



Future Technology Devices International Ltd.

Technical Note TN_100

USB Vendor ID / Product ID

Guidelines

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There are identification and certification options when designing a USB peripheral with FTDI chips. Choices are FTDI default Vendor ID and Product ID, FTDI Vendor ID with FTDI-assigned Product ID and USB-Implementers Forum assigned Vendor ID with OEM-assigned Product ID. This document outlines these options and identifies requirements for obtaining various certifications.

Use of FTDI devices in life support and/or safety applications is entirely at the user's risk, and the user agrees to defend, indemnify and hold harmless FTDI from any and all damages, claims, suits or expense resulting from such use.

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Table of Contents

1	Introduction	2
1.1	Overview	2
1.2	Scope	2
2	USB Identification Background	3
3	USB Identification Choices	4
3.1	FTDI Default Vendor ID, FTDI Default Product ID	4
3.2	FTDI Default Vendor ID, FTDI Assigned Product ID	5
3.3	USB-IF Assigned Vendor ID, OEM Assigned Product ID	6
4	Assignment of PIDs for a Device	7
5	Summary	8
6	Contact Information	9
Appendix A - References, Keywords, Acronyms and Abbreviations		10
Appendix B - Revision History		11

1 Introduction

1.1 Overview

There are several identification and certification options when designing a USB peripheral with FTDI chips. This document outlines these options and identifies requirements for obtaining various certifications.

1.2 Scope

The options outlined in this document cover all the USB Client chips from FTDI, and the Vinculum VNC1L as a USB Client when configured with VDPS firmware. This document will also aid in making design and marketing decisions with respect to time-to-market and industry standard certifications.

2 USB Identification Background

As stated on the USB Implementers Forum web site (www.usb.org):

“USB Implementers Forum, Inc. is a non-profit corporation founded by the group of companies that developed the Universal Serial Bus specification. The USB-IF was formed to provide a support organization and forum for the advancement and adoption of Universal Serial Bus technology. The Forum facilitates the development of high-quality compatible USB peripherals (devices), and promotes the benefits of USB and the quality of products that have passed compliance testing. Some of the many activities that the USB-IF supports include:

- USB compliance workshops
- USB compliance test development
- www.usb.org Web site
- USB pavilions at CES, CeBIT, IDF, WinHEC, and other events
- Marketing programs and collateral materials, such as retail newsletters, retail salespeople training, store end-caps, etc.
- USB developer conferences
- and many more...”

Members of the USB-IF have the option of obtaining a Vendor ID for use with their products. This Vendor ID is used in conjunction with a Product ID to uniquely identify USB devices, providing traceability to the OEM.

There are instances where production runs of a device may not be very large, or companies are working on a limited budget. Membership in the USB-IF, in these cases, may cause a USB project to become economically infeasible. In this situation, FTDI offers customer’s Product IDs for use with their own Vendor ID. FTDI customers also have the option of simply using the default FTDI Vendor ID and Product ID for a particular device.

Each of these choices has consequences in visual and official identification of the OEM end device. This document outlines the various identification choices, the associated issues and certification requirements.

3 USB Identification Choices

3.1 FTDI Default Vendor ID, FTDI Default Product ID

FTDI uses its USB-IF assigned Vendor ID in conjunction with a Product ID as a “default” supplied with our FTDI ICs, according to the following table:



FTDI Device	FTDI Vendor ID	Default Product ID
FT232BM/L/Q, FT245BM/L/Q	0x0403	0x6001
FT232RL/Q, FT245RL/Q	0x0403	0x6001
FT2232C/D/L	0x0403	0x6010
FT2232HL/Q	0x0403	0x6010
FT4232HL/Q	0x0403	0x6011
FT232HL/Q	0x0403	0x6014
VNC1L with VDPS Firmware	0x0403	0x6001
VNC2 with FT232Slave	0x0403	0x6001

Table 3.1 FTDI Default Vendor ID and Product ID Assignments

Advantages of using default FTDI VID and PID:

- Useful for prototype or low-volume production runs.
- Additional steps of programming EEPROM not required.
- WHQL Certified Windows® device drivers available at www.ftdichip.com.
- No ongoing OEM-specific device driver maintenance.
- USB-IF membership not required.
- External EEPROM may not be required for FT2xxB and FTx232 series parts. The internal EEPROM of the FT2xxR and Vinculum VNC1L will not need modification.
- Quickest time to market.

