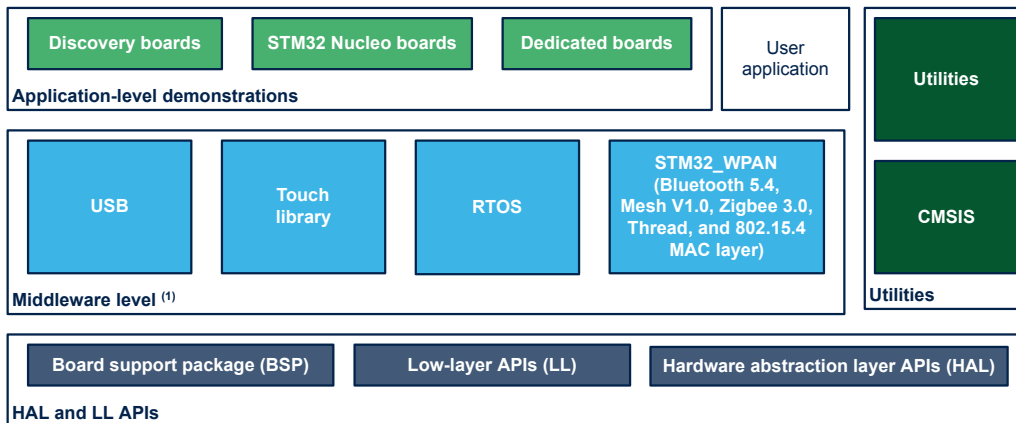


STM32Cube embedded software for STM32WB series including LL/HAL drivers, Bluetooth[®] 5.4, Mesh V1.0, Zigbee and Thread[®] libraries, RTOS, touch sensing



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

DT171858

Product status link

STM32CubeWB



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
- High quality low-layer APIs (LL) using CodeSonar[®] static analysis tool
- STM32WB middleware: USB, STMTouch (STM32 touch sensing library), FatFS and FreeRTOS[™] kernel
 - The following USB Device classes are provided with examples: HID, CDC (PSTN subprotocol) and DFU
- STM32WB-specific middleware: STM32_WPAN (Bluetooth[®] 5.4 profiles and services, OpenThread services, 802.15.4 MAC services)
- STM32WB Bluetooth[®] 5.4 and HCI stacks, Mesh V1.0 compliant with Bluetooth[®] SIG release
- Zigbee[®] 3.0 stack and clusters
- OpenThread stack, certified v.1
- 802.15.4 MAC
- Free 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 make developer' life easier 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 [STM32CubeWB](#) MCU Package composed of the STM32Cube hardware abstraction layer (HAL) and the low-layer (LL) APIs, a consistent set of middleware components such as USB Device, STMTouch, STM32_WPAN (Bluetooth® 5.4 profiles and services, OpenThread and 802.15.4 MAC services), FatFS and FreeRTOS™ kernel, plus Bluetooth® 5.4 and Mesh V1.0 profiles and services, Zigbee® 3.0 stack and clusters, OpenThread, Concurrent Bluetooth® 5.4/Thread®, HCI and 802.15.4 MAC connectivity services. 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 and have been developed in compliance with CodeSonar®, MISRA C®:2012 guidelines and ISO/TS 16949. Furthermore, STMicroelectronics specific validation processes add a deeper-level qualification.

The [STM32CubeWB](#) gathers in one single package all the generic embedded software components required to develop an application on STM32WB microcontrollers. Following STM32Cube initiative, this set of components is highly portable, not only within the STM32WB Series but also to other STM32 Series. In addition, the low-layer APIs provide an alternative, high-performance, low-footprint solution to the [STM32CubeWB](#) HAL at the cost of portability and simplicity.

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

2 License

STM32CubeWB runs on STM32 microcontrollers based on the Arm® Cortex®-M processor, Bluetooth®, Thread® and Zigbee® stacks.

STM32CubeWB 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 STM32CubeWB is available for free download from www.st.com.

Revision history

Table 1. Document revision history

Date	Version	Changes
18-Feb-2019	1	Initial release.
19-Mar-2020	2	Removed STM32Cube trademark. Added Mesh V1.0 and Zigbee stack and clusters. Changed all Ultimate Liberty licenses into SLA0044 in Section 2 License .
06-Jul-2022	3	In the whole document, changed Bluetooth 5 into Bluetooth 5.3. Updated Section Features and Section 2 License . Added publication on GitHub in Section Features .
04-Aug-2023	4	Changed Bluetooth 5.3 into Bluetooth 5.4.

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