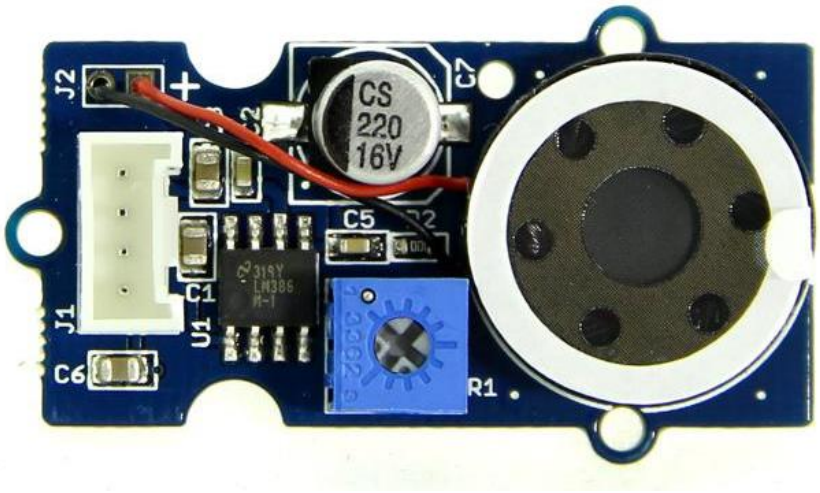
Grove - Speaker



The Grove- Speaker is a module which consists of power amplification and voice outputs. The loudness can be adjusted by the on-board potentiometer. With different input frequencies, the loud-speaker generates different tones. Coding the music into arduino, DIY your own music box!

Features

- Volume Adjustable
- Grove Interface

Tip
More details about Grove modules please refer to Grove System

Specifications

Item	Min	Typical	Max	Unit
Working Voltage	4.0	5.0	5.5	VDC
Voltage Gain	-	-	46	db
Band Width	-	-	20	KHz

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.

Usage

Play with Arduino

The speaker can emit a variety of sounds like a car horn, doorbell and ignition . The different sounds are based on the frequency of the input signal.

You can supply different frequency signal to this module with Arduino. Arduino generates these signal via PWM or even digital write and delay.Here we are going to show you how to generate these signals using *delay()*, the speaker sound bass 1~7.

音符	对应频率(Hz)	半周期(us)
1	261.6255653	1911.128216
1.5	277.182631	1803.864832
2	293.6647679	1702.621678
2.5	311.1269837	1607.060866
3	329.6275569	1516.863471
4	349.2282314	1431.728466
4.5	369.9944227	1351.371722
5	391.995436	1275.525055
5.5	415.3046976	1203.935334
6	440	1136.363636
6.5	466.1637615	1072.584446
7	493.8833013	1012.384907

```
/*macro definition of Speaker pin*/
#define SPEAKER 3

int BassTab[]={1911,1702,1516,1431,1275,1136,1012};//bass 1~7

void setup()
{
  pinInit();
}
void loop()
{
    /*sound bass 1~7*/
  for(int note_index=0;note_index<7;note_index++)
  {
    sound(note_index);
    delay(500);
  }
}
void pinInit()
{
  pinMode(SPEAKER,OUTPUT);
  digitalWrite(SPEAKER,LOW);
}
void sound(uint8_t note_index)
{
  for(int i=0;i<100;i++)
  {
    digitalWrite(SPEAKER,HIGH);
    delayMicroseconds(BassTab[note_index]);
    digitalWrite(SPEAKER,LOW);
    delayMicroseconds(BassTab[note_index]);
  }
}
```

Note
Due to the influence of the capacitance, the module can only output the bass signal, and the treble is unable to emit.

