



ST67W coprocessor module series

Faster wireless innovation

Wi-Fi® enables secure direct cloud connectivity everywhere



Fast

Simple to deploy

Scalable & cost-effective

Convenient

Driving
the need for
embedding Wi-Fi®
technology in a
fast and
cost-effective
way.



ST67W611M

The first ST Wi-Fi® coprocessor module enables **faster wireless innovation** and **design scalability**.



Integration with most STM32 microcontrollers & microprocessors

- Compatible with the majority of the STM32 portfolio.
- Plug-in solution using an MCU as a host for greater design flexibility of next-gen IoT solutions augmented by edge AI.
- Easily add wireless connectivity to existing applications thanks to self-contained module form factor.



Certified, high-performance wireless connectivity

- Pre-loaded with Wi-Fi® 6, Bluetooth® LE. Supports the Matter protocol over Wi-Fi®, providing future-proof connectivity.
- Powered by Qualcomm multiprotocol connectivity technology.
- Three variants for flexible configuration options.



Seamless integration with the STM32Cube ecosystem

- Integrated in the extensive STM32 ecosystem for smoother design journeys.
- STM32Cube software expansion package provides user-friendly APIs for application development and ready-to-use demo applications.

Accelerating the deployment of IoT solutions augmented by edge AI



Smart homes

Door locks & door-bells, cameras, smart hubs

Industrial IoT

Industrial control IoT hub/gateways, smart utility metering, EV chargers



Smart appliances

White goods, kitchen appliances

Healthcare

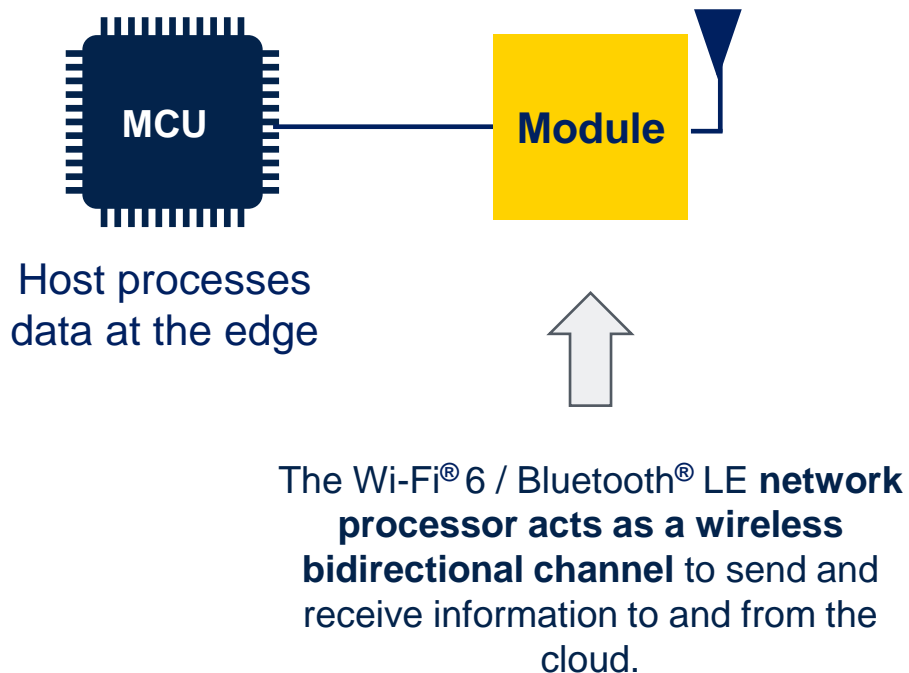
Medical devices, portable patient monitors, handheld devices



Wireless connectivity networks boost the deployment of devices enhanced with edge AI thanks to the flexibility, real-time processing, and scalability they provide.

A flexible solution to enable edge computing

Many IoT devices require edge computing, relying on real-time processing and analysis of data at the source to offload cloud infrastructures and enable ultralow latency.

