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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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### Installing from PyPI

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On supported GNU/Linux systems like the Raspberry Pi, you can install the driver locally [from PyPI](#). To install for current user:

```
pip3 install adafruit-circuitpython-cap1188
```

To install system-wide (this may be required in some cases):

```
sudo pip3 install adafruit-circuitpython-cap1188
```

To install in a virtual environment in your current project:

```
mkdir project-name && cd project-name
python3 -m venv .env
source .env/bin/activate
pip3 install adafruit-circuitpython-cap1188
```



## CHAPTER 3

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### Usage Example

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See usage examples in the examples folder.



## CHAPTER 4

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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 5

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### Documentation

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For information on building library documentation, please check out [this guide](#).





## 6.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/cap1188\_simpletest.py

```
1  # SPDX-FileCopyrightText: 2021 ladyada for Adafruit Industries
2  # SPDX-License-Identifier: MIT
3
4  import board
5  import busio
6
7  # I2C setup
8  from adafruit_cap1188.i2c import CAP1188_I2C
9
10 i2c = busio.I2C(board.SCL, board.SDA)
11 cap = CAP1188_I2C(i2c)
12
13 # SPI setup
14 # from digitalio import DigitalInOut, Direction
15 # from adafruit_cap1188.spi import CAP1188_SPI
16 # spi = busio.SPI(board.SCK, board.MOSI, board.MISO)
17 # cs = DigitalInOut(board.D5)
18 # cap = CAP1188_SPI(spi, cs)
19
20 while True:
21     for i in range(1, 9):
22         if cap[i].value:
23             print("Pin {} touched!".format(i))
```

## 6.2 adafruit\_cap1188.cap1188

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

- Author(s): Carter Nelson

### 6.2.1 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.

**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.

## 6.3 adafruit\_cap1188.i2c

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

- Author(s): Carter Nelson

### 6.3.1 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.

## 6.4 adafruit\_cap1188.spi

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

- Author(s): Carter Nelson

### 6.4.1 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 7

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### Indices and tables

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