Standard Operating Procedure

Mobibooth BLE LED Controller Firmware Upgrade

Version	Date	Author	Comments
1.0	6/18/2021	Mike Bender	Initial release
2.0	6/21/2021	Mike Bender	Clarification in programming steps. Autocorrect fixes in command line parameters.
3.0	2/8/2022	Mike Bender	Updated firmware version.

PURPOSE

The purpose of this procedure is to outline the required steps to successfully upgrade the firmware running in your Mobibooth RGB LED & Ring Light Control Module. You can update the Control Module using a PC via a USB cable.

IMPORTANT NOTICE

Do not attempt to update your Mobibooth product using any other data file except those provided directly from the Mobibooth website or through your network connection.

Follow the instructions carefully and do not attempt any other procedures not specified in the instructions provided by Mobibooth.

Improperly updated products may cause improper operation, and any parts or service required to restore proper operation will not be covered under the Mobibooth Limited Warranty.

ENVIRONMENTAL REQUIREMENTS

To perform the firmware update you will need the following tools and environment.

- A desktop or laptop running Windows 10.

- A micro USB cable.

- A small screw driver.

DISCLAIMER

To the maximum extent permitted by applicable laws, in no event will the manufacturer be liable for any damages whatsoever arising out of failures of this machine, losses of registered data, or the use or non-use of this product and operation manuals provided with it.

The manufacturer is not liable for any damages resulting from the use or misuse of this software.

Nor is the manufacturer liable for any damages resulting from the use or misuse of this software with third parties.

Contents of this manual are subject to change without prior notice.

ENVIRONMENT SETUP

1. To get started flashing your Mobibooth controller you will need to remove the unit from your Aura.

2. Using a small Phillips head screwdriver remove the 4 screws holding on the controller case cover.
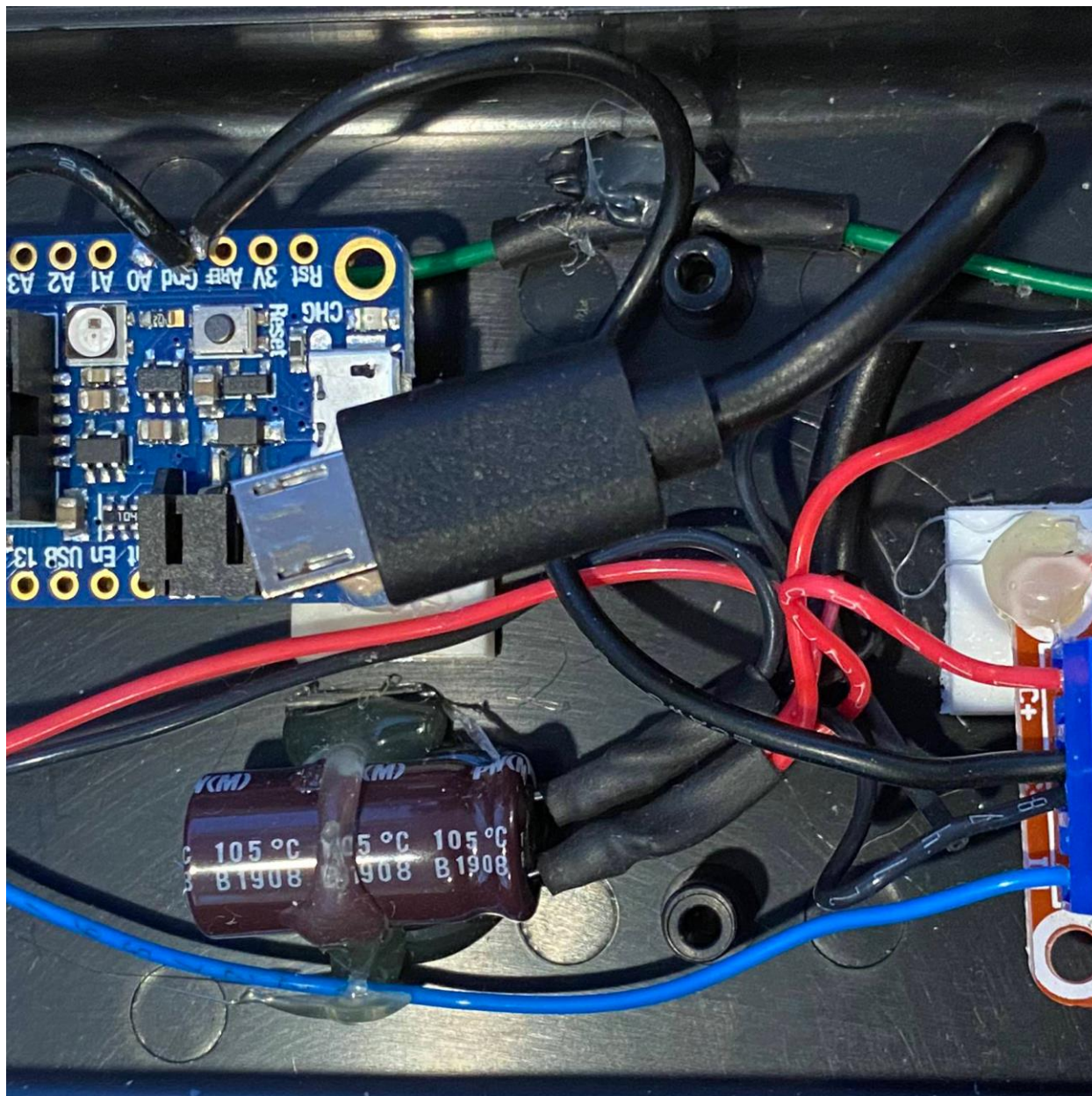
3.   Remove the case cover.

