Adafruit PCA9685 Library Documentation

Release 1.0

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Mar 05, 2018

Contents

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.

CHAPTER 4

API Reference

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.

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