Getting Started with the amomii Glow

The amomii Glow is a flexible and addressable RGB strip that allows you to add stunning colors and vibrant lighting effects to your microcontroller projects. The 8 individually addressable pixels per strip use the WS2812B chipset to provide a seamless and customizable lighting experience.

To get Glowing, follow these simple steps:

≡ STEP 1 (Get Connected)

We will demonstrate the connections using the amomii UNO, but the amomii Glow strips are compatible with most microcontrollers capable of supplying steady PWM signals.

(Connecting a single strip)

To connect a single strip, the signal pin (S) on the INPUT side of the amomii GLOW must be connected to a microcontroller's digital data pin. In the example provided, we connected the amomii GLOW's INPUT signal pin to digital pin 9 on the amomii UNO. The 5V and Gnd pins of the amomii GLOW can be directly connected to the 5V and Gnd pins on a microcontroller, but caution must be taken with respect to the current draw. Refer to the Power and Consumption section for more information.
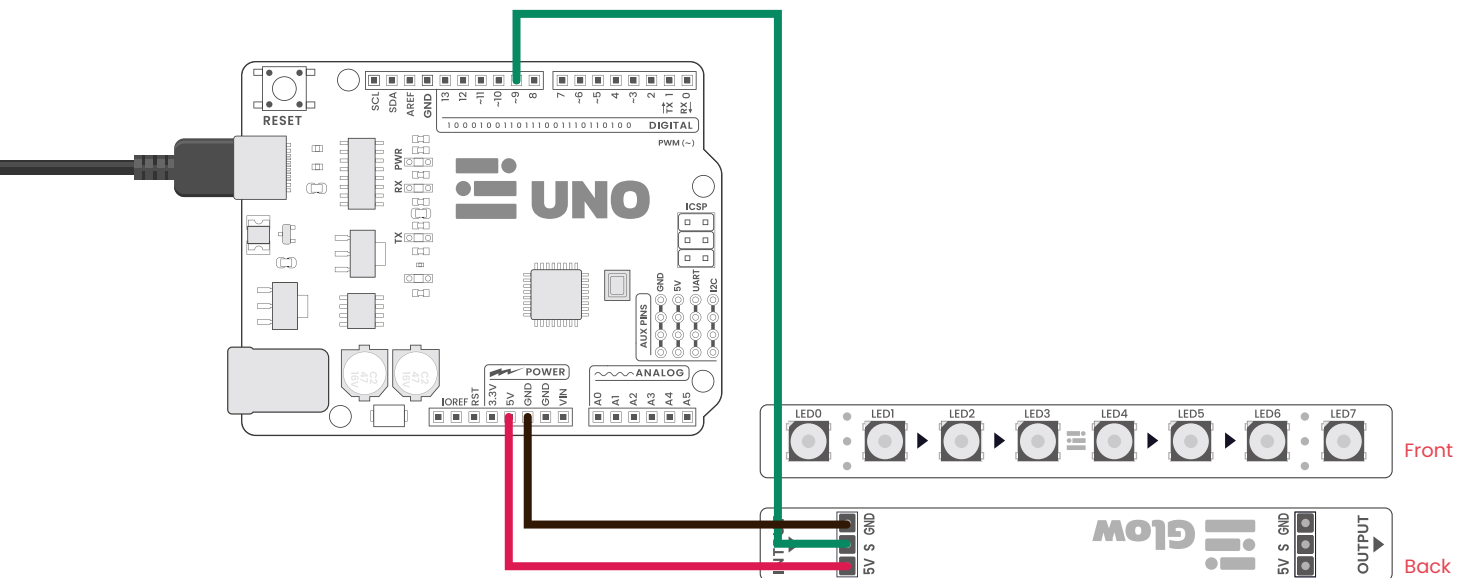

(Daisy Chaining Multiple Strips)

Multiple strips can be daisy-chained together and controlled by a single data pin on a microcontroller. The number of strips that can be connected is determined by two factors: the power supply and the memory on the microcontroller. For more information on these factors, refer to the Connections section on the datasheet. (amomii.com/products/glow)

To daisy-chain multiple strips, connect the INPUT end of the first strip to the microcontroller and power supply, and connect the output of the first strip to the input of the next strip. Connect the 5V, S, and Gnd pins of the OUTPUT to those of the next strip's INPUT. See the diagram below for a clear illustration of the connection.

