

# STM32WB WIRELESS SERIES



## Bluetooth LE 5.2 & 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 5.2 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 5.2 & IEEE 802.15.4

The STM32WB SoC offers multi-protocol stacks including Bluetooth® 5.2, 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.

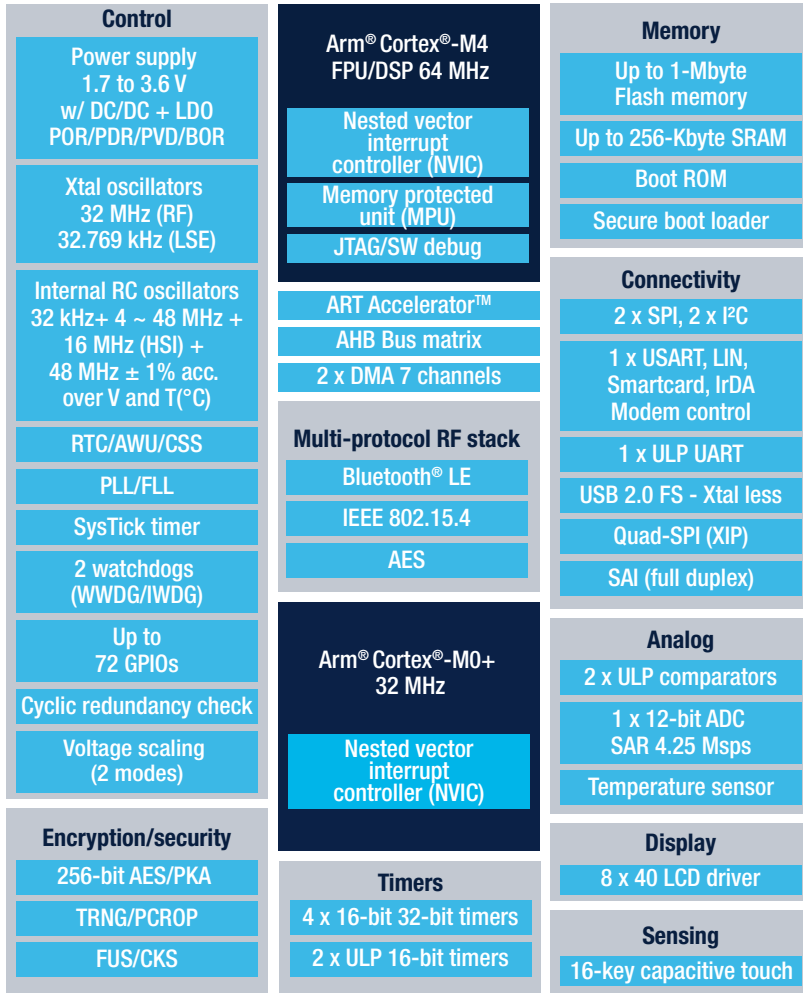
### IP Protection

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

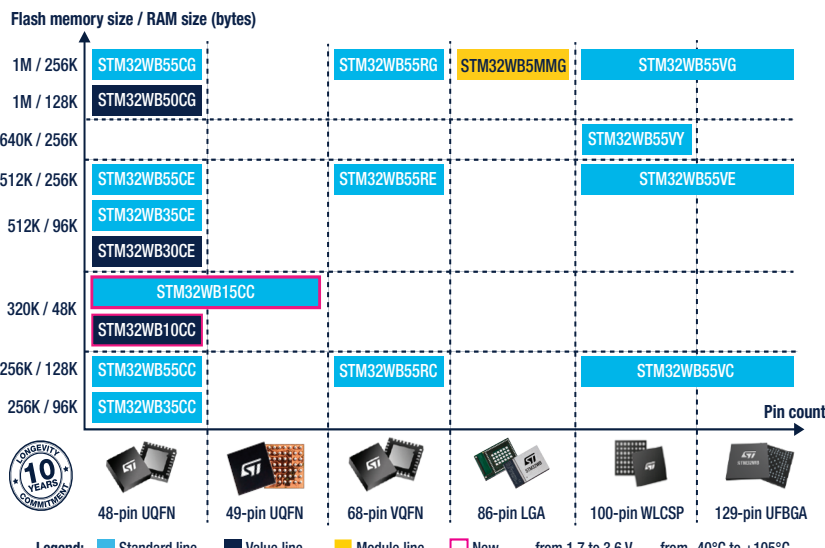
Features	Benefits
Dual-core solution in a single die	Dual-core solution with independent clock trees ensures real-time RF execution and optimized PCB and BOM
TX: 5.2 mA, RX: 4.5 mA BLE: -96 dBm, 802.15.4: -100 dBm	Extended battery life time. Perfect fit for coin cell battery Comfortable and robust operating 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



## STM32WB PORTFOLIO



Companion chip  
 STMicroelectronics' integrated matching RF components are tailored for STM32WB packages:  
 MLPF-WB55-0xE3, QFN: x=0, WLCSF100: x=2.



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## 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 5.2, OpenThread and Zigbee 3.0 connectivity stacks. All embedded software components come with a full set of examples running on STMicroelectronics boards.

## SOFTWARE TOOLS

### STM32CubeMX

Pinout and clock configurator, power consumption calculator and code generation tools.



### STM32CubeIDE

Eclipse-based IDE with STM32CubeMX configuration tool features included.



### STM32CubeMonitor

With STM32CubeMonRF dedicated to wireless connectivity enabling radio testing and beaconing.



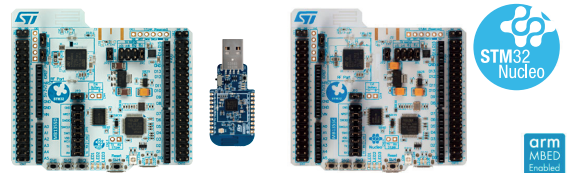
### STM32CubeProg

All-in-one software tool for programming STM32 devices including secure programming of the RF stacks.



## HARDWARE TOOLS

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



Order code: P-NUCLEO-WB55

Order codes: NUCLEO-WB55RG, NUCLEO-WB15CC

## STANDARD PROTOCOL

