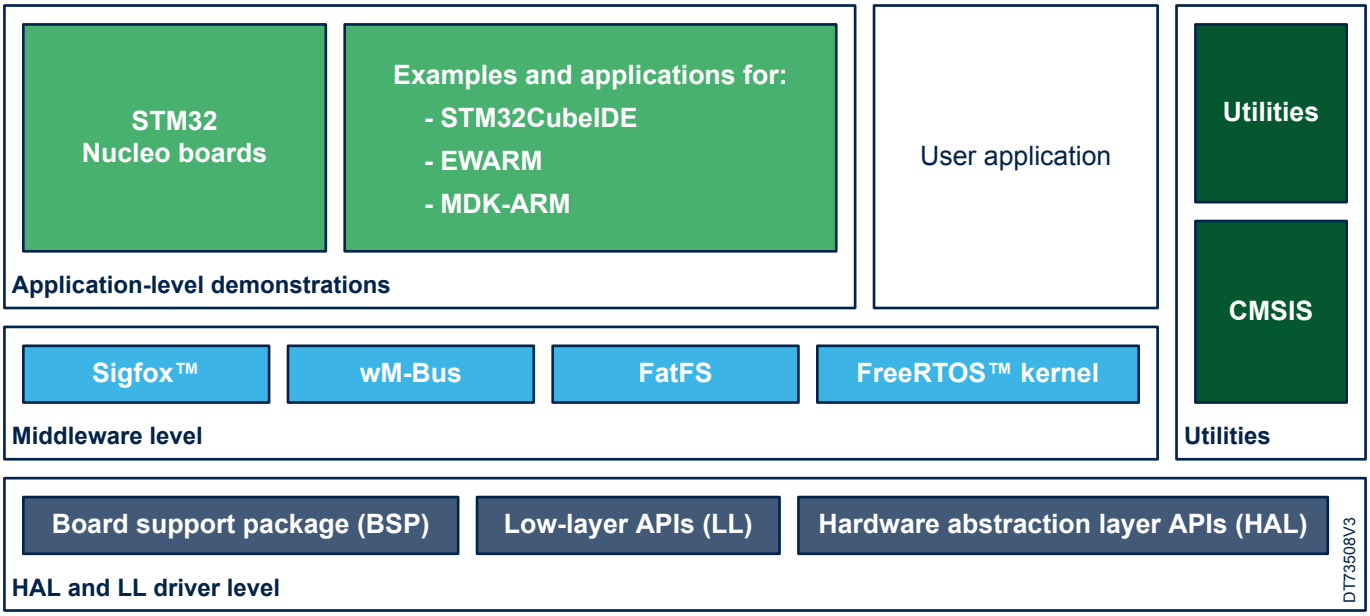
STM32CubeWL3

Data brief

STM32Cube embedded software for STM32WL3x microcontrollers including LL and HAL drivers, Sigfox™, wM-Bus, FatFS, and FreeRTOS™ kernel



Product status
STM32CubeWL3

Features

- Software package supporting the STM32WL3x product line microcontrollers
- Sub-GHz radio proprietary driver and examples
- Sigfox™ binary libraries, APIs, and demonstration applications
- wM-Bus middleware with physical and data link layers
- CMSIS files
- Low-layer and hardware abstraction layer peripheral drivers and related examples
- Support for the Nucleo boards

Description

STM32Cube is an STMicroelectronics original initiative to improve designer productivity significantly 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 STM32CubeWL3 MCU Package, composed of the STM32Cube hardware abstraction layer (HAL) and the low-layer (LL) APIs, a consistent set of middleware components such as Sigfox™ binary libraries with a complete set of APIs, wM-Bus middleware implementing the physical and data link layers, FreeRTOS™ kernel, and FatFS generic file system module.

The STM32CubeWL3 gathers in one single package all generic embedded software components required to develop an application on STM32WL3x product line microcontrollers.

Additional sub-GHz radio demonstrations are also provided to show more complex and advanced scenarios such as low-power manager integration.

1 General information

1.1 Ordering information

STM32CubeWL3 is available for free download from the *www.st.com* website.

1.2 What is STM32Cube?

STM32Cube is an STMicroelectronics original initiative to improve designer productivity significantly by reducing development effort, time, and cost. STM32Cube covers the whole STM32 portfolio.

STM32Cube includes:

- A set of user-friendly software development tools to cover project development from conception to realization, among which are:
  - STM32CubeMX, a graphical software configuration tool that allows the automatic generation of C initialization code using graphical wizards
  - STM32CubeIDE, an all-in-one development tool with peripheral configuration, code generation, code compilation, and debug features
  - STM32CubeCLT, an all-in-one command-line development toolset with code compilation, board programming, and debug features
  - STM32CubeProgrammer (STM32CubeProg), a programming tool available in graphical and command-line versions
  - STM32CubeMonitor (STM32CubeMonitor, STM32CubeMonPwr, STM32CubeMonRF, STM32CubeMonUCPD), powerful monitoring tools to fine-tune the behavior and performance of STM32 applications in real time
- STM32Cube MCU and MPU Packages, comprehensive embedded-software platforms specific to each microcontroller and microprocessor series (such as STM32CubeWL3 for the STM32WL3x product line), which include:
  - STM32Cube hardware abstraction layer (HAL), ensuring maximized portability across the STM32 portfolio
  - STM32Cube low-layer APIs, ensuring the best performance and footprints with a high degree of user control over hardware
  - A consistent set of middleware components such as FreeRTOS™ kernel, FatFS, Sigfox™, and wM-Bus
  - All embedded software utilities with full sets of peripheral and applicative examples
- STM32Cube Expansion Packages, which contain embedded software components that complement the functionalities of the STM32Cube MCU and MPU Packages with:
  - Middleware extensions and applicative layers
  - Examples running on some specific STMicroelectronics development boards

2 License

STM32CubeWL3 runs sub-GHz demonstration applications, including Sigfox™ binaries, on STM32WL3x product line microcontrollers based on the Arm® Cortex®-M0+ processor.

STM32CubeWL3 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.

Revision history

Table 1. **Document revision history**

Date	Revision	Changes
29-Mar-2024	1	Initial release.
14-Nov-2024	2	Full integration of STM32CubeWL3 in STM32Cube: • Updated the cover image • Updated *Features* and *Description* • Updated *Ordering information* and *License* • Added *What is STM32Cube?*
19-Jun-2025	3	Added wM-Bus support: • Updated the cover image • Updated Features and Description • Updated What is STM32Cube?

IMPORTANT NOTICE – READ CAREFULLY

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgment.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2025 STMicroelectronics – All rights reserved