ALLO AUDIO CARDS CONFIGURING

This document covers the configuration of Allo audio cards for Raspberry Pi. To load device drivers into the Raspberry Pi environment, device tree overlay is used.

CONFIGURE DEVICE TREE OVERLAY FILE

Load proper device tree overlay by adding the following line for the corresponding Allo audio card in the /boot/config.txt file.

ALLO PIANO HIFI DAC

    dtoverlay=allo-piano-dac-pcm512x-audio

ALLO PIANO 2.1 HIFI DAC

    dtoverlay=allo-piano-dac-plus-pcm512x-audio

ALLO BOSS HIFI DAC / MINI BOSS HIFI DAC

    dtoverlay=allo-boss-dac-pcm512x-audio

ALLO DIGIONE

    dtoverlay=allo-digione

DISABLING ON-BOARD AUDIO

You can disable the Raspberry Pi's on-board "low quality" audio device. For this, replace "dtparam=audio=on" with "dtparam=audio=off" in the /boot/config.txt file.

    dtparam=audio=off

VERIFICATION

Check, if the sound card is enabled with "aplay":

```
$ aplay -l

**** List of PLAYBACK Hardware Devices ****
card 0: PianoDAC [PianoDAC], device 0: PianoDAC multicodec-0 []
  Subdevices: 0/1
  Subdevice #0: subdevice #0
```

Note the device number and subdevice number – these may be useful when configuring media applications to access the sound card in your system.

This should work as root but also with the default "pi" user of Raspbian. If you created another user make sure it is part of the "audio" group, otherwise it won't be able to access the sound card and aplay won't list it.

You can use aplay command, to playback a WAV file.

```
$aplay -D default:CARD=PianoDAC <yourfilename.wav>
```

DEBUGGING

- **If the card is not recognized:** Make sure proper drivers are available. Check for the required ko & dtbo file availability using the following command:

```
$ ls /boot/overlays/allo-*
/boot/overlays/allo-boss-dac-pcm512x-audio.dtbo
/boot/overlays/allo-piano-dac-pcm512x-audio.dtbo
/boot/overlays/allo-digione.dtbo
/boot/overlays/allo-piano-dac-plus-pcm512x-audio.dtbo

$ cd /lib/modules/<version>-v7+/kernel/sound/soc/bcm/
$ ls
snd-soc-allo-boss-dac.ko snd-soc-allo-piano-dac.ko
snd-soc-allo-digione.ko snd-soc-allo-piano-dac-plus.ko

$ cd /lib/modules/<version>+/kernel/sound/soc/bcm/
$ ls
```

```
snd-soc-allo-boss-dac.ko snd-soc-allo-piano-dac.ko
snd-soc-allo-digione.ko snd-soc-allo-piano-dac-plus.ko
```

If the required files are missing, try upgrading the kernel.

OR it could be caused by typos in config.txt or blacklisted drivers. Add "`dtdebug=1`" to your config.txt. Have a look at the output of `$dmesg`

- **Card is recognized, but no sound:** Check if the volume is not low or muted. For this run the `alsamixer` command from the console. If you have more than one sound devices, you may have to select the device, by pressing the F6 key.

```
$ alsamixer
```


Now adjust the volume by highlighting "`Digital`" (Press cursor keys left and right to select) and increase / decrease the volume by pressing up and down cursor keys. Remember 100% = 0db, 0% is mute.

[Note: This is not applicable to Allo Digione]