Updating the e-Tracker firmware

This document explains the steps to upload the new firmware to the e-Tracker.

You can download the firmware from this link. Follow the below steps to upload the program to your e-Tracker.

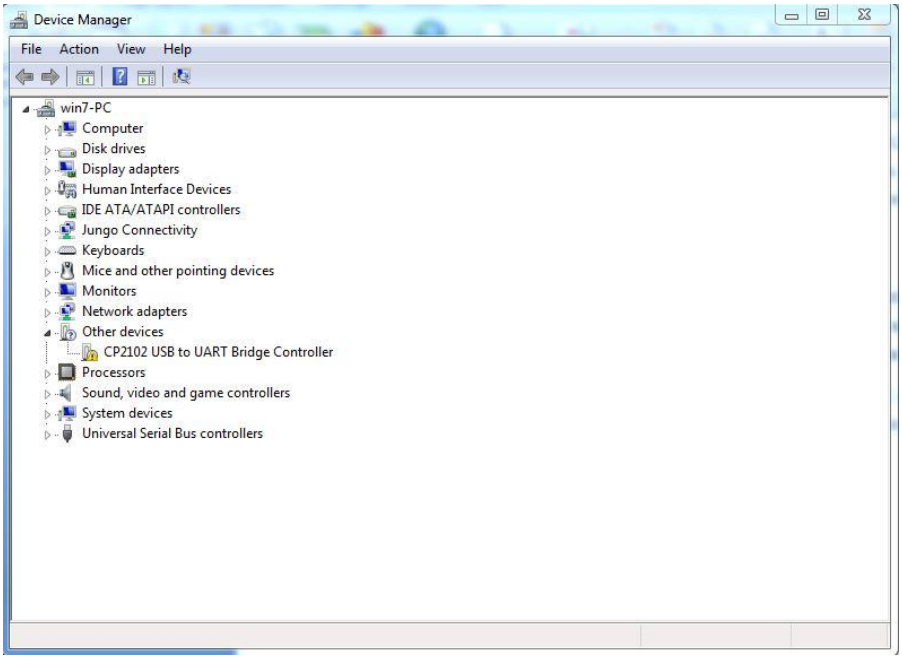
Tools required:

For uploading the firmware you will need a usb to TTL converter like cp2102 module. If you dont have one then you can buy one from our store. You might also need some jumper cables for connecting the usb to ttl module to the e-Tracker board.

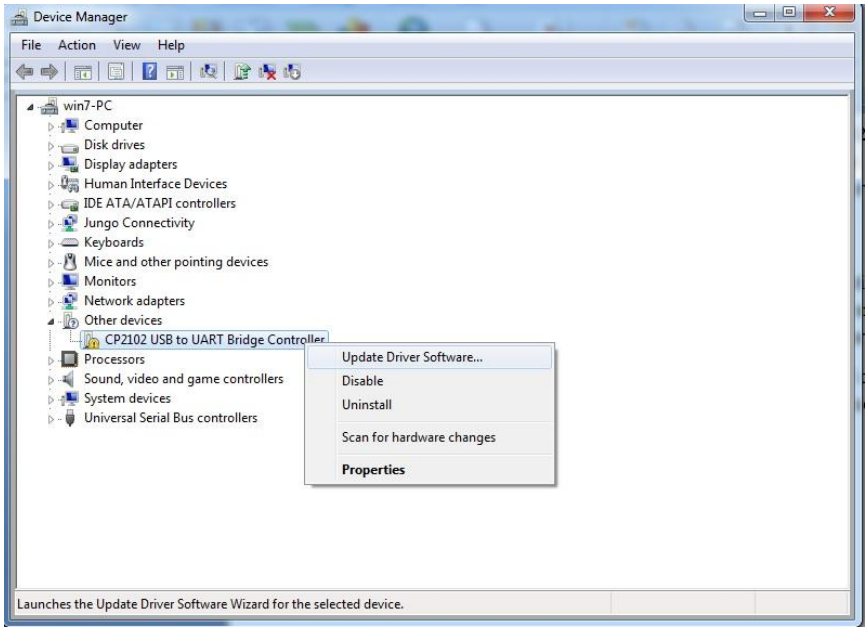
Step.1: Preparing the PC

For uploading the firmware you need to connect the CP2102 USB to TTL converter to the e-Tracker board and to your computer. You might need to install the drive software for the cp2102 usb to TTL module. For that

