

EVOBD2

Firmware Update Guide

v2.02 - December 14th, 2020



e v o b d 2 . c o m

EVOBD2 Module Firmware Upgrade Procedure

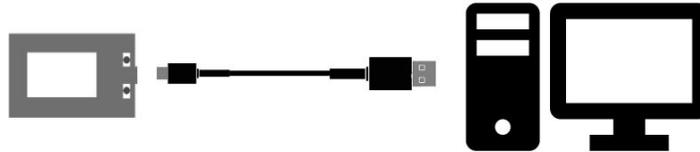
What you need to perform the update:

- a Windows computer
- a USB-C cable to connect the EVOBD2 to your computer
- your EVOBD2 device

The EVOBD2 device must be connected to your computer via its USB-C port to perform the update. If you own a Windows laptop computer then the update can be performed in your vehicle, otherwise you will need to bring the EVOBD2 device to your desktop computer. The OBDII Bluetooth adapter is not required for the upgrade procedure.

Connecting your EVOBD2 to your PC:

Connect the EVOBD2 device USB-C port to your Windows computer's USB port with your USB cable.



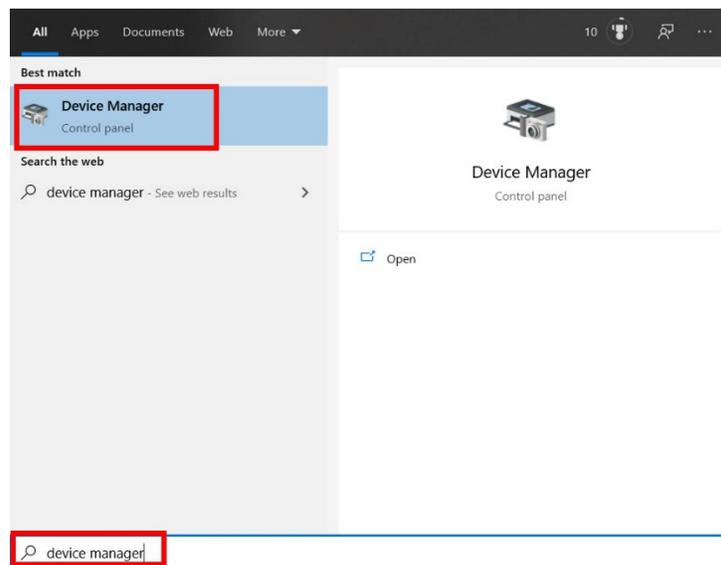
IMPORTANT: Once your EVOBD2 device has been connected to your computer you must ensure that the EVOBD2 device has been detected by Windows and that it appears as a Serial Port. The following steps will guide you through the steps required to confirm that it is installed correctly.

NOTE: The steps provided for the driver setup are for Windows 10. They should also apply to Windows 8 and Windows 8.1, as well as Windows 7, but may not be as described below.

EVOBD2 Driver Installation (Windows 10):

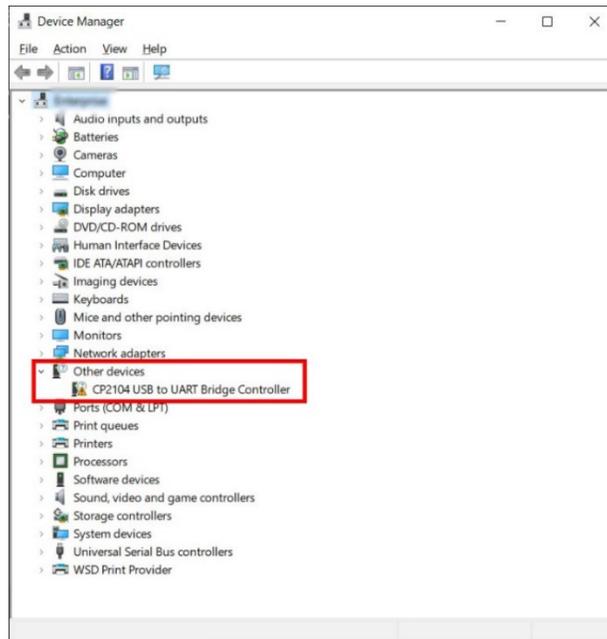
After connecting your EVOBD2 device to your computer it may not have been automatically set up as a Serial Port Device.

