

# JODY-W2 series



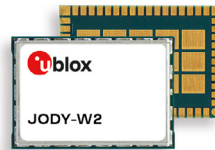
## Host-based multiradio modules with Wi-Fi and Bluetooth

**Smallest, most flexible automotive modules supporting Wi-Fi 802.11ac at 105 °C**

- Dual band Wi-Fi 2.4 GHz and 5 GHz 802.11a/b/g/n/ac
- Dual-mode Bluetooth 5.2 (Bluetooth BDR/EDR/Low Energy)
- Supports operation at 105 °C
- Simultaneous access point (AP), station (STA), or Wi-Fi Direct (P2P)
- Optimized for parallel operation of Wi-Fi and Bluetooth
- Supports WPA3 security protocol



13.8 × 19.8 × 2.5 mm



### Product description

JODY-W2 is a compact module based on the NXP 88W8987 AEC-Q100 compliant chipset. It enables Wi-Fi, Bluetooth EDR, and Bluetooth low energy communications, and is thus ideal for in-vehicle infotainment and telematics, industrial applications such as machine control, and other applications requiring high data rates. The module is built to meet the requirements for operation in very high temperatures, such as telematics systems in cars. JODY-W2 supports 1x1 single-antenna 802.11ac Wi-Fi operation, with data rates up to 433 Mbit/s. A second antenna is dedicated for Bluetooth operation.

JODY-W2 is a host-based module that connects to a host processor running a Linux or Android operating system via SDIO (for Wi-Fi) and high-speed UART (for Bluetooth) interfaces. Support for other operating systems such as QNX will also be available. The NXP Linux BSPs and MCUXpresso SDK include pre-integrated open-source drivers.

JODY-W2 undergoes extended automotive qualification according to AEC-Q104 and is manufactured in line with ISO/TS 16949. Radio type approvals are pending for the US, Europe, and Canada.

### Key features

- Wi-Fi 1x1 SISO IEEE 802.11ac data rates up to 433 Mbit/s (PHY, MCS9), beamforming
- Supports 802.11d/e/h (DFS)/i/k/r/u/v/w/ai
- Wi-Fi 20, 40, and 80 MHz channels
- Bluetooth and Bluetooth low energy v5.2; Bluetooth low energy 5.2 supporting 2 Mbit/s
- Extended temperature range -40 °C to +105 °C
- Chipset is compliant with AEC-Q100
- SDIO host interface
- PCM interface for Bluetooth audio
- Access point mode for up to 8 stations
- Hardware encryption engines: AES and TKIP
- Security: WPA, WAPI, WPA2, WPA3, WPS and Easy Connect

	JODY-W263-A	JODY-W263
<b>Grade</b>		
Automotive	•	
Professional		•
Standard		
<b>Radio</b>		
Chip inside	NXP 88W8987	NXP 88W8987
Bluetooth qualification	v5.2	v5.2
Bluetooth profiles	HCI	HCI
Bluetooth BR/EDR	•	•
Bluetooth low energy	•	•
Wi-Fi IEEE 802.11 standards	a/b/g/n/ac	a/b/g/n/ac
Wi-Fi 2.4 / 5 [GHz]	2.4 and 5	2.4 and 5
LTE filter	o	•
Max output power at antenna pin [dBm]	18	18
Antenna type	2p	2p
<b>OS support</b>		
Android / Linux (from u-blox)	•	•
<b>Interfaces</b>		
SDIO [version] (for Wi-Fi only)	v3	v3
UART (for Bluetooth only)	1	1
PCM (Bluetooth audio)	1	1
<b>Features</b>		
Micro Access Point [max connects]	8	8
AES hardware support	•	•
RF parameters in OTP memory	•	•
MAC addresses in OTP memory	•	•

2p = Two pins for Wi-Fi and Bluetooth antennas

o = On request



## Features

Wi-Fi standards	IEEE 802.11 a/b/g/n/ac IEEE 802.11 d/e/h/i/k/r/u/v/w/ai
Wi-Fi channels	2.4 GHz: 1-13 5 GHz: 36-165
Bluetooth	v5.2 (Bluetooth low energy and Bluetooth with EDR) class 1 and 2 transmission
Antenna	Antenna pin 1: 2.4 GHz and 5 GHz Wi-Fi Antenna pin 2: 2.4 GHz Bluetooth
Output power	Wi-Fi IEEE 802.11b: 18 dBm Wi-Fi IEEE 802.11a/g/n/ac: 16.5 dBm Bluetooth BDR: +10 dBm Bluetooth EDR: +9 dBm Bluetooth Low Energy: +8 dBm
Security	Hardware encryption engine: AES-CCMP, AES-GCMP, TKIP WPA/WPA2/WPA3 128-bit AES hardware support

## Software features

RF parameters	Available in on-board OTP memory
MAC addresses	Available in on-board OTP memory
Security	WEP WPA2 (CCMP, AES), WAPI WPA3 (OWE, SAE, CSNA, DPP)
Wi-Fi modes	Station (STA): Infrastructure & Direct mode AP: Supports up to 8 stations Wi-Fi direct
Driver support	Linux drivers in source code

## Interfaces

Wi-Fi	SDIO v3.0 (4-bit, 208 MHz)
Bluetooth	High-speed UART, 4-wire, up to 4 Mbit/s PCM audio, 8, 16 KHz sampling
Other interfaces	GPIOs

## Package

Dimensions	13.8 × 19.8 × 2.5 mm
Mounting	Solder pins (LGA), 60 pins, additional large ground pins

## Environmental data, quality & reliability

Operating temperature	-40 / -30 °C to +85 °C -40 °C to +105 °C
Automotive qualification according to u-blox Qualification Policy based on AEC-Q104	

## Electrical data

Power supply	2.8 V – 5.5 VDC
VIO power supply	1.8 VDC
I/O power supply	3.3 VDC or 1.8 VDC

## Certifications and approvals

Europe (ETSI RED), USA (FCC CFR part 15)<sup>1</sup>, Canada (ISED)<sup>1</sup>, Japan (Giteki)<sup>1</sup>

1 = Dynamic frequency selection: DFS local and DFS remote support

## Support products

EVK-JODY-W263	Evaluation kit for JODY-W263
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## Product variants

JODY-W263-00A	Automotive grade with 2 antenna pins, -40 °C to +85 °C
JODY-W263-01A	Automotive grade with 2 antenna pins, -40 °C to +105 °C
JODY-W263-00B	Professional grade with 2 antenna pins, -40 °C to +85 °C
JODY-W263-01B	Professional grade with 2 antenna pins, -40 °C to +85 °C, LTE filter
JODY-W263-10B	Professional grade with 2 antenna pins, -30 °C to +85 °C

## Further information

For contact information, see [www.u-blox.com/contact-u-blox](http://www.u-blox.com/contact-u-blox).

For more product details and ordering information, see the product data sheet.

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