

UPGRADING THE METER'S FIRMWARE

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

Caution: Unless you follow these steps exactly, there is a possibility that you may "brick" your GM-102. 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 meter, please contact WA4MCMkits @ don.friend@wa4mcmkits.com for assistance.

1. Press and **hold** the "boot" button on the bottom-right of the meter's MCU board. While still holding the "boot" button, press and release the "reset" button. This will put the MCU board in a mode for uploading a new firmware image. It will also temporarily change the virtual serial port number being used by the meter 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 meter.
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.
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 meter's MCU board. Watch the splash screen to confirm the new version matches the version number listed as part of the downloaded firmware's filename.

```
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
```

Finally – to view an instructional video on the entire upgrade process, please watch this [YouTube Video](#). This video is from an earlier firmware update, but is still relevant – just use the latest firmware version wherever applicable.