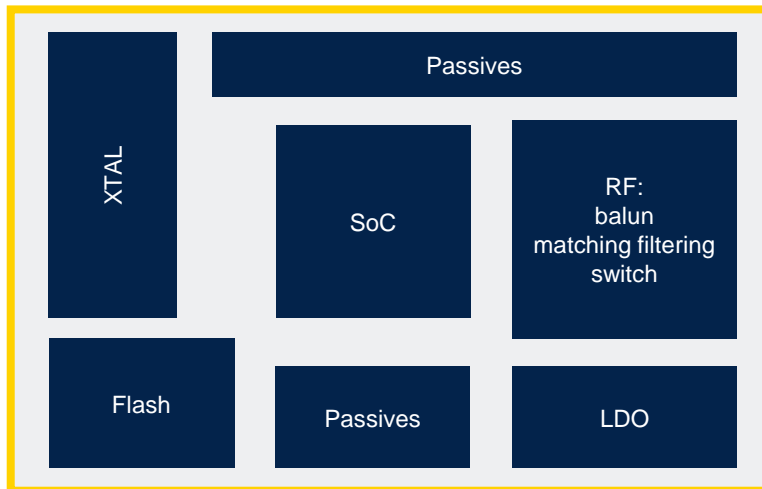


Plug-in Wi-Fi® and Bluetooth® LE unconstrained design upgradability

- Host upscaling will **not affect the wireless subsystem** and will **not require a new certification**
- **Powerful computing and scalable** resources
- **Reusable** Wi-Fi®6 / Bluetooth® LE component
- **Highly flexible** partitioning thanks to the embedded flash of the module maximizing host offloading
- **Independent** host/wireless subsystems

