

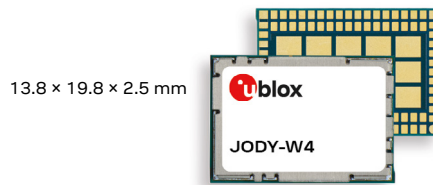
JODY-W4 series



Host-based automotive modules with Wi-Fi 6E (802.11ax) and Bluetooth 5.3

Automotive grade modules supporting tri-band Wi-Fi 6E (802.11ax) and Bluetooth LE Audio

- Wi-Fi 6E, tri-band, 2x2 MIMO, data rates up to 1.2 Gbit/s
- Multi-role Wi-Fi modes: AP+AP, AP+STA, AP+P2P, STA+P2P
- Dual-mode Bluetooth classic and Bluetooth Low Energy 5.3 with Bluetooth LE Audio
- Support for Bluetooth LE Angle-of-Arrival and Angle-of-Departure
- Automotive-grade temperature range -40 °C to +85 °C / +105 °C



Product description

The JODY-W4 series are host-based Wi-Fi 6E and Bluetooth 5.3 multiradio modules designed for a wide range of in-car applications, such as a telematics box with connectivity for inside and outside the cabin, in-car infotainment systems, and EV charging. The modules are designed and built to meet the high reliability and quality requirements of first-mount automotive components.

JODY-W4 modules support the newest Wi-Fi 6E standard (802.11ax) on 2.4, 5, and 6 GHz bands. Delivering up to 1.2 Mbit/s data throughout (PHY-layer), the modules can address the most demanding needs for automotive use-cases. JODY-W4 supports specific automotive requirements such as Zero-Wait DFS. JODY-W4 supports Bluetooth version 5.3, BR/EDR, and the full feature set of the Bluetooth LE 5.2 standard.

With a size of 13.8 x 19.8 mm, JODY-W4 are the most compact automotive-grade Wi-Fi 6 modules available in the market.

JODY-W4 modules are based on the AEC-Q100-qualified Infineon CYW89570 chip. They undergo extended automotive qualification according to AEC-Q104 and are manufactured in line with ISO/TS 16949.

Key features

- Wi-Fi 6E, triple-band, two streams, data rate up to 1.2 Gbit/s
- 2x2 MU-MIMO
- 20/40/80 MHz Wi-Fi channels
- Wi-Fi 802.11d/e/h/i/k/r/u/v/w/mc
- DFS Zero-Wait
- Supporting up to 12 stations in AP-mode
- Dual-mode Bluetooth version 5.3, supporting all v5.2 features, including long range PHY, AoA/AoD, and LE Audio
- Low-power Bluetooth LE wake-up (ignition-off use-case)
- Security: WPA/WPA2/WPA3 (Enterprise), WAPI STA, WEP

	JODY-W487-00A	JODY-W487-01A	JODY-W487-10A	JODY-W487-11A
Grade				
Automotive	•	•	•	•
Professional				
Standard				
Radio				
Chip inside	IFX 89570			
Bluetooth qualification	v5.3			
Bluetooth profiles	HCI			
Bluetooth BR/EDR	•			
Bluetooth Low Energy	•			
Wi-Fi IEEE 802.11 standards	Wi-Fi 6			
Wi-Fi channel [MHz]	20, 40, 80			
Bluetooth output power conducted [dBm]	12			
Wi-Fi output power conducted [dBm]	18			
Antenna type	3p			
OS support				
Android / Linux drivers (from Infineon)	•			
Interfaces				
UART ^B	1			
PCIe ^W	1			
PCM / I2S (Audio)	1			
Features				
LTE filter	• •			
Temperature range up to [°C]	85	105	85	105
Micro Access Point [max connects]	12			
Wi-Fi direct	•			
Wi-Fi 802.11mc	•			
WPA3	•			
RF calibration in OTP	•			
Programmed MAC address	•			

3p = 3 pins, 2 for Wi-Fi and 1 for Bluetooth antenna

B = For Bluetooth only
W = For Wi-Fi only



Features

Wi-Fi standards	Wi-Fi 6E (802.11a/b/g/n/ac/ax) 802.11ax on both 2.4 and 5/6 GHz bands 802.11d/e/h/i/k/r/u/v/w/mc
Wi-Fi channels	2.4 GHz: 1-13 5 GHz: 36-165 6 GHz: 1-233
Bluetooth	v5.3 (Bluetooth Low Energy and Bluetooth BR/EDR) Class 1 and 2 transmission Bluetooth Low Energy long range Bluetooth Low Energy Audio HCI UART
Antenna	Pin 1: Wi-Fi 2.4 / 5 / 6 GHz Pin 2: Wi-Fi 2.4 / 5 / 6 GHz Pin 3: Bluetooth
Output power	Wi-Fi: 18 dBm Bluetooth BR/EDR: 12/8 dBm Bluetooth Low Energy: 10 dBm

Security

	AES/TKIP hardware support
	WPA/WPA2/WPA3 (Enterprise), WAPI STA, WEP

Software features

RF parameters	Available in on-board OTP memory
MAC addresses	Available in on-board OTP memory
Wi-Fi modes	Station (STA) Access Point (AP) Wi-Fi Direct P2P Combinations of STA, AP, P2P
Driver support	Linux, Android

Interfaces

Wi-Fi	PCIe v3.0 (Gen2 speed), SDIO 3.0
Bluetooth	High-speed UART, 4-wire
Bluetooth Audio	PCM / I2S for classic audio
Other interfaces	GPIOs, MWS 2-wire coexistence

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
Automotive qualification according to u-blox Qualification Policy based on AEC-Q104	

Electrical data

Power supply	3.3 V
VIO power supply	1.8 V

Certifications and approvals ¹

Type approvals	Europe (RED); US (FCC); Canada (ISED) Other certifications are planned
Bluetooth qualification	v5.3

1 = Pending approvals

Support products

EVK-JODY-W487	Evaluation kit for all JODY-W487 variants
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Product variants

JODY-W487-00A	Wi-Fi 6E / Bluetooth module, automotive grade, 3 antenna pins, -40 °C to 85 °C
JODY-W487-01A	Wi-Fi 6E / Bluetooth module, automotive grade, 3 antenna pins, -40 °C to 105 °C
JODY-W487-10A	Wi-Fi 6E / Bluetooth module, automotive grade, 3 antenna pins, -40 °C to 85 °C, LTE filter
JODY-W487-11A	Wi-Fi 6E / Bluetooth module, automotive grade, 3 antenna pins, -40 °C to 105 °C, LTE filter

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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