

STM32WB WIRELESS SERIES



Bluetooth LE 5.3 & IEEE 802.15.4



Deliver best-in class IoT solutions with built-in key storage, OTA firmware updates and protocol concurrency control

A wireless dual-core brain

The STM32WB series is a dual-core, multi-protocol and ultra-low-power 2.4 GHz MCU system-on-chip. It supports Bluetooth® LE 5.3 as well as IEEE 802.15.4 protocols (in Single and Concurrent modes) covering a wide spectrum of IoT application needs. Based on ST's best-in-class, ultra-low-power MCU with wide peripheral set, the STM32WB series reduces development time, BOM cost, and extends application battery life. STM32WB inspires innovation.

Bluetooth® LE 5.3 & IEEE 802.15.4

The STM32WB SoC offers multi-protocol stacks including Bluetooth® 5.3, OpenThread, Zigbee 3.0, proprietary protocols and concurrent mode, for best in-class RF performance.

Dedicated core to radio activity provides SW flexibility and better user experience.

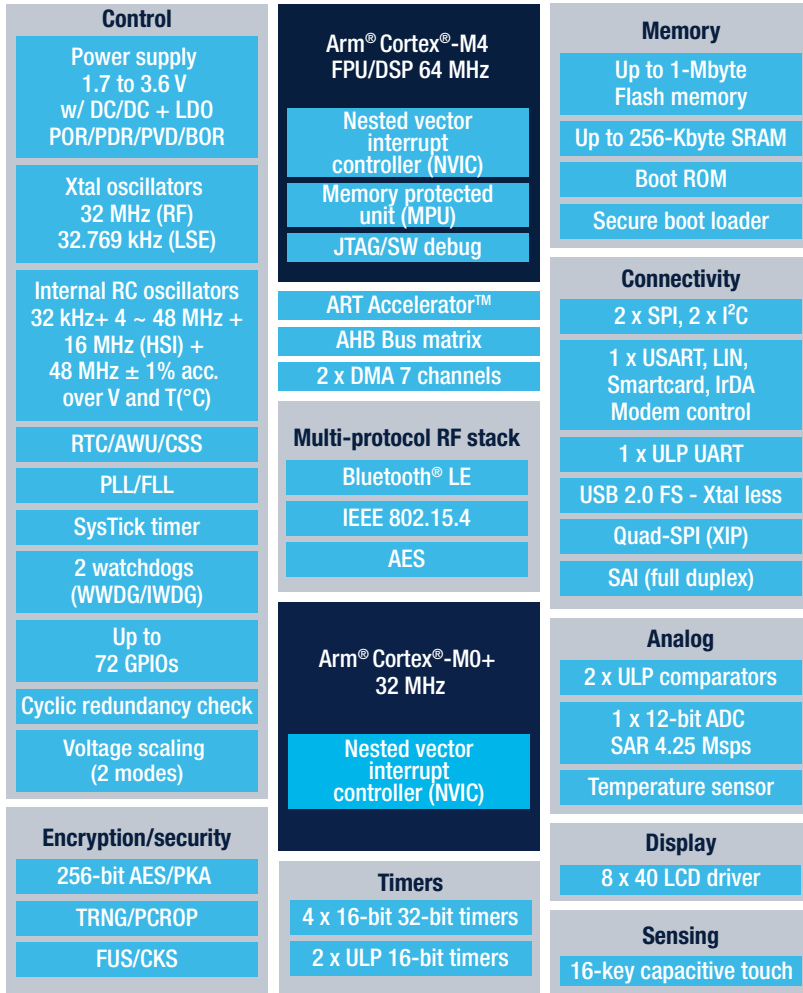
IP Protection

STM32WB devices offer device integrity and industrial IP protection features to meet manufacturers' increasing demand for brand protection.

