitations	33
8.11	Version 0.6	34
8.11.1	Changes in Version 0.6	34
8.11.2	Changes & Bug Fixes in DLL	34
8.11.3	Known Limitations	34
8.12	Version 0.5	35
8.12.1	Changes in Version 0.5	35
8.12.2	Changes & Bug Fixes in DLL	35
8.12.3	Known Limitations	35
8.13	Version 0.4	36
8.13.1	Changes in Version 0.4	36
8.13.2	Changes & Bug Fixes in CLI	36
8.13.3	Changes & Bug Fixes in DLL	36
8.13.4	Known Limitations	36
8.14	Version 0.3	37
8.14.1	Changes in Version 0.3	37
8.14.2	Bug Fixes in DLL	37
8.14.3	Known Limitations	37

8.15	Version 0.2.....	38
8.15.1	Changes in Version 0.2	38
8.15.2	Known Limitations	38
9	Appendix I - SPI flash memory	39
9.1	USB253x/(8)4604/USB57X4.....	39
9.2	USB58XX/USB59XX.....	39

1 Introduction

This document provides release information about different versions of Protouch2 components.

2 Legal Information

Software License Agreement

(c) 2004 - 2016 Microchip Technology Inc.

Microchip licenses this software to you solely for use with Microchip products. The software is owned by Microchip and its

licensors, and is protected under applicable copyright laws. All rights reserved.

SOFTWARE IS PROVIDED "AS IS" MICROCHIP EXPRESSLY DISCLAIMS ANY WARRANTY OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL MICROCHIP BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOST PROFITS OR LOST DATA, HARM TO YOUR EQUIPMENT, COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES, ANY CLAIMS BY THIRD PARTIES (INCLUDING BUT NOT LIMITED TO ANY DEFENSE THEREOF), ANY CLAIMS FOR INDEMNITY OR CONTRIBUTION, OR OTHER SIMILAR COSTS.

To the fullest extent allowed by law, Microchip and its licensors liability shall not exceed the amount of fees, if any, that you have paid directly to Microchip to use this software.

MICROCHIP PROVIDES THIS SOFTWARE CONDITIONALLY UPON YOUR ACCEPTANCE OF THESE TERMS.

Trademark Information

The Microchip name and logo, the Microchip logo, MPLAB, and PIC are registered trademarks of Microchip Technology

Incorporated in the U.S.A. and other countries.

PICDEM and PICtail are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

Microsoft, Windows, Windows Vista, and Authenticode are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

SD is a trademark of the SD Association in the U.S.A and other countries

3 OS supported

- Windows 7 (32 and 64 bit)
- Windows 8 (32 and 64 bit)
- Windows 8.1 (32 and 64 bit)
- Windows 10 (32 and 64 bit)

4 USB Controllers supported

1. EHCI - USB 2.0
2. XHCI - USB 3.0

Note: External PCI USB controllers may not be supported.

5 Supported SKU List

The following devices are supported in this release

5.1 CLI/DLL

5.1.1 USB 2.0 Hub

- USB2532
- USB2533
- USB2534
- USB3503
- USB3613
- USB3803
- USB3813
- USB4604
- USB4624
- USB82512
- USB82513
- USB82514
- USB82640
- USB82642
- USB84604

5.1.2 USB 3.0 Hub

- USB5734
- USB5744
- USB5742
- USB5806
- USB5807
- USB5816
- USB5826
- USB5906

- USB5916
- USB5926

5.1.3 USB to Ethernet Controller

- LAN7800
- LAN7801
- LAN7850

5.2 *GUI*

5.2.1 USB 2.0 Hub

- USB2532
- USB2533
- USB2534
- USB4604
- USB84604
- USB3813
- USB3613

5.2.2 USB 3.0 Hub

- USB5734
- USB5744
- USB5742
- USB5806
- USB5807
- USB5816
- USB5826
- USB5906
- USB5916
- USB5926

5.2.3 USB to Ethernet Controller

- LAN7800
- LAN7801
- LAN7850

6 Protouch2 Components

- Command line programmer – **CLI**
- Graphical User Interface for configuration and programming- **GUI**
- SDK which contains APIs that can be used for custom applications - **DLL**

