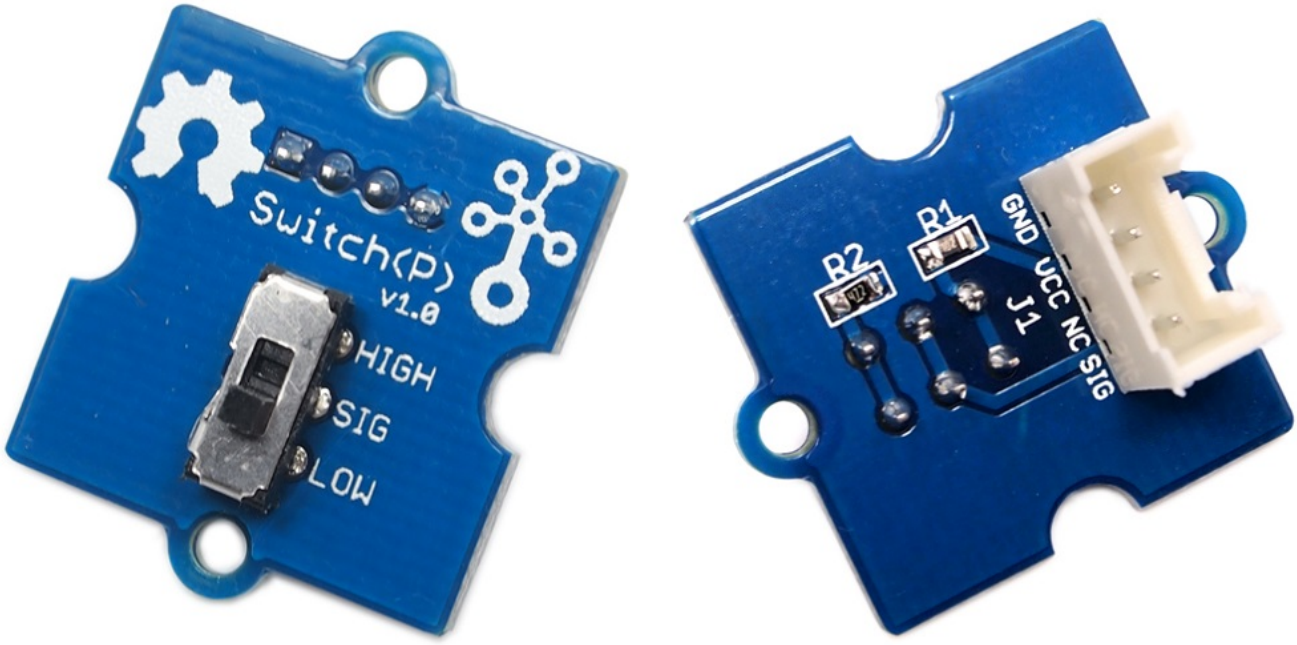
Grove - Switch(P) SKU:101020004



This Grove – Switch is a mini SPDT slide, great for "ON/OFF" situations. It is a reliable switch of great build quality that we adopt it on many of our boards. You should stock some for your Grove prototyping system.

What does "P" mean? "P" stands for "panel mount" in this product.

Version

Product Version	Changes	Released Date
Grove-Switch(P) V1.0	Initial	Jul 2012

Features

- Grove Interface
- Easy to use
- Basic Grove element

!!!Tip More details about Grove modules please refer to Grove System

Specification

Parameter	Value/Range
Operating voltage	3.3/5V
Electrical Life	10,000 cycles
Operation Force	200 ± 50gf

Parameter	Value/Range
Operation Temperature	-20℃ to +80℃
Size	L:20mm W:20mm H:10mm
Weight	1.9g
Package size	L: 90mm W: 140mm H: 11mm
Gross Weight	8g
Certification	ROHS

Platforms Supported

Arduino	Raspberry Pi	BeagleBone	Wio	LinkIt ONE

!!!Caution The platforms mentioned above as supported is/are an indication of the module's software or theoritical compatibility. We only provide software library or code examples for Arduino platform in most cases. It is not possible to provide software library / demo code for all possible MCU platforms. Hence, users have to write their own software library.

