Adafruit NeoPixel Library Documentation

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Higher level NeoPixel driver that presents the strip as a sequence. This is a supercharged version of the original MicroPython driver. Its now more like a normal Python sequence and features slice support, `repr` and `len` support.

Colors are stored as tuples by default. However, you can also use int hex syntax to set values similar to colors on the web. For example, `0x100000` (`#100000` on the web) is equivalent to `(0x10, 0, 0)`.

Note: The int hex API represents the brightness of the white pixel when present by setting the RGB channels to identical values. For example, full white is 0xffffff but is actually (0, 0, 0, 0xff) in the tuple syntax. Setting a pixel value with an int will use the white pixel if the RGB channels are identical. For full, independent, control of each color component use the tuple syntax.

CHAPTER 1

Dependencies

This driver depends on:

- Adafruit CircuitPython

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the Adafruit library and driver bundle.

CHAPTER 2

Usage Example

This example demonstrates the library with the single built-in NeoPixel on the Feather M0 Express and Metro M0 Express.

```
import board
import neopixel

pixels = neopixel.NeoPixel(board.NEOPIXEL, 1)
pixels[0] = (10, 0, 0)
```

This example demonstrates the library with the ten built-in NeoPixels on the Circuit Playground Express. It turns off `auto_write` so that all pixels are updated at once when the `show` method is called.

```
import board
import neopixel

pixels = neopixel.NeoPixel(board.NEOPIXEL, 10, auto_write=False)
pixels[0] = (10, 0, 0)
pixels[9] = (0, 10, 0)
pixels.show()
```

CHAPTER 3

Contributing

Contributions are welcome! Please read our Code of Conduct before contributing to help this project stay welcoming.

CHAPTER 4

API Reference

4.1 `neopixel` - NeoPixel strip driver

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class `neopixel.`**`NeoPixel`**(*pin*, *n*, ***, *bpp=3*, *brightness=1.0*, *auto_write=True*)

A sequence of neopixels.

Parameters

- **pin** (*Pin*) – The pin to output neopixel data on.
- **n** (*int*) – The number of neopixels in the chain
- **bpp** (*int*) – Bytes per pixel. 3 for RGB and 4 for RGBW pixels.
- **brightness** (*float*) – Brightness of the pixels between 0.0 and 1.0 where 1.0 is full brightness
- **auto_write** (*bool*) – True if the neopixels should immediately change when set. If False, `show` must be called explicitly.

Example for Circuit Playground Express:

```
import neopixel
from board import *

RED = 0x100000 # (0x10, 0, 0) also works

pixels = neopixel.NeoPixel(NEOPIXEL, 10)
for i in range(len(pixels)):
    pixels[i] = RED
```

Example for Circuit Playground Express setting every other pixel red using a slice:

```
import neopixel
from board import *
```

```
import time

RED = 0x100000 # (0x10, 0, 0) also works

# Using `with` ensures pixels are cleared after we're done.
with neopixel.NeoPixel(NEOPIXEL, 10) as pixels:
    pixels[::2] = [RED] * (len(pixels) // 2)
    time.sleep(2)
```

brightness

Overall brightness of the pixel

deinit()

Blank out the NeoPixels and release the pin.

fill(*color*)

Colors all pixels the given ***color***.

show()

Shows the new colors on the pixels themselves if they haven't already been autowritten.

The colors may or may not be showing after this function returns because it may be done asynchronously.

write()

Use *show* instead. It matches Micro:Bit and Arduino APIs.

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