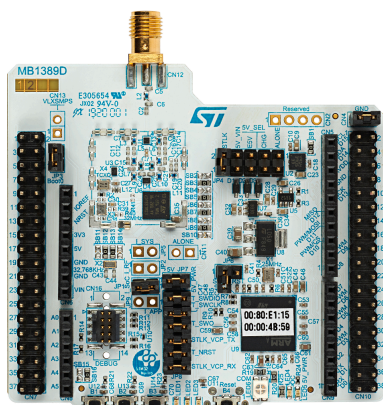


STM32WL Nucleo-64 board



NUCLEO-WL55JC example. Boards with different references show different layouts. Picture is not contractual.

Product status link

NUCLEO-WL55JC



Features

- STM32WL55JC microcontroller multiprotocol LPWAN dual-core 32-bit (Arm® Cortex®-M4/M0+ at 48 MHz) in UFBGA73 package featuring:
 - Ultra-low-power MCU
 - RF transceiver (150 MHz to 960 MHz frequency range) supporting LoRa®, (G)FSK, (G)MSK, and BPSK modulations
 - 256-Kbyte Flash memory and 64-Kbyte SRAM
- 3 user LEDs
- 3 user buttons and 1 reset push-button
- 32.768 kHz LSE crystal oscillator
- 32 MHz HSE on-board oscillator
- Board connectors:
 - USB with Micro-B
 - MIPi® debug connector
 - ARDUINO® Uno V3 expansion connector
 - ST morpho extension pin headers for full access to all STM32WL I/Os
- Delivered with SMA antenna
- Flexible power-supply options: ST-LINK, USB V_{BUS}, or external sources
- On-board STLINK-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 STM32CubeWL MCU Package
- Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE
- Suitable for rapid prototyping of end nodes based on LoRaWAN®, Sigfox™, wM-Bus, and many other proprietary protocols
- Fully open hardware platform

Description

The NUCLEO-WL55JC STM32WL Nucleo-64 board provides an affordable and flexible way for users to try out new concepts and build prototypes with the STM32WL Series microcontroller, choosing from the various combinations of performance, power consumption, and features.

The ARDUINO® Uno V3 connectivity support and the ST morpho headers provide an easy means of expanding the functionality of the STM32WL Nucleo open development platform with a wide choice of specialized shields.

The STM32WL Nucleo-64 board does not require any separate probe as it integrates the STLINK-V3E debugger and programmer.

The STM32WL Nucleo-64 board is provided with the STM32WL comprehensive software HAL library and various packaged software examples available with the STM32CubeWL MCU Package.

1 Ordering information

To order an STM32WL Nucleo-64 board, refer to [Table 1](#). For a detailed description of each board, refer to its user manual on the product web page. Additional information is available from the datasheet and reference manual of the target STM32.

Table 1. List of available products

Order code	Board reference	User manual	Target STM32	Differentiating feature
NUCLEO-WL55JC1	MB1389	UM2592	STM32WL55JC17U	High-frequency band. RF frequency range from 865 to 928 MHz
NUCLEO-WL55JC2				Low-frequency band. RF frequency range from 433 to 510 MHz

1.1 Product marking

The sticker located on the top or bottom side of the PCB board shows the information about product identification such as board reference, revision, and serial number.

The first identification line has the following format: "MBxxxx-Variant-yyz", where "MBxxxx" 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 identification line is the board serial number used for traceability.

Evaluation tools marked as "ES" or "E" are not yet qualified and therefore not ready to be used as reference design or in production. Any consequences deriving from such usage will not be at ST charge. In no event, ST will be liable for any customer usage of these engineering sample tools as reference designs or in production.

"E" or "ES" 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.

These 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.

In order to use the same commercial stack in his application, a developer may 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-WL55JCX	Description	Example: NUCLEO-WL55JC1
WL	MCU series in STM32 32-bit Arm Cortex MCUs	STM32WL Series
55	Product line in the Series	STM32WL55: Dual-core with LoRa®, (G)FSK, (G)MSK, and BPSK modulations
J	STM32 package pin count	73 pins
C	STM32 Flash memory size: • C for 256 Kbytes	256-Kbyte Flash memory
X	Frequency band: • 1: high-frequency band • 2: low-frequency band	High-frequency band

2 Development environment

STM32 32-bit microcontrollers are based on the Arm® Cortex®-M processor.

Note: Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.

arm

2.1 System requirements

- Windows® OS (7, 8, or 10), Linux® 64-bit, or macOS®
- USB Type-A or USB Type-C® to Micro-B cable

Note: macOS® is a trademark of Apple Inc. registered in the U.S. and other countries. All other trademarks are the property of their respective owners.

2.2 Development toolchains

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

1. On Windows® only.

2.3 Demonstration software

The demonstration software, included in the STM32Cube MCU Package corresponding to the on-board microcontroller, is preloaded in the STM32 Flash memory for easy demonstration of the device peripherals in standalone mode. The latest versions of the demonstration source code and associated documentation can be downloaded from www.st.com.

Revision history

Table 3. Document revision history

Date	Version	Changes
16-Nov-2020	1	Initial release.

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