Getting Started

!!!Note If this is the first time you work with Arduino, we firmly recommend you to see Getting Started with Arduino before the start.

Play With Arduino

Hardware

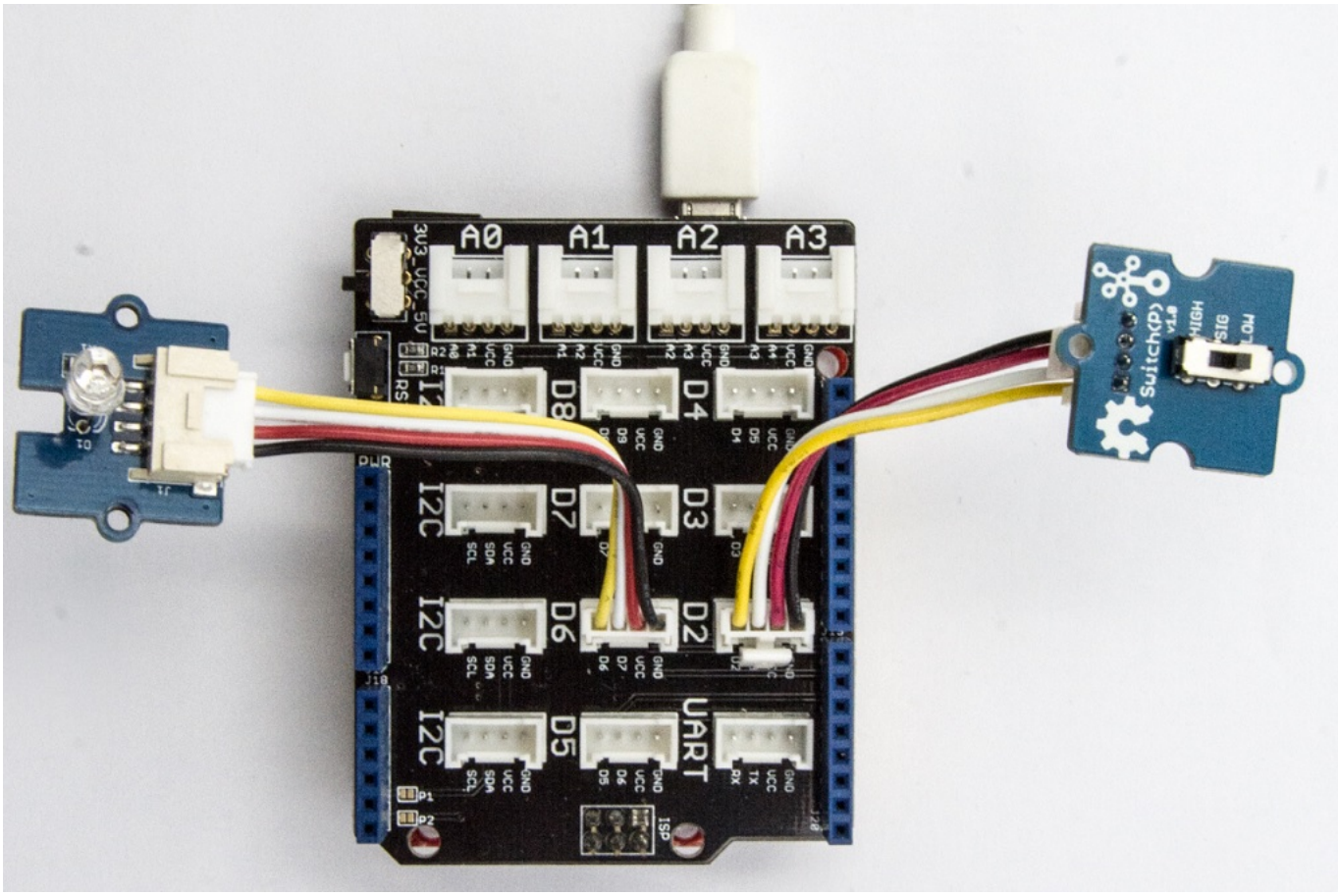
- **Step 1.** Prepare the below stuffs:

Seeeduino V4.2	Base Shield	Grove-Switch(P)	Grove - Purple LED (3mm)



- **Step 2.** Connect Grove-Switch(P) to **D2** port of Grove-Base Shield.
- **Step 3.** Connect Grove-LED to **D6** port of Grove-Base Shield.