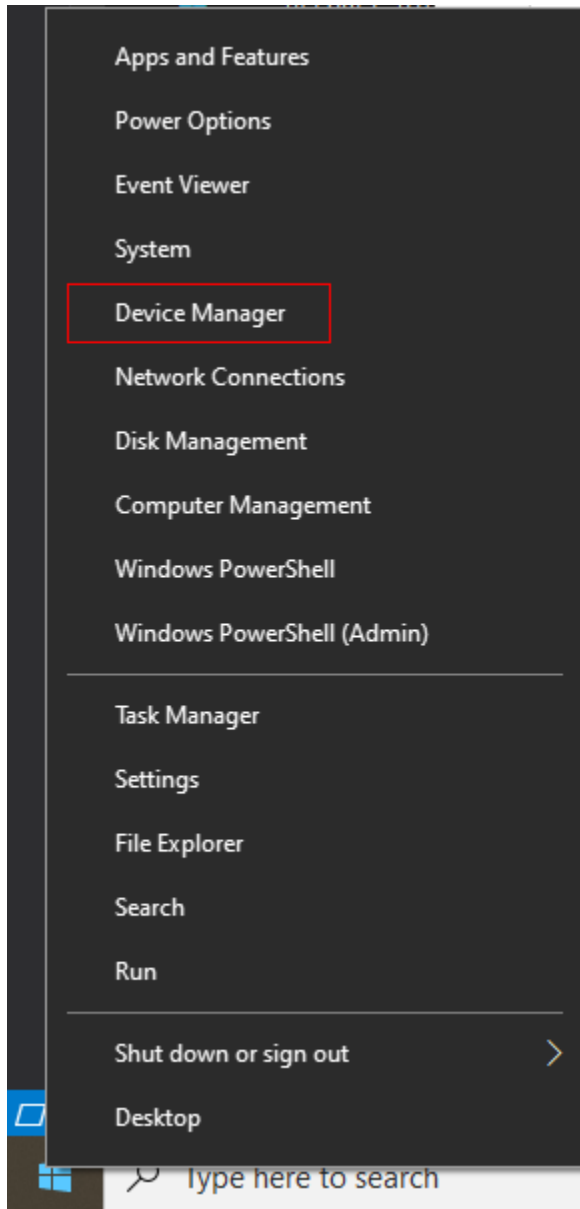4.   Locate the USB power cable to the microcontroller PCB.
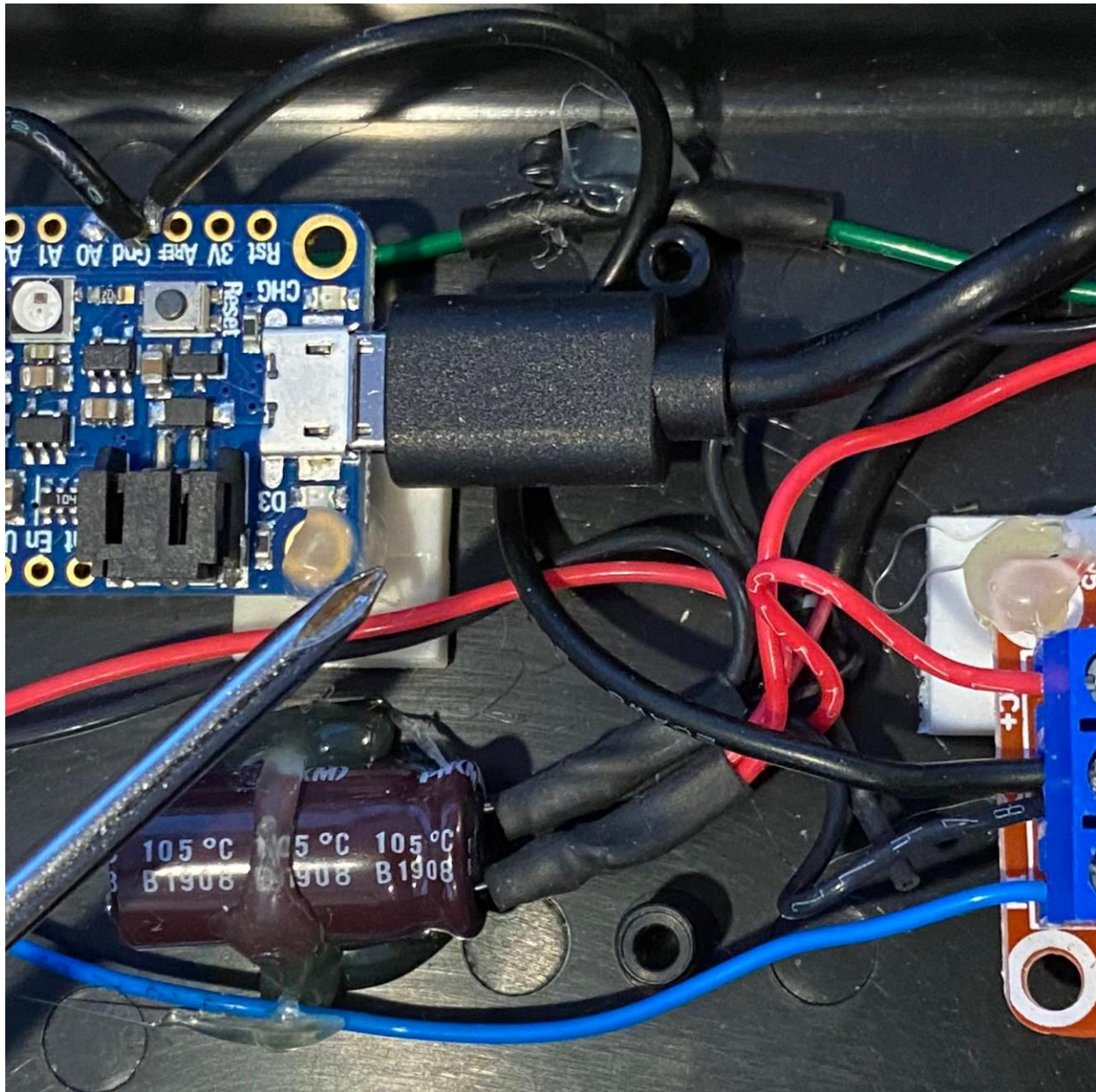
5. Unplug the USB power cable from the microcontroller PCB.

6. Open up Windows Device Manager on the computer. You can do this by right clicking on the start menu button and selecting Device Manager.

