



VCP vs. D2XX

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The FTDI USB drivers that are used for all DLP Design products can be operated in one of two general modes: D2XX or VCP. This article is intended to help the user decide which mode is right for their particular project:

The VCP mode is easy, which is not to say that the D2XX mode is difficult. By “easy” I mean that it will seem very familiar to anyone who has ever developed a host application that talks over the RS232 port (DB9 or DB25) on a personal computer. Once the VCP drivers are loaded, all that is required of the host app is to open what appears to be an RS232 port (it shows up in Device Manager as a COM port), set the desired baud date and start to send and receive data using the exact same methods and source code as those used with the original DB9 ports. (If the USB chip used on your board is a parallel version (FT245x), then the command to set the baud rate will have no effect.) The only downside to using the VCP drivers is the same issue that has always plagued legacy developers using DB9 ports--how do you determine to which COM port your hardware is connected? The options are limited to either assuming your hardware is on a particular COM port (dangerous) or the host app has to open every available port and send out a ping then wait for the correct reply (which is both tedious and time consuming).

The other option is to use the D2XX drivers. In this mode, the host app can tell how many FTDI USB devices are connected to the PC and what each device’s name or serial number is with the FT_ListDevices() function call. The port can then be opened to a specific FTDI USB device using either its name or serial number (both are programmed into the USB interface chip) using the FT_OpenEx() function call. The hardware can be plugged into any available USB port and later changed to a different port on the host PC or connected hub without restriction or any need to relearn the location of the device. The only downside to using the D2XX drivers is the use of the library. Either the .lib library file must be included in the source code project, or the functions in the DLL must be loaded at run time.

Considerable demonstration source code is available for download from both the DLP Design and FTDI websites to assist you in bringing up the first project.