Features	Benefits
Dual-core solution in a single die	Dual-core solution with independent clock trees ensures real-time RF execution and optimized PCB and BOM
TX: 5.2 mA, RX: 4.5 mA BLE: -96 dBm, 802.15.4: -100 dBm	Extended battery life time. Perfect fit for coin cell battery Comfortable and robust operating distance of connection
Integrated balun, USB 2.0 crystal-less, LCD driver	Reduces BOM cost and PCB footprint
OTA firmware updates, customer key storage	Easy fleet maintenance, brand and IP protection

Note* Features availability or characteristics depend on STM32WB reference

STM32WB55 BLOCK DIAGRAM



STM32WBx0 VALUE LINE

It focuses on the essentials and offers a feature-optimized solution to help developers meet the design requirements of cost-sensitive industrial and consumer IoT applications. Nucleos are a useful tool to quickly get you started with the STM32WBx0 microcontrollers.

EMBEDDED SOFTWARE

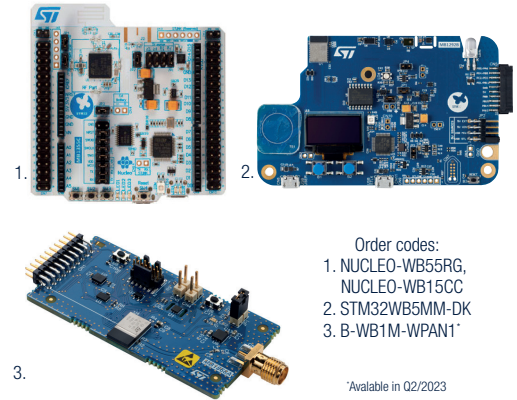
The STM32CubeWB package includes the STM32Cube hardware abstraction layer (HAL) and low-layer (LL) APIs peripheral drivers, a consistent set of middleware components (RTOS, USB, FatFS and STM32 touch sensing), as well as Bluetooth® LE 5.3, OpenThread and Zigbee 3.0 connectivity stacks. All embedded software components come with a full set of examples running on STMicroelectronics boards.

SOFTWARE TOOLS



HARDWARE TOOLS

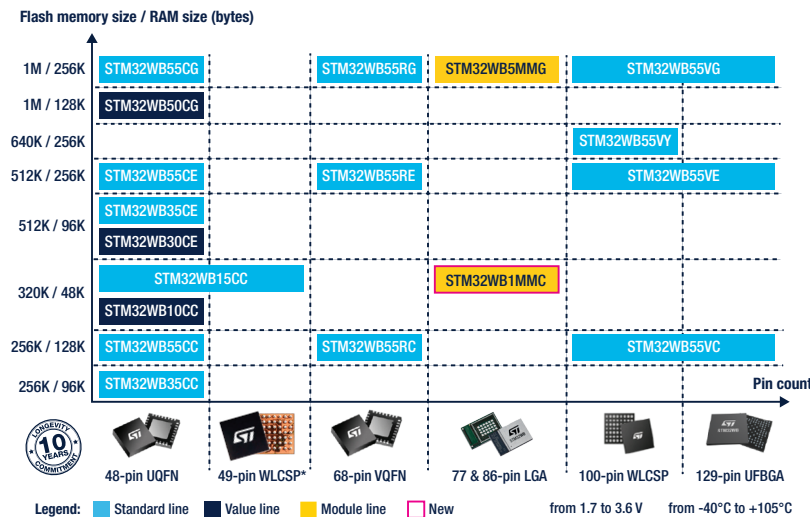
This STM32 Nucleo is the most cost-effective way to quickly get started developing STM32WB-based prototypes.



- Order codes:
 1. NUCLEO-WB55RG,
 NUCLEO-WB15CC
 2. STM32WB5MM-DK
 3. B-WB1M-WPAN1*

*Available in Q2/2023

STM32WB PORTFOLIO



Companion chip
 STMicroelectronics' integrated matching RF components are tailored for STM32WB WLCSPP, QFN, BGA packages:
 MLPF-WB-01E3, MLPF-WB-01D3, MLPF-WB55-02E3, MLPF-WB-02D3

STANDARD PROTOCOL

OPENTHREAD
released by Google



© STMicroelectronics - March 2023 - Printed in the United Kingdom - All rights reserved
 ST and the ST logo are registered and/or unregistered trademarks of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere. In particular, ST and the ST logo are Registered in the US Patent and Trademark Office.
 For additional information about ST trademarks, please refer to www.st.com/trademarks.
 All other product or service names are the property of their respective owners.

