
Adafruit PCA9685 Library Documentation

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Contents

1	Dependencies	3
2	Usage Example	5
3	Contributing	7
4	API Reference	9
4.1	adafruit_pca9685	9
	Python Module Index	11

Driver for the PCA9685, a 16-channel, 12-bit PWM chip

CHAPTER 1

Dependencies

This driver depends on:

- [Adafruit CircuitPython](#)

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

TODO

CHAPTER 3

Contributing

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

4.1 adafruit_pca9685

Driver for the PCA9685 PWM control IC. Its commonly used to control servos, leds and motors.

See also:

The [Adafruit CircuitPython Motor library](#) can be used to control the PWM outputs for specific uses instead of generic `duty_cycle` adjustments.

- Author(s): Scott Shawcroft

class `adafruit_pca9685.PCA9685` (*i2c_bus*, *, *address*=64, *reference_clock_speed*=25000000)

Initialise the PCA9685 chip at address on `i2c_bus`.

The internal reference clock is 25mhz but may vary slightly with environmental conditions and manufacturing variances. Providing a more precise `reference_clock_speed` can improve the accuracy of the frequency and `duty_cycle` computations. See the `calibration.py` example for how to derive this value by measuring the resulting pulse widths.

Parameters

- **`i2c_bus`** (*I2C*) – The I2C bus which the PCA9685 is connected to.
- **`address`** (*int*) – The I2C address of the PCA9685.
- **`reference_clock_speed`** (*int*) – The frequency of the internal reference clock in Herz.

`channels` = `None`

Sequence of 16 `PWMChannel` objects. One for each channel.

`deinit` ()

Stop using the pca9685.

`frequency`

The overall PWM frequency in herz.

reference_clock_speed = None

The reference clock speed in Hz.

reset ()

Reset the chip.

class adafruit_pca9685.**PCAChannels** (*pca*)

Lazily creates and caches channel objects as needed. Treat it like a sequence.

class adafruit_pca9685.**PWMChannel** (*pca, index*)

A single PCA9685 channel that matches the [PWMOut](#) API.

duty_cycle

16 bit value that dictates how much of one cycle is high (1) versus low (0). 0xffff will always be high, 0 will always be low and 0x7fff will be half high and then half low.

frequency

The overall PWM frequency in herz.

Python Module Index

a

`adafruit_pca9685`, 9

A

`adafruit_pca9685` (module), [9](#)

C

`channels` (`adafruit_pca9685.PCA9685` attribute), [9](#)

D

`deinit()` (`adafruit_pca9685.PCA9685` method), [9](#)

`duty_cycle` (`adafruit_pca9685.PWMChannel` attribute),
[10](#)

F

`frequency` (`adafruit_pca9685.PCA9685` attribute), [9](#)

`frequency` (`adafruit_pca9685.PWMChannel` attribute), [10](#)

P

`PCA9685` (class in `adafruit_pca9685`), [9](#)

`PCAChannels` (class in `adafruit_pca9685`), [10](#)

`PWMChannel` (class in `adafruit_pca9685`), [10](#)

R

`reference_clock_speed` (`adafruit_pca9685.PCA9685` attribute), [9](#)

`reset()` (`adafruit_pca9685.PCA9685` method), [10](#)