With External Power Supply

5V DC External Power Supply
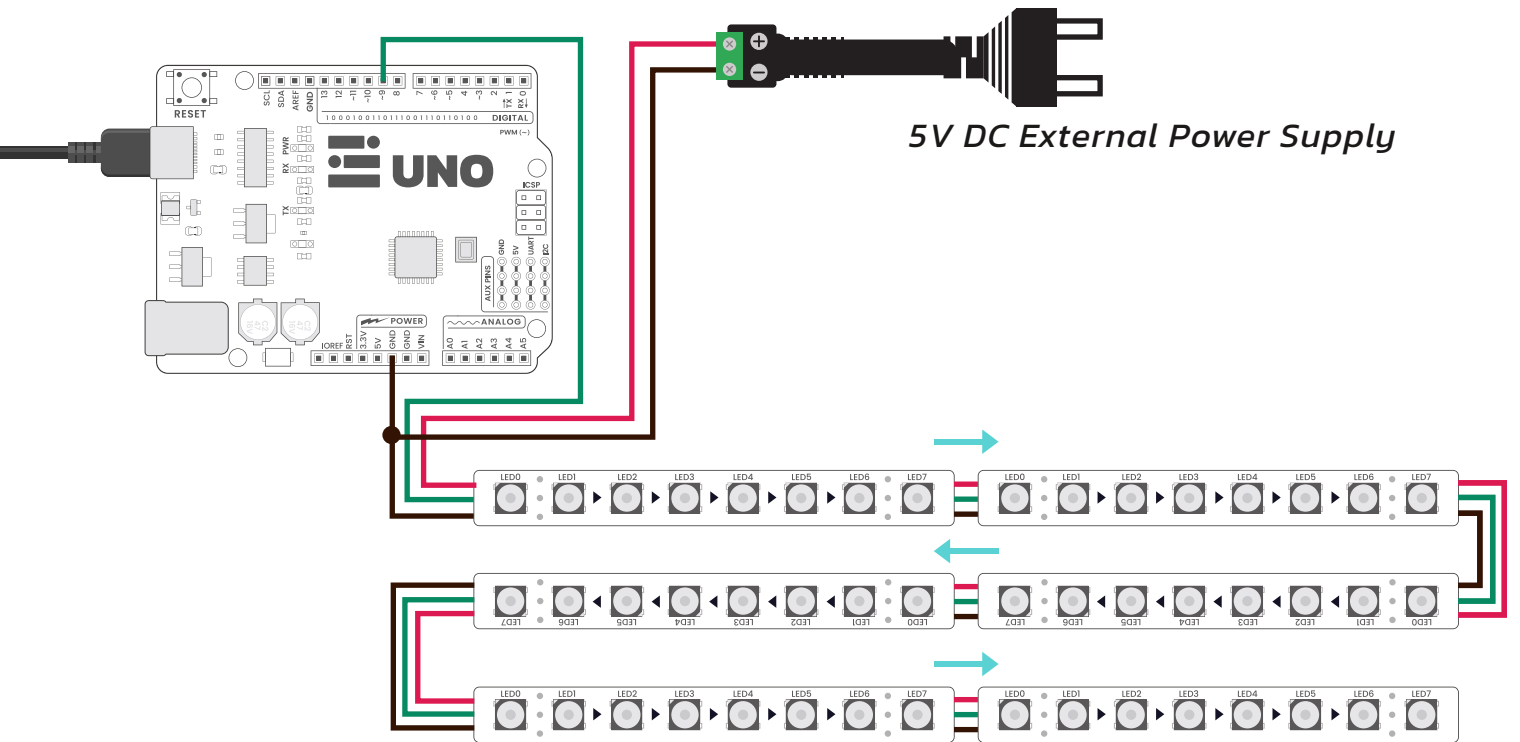
Powered Directly

