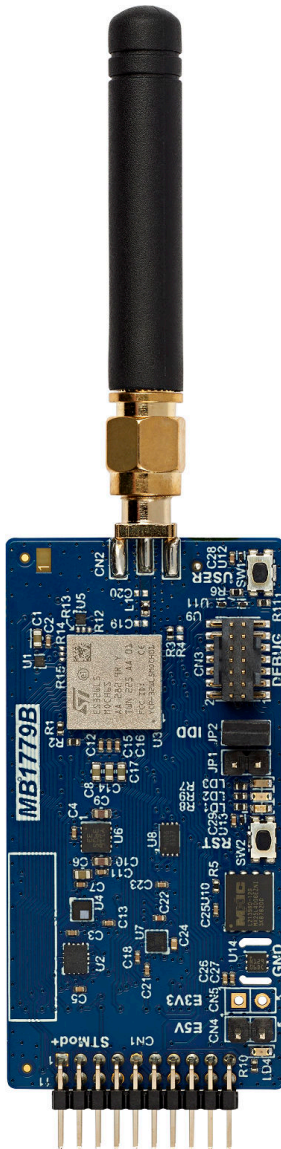


STM32WL connectivity expansion board



B-WL5M-SUBG1 top view without add-on STMod+ adapter board. Picture is not contractual.

Features

- STM32WL connectivity expansion board embedding an **STM32WL5MOC** module including:
 - Ultra-low-power STM32WL55JC microcontroller multiprotocol LPWAN dual-core based on Arm® Cortex®-M4/M0+, featuring 256 Kbytes of flash memory and 64 Kbytes of SRAM in a UFBGA73 package
 - RF transceiver (150 MHz to 960 MHz frequency range) supporting LoRa®, (G)FSK, (G)MSK, and BPSK modulations
- 4-Mbit CMOS serial flash memory and 256-Kbit serial I²C bus EEPROM
- MEMS sensors from STMicroelectronics:
 - Integrated high-accuracy temperature sensor
 - High-accuracy, ultra-low-power, 3-axis digital output magnetometer
 - 3D accelerometer and 3D gyroscope
 - Ultracompact piezoresistive absolute pressure sensor
- Three user LEDs
- User and reset push-buttons
- Board connectors:
 - MIPI® debug
 - STMod+
 - Stubby antenna
 - USB Type-C® for power only on add-on STMod+ adapter board
- Flexible power supply options: external sources, or USB V_{BUS} from the add-on board
- 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

Description

The B-WL5M-SUBG1 STM32WL connectivity expansion board provides an affordable and flexible way for users to try out new concepts and build prototypes with the STM32WL series **STM32WL5MOC** microcontroller module.

The B-WL5M-SUBG1 product requires a separate probe for programming and debugging. The STLINK-V3SET debugger can be connected through a MIPI10/STDC14 cable.

The B-WL5M-SUBG1 STM32WL connectivity expansion board is provided with a USB Type-C® connector on an add-on STMod+ adapter board.

The B-WL5M-SUBG1 product is provided with the STM32WL comprehensive software HAL library and various packaged software examples available with the **STM32CubeWL** MCU Package.

Product status link

B-WL5M-SUBG1

1 Ordering information

To order the B-WL5M-SUBG1 STM32WL connectivity expansion 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 STM32WL5MOC module.

Table 1. Ordering information

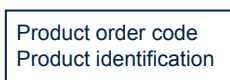
Order code	Board reference	User manual	Target STM32
B-WL5M-SUBG1	<ul style="list-style-type: none"> MB1779⁽¹⁾ MB1880⁽²⁾ 	UM3127	STM32WL5MOCH6TR

1. Expansion board
2. STMod+ adapter board

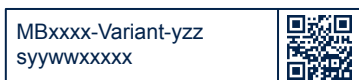
1.1 Product marking

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:



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



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: “MBxxxx-Variant-yzz”, 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 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

B-XXYY-ZZZZT	Description	Example: B-WL5M-SUBG1
B	Expansion board	Connectivity expansion board
XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32WL series
YY	MCU product line in the series	STM32WL5M line
ZZZZ	Wireless network	Subgigahertz wireless network based on LoRa [®] , (G)FSK, (G)MSK, and BPSK modulations
1	Sequential number	First SUBG connectivity expansion board

2 Development environment

The B-WL5M-SUBG1 STM32WL connectivity expansion board runs with the STM32WL5MOC module including the STM32WL5MOCH6 32-bit microcontroller based on the Arm® Cortex®-M4/M0+ processor.

Note: Arm is a registered trademark 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 USB Type-C® cable

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.

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	Revision	Changes
19-Sep-2023	1	Initial release.

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