TUSBWINVCP Customization Guide

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1   References

1. TUSB3410 Data Manual
2. USB/Serial Applications Using TUSB3410 VCP Software
3. VIDs, PIDs, and Firmware: Design Decisions When Using TI USB Device Controllers
4. TI Virtual COM Port Windows Drivers and Firmware
5. TUSB3410 USB I2C Header Generator Utility for VCP Applications
6. TI USB EEPROM Burner Utility for the TUSB3410

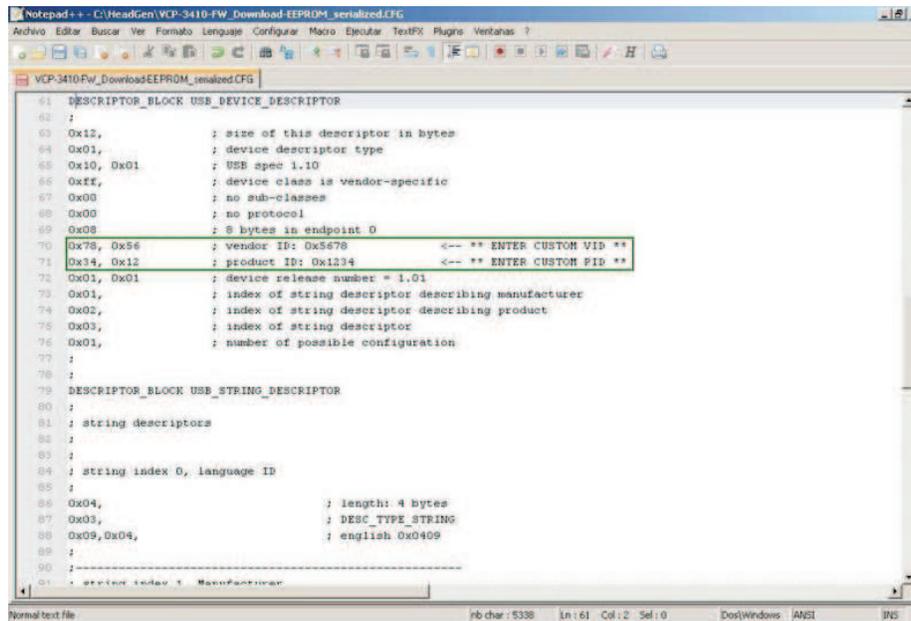Always check www.ti.com for the latest versions of these documents.

2   Step-By-Step Process

1. Determine which firmware load option – whether in an attached I2C EEPROM or downloaded over USB from the host – will be best for the implementation/application. There are three key references to help guide this decision:

   (a) Section 3.2 of the TUSB3410 Data Manual
   (b) Section 2 of the VIDs, PIDs, and Firmware: Design Decisions Application Note
   (c) Section 3.2 of the USB/Serial Applications Using TUSB3410 VCP Software Application Note

2. The next step in the process is generating the file that you will use to program the EEPROM with your "customized" information.

   (a) You will need to download and install the TUSB3410 USB I2C Header Generator Utility for VCP Applications.
   (b) After downloading, you will need to run the SETUP.EXE and follow the on-screen directions. If you just accept the defaults, the files will be installed on you local drive under "Program Files – Texas Instruments – I2C Header Generator Utility for VCP apps".
   (c) After you have installed the utility, you will choose a Configuration file to modify based on the firmware location decision you made in Step 1 above:

      (i) **VCP-3410-FW_Download-EEPROM_serialized.cfg:** Lets you generate your EEPROM binary with VID/PID, descriptors, and enables the use of a serial number, but no firmware – recommended usage model.
      (ii) **VCP-3410-FW_Download-EEPROM_not_serialized.cfg:** Lets you generate your EEPROM binary with FW, VID/PID and descriptors, but without firmware or a serial number – not a recommended usage model.
      (iii) **VCP-3410-FW_in_EEPROM.cfg:** Lets you generate your EEPROM binary with FW, VID/PID, descriptors, and enables the use of a serial number – recommended usage model.