1. Connect the module to your computer
2. Go to device manager
3. You will see the device listed under other devices with a yellow exclamation mark



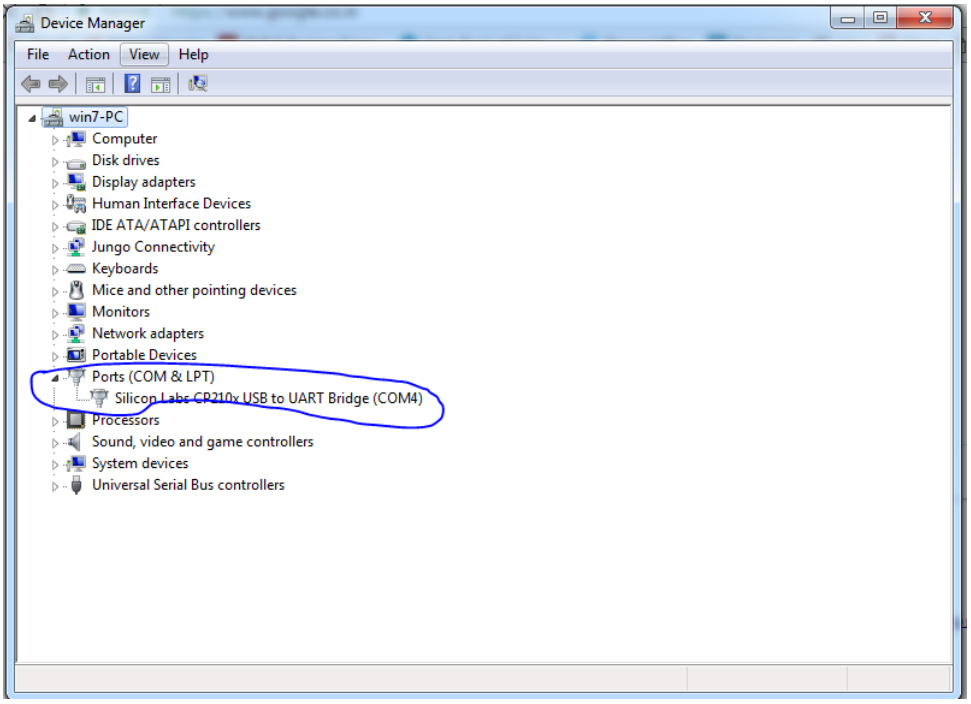
4. Right click on the device and select update driver software.



