Product summary

MAYA-W4 series

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Host-based Wi-Fi™ 6 multiradio modules for the IoT

Standard

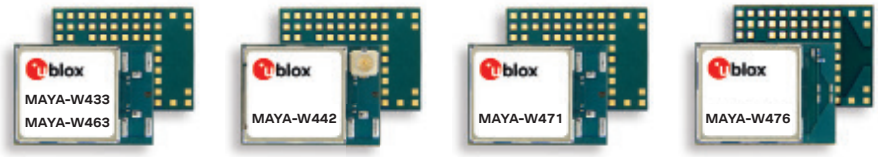
Professional

Automotive

Cost-efficient, small, secure modules for IoT applications

- Single- and dual-band Wi-Fi 6 1x1, 20 MHz channels
- Bluetooth® LE, qualified against Bluetooth Core 5.4
- 802.15.4 radio supporting Thread
- Matter over Wi-Fi and Thread
- Variants with PCB-antenna, U.FL connector(s), and antenna pin(s)
- Secure boot, firmware, OTP memory, NXP Edgelock®

10.4 x 14.3 x 1.9 mm



Product description

The MAYA-W4 series host-based modules are designed, built, and tested to meet the high reliability and quality requirements of industrial and commercial applications, such as building automation, professional appliances, energy management, smart homes, healthcare, and more.

MAYA-W4 modules provide SISO Wi-Fi 6 operation with 20 MHz channel width and improved network availability in dense Wi-Fi environments. The modules can work as access point, station, in P2P connections, or combinations of these.

MAYA-W4 supports Bluetooth Low Energy 5.4. MAYA-W44x and MAYA-W47x variants support IEEE 802.15.4 radio for Thread mesh network support. The Matter application protocol is supported over Thread and Wi-Fi allowing interoperability with various products in a growing ecosystem.

At 10.4 x 14.3 mm, MAYA-W4 are among the most compact Wi-Fi 6 SMD modules with integrated antenna or U.FL connectors.

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-W4 series is based on the NXP IW610 chipsets.

Key features

- Variants with antenna pins, U.FL connectors, and embedded PCB antenna
- Wi-Fi 6, single- and dual-band, single stream, supporting MU-MIMO, 20 MHz channels
- Wi-Fi 802.11a/b/g/n/ac/ax/ - e/i/k/r/v/w
- Wi-Fi security: WPA3, WPA2, AES
- Bluetooth LE, qualified again Bluetooth Core 5.4
- 802.15.4 radio for Thread
- Secure operation (Edgelock™), secure boot
- Industrial temperature range −40 °C to +85 °C

	MAYA-W433	MAYA-W442	MAYA-W463	MAYA-W471	MAYA-W476
Grade					
Automotive					
Professional	•	•	•	•	•
Standard					
Radio					
Chip inside	NXP IW610				
Bluetooth qualification	5.4 (Low Energy)				
Bluetooth profiles	HCI				
Bluetooth Low Energy	•	•	•	•	•
Bluetooth output power [dBm]	up to 15				
Wi-Fi IEEE 802.11 standards	Wi-Fi 6 (802.11a/b/g/n/ac/ax)				
Wi-Fi frequency band [GHz]	2.4	2.4	2.4 / 5	2.4 / 5	2.4 / 5
802.15.4 radio		•		•	•
Wi-Fi output power [dBm]	18	18	18	18	18
Antenna type	pin	U.FL	pin	pin	pcb
Number of antennas	1	1	1	2	1
OS support					
Android / Linux drivers (from NXP)	•	•	•	•	•
RTOS (via NXP i.MX RT MCUs)	•	•	•	•	•
Interfaces					
High-speed UART (Bluetooth)	1	1	1	1	1
USB (Wi-Fi)	2.0	2.0	2.0	2.0	2.0
SDIO (Wi-Fi) [version]	3.0	3.0	3.0	3.0	3.0
SPI (802.15.4)		1		1	1
Features					
Micro access point [max connects]	8	8	8	8	8
Wi-Fi direct	•	•	•	•	•
WPA3	•	•	•	•	•
RF calibration in OTP	•	•	•	•	•
Programmed MAC address	•	•	•	•	•
Secure boot	•	•	•	•	•

pin = antenna pin
pcb = internal PCB antenna

U.FL = U.FL antenna connector

MAYA-W4 series

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Features

Wi-Fi standards	Wi-Fi™ 6 IEEE 802.11a/b/g/n/ac/ax IEEE 802.11d/e/i/k/r/v/w
Wi-Fi channels	2.4 GHz: 1-13 5 GHz: 36-177
Bluetooth	Bluetooth® LE, long range, power management Qualified against Bluetooth Core 5.4
802.15.4	IEEE 802.15.4 - 2015 compliant 2.45 GHz, up to 250 kbps
Antennas	MAYA-W433: 1 antenna pin MAYA-W442: 1 U.FL connector MAYA-W463: 1 antenna pin MAYA-W471: 2 antenna pins MAYA-W476: 1 antenna 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 LE: −100.5 dBm (@ 1 Mbps, indicative) 802.15.4: −103 dBm (indicative)
Security	128-bit AES hardware encryption Secure boot EdgeLock™

Software features

RF calibration	Available in on-board OTP memory
MAC addresses	Available in on-board OTP memory
Security	WPA2 (CCMP, AES) WPA3
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 / 802.15.4 coexistence	Internal coexistence between Wi-Fi and Bluetooth LE or 802.15.4 WCI-2 and PTA interface for external radio coexistence

Interfaces

Wi-Fi	SDIO 3.0 (4-bit, up to 208 MHz clock) USB 2.0
Bluetooth	4-wire high-speed UART
802.15.4	SPI
Coexistence	WCI-2 (2-wire) PTA
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 will be considered upon request
Bluetooth qualification	Qualified against Bluetooth Core 5.4 Bluetooth LE

Support products

EVK-MAYA-W476	Evaluation kit for MAYA-W476
M2-MAYA-W473-10C	M2-MAYA-W473 module delivered as an evaluation kit together in a box with 1 patch antenna

Product variants

MAYA-W433-00B	Professional grade module with one antenna pin for single-band Wi-Fi and Bluetooth (under development)
MAYA-W442-00B	Professional grade module with one U.FL connector for single-band Wi-Fi, Bluetooth, and 802.15.4 (under development)
MAYA-W463-00B	Professional grade module with one antenna pin for dual-band Wi-Fi and Bluetooth (under development)
MAYA-W471-00B	Professional grade module with two separate antenna pins for dual-band Wi-Fi, Bluetooth, and 802.15.4 (under development)
MAYA-W476-00B	Professional grade module with embedded PCB antenna for dual-band Wi-Fi, Bluetooth, and 802.15.4 (under development)

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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