- **Step 4.** Plug Grove - Base Shield into Seeeduino.
- **Step 5.** Connect Seeeduino to PC via a USB cable.



!!!Note If we don't have Grove Base Shield, We also can directly connect Grove-Switch(P) and Grove - Purple LED (3mm) to Seeeduino as below.

Seeeduino	Grove-Switch(P)	Seeeduino	Grove - Purple LED (3mm)
5V	Red	5V	Red
GND	Black	GND	Black
NC	White	NC	White
D2	Yellow	D6	Yellow

Software

- **Step 1.** Please copy below code to Arduio IDE and upload to arduino. If you do not know how to upload the code, please check how to upload code.

```
const int switchPin = 2;     // the number of the pushbutton pin
const int ledPin =  6;      // the number of the LED pin

int switchState = 0;         // variable for reading the pushbutton status

void setup() {
    // initialize the LED pin as an output:
```

```
    pinMode(ledPin, OUTPUT);
    // initialize the switch pin as an input:
    pinMode(switchPin, INPUT);
    Serial.begin(9600);
}

void loop(){
    // read the state of the switch value:
    switchState = digitalRead(switchPin);

    if (switchState == HIGH) {
        //turn LED on:
        digitalWrite(ledPin, HIGH);
        Serial.println("switch high!");
    }
    else {
        //turn LED off:
        digitalWrite(ledPin, LOW);
        Serial.println("switch low");
    }
}
```

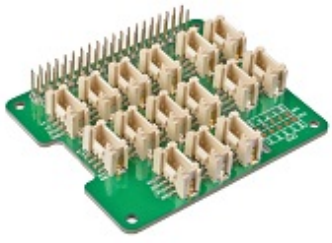
- **Step 2.** When we switch to high and the LED will be on. We also can see the Serial output as below.

```
switch high!
switch high!
switch high!
```

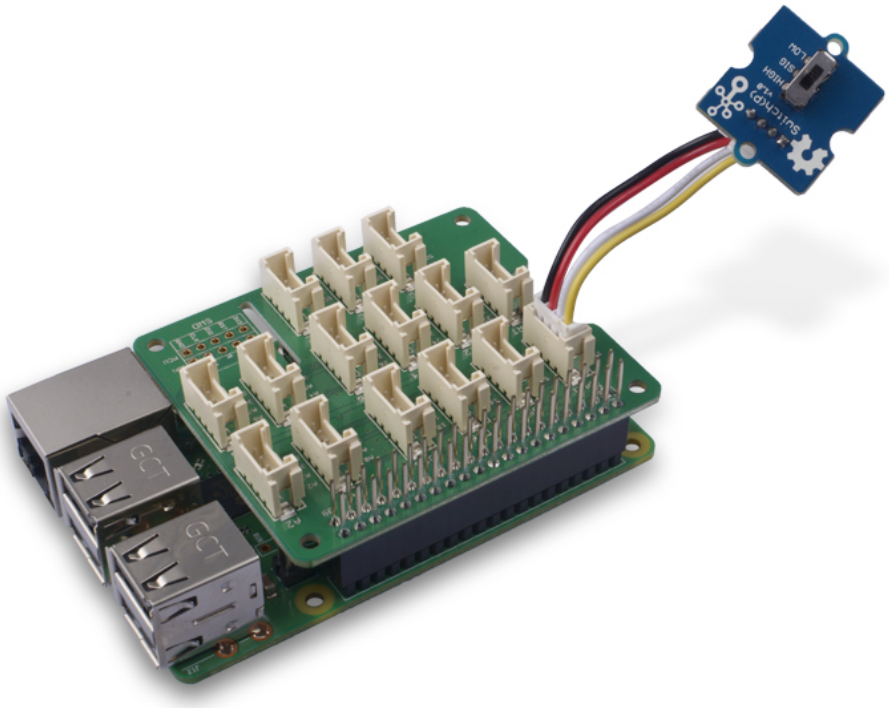
Play With Raspberry Pi (With Grove Base Hat for Raspberry Pi)