   The balance of this document is based on using #1 above.

(d) You can use any standard text editing tool with this file. The areas that need to be modified are pointed out via the comments at the end of each line.
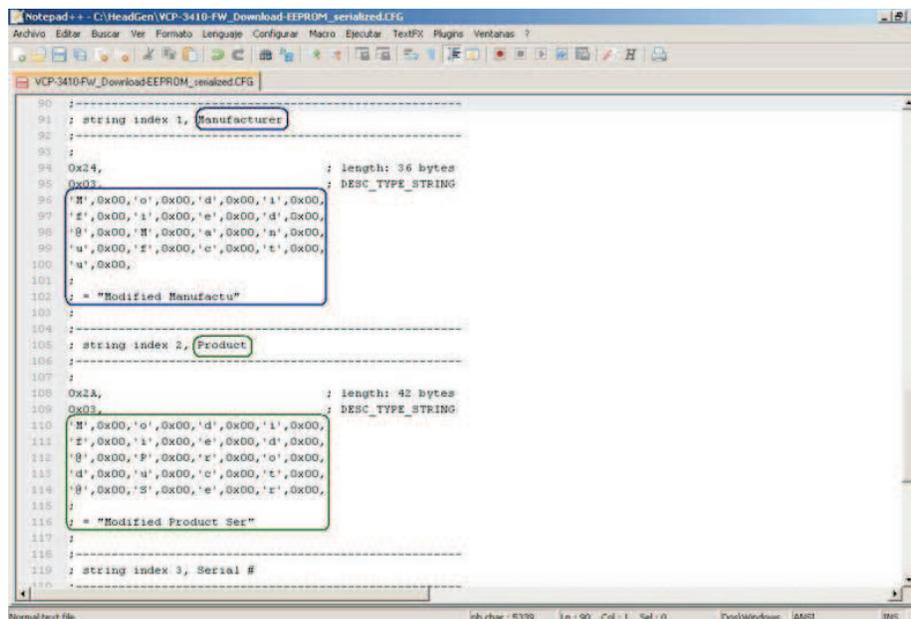
(i) VID/PID

