

How to record audio

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1 Article purpose

This article explains how to record audio via the kernel [ALSA](#) audio framework in **Linux® OS** context. The examples below, show how to record audio from the different audio hardware interfaces of the STM32MPU boards.

2 Audio record 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 to list audio profiles and to select one, in order to record from a specific audio interface.

The audio record examples in following sections are based on [ALSA utilities](#). Some input paths are configured through ALSA controls. These configurations are detailed in [sound card configuration](#) article. If an error is issued when running an example, please refer to [Audio troubleshooting grid](#) article for debug.

3 Examples

3.1 Audio record from headset microphone input

■ Record from ALSA device

Launch audio record from 'record_codec' ALSA device:



'record_codec' is an alias defined in /etc/asound.conf, for headset microphone input device.

```
Board $> arecord -D record_codec -f S16_LE -d 10 /tmp/rec.wav
```

■ Record via PulseAudio

Change 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 "*pactl list cards short*" command.

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

Launch audio record:

```
Board $> arecord -d 10 /tmp/rec.wav
```

3.2 Audio record from digital microphone input



The support of digital microphone input is board dependent. Please, check available inputs with "*arecord -l*" command.

■ Record from ALSA device

Launch audio record from 'record_dfscdm0' ALSA device:



'record_dfscdm0' is an alias defined in /etc/asound.conf, for digital microphone U1 input device.

```
Board $> arecord -D record_dfscdm0 -r 16000 -f S32_LE -c 1 -d 10 /tmp/rec.wav
```

3.3 Audio record from S/PDIF input



The support of S/PDIF input is board dependent. Please, check available inputs with "*arecord -l*" command.

■ Record from ALSA device

Launch audio record from 'record_spdif' ALSA device:



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



A S/PDIF signal must be available on S/PDIF RCA input connector before launching the record command. The record rate must be set according to S/PDIF signal sampling rate.

```
Board $> arecord -D record_spdif -f S32_LE -c 2 -r 48000 -d 10 /tmp/rec.wav
```

Operating System

Advanced Linux sound architecture

Sony/Philips Digital Interface Format