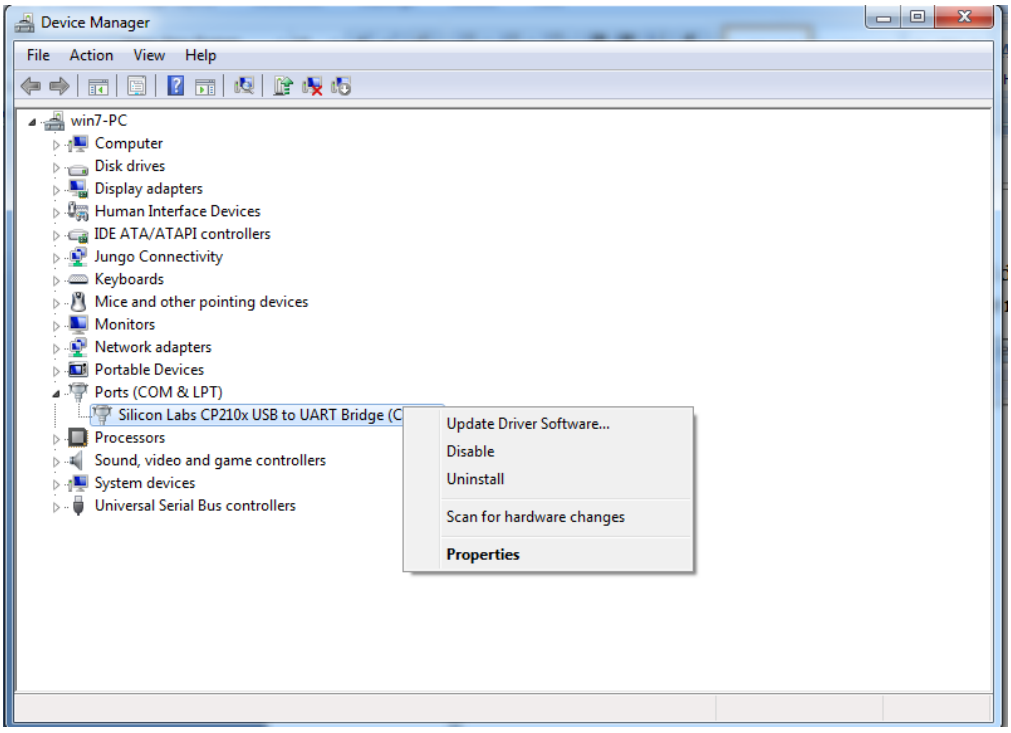
5. Click search automatically for the updated driver software.

Now the device driver will be automatically downloaded and installed.

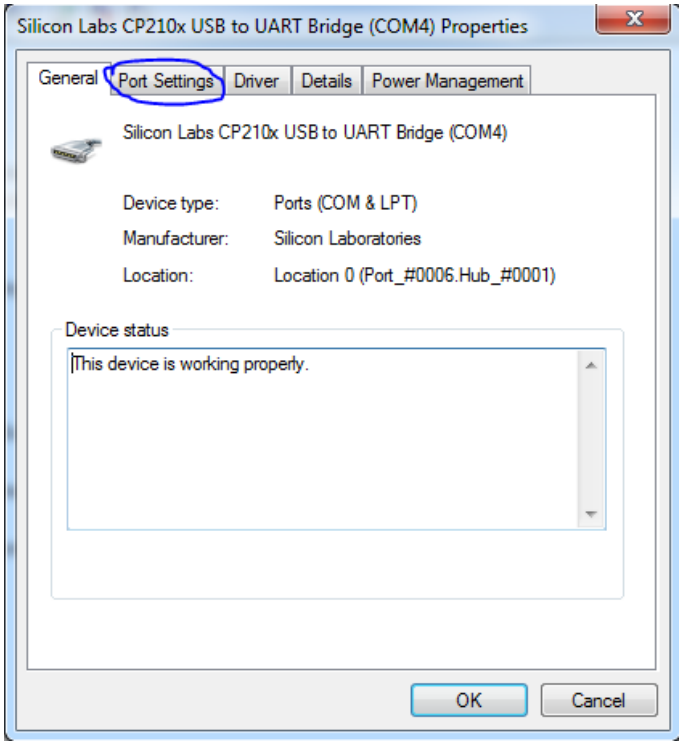
After installing the driver, when you connect the cp2102 USB to TTL device to your computer's USB port, you can see the port details in the "Device Manager."



