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# **AdafruitCAP1188 Library Documentation**

***Release 1.0***

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



# CHAPTER 1

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## Dependencies

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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

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### Usage Example

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See usage examples in the examples folder.



## CHAPTER 3

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### Contributing

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



# CHAPTER 4

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## Building locally

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### 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](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.

    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.

    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](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](https://github.com/adafruit/Adafruit_CircuitPython_BusDevice)

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



## CHAPTER 6

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### Indices and tables

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