

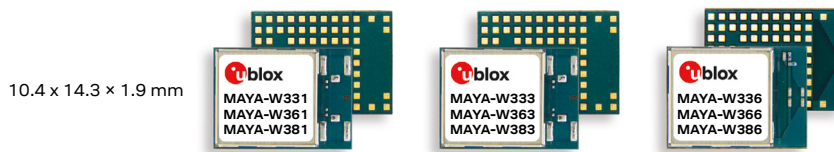
MAYA-W3 series



Host-based Wi-Fi 6/6E and Bluetooth® 5.4 modules for the IoT

Small, low-power, secure modules for IoT applications

- Single-band, dual-band, and tri-band Wi-Fi 6/6E
- Dual-mode Bluetooth Classic and Bluetooth Low Energy 5.4
- Bluetooth LE Audio
- Efficient coexistence management between internal and external radios
- Variants with PCB-antenna, one antenna pin, and 2 antenna pins
- Secure boot and secure OTP



Product description

The MAYA-W3 series host-based modules are designed, built, and tested to meet the high reliability and quality requirements of a wide range of industrial applications, such as smart manufacturing, tracking and telematics, building automation, professional appliances, healthcare, and EV charging infrastructures.

MAYA-W3 modules provide SISO Wi-Fi 6/6E operation with 20 MHz channel width, improved network availability in dense Wi-Fi environments, and MU-MIMO. The modules can work as access point, station, in P2P connections, or combinations of these. MAYA-W3 supports Bluetooth Low Energy 5.4, including the use of isochronous channels for LE Audio.

At 10.4 x 14.3 mm, MAYA-W3 are among the most compact Wi-Fi 6/6E SMD modules available in the market.

All u-blox modules undergo extensive qualification tests to ensure reliability over their life-time, and each module is fully tested before leaving the assembly line.

The MAYA-W3 series is based on the CYW5551/2/3 chips from Infineon.

Key features

- Variants with antenna pins and embedded PCB antenna
- Wi-Fi 6/6E, tri-band, dual-band, and single-band; single stream, supporting MU-MIMO
- 20 MHz Wi-Fi channels
- Wi-Fi 802.11 a/b/g/n/ac/ax/ - d/e/h/i/r/w
- Bluetooth 5.4 supporting LE Audio
- Wi-Fi security: WPA3, WPA2, WAPI, AES
- High-power Bluetooth: up to +20 dBm
- Secure boot
- Industrial temperature range -40 °C to +85 °C

	MAYA-W331	MAYA-W333	MAYA-W336	MAYA-W361	MAYA-W363	MAYA-W366	MAYA-W381	MAYA-W383	MAYA-W386
Grade									
Automotive									
Professional	•								
Standard									
Radio									
Chip inside	CYW55511			CYW55512			CYW55513		
Bluetooth qualification	v5.4			v5.4			v5.4		
Bluetooth profiles	HCI			HCI			HCI		
Bluetooth Classic	•								
Bluetooth Low Energy	•								
Bluetooth output power conducted [dBm]	up to 20			up to 20			up to 20		
Wi-Fi IEEE 802.11 stds	Wi-Fi 6 (802.11a/b/g/n/ac/ax)								
Wi-Fi freq. band [GHz]	2.4		2.4 and 5		2.4 and 5		2.4, 5, and 6		
Wi-Fi output power [dBm]	18			18			18		
Antenna type	pin pin pcb		pin pin pcb		pin pin pcb		pin pin pcb		
Number of antennas	2 1 1		2 1 1		2 1 1		2 1 1		
OS support									
Android / Linux drivers	•								
RTOS (via NXP MCU)	•								
Interfaces									
High-speed UART (Bluetooth)	1			1			1		
PCM, I2S (Bluetooth audio)	1			1			1		
SDIO (Wi-Fi) [version]	3.0			3.0			3.0		
Features									
Micro access points [max]	16			16			16		
Wi-Fi direct	•								
WPA3	•								
RF calibration in OTP	•								
Programmed MAC addr.	•								
Secure boot	•								