Disadvantages of using default FTDI VID and PID:

- OEM-specific identification of hardware is only available through the manufacturers’ string.
- OEM-specific identification within the device drivers not available.
- USB Certification of the OEM device is not available.
- USB Logo: 
 - Only the USB Icon, sometimes called the “trident logo”, may be used to identify the connectors, as described in the USB 2.0 specification.
 - USB Certified logos like this  may **not** be used.

3.2 FTDI Default Vendor ID, FTDI Assigned Product ID



FTDI customers who wish to use unique product identifications may obtain, at no charge, a block of Product IDs from FTDI by contacting their local branch with the following information:

- Contact Name
- Company Details
- Country
- Email Address and other contact details
- Product Name
- Production Schedule

Advantages of using an FTDI assigned PID:

- OEM-specific identification of the hardware is available at multiple locations.
 - The Manufacturer and Product Description strings are stored in the EEPROM. The Product Description is the text that displayed in the "Found New Hardware" tool tip that appears the first time a new device is plugged-in.
 - Product ID assignments are unique to your company, usually issued in blocks of 8 numbers. FTDI maintains a database of assigned values.
 - Windows Device Driver identification strings can be unique for your company. These strings are displayed in the Windows Device Manager.
- Useful for prototype or low-volume production runs.
- USB-IF membership not required.

Disadvantages of using an FTDI assigned PID:

- Any changes to the Windows Device Driver files result in loss of WHQL certification.
 - The device driver may still be used; however, a warning will be displayed by Windows.
 - Device drivers may be re-certified by the Microsoft WHQL process. FTDI has obtained full certification of the default device drivers. An OEM may become a "reseller" of these device drivers and submit the modified drivers for a shortened version of the WHQL tests, known as "Driver Update Acceptable". Nominal fees for VeriSign and MSDN accounts apply.
- The OEM must track and distribute device driver updates with their edited version.
- USB Certification of the OEM device is not available
- USB Logo: 
 - Only the USB Icon, sometimes called the "trident logo", may be used to identify the connectors, as described in the USB 2.0 specification.
 - USB Certified logos like this  may **not** be used.



Details for editing the Windows device driver INF files can be found in the FTDI Application Note AN232B-10 "Advanced Driver Options".

Important: It is important to note that any edits to the INF file must include deletion or commenting out the FTDI default Vendor ID and Product ID entries prior to any certification or distribution by the OEM.

3.3 USB-IF Assigned Vendor ID, OEM Assigned Product ID

FTDI customers who wish to use the USB logo and have their products listed with the USB-IF must select this option. As with the previous description, edits to the various device driver files are required. In order to obtain a unique Vendor ID, the company must be a current member of the USB-IF.

Advantages of USB-IF assigned VID, OEM assigned PID:

- OEM-specific identification of the hardware is available at multiple locations.
 - The Manufacturer and Product Description strings are stored in the EEPROM. The Product Description is the text that displayed in the "Found New Hardware" tool tip that appears the first time a new device is plugged-in.
 - Vendor ID assignment is unique to the OEM.
 - Product ID assignments are controlled by the OEM.
 - Windows Device Driver identification strings can be unique for your company. These strings are displayed in the Windows Device Manager.
- Useful for all sized production runs.
- USB-IF membership by the OEM is required. Products are listed by the USB-IF upon completion of compliance tests.
- USB Logo:  
 - USB Certified Logos may be used in conjunction with the USB Icon according to the testing and certification guidelines posted on www.usb.org.
 - USB Icon, sometimes called the "trident logo", may be used to identify the connectors, as described in the USB 2.0 specification.

