



SPDIFRX internal peripheral



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## 1 Article purpose

The purpose of this article is to:

- briefly introduce the SPDIFRX peripheral and its main features
- indicate the level of security supported by this hardware block
- explain how each instance can be allocated to the three runtime contexts and linked to the corresponding software components
- explain how to configure the SPDIFRX peripheral.

## 2 Peripheral overview

The **SPDIFRX** peripheral, is designed to receive an S/PDIF flow compliant with IEC-60958 and IEC-61937. The SPDIFRX receiver provides two separated paths to retrieve the audio data and the user and channel information.

### 2.1 Features

Refer to the [STM32MP15 reference manuals](#) for the complete feature list, and to the software components, introduced below, to see which features are implemented.



## 2.2 Security support

The SPDIFRX is a **non secure** peripheral.

# 3 Peripheral usage and associated software

## 3.1 Boot time

The SPDIFRX is not used at boot time.

## 3.2 Runtime

### 3.2.1 Overview

The SPDIFRX instance can be allocated to:

- the Arm® Cortex®-A7 non-secure for use in Linux with ALSA framework
- the Cortex-M4 for use in STM32Cube with STM32Cube SPDIFRX driver

Chapter #Peripheral assignment exposes which instance can be assigned to which context.

### 3.2.2 Software frameworks

Do	Peri	Software frameworks		Comment
mai Cortex -A7 non-secure (OPE) TE E)	Cor tex -A7 no n- sec ure (Li nux )	Cortex-M4  (STM32Cube)		
Au dio	SP DI FR X	ALSA framework	STM32Cube SPDIFRX driver	

### 3.2.3 Peripheral configuration

The configuration is applied by the firmware running in the context to which the peripheral is assigned. The configuration can be done alone via the STM32CubeMX tool for all internal peripherals, and then manually completed (particularly for external peripherals), according to the information given in the corresponding software framework article.





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## 4 How to go further

The STM32H7 SPDIFRX training <sup>[2]</sup>, introduces the STM32 S/PDIF Receiver interface on the STM32H7. This training also applies to the STM32 MPU SPDIFRX internal peripheral.

## 5 References

- Device tree
- STM32H7 SPDIFRX training

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

Open Portable Trusted Execution Environment

Microprocessor Unit