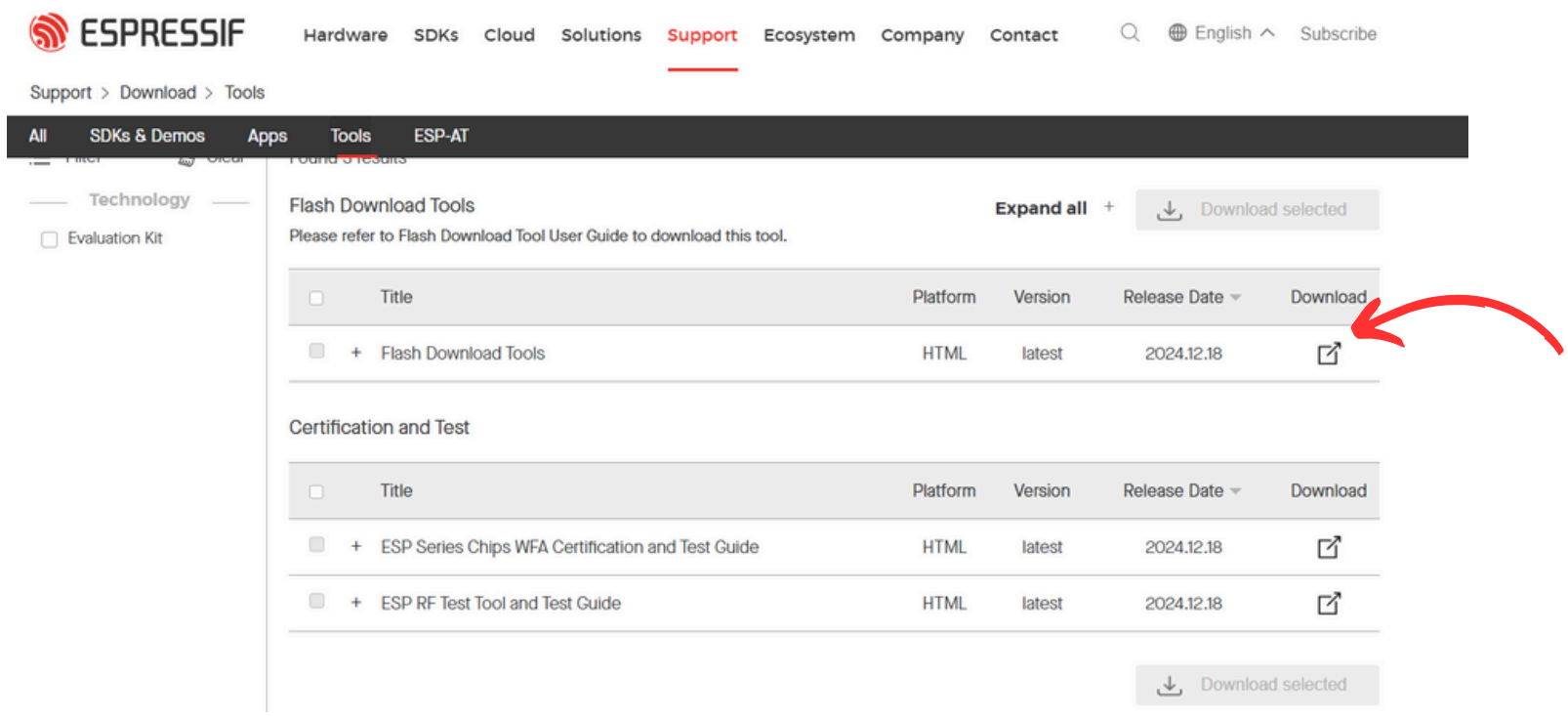
DOWNLOAD TOOL

Go to Expressif website to download the Flash Download Tool.



