

# Device Driver Layer

## Before driver installation



Insert the TE USB FX2 module and then check your VID/PID in device manager (devmgmt.msc > properties > details > Hardware Ids).

## Generation 2

### Device driver files

- [TE03xx-USB\\_32-64.zip](#)
- Trenz Electronic hardware: TE0300 series, TE0320 series, TE0630 series
- VID (vendor identifier): 0547 (Anchor Chips, now Cypress Semiconductor)
- PID (product identifier): 1002 (Python2 WDM Encoder)
- device drivers: DEWESoft USB FX2 (generation 2)
- SW API: [DEWESoft\\_API](#) (generation 2)
- FW APIs: [USB FX2 API Commands](#), [SPI Flash Commands](#), [MicroBlaze API Commands](#) (the latter one if [Logical Architecture Layer](#) is [Reference Architecture Layer](#) or derived compatible work)

Generation 2 device drivers are provided by DEWESoft and can also be downloaded from [here](#) or [here](#).

## Generation 3

### Device driver files

- [TE\\_USB\\_FX2-drivers.zip](#)
- Trenz Electronic hardware: TE0300 series, TE0320 series, TE0630 series
- VID (vendor identifier): 0BD0 (Trenz Electronic GmbH)
- PID (product identifier): 0300 (USB 2.0 FPGA modules)
- device drivers: Trenz Electronic USB FX2 (generation 3)
- SW APIs: C++ [TE\\_USB\\_FX2\\_CyAPI.dll](#) (generation 3), C# [TE\\_USB\\_FX2\\_CyUSB.dll](#), C++ CyAPI.lib, C# CyUSB.dll (the latter two APIs are available in [Cypress SuiteUSB 3.4](#))
- FW APIs: [USB FX2 API Commands](#), [SPI Flash Commands](#), [MicroBlaze API Commands](#) (the latter one if [Logical Architecture Layer](#) is [Reference Architecture Layer](#) or derived compatible work)

## Documentation

- [USB Drivers Installation - User Manual \(UM-drivers-TE\\_USB\\_FX2.pdf\)](#)
- video play list: Microsoft Windows XP [32 bit](#) and [64 bit](#);
- video play list: [Microsoft Windows Vista](#) 32 bit;
- video play list: [Microsoft Windows 7](#) 64 bit;
- video play list: [Microsoft Windows 8](#) 64 bit.

## Description

The driver package contains many folders. During installation, the user shall specify the folder according to the following table.

host operating system (Microsoft Windows )	device driver folder	automatic/online installation/update
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<b>2000</b>	MS-Windows-2000.recommended	not available
<b>XP</b>	MS-Windows-XP.recommended	not available
<b>Vista</b>	MS-Windows-Vista+7	not available
<b>7</b>	MS-Windows-Vista+7	available
<b>8</b>	MS-Windows-Vista+7	available

**Recommended device driver folder depending on operating system.**

Trenz Electronic device drivers are derived from the original Cypress generic USB device drivers, distributed with the Cypress SuiteUSB 3.4 (or later). Driver installation on Microsoft Window 7 and Microsoft Window 8 can be performed automatically (on-line). It can happen that the first online driver installation attempt fails; in this case the user shall just force a retry (the second attempt normally works!). See section 2.1.2.3.2 *Force the online search of USB Drivers Installation - User Manual*.

## Coexistence of Generation 2 and Generation 3 device drivers

Installation of both device drivers on the same host computer is normally possible.  
Installation of both device drivers on the same host is not recommended under Microsoft Windows XP.  
Please read *USB Drivers Installation - User Manual* ([UM-drivers-TE\\_USB\\_FX2.pdf](#)) for further details.