7. After opening Device Manager go to the Ports (COM & LPT) section and expand. This will show you all current ports assigned and will show new ones once they have been plugged in.
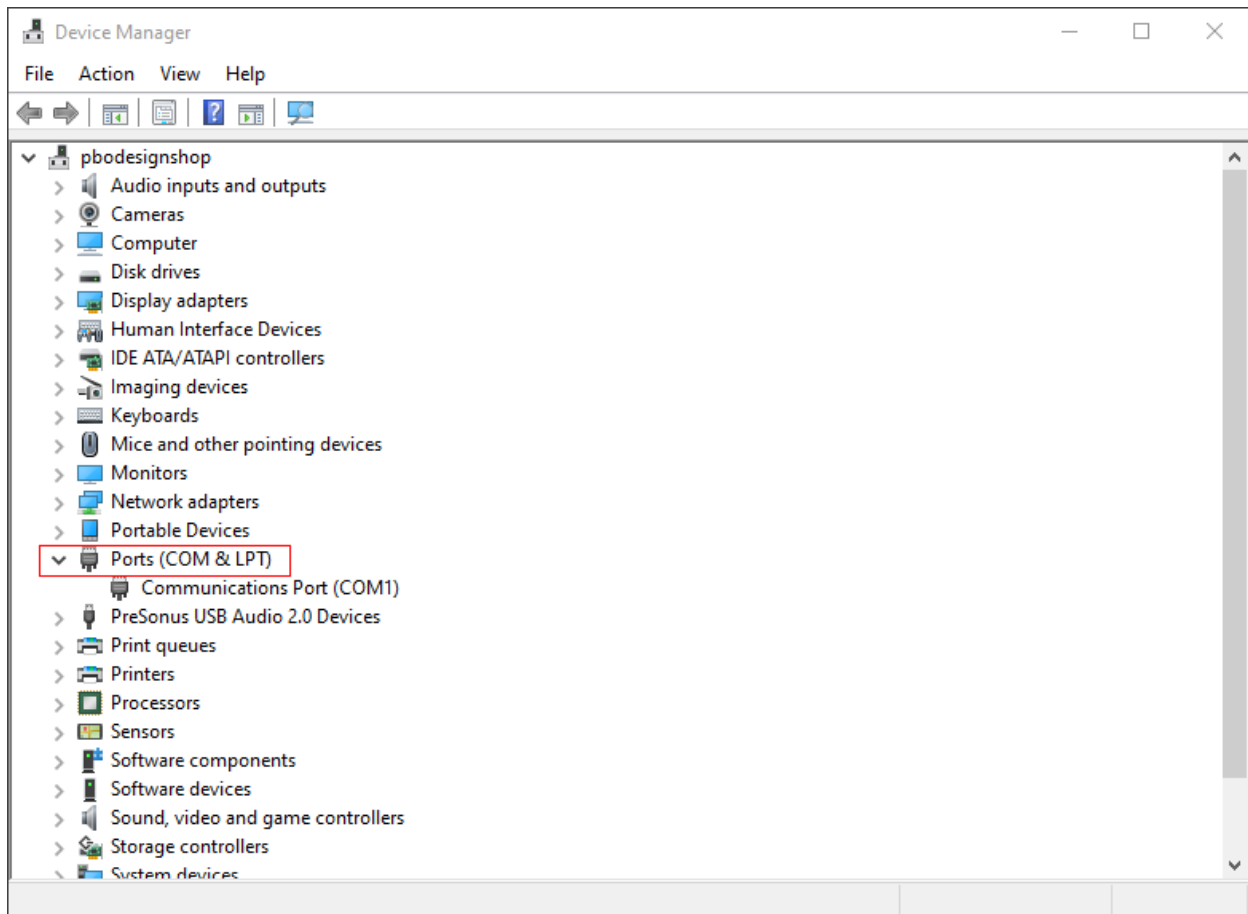
8. Connect the micro-USB cable from computer to the micro-USB port on the microcontroller.
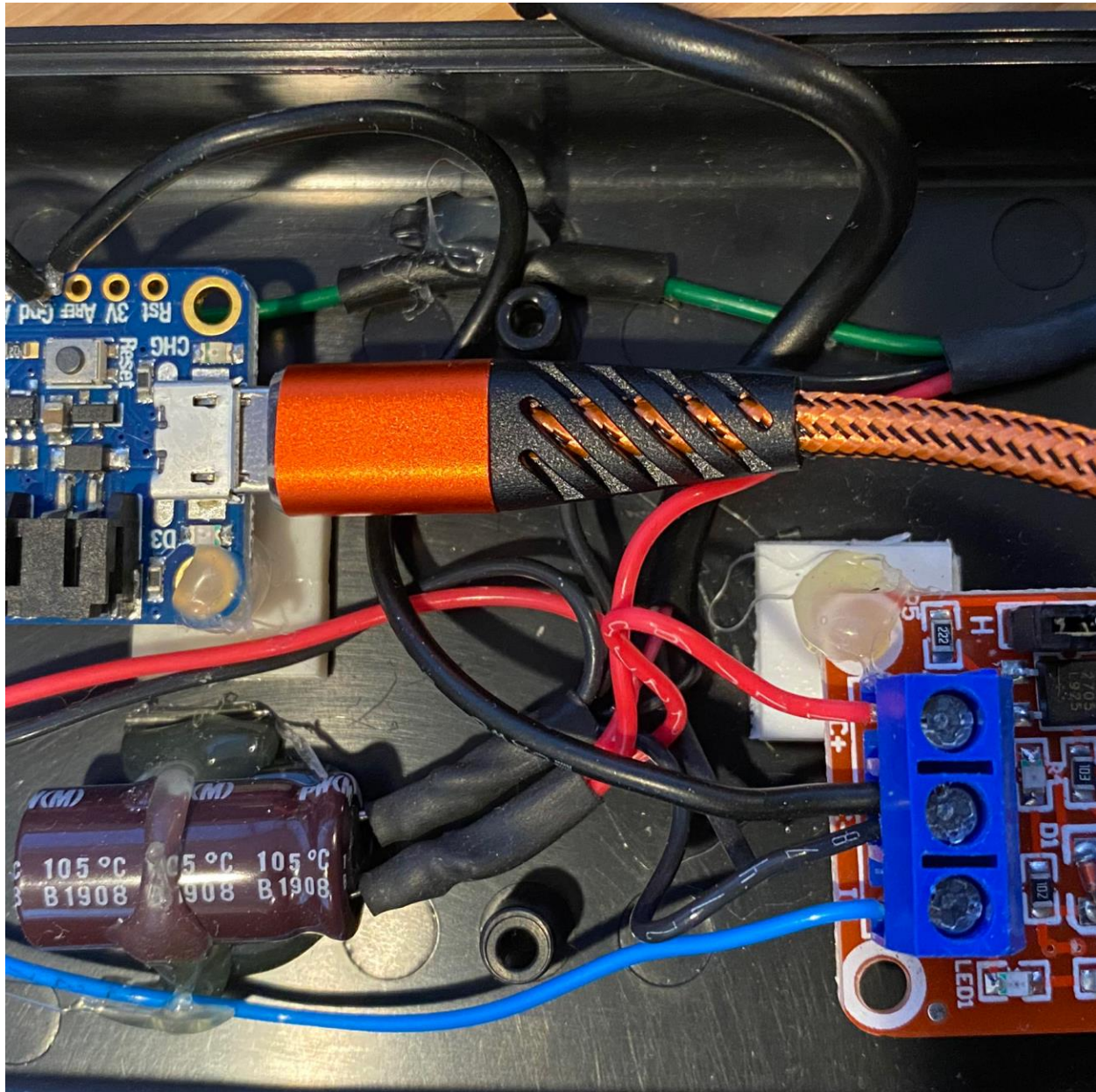
9. Device Manager will refresh shortly after you connect the micro-USB cable. Record the new serial port number associated to the microcontroller.
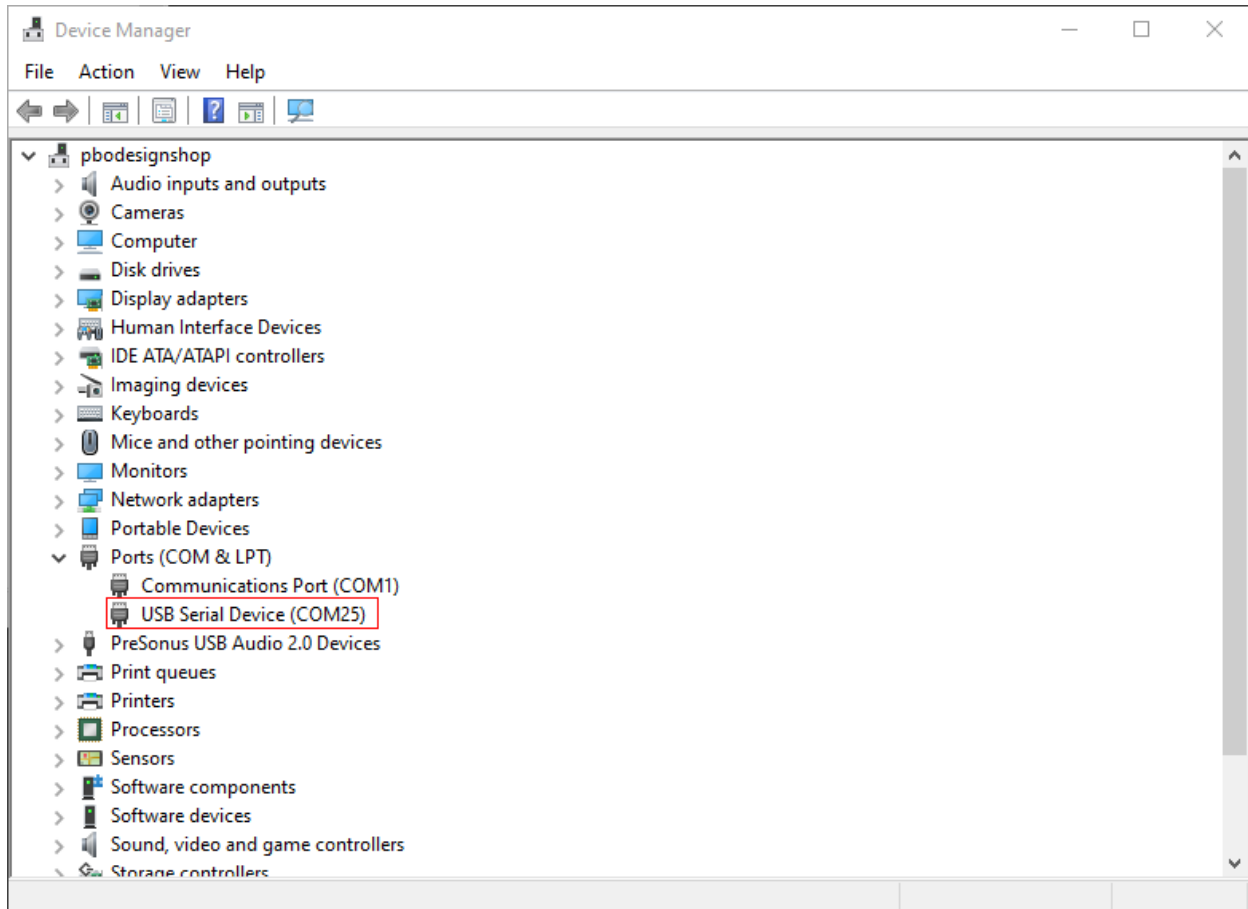
10. Download the latest flash utility for Windows at https://mobibooth.co/nrf52util. The Windows version a –win suffice in the name.

