USB TO AUDIO

Introduction

USB TO AUDIO

USB
WAVESHARE
USB TO AUDIO
PWR

This is a USB sound card that supports recording and playback, a stereo codec, a built-in microphone, and a speaker. It is suitable for Raspberry Pi/Jetson Nano, driver-free, plug and play.

Features

- Onboard PWR indicators for operating status.
- Onboard microphone and speaker, support audio input/output.
- Driver-free, plug and play. Compatible with Windows, Mac OS, Linux, and Android.
- Standard USB 2.0 port, portable size.

Specification

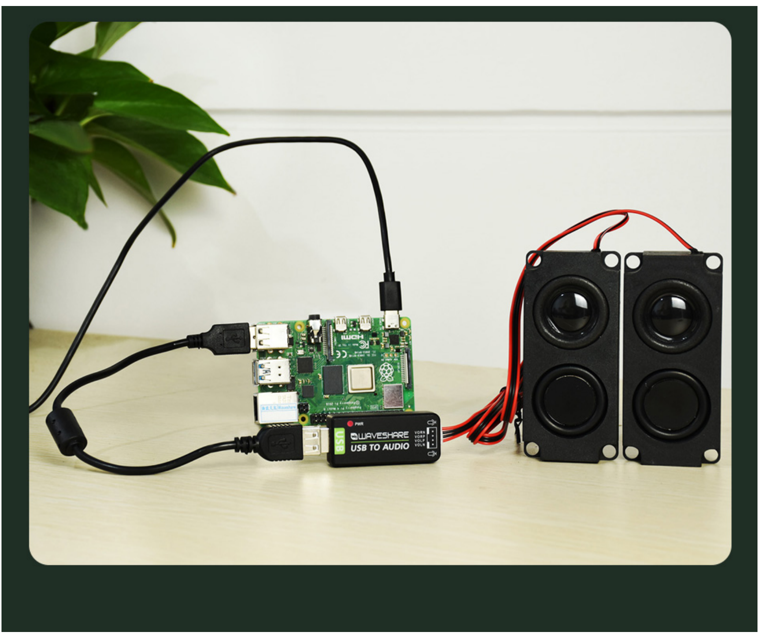
- Power supply: 5V
- Audo encoder/decoder: SSS1629A5
- Control port: USB
- Audio port: PH2.0
- Speaker driver: 2.6W per channel (4Ω BTL)

Working with Raspberry Pi

Hardware Configuratoin

- Raspberry Pi x1
- Speaker
- USB TO AUDIO

Hardware connection :

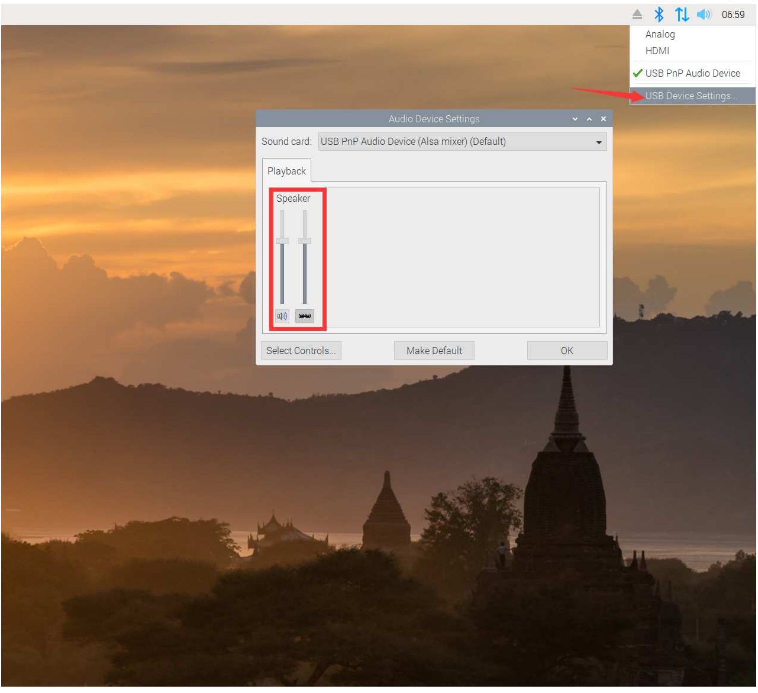


Play and Record

- Right-click the Audio logo of Raspberry Pi ->Choose USB PnP Audio Device->Play or recording.