7 Package Content

The release package contains the following files and directories

7.1 Drivers

- **Drivers/VsmFilter/** - This folder contains the driver files for VSM filter install/uninstall.
- **Drivers/UDC_WINUSB_Driver/** – This folder contains the driver files for WinUSB installation and uninstallation
- **Drivers/ LAN78xxDriver/**- This folder contains the driver file for LAN devices

7.2 CLI

- **Protouch2 CLI User Manual.pdf** – User Manual for the command line tool
- **PT2_CLI/pt2main.exe** - Protouch2 command line executable application
- **PT2_CLI/Protouch2.ini** - Protouch2 command line executable initialisation file
- **PT2_CLI/DisableSPIFlash.bin** – Bin File used for erasing the SPI Flash firmware – Refer to “Protouch2 CLI User Manual.pdf” for more details
- **PT2_CLI/SerialNumberSuppression/** – Contains Batch file used for suppressing new driver load on each Serial number change. Refer to “Protouch2 CLI User Manual.pdf” for more details

7.3 DLL

- **Protouch2 DLL User Guide.pdf** – User Manual for the DLL and its APIs
- **PT2_DLL/APIHeader/**: Contains the header file (supported API list) in this SDK

- **PT2_DLL/APILib/:** Contains the 32 bit and the 64 bit library file that supports the API list in the header file
- **PT2_DLL/APILib/Protouch2.ini** - Protouch2 DLL initialisation file
- **PT2_DLL/SampleApp/:** Contains the Sample Visual Studio project (2010 or later) that demonstrates the usage of the library for programming MCHP hubs.
- **PT2_DLL/SampleApp.exe/:** Sample application executable using this API and library

7.4 GUI

- **Protouch2 GUI User Manual.pdf** - User Manual for the GUI tool
- **PT2_GUI/Protouch2.exe** – Protouch2 GUI executable application
- **PT2_GUI/UI/** – UI and DLL files used by the Protouch2 GUI : For internal use only – Please do not change anything in this folder.
- **PT2_GUI/DefaultBin/** - Default bin files for each SKU
- **PT2_GUI/Protouch2.ini** - Protouch2 GUI initialisation file

7.5 Sample CFG

- Folder contains sample configuration file
 - **Sample CFG\USB5744_HCE_DISABLE.cfg:** This file can be used for disabling the internal HCE device if it is not required for the user.

8 Release History

8.1 *Version 1.8*

GUI, CLI and DLL are available as part of this release.

8.1.1 Command Line Interface (CLI)

8.1.1.1 Changes

- None

8.1.1.2 Feature Addition

- Added USB58XX/USB59XX product support.
- Added option /eel for LAN78XX products to erase EEPROM content

8.1.1.3 Known limitations

- Refer to [Known limitations for CLI, DLL, GUI](#)

8.1.2 DLL

8.1.2.1 Changes

- None

8.1.2.2 Feature Addition

- Added USB58XX/USB59XX product support.

8.1.2.3 Known limitations

- For USB253x/4604 family hubs, MchpI2Csetconfig API supports only 62.5 KHz.
- Refer to [Known limitations for CLI, DLL, GUI](#)

8.1.3 Graphical User Interface (GUI)

8.1.3.1 Changes

None

8.1.3.2 Feature Addition

- Added USB58XX/USB59XX product support.

8.1.3.3 Bug Fix

- None

8.1.3.4 Known limitations

- Unicode characters are not supported for String widgets.

- LAN78XX online page fields will not be populated, if OTP and EEPROM has no valid content.
- Refer to [Known limitations for CLI, DLL, GUI](#)

8.1.4 Known limitations for CLI, DLL, GUI

- The tool supports programming of only one Microchip device at a time.
- EEPROM with size 256 byte may not work for LAN78XX products.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool for LAN78XX and HFC disabled USB hub products.
- **The LAN78xx driver is not supported for other than Microchip vendor id and product id.**
- MCHP Device has to be connected before launching the application.
- If the MCHP device(USB Hub) is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HFC device is disabled**)

8.2 *Version 1.7*

GUI, CLI and DLL are available as part of this release.