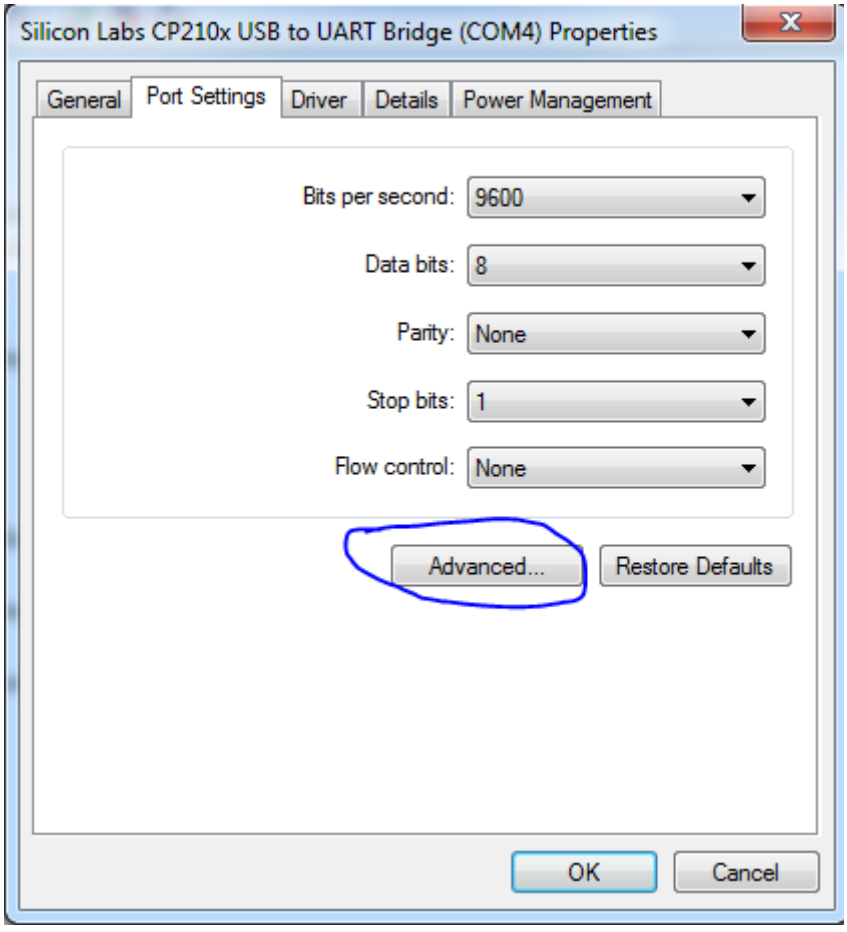
Right click your mouse on the device listed as “Silicon labs CP210 USB to UART Bridge”. Choose properties from the options.



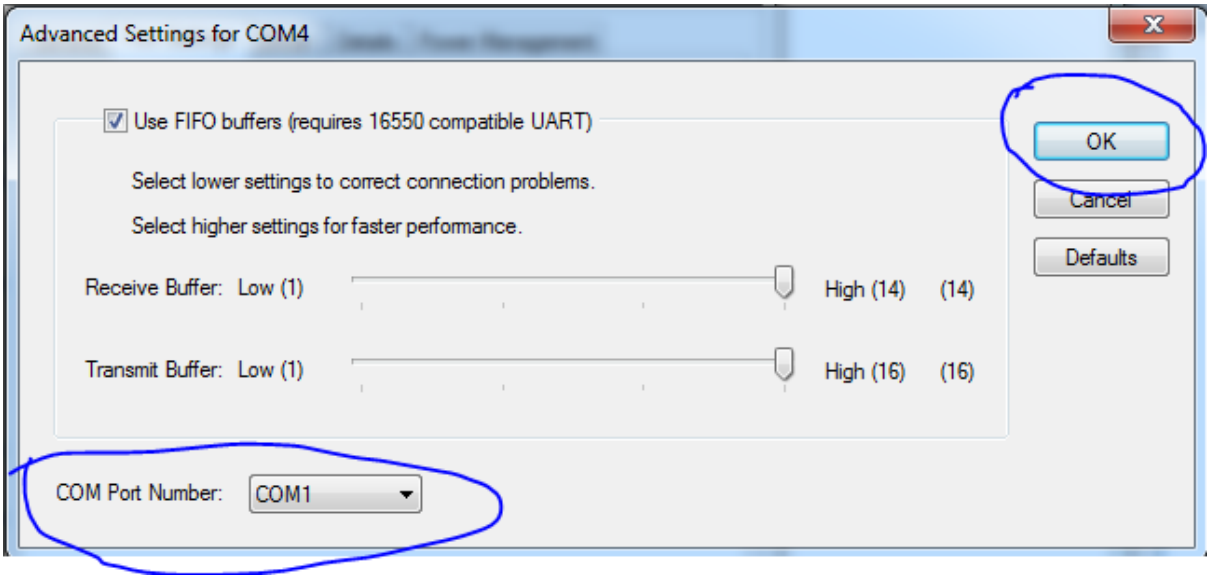
A window as below appears. Choose Port Settings from the options



