Product Summary

ODIN-W2 series

Stand-alone IoT gateway modules with Wi-Fi and Bluetooth®

S

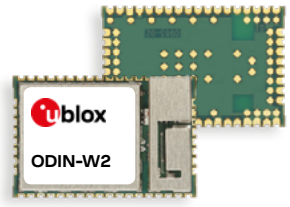
Standard

Professional

Automotive

The most versatile industrial IoT gateway modules

- Dual-band Wi-Fi and dual-mode Bluetooth®
- Wi-Fi station / access point
- Open CPU with Arm® Mbed™
- High speed RMII interface
- Wi-Fi enterprise security
- Multiple antenna options
- Global certification



14.8 × 22.3 × 4.7 mm

Product description

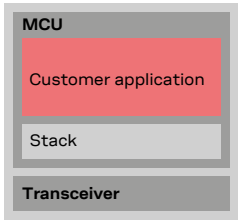
The ODIN-W2 is a compact and powerful stand-alone multi-radio module, designed for Internet-of-Things gateway applications. The module includes an embedded Bluetooth stack, Wi-Fi driver, IP stack, and an application for wireless data transfer, all configurable using AT commands. The wireless support includes dual-mode Bluetooth v4.0 (BR/EDR and low energy) and dual-band Wi-Fi (2.4 and 5 GHz bands).

The module supports point-to-point and point-to-multipoint configurations and can have concurrent Bluetooth and Wi-Fi connections. It can operate in Wireless Multidrop™ or Extended Data Mode for advanced multipoint capabilities. Operation in Point-to-Point Protocol (PPP) mode gives the host a UART-based IP interface for advanced use cases. The software provides support for RMII with a micro Access Point.

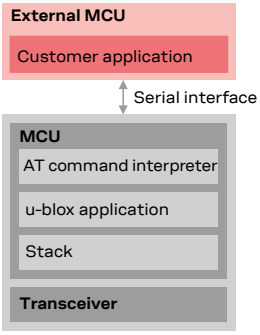
Using the EVK-ODIN-W262 Mbed evaluation kit, the module's integrated Cortex®-M4 with FPU can be accessed for integration of the customer application using Arm Mbed and to save external MCU, crystals, and PCB area in an end product.

Additionally, interfaces like SPI, I²C, CAN, and ADC are made available through the software libraries provided by the Arm Mbed development tool.

The module is professional grade with an extended temperature range and is radio type approved for multiple countries, which reduces the integration work and cost.



Mbed Enabled ODIN-W2



ODIN-W2

Product selector

Model	Radio									Interfaces						Features										Grade		
	Wi-Fi IEEE 802.11 (a/b/g/n)	Wi-Fi output power (dBm)	2.4 GHz channels 1-13	5 GHz channels 36-165	Bluetooth BR/EDR v2.1	Bluetooth Low Energy v4.0	Bluetooth output power (dBm)	Max range, in meters	Antenna type	UART	RMII	SPI	I²C	GPIO pins	AD converters (ADC)	Micro access point	Wi-Fi throughput (Mbit/s)	Wi-Fi Enterprise Security	Bluetooth throughput (Mbit/s)	Bluetooth profiles	AT command support	Low Energy Serial Port Service	Point-to-Point Protocol (PPP)	Extended Data Mode protocol	ATEX / IECEx certified	Standard	Professional	Automotive
ODIN-W260	•	18	•	•	•	•	14	300	U	•	•			23		•	20	•	1.3	SDPG	•	•	•	•	•		•	
ODIN-W262	•	15	•	•	•	•	11	250	I	•	•			23		•	20	•	1.3	SDPG	•	•	•	•	•		•	
ODIN-W260 *	•	18	•	•	•	•	14	300	U	•	•	•	•	29	3	•	20	•	1.3	SDPG					•		•	
ODIN-W262 *	•	15	•	•	•	•	11	250	I	•	•	•	•	29	3	•	20	•	1.3	SDPG					•		•	