pin = antenna pin(s)

pcb = internal PCB antenna and pin

MAYA-W3 series



Features

Wi-Fi standards	Wi-Fi 6/E IEEE 802.11a/b/g/n/ac/ax IEEE 802.11d/e/h/i/r/w
Wi-Fi channels	2.4 GHz: 1-14 5 GHz: 36-196 6 GHz: 1-233
Bluetooth	v5.4 Classic and LE long range, power management, LE Audio
Antennas	MAYA-W331, MAYA-W361 and MAYA-W381: 2 antenna pins MAYA-W333, MAYA-W363 and MAYA-W383: 1 antenna pin MAYA-W336, MAYA-W366 and MAYA-W386: 1 antenna via pin or embedded in PCB
Wi-Fi output Tx-power	18 dBm (Wi-Fi 6, 5 GHz, 20 MHz channel)
RX sensitivity	Wi-Fi 6 2.4 GHz: -95 dBm (indicative) Wi-Fi 6 5 GHz: -94 dBm (indicative) Bluetooth Classic: -94 dBm (indicative) Bluetooth LE: -100.5 dBm (1 Mbit/s, indicative)
Security	128-bit AES hardware encryption Secure boot

Software features

RF calibration	Available in on-board OTP memory
MAC addresses	Available in on-board OTP memory
Security	WPA2 (CCMP, AES) WPA3 WAPI
Wi-Fi operational modes	Station, access point, Wi-Fi direct, or any combination of these
Driver support	Free of charge drivers for Linux and Android
Wi-Fi/Bluetooth coexistence	Internal TDM mechanism Central hardware packet traffic arbitration for external radio WCI-2 interface for external radio coexistence

Interfaces

Wi-Fi	SDIO 3.0 (4-bit, up to 100 MHz clock)
Bluetooth	4-wire high-speed UART PCM and I2S for Bluetooth audio
Coexistence	WCI-2 (2-wire) Zigbee (3-wire) UWB (3-wire) 4-wire LTE
Other	GPIOs

Package

Dimensions	10.4 × 14.3 × 1.9 mm
Mounting	Soldering, 90 pins (LGA)

Environmental data, quality, and reliability

Operating temperature	-40 °C to +85 °C
Moisture sensitivity level	4
RoHS and REACH compliance	

Electrical data

RF power supply	3.3 VDC, 1.8 VDC
I/O power supply	1.8 VDC

Certifications and approvals

Type approvals	Europe (RED); US (FCC); Canada (ISED); Japan (Giteki) Other certifications to be considered upon request
Bluetooth qualification	v5.4 (Bluetooth Classic and Bluetooth Low Energy)

Support products

EVK-MAYA-W381	Evaluation kit for all MAYA-W3 modules
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Product variants

MAYA-W331	Single-band Wi-Fi 6 and Bluetooth 5.4 module with two separate antenna pins
MAYA-W333	Single-band Wi-Fi 6 and Bluetooth 5.4 module with one antenna pin
MAYA-W336	Single-band Wi-Fi 6 and Bluetooth 5.4 module with embedded PCB antenna
MAYA-W361	Dual-band Wi-Fi 6 and Bluetooth 5.4 module with two separate antenna pins
MAYA-W363	Dual-band Wi-Fi 6 and Bluetooth 5.4 module with one antenna pin
MAYA-W366	Dual-band Wi-Fi 6 and Bluetooth 5.4 module with embedded PCB antenna
MAYA-W381	Tri-band Wi-Fi 6E and Bluetooth 5.4 module with two separate antenna pins
MAYA-W383	Tri-band Wi-Fi 6E and Bluetooth 5.4 module with one antenna pin
MAYA-W386	Tri-band Wi-Fi 6E and Bluetooth 5.4 module with embedded PCB antenna

Further information

For contact information, see www.u-blox.com/contact-u-blox.

For more product details and ordering information, see the [product data sheet](#).

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