- To verify the status of the EVOBD2 driver, open the Device Manager by clicking on the Start icon in Windows, then type "device manager".
- Click on Device Manager at the top of the menu.



EVOBD2 device driver continued ...

- Once the Device Manager has opened you should see the EVOBD2 device listed under “Other”, as the “CP2104 USB to UART Bridge Controller”



- To have Windows automatically install the drivers, right click on “CP2104 USB to UART Bridge Controller” and click “Update Driver”. If Windows does not find the UART driver it can be found here: https://www.silabs.com/documents/public/software/CP210x_Universal_Windows_Driver.zip
- When the Update Driver window pops up, click on the “Windows Update” option to allow Windows to automatically search for, and install the correct driver.
- Once the driver has been successfully installed the EVOBD2 device will be listed under “Ports (COM & LPT)” as “Silicon Labs CP210x USB to UART Bridge (COMx)” as shown in the example below.
IMPORTANT: The COM6 number in the image below is an example. The COM number used on your computer may be different and it is important to take note of your COM number for the update procedure that follows.



NEXT STEPS:

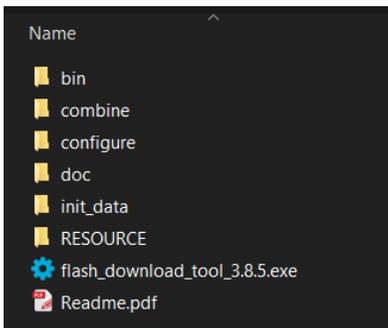
Now that your EVOBD2 device is installed in Windows, and you have noted the COM number it uses, you are ready to start the firmware update procedure.

- *** **IMPORTANT:** The following pages describe the update procedure with important details. Please be sure to follow the update steps exactly as described. Failure to follow these instructions exactly may result in your EVOBD2 device becoming nonfunctional.

Firmware Update of the EVOBD2 Device

IMPORTANT: The following pages describe the update procedure with important details. Please be sure to follow the update steps exactly as described. Failure to follow these instructions exactly may result in your EVOBD2 device becoming nonfunctional.

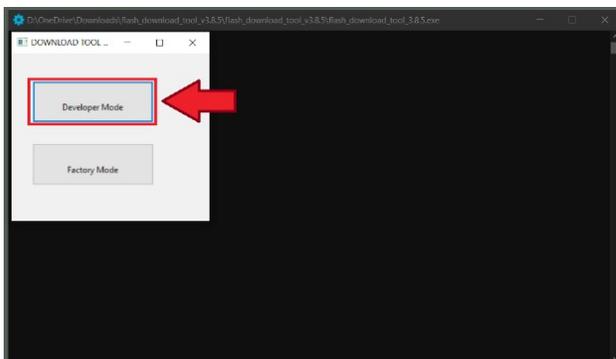
1. You have been provided with a ZIP file called “**evobd2-firm-2-02-en.zip**” that contains everything needed to perform the update. Extract all contents of the ZIP file to a folder on your computer, then open the folder. The following files should have been extracted and listed in the folder you selected as the destination.
 - a. 01_boot_app0.bin
 - b. 02_bootloader_qio_80m.bin
 - c. 03_evobd2-firm-2-02.ino.bin
 - d. 04_evobd2-firm-2-02.ino.partitions.bin
 - e. EVOBD2 Firmware Update Guide - v2-02.pdf
 - f. evobd2-man-en-v2-02.pdf
 - g. flash_download_tool_v3.8.5.zip
2. The utility required to perform the update is in the ZIP file called “**flash_download_tool_v3.8.5.zip**”. Extract all contents of the ZIP file to a folder on your computer, then open the folder. The following files should have been extracted and listed in the folder your selected as the destination.



3. The file called “**flash_download_tool_3.8.5.exe**”, as well as the rest of the contents of this folder, are the program required to update the firmware of the EVOBD2 device.

