**Product summary**

**MAYA-W2 series**

**Host-based Wi-Fi 6, Bluetooth 5.2, 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 600 Mbit/s throughput
- Dual-mode Bluetooth classic and Bluetooth Low Energy 5.2, 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

**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 600 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 the full feature set of Bluetooth Low Energy 5.2, including the use of isochronous channels for LE Audio. MAYA-W271 provides 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 IW611/IW612 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/a/h/i/k/n/u/v/az
- Bluetooth 5.2 supports all features including 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

**Grade**
- Automotive
- Professional
- Standard

**Radio**
- Chip inside NXP IW611 NXP IW612
- Bluetooth qualification v5.2
- Bluetooth profiles HCI
- Bluetooth BA/EDR • • • •
- Bluetooth Low Energy • • • •
- Bluetooth output power conducted [dBm] up to 20
- Wi-Fi IEEE 802.11 standards
- Wi-Fi frequency band [GHz] 2.4 and 5
- 802.15.4 radio
- Wi-Fi output power [dBm] 18 18 18 18
- Antenna type U.FL pin pcb pin
- Number of antennas 2 2 1 2

**OS support**
- Android / Linux drivers (from u-blox) • • • •
- RTOS (via NXP i.MX RT MCUs) • • • •

**Interfaces**
- High-speed UART (Bluetooth) 1 1 1 1
- PCM, I2S (Bluetooth audio) 1 1 1 1
- SDIO (Wi-Fi) [version] 3.0 3.0 3.0 3.0
- SPI (802.15.4) 1

**Features**
- Micro access point [max connects] 16 16 16 16
- Wi-Fi direct • • • •
- WPA3 • • • •
- RF calibration in OTP • • • •
- Programmed MAC address • • • •
- Secure boot • • • •
- pin = antenna pin
cpb = 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/az

Wi-Fi channels
- 2.4 GHz: 1-14
- 5 GHz: 36-193

Bluetooth
- v5.2 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

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 (@ 1 mbps, 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
- 3.0 – 3.6 VDC

I/O power supply
- 3.3 VDC and 1.8 VDC

Certifications and approvals

Type approvals
- Europe (RED); US (FCC); Canada (ISED); Japan (Giteki)
- Other certifications: Taiwan, Korea, Australia, and Brazil are planned

Bluetooth qualification
- v5.2 (Bluetooth BR/EDR and Bluetooth Low Energy)

Support products

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

EVK-MAYA-W266 Evaluation kit for MAYA-W266

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

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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