



How to play audio



Contents

1. How to play audio	3
2. ALSA overview	6
3. Category:ST boards	6
4. PulseAudio	6
5. Gst-play	6



How to play audio

Stable: 21.01.2020 - 17:13 / Revision: 11.12.2019 - 15:27

Contents

1 Article purpose	3
2 Audio playback overview	3
3 Examples	4
3.1 Audio playback on headset output	4
3.1.1 Playback on ALSA device	4
3.1.2 Playback via PulseAudio	4
3.2 Audio playback on HDMI output	4
3.2.1 Playback on ALSA device	4
3.2.2 Playback via PulseAudio	5
3.3 Audio playback on S/PDIF output	5
3.3.1 Set IEC958 status bits	5
3.3.2 Playback on ALSA device	5
3.3.3 Playback via PulseAudio	5

1 Article purpose

This article explains how to play audio through the [ALSA](#) audio framework in [Linux®OS](#) context. The examples below, show how to play audio on the different audio hardware interfaces of the [STM32MPU boards](#).

2 Audio playback overview

The [ALSA](#) framework exposes audio devices associated to the board audio hardware interfaces.

The application audio streams are routed by default through the [PulseAudio](#) sound server. PulseAudio exposes audio profiles which are mapped on the ALSA sound card audio devices. The PulseAudio server provides a command line interface which allows to list audio profiles and to select a profile, to play on a specific audio interface.

The audio playback examples in following sections are given for [ALSA utilities](#). However, the audio playbacks can be launched by other applications, such as [gstreamer](#) multimedia framework.

3 Examples

3.1 Audio playback on headset output

3.1.1 Playback on ALSA device

Run audio playback on 'playback_codec' ALSA device:



'playback_codec' is an alias defined in /etc/asound.conf, for headset output device.

```
Board $> aplay -D playback_codec /usr/share/sounds/alsa/Front_Left.wav
```

3.1.2 Playback via PulseAudio

- **Configure Pulseaudio**

Change the Pulseaudio active profile of the sound card, to 'analog-stereo' profile:



The Pulseaudio analog-stereo profile is the default profile. So next command is not required after boot.



Example below is given for **sound card index 0**. Check sound cards index with "*pacctl list cards short*" command.

```
Board $> pacmd set-card-profile 0 output:analog-stereo+input:analog-stereo
```

- **Run audio playback:**

```
Board $> aplay /usr/share/sounds/alsa/Front_Left.wav
```

3.2 Audio playback on HDMI output



The support of HDMI output is board dependent. Please, check available outputs with "*aplay -l*" command.

3.2.1 Playback on ALSA device

Run audio playback on 'playback_hdmi' ALSA device:



'playback_hdmi' is an alias defined in /etc/asound.conf, for hdmi output device.

```
Board $> aplay -D playback_hdmi /usr/share/sounds/alsa/Front_Left.wav
```

3.2.2 Playback via PulseAudio

- **Configure Pulseaudio**

Change the Pulseaudio active profile of the sound card, to 'hdmi-stereo' profile:



Example below is given for **sound card index 0**. Check sound card index with "`pactl list cards short`" command.

```
Board $> pacmd set-card-profile 0 output:hdmi-stereo
```

- **Run audio playback:**

```
Board $> aplay /usr/share/sounds/alsa/Front_Left.wav
```

3.3 Audio playback on S/PDIF output



The support of S/PDIF output is board dependent. Please, check available outputs with "`aplay -l`" command.



S/PDIF ALSA device supports only **32-bit audio streams**. As 32-bit wave files are not provided in sample sound files, speaker-test is used instead of aplay, for convenience, here. Speaker-test generates a 440Hz sine wave in following examples.

3.3.1 Set IEC958 status bits

Example: set IEC958 mode bit.

```
Board $> iecset -c STM32MP1EV -n device=0 pro on
```

3.3.2 Playback on ALSA device

Run audio playback on 'playback_spdif' ALSA device:



'playback_spdif' is an alias defined in /etc/asound.conf, for S/PDIF output device.

```
Board $> speaker-test -D playback_spdif -c 2 -F S32_LE -f 440 -t sine -l 1
```

3.3.3 Playback via PulseAudio

- **Configure Pulseaudio**

Change the sound card active profile, to S/PDIF 'iec958-stereo' profile.



Example below is given for **sound card index 0**. Check sound card index with "`pactl list cards short`" command.

```
Board $> pacmd set-card-profile 0 output:iec958-stereo
```

- **Run audio playback:**

```
Board $> speaker-test -c 2 -F S32_LE -f 440 -t sine -l 1
```

Operating System

Advanced Linux sound architecture

High-Definition Multimedia Interface (HDMI standard)

Sony/Philips Digital Interface Format (Protocol (IEC-60958))

Permission error

Stable: 15.04.2020 - 08:02 / Revision: 15.04.2020 - 08:00

You do not have permission to read this page, for the following reason:

The action "Read pages" for the draft version of this page is only available for the groups ST_editors, ST_readers, Selected_editors, sysop, reviewer

Permission error

Stable: 17.06.2020 - 15:27 / Revision: 16.01.2020 - 13:36

You do not have permission to read this page, for the following reason:

The action "Read pages" for the draft version of this page is only available for the groups ST_editors, ST_readers, Selected_editors, sysop, reviewer

Permission error

Stable: 20.02.2019 - 09:09 / Revision: 20.02.2019 - 09:04

You do not have permission to read this page, for the following reason:

The action "Read pages" for the draft version of this page is only available for the groups ST_editors, ST_readers, Selected_editors, sysop, reviewer

Permission error

Stable: 10.04.2020 - 14:54 / Revision: 10.04.2020 - 14:53



How to play audio

You do not have permission to read this page, for the following reason:

The action "Read pages" for the draft version of this page is only available for the groups ST_editors, ST_readers, Selected_editors, sysop, reviewer