Note

The amomii UNO can handle more power than typical Arduino UNO style boards, allowing for a greater number of strips to be powered directly from the board. Additionally, by limiting the maximum brightness through code, the number of strips that can be connected directly to the board can be further increased. However, caution must still be taken to ensure the board can handle the current draw from the strips.
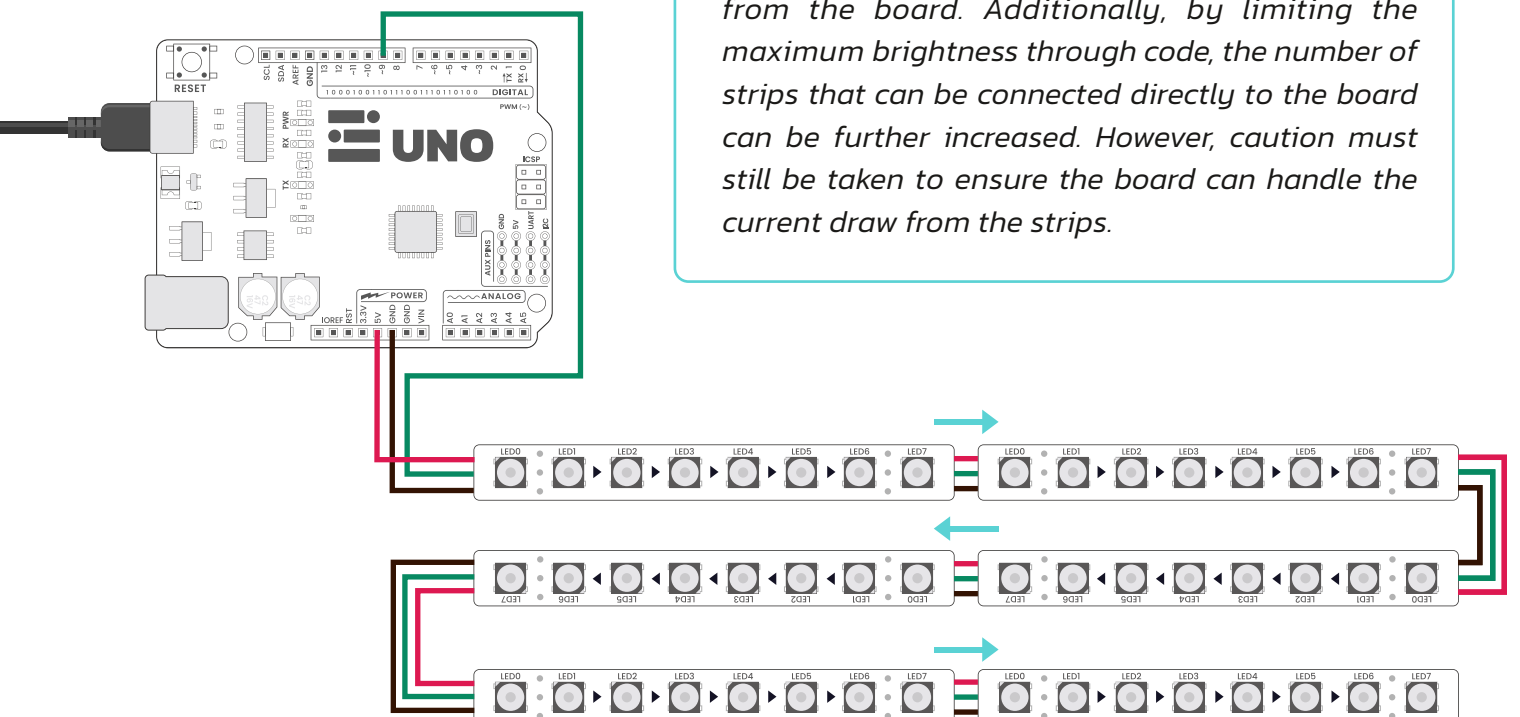
⊟ STEP 2 (Get the Library)

