# STM32CubeH7

## STM32Cube MCU Package for STM32H7 Series with HAL and dedicated middleware

**Data brief**

## Features

- Consistent and complete embedded software offer that frees the user from dependency issues

- Maximized portability between all STM32 Series supported by STM32Cube

- Hundreds of examples for easy understanding

- High quality HAL using CodeSonar® static analysis tool

- STM32H7-dedicated middleware including USB Host and Device, TCP/IP, and Ethernet

- Free user-friendly license terms

- Update mechanism that can be enabled by the user to be notified of new releases
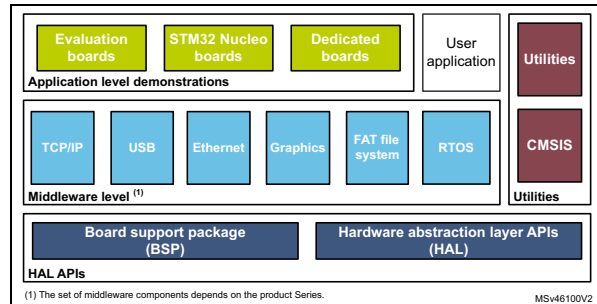
## Description

STMCube™ is an STMicroelectronics original initiative to make developers' lives easier by reducing development effort, time and cost. STM32Cube is the implementation of STMCube that covers the whole STM32 portfolio.

STM32Cube includes STM32CubeMX, a graphical software configuration tool that allows the generation of C initialization code using graphical wizards.

It also comprises the STM32CubeH7 MCU Package composed of the STM32Cube hardware abstraction layer (HAL), plus a consistent set of middleware components (RTOS, USB, FAT file system, Graphics, TCP/IP and Ethernet). All embedded software utilities are delivered with a full set of examples running on STMicroelectronics boards.

The STM32Cube HAL is an STM32 embedded software layer that ensures maximized portability across the STM32 portfolio.



(1) The set of middleware components depends on the product Series.

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The HAL is production-ready and has been developed in compliance with MISRA C®:2004 guidelines with some documented exceptions (reports available on demand) and ISO/TS 16949. Furthermore, ST-specific validation processes add a deeper-level qualification.

STM32CubeH7 gathers in one single package all the generic embedded software components required to develop an application on STM32H7 microcontrollers. Following STM32Cube initiative, this set of components is highly portable, not only within STM32H7 Series but also to other STM32 Series.

HAL is available under open-source BSD license for user convenience.

For further information contact your local STMicroelectronics sales office.

www.st.com

# STM32CubeH7 MCU Package

The STM32CubeH7 MCU Package runs on STM32 32-bit microcontrollers based on the Arm® Cortex®-M processor.

The package contains a set of middleware components with the corresponding examples. They are delivered in very permissive license terms:

- CMSIS-RTOS implementation with FreeRTOS™ open source solution

- TCP/IP stack based on open source LwIP solution

- mbedTLS (previously PolarSSL) stack based on ARM® TLS implementation, customized for STM32 platforms and supporting TLS/SSL protocols with cryptography and TCP/IP

- FAT file system based on open source FatFS solution supporting USB MSC and SD-Card memory accesses

- STemWin, a professional graphical stack solution available in binary format and based on our partner solution SEGGER emWin

- Full USB Host and Device stack supporting many classes

- PDM audio software decoding library, an optimized software implementation for PDM signal decoding and audio signal reconstruction

A set of application projects implementing STemWin, Draupner TGFX and EmbeddedWizard Tara graphic stacks is also provided in the STM32CubeH7 MCU Package.

# Ordering Information

STM32CubeH7 is available for free download from http://www.st.com/stm32cubefw.

# Revision history

**Table 1. Document revision history**

| Date | Revision | Changes |
|---|---|---|
| 26-Apr-2017 | 1 | Initial release. |
| 1-Dec-2017 | 2 | Updated title and schematic.<br>Updated *Features*, *Description* and *STM32CubeH7 MCU Package* to introduce the 'STM32CubeH7 MCU Package' denomination. |

**IMPORTANT NOTICE – PLEASE READ CAREFULLY**