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STM32WBxM wireless modules

Bluetooth® Low Energy 5.3,
Zigbee 3.0, and Thread



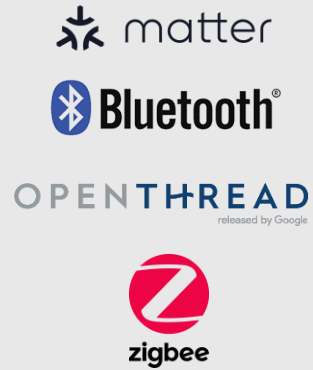


STM32 MCU and MPU portfolio



 MPU	STM32MP1 Up to 1 GHz Cortex-A7 209 MHz Cortex-M4				
★ High Perf MCUs	STM32F2 Up to 398 CoreMark 120 MHz Cortex-M3		STM32F4 Up to 608 CoreMark 180 MHz Cortex-M4	STM32F7 1082 CoreMark 216 MHz Cortex-M7	STM32H7 Up to 3224 CoreMark Up to 550 MHz Cortex -M7 240 MHz Cortex -M4
				STM32H5 Up to 1023 CoreMark 250 MHz Cortex-M33	
» Mainstream MCUs	STM32F3 245 CoreMark 72 MHz Cortex-M4		STM32G4 569 CoreMark 170 MHz Cortex-M4	Mixed-signal MCUs	
	STM32C0 114 CoreMark 48MHzCortex M0+	STM32F0 106 CoreMark 48 MHz Cortex-M0	STM32G0 142 CoreMark 64 MHz Cortex-M0+	STM32F1 177 CoreMark 72 MHz Cortex-M3	
🔋 Ultra-low Power MCUs	STM32L0 75 CoreMark 32 MHz Cortex-M0+		STM32L4 273 CoreMark 80 MHz Cortex-M4	STM32L4+ 409 CoreMark 120 MHz Cortex-M4	STM32L5 443 CoreMark 110 MHz Cortex-M33
					STM32U5 651 CoreMark 160 MHz Cortex-M33
📶 Wireless MCUs	STM32WL 162 CoreMark 48 MHz Cortex-M4 48 MHz Cortex-M0+		STM32WB 216 CoreMark 64 MHz Cortex-M4 32 MHz Cortex-M0+	STM32WBA 407 CoreMark 100 MHz Cortex-M33	

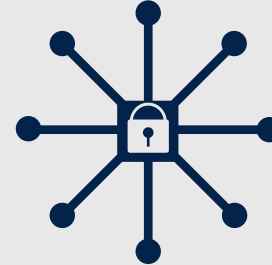
Choose the STM32WB series 7 keys points that make a difference



Open 2.4 GHz radio
Multi-protocol



Dual-core / Full control
Ultra-low-power



IoT Protection ready



Massive integration
Cost saving

1MB Flash
3.6 V 129-pin
1.7 V 48-pin
256KB Flash

A large offer



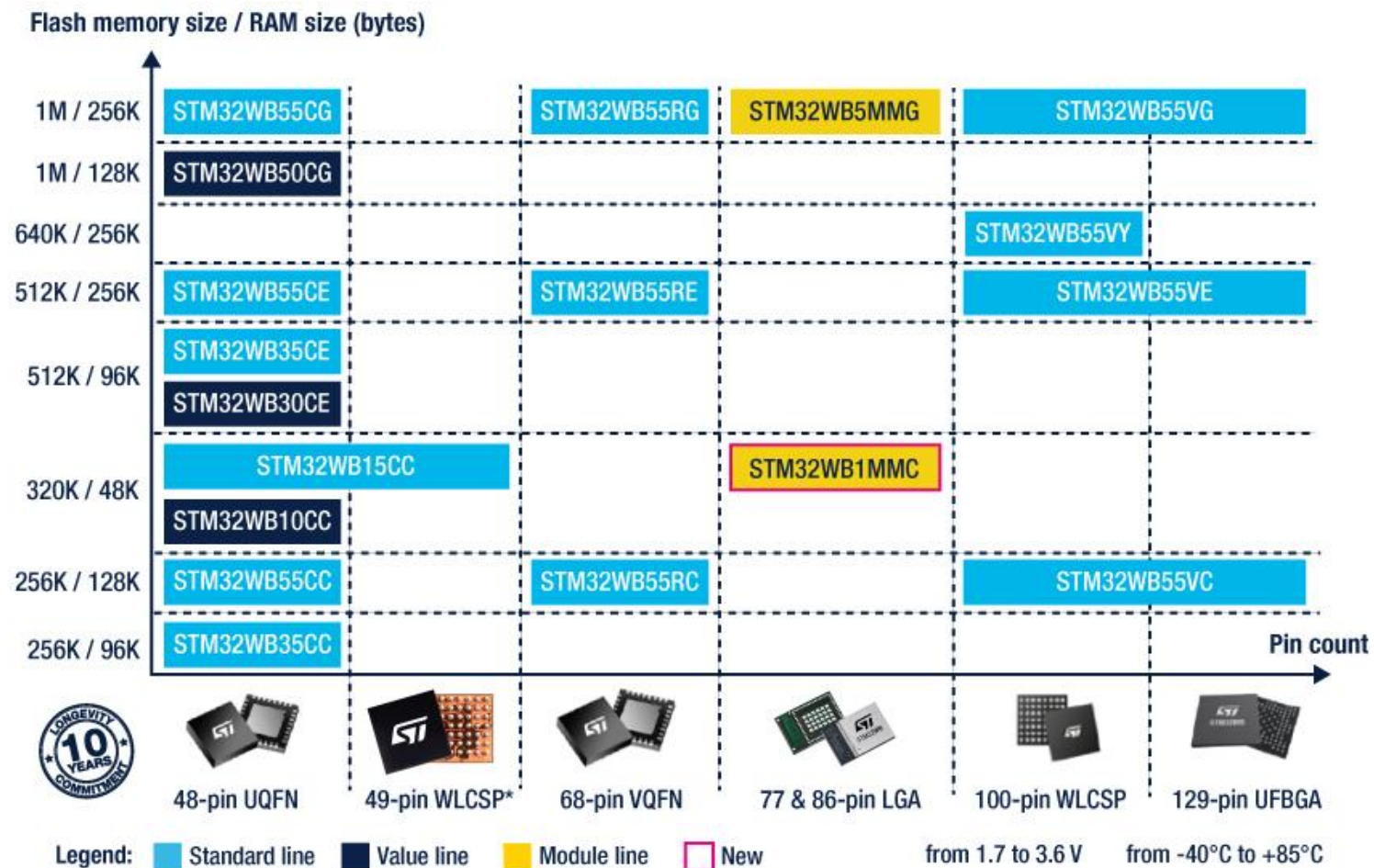
Advanced RF tool, Energy control
with C code generation