11. Extract the downloaded file to a temporary directory. We recommend creating a directory on the C drive named temp (C:\temp). We will use C:\temp as the root directory in the remainder of this document.

12. Download the latest firmware for your Mobibooth controller. You can download this file from https://mobibooth.co/rgb-firmware.

It is important to download the proper firmware configuration for your unit.

Every controller box ships with a version label on it. If your label is version 1.0, 2.0 or 2.1.1or contains a -172 at the end of the name you'll want to download the proper generation with the -172 suffix.
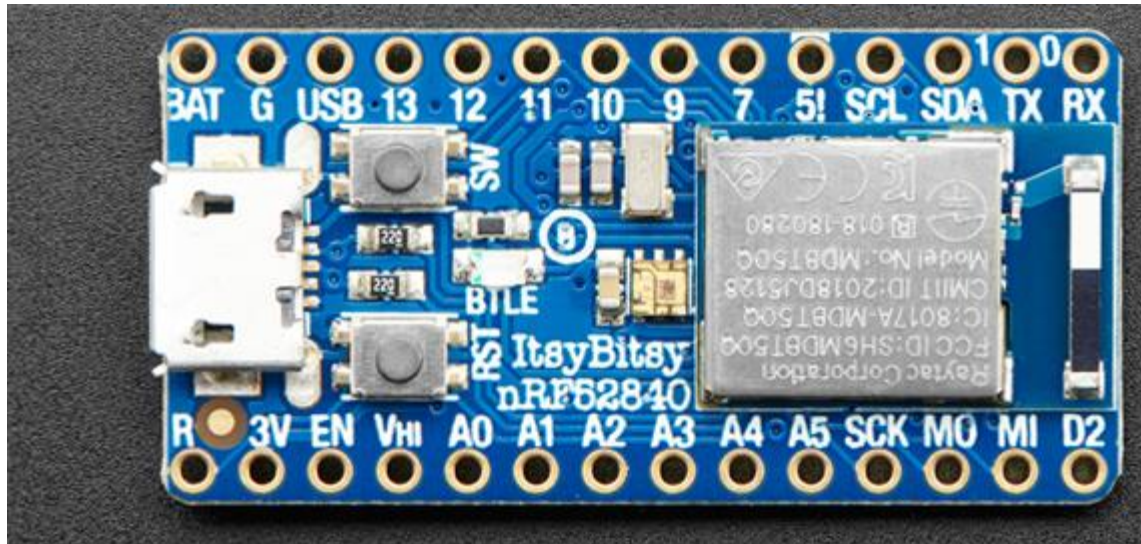
Identify the board type you have. The controller modules have shipped with two unique microcontroller boards. It is important that your board be identified before flashing. Please reference the following table for assistance.

G1

G2

13. Move the downloaded file to the C:\temp directory if you did not download it directly to it.

The folder should contain the following files:

- adafruit-nrfutil.exe

- The new firmware file as a zip file.

Congratulations your environment is now ready to proceed to programming.

PROGRAMMING STEPS

If you have not completed all the steps in **Environment Setup** please return and do so. A failure to do so could result in a failed upgrade and the potential loss of functionality in the controller module.