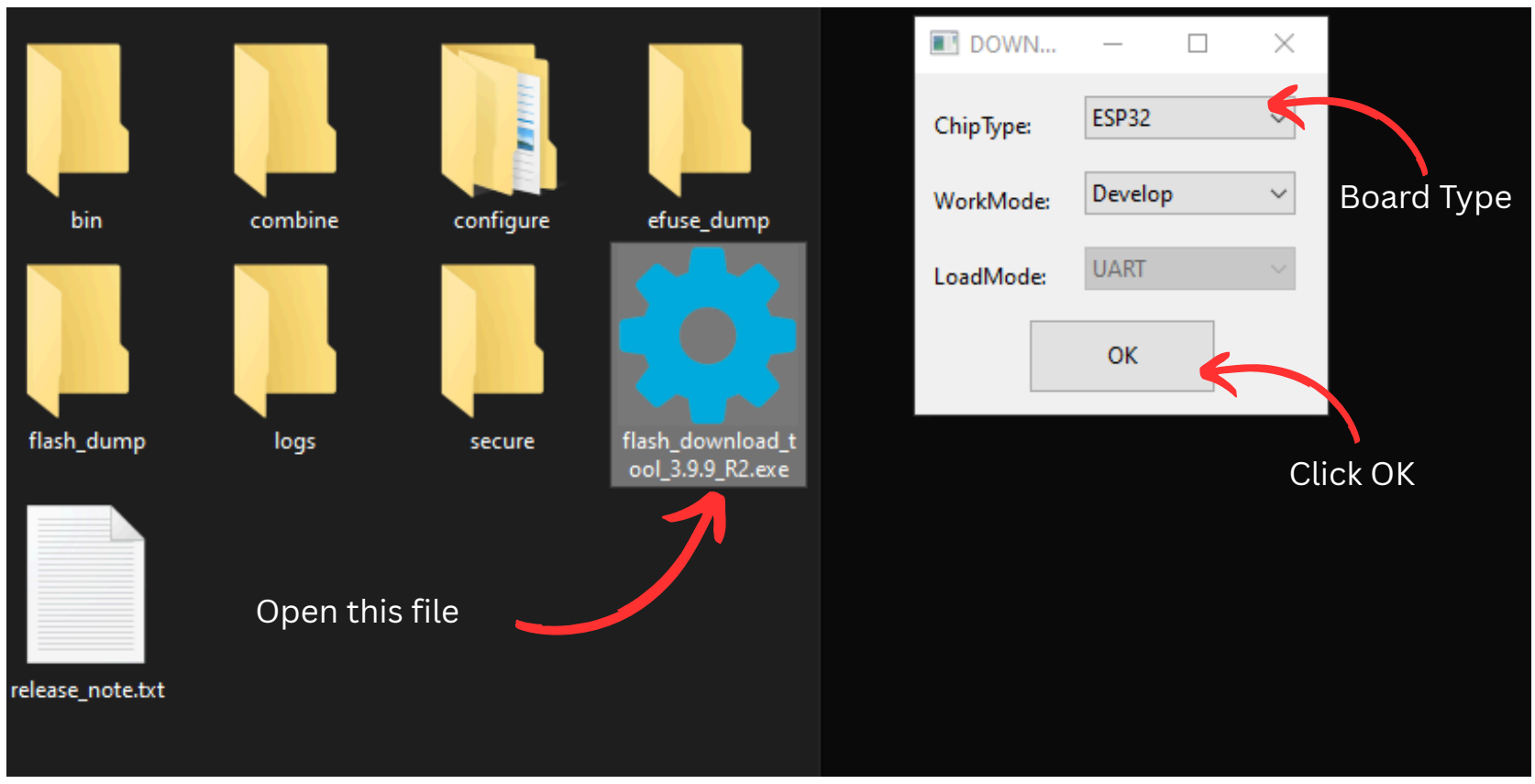
KEY WRITER & HUB WRITER

What exactly is the Key Writer ? The way Ectogear board works is it uses a security key to identify itself between each other. Every user should have their own unique security key. The boards then will automatically connected to other boards with the same security key only. There's no need to look for MAC address or setup communication setting for each board. This way, all you need to do is to make sure all the board uses the exact same security key.