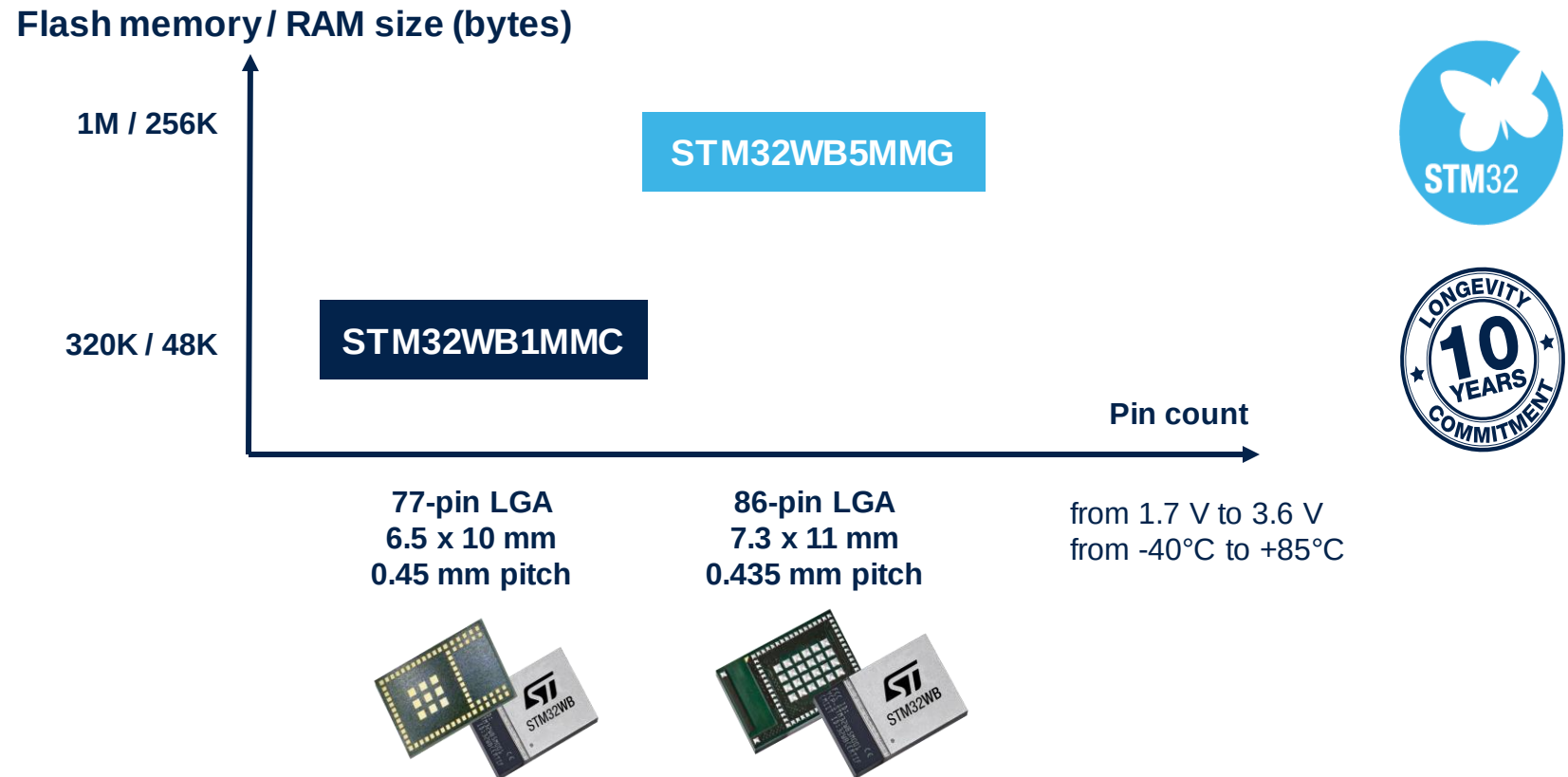
No matter what!