14. Verify that the microcontroller PCB is connected to the computer with a micro-USB cable.

15. Place the microcontroller PCB into programming mode by tapping the RESET (RST) button two times quickly.

G1
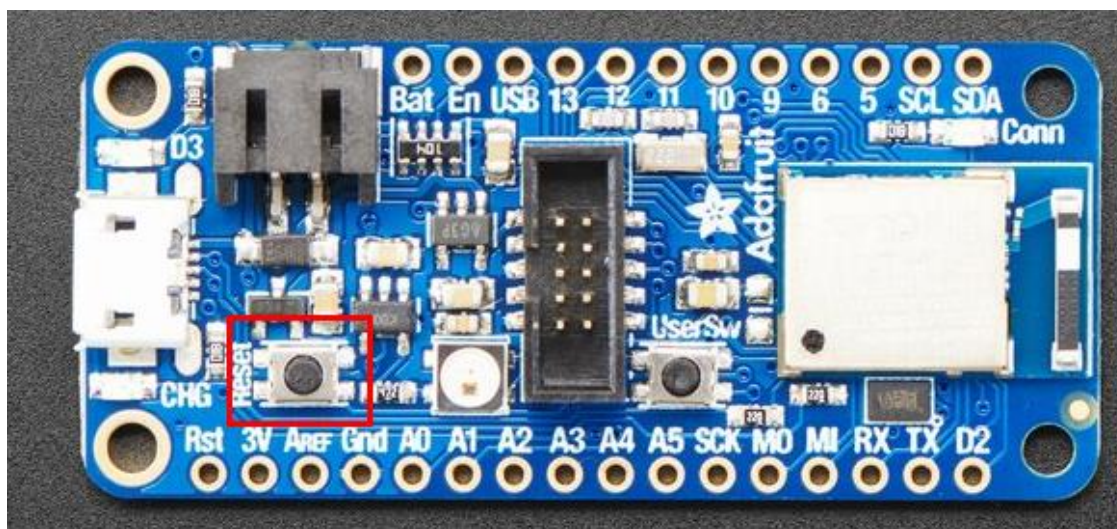
The user LED next to the RESET button will illuminate solid green.
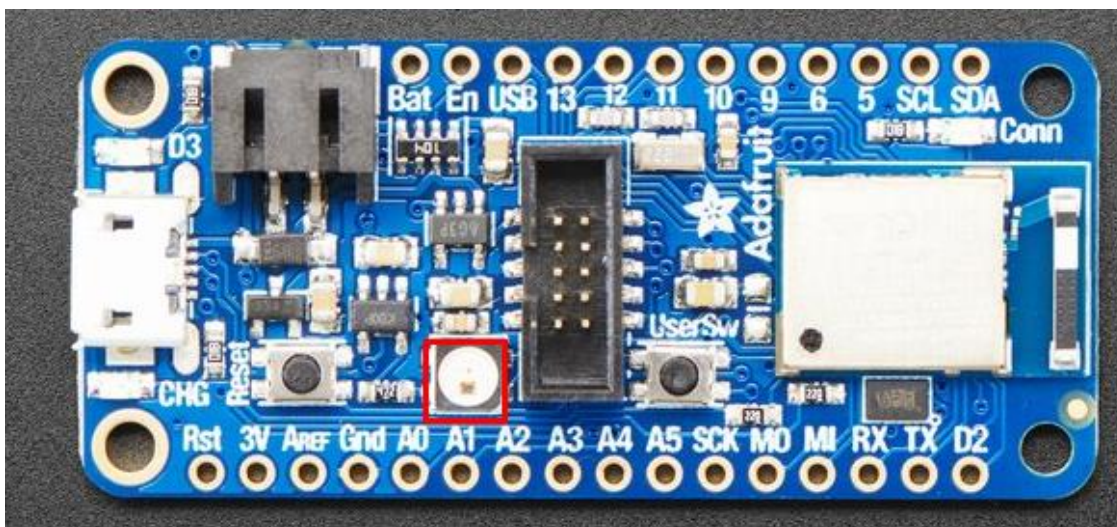
G2

The BTLE LED will illumiate solid blue.