You can write code for your amomii Glow strips using various IDEs, but we recommend the Arduino IDE with the FastLED library installed on it. We will go over how to install the FastLED library next, but if you don't have the Arduino IDE, you can download it for free from the official Arduino website – arduino.cc

You can also find more details about using the IDE in the Getting Started manual for the amomii UNO. This can be found at amomii.com/products/UNO

(Download the FastLED library)

There are various ways to download coding libraries for the Arduino IDE, but the simplest way is to download them directly from within the IDE itself. We will be using Version 2 of the IDE, but the steps for the original are similar.
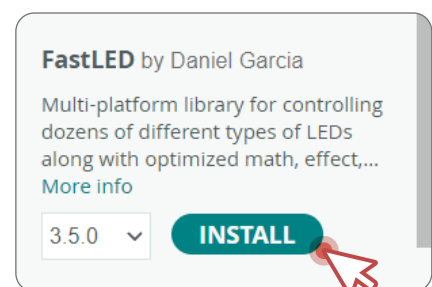
Click on the library manager shortcut on the left hand side of the IDE.

(Note)

There is no shortcut here on the original Arduino IDE, but the Library Manager can be accessed from Tools ❯ Manage Libraries...
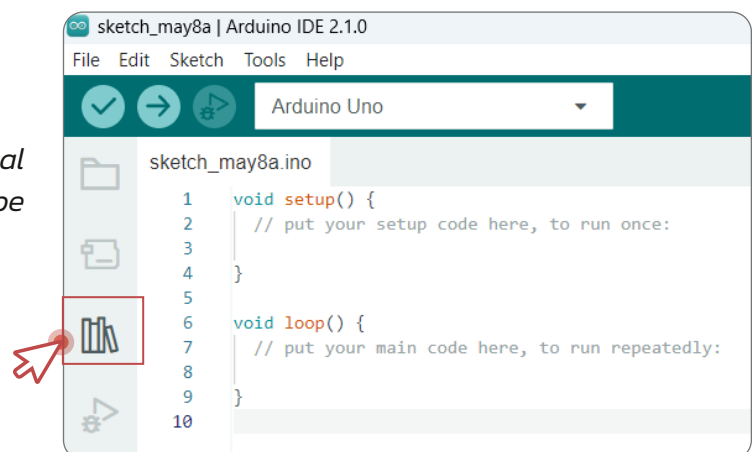
When the Library Manager pops up, search for FastLED and click INSTALL on the version written by Daniel Garcia.

If you are prompted with the question whether you would like to download all the missing dependencies, click "INSTALL ALL".

≣ STEP 3   (Editing the Example Code)

With your amomii Glow strip(s) connected to your microcontroller and your microcontroller connected to your computer, open the IDE and navigate to File ❯ Examples ❯ FastLED ❯ ColorPalette
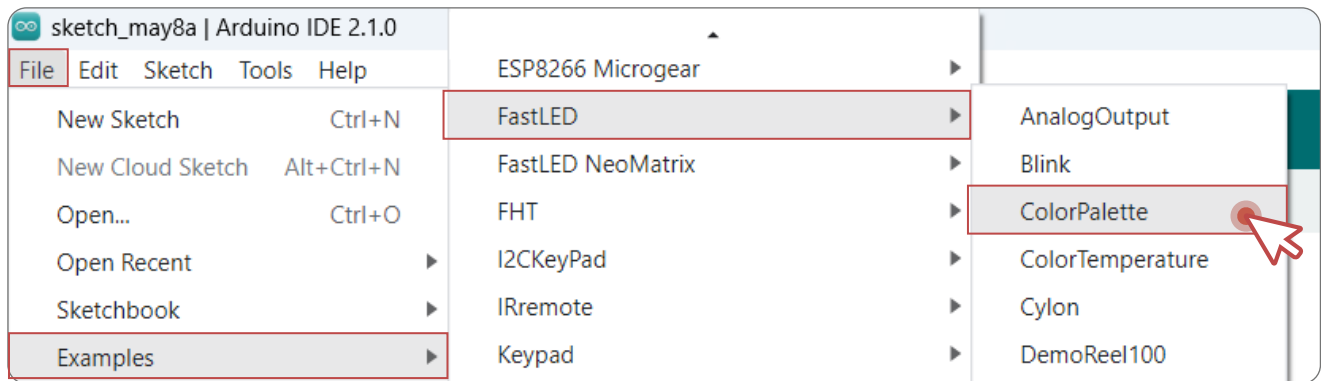
Before you upload the code to your board, there are a couple of changes you need to make.