STM32WB MCU provides a large offering

Bluetooth® Low Energy 5.3, OpenThread, Zigbee 3.0
and proprietary protocol capable

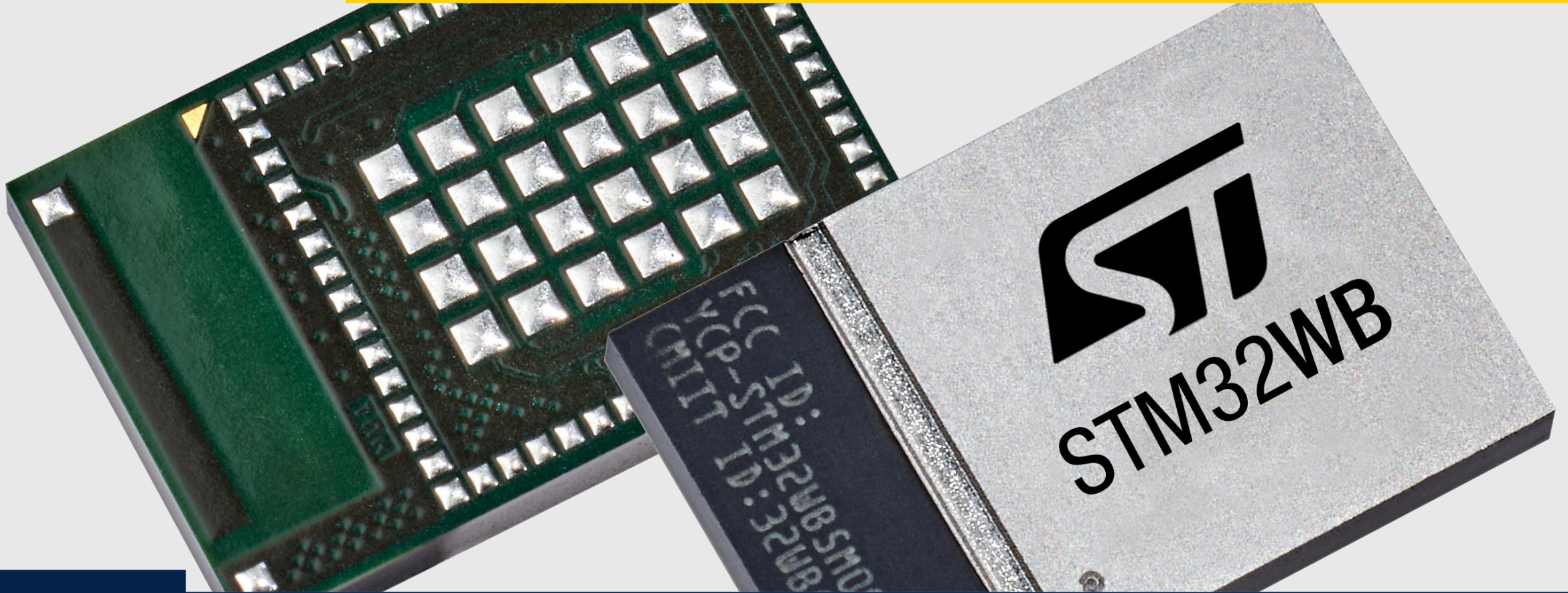


STM32WBxM module portfolio



Latest product generation

**Available as a module
to reduce your time to market**



STM32WB5MMG module

Easy to integrate - smooth certification process for developers

Key advantages

- WLCSP100 package integrated
- Maximum of features enabled
- Low-cost PCB for the mother board

[Watch the video](#) 

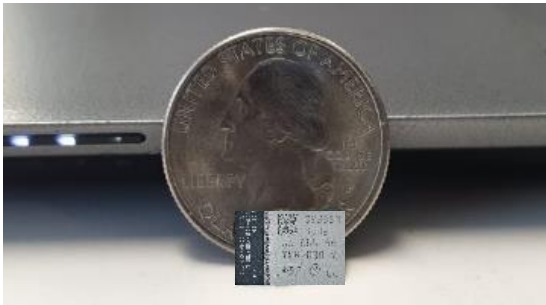


STM32WB5MMG multi-protocol module

Small form factor

7.3 x 11 mm

Full reference design up to
antenna, crystals



Reduce the cost

Down to 2 PCB layers

Everything inside
(single cap outside)