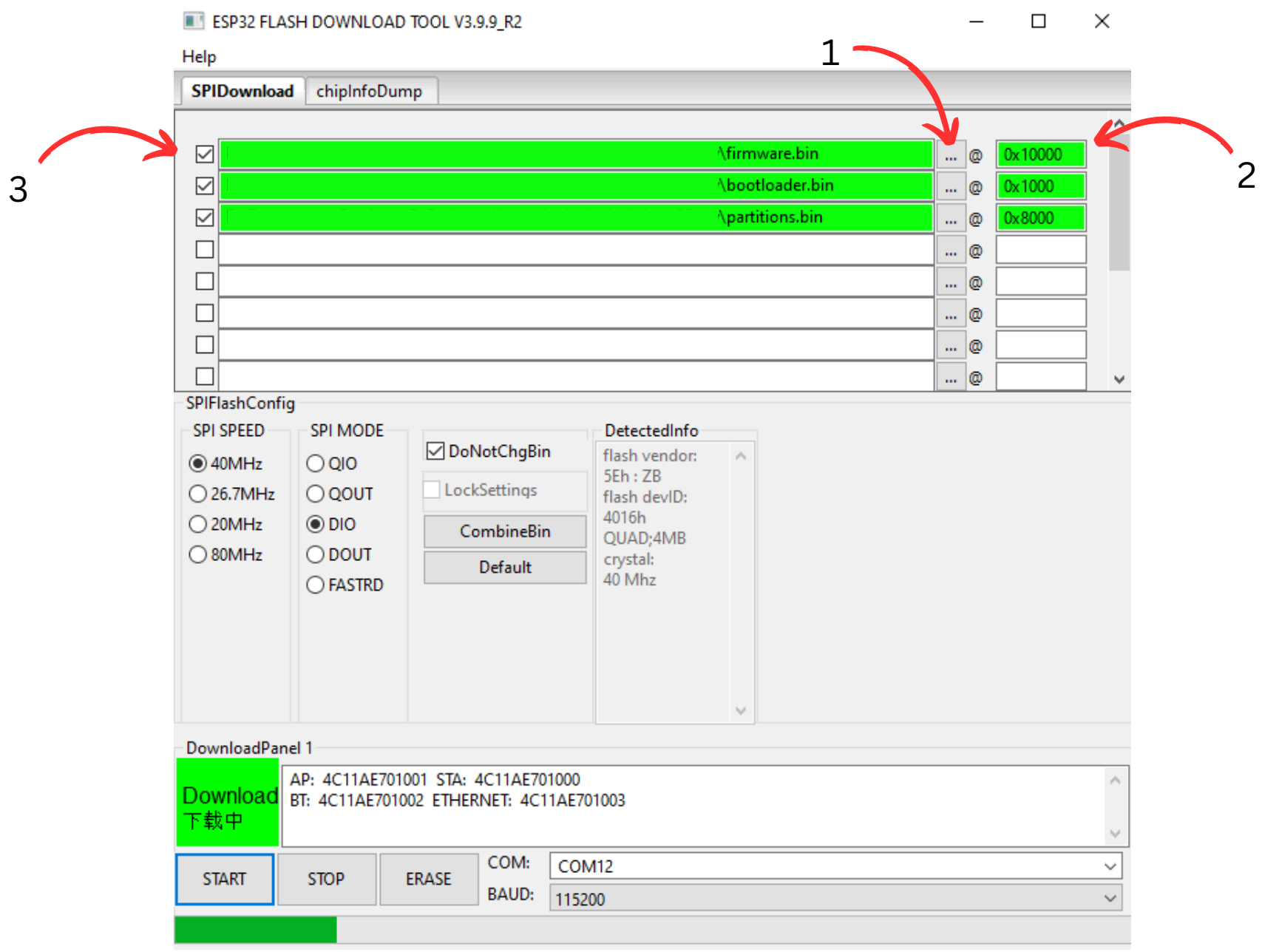
Refer to the schematic of the equipment you are flashing to know which firmware and board type to use. For example, Active Heat Isolator uses ESP32-C3 Supermini. So, if you are flashing that, upload the KeyWriter_C3.bin and the firmware is AHI_C3_firmware.bin. If the equipment schematic uses either ESP32 DEV or ESP32 D1 Mini, use KeyWriter_ESP32.

What exactly is the Hub Writer ? This is specially for switchboard or neutrona wand board. These board has an additional setting where you can set the SSID network name and password of the boards. This board is one that you able to connect to and change the timing and condition configurations. The way to flash the security key and firmware is exactly the same way. Once inside the serial monitor, just follow the instruction on the serial monitor.

OPEN DOWNLOAD TOOL



There's no need to install the software. Just extract and click open the program called Flash Download Tool. Once open, a terminal will open and a popup will appear. Pick the board type and click ok.