Simplifying your Wi-Fi® design journey and costs

PCB implementation with Wi-Fi® chipset



4-layer PCB

Many discrete components
Sensitive design

PCB implementation with ST67W611M



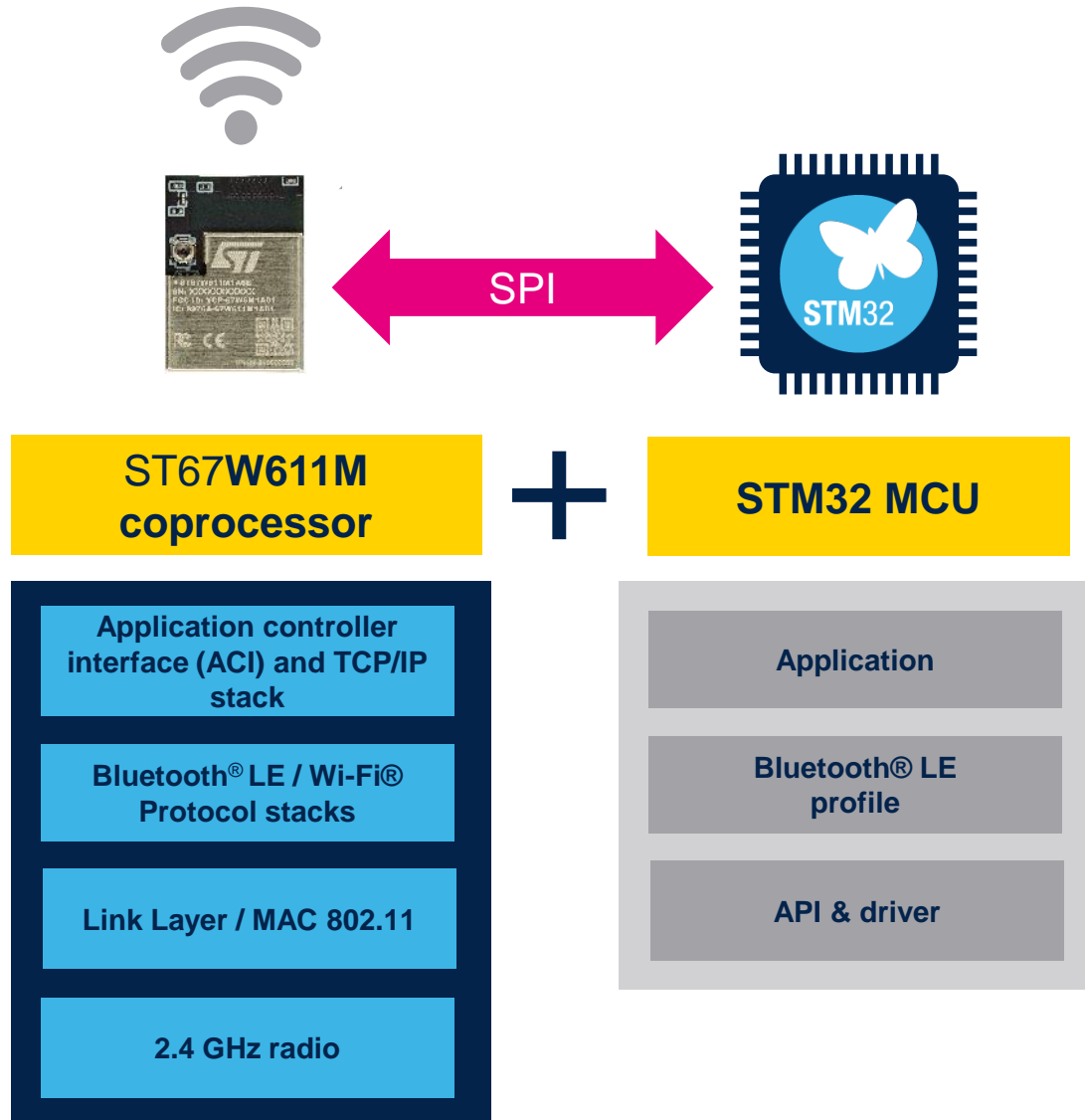
Module enabling 2-layer PCB

Single crystal Wi-Fi® operation

**SoC with integrated balun, power amplifier,
low noise amplifier and switch**

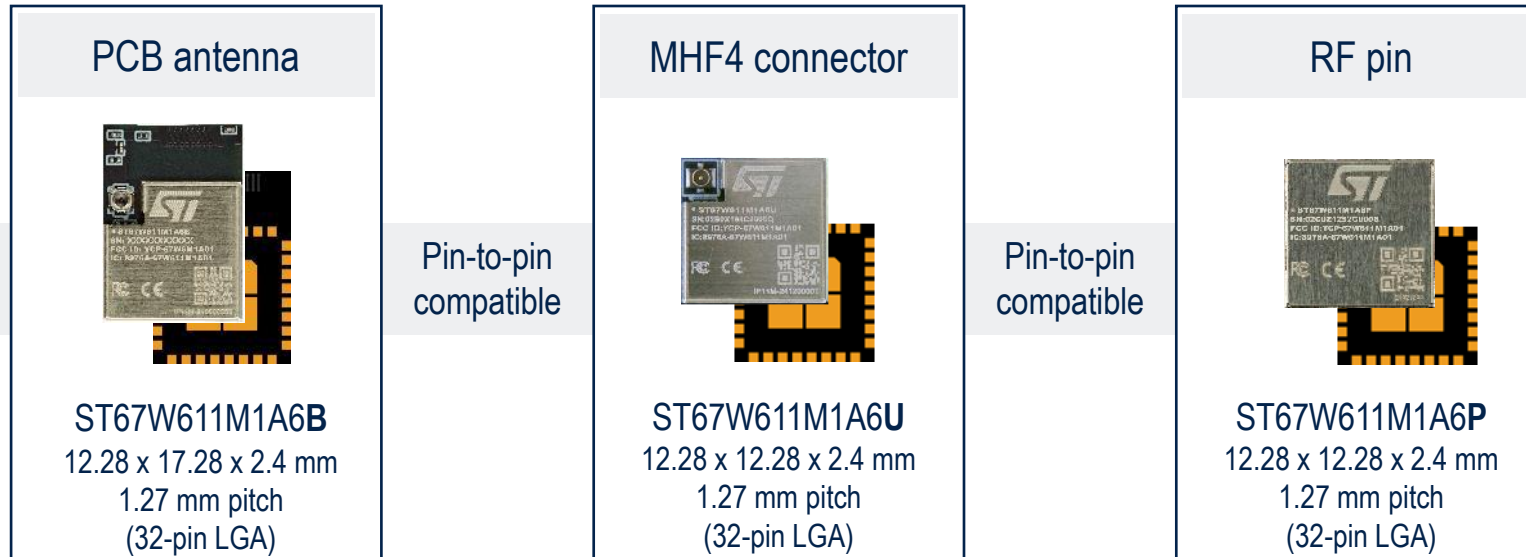
Integrated flash memory & PCB antenna

Network coprocessor (NCP) software stack



- All stacks are contained in the module
- High-level APIs for simple integration with applications

ST67W611M module in LGA32 package



Pin count (main ones)	Name	Description
4x	SPI	Communication interface
2x	UART	Optional for debugging
1	DEVICE_READY	SPI clock request to host
1	CHIP_EN	Enable for the module
1	RF_ANT	RF in/out pin (ST67W611M1A6P only)

Key enabling features

Integration



- Embedded 4 Mbytes of flash w/ OTA capability
- Embedded 40 MHz crystal
- Integrated balun, PA, LNA, and switch
- Built on a 40 nm process node

Wireless connectivity



- Wi-Fi®6 1x1 2.4 GHz, 802.11b/g/n/ax
- MCS9, high efficiency 20/40MHz bandwidth
- Station / Soft access point
- Target wake up time (TWT)
- Bluetooth® LE
- Matter (*)
- Thread (**)



Wireless performance



- TCP throughput of up to 18 Mbps
- Tx output power:
 - Up to +21 dBm (Wi-Fi®)
 - +10 dBm (Bluetooth® LE)
- Rx sensitivity:
 - -70/-67 dBm (MCS9, HE20/HE40)
 - -99/-97 dBm (Bluetooth® LE 1M/2M)

Security



- Integrated hardware crypto acceleration
- Security services (secure boot, secure debug,...)
- PSA Certified Level One

Notes:

(*) delivery planned in Q3 2025

(**) delivery planned Q4 2025

ST67W611M1 TWT feature and power consumption

Target wake up time (TWT) feature significantly reduces power consumption and congestion