Disadvantages of USB-IF assigned VID, OEM assigned PID:

- Any changes to the Windows Device Driver files results in loss of WHQL certification.
 - The device driver may still be used; however, a warning will be displayed by Windows.
 - WHQL re-certification ("Driver Update Acceptable") is possible through obtaining Reseller Rights from FTDI. Nominal fees for Verisign and MSDN accounts apply.
- The OEM must track and distribute device driver updates with their edited version.
- Although a product can be released prior to USB certification, use of the USB Certified logos is not available until after the product has passed compliance tests.

Details for editing the Windows device driver INF files can be found in the FTDI Application Note AN232B-10 "Advanced Driver Options".

Important: It is important to note that any edits to the INF file must include deletion or commenting out the FTDI default Vendor ID and Product ID entries prior to any certification or distribution by the OEM.

4 Assignment of PIDs for a Device

When assigning a Product ID to a product, according to sections 3.2 and 3.3 above, it is important to note that each PID may be only used for a single product or a family of similar products. For example, the FTDI FT232R, FT245R, FT232B and FT245B are all single-port interfaces. They share a common default PID of 0x6001.

If a manufacturer makes a product with the FT232R and another with the FT2232H, then each of these products are required to use a different PID. Referring to the FTDI defaults, the FT232R device (single-port) uses 0x6001 while the FT2232H (dual-port) device uses 0x6010. This allows the operating system to properly identify the ports on the different types of devices.

If a manufacturer makes two products with the same FT-series part, but the functions are different, then it is recommended that each product use an individual PID as well. This allows for different driver settings if necessary.

Finally, if a product is intended for use with Windows CE, Linux or Mac OS X systems, the VCP and D2XX device drivers are mutually exclusive for a given VID/PID combination. If similar parts are used where one is intended for VCP and another for D2XX, each of the parts must be programmed with different PIDs, assuming a common VID. (This restriction is not present for "desktop" Microsoft Windows 2000 through 7 and Server.)

5 Summary

OEM FTDI customers have 3 choices in determining the USB identification path that is most beneficial and cost effective to their application. Default FTDI VID and PID assignments are the quickest way to implement USB identification, but this route lacks unique identification of the end product. FTDI VID and unique PID assignments requires a few extra steps. Time to market remains quick, but devices cannot be listed on the USB Implementers Forum. USB-IF certification requires a financial commitment on the part of the OEM; however, there are advantages in the marketing and customer acceptance of a device in the USB-IF product list.

All of these options are supported by FTDI.

6 Contact Information

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Appendix A - References, Keywords, Acronyms and Abbreviations

References:

1. USB Implementers Forum USB 2.0 specification
(<http://www.usb.org/developers/docs/>)
2. FTDI Data sheets (<http://ftdichip.com/Documents/DataSheets.htm>)
3. FTDI Application Note AN107: Advanced Driver Options
(http://www.ftdichip.com/Support/Documents/AppNotes/AN_107_AdvancedDriverOptions_AN_000073.pdf)

Keywords

FT232, FT245, FT2232, FT4232, USB Device, USB-IF Certification, Vinculum VNC1L, VNC2, VDPS Firmware, Windows Hardware Quality Labs, WHQL

Acronyms and Abbreviations

Terms	Description
EEPROM	Electrically Erasable Programmable Read Only Memory
MPROG	FTDI software utility for programming the internal or external EEPROM that stores chip settings
PID	Product ID, a unique product identification issued by the holder of the Vendor ID
VID	Vendor ID, a unique vendor identification number issued by the USB Implementers Forum
USB	Universal Serial Bus
USB-IF	USB Implementers Forum (www.usb.org)
WHQL	Microsoft Windows [®] Hardware Quality Labs

Appendix B - Revision History

Version 1.0	Initial Release	August 2008
Version 1.1	Added references to FT2232H & FT4232H Updated UK & TW addresses. Added CH address.	October 2009
Version 1.2	Formatted contact page, header, footer Added new section 4 for PID assignment recommendations	December 2012