

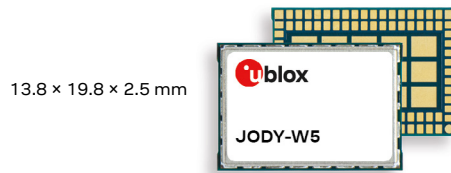
JODY-W5 series



Host-based compact automotive modules

Automotive grade modules supporting Wi-Fi 6 dual-band 1x1 and dual-mode Bluetooth 5.3

- Two-wheel vehicle applications
- Electric vehicle charging
- Telematic control units and head units
- In-vehicle infotainment, such as rear-seat entertainment
- Demanding environments up to +105 °C
- State-of-the-art security and encryption



13.8 × 19.8 × 2.5 mm

Product description

JODY-W5 host-based modules for automotive applications provide Wi-Fi 6 dual-band single-stream at up to 600 Mbit/s data rate and dual-mode Bluetooth 5.3 Classic and LE including isochronous channels for LE Audio at up to 3 Mbit/s (LE 2 Mbit/s). JODY-W5 modules require a host processor running Linux or Android. They connect to the host processor through various interfaces: SDIO for Wi-Fi, high speed UART for Bluetooth, and PCM or I2S for Bluetooth Classic audio. JODY-W5 has the established compact JODY footprint and pinout enabling easy migration, for instance from the JODY-W2 Wi-Fi 5 module.

JODY-W5 features two antenna pins (1 Wi-Fi, 1 Bluetooth), and is offered in automotive grade 3 with up to 85 °C and grade 2 with up to 105 °C operating temperature. It is certified by FCC, ISCED, RED and Bluetooth SIG (under development).

Other antenna configurations, LTE filters, and regional certifications can be offered based on market demand.

JODY-W5 modules are designed with the automotive qualified NXP AW611 chip. They undergo automotive qualification according to the u-blox qualification policy based on AEC-Q104 and are manufactured in line with ISO/TS 16949.

Key features

- Wi-Fi 6 (802.11ax) 2.4 and 5 GHz, 1x1 SISO
- Up to 480 Mbit/s throughput via SDIO 3.0
- Supporting MU-MIMO
- Wi-Fi 802.11d/e/h/i/k/r/u/v/w/mc/az
- Wi-Fi security: WPA3, WPA2, WAPI, AES
- Dual mode BT & BLE – Bluetooth 5.3
- BR/EDR 3Mbit/s; LE 2Mbit/s via High-Speed UART
- LE Long Range and LE Power Control
- Isochronous channels for LE Audio
- Coexistence management – internal (Wi-Fi / BT) and external via WCI-2 and PTA interfaces
- Secure boot and secure OTP
- Compact JODY form-factor 13.8 mm x 19.8 mm
- Automotive Grades 3 and 2, -40 °C to 85 / 105°C

	JODY-W562-00A	JODY-W562-01A	JODY-W562-21A
Grade			
Automotive	•	•	•
Professional			
Standard			
Radio			
Chip inside	NXP AW611		
Bluetooth qualification	v5.3		
Bluetooth profiles	HCI		
Bluetooth BR/EDR	•	•	•
Bluetooth Low Energy	•	•	•
Bluetooth output power conducted [dBm]	12	12	12
Wi-Fi output power conducted, 2 GHz [dBm]	20	20	20
Wi-Fi output power conducted, 5 GHz [dBm]	18	18	18
Wi-Fi IEEE 802.11 standards	Wi-Fi 6		
Wi-Fi channel width [MHz]	20, 40, 80		
LTE filter			•
Antenna type	2p	2p	2p
OS support			
Android / Linux drivers (from NXP)	•	•	•
Interfaces			
UART ^B	1	1	1
SDIO 3.0 ^W	1	1	1
PCM / I2S (Audio)	1	1	1
Features			
Temperature range up to [°C]	85	105	105
Micro Access Point [max connects]	16	16	16
Wi-Fi direct	•	•	•
WPA3	•	•	•
RF calibration in OTP	•	•	•
Programmed MAC address	•	•	•

B = For Bluetooth only 2p = 2 pins, 1 each for Wi-Fi and Bluetooth antenna
W = For Wi-Fi only

JODY-W5 series



Features

Wi-Fi standards	Wi-Fi 6 (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 (Bluetooth Low Energy and Bluetooth BR/EDR) Class 1 and 2 transmission Bluetooth Low Energy long range Bluetooth Low Energy Audio
Antenna	2 antenna pins
Wi-Fi 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 (@ 1mbit/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 op modes	Station (STA) Access Point (AP) Wi-Fi Direct P2P Combinations of STA, AP, P2P
Driver support	Free of charge drivers for Linux and Android RTOS (with NXP MCUXpresso)
Wi-Fi / Bluetooth coexistence	Internal co-existence mechanism, Central hardware packet traffic arbitration for external radio

Interfaces

Wi-Fi	SDIO 3.0 (4-bit, up to 208 MHz clock)
Bluetooth	High-speed UART, 4-wire PCM and I2S for Bluetooth audio
Coexistence	WCI-2 interface for external radio coexistence
Other interfaces	GPIOs

Package

Dimensions	13.8 × 19.8 × 2.5 mm
Mounting	Solder pins (LGA), 94 pins, additional large ground pins

Environmental data, quality, and reliability

Operating temperature	-40 °C to +85 °C / +105 °C
MSL-level	3
RoHS and REACH compliance	
Automotive qualification according to u-blox Qualification Policy based on AEC-Q104	

Electrical data

RF power supply	3.14 – 3.46 V DC
VIO power supply	3.3 V DC or 1.8 V DC

Certifications and approvals ¹

Type approvals	Europe (RED), US (FCC), Canada (ISED), Great Britain (UKCA) Taiwan, Korea, Australia, and Brazil upon demand
Bluetooth qualification ¹	v5.3 (Bluetooth BR/EDR and Bluetooth Low Qualification Energy)

¹ = Pending approvals

Support products

EVK-JODY-W562-00C	Evaluation kit for JODY-W562
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Product variants

JODY-W562-00A	Automotive grade 3 (-40 °C to +85 °C) module for Wi-Fi 6 / Bluetooth 5.3, under development
JODY-W562-01A	Automotive grade 2 (-40 °C to +105 °C) module for Wi-Fi 6 / Bluetooth 5.3, under development
JODY-W562-21A	Automotive grade 2 (-40 °C to +105 °C) module for Wi-Fi 6 / Bluetooth 5.3, LTE filter, 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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