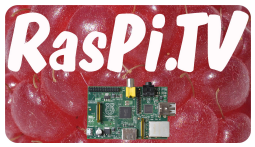
RasPi.TV RPi.GPIO Quick Reference




```
# RPi.GPIO Basics cheat sheet - Don't try to run this. It'll fail!
# Alex Eames http://RasPi.TV
# http://RasPi.TV/?p=4320

# RPi.GPIO Official Documentation
# http://sourceforge.net/p/raspberry-gpio-python/wiki/Home/

import RPi.GPIO as GPIO                 # import RPi.GPIO module

# choose BOARD or BCM
GPIO.setmode(GPIO.BCM)                  # BCM for GPIO numbering
GPIO.setmode(GPIO.BOARD)                # BOARD for P1 pin numbering

# Set up Inputs
GPIO.setup(port_or_pin, GPIO.IN)        # set port/pin as an input
GPIO.setup(port_or_pin, GPIO.IN,  pull_up_down=GPIO.PUD_DOWN) # input with pull-down
GPIO.setup(port_or_pin, GPIO.IN,  pull_up_down=GPIO.PUD_UP)   # input with pull-up

# Set up Outputs
GPIO.setup(port_or_pin, GPIO.OUT)               # set port/pin as an output
GPIO.setup(port_or_pin, GPIO.OUT, initial=1)    # set initial value option (1 or 0)

# Switch Outputs
GPIO.output(port_or_pin, 1)      # set an output port/pin value to 1/GPIO.HIGH/True
GPIO.output(port_or_pin, 0)      # set an output port/pin value to 0/GPIO.LOW/False

# Read status of inputs OR outputs
i = GPIO.input(port_or_pin)      # read status of pin/port and assign to variable i
if GPIO.input(port_or_pin):      # use input status directly in program logic

# Clean up on exit
GPIO.cleanup()

# What Raspberry Pi revision are we running?
GPIO.RPI_REVISION

# What version of RPi.GPIO are we running?
GPIO.VERSION

# What Python version are we running?
import sys; sys.version
```

You can download the **.txt** version of this for cutting and pasting from
http://RasPi.TV/download/rpigpio.txt

Or directly on your Raspberry Pi with...

`wget` **http://RasPi.TV/download/rpigpio.txt**

RasPi.TV RPi.GPIO Quick Reference

We now have B+, Rev 2 and Rev 1 Pi pinouts to deal with.

GPIO Numbers

Raspberry Pi B
Rev 1 P1 GPIO Header

	Pin No.		
3.3V	1	2	5V
GPIO0	3	4	5V
GPIO1	5	6	GND
GPIO4	7	8	GPIO14
GND	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO21	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
GPIO10	19	20	GND
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
GND	25	26	GPIO7

Raspberry Pi A/B
Rev 2 P1 GPIO Header

	Pin No.		
3.3V	1	2	5V
GPIO2	3	4	5V
GPIO3	5	6	GND
GPIO4	7	8	GPIO14
GND	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
GPIO10	19	20	GND
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
GND	25	26	GPIO7

Raspberry Pi B+
B+ J8 GPIO Header

	Pin No.		
3.3V	1	2	5V
GPIO2	3	4	5V
GPIO3	5	6	GND
GPIO4	7	8	GPIO14
GND	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
GPIO10	19	20	GND
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
GND	25	26	GPIO7
DNC	27	28	DNC
GPIO5	29	30	GND
GPIO6	31	32	GPIO12
GPIO13	33	34	GND
GPIO19	35	36	GPIO16
GPIO26	37	38	GPIO20
GND	39	40	GPIO21

Key

Power +	UART
GND	SPI
I²C	GPIO

Alternative Functions

Raspberry Pi B
Rev 1 P1 GPIO Header

	Pin No.		
3.3V	1	2	5V
SDA0	3	4	5V
SCL0	5	6	GND
GPCLK0	7	8	TXD
GND	9	10	RXD
GPIO17	11	12	PWM
GPIO21	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
MOSI	19	20	GND
MISO	21	22	GPIO25
SCLK	23	24	CE0
GND	25	26	CE1

Raspberry Pi A/B
Rev 2 P1 GPIO Header

	Pin No.		
3.3V	1	2	5V
SDA1	3	4	5V
SCL1	5	6	GND
GPCLK0	7	8	TXD
GND	9	10	RXD
GPIO17	11	12	PWM
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
MOSI	19	20	GND
MISO	21	22	GPIO25
SCLK	23	24	CE0
GND	25	26	CE1

Raspberry Pi B+
B+ J8 GPIO Header

	Pin No.		
3.3V	1	2	5V
SDA1	3	4	5V
SCL1	5	6	GND
GPCLK0	7	8	TXD
GND	9	10	RXD
CE1_1	11	12	PWM0/CE0_1
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
MOSI_0	19	20	GND
MISO_0	21	22	GPIO25
SCLK_0	23	24	CE0_0
GND	25	26	CE1_0
DNC	27	28	DNC
GPCLK1	29	30	GND
GPCLK2	31	32	PWM0/GPIO12
PWM1/GPIO13	33	34	GND
PWM1/MISO_1	35	36	CE2_1
GPIO26	37	38	MOSI_1
GND	39	40	SCLK_1

Key

Power +	UART
GND	SPI
I²C	GPCLK
GPIO	

http://RasPi.TV/rpi-gpio

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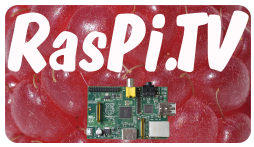

RasPi.TV RPi.GPIO Tutorials

RPi.GPIO Basics series

1. How to check what RPi.GPIO version you have
2. How to check what Raspberry Pi board Revision you have
3. How to Exit GPIO programs cleanly, avoid warnings and protect your Pi
4. Setting up RPi.GPIO, numbering systems and inputs
5. Setting up and using outputs with RPi.GPIO
6. Using inputs and outputs at the same time with RPi.GPIO, and pull-ups/pull-downs
7. RPi.GPIO cheat sheet

RPi.GPIO more advanced

Interrupts (needs RPi.GPIO 0.5.2+)

1. **Background and simple interrupt:** How to use interrupts with Python on the Raspberry Pi and RPi.GPIO
2. **Threaded callback:** How to use interrupts with Python on the Raspberry Pi and RPi.GPIO – part 2
3. **Multiple threaded callback:** How to use interrupts with Python on the Raspberry Pi and RPi.GPIO – part 3
4. **Edge Detection:** Detecting both rising and falling edges with RPi.GPIO

Software PWM

1. **PWM explained:** RPi.GPIO 0.5.2a now has software PWM – How to use it
2. **PWM practical:** How to use soft PWM in RPi.GPIO 0.5.2a pt 2 – led dimming and motor speed control

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