8.2.1 Command Line Interface (CLI)

8.2.1.1 Changes

None

8.2.1.2 Feature Addition

- Added LAN78XX product support.
- Added USB3813 and USB3613 product support.

8.2.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- EEPROM with size 256 byte may not work for LAN78XX products.
- .JSON file should not be used with the commands /pspi and /p.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool for LAN78XX and HFC disabled USB hub products.
- **The LAN78xx driver is not supported for other than Microchip vendor id and product id.**
- MCHP Device has to be connected before launching the application.
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device(USB Hub) is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HFC device is disabled**)

8.2.2 DLL

8.2.2.1 Changes

None

8.2.2.2 Feature Addition

- Added LAN78XX product support.
- Added new MchpProgramSPIFirmwareWithConfigBuffer API for USB Hub products.
- Added USB3813 and USB3613 product support.

8.2.2.3 Known limitations

- Admin privilege is required for running the DLL. If a custom application is built which uses the DLL, then admin privilege is required for running the custom application.

- EEPROM with size 256 byte may not work for LAN78XX products.
- .JSON file should not be used for programming other than MchpProgramFile API.
- For USB253x/4604 family hubs, MchpI2Csetconfig API supports only 62.5 KHz.
- **The LAN78xx driver is not supported for other than Microchip vendor id and product id.**
- For USB57x4 family hubs, SPI programming support is not added for SST26VF016B and SST26VF032B parts.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.2.3 Graphical User Interface (GUI)

8.2.3.1 Changes

None

8.2.3.2 Feature Addition

- LAN78XX product support is added in this revision.
- USB3813 and USB3613 product support added in this revision.

8.2.3.3 Bug Fix

None

8.2.3.4 Known limitations

- Unicode characters are not supported for String widgets.
- EEPROM with size 256 byte may not work for LAN78XX products.
- LAN78XX online page fields will not be populated, if OTP and EEPROM has no valid content.
- **The LAN78xx driver is not supported for other than Microchip vendor id and product id.**
- Configuration programming with .json file as an input should not be along with firmware programming.

8.3 Version 1.6

GUI, CLI and DLL are available as part of this release.

8.3.1 Command Line Interface (CLI)

8.3.1.1 Changes

- Programming time has been optimized to achieve higher performance.
- Configuration program count will be updated properly.

8.3.1.2 Feature Addition

- For USB253x/4604 family hubs, SPI programming support is added for SST26VF016B and SST26VF032B parts.
- Devices can be selected using port chain method while programming (/devpath command).
- Logging levels can be controlled using the commands s0, s1 and s2.

8.3.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- For USB57x4 family hubs, SPI programming support is not added for SST26VF016B and SST26VF032B parts.
- .JSON file should not be used with the commands /pspi and /p
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.3.2 DLL

8.3.2.1 Changes

- By default, logging in PT2.log file is disabled. To enable logging in PT2.log file, MchpEnableLogging API must be called.
- Programming time has been optimized to achieve higher performance.
- Configuration program count will be updated properly.

8.3.2.2 Feature Addition

- The following new API's are added
 1. MchpUsbUartReadTimeOut
 2. MchpUsbGetAllHubsPortChainInfo
 3. MchpGetHubIndex

4. MchpGetHubPortChain

- For USB253x/4604 family hubs, SPI programming support is added for SST26VF016B and SST26VF032B parts.
- Devices can be selected using port chain method using MchpGetHubPortChain and MchpGetHubIndex API's.