Configure Volume

- Right-click USB Device Settings->The left spider is the volume of the speaker and the right one is microphone.



Sound card: USB PnP Audio Device (Alsa mixer) (Default)

Working with Jetson Nano

Hardware Configuration

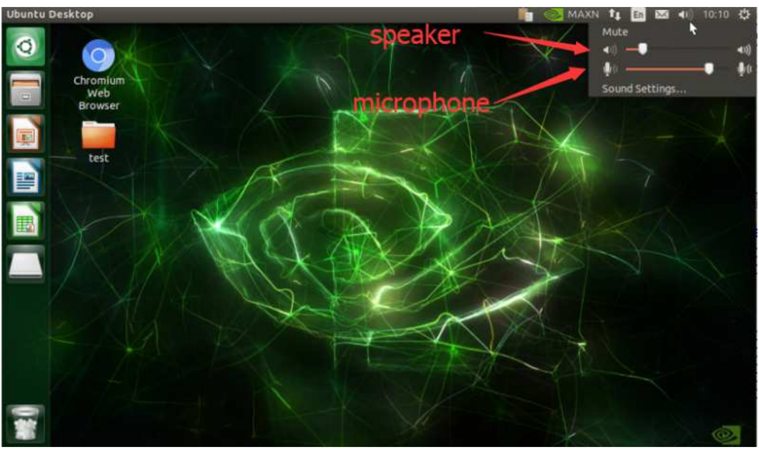
- Jetson Nano
- 8Ω 5W Speaker
- USB to Audio

Connection diagram:

WAVESHARE
USB TO AUDIO

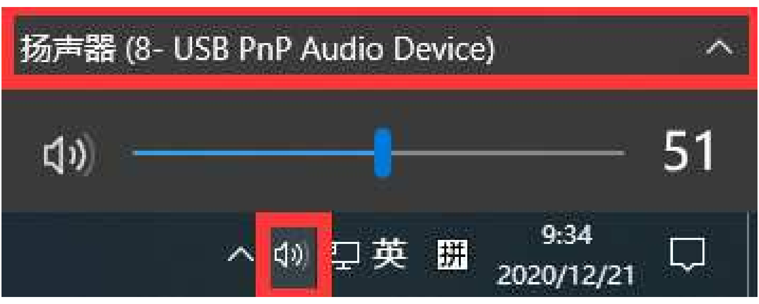
Configure Play & Recording Volume

- Right-click on the top right speaker icon -> the speaker volume bar and microphone volume bar appear -> you can drag the volume bar to adjust the volume and microphone volume.

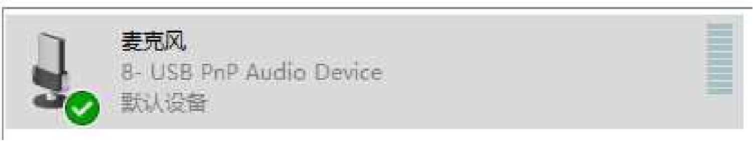


Working with PC

- Connect the USB TO AUDIO to PC and it will be auto-recognized as a USB audio device.

