

# Audio codecs hardware components

Stable: 11.02.2019 - 12:20 / Revision: 22.01.2019 - 07:56



**cs42151 bindings linked forced to 4.20. Version to be removed on next kernel rebase**

## Contents

|                             |   |
|-----------------------------|---|
| 1 Article purpose .....     | 1 |
| 2 Software frameworks ..... | 1 |
| 3 Wolfson wm8994 .....      | 2 |
| 3.1 Linux driver .....      | 2 |
| 4 Cirrus cs42151 .....      | 2 |
| 4.1 Linux driver .....      | 2 |
| 5 Silab sil9022 .....       | 2 |
| 5.1 Linux driver .....      | 3 |
| 6 ST MP34DT01-M .....       | 3 |
| 6.1 Linux driver .....      | 3 |

## 1 Article purpose

The purpose of this article is to:

- list the audio codec hardware components that might be integrated in the different STM32MPU boards
- link these components to the corresponding software framework(s)
- point to the datasheet(s) of these components
- explain, when necessary, how to configure these components.

## 2 Software frameworks

| Do<br>mai<br>n | Peri<br>phe<br>ral            | Software frameworks             |                                    |                              | Comment                     |
|----------------|-------------------------------|---------------------------------|------------------------------------|------------------------------|-----------------------------|
|                |                               | Cortex-A7<br>secure<br>(OP-TEE) | Cortex-A7<br>non-secure<br>(Linux) | Cortex-M4<br><br>(STM32Cube) |                             |
| Audi<br>o      | Wolf<br>son<br>wm<br>899<br>4 |                                 | ALSA framework                     |                              | DAC & ADC<br>audio<br>codec |

|           |                              |  |                |  |                             |
|-----------|------------------------------|--|----------------|--|-----------------------------|
| Audi<br>o | Cirrus<br>cs42<br>l51        |  | ALSA framework |  | DAC & ADC<br>audio<br>codec |
| Audi<br>o | Silab<br>sil90<br>22         |  | ALSA framework |  | HDMI<br>transmitter         |
| Audi<br>o | ST<br>MP3<br>4DT<br>01-<br>M |  | ALSA framework |  | Digital<br>microphon<br>e   |

### 3 Wolfson wm8994

---

The WM8994 is a highly integrated ultra-low power hi-fi CODEC rich in multimedia features.

For details and the datasheet please contact the WM8994 codec provider.

#### 3.1 Linux driver

---

Bindings: [Documentation/devicetree/bindings/sound/wm8994.txt](#)

Sources:

- [drivers/mfd/wm8994-core.c](#)
- [sound/soc/codecs/wm8994.c](#)
- [sound/soc/codecs/wm\\_hubs.c](#)

### 4 Cirrus cs42l51

---

The CS42L51 is a highly integrated, 24-bit, low-power stereo CODEC.

For details and the datasheet please contact the CS42L51 codec provider.

#### 4.1 Linux driver

---

Bindings: [Documentation/devicetree/bindings/sound/cs42l51.txt \(v4.20\)](#)

Sources: [sound/soc/codecs/cs42l51.c](#)

### 5 Silab sil9022

---

The Sil9022A HDMI transmitter supports the HDMI<sup>®</sup> Specification on a wide range of mobile products.

For details and the datasheet please contact the Sil9022A HDMI transmitter provider.

## 5.1 Linux driver

---

Bindings: [Documentation/devicetree/bindings/display/bridge/sii902x.txt](#)

Sources: [drivers/gpu/drm/bridge/sii902x.c](#)

## 6 ST MP34DT01-M

---

The MP34DT01-M is an ultra-compact, low-power, omnidirectional, digital MEMS microphone.

Datasheet: <https://www.st.com/resource/en/datasheet/mp34dt01-m.pdf>

### 6.1 Linux driver

---

Bindings: [Documentation/devicetree/bindings/sound/dmic.txt](#) Sources: [sound/soc/codecs/dmic.c](#)

Open Portable Trusted Execution Environment

Digital-to-analog converter

Analog-to-digital converter. The process of converting a sampled analog signal to a digital code that represents the amplitude of the original signal sample.

High-Definition Multimedia Interface (HDMI standard)