8.3.2.3 Known limitations

- Admin privilege is required for running the DLL. If a custom application is built which uses the DLL, then admin privilege is required for running the custom application.
- .JSON file should not be used for programming other than MchpProgramFile API.
- For USB253x/4604 family hubs, MchpI2Csetconfig API supports only 62.5 KHz.
- For USB57x4 family hubs, SPI programming support is not added for SST26VF016B and SST26VF032B parts.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.3.3 Graphical User Interface (GUI)

8.3.3.1 Changes

- PHY Boost setting is updated based on the registers mentioned in the Datasheet.
- Configuration program count will be updated properly.

8.3.3.2 Feature Addition

- Added USB-SPI bridging, USB-I2C bridging, USB-GPIO bridging and USB-UART bridging in the Special Features tab
- Added "Flex Connect Demo" in Advanced Features.
- Added the field "USB 3.1 Gen1 bcdUSB" under the "Device Identification USB 3.1 Gen 1".

8.3.3.3 Known limitations

- Unicode characters are not supported for String widgets.
- For USB57x4 family hubs, SPI programming support is not added for SST26VF016B and SST26VF032B parts.
- Configuration programming with .json file as an input should not be along with firmware programming.

8.4 Version 1.55

CLI and DLL are available as part of this release.

8.4.1 Command Line Interface (CLI)

8.4.1.1 Changes

- None

8.4.1.2 Feature Addition

- Configuration file and Serial number can be programmed with SPI Firmware File

8.4.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.4.2 DLL

8.4.2.1 Changes

- None

8.4.2.2 Feature Addition

- Configuration file and Serial number can be programmed with SPI Firmware File

8.4.2.3 Known limitations

- Admin privilege is required for running the DLL. If a custom application is built which uses the DLL, then admin privilege is required for running the custom application.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.1 *Version 1.54*

Only CLI is available as part of this release.

8.1.1 Command Line Interface (CLI)

8.1.1.1 Changes

- None

8.1.1.2 Feature Addition

- Hub scanning based on port chain method is added.
- Added command (/lp) to list the hubs with port chain information.
- Alignment changes are done for the device tree view in CLI (/l and /p).
- Hub controller driver version is upgraded to 1.0.0.5 to support the product ID 0x274C.

8.1.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.2 *Version 1.5*

8.2.1 Command Line Interface (CLI)

8.2.1.1 Changes

- None

8.2.1.2 Feature Addition

- None

8.2.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.

- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.2.2 Graphical User Interface (GUI)

8.2.2.1 Changes

- None

8.2.2.2 Features Addition

- None

8.2.2.3 Known limitations

- SPI with Pseudo OTP memory dump will fail for USB2530 SKU.
- Tool does not wait for loading driver after changing either Vendor id, Product id or serial number of the hub
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.2.3 DLL

8.2.3.1 Changes

- None

8.2.3.2 Features Addition

- None

8.2.3.3 Known limitations

- Admin privilege is required for running the DLL. If a custom application is built which uses the DLL, then admin privilege is required for running the custom application.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.3 *Version 1.44*

8.3.1 Command Line Interface (CLI)

8.3.1.1 Changes

- None

8.3.1.2 Feature Addition

- None

8.3.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.3.2 Graphical User Interface (GUI)

8.3.2.1 Changes

- Strap manipulation support is removed from offline page.
- Restore factory Default is done based on default configurations for USB2530 SKU.
- Tool does not allow disabling all the Ports.

8.3.2.2 Features Addition

- Added support for USB2530 family

8.3.2.3 Known limitations

- Tool user interface will change based on computer screen resolution.
- SPI with Pseudo OTP memory dump will fail for USB2530 SKU.
- USB2530 SKU SPI memory dump will lead tool crash.
- High speed rise/fall Dropdown will expand when selected.
- Restore factory default will not work for USB2534-1050 SKU.
- Simultaneous access to USB57XX and USB2530 is not supported.
- Confirmation box will show dependant widgets list in the offline configuration page.