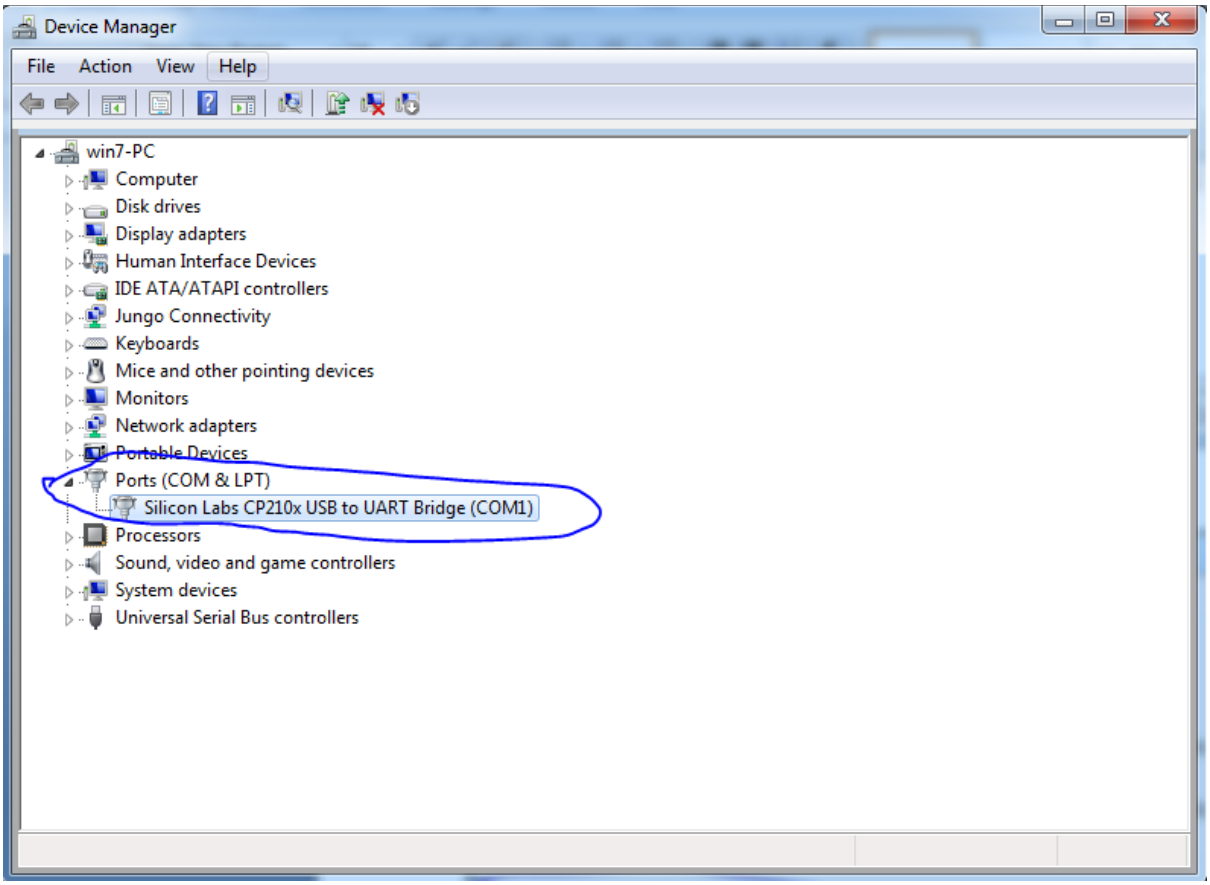
In port settings choose Advanced



Change the COM port number to COM1 and press OK



Confirm that now the device is connected to COM1 by checking it in the listed ports in device manager



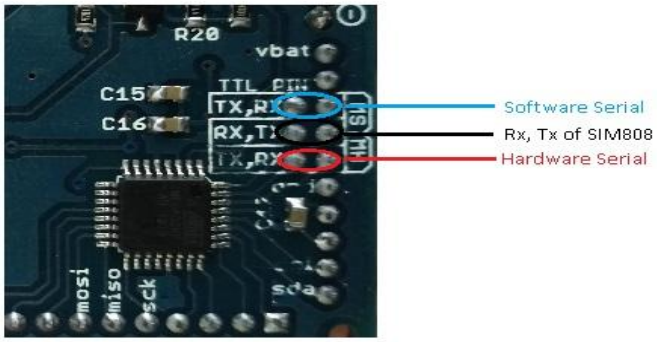
Now your computer is ready for uploading the program.