Hardware

- **Step 1**. Things used in this project:

Raspberry pi	Grove Base Hat for RasPi	Grove - Switch P
		

- **Step 2**. Plug the Grove Base Hat into Raspberry.
- **Step 3**. Connect the Switch to port 12 of the Base Hat.
- **Step 4**. Connect the Raspberry Pi to PC through USB cable.



!!! Note For step 3 you are able to connect the switch to **any GPIO Port** but make sure you change the command with the corresponding port number.

Software

- **Step 1**. Follow Setting Software to configure the development environment.
- **Step 2**. Download the source file by cloning the grove.py library.

```
cd ~
git clone https://github.com/Seeed-Studio/grove.py
```

- **Step 3**. Excute below commands to run the code.

```
cd grove.py/grove
python grove_switch.py 12
```

Following is the grove_switch.py code.

```
import time
from grove.gpio import GPIO


class GroveTiltSwitch(GPIO):
    def __init__(self, pin):
        super(GroveTiltSwitch, self).__init__(pin, GPIO.IN)

    @property
    def state(self):
        return super(GroveTiltSwitch, self).read()


Grove = GroveTiltSwitch


def main():
    import sys

    if len(sys.argv) < 2:
        print('Usage: {} pin'.format(sys.argv[0]))
        sys.exit(1)

    swicth = GroveTiltSwitch(int(sys.argv[1]))


    while True:
        if swicth.state is 1:
            print("on")
        else:
            print("off")
        time.sleep(1)


if __name__ == '__main__':
    main()
```

!!!success If everything goes well, you will be able to see the following result

```
pi@raspberrypi:~/grove.py/grove $ python grove_switch.py 12
off
off
on
off
on
on
```

```
off
^CTraceback (most recent call last):
  File "grove_switch.py", line 70, in <module>
    main()
  File "grove_switch.py", line 66, in main
    time.sleep(1)
KeyboardInterrupt
```

You can quit this program by simply press ++ctrl+c++.