(ii) Manufacturer string

(iii) Product string descriptor

(iv) Serial number – assuming you are enabling serialization – which is the Texas Instruments recommendation.
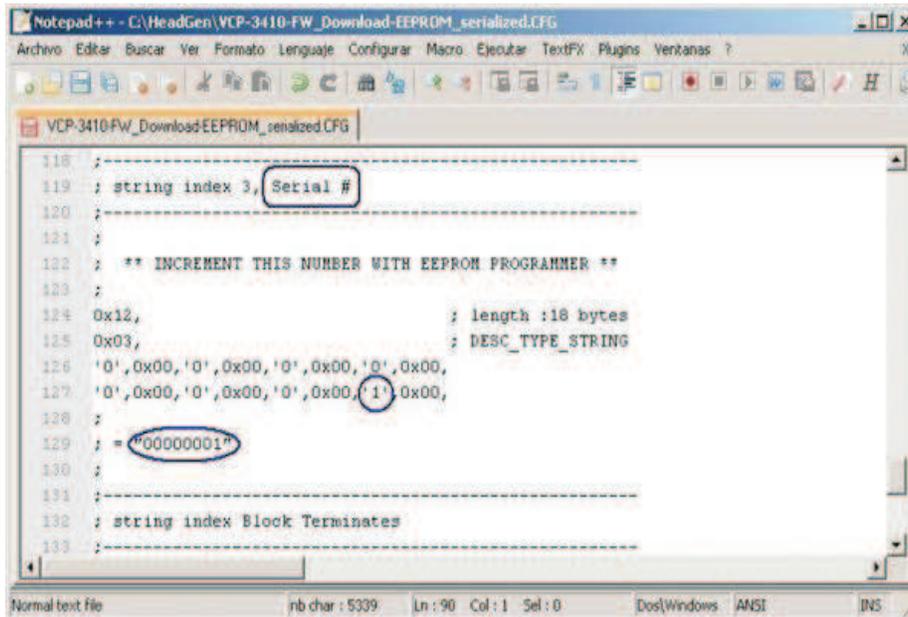
(v) If you are including the firmware in EEPROM, then you need to make a change to call out the proper i51 file as well.
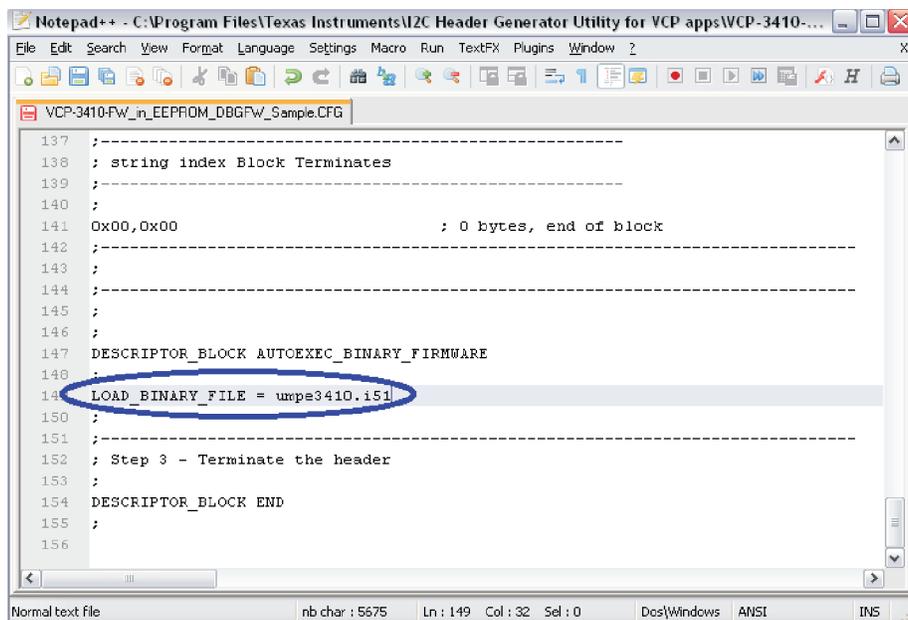
(e) Once the CFG file has been customized with your desired information, create your EEPROM file using the header generator utility per the "Header Gen User's Guide.txt" document.

(f) Once the BIN file has been generated, proceed to burn it in the I2C EEPROM. If you do not have a stand-alone EEPROM burner, you can use our provided EEPROM burner application.

3. Next you need to download the latest VCP driver and run SETUP.exe to do the initial "install". This does not actually install the driver for use, but rather places the files on your computer for customization PRIOR to actual installation.

(a) If the firmware will be loaded from the EEPROM, then you need to delete umpf3410.i51 from this directory.

4. Next you will need to customize the driver's INF using the same information – VID/PID and description strings – you placed in the CFG file during the EEPROM file generation step.

   (a) The INF file is a text file, so any text editor will work fine.
   (b) For more information see section 3.6 of the VCP Implementation Application Note.
   (c) Edits for the firmware location or file name may be needed:

      (i) If the firmware will be in the EEPROM, you will also need to customize the INF to comment out – with a semicolon at the beginning of the line – any "umpf3410.i51 occurrence.
      (ii) If the firmware is to be installed from the host PC, then this step can be omitted.

      NOTE: If your download i51 file has a different name then our standard default, then you need to modify this in the INF as well.

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5. Now proceed to do the installation of the VCP software.

6. To enable this to work for your customers, you will need to repackage the installer with all of your customized files to meet your software distribution plans. a. See section 3.7 of the VCP Implementation app note for more on this topic.

7. WHQL Signing/Certification: Since the INF file has been modified, the digital signature that ships with our test/development distribution will have been invalidated. If you desire to ship with a digitally signed driver:

   (a) You will need to work through the Microsoft WHQL process.
   (b) Texas Instruments can grant you "reseller rights".

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