## Cypress Generic USB driver: used in recovery boot for both Generation 2 and Generation 3

### Device driver files

- [Cypress\\_generic\\_USB\\_driver.zip](#)
- source: [Cypress SuiteUSB 3.4](#)
- version: 3.4.5
- date: 2011 Jan 19
- VID (vendor identifier): 04B4 (Cypress Semiconductor)
- PID (product identifier): 8613 (CY7C68013 EZ-USB FX2 USB 2.0)
- SW APIs: CyAPI.lib, CyUSB.dll (both available in [Cypress SuiteUSB 3.4](#))
- FW APIs: no one is supported

### Documentation

- *USB Drivers Installation - User Manual* ([UM-drivers-TE\\_USB\\_FX2.pdf](#))

### Description

The driver package contains many folders. During installation, the user shall specify the folder according to the following table.

Device driver: original Cypress generic USB device drivers, distributed with the [Cypress SuiteUSB 3.4](#) (or later).

host operating system (Microsoft Windows )	device driver folder	automatic/online installation/update
<b>2000</b>	MS-Windows-2000.recommended	not available
<b>XP</b>	MS-Windows-XP.recommended	not available

<b>Vista</b>	MS-Windows-Vista+7	not available
<b>7</b>	MS-Windows-Vista+7	available but it is another driver <sup>(1)</sup>
<b>8</b>	MS-Windows-Vista+7	available but it is another driver <sup>(1)</sup>

**Recommended device driver folder depending on operating system.**

(1) Driver installation on Microsoft Window 7 and Microsoft Window 8 can be performed automatically (on-line). It can happen that the first online driver installation attempt fails; in this case the user shall just force a retry (the second attempt normally works!). The driver installed is NOT the Cypress generic USB device drivers (distributed with the [Cypress SuiteUSB 3.4](#)), but one of this two signed Cypress driver (they can be downloaded from [Microsoft Update Catalog](#)):

- Cypress - Other hardware - Cypress USB Generic Driver (3.4.7.000) for BI15xx where xx is [00,11,12,14, 32](#)
- Cypress - Bus Controllers and Ports - ND-tech USB Adapter (Cypress USB Generic Driver, version 3.4.1.20) ([link](#))



The second driver could be used but it is not recommended because two PIDs are possible.

Same VID and two different PIDs are possible (written in the corresponding .inf file):

- Cypress VID (0x04B4) and PID (0x8613) (are typically shown)
- Cypress VID (0x04B4) and ND-tech PID (0x1004) (it is shown if the board is disconnected and reconnected without power cycle after the firmware download onto EEPROM: **this procedure is not correct**)

## WinUSB driver and Zadig (Generation2, Generation 3, Cypress default and /or custom firmware)

WinUSB driver and Zadig are advised if [libusb](#) or [libusbx](#) are the libraries used (instead of Cypress libraries (CyAPI.lib and CyUSB.dll) and the derived Trenc Electronic libraries ([TE\\_USB\\_FX2\\_CyAPI.dll](#) and [TE\\_USB\\_FX2\\_CyUSB.dll](#))) by the user under Windows OS.

Generation 2, Generation 3 and Cypress drivers do not work with [libusb](#) or [libusbx](#).

See WinUSB driver installation ([libusb](#) and [libusbx](#)). See also [Zadig](#).



If [libusb](#) or [libusbx](#) are used (with WinUSB driver and/or Zadig), the software tools [Cypress USB Console](#), [Cypress USB Control Center](#), [Python Open\\_FUT \(Gen2\)](#), [Python Open\\_FUT \(Gen 3\)](#) and [C# OpenFutNet](#) could not be directly used. The code of these tools should be rewritten using [libusb](#) or [libusbx](#) instead of Cypress libraries (CyAPI.lib and CyUSB.dll) and the derived Trenc Electronic libraries ([TE\\_USB\\_FX2\\_CyAPI.dll](#) and [TE\\_USB\\_FX2\\_CyUSB.dll](#)). See [Linux\\_FUT](#) as a starting point for a new software tool using [libusb](#) or [libusbx](#) under Windows OS.



These libraries are not yet officially supported under Windows, but they are already used with TE USB FX2 modules under Linux (see the community contribution [Linux\\_FUT](#)).

Zadig is not yet officially supported under Windows.