1. Lets first upload the Key Writer. For the first time on a fresh board, add the firmware, bootloader and partitions.

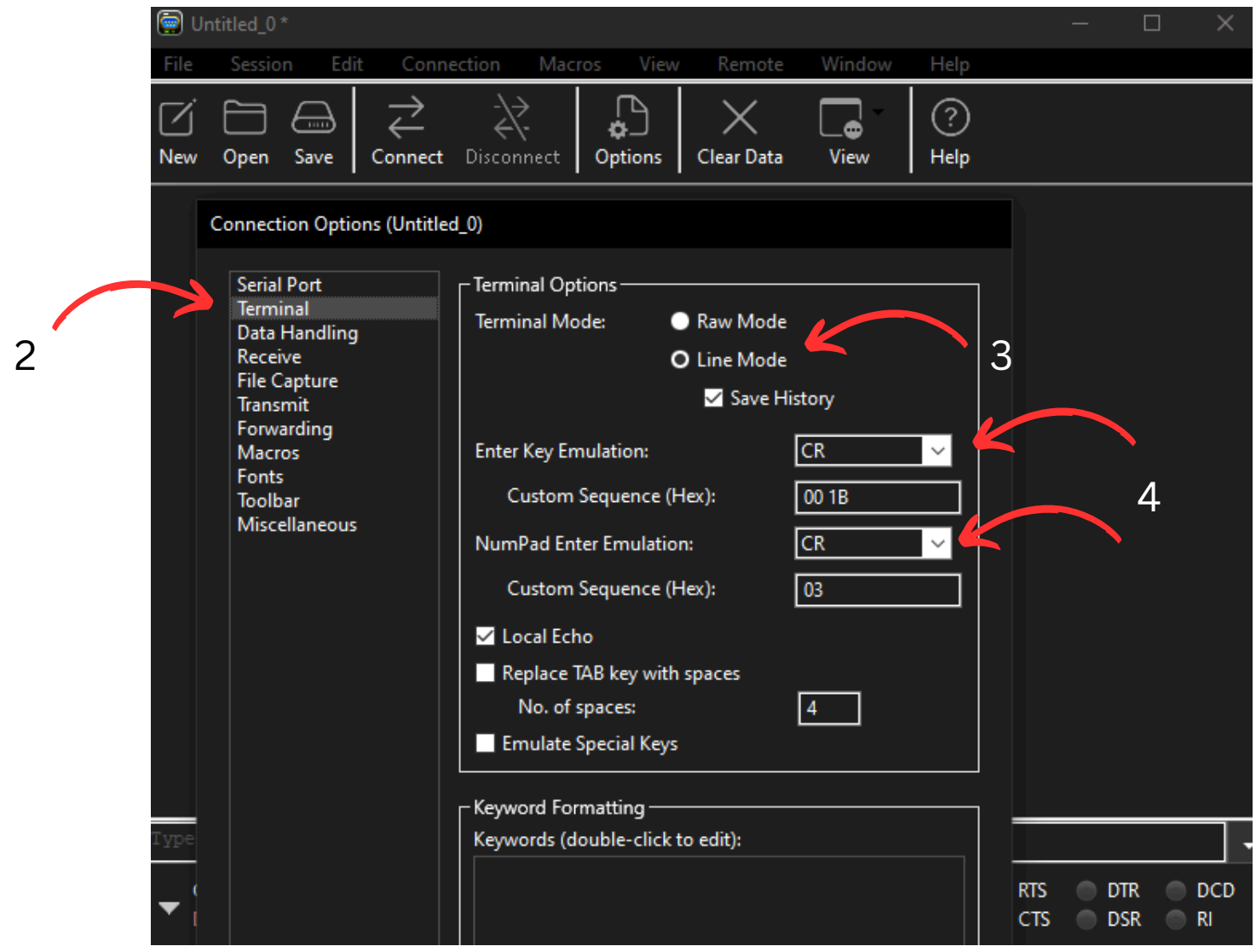
2. Follow the numbers at the right side. If bootloader has an error, use the number 0x0 instead of 0x1000.