Play with Codecraft

Hardware

Step 1. Connect Grove - Speaker to port D3 in a Base Shield

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

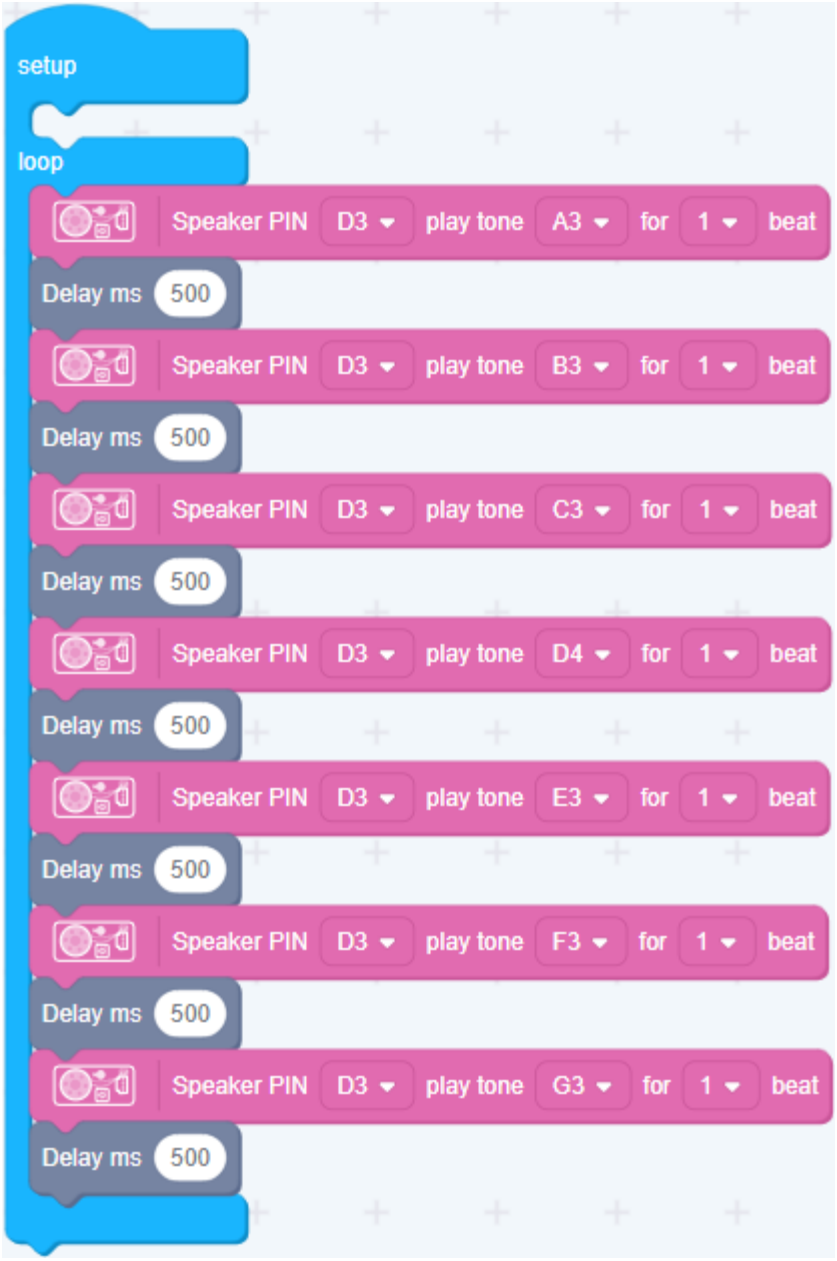
Step 3. Link Seeeduino/Arduino to your PC via an USB cable.

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 Speaker making a DO to SI sound.

Resources

- Grove - Speaker Eagle File
- How to generate different tone with MCU
- Grove_-_Speaker_v1.0_brd.pdf
- Grove_-_Speaker_v1.0_sch.pdf
- LM386 Low Voltage Audio Power Amplifier Datasheet
- CodeCraft Code

Tech Support

Please submit any technical issue into our forum or drop mail to techsupport@seeed.cc.