

# SPDIFRX device tree configuration

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## 1 Article purpose

This article explains how to configure the [SPDIFRX internal peripheral](#) when it is assigned to the **Linux® OS**. In that case, it is controlled by the [ALSA framework](#).

The configuration is performed using the [device tree](#) mechanism that provides a hardware description of the SPDIFRX peripheral, used by the [SPDIFRX linux driver](#).

## 2 DT bindings documentation

STM32 SPDIFRX device tree bindings <sup>[1]</sup> document describes all the required and optional configuration properties.

## 3 DT configuration

This hardware description is a combination of STM32 microprocessor <sup>[2]</sup> and board device tree files. See the [Device tree](#) for an explanation of the device tree file split.

**STM32CubeMX** can be used to generate the board device tree. Refer to [How to configure the DT using STM32CubeMX](#) for more details.

### 3.1 DT configuration (STM32 level)

The SPDIFRX node is declared in `stm32mp157c.dtsi`<sup>[2]</sup>. It describes the hardware parameters such as register addresses, interrupt, clock and DMA. This set of properties may not vary for a given STM32MPU.



**This device tree part is related to STM32 microprocessors. It must be kept as is, without being modified by the end-user.**

## 3.2 DT configuration (board level)

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The SPDIFRX is an audio peripheral, which can be used as a component of a soundcard through Linux<sup>®</sup> kernel [ALSA framework](#). This part of the device tree allows the configuration of the SPDIFRX to implement a soundcard. Refer to [soundcard configuration](#) for examples of SPDIFRX configuration on various boards.

## 4 How to configure the DT using STM32CubeMX

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The [STM32CubeMX](#) tool can be used to configure the STM32MPU device and get the corresponding [platform configuration device tree](#) files.

The STM32CubeMX may not support all the properties described in the above [DT bindings documentation](#) paragraph. If so, the tool inserts **user sections** in the generated device tree. These sections can then be edited to add some properties and they are preserved from one generation to another. Refer to [STM32CubeMX](#) user manual for further information.

## 5 References

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1. ↑ [Documentation/devicetree/bindings/sound/st,stm32-spdifrx.txt](#)
2. ↑ [2.02.1 arch/arm/boot/dts/stm32mp157c.dtsi](#)

Operating System

Device Tree

Direct Memory Access