3. Remember to tick the boxes on the left. This is to select the files you wanted to upload into the board.

4. SPI Speed is 40mhz, SPI DIO, choose the COM where the board is assigned to in your pc. Baud speed 115200.

5. Press "START". Wait till panel change from "Download" to "Finished".

SERIAL MONITOR



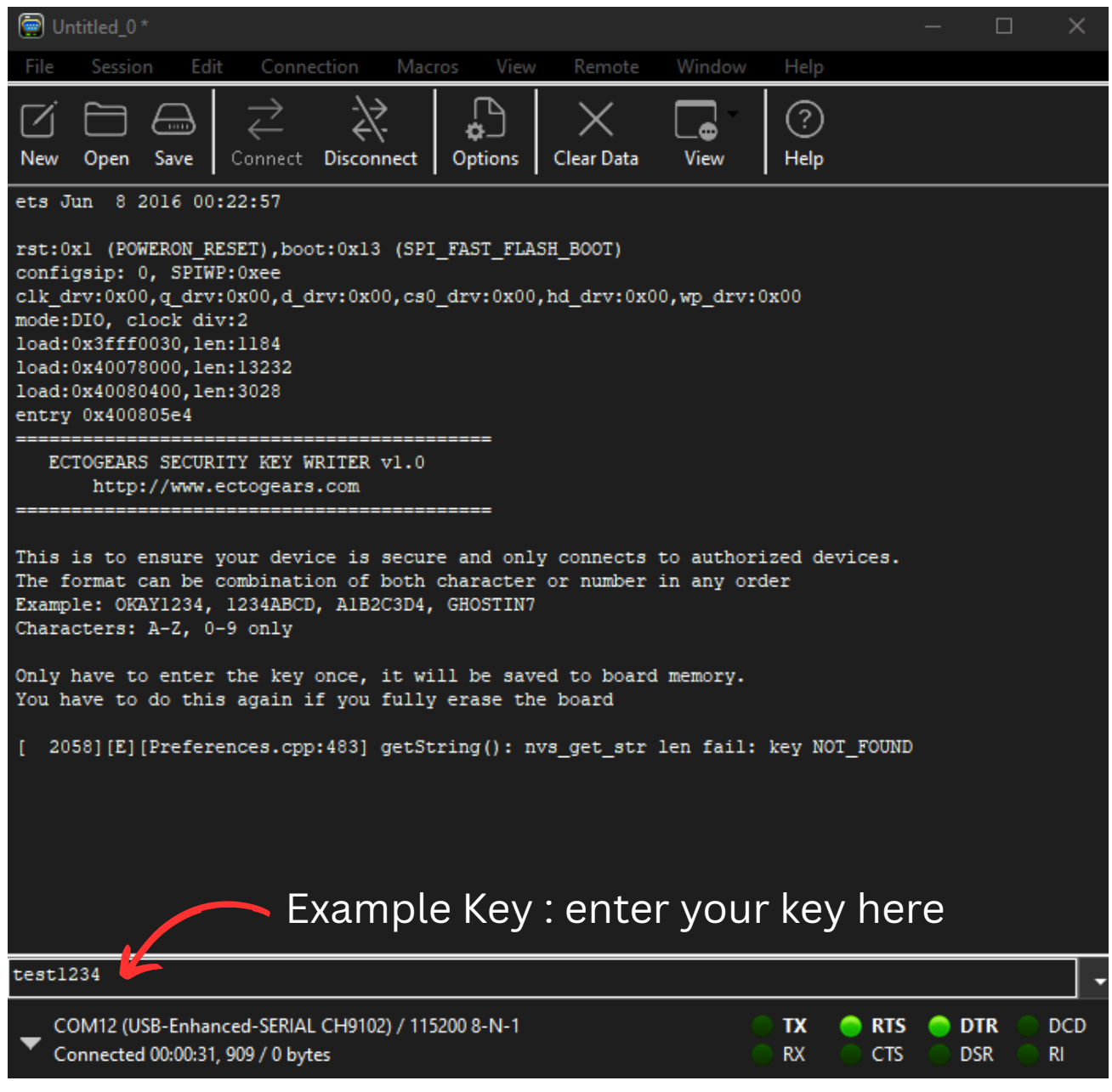
1. I recommend to use CoolTerm for serial monitor application. It allows me to open multiple serial monitors at one time. You can get them here.
2. Open “Options” then “Terminal”.
3. Change “Terminal Mode” to “Line Mode”
4. Change “Enter Key Emulation” and “NumPad Enter Emulation” to “CR”
5. Click “OK”

1. If you see this command column, you are doing it right.
2. Click the down arrow. Pick the COM port your board is connected to and choose baud 115200
3. Click “Connect”

SAVE KEY INTO BOARD

For the first time this firmware is flashed to the board, you will get this error. This is expected. Don't worry. Read the instruction. Make sure your security key is 8 characters. It can be mixed both letters and numbers. Make it unique.