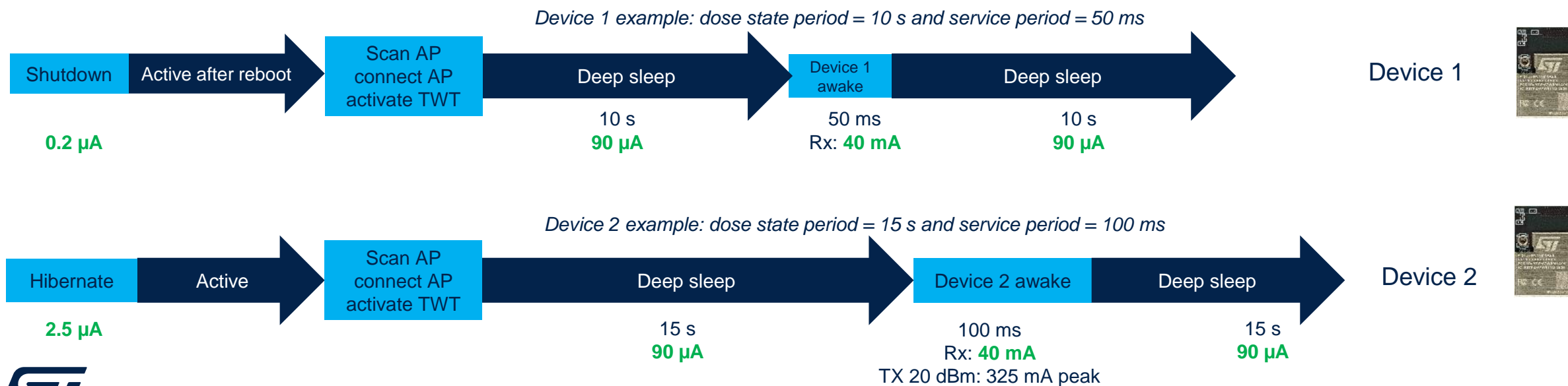
Wi-Fi® 6 AP



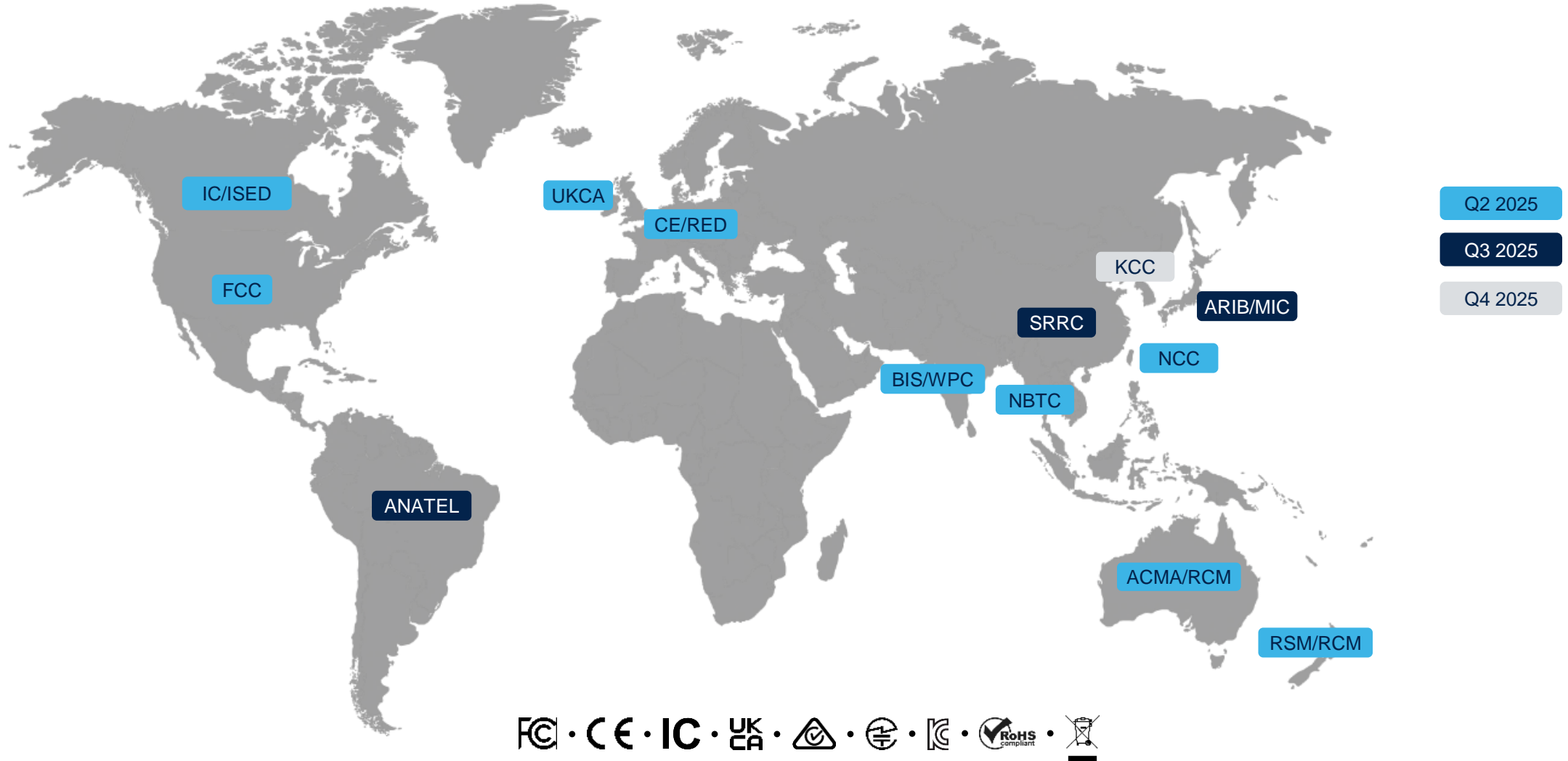
ST67W611M1



Access point and ST67W611M1 negotiate scheduled wake up time



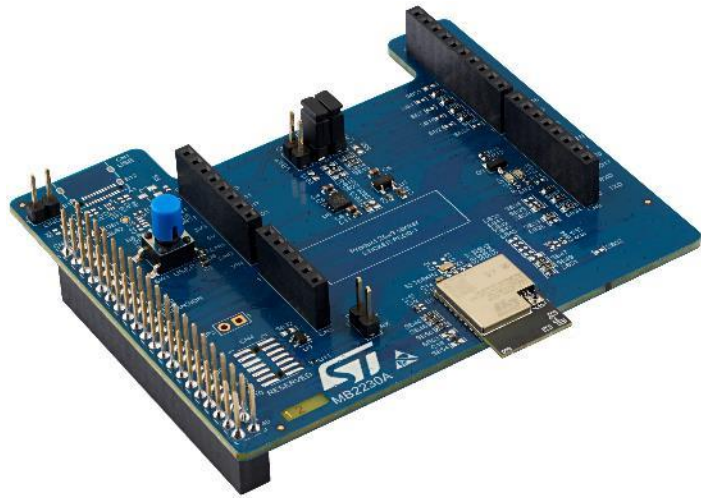
The module addresses worldwide certifications



Seamless integration within STM32 ecosystem