Free of charge radio stack

Certified FCC, CE, NCC, JRF,
KC, SRRC, ISCED, GOST

Multi-protocols



Rich feature set

Dual core based

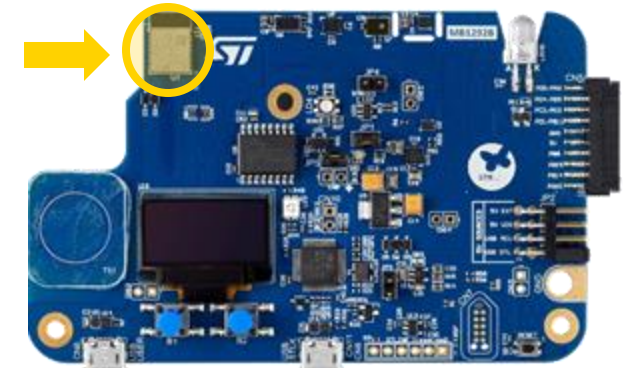
1 Mbyte flash memory
256 KBytes of RAM

LCD, USB FS, ADC, COMP

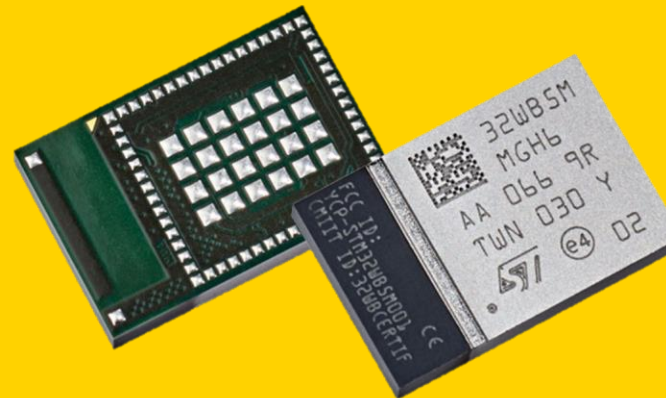
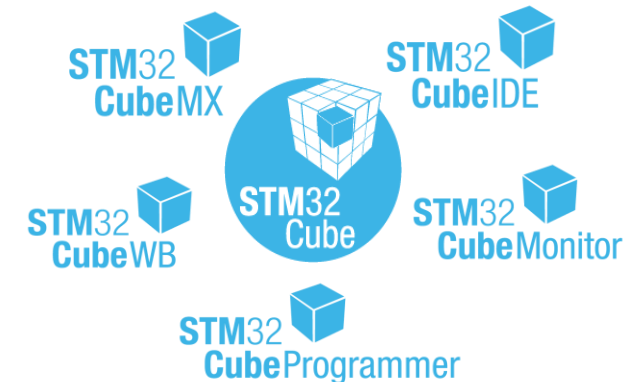
Security

OTA(application, radio)

