Product summary

MAYA-W2 series

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Host-based Wi-Fi 6, Bluetooth 5.4, and 802.15.4 modules for the IoT

Standard

Professional

Automotive

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 5.4, 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; Supports antenna diversity
- Secure boot and secure OTP

10.4 x 14.3 x 1.9 mm



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 5.4, 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 5.4 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	v5.4				
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

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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	v5.4 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	v5.4 (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.

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