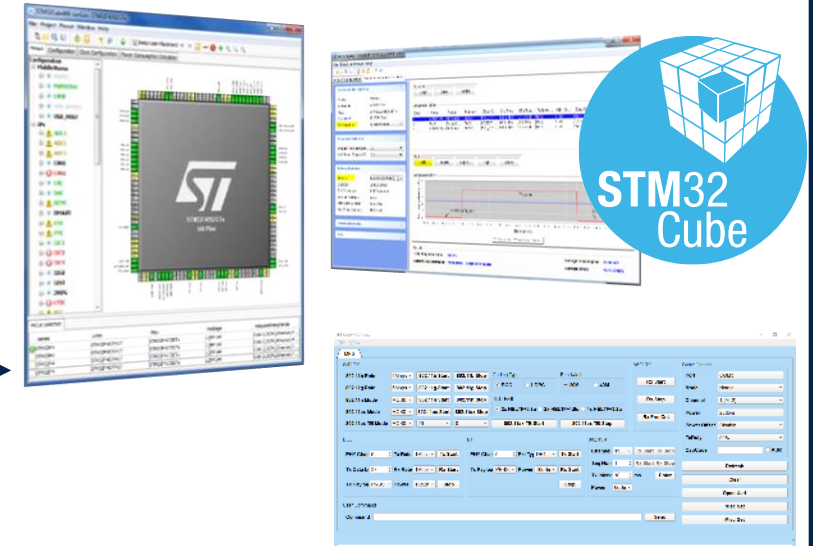
ST67W611M ecosystem simplifies your design journey



Hardware

**X-NUCLEO-67W61M1
expansion**

**STDES-67W61BU-U5
reference design**



Software

STM32CubeMX (code generation for host MCU/MPU)

X-CUBE-ST67W61 (Wi-Fi® & Bluetooth® LE
dedicated drivers + examples)