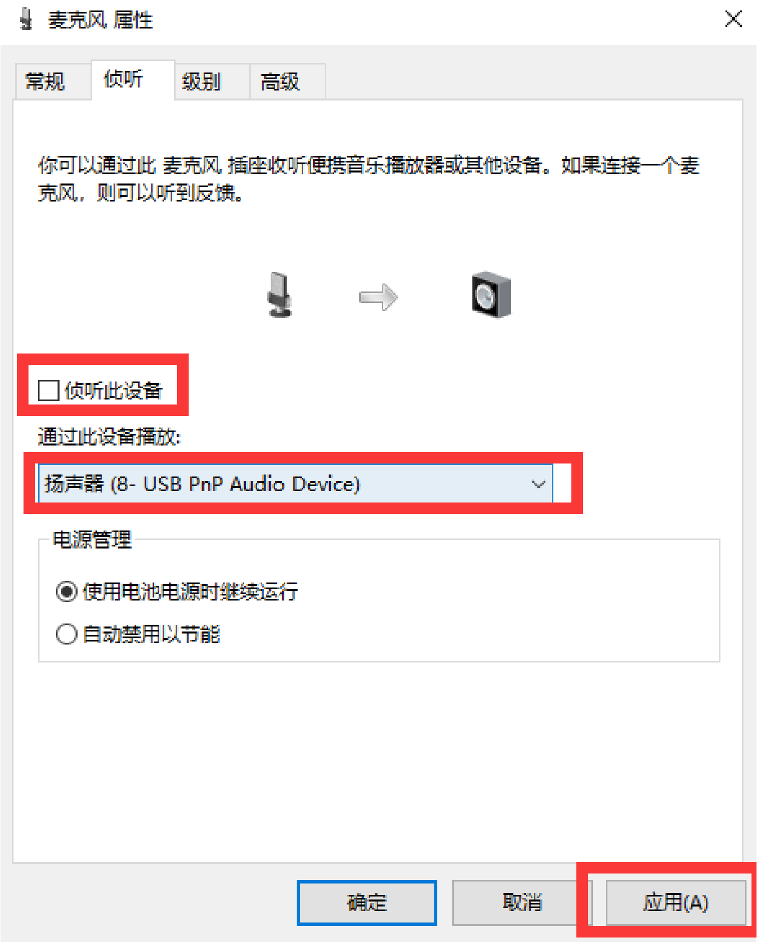

扬声器 (8- USB PnP Audio Device)

- Open the Control panel. choose Hardware and Sound-> Sound -> Recording and a USB microphone is listed.


麦克风
8- USB PnP Audio Device
默认设备

- Connect speaker to the USB TO AUDIO , please keep the speaker away from the USB TO AUDIO module

Right-Click Microphone -> Properties -> Listen and set it as below:


麦克风 属性

你可以通过此 麦克风 插座收听便携音乐播放器或其他设备。如果连接一个麦克风，则可以听到反馈。

□ 侦听此设备

通过此设备播放：

扬声器 (8- USB PnP Audio Device)

电源管理

● 使用电池电源时继续运行

○ 自动禁用以节能

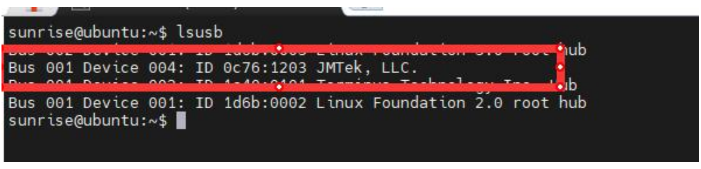
- Try to say to the microphone and check if the speaker works normally. Please keep the speaker away from the USB TO AUDIO Module, or it causes echo problem.