16. In Device Manager the COM port number will change. Record the new COMxx name of the port.
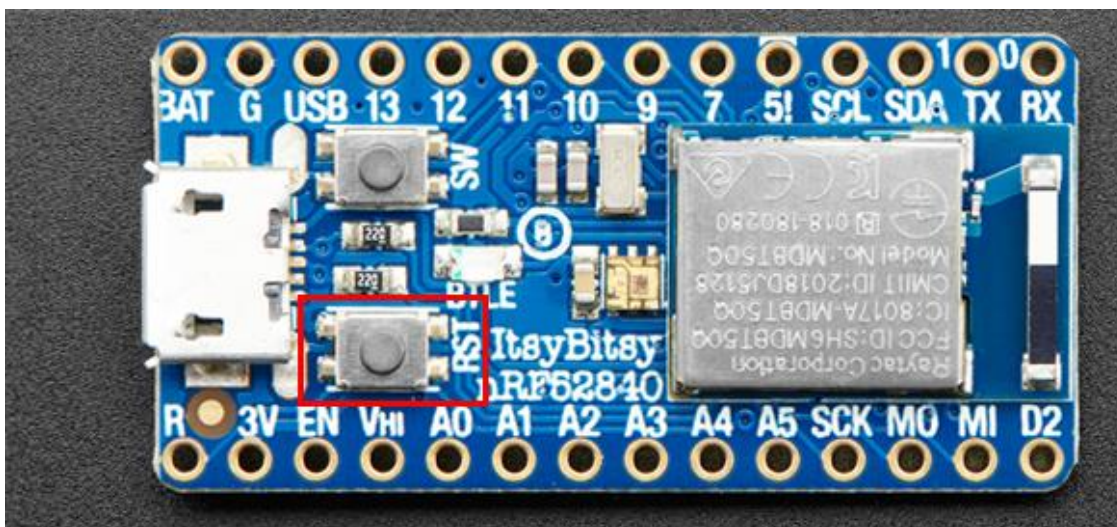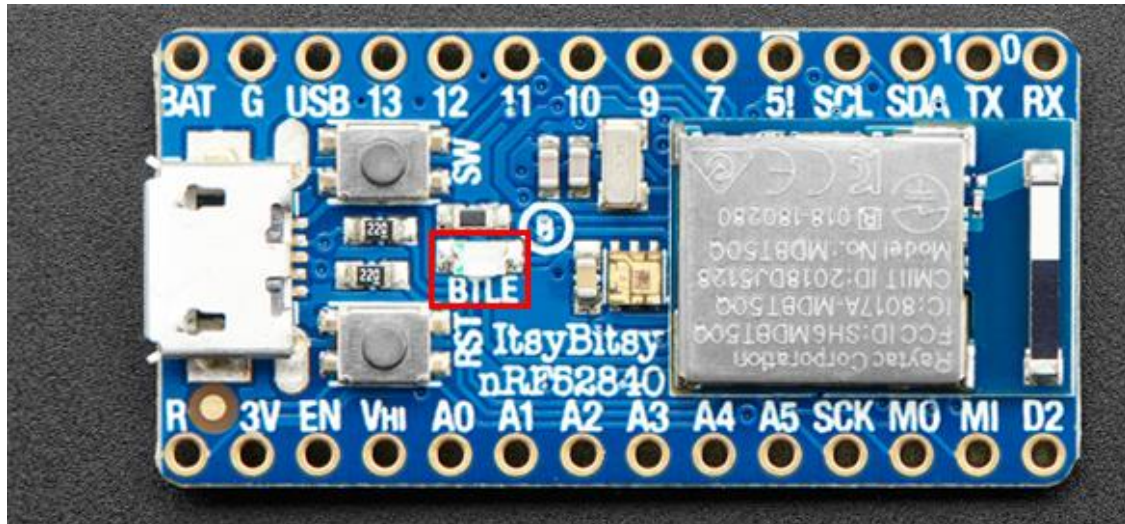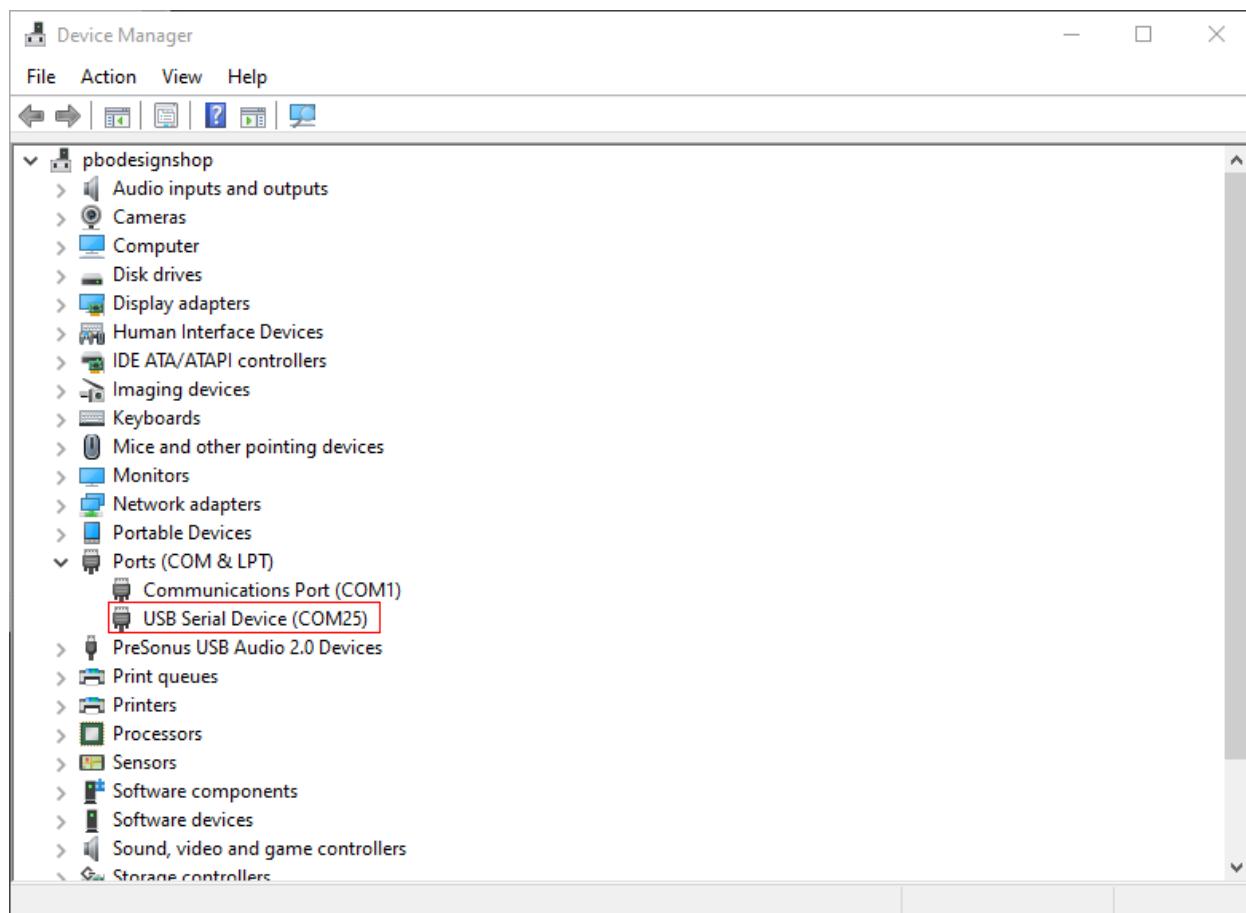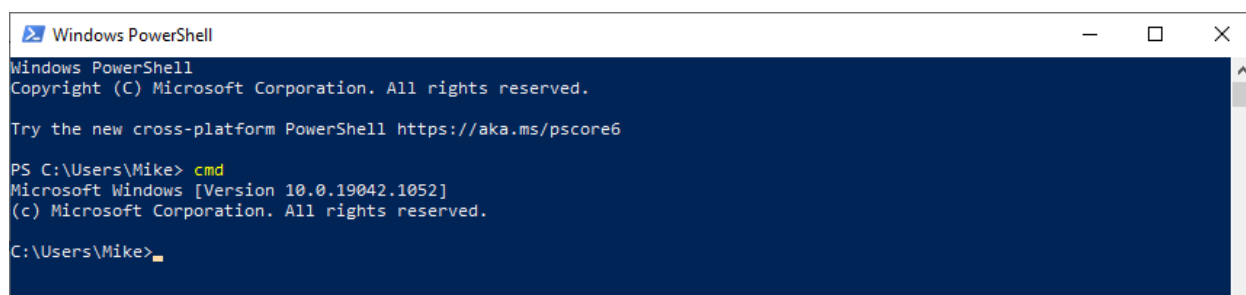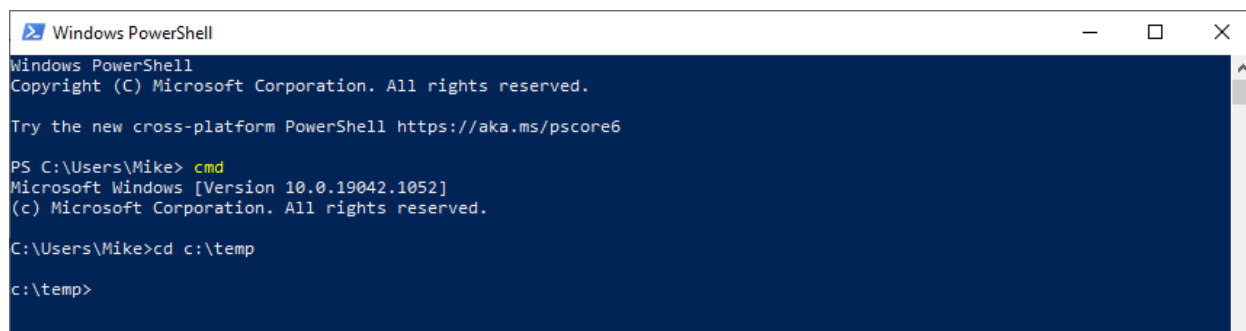
17. Open Windows PowerShell. This can be done by right clicking on the start menu button.

18. Enter a command prompt by typing **cmd** and pressing the Enter key.

19. Switch to the directory you created in Step 12 in the **Environment Setup** section. In our case we will use c:\temp.

```
Windows PowerShell                                                  —   □   ✕

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Mike> cmd
Microsoft Windows [Version 10.0.19042.1052]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Mike>cd c:\temp

c:\temp>
```

20. Edit the following command inserting the COMxx port number and firmware file name

```
adafruit-nrfutil.exe --verbose dfu serial -pkg
<filename> -p <com port> -b 115200 --singlebank
```

It is highly recommended that you do this inside of a text editor such as Notepad.

