

Controlling LEDstrips with Arduino

LED Strips and Arduino

With the Adafruit Neopixel library, it is very easy to work with controlling different types of LED's using Arduino. Adafruit has a very extensive "[Adafruit NeoPixel Überguide](#)" available online, where you can follow a step-by-step guide for controlling LED strips, panels and individual led's.

NeoPixel options:



Strips



Rings



Matrices

Pins



ETC...

Neon-Like Strips

Images from Adafruit

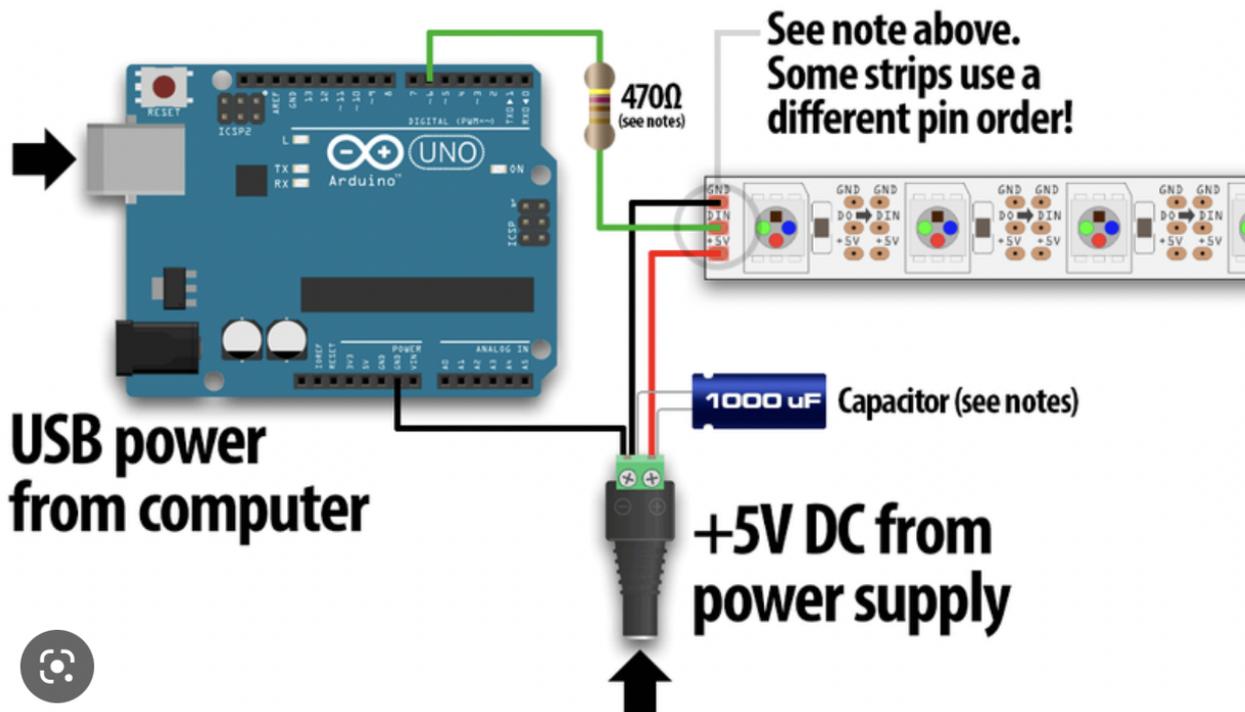
Basic NeoPixel LED strip setup

HARDWARE

Materials needed:

- Arduino Uno (or other available Arduino, but Nano is most beginner friendly)
- 1x 300 to 500 Ohm Resistor
- 5V power supply ([this type](#) is recommended for simple setup)
- 1x 500-1000 μ F Capacitor

For controlling LED strips and Arduino you can build the following hardware:



SOFTWARE

Launch the Arduino IDE.

If you have not installed the NeoPixel Library for Arduino, first make sure to do that first.

Arduino IDE 2.0 (newest)

In the newest version of Arduino IDE 2.0, you can install Libraries automatic from the IDE itself.

Arduino IDE 1.0 (older)

If you want to understand more about Arduino and [Libraries? Read more here...](#)

From the **File** menu, select

Examples→**Adafruit NeoPixel**→**strandtest**

<https://learn.adafruit.com/adafruit-neopixel-uberguide/arduino-library-installation>

Powering NeoPixels in different ways

Other methods for powering ledstrips beside the simple standard power supply are:

- DC wall wart adapters (5v)
- lithium-polymer battery (Lithium Ion Polymer Battery - 3.7v 2500mAh)
- Three alkaline cells (such as AA batteries)
- Four nickel-metal hydride (NiMH) rechargeable cells

You must use a 3-5V DC power supply to power these strips, do not use higher than 6V or you can destroy the entire strip- yikes!

Example 1 AA or AAA = 1,5 V

When choosing any option for powering the ledstrips, always take into account that you have enough amperage provided for the strips. Checkout the [Adafruit page for more details regarding power options](#).

Powering Arduino in different ways

If you want to use a powerbank in some cases depending on how much power the arduino needs from the bank it might turn off after 1 - a few minutes even though the powerbank is fully charged. It depends on the kind of powerbank. Some have a safety built in. But most of the time it is not mentioned in the description.

Try different types of powerbanks or use info from these links:

<https://www.youtube.com/watch?v=l7MrL5Q7zvY>

<https://forum.arduino.cc/t/simplest-battery-power-to-arduino-nano-solution/530242>

Im still experimenting with this myself once i find more info i add it to this book.

At the moment i have tried 2 powerbanks (5000 & 10000 mAh) for Arduino Nano with seperate power for my small Neopixel Jewel (7 leds). Both dont work. Using batterypack 4xAA atm.

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