On line 3, change the LED_PIN number depending on which pin you connected your Glow strip to. In the Getting Connected wire diagram, we connected the signal pin (S) to the amomii UNO's digital pin 9, so we will change LED_PIN to "9".

```
1    #include <FastLED.h>
2
3    #define LED_PIN      5
4    #define NUM_LEDS     50
5    #define BRIGHTNESS   64
6    #define LED_TYPE     WS2811
7    #define COLOR_ORDER  GRB
8    CRGB leds[NUM_LEDS];
```

```
3      #define LED_PIN      9
```

Next we must change the NUM_LEDS value to correspond with the amount of pixels you want to control. Given that each amomii Glow strip has 8 pixels, if you are wanting to control one strip, you would change this value to 8, or if you wanted to control 3 strips, you would change this value to 24 (8 x 3).

I will use all 8 of the strips that come in the amomii Glow kit, so I will change the number to 64 (8*8).

```
#define NUM_LEDS      64
```

After that, you have the option of whether you want to change the brightness of the strips. In general, it is a good idea to start low and work your way up to find the right value for brightness. The value you put must be between 0 (completely dark) and 255 (max brightness).

> *Before choosing your value, you must consider the fact that the brighter the pixels shine, the more power they demand. You must make sure that you have a power supply capable of delivering enough power to your project. For more details on power consumption, please read the datasheet carefully.*

I will change the value to 50.

```
5     #define BRIGHTNESS  50
```

Finally, you must change the chipset to match the chips used on the amomii Glow module, WS2812B.

```
6     #define LED_TYPE   WS2812B
```

Lines 3 – 6 of your updated code will now look something like this:

```
3  #define LED_PIN      9
4  #define NUM_LEDS     64
5  #define BRIGHTNESS   50
6  #define LED_TYPE     WS2812B
```

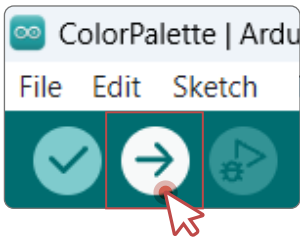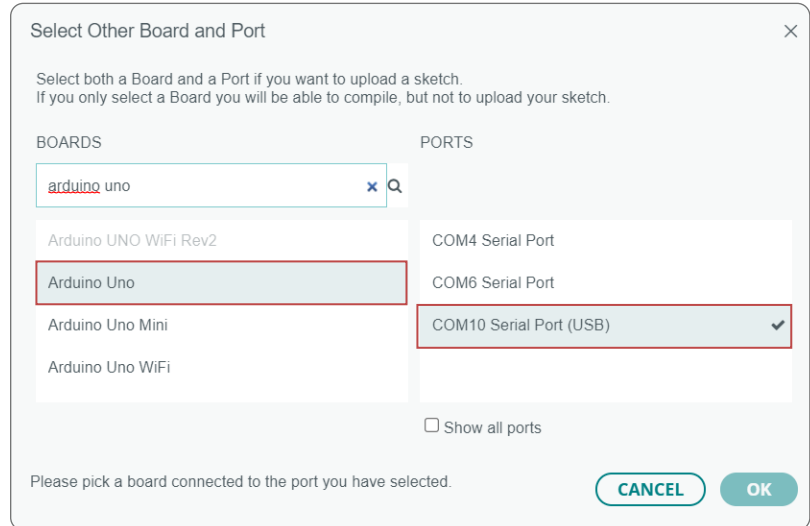## ☰ STEP 4 ⟨ **Uploading the Code** ⟩

Before hitting the Upload button, you need to make sure your board and comport are connected.

