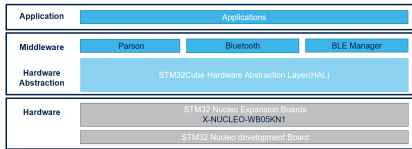


## Bluetooth low energy software expansion for STM32Cube



### Features

- Complete middleware to build Bluetooth® low energy applications using STM32WB05xN network processor connected with host MCU over serial interface like SPI or UART
- Various reference examples to build Bluetooth connectivity applications
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms

### Description

The **X-CUBE-WB05N** expansion software package for STM32Cube runs on the STM32 and includes drivers for STM32WB05xN Bluetooth® low energy device.

The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. Sample implementation available on **X-NUCLEO-WB05KN1** plugged on **NUCLEO-U575ZI-Q** development board.

Product summary	
Bluetooth low energy software expansion for STM32Cube	X-CUBE-WB05N
Bluetooth® low energy expansion board for STM32	X-NUCLEO-WB05KN1
STM32 Nucleo-144 development board with STM32U575ZIT6Q MCU, SMPS, supports Arduino, ST Zio and morpho connectivity	NUCLEO-U575ZI-Q
Bluetooth® low energy network processor	STM32WB05xN
Applications	Connectivity Sensing Personal electronics Industrial IOT applications

## 1 Detailed description

### 1.1 What is STM32Cube?

**STM32Cube** is a combination of a full set of PC software tools and embedded software blocks running on STM32 microcontrollers and microprocessors:

- **STM32CubeMX** configuration tool for any STM32 device; it generates initialization C code for Cortex-M cores and the Linux device tree source for Cortex-A cores
- **STM32CubeIDE** integrated development environment based on open-source solutions like Eclipse or the GNU C/C++ toolchain, including compilation reporting features and advanced debug features
- **STM32CubeProgrammer** programming tool that provides an easy-to-use and efficient environment for reading, writing and verifying devices and external memories via a wide variety of available communication media (JTAG, SWD, UART, USB DFU, I2C, SPI, CAN, etc.)
- **STM32CubeMonitor** family of tools (**STM32CubeMonRF**, **STM32CubeMonUCPD**, **STM32CubeMonPwr**) to help developers customize their applications in real-time
- **STM32Cube MCU and MPU packages** specific to each STM32 series with drivers (HAL, low-layer, etc.), middleware, and lots of example code used in a wide variety of real-world use cases
- **STM32Cube expansion packages** for application-oriented solutions.

### 1.2 How does this software complement STM32Cube?

This software is based on the STM32CubeHAL hardware abstraction layer for the STM32 microcontroller.

The package extends **STM32Cube** by providing a board support package (BSP) for the STM32WB05xN expansion board **X-NUCLEO-WB05KN1** and some middleware components for communication with other Bluetooth LE devices.

STM32WB05xN is a very low power Bluetooth low energy (BLE) single-mode wireless network co-processor.

The software implements low power optimizations to allow system power consumption of few micro-amps.

## Revision history

**Table 1. Document revision history**

Date	Revision	Changes
28-Jun-2024	1	Initial release.

**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](http://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.

© 2024 STMicroelectronics – All rights reserved