

The Grove - Buzzer module has a **piezo buzzer** as the main component. The piezo can be connected to digital outputs, and will emit a tone when the output is HIGH. Alternatively, it can be connected to an analog pulse-width modulation output to generate various tones and effects.

Version

Product Version	Changes	Released Date
Grove-Buzzer V1.0	Initial	Nov 25 2010
Grove-Buzzer V1.1	Add S9013 Transistor	May 30 2014

Features

- Easy to use piezoelectric buzzer
- Uses Standard 4-pin Grove Cables to connect to other Grove modules such as - [Grove Power Modules](#) and Grove - Base Shield




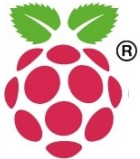
Tip

More details about Grove modules please refer to [Grove System](#)

Specifications

Items	Specification
Operating Voltage	3.3V/5V
Sound Output	≥85dB
Resonant Frequency	2300±300Hz

Platforms Supported

Arduino	Raspberry Pi
	



Caution


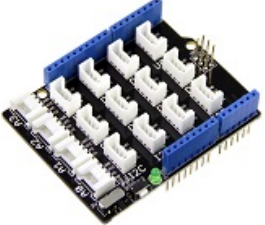

The platforms mentioned above as supported is/are an indication of the module's software or theoretical compatibility. We only provide software library or code examples for Arduino platform in most cases. It is not possible to provide software library / demo code for all possible MCU platforms. Hence,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

Getting Started

Play With Arduino

Hardware

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

Seeeduino V4.2	Base Shield	Grove - Buzzer
		
Get ONE Now	Get ONE Now	Get ONE Now

- **Step 2.** Connect Grove-Buzzer to port D6 of Grove-Base Shield.
- **Step 3.** Plug Grove - Base Shield into Seeeduino.
- **Step 4.** Connect Seeeduino to PC through a USB cable.

Seeeduino	Grove-Buzzer
5V	Red
GND	Black
Not Conencted	White
D6	Yellow

Software

- Step 1. Copy the code into Arduino IDE and upload.

```
1 void setup ()
2 {
3   pinMode (6, OUTPUT);
4 }
5
6 void loop ()
7 {
8   digitalWrite (6, HIGH);
9   delay (1000);
10  digitalWrite (6, LOW);
11  delay (1000);
12 }
```

- Step 2. We will hear the buzzer on and off.

Play with Codecraft

Hardware

Step 1. Connect Grove - Buzzer to port D6 of a Base Shield.

Step 2. Plug the Base Shield to your Seeeduino/Arduino.

Step 3. Link Seeeduino/Arduino to your PC via an USB cable.

Software

Step 1. Open [Codecraft](#), add Arduino support, and drag a main procedure to working area.



Note

If this is your first time using Codecraft, see also [Guide for Codecraft using Arduino](#).

Step 2. Drag blocks as picture below or open the cdc file which can be downloaded at the end of this page.



Upload the program to your Arduino/Seeeduino.




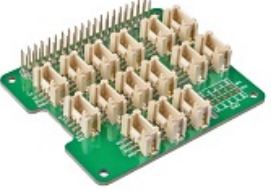

Success

When the code finishes uploaded, you will hear the buzzer sound intermittently.

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

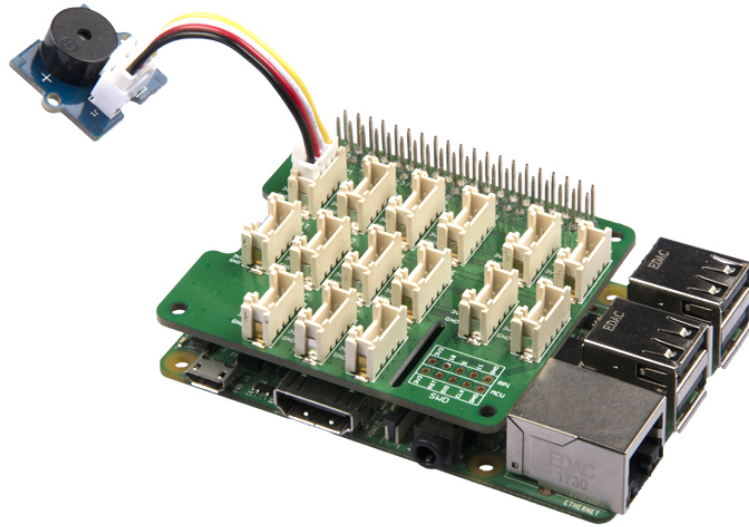
Hardware

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

Raspberry pi	Grove Base Hat for RasPi	Grove - Buzzer
		
Get ONE Now	Get ONE Now	Get ONE Now

- **Step 2.** Plug the Grove Base Hat into Raspberry Pi.
- **Step 3.** Connect the Grove Buzzer to PWM port of the Base Hat.

- **Step 4.** Connect the Raspberry Pi to PC through USB cable.



Software

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



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

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

```
1 cd grove.py/grove
2 python grove_pwm_buzzer.py
```

Following is the grove_led.py code.