If you are using the amomii UNO, you can find information about this on the Gettin-Started document. You can find this at amomii.com/products/UNO.

But in short, to make sure your board is connected, click on the boards dropdown and select the comport.
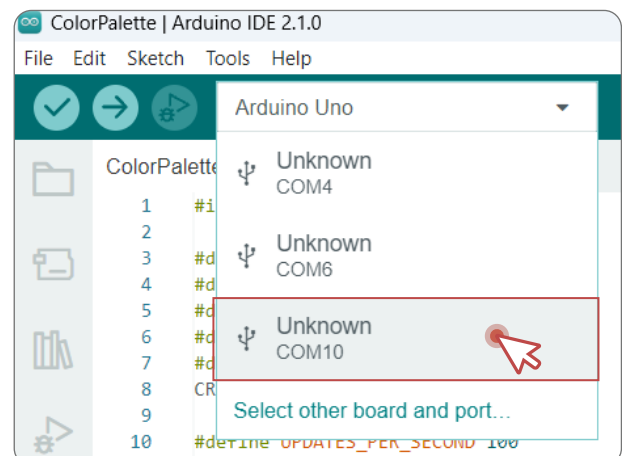
Then select your board. If you are using the amomii UNO, select "Arduino UNO" from the boards section as they have the same configuration.

Select Other Board and Port ✕

Select both a Board and a Port if you want to upload a sketch.
If you only select a Board you will be able to compile, but not to upload your sketch.

BOARDS

arduino uno   ✕ 🔍

PORTS

BOARDS	PORTS
Arduino UNO WiFi Rev2	COM4 Serial Port
Arduino Uno	COM6 Serial Port
Arduino Uno Mini	COM10 Serial Port (USB) ✓
Arduino Uno WiFi	

☐ Show all ports

Please pick a board connected to the port you have selected.

CANCEL   OK

⚙ ColorPalette | Ardu

File   Edit   Sketch

✓   →   ▶

Finally, click the Upload shortcut, and after you see the "Done" note at the bottom of the IDE, your amomii Glow should start GLOWING!

ⓘ Done compiling.
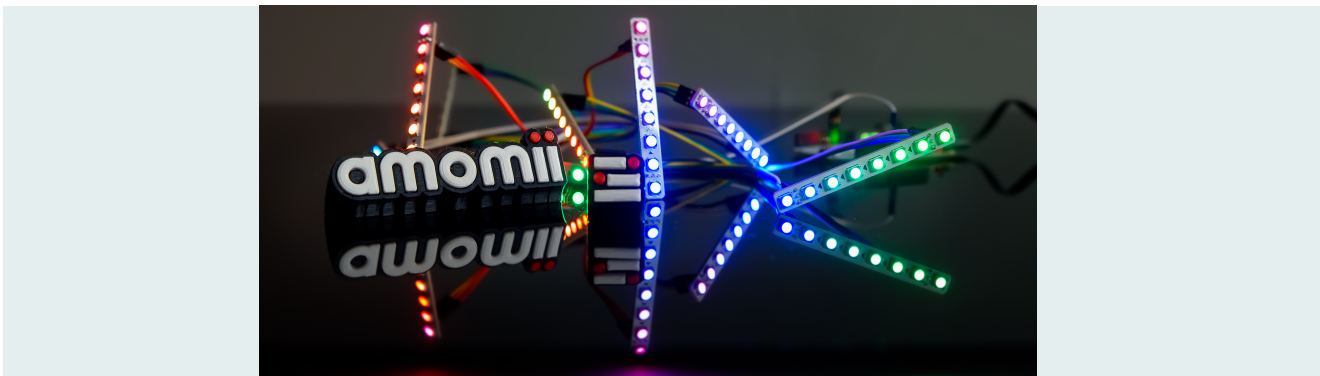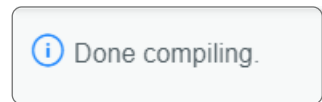
🔲 STEP 5   (Example Projects)

Now that you know everything is working nicely, it's time to be creative and put your module to good use. A great place to start would be checking out some of our example projects at in the Projects and Hack area at amomii.com

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