Working with Horizon Sunrise X3 PI

- Open the command terminal, connect USB TO AUDIO, and enter the following commands:

```
lsusb
```

- Seeing the content as shown means that the USB device has been detected:

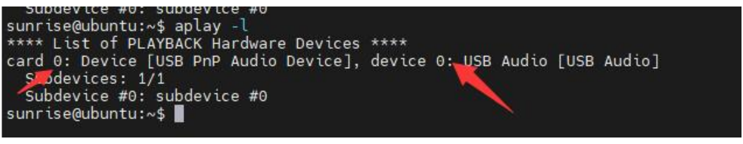


```
sunrise@ubuntu:~$ lsusb
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 004: ID 0c76:1203 JMTek, LLC.
Bus 001 Device 002: ID 1a40:0101 Terminus Technology Inc. Hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
sunrise@ubuntu:~$ 
```

- Enter the commands, and list the sound card and the digital audio device:

```
aplay -l
```

See the content as shown in the figure indicates that the corresponding audio output is detected, remember the two positions shown in the label, later to carry out the use of the device needs:

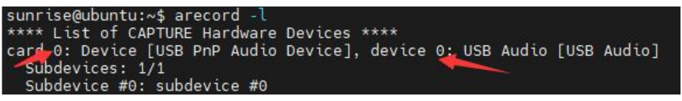


```
  Subdevice #0: subdevice #0
sunrise@ubuntu:~$ aplay -l
**** List of PLAYBACK Hardware Devices ****
card 0: Device [USB PnP Audio Device], device 0: USB Audio [USB Audio]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
sunrise@ubuntu:~$ 
```

Enter the command to list sound cards and recording devices:

```
arecord -l
```

See the content as shown in the figure indicates that the corresponding audio input is detected, remember the two positions shown in the label, the latter for the use of the device needs:

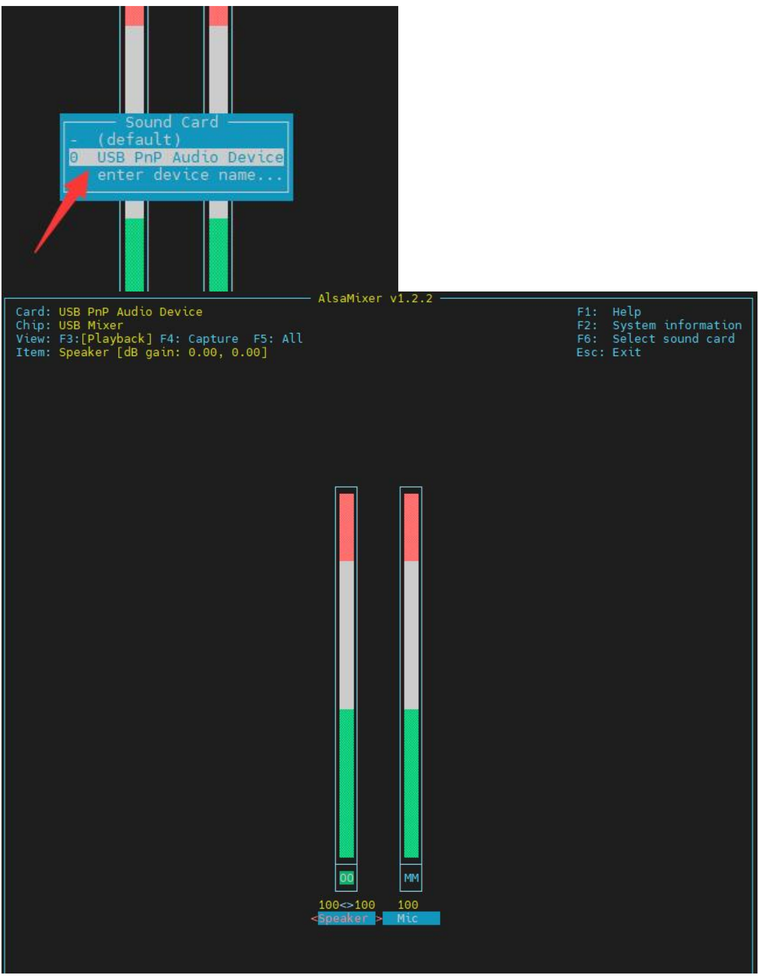


```
sunrise@ubuntu:~$ arecord -l
**** List of CAPTURE Hardware Devices ****
card 0: Device [USB PnP Audio Device], device 0: USB Audio [USB Audio]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
```

