Product summary

MAYA-W3 series

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

Standard

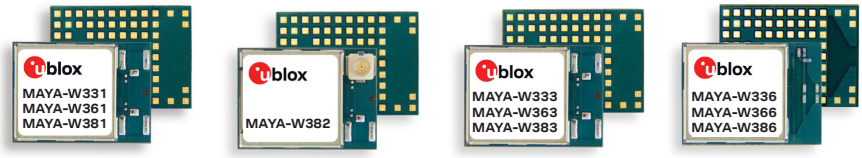
Professional

Automotive

Small, low-power, secure modules for IoT applications

- Single-band, dual-band, and tri-band Wi-Fi 6/6E
- Bluetooth Dual-mode, qualified against Bluetooth Core 6.0
- Bluetooth LE Audio
- Efficient coexistence management between internal and external radios
- Variants with PCB-antenna, U.FL connector(s), and antenna pins
- Secure boot and secure OTP

10.4 x 14.3 × 1.9 mm



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. Qualified against Bluetooth Core 6.0, MAYA-W3 supports Bluetooth LE, 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, U.FL connectors, 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 802.11a/b/g/n/ac/ax/ - d/e/h/i/r/w
- Bluetooth 6.0 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-W382	MAYA-W383	MAYA-W386
Grade										
Automotive										
Professional	•			•			•			
Standard										
Radio										
Chip inside	CYW55511			CYW55512			CYW55513			
Bluetooth qualification	6.0			6.0			6.0			
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, 5, and 6			
Wi-Fi output power [dBm]	18			18			18			
Antenna type	p	p	a	p	p	a	p	u	p	a
Number of antennas	2	1	1	2	1	1	2	1	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.	•			•			•			

p = antenna pin(s)
a = internal PCB antenna and pin

u = U.FL antenna connector

MAYA-W3 series

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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	Bluetooth Dual-Mode (Classic and LE) including long range, power management, LE Audio
Antennas	MAYA-W331, MAYA-W361 and MAYA-W381: 2 antenna pins MAYA-W382: single U.FL connector MAYA-W333, MAYA-W363 and MAYA-W383: single 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	3.13 – 3.46 VDC
I/O power supply	3.3 VDC or 1.8 VDC

Certifications and approvals

Type approvals	Europe (RED); US (FCC); Canada (ISED); Japan (Giteki) Other certifications to be considered upon request
Bluetooth	Qualified against Bluetooth Core 6.0 Bluetooth Dual-Mode

Support products

EVK-MAYA-W381	Evaluation kit for dual antenna MAYA-W3
EVK-MAYA-W386	Evaluation kit for single antenna MAYA-W3
M2-MAYA-W382-10C	M.2 card evaluation kit for MAYA-W3 modules

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-W382	Tri-band Wi-Fi 6E and Bluetooth 5.4 module with a single U.FL antenna connector
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.