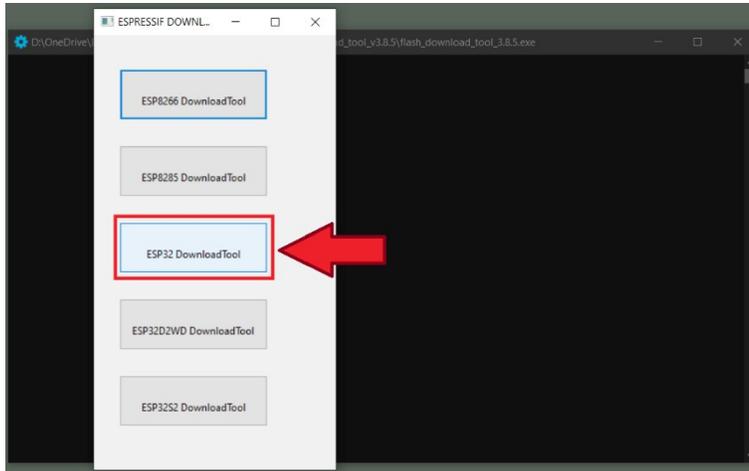
NOTE: There is no security risk related to the firmware update tool from the manufacturer of the chip used in the EVOBD2 device. You can also download the “Flash Download Tool” directly from the manufacturer of the chip, ESPRESSIF, on their Web site: <https://www.espressif.com/en/support/download/other-tools>
The tool is listed as Flash Download Tools (ESP8266 & ESP32 & ESP32-S2), Windows PC, Version 3.8.5

4. Ensure that your EVOBD2 device is connected to your PC via USB, then run the programming tool called “**flash_download_tool_3.8.5.exe**”
 - a. In the first window, click on “Developer Mode”



... Continuation of Step 4 ...

- b. In the new window, click on “ESP32 DownloadTool”



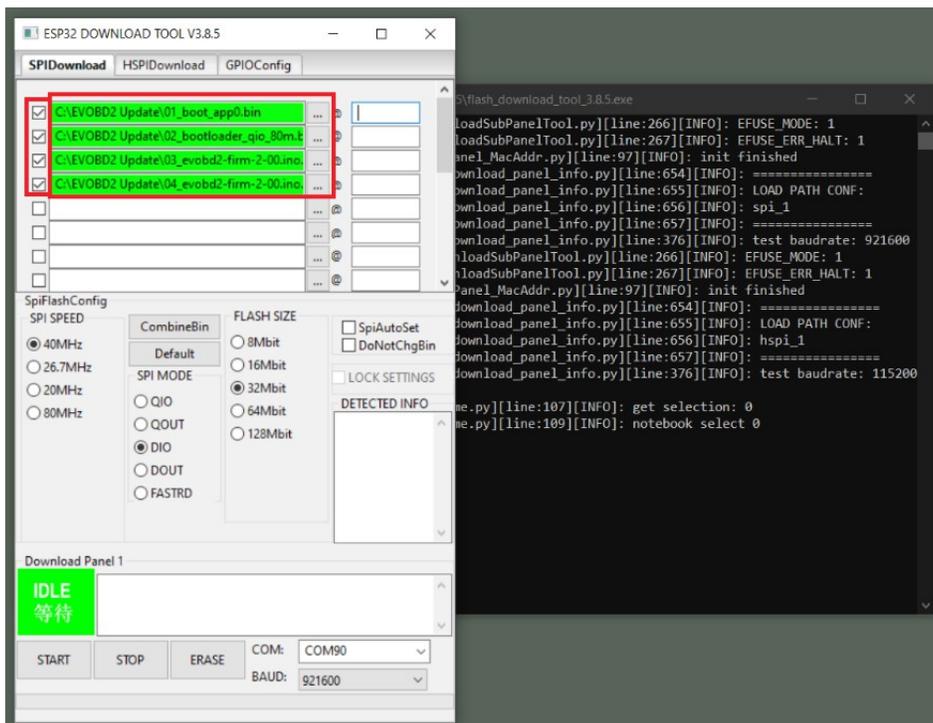
5. Set up the Programming Tool that is now running.

