

# Touch sensor - Using an CAP1188

## What is the CAP1188?

The CAP1188 is an easy-to-use 8-channel capacitive touch sensor breakout board. This chip can handle up to 8 individual touch pads, it will light up the 8 onboard LEDs when the matching touch sensor fires to help you debug your sensor setup.

The CAP1188 has support for both I2C and SPI, so it easy to use with any microcontroller. If you are using I2C, you can select one of 5 addresses, for a total of 40 capacitive touch pads on one I2C 2-wire bus. Using this chip is a lot easier than doing the capacitive sensing with analog inputs: it handles all the filtering for you and can be configured for more/less sensitivity.

Adafruit CAP1188.png

## Other Capacitive Touch Sensing Method

We have tutorials for other alternatives as well!

1. **Touch sensor - Using an MPR121**
2. **Touch sensor - with No Sensor!**

## MPR121 vs CAP1188 Comparison

Feature	MPR121	CAP1188
Number of Inputs	12 electrodes	8 electrodes
Multi-touch	<input checked="" type="checkbox"/> Yes (tracks all touches)	<input type="checkbox"/> Partial (multi-touch <b>disabled</b> by default)
I2C Addressability	4 possible addresses (0x5A-0x5D)	3 jumpers for I2C address config
Proximity Sense	<input checked="" type="checkbox"/> Yes (via filtered data)	<input checked="" type="checkbox"/> Yes (via built-in proximity detection)
Slider/Wheel Support	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Not native
Sensitivity Adjustments	<input checked="" type="checkbox"/> Touch & release thresholds	<input checked="" type="checkbox"/> Built-in auto-calibration, less customizable
Interrupt Support	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
Noise Handling	Good, needs tuning	Excellent built-in debounce and filtering
Communication	I2C	I2C or SPI (selectable)

Feature	MPR121	CAP1188
Power Consumption	Low	Low

# Library

We will be using the library `Adafruit CAP1188`. We have a tutorial on **how to install a library** here.

# Wiring

Wiring is pretty simple, it's an I2C component so it's relatively standard.

1. VIN -> 5V
2. GND -> GND
3. SCL -> SCL / A5
4. SDA -> SDA / A4

## Older Arduino boards

Some older Arduino boards do not have SDA and SCL pins as shown in the diagrams, in this case you'll need to look it up on the boards documentation, however most Arduino boards used A4 as SDA and A5 as SCL.

# Getting started

After installing the library and wiring the board, go ahead and use the examples in the `File` > `Examples` > `Adafruit CAP1188` > `cap1188test`.

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