In our example we had a <com port> of COM25 and will use the G2 firmware for release v2.3-2021.06.14. The result is as follows.

```
adafruit-nrfutil.exe --verbose dfu serial -pkg
v2.5-2021.01.28_G2_mobibooth_controller.zip -p
COM25 -b 115200 --singlebank
```

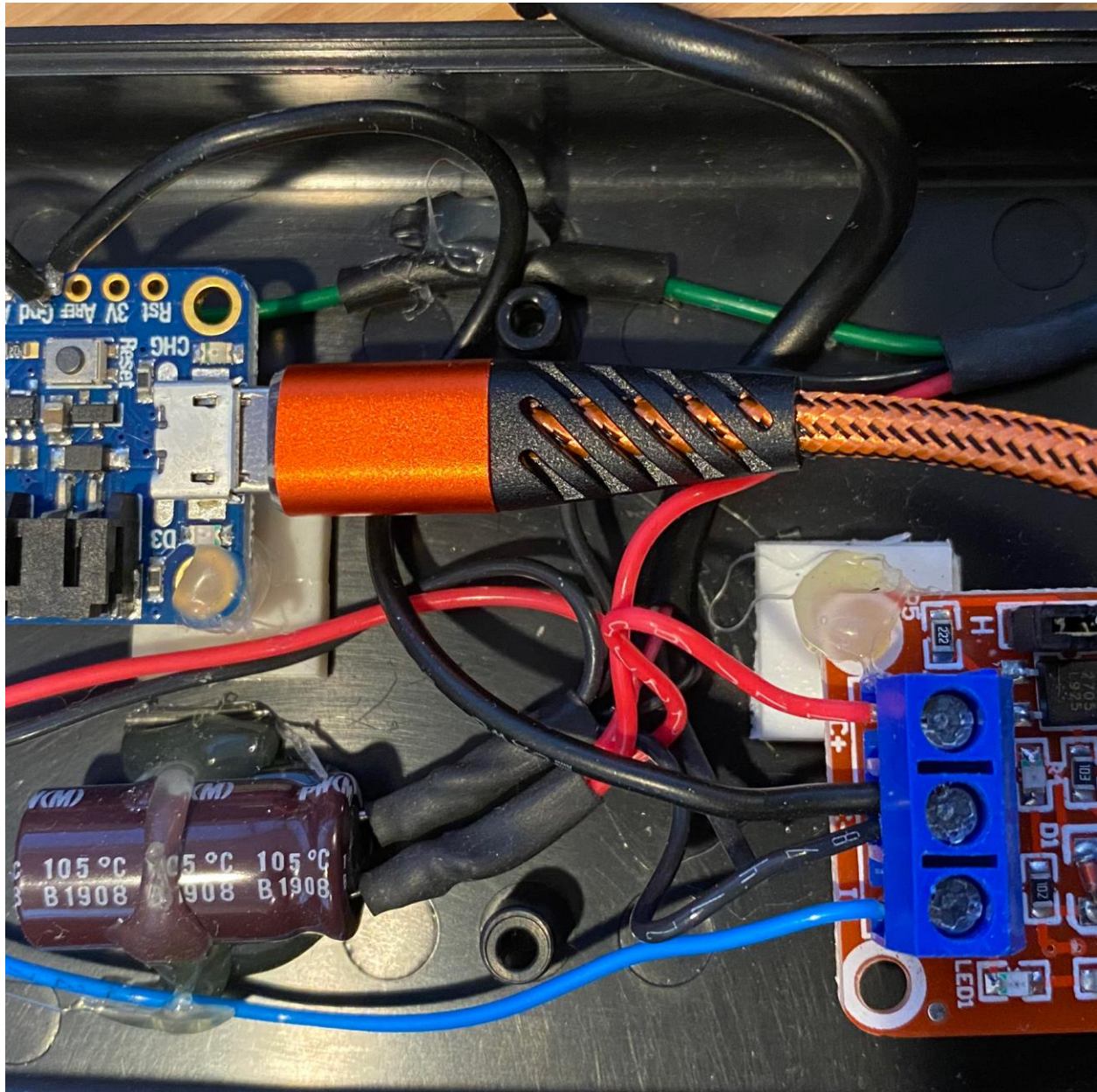21. Copy and paste the command with your modifications into the Windows PowerShell window and press the Enter key.

22. Wait for the programming process to complete. It will look like the following.

```
Windows PowerShell                                                              —    □    ✕
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Mike> cmd
Microsoft Windows [Version 10.0.19042.1052]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Mike>cd c:\temp

c:\temp>adafruit-nrfutil.exe --verbose dfu serial -pkg v2.3-2021.06.14_G2_mobibooth_controller.zip -p COM3 -b 115200 --s
inglebank
Upgrading target on COM3 with DFU package c:\temp\v2.3-2021.06.14_G2_mobibooth_controller.zip. Flow control is disabled,
 Single bank, Touch disabled
Opened serial port COM3
Starting DFU upgrade of type 4, SoftDevice size: 0, bootloader size: 0, application size: 109652
Sending DFU start packet
Sending DFU init packet
Sending firmware file
#######################################
#######################################
#######################################
#######################################
#######################################
##############
Activating new firmware

DFU upgrade took 6.915061950683594s
Device programmed.

c:\temp>
```