Step 2 : Uploading the program to the controller board.

Now that you have prepared your PC we can upload the program to the board. Download the files required for updating the firmware from this link. Extract the "updateFirmware.7z" to any location.

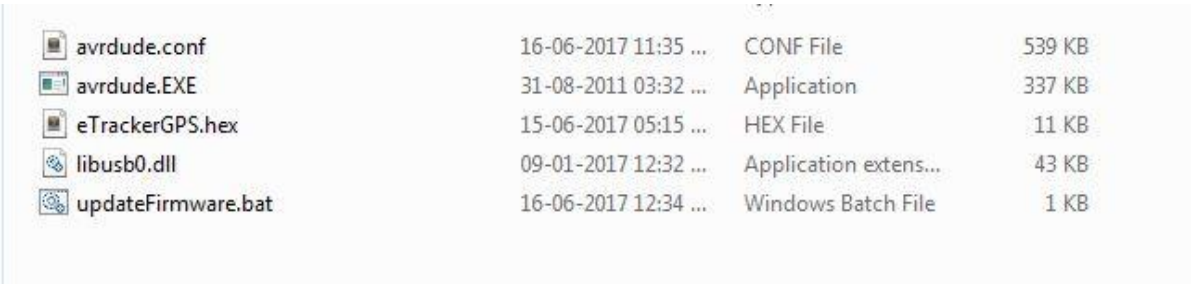
Connect the pins from the USB to ttl board to the e-Tracker as shown in the below table.