- a. Make sure that your EVOBD2 device is connected to your computer and that you have noted the COM port it communicates on, as instructed on page 2.
- b. In the window that is now open, you must select the four (4) firmware BIN files that you extracted earlier, selecting one (1) file per line. To select the files, you must click on this button  beside each line where the files are to be assigned. See the image below.

***** IMPORTANT:** It is critical that you select the files in the order shown in the image below, starting with file 01 and ending with file 04.

- c. Make sure you check off the 4 check boxes that are in front of each file, as shown in the image below.

NOTE: If the boxes are not checked the update will not be done to the EVOBD2 device.



... Continuation of step 5 ...

- d. Now that you have assigned the four (4) files to each of the appropriate lines you must assign the HEX addresses for each file, as shown in the image below.

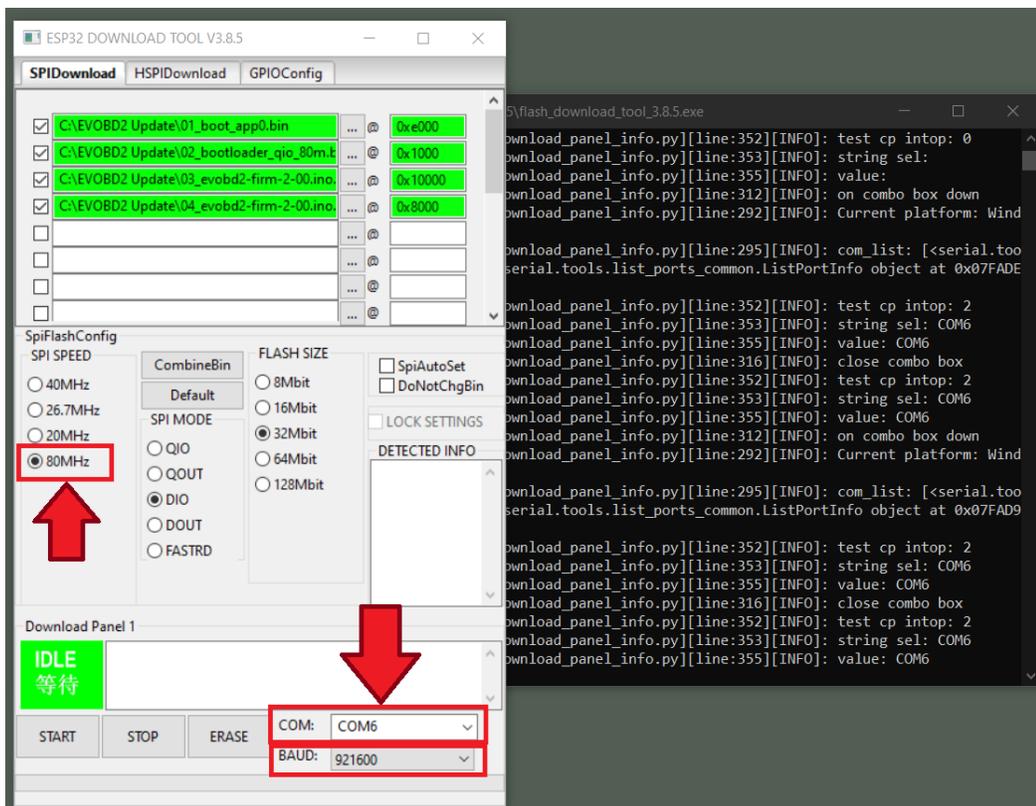
***** IMPORTANT:** It is critical that you enter the exact values as shown in the table below, any error will cause a failure of the update and render your EVOBD2 device unusable. Please ensure that you copy and paste the exact values into the correct space for each of the four (4) files, as shown in the image below.