* = For customer applications with Arm® Mbed™ / U = U.FL connector(s) for external antenna / S = SPP
D = DUN / P = PAN / G = GATT / I = Internal antenna

ODIN-W2 series

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Features

Wi-Fi standards	IEEE 802.11a/b/g/n IEEE 802.11d/e/i/h/r/w
Wi-Fi channels	2.4 GHz: 1-13 5 GHz: 36-165 (U-NII Band 1, 2, 2e, 3)
Wi-Fi maximum transfer rates	IEEE 802.11a/g: 54 Mbit/s IEEE 802.11b: 11 Mbit/s IEEE 802.11n: 130 Mbit/s (MIMO), 65 Mbit/s (SISO)
Bluetooth	v4.0 (Bluetooth low energy and Bluetooth BR/EDR)
Output power	Wi-Fi: 18 dBm EIRP Bluetooth BR/EDR: 14 dBm EIRP Bluetooth LE: 10 dBm EIRP
Sensitivity	Wi-Fi 2.4 GHz: -98 dBm EIRP Wi-Fi 5 GHz: -93 dBm EIRP Bluetooth BR/EDR: -93 dBm EIRP Bluetooth LE: -98 dBm EIRP
Antenna	Internal antenna or dual U.FL connectors for external antennas

u-blox connectivity software

Embedded software	u-blox Wi-Fi driver u-blox Bluetooth stack Serial port application Combined IPv4 and limited IPv6 stack Point-to-Point protocol Access point
Wi-Fi Security	WEP 64/128 WPA and WPA2 TKIP and AES/CCMP hardware accelerator LEAP, PEAP, EAP-TLS
Wi-Fi operational modes	µAP (DFS channels excluded) Station
Bluetooth profiles and services	u-blox Low Energy Serial Port Service GATT SPP DUN PAN roles: PANU and NAP Low energy roles: Central and Peripheral
Max. connections	7
Wireless Multidrop	For concurrent connections to Wi-Fi, Bluetooth BR/EDR and Bluetooth Low Energy
Extended Data Mode™	For individually controlled multipoint data channels
Point-to-Point Protocol (PPP)	For UART-based IP connectivity between host and module, enables individually controlled data channels and AT commands in parallel

Electrical data

Power supply	3.0 VDC - 3.6 VDC
I/O voltage	1.8 V

Package

Dimensions	14.8 x 22.3 x 4.7 mm (internal antenna) 14.8 x 22.3 x 3.2 mm (external antenna)
Mounting	Solder edge pins with castellations (visually inspectable)

Environmental data, quality & reliability

Operating temperature –40 °C to +85 °C

Interfaces

UART
RMII
GPIO
2 U.FL antenna connectors (external antenna version only)
SPI, I^2C, CAN, and ADC are available with Arm Mbed only

Certifications and approvals

Type approvals	Europe (ETSI R&TTE); US (FCC/CFR 47 part 15 unlicensed modular transmitter approval); Canada (IC RSS); Japan (MIC); Taiwan (NCC); China (SRRC); South Korea (KCC); Australia (ACMA); New Zealand; Brazil (Anatel); South Africa (ICASA)
Health and safety	EN 62479, EN 60950-1, IEC 60950-1
Medical Electrical Equipment	EN 60601-1-2
Bluetooth qualification	v4.0
Explosive atmospheres	ATEX and IECEx*

Support products

EVK-W262U	Evaluation kit with USB for ODIN-W262
EVK-ODIN-W2	Evaluation kit for ODIN-W2 (EVK-ODIN-W260 and EVK-ODIN-W262) Mbed Enabled IoT starter kit/evaluation kit with USB, Ethernet and pinlist for the ODIN-W2

Product variants

ODIN-W260	Module with dual U.FL connectors for external antennas, ATEX / IECEx certified*
ODIN-W262	Module with internal antenna, ATEX / IECEx certified*

* ATEX and IECEx variants available

Further information

For contact information, see www.u-blox.com/contact-us.

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

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