
AdafruitCAP1188 Library Documentation

Release 1.0

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Contents

1	Dependencies	3
2	Usage Example	5
3	Contributing	7
4	Building locally	9
4.1	Zip release files	9
4.2	Sphinx documentation	9
5	Table of Contents	11
5.1	Simple test	11
5.2	adafruit_cap1188.cap1188	11
5.2.1	Implementation Notes	12
5.3	adafruit_cap1188.i2c	12
5.3.1	Implementation Notes	13
5.4	adafruit_cap1188.spi	13
5.4.1	Implementation Notes	13
6	Indices and tables	15
	Python Module Index	17

CircuitPython driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

CHAPTER 1

Dependencies

This driver depends on:

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

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 usage examples in the examples folder.

CHAPTER 3

Contributing

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

CHAPTER 4

Building locally

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-cap1188 --
↪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/cap1188_simpletest.py

```
1 import board
2 import busio
3
4 # I2C setup
5 from adafruit_cap1188.i2c import CAP1188_I2C
6 i2c = busio.I2C(board.SCL, board.SDA)
7 cap = CAP1188_I2C(i2c)
8
9 # SPI setup
10 # from digitalio import DigitalInOut, Direction
11 # from adafruit_cap1188.spi import CAP1188_SPI
12 # spi = busio.SPI(board.SCK, board.MOSI, board.MISO)
13 # cs = DigitalInOut(board.D5)
14 # cap = CAP1188_SPI(spi, cs)
15
16 while True:
17     for i in range(1, 9):
18         if cap[i].value:
19             print("Pin {} touched!".format(i))
```

5.2 adafruit_cap1188.cap1188

CircuitPython driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

- Author(s): Carter Nelson

5.2.1 Implementation Notes

Hardware:

- CAP1188 - 8-Key Capacitive Touch Sensor Breakout

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

```
class adafruit_cap1188.cap1188.CAP1188
    CAP1188 driver base, must be extended for I2C/SPI interfacing.

    delta_count (pin)
        Return the 8 bit delta count value for the channel.

    recalibrate ()
        Perform a self recalibration on all the pins.

    recalibrate_pins (mask)
        Recalibrate pins specified by bit mask.

    sensitivity
        The sensitivity of touch detections. Range is 1 (least) to 128 (most).

    threshold_values ()
        Return tuple of touch threshold values for all channels.

    thresholds
        Touch threshold value for all channels.

    touched ()
        Return 8 bit value representing touch state of all pins.

    touched_pins
        A tuple of touched state for all pins.

class adafruit_cap1188.cap1188.CAP1188_Channel (cap1188, pin)
    Helper class to represent a touch channel on the CAP1188. Not meant to be used directly.

    raw_value
        The raw touch measurement.

    recalibrate ()
        Perform a self recalibration.

    threshold
        The touch threshold value.

    value
        Whether the pin is being touched or not.
```

5.3 adafruit_cap1188.i2c

CircuitPython I2C driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

- Author(s): Carter Nelson

5.3.1 Implementation Notes

Hardware:

- [CAP1188 - 8-Key Capacitive Touch Sensor Breakout](#)

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

class `adafruit_cap1188.i2c.CAP1188_I2C` (*i2c, address=41*)
Driver for the CAP1188 connected over I2C.

5.4 `adafruit_cap1188.spi`

CircuitPython SPI driver for the CAP1188 8-Key Capacitive Touch Sensor Breakout.

- Author(s): Carter Nelson

5.4.1 Implementation Notes

Hardware:

- [CAP1188 - 8-Key Capacitive Touch Sensor Breakout](#)

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

class `adafruit_cap1188.spi.CAP1188_SPI` (*spi, cs*)
Driver for the CAP1188 connected over SPI.

CHAPTER 6

Indices and tables

- `genindex`
- `modindex`
- `search`

a

`adafruit_cap1188.cap1188`, [11](#)
`adafruit_cap1188.i2c`, [12](#)
`adafruit_cap1188.spi`, [13](#)

A

adafruit_cap1188.cap1188 (module), [11](#)
adafruit_cap1188.i2c (module), [12](#)
adafruit_cap1188.spi (module), [13](#)

C

CAP1188 (class in adafruit_cap1188.cap1188), [12](#)
CAP1188_Channel (class in adafruit_cap1188.cap1188),
[12](#)
CAP1188_I2C (class in adafruit_cap1188.i2c), [13](#)
CAP1188_SPI (class in adafruit_cap1188.spi), [13](#)

D

delta_count() (adafruit_cap1188.cap1188.CAP1188
method), [12](#)

R

raw_value (adafruit_cap1188.cap1188.CAP1188_Channel
attribute), [12](#)
recalibrate() (adafruit_cap1188.cap1188.CAP1188
method), [12](#)
recalibrate() (adafruit_cap1188.cap1188.CAP1188_Channel
method), [12](#)
recalibrate_pins() (adafruit_cap1188.cap1188.CAP1188
method), [12](#)

S

sensitivity (adafruit_cap1188.cap1188.CAP1188 at-
tribute), [12](#)

T

threshold (adafruit_cap1188.cap1188.CAP1188_Channel
attribute), [12](#)
threshold_values() (adafruit_cap1188.cap1188.CAP1188
method), [12](#)
thresholds (adafruit_cap1188.cap1188.CAP1188 at-
tribute), [12](#)
touched() (adafruit_cap1188.cap1188.CAP1188 method),
[12](#)

touched_pins (adafruit_cap1188.cap1188.CAP1188 at-
tribute), [12](#)

V

value (adafruit_cap1188.cap1188.CAP1188_Channel at-
tribute), [12](#)