File Name	HEX Address
01_boot_app0.bin	0xe000
02_bootloader_qio_80m.bin	0x1000
03_evobd2-firm-2-02.ino.bin	0x10000
04_evobd2-firm-2-02.ino.partitions.bin	0x8000

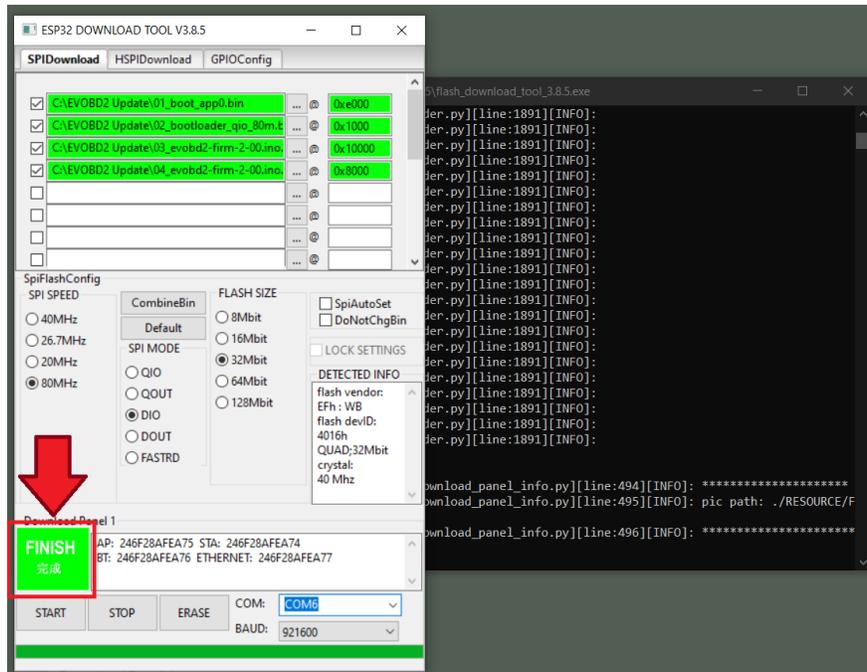
- e. Select the SPI Speed of 80MHz and ensure that you have selected the correct COM port associated to your EVOBD2 device, as shown in the image below.

NOTE: The image below shows COM6 as an example, but your COM port may be different. This is the COM port that you should have noted on page 2 during the driver installation.

- f. The rest of the settings should be default, as shown in the image below. If they are not set as indicated, please set them as follows.
 - f.i. SPI mode DIO
 - f.ii. Flash size 32Mbit
 - f.iii. BAUD 921600



6. To start the update of the firmware of your device click on the “START” button at the bottom left of the window. The update will take less than 30 seconds, at which point you will see a green “FINISH” box at the bottom left of the window, as shown in the image below.



- a. You may now close the firmware update tool windows using the “X” in the top right corner of each of the 2 windows.
- b. You may now disconnect your EVOBD2 device from your computer, it will power off.
- c. To validate that the update was a success, reconnect your EVOBD2 device to your USB cable and watch the screen as it turns on. You should now see the new boot screen that indicates version 2.02U, as shown in the image below (except for the last digit 2).



- d. If you are not in the car, please return the EVOBD2 device to your vehicle for pairing the OBDII Bluetooth adapter.
- e. **PAIRING the Bluetooth adapter:** Start the car. The display will attempt to connect to the adapter. As it is not yet paired with your adapter, it will indicate a connection error. Wait approximately 40 seconds for the RESET / PAIR screen to show up.
- f. Press ANY BUTTON for at least 4 seconds then release. The display will search for the adapter and then attempt to establish the connection. It will then try to connect and present the vehicle data. **Your module is installed and you can start using it!**

NOTE: The display shows the MAC address of the compatible OBDII adapter discovered at pairing at the bottom of the connection screen. If the connection is not established, possibly another device has been detected nearby. In this case, please turn off all other suspect Bluetooth devices like a smart phone and/or move your vehicle about 50 feet or 20 meters, then start pairing again.

Once the communication between the display and the OBDII Bluetooth adapter is established, pairing no longer needs to be redone. It would be necessary to redo a new pairing only in case you replace the OBDII adapter.

Congratulations, you have successfully updated your EVOBD2 to the latest version of firmware!