USB to TTL	e-Tracker
DTR	DTR
GND	GND
RX	HW TX
TX	HW RX

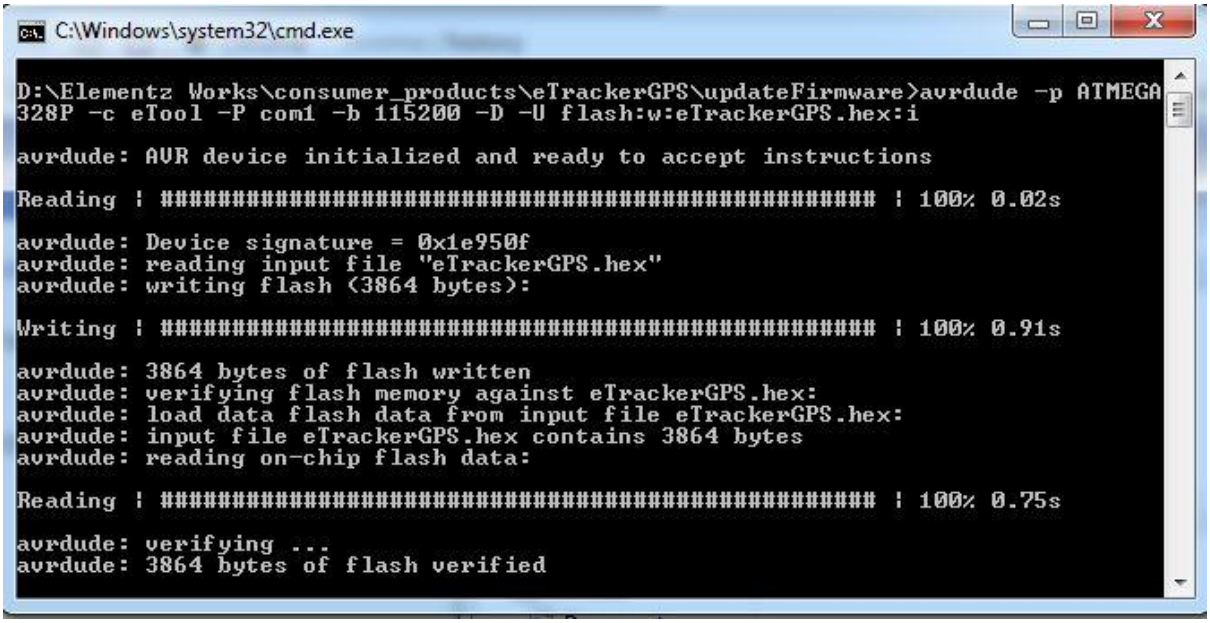


The HW TX and HW RX corresponds to the Hardware serial TX and RX as shown in the figure. This labelling you can see on the rear side of the board. Now connect the USB to ttl module to the computer and power up the e-Tracker board.

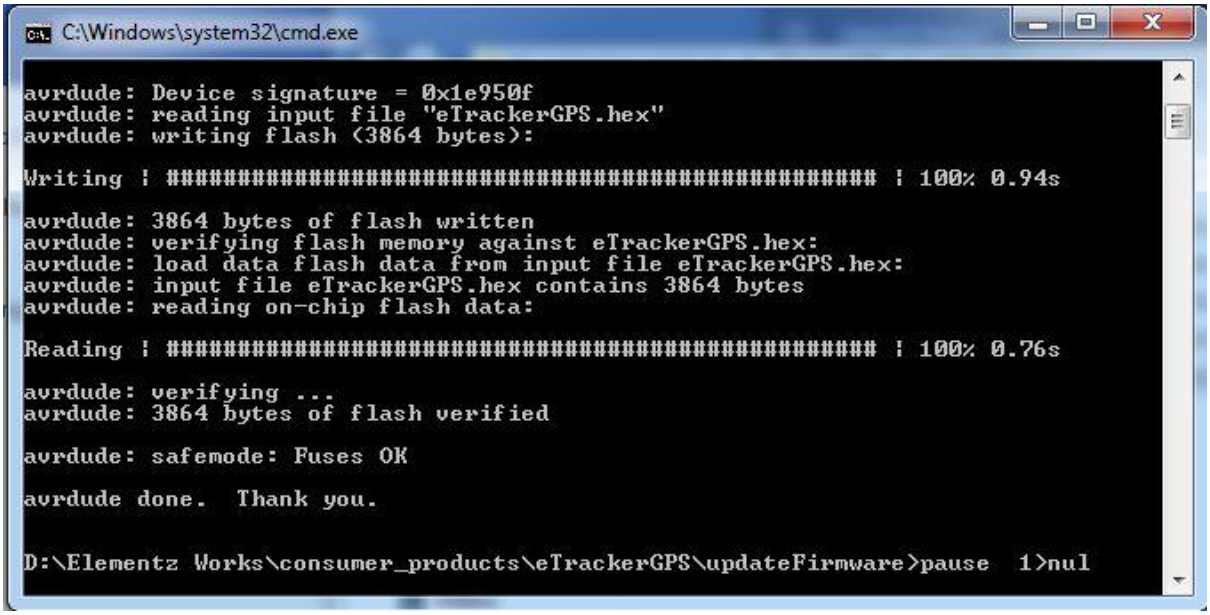
Now open the extracted folder. You will see the below files in the folder.