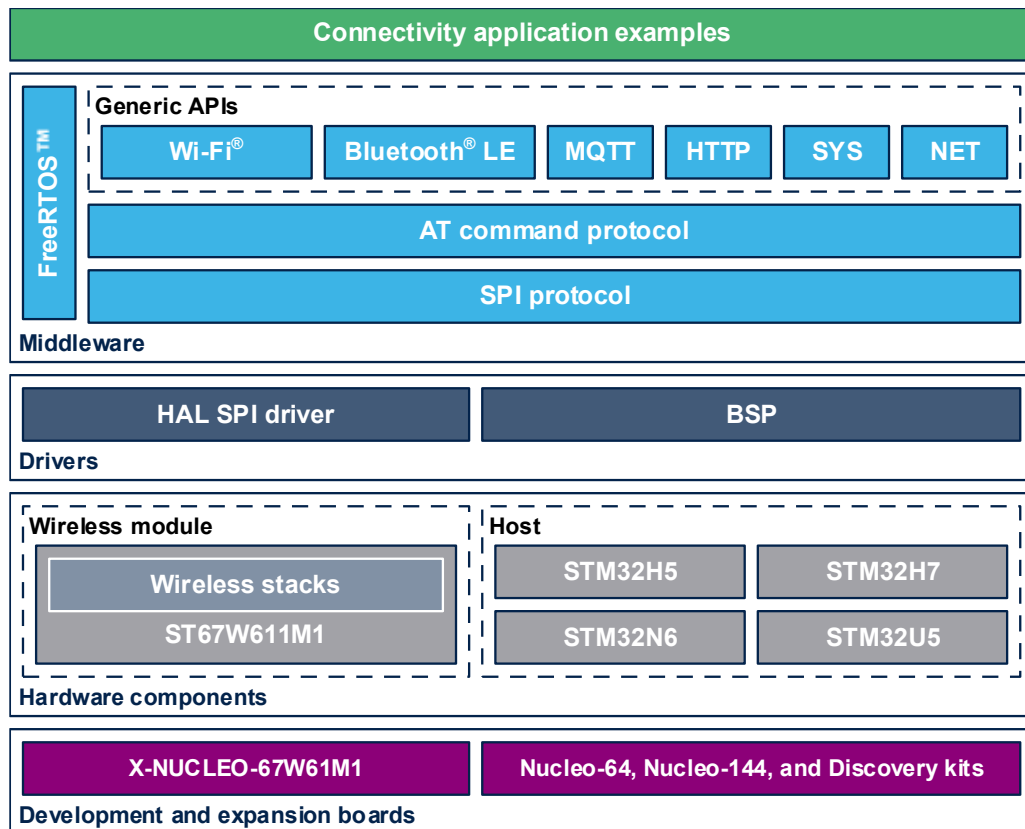
STM32CubeIDE (for host MCU/MPU)
Supported in **X-CUBE-MATTER**

Qconn RF Monitoring Tool

Qconn Programming tool (OTP)

Expansion package X-CUBE-ST67W61M

STM32Cube expansion package: drivers for the ST67W611M



- Complete middleware to build Wi-Fi® and Bluetooth® LE applications using ST67W611M.
- Native support of the X-CUBE-ST67W61M in STM32CubeMX
- Easy portability across different MCU families, thanks to STM32Cube technology.
- Numerous examples to get started with Wi-Fi® and Bluetooth® LE applications.
- Expansion package compatible with STM32CubeMX including configurability in a GUI. Can be downloaded and installed directly from the tool.
- Free of charge, user-friendly license terms.

ST67W611M takeaways



ST67W611M

Wireless

Wi-Fi® 6 / Bluetooth® LE stacks inside the module
up to +21 dBm output power (Wi-Fi®)

Integration

Certified module, regulatory, and Wi-Fi®/Bluetooth® LE
Reduced BOM and engineering efforts

Power efficiency

Wi-Fi® 6 TWT support
Low-power modes down to 0.2 μ A

Wireless design expertise

ST & Qualcomm partnership provides a trusted
solution for IoT devices

Full ecosystem support

Expansion board. Middleware, STM32Cube expansion
pack, support in STM32CubeMX & X-CUBE-MATTER

Releasing your creativity



[/STM32](#)



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[community.st.com](#)



[st.com/ST67W611m1](#)



[wiki.st.com/stm32mcu](#)



[github.com/stm32-hotspot](#)



[STM32 MCU Developer Zone](#)

Our technology starts with You



Find out more at [st.com/ST67W](https://www.st.com/ST67W)

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