- Tool does not wait for loading driver after changing either Vendor id, Product id or serial number of the hub
- Tool supports programming/configuration of only one Microchip device at a time.
- Tool did not allow to program firmware with configuration for “USB57X4” SKU when program page is loaded from USB2530 SKU.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)
- Appropriate GUI section is not mentioned in the tool tip for HCE VID and PID.
- "Enable CDC" widget will not highlight when changes detected in the widget value in “USB57X4” SKU.
- For USB2530 SKU, Flex connect cannot be demonstrated if it boots up from ROM. Currently, Flex connect is disabled when the USB2530 hub boots up from ROM. An additional hover on message specifying this condition must be added.

8.3.3 DLL

8.3.3.1 Changes

- Separate sample code added for each bridging

8.3.3.2 Features Addition

- None

8.3.3.3 Known limitations

- Device handle was not closed by the DLL which is opened through MchpUsbHCEOpen API.
- Admin privilege is required for running the DLL. It can be achieved through if the custom application uses the DLL, then the admin privilege is required for the custom application.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.4 *Version 1.41*

8.4.1 Command Line Interface (CLI)

Only CLI is available as part of this release.

8.4.1.1 Changes

- Added support to program SST26 family SPI flash devices.
- VSM filter driver will be installed based on Vendor ID and Product ID of the hub.

8.4.1.2 Feature Addition

- Added support to program the serial number using /pser command along with Manufacturer or Product string configuration data in input .cfg file for USB57X4 family.

8.4.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.5 *Version 1.4*

8.5.1 Command Line Interface (CLI)

8.5.1.1 Changes

- None

8.5.1.2 Feature Addition

- None

8.5.1.3 Known limitations

- The user should not program the serial number using /pser command along with Manufacturer or Product string configuration data in input .cfg file for USB57X4 family. This will be fixed in the next release.
- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.5.2 Graphical User Interface (GUI)

8.5.2.1 Changes

- None

8.5.2.2 New Features

- Strap manipulation support is added for offline page.

8.5.2.3 Known Limitations

- The tool user interface appearance will change based on computer screen resolution.
- ProgressBar gets stuck when operation is in progress.
- The tool supports programming/configuration of only one Microchip device at a time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.5.3 DLL

8.5.3.1 Changes

- None

8.5.3.2 Feature Addition

- New API MchpProgramSPIFirmwareWithConfig is added.

8.5.3.3 Bug Fix

- None

8.5.3.4 Known Limitations

- Admin privilege is required for running the DLL. If a custom application uses the DLL, then admin privilege is required for running the custom application.
- **If the internal HCE device is disabled , then please read the following.If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.6 *Version 1.3*

8.6.1 Command Line Interface (CLI)

No changes in CLI from V 1.2

8.6.2 Graphical User Interface (GUI)

8.6.2.1 Changes

- "Compound Device" widget cannot be disabled since the HCE device is available. Hence it is removed from the GUI.
- Hub Max Power for Hub 3.0 can be programmed through "Hub Max Power (Self)" and "Hub Max Power (Bus)" widgets.

8.6.2.2 Features

- Offline support is added in this revision of the GUI.
- Direct register access and Dump memory are added

8.6.2.3 Known Limitations

- String fields accept special characters. But after programming OTP gets corrupted. So we should not enter special characters while programming strings fields. This will be fixed in next release.
- The tool supports programming/configuration of only one Microchip device at a time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.6.3 DLL

No changes in DLL from V 1.1

8.7 *Version 1.2*

8.7.1 Command Line Interface (CLI)

Only CLI is available as part of this release.

8.7.1.1 Changes

- None

8.7.1.2 Feature Addition

- Added support for locking OTP memory area after programming USB57X4 family of hubs.

8.7.1.3 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep (**Only if the internal HCE device is disabled**)

8.8 *Version 1.1*

8.8.1 Command Line Interface (CLI)

8.8.1.1 Changes

1. /p option accepts only .cfg or .json file type as an input

8.8.1.2 Feature Addition

- OTP Dump file extension is “.dump”
- Programming SPI flash with config (Pseudo-OTP) memory and firmware simultaneously.
- Reading SPI flash with config (Pseudo-OTP) memory and firmware simultaneously.

