
AdafruitNeoTrellis Library Documentation

Release 1.0

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This is a library for using the Adafruit_NeoTrellis boards with circuitpython.

CHAPTER 1

Dependencies

This driver depends on:

- [Adafruit CircuitPython](#)
- [Bus Device](#)
- [Register](#)
- [Adafruit Seesaw](#)

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

see `examples/neotrellis_simpletest.py` for usage example

CHAPTER 3

Contributing

Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.

4.1 Zip release files

To build this library locally you'll need to install the `circuitpython-build-tools` package.

```
python3 -m venv .env
source .env/bin/activate
pip install circuitpython-build-tools
```

Once installed, make sure you are in the virtual environment:

```
source .env/bin/activate
```

Then run the build:

```
circuitpython-build-bundles --filename_prefix adafruit-circuitpython-neotrellis --
↳library_location .
```

4.2 Sphinx documentation

Sphinx is used to build the documentation based on rST files and comments in the code. First, install dependencies (feel free to reuse the virtual environment from above):

```
python3 -m venv .env
source .env/bin/activate
pip install Sphinx sphinx-rtd-theme
```

Now, once you have the virtual environment activated:

```
cd docs
sphinx-build -E -W -b html . _build/html
```

This will output the documentation to `docs/_build/html`. Open the `index.html` in your browser to view them. It will also (due to `-W`) error out on any warning like Travis will. This is a good way to locally verify it will pass.

5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/neotrellis_simpletest.py

```
1 import time
2
3 from board import SCL, SDA
4 import busio
5 from adafruit_neotrellis.neotrellis import NeoTrellis
6
7 #create the i2c object for the trellis
8 i2c_bus = busio.I2C(SCL, SDA)
9
10 #create the trellis
11 trellis = NeoTrellis(i2c_bus)
12
13 #some color definitions
14 OFF = (0, 0, 0)
15 RED = (255, 0, 0)
16 YELLOW = (255, 150, 0)
17 GREEN = (0, 255, 0)
18 CYAN = (0, 255, 255)
19 BLUE = (0, 0, 255)
20 PURPLE = (180, 0, 255)
21
22 #this will be called when button events are received
23 def blink(event):
24     #turn the LED on when a rising edge is detected
25     if event.edge == NeoTrellis.EDGE_RISING:
26         trellis.pixels[event.number] = CYAN
27     #turn the LED off when a rising edge is detected
```

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```

28     elif event.edge == NeoTrellis.EDGE_FALLING:
29         trellis.pixels[event.number] = OFF
30
31 for i in range(16):
32     #activate rising edge events on all keys
33     trellis.activate_key(i, NeoTrellis.EDGE_RISING)
34     #activate falling edge events on all keys
35     trellis.activate_key(i, NeoTrellis.EDGE_FALLING)
36     #set all keys to trigger the blink callback
37     trellis.callbacks[i] = blink
38
39     #cycle the LEDs on startup
40     trellis.pixels[i] = PURPLE
41     time.sleep(.05)
42
43 for i in range(16):
44     trellis.pixels[i] = OFF
45     time.sleep(.05)
46
47 while True:
48     #call the sync function call any triggered callbacks
49     trellis.sync()
50     #the trellis can only be read every 17 milliseconds or so
51     time.sleep(.02)

```

5.2 adafruit_neotrellis

4x4 elastomer buttons and RGB LEDs

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5.2.1 Implementation Notes

Hardware:

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit Seesaw CircuitPython library https://github.com/adafruit/Adafruit_CircuitPython_seesaw/releases

class adafruit_neotrellis.neotrellis.**NeoTrellis** (*i2c_bus*, *interrupt=False*, *addr=46*, *drdy=None*)

Driver for the Adafruit NeoTrellis.

activate_key (*key*, *edge*, *enable=True*)

Activate or deactivate a key on the trellis. Key is the key number from 0 to 16. Edge specifies what edge to register an event on and can be NeoTrellis.EDGE_FALLING or NeoTrellis.EDGE_RISING. enable should be set to True if the event is to be enabled, or False if the event is to be disabled.

sync ()

read any events from the Trellis hardware and call associated callbacks

CHAPTER 6

Indices and tables

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