Discovery kit



STM32 ecosystem



RPN : STM32WB5MMGH6TR

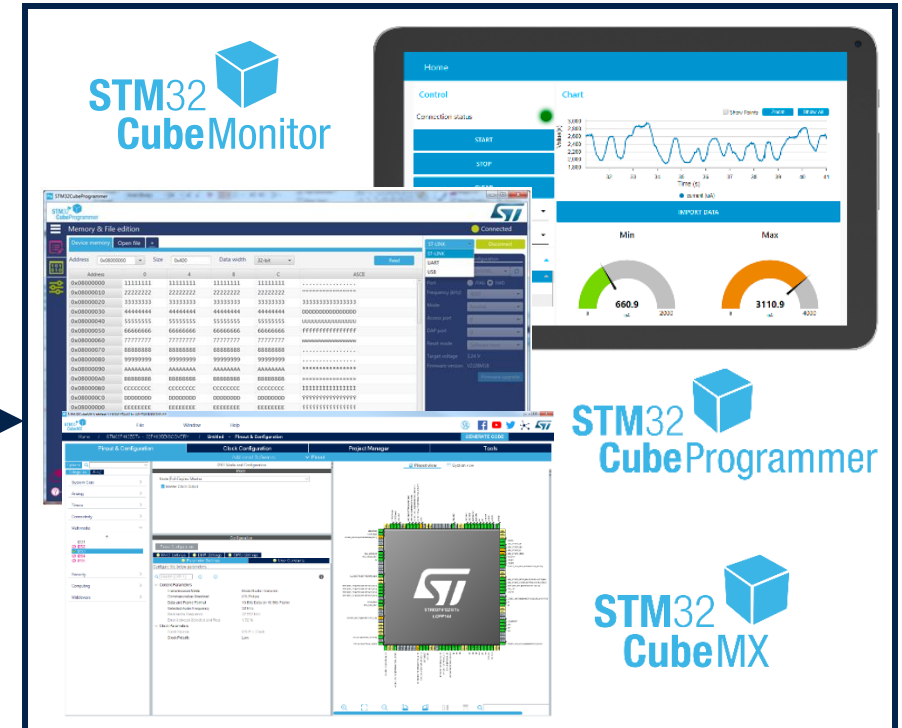
Prototyping made as easy as 1,2,3



STM32WB5MM-DK

Hardware
discovery kit


STM32WB

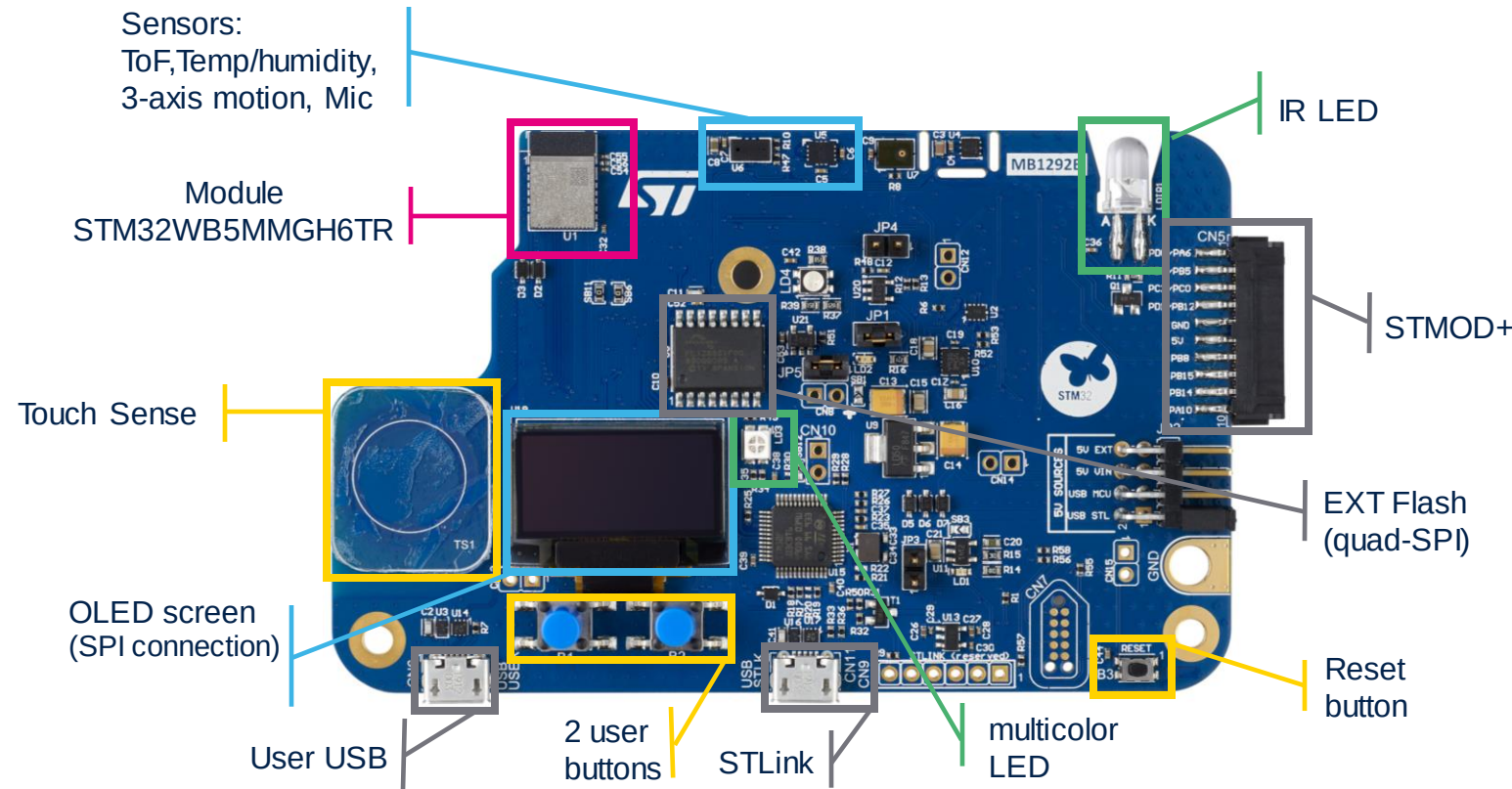


STM32CubeMX/STM32CubeWB/
STM32CubeProg & STM32CubeMonRF
Code generation
Power calculation

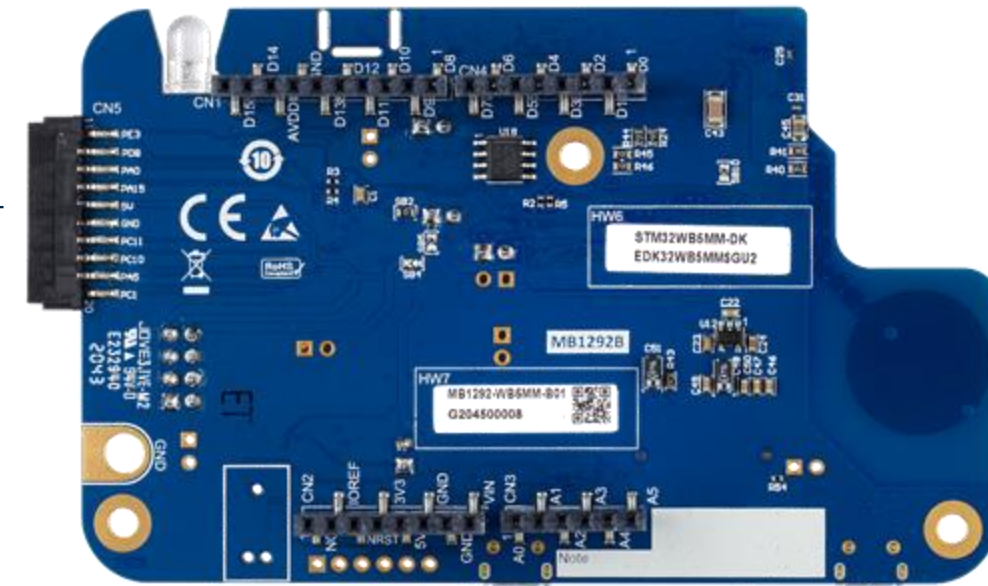


STM32WB5MM-DK

[Watch the video](#) 



