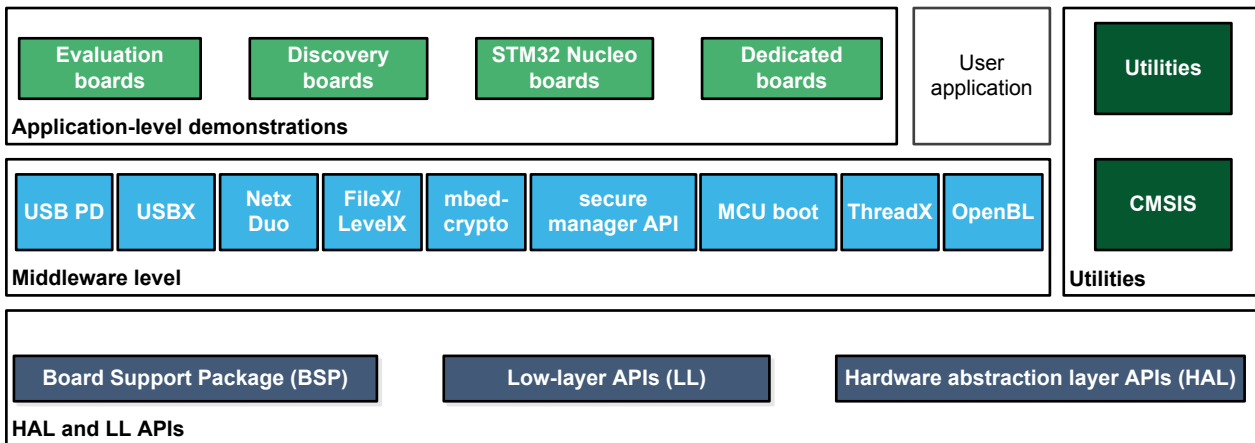


STM32Cube embedded software for STM32H5 Series including LL/HAL drivers, USB, Crypto, secure manager API and RTOS



Features

- Consistent and complete embedded software that provides hardware abstraction to easily develop end-user firmware
- Maximized portability between all STM32 series supported by [STM32Cube](#)
- Up to 290 examples and applications for easy understanding, all compatible with [STM32CubeMX](#) to facilitate the configuration through a graphical tool
- Production-ready HAL and LL API drivers, checked with CodeSonar[®] static analysis tool, and developed in compliance with MISRA C[®] guidelines, following a process certified according to IEC 61508 systematic capability 2 level (SC2)
- CMSIS CORE, DSP and RTOS software components
- STM32H5 comprehensive middleware offer built around Microsoft[®] Azure[®] RTOS middleware and other in-house (secure manager API, OpenBL)
- Free-of-charge, user-friendly license terms
- Update mechanism with new-release notification capability
- Published on GitHub in addition to www.st.com to propagate bug fixes and improvements faster, open for pull requests and issues to facilitate user contributions and direct feedback

1 Description

STM32Cube is an STMicroelectronics original initiative to significantly improve developer productivity by reducing development effort, time and cost. STM32Cube 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 STM32CubeH5 MCU Package composed of the STM32Cube hardware abstraction layer (HAL) and the low-layer (LL) APIs, plus a consistent set of middleware components (Azure® RTOS, USBX, FileX/LevelX, ThreadX, NetX Duo, USB Power Delivery, mcu-boot, mbed-crypto, secure manager API, and OpenBootloader). 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, while the LL APIs make up a fast, light-weight, expert-oriented layer which is closer to the hardware than the HAL. HAL and LL APIs can be used simultaneously with a few restrictions.

Both the HAL and LL APIs are production-ready, checked with CodeSonar® static analysis tool, and developed in compliance with MISRA C® guidelines, following a process certified according to IEC 61508 systematic capability 2 level (SC2). Reports are available on demand.

STM32CubeH5 gathers in one single package all the generic embedded software components required to develop an application on STM32H5 microcontrollers. Following STM32Cube initiative, this set of components is highly portable to other STM32 Series. In addition, the low-layer APIs provide an alternative, high-performance, low-footprint solution to the STM32CubeH5 HAL at the cost of portability and simplicity.

HAL and LL APIs are available in open-source BSD license for user convenience.

STM32H5 devices support Arm® PSA security model. The STM32CubeH5 reference firmware supports all the different configurations of the SMT32H5. It implements Secure Boot and Secure Firmware Update functions managed into the two iRot (when ST-iRoT not active) and uRot memory areas. TF-M source code is now available under Arm® github and no more included into the STM32Cube firmware delivery. It is replaced by an ST proprietary SMAK solution, Arm® PSA API Compliant, and accessible by the non-secure domain. It can be additionally installed on STM32H5 to enable Cryptographic, Secure key management, Platform Attestation, Secure Firmware Update functions. Refer to the SMAK application, which is integrated in the Firmware package.



2 License

STM32CubeH5 is delivered under the [SLA0048](#) software license agreement and its Additional License Terms.

Note: Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.





3 **Ordering information**

The STM32CubeH5 is available for free download from www.st.com.

Revision history

Table 1. Document revision history

Date	Version	Changes
06-Feb-2023	1	Initial release.

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