

MAYA-W2 series

Host-based Wi-Fi 6, Bluetooth 5.3, and 802.15.4 modules for the IoT

Small, low-power, secure tri-radio modules for IoT applications

- Dual-band Wi-Fi 6 with up to 480 Mbit/s throughput (600 Mbit/s maximum data rate)
- Dual-mode Bluetooth classic and Bluetooth Low Energy 5.3, including LE Audio
- 802.15.4 radio supporting Thread and Zigbee mesh networks
- Efficient coexistence management between all radios and external radios
- Variants with PCB-antenna, U.FL connectors, and antenna pins
- Secure boot and secure OTP



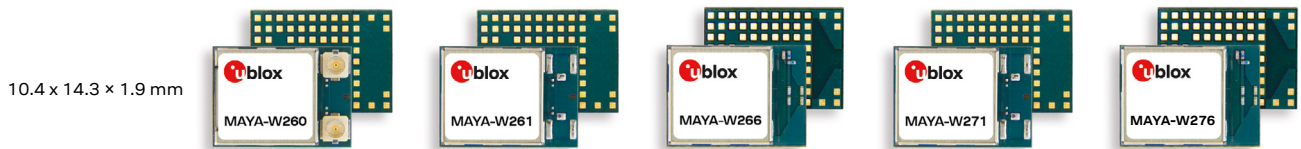
Standard



Professional



Automotive



Product description

The MAYA-W2 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-W2 modules provide SISO Wi-Fi 6 operation with up to 480 Mbit/s data throughput, improved performance in dense Wi-Fi environments, and MU-MIMO. Using 20, 40 or 80 MHz channels, the modules can work as access point, station, in P2P connections, or any combinations of these. MAYA-W2 supports Bluetooth Low Energy 5.3, including the use of isochronous channels for LE Audio. MAYA-W271 and MAYA-W276 provide 802.15.4 radio, as used by Thread and Zigbee.

At 10.4 x 14.3 mm, MAYA-W2 are among the most compact Wi-Fi 6 dual-band 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.

MAYA-W2 series is based on the NXP IW61x chips, which provide OS driver integration in their application host BSPs and SDK support for NXP MCUs.

Key features

- Variants with antenna pins, U.FL connectors and embedded PCB antenna
- Wi-Fi 6, dual-band, single stream, supporting MU-MIMO
- 20, 40, and 80 MHz Wi-Fi channels
- Wi-Fi 802.11d/e/h/i/k/r/u/v/w/mc/az
- Bluetooth 5.3 supporting LE Audio
- Wi-Fi security: WPA3, WPA2, WAPI, AES
- 802.15.4 radio
- High-Power Bluetooth: up to +20 dBm
- Secure boot
- Industrial temperature range -40 °C to +85 °C

	MAYA-W260	MAYA-W261	MAYA-W266	MAYA-W271	MAYA-W276
Grade					
Automotive					
Professional	•	•	•	•	•
Standard					
Radio					
Chip inside	NXP IW611		NXP IW612		
Bluetooth qualification	v5.3				
Bluetooth profiles	HCI				
Bluetooth BR/EDR	•	•	•	•	•
Bluetooth Low Energy	•	•	•	•	•
Bluetooth output power conducted [dBm]	up to 20				
Wi-Fi IEEE 802.11 standards	Wi-Fi 6 (802.11a/b/g/n/ac/ax)				
Wi-Fi frequency band [GHz]	2.4 and 5				
802.15.4 radio				•	•
Wi-Fi output power [dBm]	18	18	18	18	18
Antenna type	U.FL	pin	pcb/pin	pin	pcb/pin
Number of antennas	2	2	1	2	1
OS support					
Android / Linux drivers (from u-blox)	•	•	•	•	•
RTOS (via NXP i.MX RT MCUs)	•	•	•	•	•
Interfaces					
High-speed UART (Bluetooth)	1	1	1	1	1
PCM, I2S (Bluetooth audio)	1	1	1	1	1
SDIO (Wi-Fi) [version]	3.0	3.0	3.0	3.0	3.0
SPI (802.15.4)				1	1
Features					
Micro access point [max connects]	16	16	16	16	16
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-W2 series



Features

Wi-Fi standards	Wi-Fi 6 IEEE 802.11a/b/g/n/ac/ax IEEE 802.11d/e/h/i/k/r/u/v/w/mc/az
Wi-Fi channels	2.4 GHz: 1-13 5 GHz: 36-177
Bluetooth	v5.3 BR/EDR and LE long range, power management, LE Audio
802.15.4	IEEE 802.15.4 - 2015 compliant 2.45 GHz, up to 250 kbps
Antennas	MAYA-W260: 2 U.FL connectors MAYA-W261: 2 antenna pins MAYA-W266: 1 antenna: pin or embedded in PCB MAYA-W271: 2 antenna pins MAYA-W276: 1 antenna: 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: -91 dBm (indicative) Wi-Fi 6 5 GHz: -92.5 dBm (indicative) BT BDR: -96 dBm (indicative) BLE: -98 dBm (@ 1mbps, 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 RTOS (with NXP MCUXpresso)
Wi-Fi/Bluetooth / 802.15.4 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 208 MHz clock)
Bluetooth	4-wire high-speed UART PCM and I2S for Bluetooth audio
802.15.4	SPI
Other	GPIOs

Package

Dimensions	10.4 × 14.3 × 1.9 mm
Mounting	Soldering, 86 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	v5.3 (Bluetooth BR/EDR and Bluetooth Low Energy)

Support products

EVK-MAYA-W271	Evaluation kit for MAYA-W261 and MAYA-W271
EVK-MAYA-W276	Evaluation kit for MAYA-W266 and MAYA-W276

Product variants

MAYA-W260-00B	Professional grade module with two separate U.FL connectors for Wi-Fi and Bluetooth
MAYA-W261-00B	Professional grade module with two separate antenna pins for Wi-Fi and Bluetooth
MAYA-W266-00B	Professional grade module with one antenna – pin or embedded PCB antenna – for Wi-Fi and Bluetooth
MAYA-W271-00B	Professional grade module with two separate antenna pins for Wi-Fi and Bluetooth/802.15.4
MAYA-W276-00B	Professional grade module with one antenna – pin or embedded PCB antenna – for Wi-Fi and Bluetooth/802.15.4

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.

Legal Notice:

u-blox or third parties may hold intellectual property rights in the products, names, logos, and designs included in this document. Copying, reproduction, or modification of this document or any part thereof is only permitted with the express written permission of u-blox. Disclosure to third parties is permitted for clearly public documents only.

The information contained herein is provided "as is". No warranty of any kind, either express or implied, is made in relation to the accuracy, reliability, fitness for a particular purpose or content of this document. This document may be revised by u-blox at any time. For most recent documents, please visit www.u-blox.com.