Top view



Bottom view
(ARDUINO connectors)

STM32WB1M module

Bluetooth LE Module Solution



Flash memory / RAM size (bytes)

320K / 48K

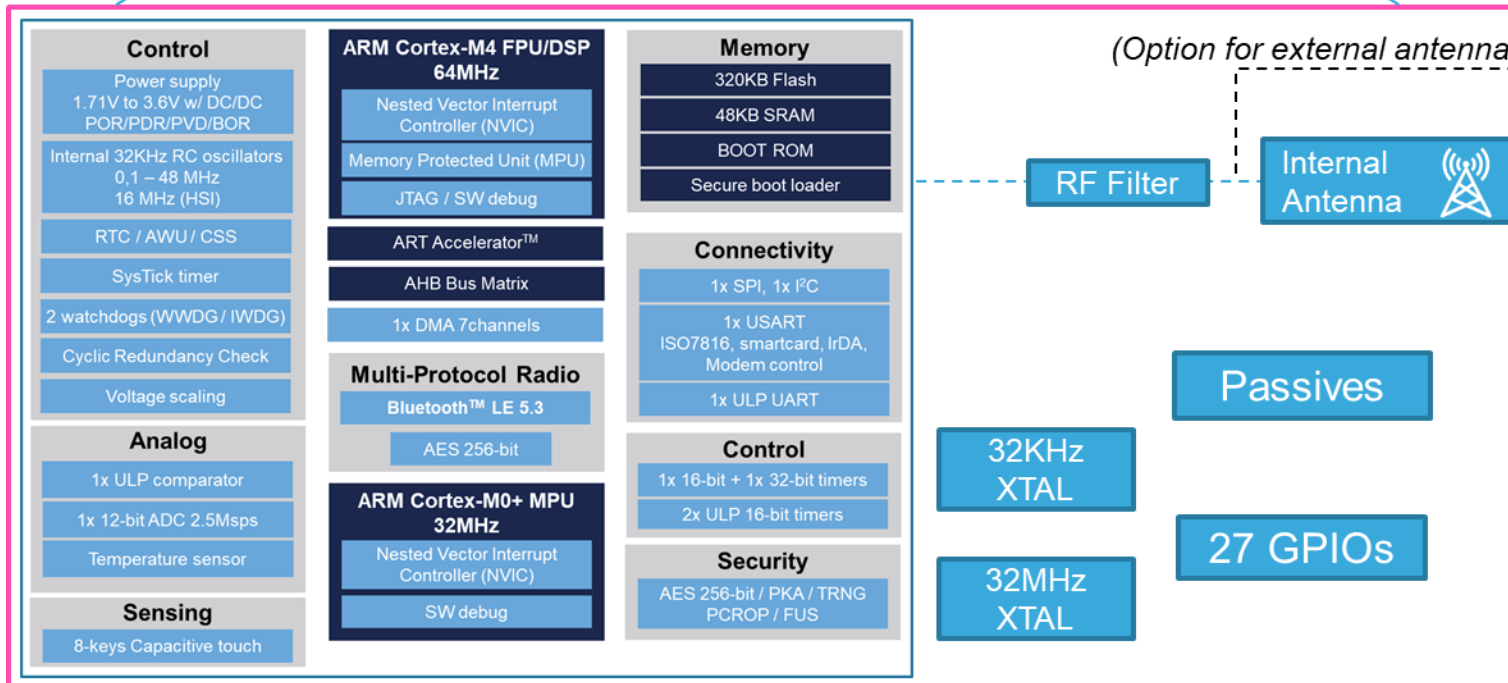
STM32WB1MMC



Pin count

77-pin LGA

from 1.7 V to 3.6 V
from -40°C to +85°C



In production NOW!

STM32WB1M module

Small form factor

6.5 x 10 mm

Everything inside (antenna, crystals...)

Option:
internal or external antenna

Extended Battery life

DCDC configuration

Standby ultra-low-power mode while radio activities

Reduce costs

Down to 2 PCB layers

Everything inside (single cap outside)

