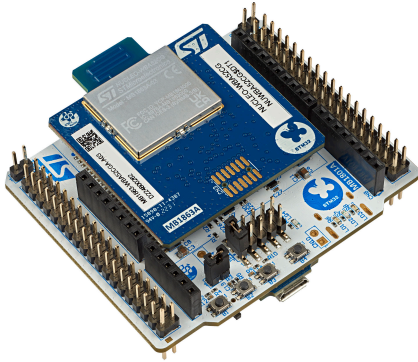


STM32WBA Nucleo-64 boards



NUCLEO-WBA52CG global view. Picture is not contractual.

Product status link

[NUCLEO-WBA52CG](#)

[NUCLEO-WBA55CG](#)



Features

- Ultra-low-power wireless STM32WBA5xCG microcontroller based on the Arm® Cortex®-M33 core, featuring 1 Mbyte of flash memory and 128 Kbytes of SRAM in a UFQFPN48 package
- MCU RF board (MB1863/MB1803):
 - 2.4 GHz RF transceiver supporting Bluetooth® specification v5.4
 - IEEE 802.15.4-2015 PHY and MAC, supporting Thread®, Matter, and Zigbee® (for NUCLEO-WBA55CG only)
 - Arm® Cortex®-M33 CPU with TrustZone®, MPU, DSP, and FPU
 - Integrated PCB antenna
- Three user LEDs
- Three user and one reset push-buttons
- Board connectors:
 - USB Micro-B (NUCLEO-WBA52CG) or USB Type-C® (NUCLEO-WBA55CG)
 - ARDUINO® Uno V3 expansion connector
 - ST morpho headers for full access to all STM32 I/Os
- Flexible power-supply options: ST-LINK USB V_{BUS} or external sources
- On-board ST-LINK-V3 debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port
- Comprehensive free software libraries and examples available with the [STM32CubeWBA](#) MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE

Description

NUCLEO-WBA52CG and NUCLEO-WBA55CG are Bluetooth® Low Energy wireless and ultra-low-power boards embedding a powerful and ultra-low-power radio compliant with the Bluetooth® Low Energy SIG specification v5.4, IEEE 802.15.4-2015 PHY and MAC, supporting Thread®, Matter, and Zigbee®.

The ARDUINO® Uno V3 connectivity support and the ST morpho headers allow the easy expansion of the functionality of the STM32 Nucleo open development platform with a wide choice of specialized shields.

1 Ordering information

To order the NUCLEO-WBA5xCG board, refer to [Table 1](#). For a detailed description, refer to its user manual on the product web page. Additional information is available from the datasheet and reference manual of the target microcontroller.

Table 1. List of available products

Order code	Board reference	User manual	Target STM32
NUCLEO-WBA52CG	<ul style="list-style-type: none"> MB1801⁽¹⁾ MB1863⁽²⁾ 	UM3103	STM32WBA52CG
NUCLEO-WBA55CG	<ul style="list-style-type: none"> MB1801⁽¹⁾ MB1803⁽²⁾ 	UM3301	STM32WBA55CG

1. Mezzanine board
2. MCU RF board

1.1 Product marking

The stickers located on the top or bottom side of all PCBs provide product information:

- First sticker: product order code and product identification, generally placed on the main board featuring the target device.
Example:

Product order code Product identification
--

- Second sticker: board reference with revision and serial number, available on each PCB.
Example:

MBxxx-Variant-yyz syywwxxxxx	
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On the first sticker, the first line provides the product order code, and the second line the product identification.

On the second sticker, the first line has the following format: “*MBxxx-Variant-yyz*”, where “*MBxxx*” is the board reference, “*Variant*” (optional) identifies the mounting variant when several exist, “*y*” is the PCB revision, and “*zz*” is the assembly revision, for example B01. The second line shows the board serial number used for traceability.

Parts marked as “*ES*” or “*E*” are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event will ST be liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.

“*ES*” or “*E*” marking examples of location:

- On the targeted STM32 that is soldered on the board (for an illustration of STM32 marking, refer to the STM32 datasheet *Package information* paragraph at the www.st.com website).
- Next to the evaluation tool ordering part number that is stuck, or silk-screen printed on the board.

Some boards feature a specific STM32 device version, which allows the operation of any bundled commercial stack/library available. This STM32 device shows a “*U*” marking option at the end of the standard part number and is not available for sales.

To use the same commercial stack in their applications, the developers might need to purchase a part number specific to this stack/library. The price of those part numbers includes the stack/library royalties.

1.2 Codification

The meaning of the codification is explained in Table 2.

Table 2. Codification explanation

NUCLEO-XXXYYZT	Description	Example: NUCLEO-WBA52CG
XXX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32WBA series
YY	MCU product line in the series	STM32WBAx2 product line
Z	STM32 package pin count: <ul style="list-style-type: none"> C for 48 pins 	48 pins
T	STM32 flash memory size: <ul style="list-style-type: none"> G for 1 Mbyte 	1 Mbyte

2 Development environment

The NUCLEO-WBA5xCG boards feature the STM32WBA5xCG 32-bit microcontrollers based on the Arm® Cortex®-M33 processor with Arm® TrustZone®.

Note: Arm and TrustZone are registered trademarks of Arm Limited (or its subsidiaries) in the US and/or elsewhere.



2.1 System requirements

- Multi-OS support: Windows® 10, Linux® 64-bit, or macOS®
- USB Type-A or USB Type-C® to Micro-B cable for NUCLEO-WBA52CG
- USB Type-A or USB Type-C® to USB Type-C® cable for NUCLEO-WBA55CG

Note: macOS® is a trademark of Apple Inc., registered in the U.S. and other countries and regions.
Linux® is a registered trademark of Linus Torvalds.
Windows is a trademark of the Microsoft group of companies.

2.2 Development toolchains

- IAR Systems® - IAR Embedded Workbench®⁽¹⁾
- Keil® - MDK-ARM⁽¹⁾
- STMicroelectronics - STM32CubeIDE

1. On Windows® only.

Revision history

Table 3. Document revision history

Date	Revision	Changes
13-Jan-2023	1	Initial release.
06-Feb-2024	2	Added NUCLEO-WBA55CG. Updated all sections due to this product addition.
04-Oct-2024	3	Updated Bluetooth® specification version, support list, and STM32Cube link.



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