

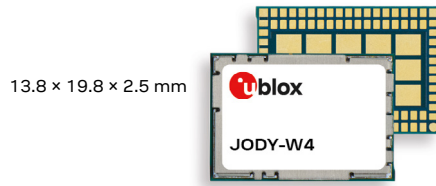
# JODY-W4 series



## 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
- 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 Gbit/s data rate (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 (under development).

With a size of 13.8 x 19.8 mm, JODY-W4 are the most compact automotive-grade Wi-Fi 6/6E modules available in the market. JODY-W4 modules are based on the AEC-Q100-qualified Infineon CYW89570 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 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/l/k/r/u/v/w
- DFS Zero-Wait
- Supporting up to 12 stations in AP-mode
- Dual-mode Bluetooth version 5.3, supporting v5.2 features, including long range PHY 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 |
|---|---------------|---------------|---------------|---------------|
| <b>Grade</b>                            |               |               |               |               |
| Automotive                              | •             | •             | •             | •             |
| Professional                            |               |               |               |               |
| Standard                                |               |               |               |               |
| <b>Radio</b>                            |               |               |               |               |
| 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 6E      |               |               |               |
| Wi-Fi channel [MHz]                     | 20, 40, 80    |               |               |               |
| Bluetooth output power conducted [dBm]  | 10            |               |               |               |
| Wi-Fi output power conducted [dBm]      | 18            |               |               |               |
| Antenna type                            | 3p            |               |               |               |
| <b>OS support</b>                       |               |               |               |               |
| Android / Linux drivers (from Infineon) | •             |               |               |               |
| <b>Interfaces</b>                       |               |               |               |               |
| UART <sup>B</sup>                       | 1             |               |               |               |
| PCIe <sup>W</sup>                       | 1             |               |               |               |
| SDIO 3.0 <sup>W</sup>                   | 1             |               |               |               |
| PCM / I2S (Audio)                       | 1             |               |               |               |
| <b>Features</b>                         |               |               |               |               |
| LTE filter                              | • •           |               |               |               |
| Temperature range up to [°C]            | 85            | 105           | 85            | 105           |
| Micro Access Point [max connects]       | 12            |               |               |               |
| Wi-Fi direct                            | •             |               |               |               |
| 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)<br>802.11ax on both 2.4 and 5/6 GHz bands<br>802.11d/e/h/i/k/r/u/v/w  |
| Wi-Fi channels  | 2.4 GHz: 1-13 (20 MHz)<br>5 GHz: 36-165 (20/40/80 MHz)<br>6 GHz: 1-233 (20/40/80 MHz)  |
| Bluetooth       | v5.3 (Bluetooth Low Energy and Bluetooth BR/EDR) Class 1 and 2 transmission<br>Bluetooth Low Energy long range<br>Bluetooth Low Energy Audio<br>HCI UART |
| Antenna         | Pin 1: Wi-Fi 2.4 / 5 / 6 GHz<br>Pin 2: Wi-Fi 2.4 / 5 / 6 GHz<br>Pin 3: Bluetooth   |
| Output power    | Wi-Fi: 18 dBm<br>Bluetooth BR/EDR: 10/5 dBm<br>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)<br>Access Point (AP)<br>Wi-Fi Direct P2P<br>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, WCI-2 2-wire coexistence  |

## 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](#).

## Package

|            |   |
|------------|---|
| Dimensions | 13.8 × 19.8 × 2.5 mm  |
| Mounting   | Solder pins (LGA), 94 pins,<br>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 <sup>1</sup>

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

<sup>1</sup> = Pending approvals

## Support products

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

## Product variants

|               |   |
|---------------|---|
| JODY-W487-00A | Wi-Fi 6E / Bluetooth module, automotive grade 3,<br>3 antenna pins, -40 °C to 85 °C<br>Under development              |
| JODY-W487-01A | Wi-Fi 6E / Bluetooth module, automotive grade 2,<br>3 antenna pins, -40 °C to 105 °C<br>Under development             |
| JODY-W487-10A | Wi-Fi 6E / Bluetooth module, automotive grade 3,<br>3 antenna pins, -40 °C to 85 °C, LTE filter<br>Under development  |
| JODY-W487-11A | Wi-Fi 6E / Bluetooth module, automotive grade 2,<br>3 antenna pins, -40 °C to 105 °C, LTE filter<br>Under development |

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