Product summary

**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 (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

**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 requires a host processor running a Linux or Android operating system. It connects to a host processor through SDIO (for Wi-Fi), or high-speed UART (for Bluetooth) interfaces. Support for other operating systems such as QNX will also be available. 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/s/h (DFS)/i/k/r/u/v/w/ai
- Wi-Fi 20, 40, and 80 MHz channels
- Bluetooth and Bluetooth low energy v5.0; Bluetooth low energy 5.0 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

**Radio**
- Chip inside: NXP 88W8987
- Bluetooth qualification: v5.0
- Bluetooth profiles: HCI
- Bluetooth BR/EDR
- Bluetooth low energy
- Wi-Fi IEEE 802.11 standards: a/b/g/n/ac
- Wi-Fi 2.4 / 5 [GHz]: 2.4 and 5
- LTE filter
- Max output power at antenna pin [dBm]: 18
- Antenna type: 2p
- OS support: Android / Linux (from u-blox)
- Interfaces: SDIO [version] (for Wi-Fi only), UART (for Bluetooth only), PCM (Bluetooth audio)
- Features: Micro Access Point [max connects], AES hardware support, RF parameters in OTP memory, MAC addresses in OTP memory

2p = Two pins for Wi-Fi and Bluetooth antennas
## JODY-W2 series

### Features

| Wi-Fi standards   | IEEE 802.11a/b/g/n/ac  
|                   | IEEE 802.11d/e/h/i/k/r/u/v/w/ai |
| Wi-Fi channels    | 2.4 GHz: 1-13  
|                   | 5 GHz: 36-165 |
| Bluetooth         | v5.0 (Bluetooth low energy and Bluetooth with EDR) class 1 and 2 transmission |
| 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: 13 dBm (w/o LTE filter)  
|                   | Bluetooth EDR: 10 dBm (w/o LTE filter) |
| 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 |

### 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 °C to +85 °C  
|                       | −40 °C to +105 °C |

Automotive qualification according to 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)  
Canada (ISED)  

1 = Pending approval  
2 = DFS master and DFS slave support

### Support products

| EVK-JODY-W263 | Evaluation kit for JODY-W263 |

### Product variants

JODY-W263-00A  Automotive grade with 2 antenna pins, 85 °C
JODY-W263-00B  Professional grade with 2 antenna pins, 85 °C
JODY-W263-01A  Automotive grade with 2 antenna pins, 105 °C

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