Enter the commands, and adjust the volume in the interface:

```
sudo alsamixer
```

Press F6, choose the corresponding device, and adjust the volume:

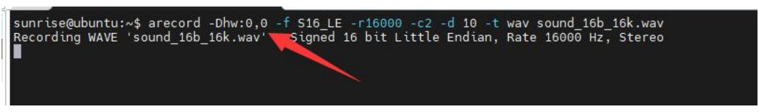


```
Card: USB PnP Audio Device
Chip: USB Mixer
View: F3:[Playback] F4: Capture  F5: All
Item: Speaker [dB gain: 0.00, 0.00]
```

Start recording 10 seconds of audio:

```
arecord -Dhw:0,0 -f S16_LE -r16000 -c2 -d 10 -t wav sound_16b_16k.wav
```

Note the markings of the location shown, here to be consistent with the previously detected.

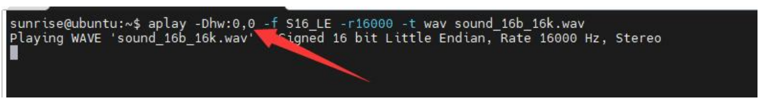


```
sunrise@ubuntu:~$ arecord -Dhw:0,0 -f S16_LE -r16000 -c2 -d 10 -t wav sound_16b_16k.wav
Recording WAVE 'sound_16b_16k.wav' : Signed 16 bit Little Endian, Rate 16000 Hz, Stereo
```

Start playing the audio you just recorded:

```
aplay -Dhw:0,0 -f S16_LE -r16000 -t wav sound_16b_16k.wav
```

Note the markings of the location shown, here to be consistent with the previously detected:



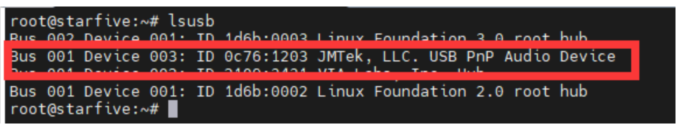
```
sunrise@ubuntu:~$ aplay -Dhw:0,0 -f S16_LE -r16000 -t wav sound_16b_16k.wav
Playing WAVE 'sound_16b_16k.wav' : Signed 16 bit Little Endian, Rate 16000 Hz, Stereo
```

Working With VisionFive2

Install usbutils library:

```
apt install usbutils
```

Enter lsusb to view the corresponding USB device, and the device shown in the figure indicates that the device is connected.



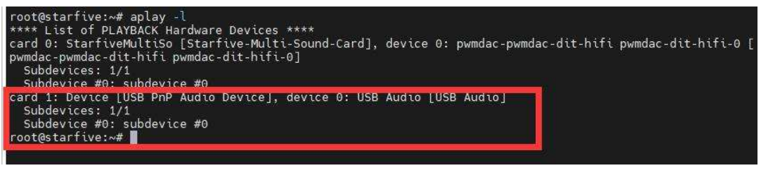
```
root@starfive:~# lsusb
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 003: ID 0c76:1203 JMTek, LLC. USB PnP Audio Device
Bus 001 Device 002: ID 2109:3431 VIA Labs, Inc. Hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
root@starfive:~# 
```

Install alsa-utils:

```
apt install alsa-utils
```

Enter the commands, list the sound card and the digital audio device:

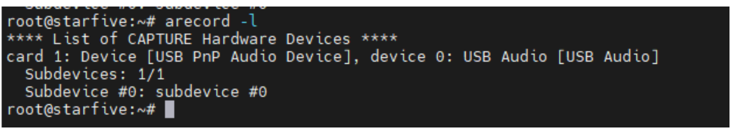
```
aplay -l
```



```
root@starfive:~# aplay -l
**** List of PLAYBACK Hardware Devices ****
card 0: StarfiveMultiSo [Starfive-Multi-Sound-Card], device 0: pwmdac-pwmdac-dit-hifi pwmdac-dit-hifi-0 [
pwmdac-pwmdac-dit-hifi pwmdac-dit-hifi-0]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
card 1: Device [USB PnP Audio Device], device 0: USB Audio [USB Audio]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
root@starfive:~# 
```