Free radio stack

Certifications FCC, CE, NCC, JRF, KC, SRRC, ISCED

Bluetooth® Low Energy protocol



Proprietary 2.4GHz

Rich feature set

Dual core based

320 Kbytes flash

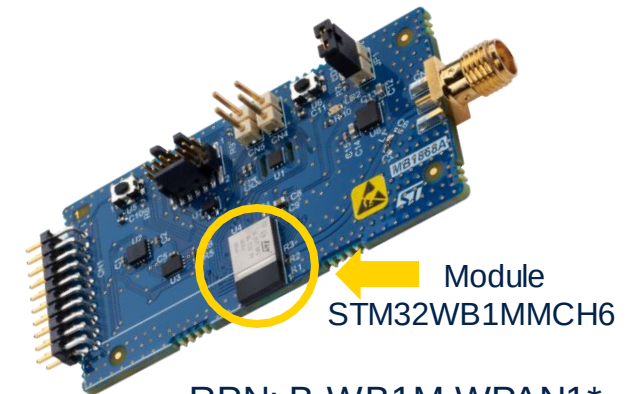
48 Kbytes RAM

ADC, COMP, TSC

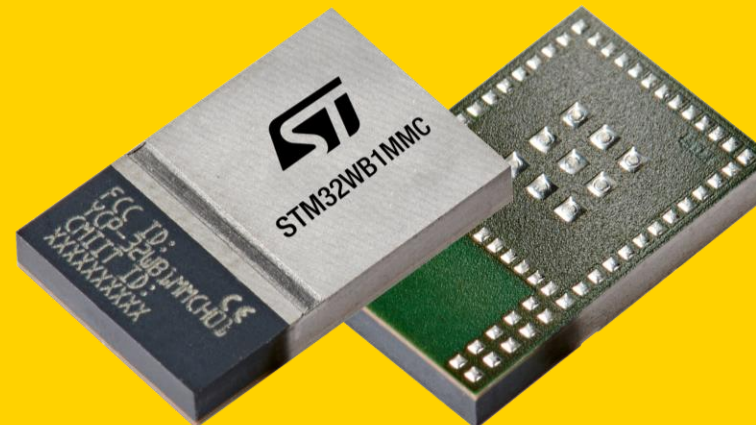
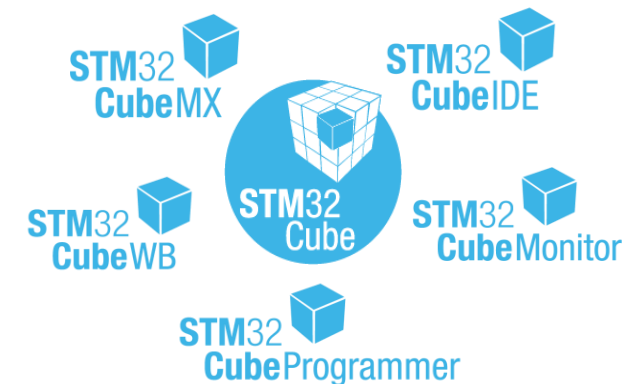
Security

OTA (application, radio)