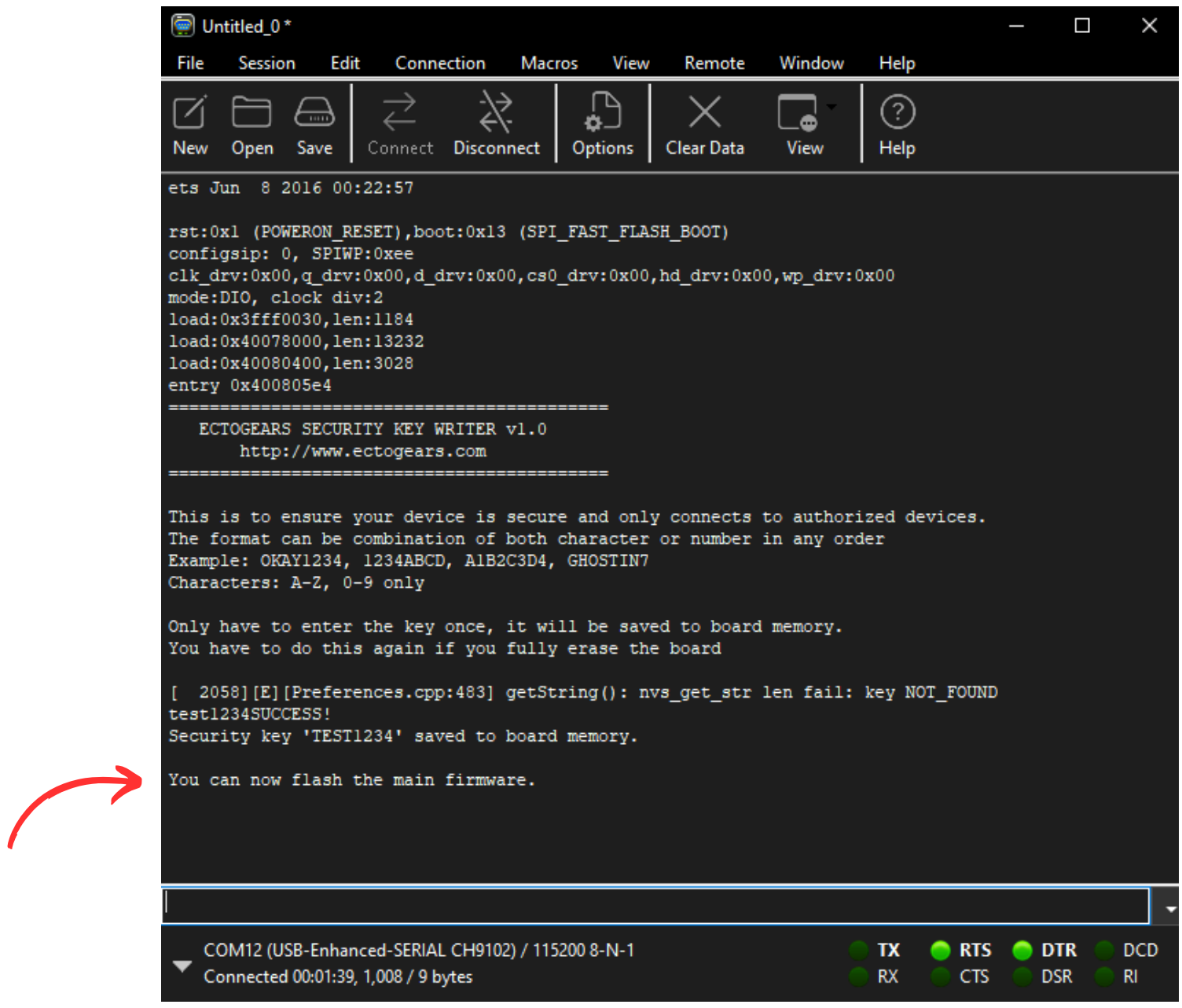
Enter your chosen unique security key here in the column and press "Enter" to confirm and set security key.



1. Enter your security key here and press enter.
2. Make sure your security code is 8 characters. It can be mixed both letters and numbers. Make it unique.