8.8.1.3 Bug Fix

None

8.8.1.4 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep**

8.8.2 DLL

8.8.2.1 Changes

Code changes required for new revision of the chip

8.8.2.2 Feature Addition

- None

8.8.2.3 Bug Fix

- None

8.8.2.4 Known Limitations

- Admin privilege is required for running the DLL. It can be achieved through if the custom application uses the DLL, then the admin privilege is required for the custom application.

- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.9 Version 1.0

8.9.1 Command Line Interface (CLI)

8.9.1.1 Changes

- Only the CLI has been updated to V 1.0

8.9.1.2 Feature Addition

- None

8.9.1.3 Bug Fix

- Bug fix in finding Number of Downstream ports based on SKU

8.9.1.4 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.10 Version 0.9

The initial rev of the GUI has been added in this release. Incremental changes have been done to the CLI and DLL as mentioned below.

8.10.1 Command Line Interface (CLI)

8.10.1.1 Changes

- Added support for verification of hub configuration parameters like VID, PID & Strings
- Log file name is renamed to PT2.log from Protouch2log.log.
- INI file name is renamed to Protouch2.ini from ShowHubsVIDList.ini.

8.10.1.2 Feature Addition

- The internal HCE device VID and PID can be changed

8.10.1.3 Bug Fix

- Bug fix in Programming SPI Firmware

8.10.1.4 Known limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.10.2 Graphical User Interface (GUI)

This is the initial rev of the GUI.

8.10.2.1 Known Limitations

- The tool supports programming/configuration of only one Microchip device at a time.
- The “Special Features” tab is not implemented except for FlexConnect.
- Offline support is not available. The device must be connected to the PC on which the tool is running for generating the configuration file. This will be fixed in the next release.
- "Compound Device" widget cannot be disabled in this revision. This will be addressed in next release.
- Hub Max Power for Hub 3.0 will not get program through "Hub Max Power (Self)" and "Hub Max Power (Bus)" widgets. This will be addressed in next release.

- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.10.3 DLL

8.10.3.1 Changes

- Log file name is renamed to PT2.log from Protouch2log.log.
- INI file name is renamed to Protouch2.ini from ShowHubsVIDList.ini.

8.10.3.2 Feature Addition

- New Low level API's are added to access the OTP and SPI memory.

8.10.3.3 Bug Fix

- None

8.10.3.4 Known Limitations

- Admin privilege is required for running the DLL. It can be achieved through if the custom application uses the DLL, then the admin privilege is required for the custom application.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.11 Version 0.6

8.11.1 Changes in Version 0.6

Only the DLL has been updated to V 0.6. The CLI in this release is still at V0.4 – Please refer to Section 8.3 for details on the CLI.

8.11.2 Changes & Bug Fixes in DLL

- Following new API's have been added to the DLL.
 - MchpUsbGpioGet
 - MchpUsbGpioSet
 - MchpUsbI2CSetConfig
 - MchpUsbI2CRead
 - MchpUsbI2CWrite
 - MchpUsbI2CTransfer
 - MchpUsbOpenID
- bVSMInstall and iRestartDelay arguments are removed from **MchpUsbOpen** API. Those flags should be configured in the ShowHubsVIDList.ini file.
- Argument pchInputFileName of MchpProgramFileWithSerial API has been made as optional.
- Argument of MchpUsbGetLastError has been changed to "HANDLE" from hub_index.

8.11.3 Known Limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **"Run as administrator"** needs to be done for running the tool.
- GUI is not available. Only command line version is available.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- The internal HCE device VID and PID should not be changed.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.12 Version 0.5

8.12.1 Changes in Version 0.5

Only the DLL has been updated to V 0.5. The CLI in this release is still at V0.4 – Please refer to Section 8.2 for details on the CLI.

8.12.2 Changes & Bug Fixes in DLL

- None

8.12.3 Known Limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- GUI is not available. Only command line version is available.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- The internal HCE device VID and PID should not be changed.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.13 Version 0.4

8.13.1 Changes in Version 0.4

Both CLI and DLL have been updated to 0.4 in this release.