Enter the commands, list the sound card and the recording device:

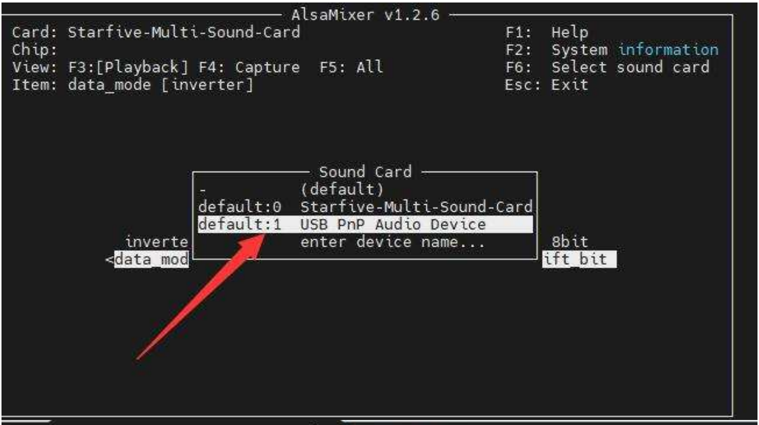
```
arecord -l
```



```
  Subdevice #0: subdevice #0
root@starfive:~# arecord -l
**** List of CAPTURE Hardware Devices ****
card 1: Device [USB PnP Audio Device], device 0: USB Audio [USB Audio]
  Subdevices: 1/1
  Subdevice #0: subdevice #0
root@starfive:~# 
```

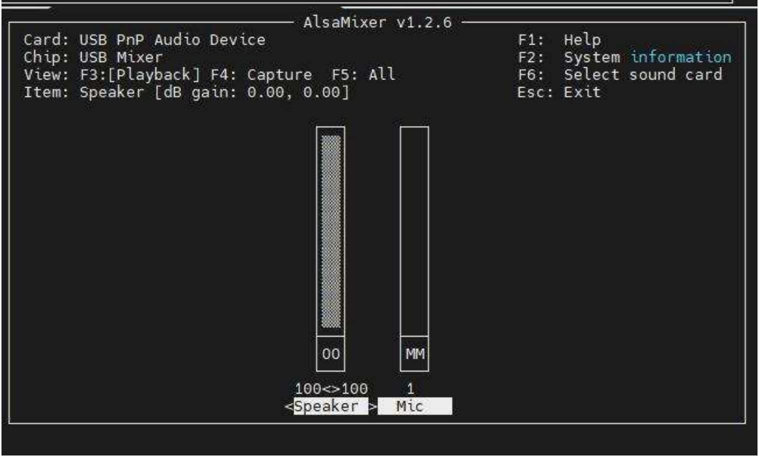
Enter the command to adjust the volume in the terminal screen:

```
sudo alsamixer
```



```
──────────────────────────── AlsaMixer v1.2.6 ─────────────────────────────
Card: Starfive-Multi-Sound-Card                        F1:  Help
Chip:                                                  F2:  System information
View: F3:[Playback] F4: Capture  F5: All               F6:  Select sound card
Item: data_mode [inverter]                             Esc: Exit

                    ┌──────── Sound Card ───────────┐
                    │-          (default)            │
                    │default:0  Starfive-Multi-Sound-Card
                    │default:1  USB PnP Audio Device │
             inverte│           enter device name... │8bit
           <data_mod└────────────────────────────────┘ift_bit
```



```
──────────────────────────── AlsaMixer v1.2.6 ─────────────────────────────
Card: USB PnP Audio Device                             F1:  Help
Chip: USB Mixer                                        F2:  System information
View: F3:[Playback] F4: Capture  F5: All               F6:  Select sound card
Item: Speaker [dB gain: 0.00, 0.00]                    Esc: Exit

                          OO      MM
                       100<>100   1
                      <Speaker > Mic
```