Double click on the "updateFirmware.bat" file for updating the firmware in e-Tracker. When you double click on the file a shell window opens as below, with some reading and writing dialogues.



After completing the upload you will see a flash verified, avrdude done message as below.

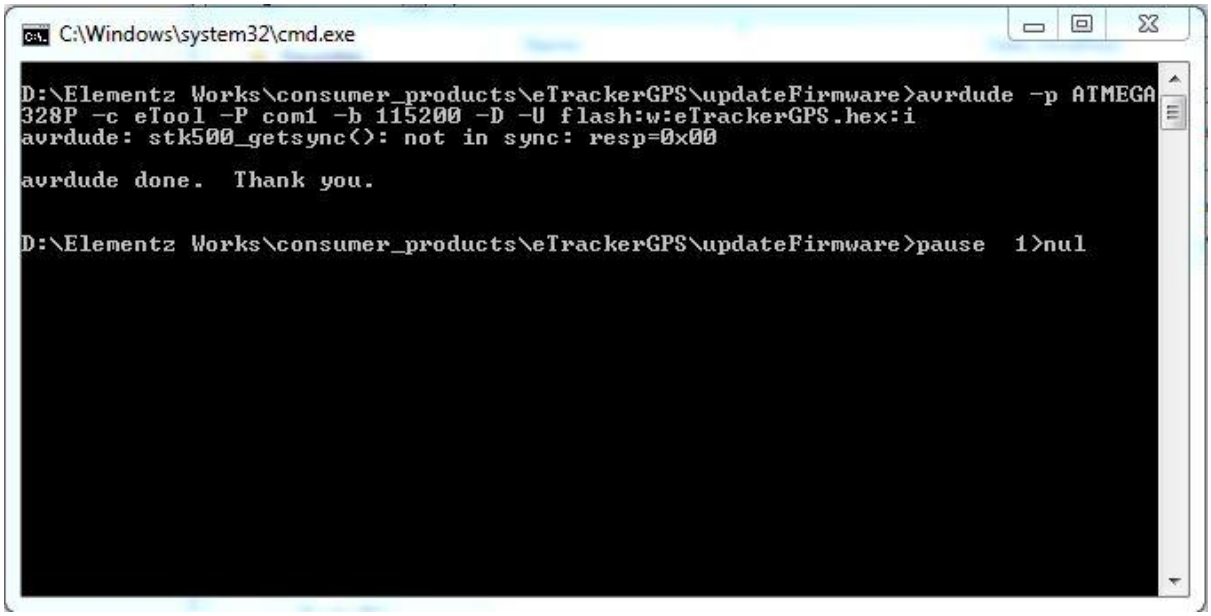


Now you have updated the firmware. Refer setting up e-Tracker and API manual for more information. You can also visit our wiki for more information.

The possible errors you might encounter while uploading the firmware are shown below

1. Not in sync: resp = 0x00
   This happens when the connections are not proper. Double check the connections to remove the problem.

This error also occur if you have ever erased the flash of e-Tracker before, like while uploading a program using ISP, other than using the bootloader.



2. Can't open device error

   This error occur when the USB to TTL is not connected to the COM1 port. You can verify this under the PORTs section in the device manager. IF it is not connected to COM1, then follow the previous steps mentioned in this manual to change the COM port.