Connectivity expansion board

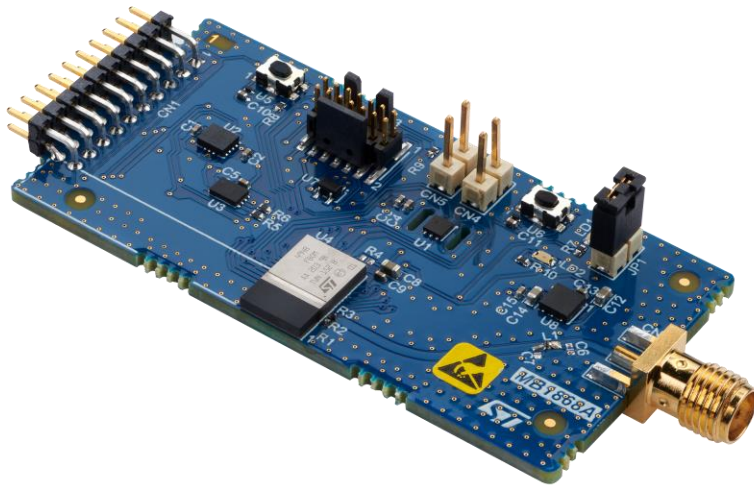


STM32 ecosystem



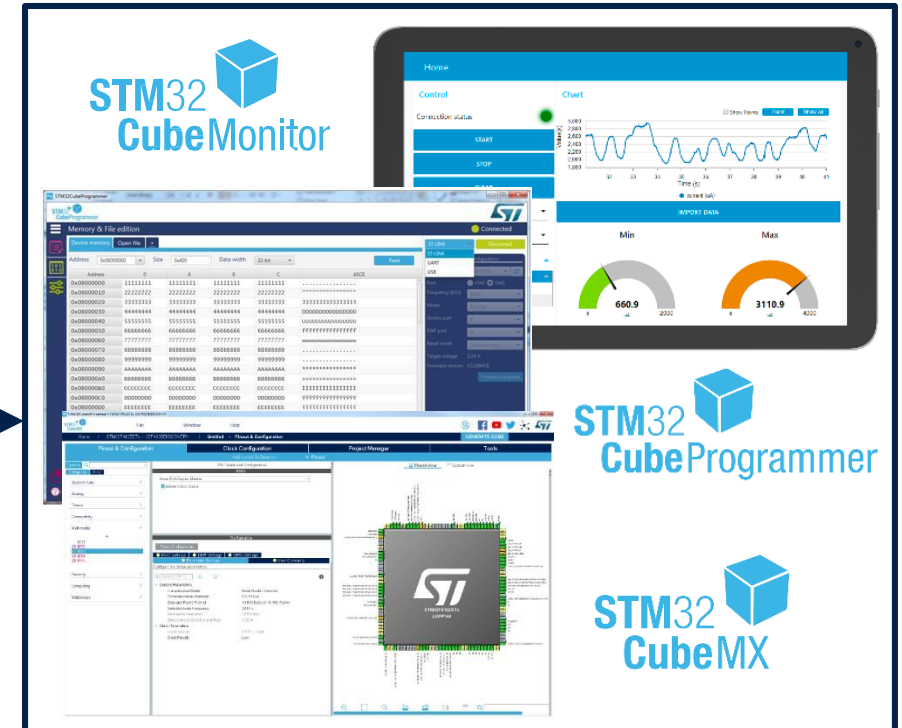
*Available in Q4/2023

Prototyping made as easy as 1,2,3



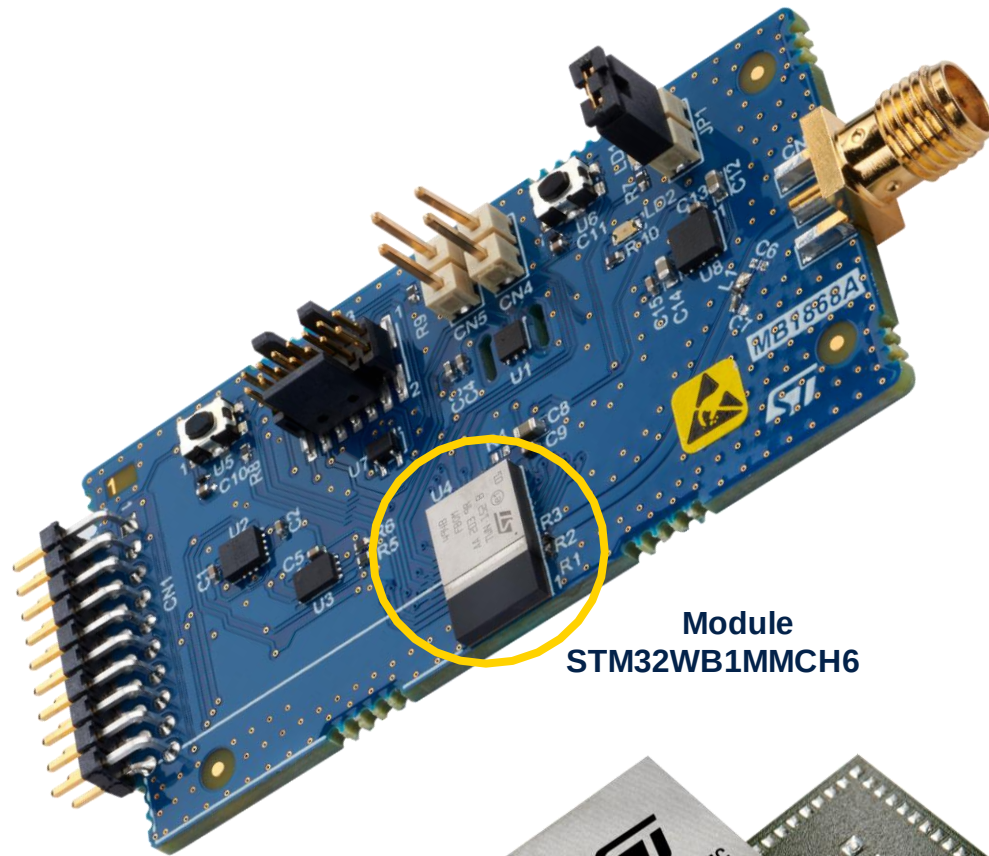
B-WB1M-WPAN1*

Hardware
connectivity expansion board



STM32CubeMX/STM32CubeWB/
STM32CubeProg & STM32CubeMonitor
Code generation
Power calculation

B-WB1M-WPAN1 expansion board



Module
STM32WB1MMCH6



Power supply options:

- From Host through STMOD+ (slave mode)
- From USB type C through STMOD+ adapter (master mode)
- From Battery LiPo type directly connected (master mode)

Boot mode through micro switch

1x User button
1x Reset button
1x LED Blue

Sensors:

- Temperature sensor
- Accelerometer

Connectors:

- STMOD+
- STDC14 receiver
- SMA connector for external antenna connexion option (not assembled by default)

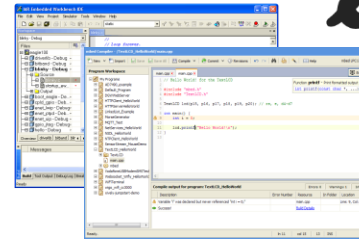
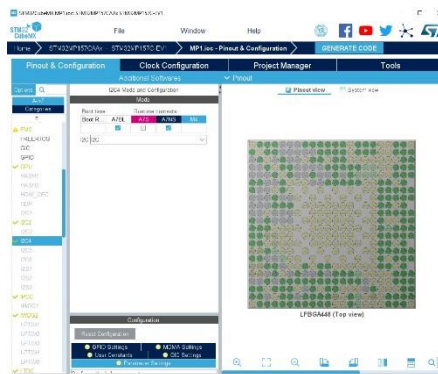
Additional features:

Adapter board female-female STMOD+ (B_STMOD_FEM), provided with CEB
Power consumption measurement capability through jumper



Software tools for STM32WBxM modules

A complete design journey, from configuration to application monitoring



STM32CubeMX

**Graphical tool
for easy configuration**

- Configure and generate code
- Peripherals and middleware configuration

IDEs Compile and debug

**Simple,
powerful solutions**

- Partners IDE (Arm® Keil®) **FREE**
- IDE based on Eclipse **FREE**
- RTOS aware debug

STM32 programming & monitoring tools

**STM32CubeProg
STM32CubeMonitor**

- Device and memory configuration
- Program the application
- Monitor variables at runtime

Releasing your creativity



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[@ST_World](#)



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Our technology starts with You



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