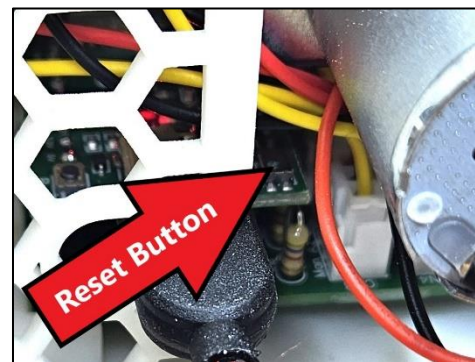


UPGRADING THE ROTOR'S FIRMWARE

Periodically, WA4MCMkits may release updates to the rotor's firmware. This could be to fix bugs or provide enhancements. Firmware updates may easily be accomplished using the existing USB-C computer interface on the rotor's microcontroller module by executing the following steps:

Caution: Unless you follow these steps exactly, there is a possibility that you may "brick" your PSR-100. Especially if you enter the wrong hexadecimal installation address. Please double-check your work before clicking the "Program" button. If you do end up bricking your rotor, please contact WA4MCMkits @ don.friend@wa4mcmkits.com for assistance.

1. Please refer to the images below for the locations of the boot and reset buttons once the microcontroller module once it has been installed inside the rotor's main body:



Use a small probe or screwdriver to press and **hold** the "boot" button on the rotor's microcontroller module. While still holding down the "boot" button, use a second small probe or screwdriver to press and release the "reset" button. This will put the microcontroller module in a mode for uploading a new firmware image. It will also temporarily change the virtual serial port number being used by the rotor while in this mode.

2. Go to the following web site: https://adafruit.github.io/Adafruit_WebSerial_ESPTool/
3. Click the "Connect" button in the upper-right corner of the page, and then select the serial port that is labeled "USB JTAG/serial debug unit" and click connect. Please note that this will be a different virtual serial port than what has normally been used for your rotor.
4. Refer to the image for a sample response from the flasher tool – the MAC address you see will be different. The results text should show that you've connected successfully. Once this happens, you'll be able to set up the image file for programming.
5. Set the top file offset to 0x10000 (four zeros!) – you can leave the other 3 at 0x0 since you'll only be selecting one file. **Note: the "0x" is already entered for you by the web page.**
6. Click the top "Choose a file..." button and navigate to and select the firmware file (.bin extension) that is contained in the same .zip file as these instructions.

7. Double-check the file offset address!

8. Click the "Program" button and observe the progress bar until it's done.
9. Press the reset button on the rotor's microcontroller module.

```
ESP Web Flasher loaded.  
Connecting...  
Connected successfully.  
Try hard reset.  
Chip type ESP32-S3  
Connected to ESP32-S3  
MAC Address: C0:4E:30:0C:83:B4  
Uploading stub...  
Running stub...  
Stub is now running...  
Detecting Flash Size  
FlashId: 0x1740C8  
Flash Manufacturer: c8  
Flash Device: 4017  
Auto-detected Flash size: 8MB
```