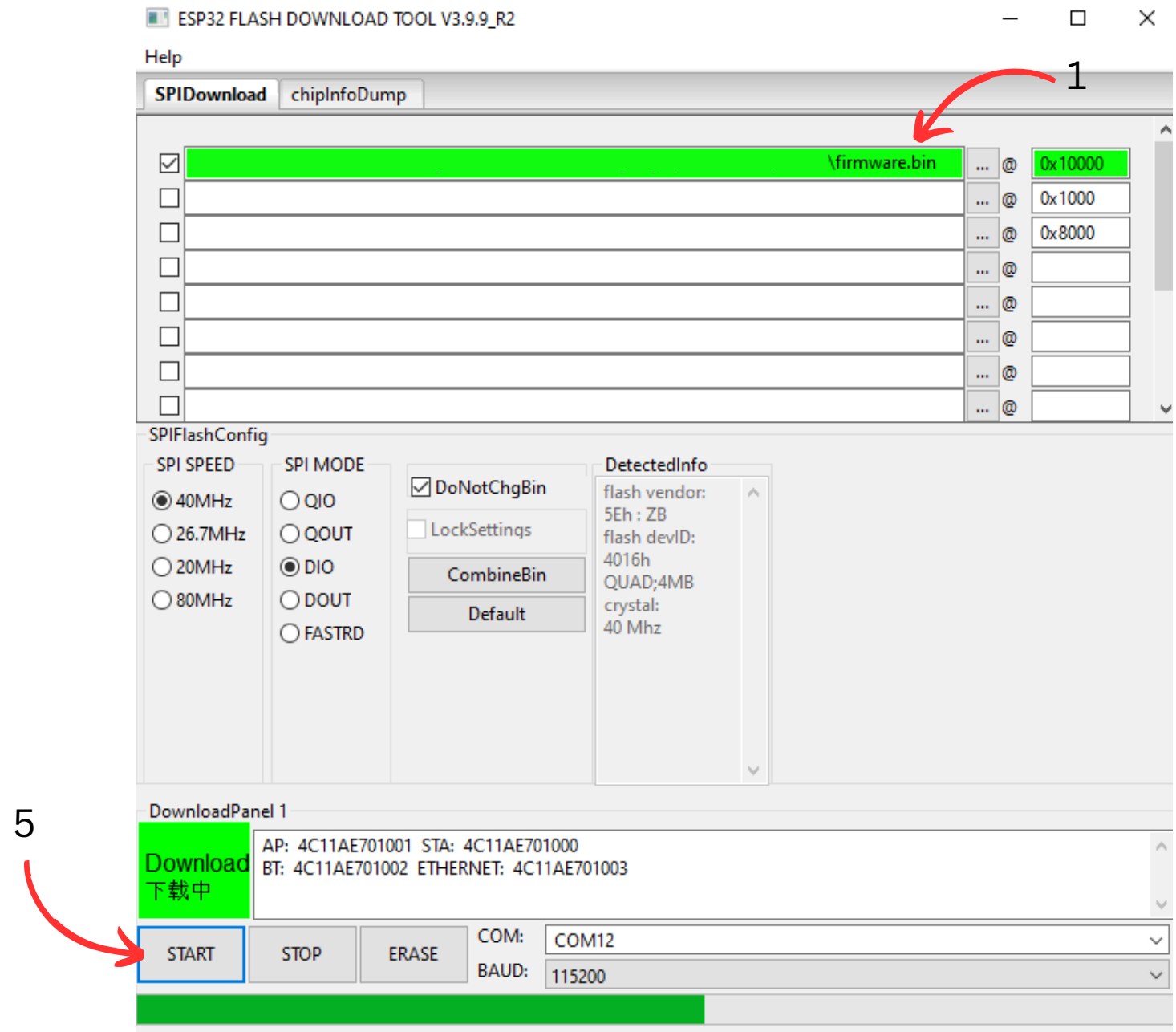
Now, the security key has been programmed into the board memory. The board will remember this security key and persist over power reset. You only have to do this once, unless if the board has a complete memory wipe / reset.

Now, you can flash the main equipment firmware.



BOARD FIRMWARE

Once the security key is done, now you can upload the actual project firmware.



1. Using the same step as Security Key, flash the main firmware. Change the firmware file to the actual intended equipment firmware.

2. Only tick and upload the equipment firmware.

3. If you add the rest, it could wipe the security key with it. So, please be careful.

4. Same SPIFlashConfig settings.

5. Press "Start" to upload project firmware.

6. Press "START". Wait till panel change from "Download" to "Finished".

7. You have successfully uploaded the firmware to the board !