Adafruit PCA9685 Documentation

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CHAPTER 1

PCA9685 PWM Driver

class pca9685.**PCA9685**(*i2c*, *address=0x40*)

Allows controlling the PWM chip directly.

reset()

Reset the chip.

freq([*freq*])

Get or set the PWM frequency.

pwm(*index*[, *on*][, *off*])

Get or set the PWM signal's on and off timings for the channel *index*.

duty(*index*[, *value*][, *invert*])

Get or set the PWM duty cycle in range 0-4095 (4095 corresponds to 100% duty cycle). If *invert* is *True*, 4095 corresponds to 0 and 0 corresponds to 100%.

CHAPTER 2

Servo Driver

class `servo.`**`Servos`**(*i2c*, *address=0x40*, *freq=50*, *min_us=600*, *max_us=2400*, *degrees=180*)

Allows controlling up to 16 hobby servos.

The *freq* argument sets the PWM signal frequency in Hz. Analog servos usually expect this to be 50, but digital servos can often handle higher frequencies, resulting in smoother movements.

The *min_us* and *max_us* arguments set the range of the singnal's duty that the servo accepts. This is different between different servo models, but usually they are centerd at 1500µs.

The *degrees* argument specifies the physical range of the servo corresponding to the signal's duty range specified before. It is used to calculate signal's duty when the angle is specified in degrees or radians.

`position`(*index*[, *degrees|radians|us|duty*])

Get or set the servo position. The position can be specified in degrees (the default), radians, microseconds or directly as a number between 0 and 4095 signifying the duty cycle. It will be automatically clamped to the minimum and maximum range allowed.

When getting the position, it will always be returned in duty cycle.

`release`(*index*)

Stop sending a signal to the given servomechanism, releasing it.

CHAPTER 3

Motor Driver

class motor.**DCMotors**(*i2c*, *address=0x40*, *freq=1600*)

Control the motor driver.

The *freq* argument allows setting PWM frequency. Most motors should be fine with the default.

speed(*index*[, *value*])

Set or get the motor's speed.

Negative values make the motor spin backwards. Zero releases the motor.

brake(*index*)

Brake the motor.

CHAPTER 4

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