Success

If everything goes well, the buzzer will ring a few times and then stop, the program will automatically exit.

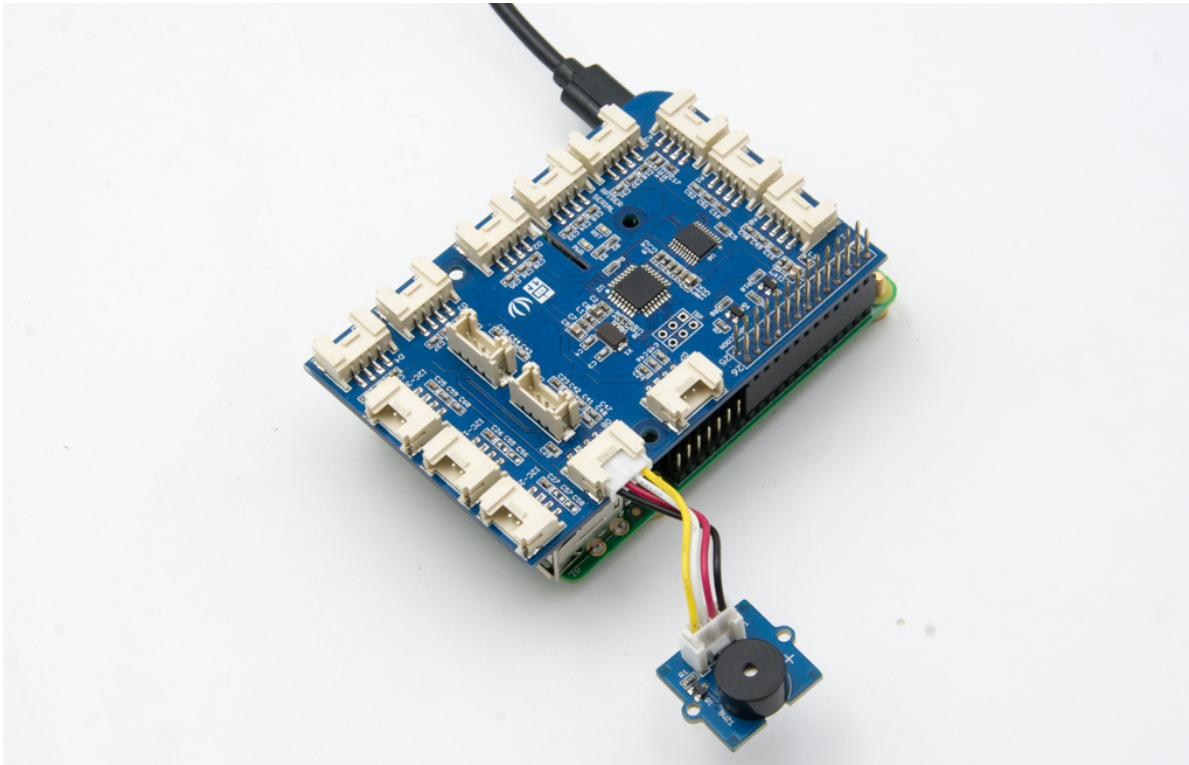
Play With Raspberry Pi (with GrovePi_Plus)

Hardware

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

Raspberry pi	GrovePi_Plus	Grove - Buzzer
		
Get ONE Now	Get ONE Now	Get ONE Now

- **Step 2.** Plug the GrovePi_Plus into Raspberry.
- **Step 3.** Connect Grove-Buzzer to D8 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.

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



- **Step 3.** Excute below commands.

```
1 cd ~/GrovePi/Software/Python
2 python grove_buzzer.py
```

Here is the grove_buzzer.py code.

```
1 import time
2 import grovepi
3
4 # Connect the Grove Buzzer to digital port D8
5 # SIG,NC,VCC,GND
6 buzzer = 8
7
8 grovepi.pinMode(buzzer,"OUTPUT")
9
10 while True:
11     try:
12         # Buzz for 1 second
13         grovepi.digitalWrite(buzzer,1)
14         print ('start')
15         time.sleep(1)
16
17         # Stop buzzing for 1 second and repeat
18         grovepi.digitalWrite(buzzer,0)
19         print ('stop')
20         time.sleep(1)
21
22     except KeyboardInterrupt:
23         grovepi.digitalWrite(buzzer,0)
24         break
25     except IOError:
```

```
26     print ("Error")
```