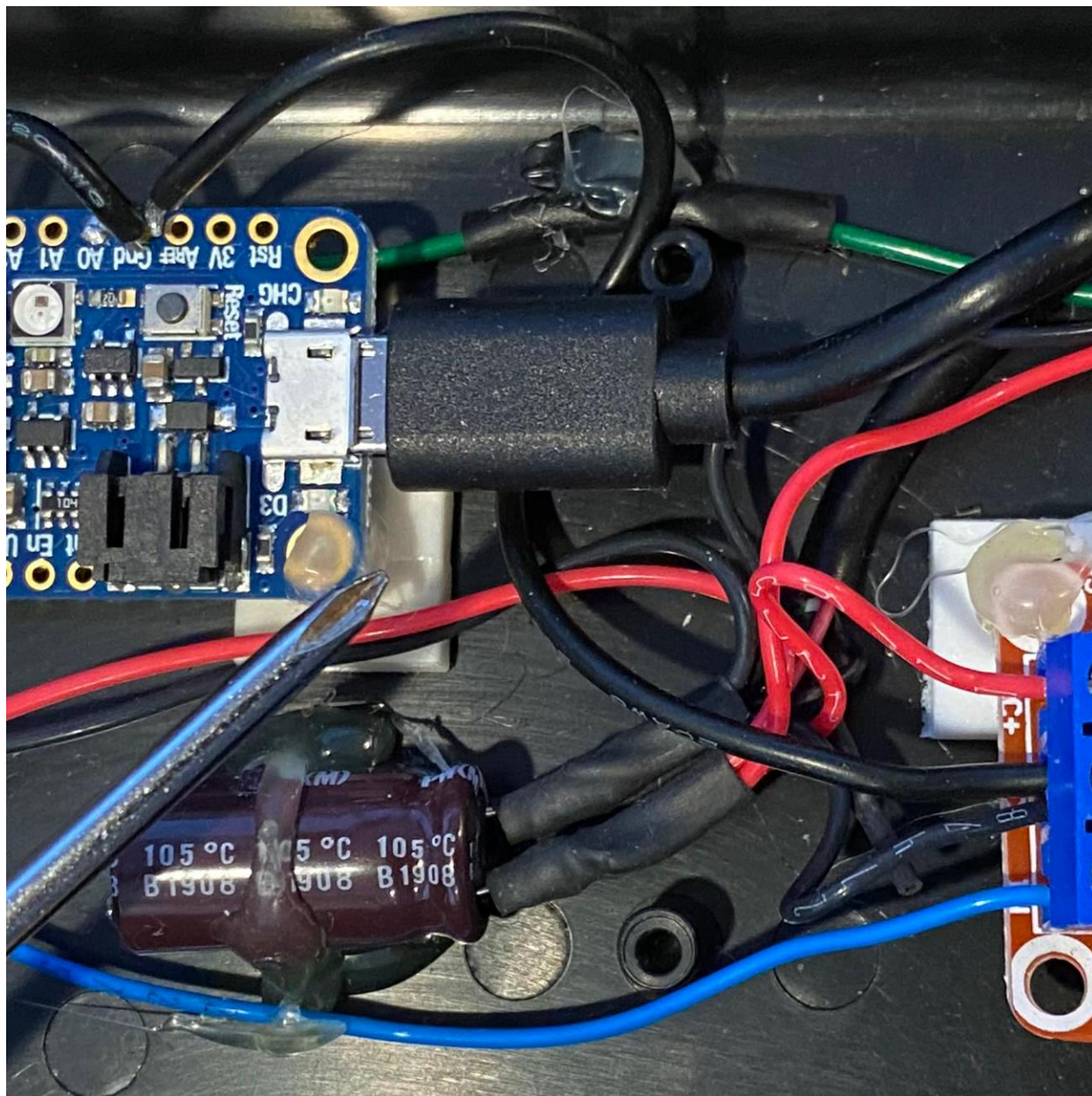23. At this time your controller has been successfully programmed with the new firmware.

24. Disconnect the micro-USB cable from computer to the micro-USB port on the microcontroller.
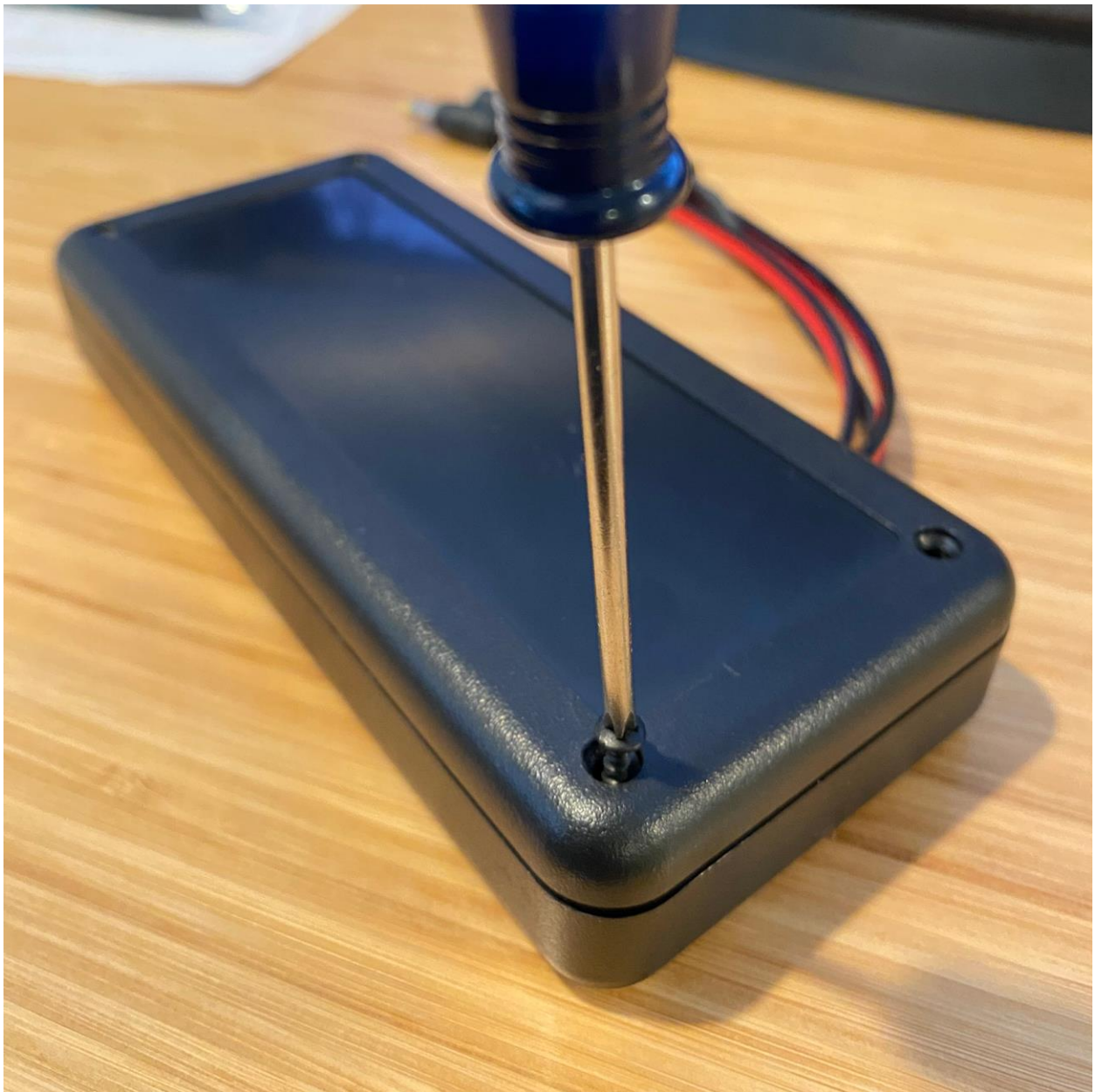
25. Reconnect the USB power cable to the microcontroller PCB. Ensure that the plug is fully seated in the connector of the microcontroller.

26. Place the lid of the controller case into place.

27. Using a small Phillips head screwdriver screw the 4 screws into the controller case cover. Be careful not to over tighten.

28. Your firmware upgrade is now complete. It is recommended that you use a permanent market and cross off the old firmware version and write in the new one for your future reference.

29. It is now time to install the controller box back into your Mobibooth Aura photo kiosk.

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