Enter the command to adjust the volume in the terminal screen:

```
sudo alsamixer
```

Resources

- APA2068KAI-TRG
- SSS1629A5

FAQ

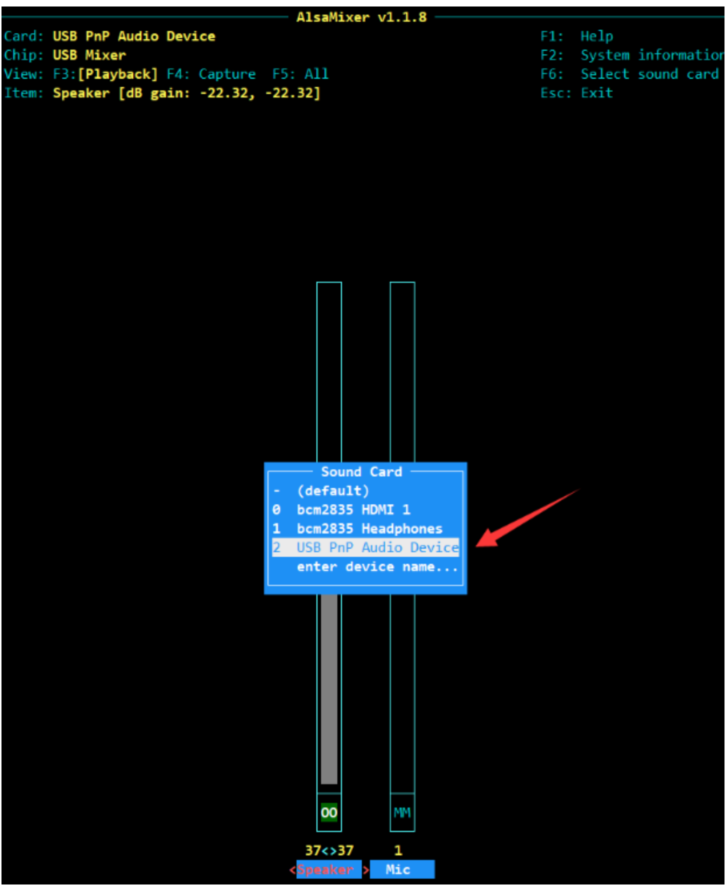
Question:How to change the volume by command on raspbian system of raspberry pi?

Answer:

*Enter the volume adjustment command in the terminal interface

```
sudo alsamixer
```

- If the USB PnP Audio sound card is not set as the default sound card, you need to press F6 to select the sound card device.



```
──────────────────────────── AlsaMixer v1.1.8 ─────────────────────────────
Card: USB PnP Audio Device                             F1:  Help
Chip: USB Mixer                                        F2:  System informatior
View: F3:[Playback] F4: Capture  F5: All               F6:  Select sound card
Item: Speaker [dB gain: -22.32, -22.32]                Esc: Exit

                    ┌──── Sound Card ────┐
                    │-  (default)         │
                    │0  bcm2835 HDMI 1    │
                    │1  bcm2835 Headphones│
                    │2  USB PnP Audio Device
                    │   enter device name...
                    └─────────────────────┘
                          OO      MM
                        37<>37    1
                      <Speaker > Mic
```

- Switch speaker or microphone volume settings by left and right buttons; switch microphone volume settings by up and down buttons.

Question:How to record and broadcast through commands on the raspbian system of Raspberry Pi?

Answer:

*Recording

```
arecord -d 10 test.wav
```

- Broadcast

```
aplay test.wav
```

Question:How much the loudspeaker can the sound card connect to?

Answer:

Single channel 2.6W.

Support

If you require technical support, please go to the page and open a ticket.