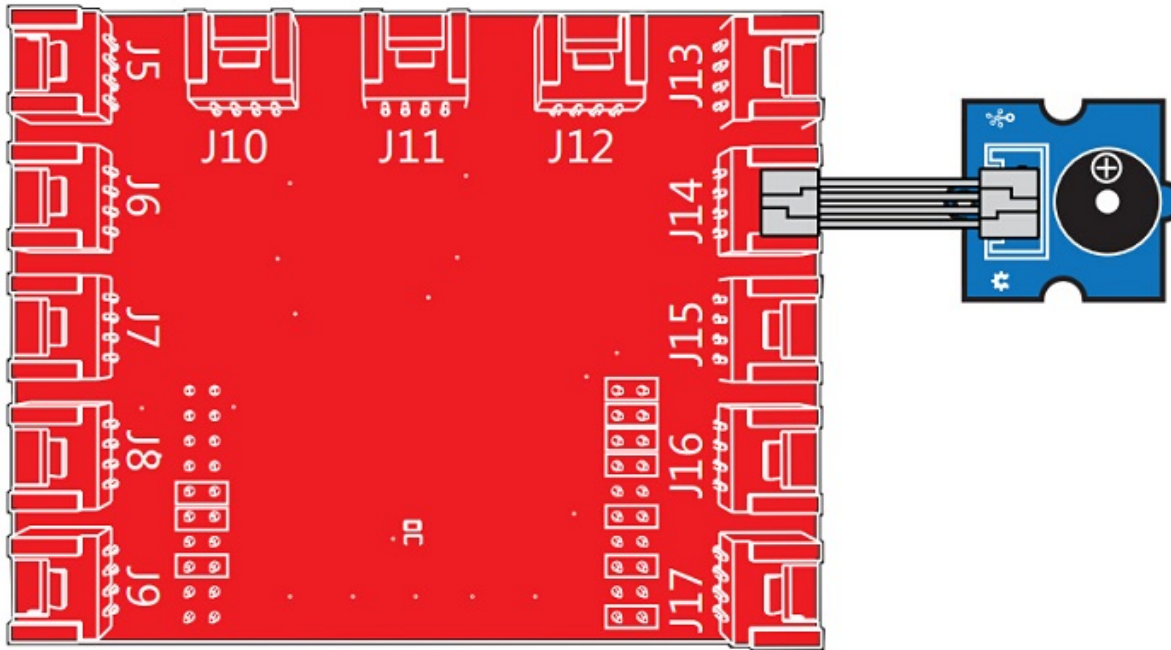
- Step 4. We will hear the buzzer on and off.

```
1 pi@raspberrypi:~/GrovePi/Software/Python $ python grove_buzzer.py
2 start
3 stop
4 start
5 stop
```

Play With TI LaunchPad

Hardware

- This example shows how to use the Grove buzzer module to play melodies. It sends a square wave of the appropriate frequency to the buzzer, generating the corresponding tone.



Software

```
1  /*  
2   Buzzer  
3   The example use a buzzer to play melodies. It sends a square wave of the  
4   appropriate frequency to the buzzer, generating the corresponding tone.  
5  
6   The circuit:  
7   * Buzzer attached to pin39 (J14 plug on Grove Base BoosterPack)  
8   * one side pin (either one) to ground  
9   * the other side pin to VCC  
10  * LED anode (long leg) attached to RED_LED
```



```

11  * LED cathode (short leg) attached to ground
12
13  * Note:
14  This example code is in the public domain.
15
16  https://www.seeedstudio.com/wiki/index.php?title=GROVE\_-\_Starter\_Kit\_v1.1
17
18  */
19
20  /* Macro Define */
21  #define BUZZER_PIN          39          /* sig pin of the buzzer
22
23  int length = 15;          /* the number of notes */
24  char notes[] = "ccggaagffeeddc ";
25  int beats[] = { 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 2, 4 };
26  int tempo = 300;
27
28  void setup()
29  {
30      /* set buzzer pin as output */
31      pinMode(BUZZER_PIN, OUTPUT);
32  }
33
34  void loop()
35  {
36      for(int i = 0; i < length; i++) {
37          if(notes[i] == ' ') {
38              delay(beats[i] * tempo);
39          } else {
40              playNote(notes[i], beats[i] * tempo);
41          }
42          delay(tempo / 2);    /* delay between notes */
43      }
44
45  }

```

```
46
47 /* play tone */
48 void playTone(int tone, int duration) {
49     for (long i = 0; i < duration * 1000L; i += tone * 2) {
50         digitalWrite(BUZZER_PIN, HIGH);
51         delayMicroseconds(tone);
52         digitalWrite(BUZZER_PIN, LOW);
53         delayMicroseconds(tone);
54     }
55 }
56
57 void playNote(char note, int duration) {
58     char names[] = { 'c', 'd', 'e', 'f', 'g', 'a', 'b', 'C' };
59     int tones[] = { 1915, 1700, 1519, 1432, 1275, 1136, 1014, 956 };
60
61     // play the tone corresponding to the note name
62     for (int i = 0; i < 8; i++) {
63         if (names[i] == note) {
64             playTone(tones[i], duration);
65         }
66     }
67 }
```

Grove - Buzzer Schematic Files v1.0



Grove - Buzzer Schematic Files v1.1



Resources

- [\[Eagle&PDF\] Grove - Buzzer Schematic Files v1.1](#)
- [\[Eagle&PDF\] Grove - Buzzer Schematic Files v1.0](#)

- **[DataSheet]** [S9013datasheet](#)
- **[More Reading]** [Wooden Laser Gun](#)
- **[Codecraft]** [CDC File](#)

Tech Support

Please submit any technical issue into our [forum](#).