8.13.2 Changes & Bug Fixes in CLI

- Hub index selection was not available if several MCHP hubs are connected. This is fixed in this release.
- The tool assumed that only one Microchip hub is present in the system and programs the Hub at index 0. This is fixed in this release by having a tree view and hub index that needs to be provided for identifying the device that has to be programmed.
- Added support to verify hub configuration parameters like VID, PID & Strings.
- Device specific VSM driver will be installed only if “/iv” command line argument is present.
- Serial number programming support is added.
- All command formats are changed to short formats like beginning with “/”.
- Added support to read the SPI Flash.

8.13.3 Changes & Bug Fixes in DLL

- MchpUsbGetAllHubs API is modified to find out the tree view and hub index that needs to be provided for identifying the device that has to be programmed.
- MchpVerifyWidgetValues API is added to verify hub configuration parameters.

8.13.4 Known Limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- GUI is not available. Only command line version is available.
- Hub has to be connected before launching the application
- Only 1 configuration file can be programmed on each device at one time.
- The internal HCE device VID and PID should not be changed.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep, please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**

8.14 Version 0.3

8.14.1 Changes in Version 0.3

Only the DLL has been updated to V 0.3. The CLI in this release is still at V0.2 – Please refer to Section 8.2 for details on the CLI.

8.14.2 Bug Fixes in DLL

- Hub index selection was not available if several MCHP hubs are connected. This is fixed in this release.
- The tool assumed that only one Microchip hub is present in the system and programs the Hub at index 0. This is fixed in this release by having a tree view and hub index that needs to be provided for identifying the device that has to be programmed.

8.14.3 Known Limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- GUI is not available. Only command line version is available.
- Hub has to be connected before launching the application
- Verification of parameters like VID, PID has not been added yet. Only DID verification after programming is supported
- Only 1 configuration file can be programmed on each device at one time.
- The internal HCE device VID and PID should not be changed.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller or the controller which supports hub to sleep , please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep.**
- MCHP Hub should be disconnected when installing and uninstalling winusb driver. This will be addressed in the next release.
- DLL API will be added to find out the tree view and hub index that needs to be provided for identifying the device that has to be programmed.

8.15 Version 0.2

8.15.1 Changes in Version 0.2

- CLI: Alpha release for PT2 programming support.

8.15.2 Known Limitations

- The tool supports programming of only one Microchip device at a time.
- Admin privilege is required for running the tool. **“Run as administrator”** needs to be done for running the tool.
- GUI is not available. Only command line version is available.
- Hub has to be connected before launching the application
- Verification of parameters like VID, PID has not been added yet. Only DID verification after programming is supported
- Only 1 configuration file can be programmed on each device at one time.
- If the VID of the device is changed in the config file , then after programming device will be reset , the hub may not be at index 0 ; if –verify option is provided then that command will fail. This will be addressed in the next release.
- The internal UCH device VID and PID should not be changed.
- **If the MCHP device is connected to a XHCI - USB 3.0 controller , please connect a pen drive to the MCHP hub to avoid the controller from putting the hub to sleep**
- MCHP Hub should be disconnected when installing and uninstalling winusb driver. This will be addressed in the next release.
- Hub index selection is not available if several MCHP hubs are connected. This will be addressed in the next release.
- The tool assumes that only one Microchip hub is present in the system and programs the Hub at index 0. This will be addressed in the next release by having a tree view and hub index that needs to be provided for identifying the device that has to be programmed.

9 Appendix I - SPI flash memory

Following are the tested SPI flash memories with different family of Microchip hubs.

9.1 *USB253x/(8)4604/USB57X4*

- SST26F016B
- SST26F032B
- SST26VF064B
- SST25VF064C
- SST25VF040C
- SST25VF040B
- SST25VF020B
- SST25VF010A
- SST25VF080B

9.2 *USB58XX/USB59XX*

- SST26VF064B
- SST25VF064C

The other SPI flash may work with Microchip hubs.