

Introduction

PCM2912-UAC 是一款 USB 接口集高质量成立体声音输出及单声道 MIC 输入的声卡。

It adopted the Texas Instruments single-chip PCM2912A, USB stereo audio codec with a USB, 2.0-compliant, full-speed protocol controller and an Active Front End (AFE) function for headset applications.

The USB protocol controller works with no software code, but USB descriptors can be modified on request. The PCM2912A employs SpAct™ architecture, TI's unique system that recovers the audio clock from USB packet data. On-chip analog PLLs with SpAct enables independent playback and record sampling rates with low clock jitters.

Features

1, On-Chip USB Interface:

- With Full-Speed Transceivers
- Fully Compliant With USB 2.0 Specification
- Certified By USB-IF
- Partially Programmable Descriptors
- Adaptive Isochronous Transfer for Playback
- Asynchronous-Isochronous Transfer for Record
- Bus Powered

2, 16-Bit Delta-Sigma ADC and DAC

3, Sampling Rate:

8, 11.025, 16, 22.05, 32, 44.1, or 48 kHz

4, Mono ADC with Microphone Input

Analog Performance at $V_{BUS} = 5 V$:

THD+N: 0.01%

SNR: 92 dB

Dynamic Range: 90 dB

5, Stereo DAC With Headphone Output

Analog Performance at $V_{BUS} = 5.0 V$

THD+N: 0.01% ($R_L > 10 k\Omega$)

THD+N: 0.02% ($R_L = 32 \Omega$)

SNR: 92 dB

Dynamic Range: 90 dB

Testing under Raspberry:

1, Viewing system playback device

```
pi@raspberrypi:~$ sudo aplay -l
```

```
**** List of PLAYBACK Hardware Devices ****
```

```
card 0: ALSA [bcm2835 ALSA], device 0: bcm2835 ALSA [bcm2835 ALSA]
```

Subdevices: 8/8

Subdevice #0: subdevice #0

Subdevice #1: subdevice #1

Subdevice #2: subdevice #2

Subdevice #3: subdevice #3

Subdevice #4: subdevice #4

Subdevice #5: subdevice #5

Subdevice #6: subdevice #6

Subdevice #7: subdevice #7

card 0: ALSA [bcm2835 ALSA], device 1: bcm2835 ALSA [bcm2835 IEC958/HDMI]

Subdevices: 1/1

Subdevice #0: subdevice #0

card 1: Device [PDP Audio Device], device 0: USB Audio [USB Audio]

Subdevices: 0/1

Subdevice #0: subdevice #0

2, Viewing system record device

**** List of CAPTURE Hardware Devices ****

card 1: Device [PDP Audio Device], device 0: USB Audio [USB Audio]

Subdevices: 1/1

Subdevice #0: subdevice #0

3, Playback test

```
pi@raspberrypi:~$ speaker-test -Dplughw:CARD=Device -c2 -twav
```

you can hear : Front Left Front Right from headset.

4, Record test

We can use below instruction record the MIC input to file test.wav.

```
pi@raspberrypi:~$ arecord -Dplughw:CARD=Device -fcd -c1 -twav test.wav
```