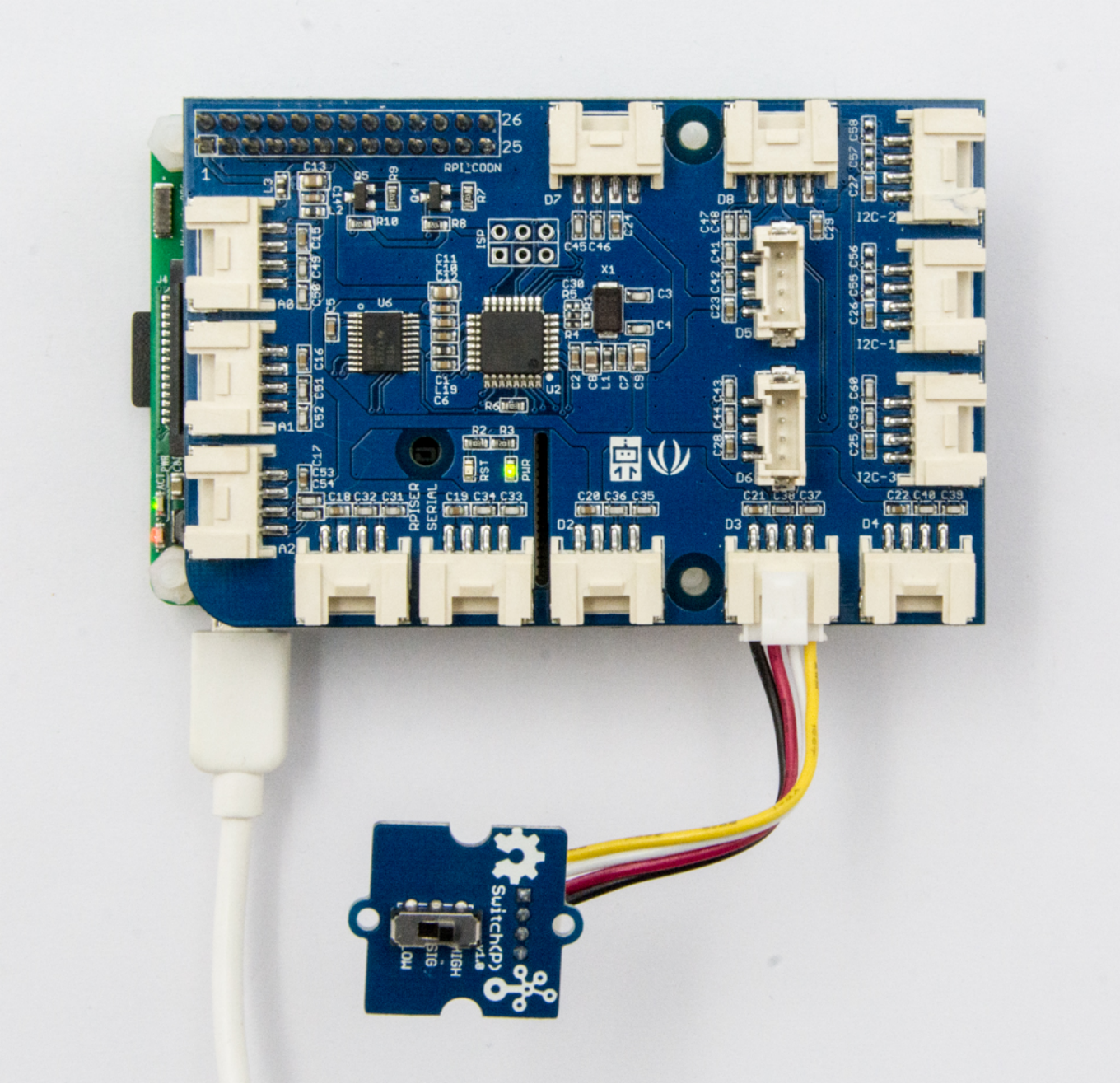
Play With Raspberry Pi (with GrovePi_Plus)

Hardware

- **Step 1.** Prepare the below stuffs:

Raspberry pi	GrovePi_Plus	Grove-Switch(P)
		

- **Step 2.** Plug the GrovePi_Plus into Raspberry.
- **Step 3.** Connect Grove-Switch(P) to **D3** port of GrovePi_Plus.
- **Step 4.** Connect the Raspberry to PC through USB cable.



Software

- **Step 1.** Follow Setting Software to configure the development environment.
- **Step 2.** Git clone the Github repository.

```
cd ~
git clone https://github.com/DexterInd/GrovePi.git
```

- **Step 3.** Excute below commands to monitor the switch status.

```
cd ~/GrovePi/Software/Python
python grove_switch.py
```

Here is the grove_switch.py code.

```
import time
import grovepi

# Connect the Grove Switch to digital port D3
# SIG,NC,VCC,GND
switch = 3

grovepi.pinMode(switch,"INPUT")

while True:
    try:
        print(grovepi.digitalRead(switch))
        time.sleep(.5)

    except IOError:
        print ("Error")
```

- **Step 4.** We will see the switch status as below.

```
pi@raspberrypi:~/GrovePi/Software/Python $ python grove_switch.py
1
1
0
0
0
```

Resources

- **[Eagle&PDF]** Grove-Switch(P) Schematic

Tech Support

Please submit any technical issue into our forum.