

NINA-W1 series

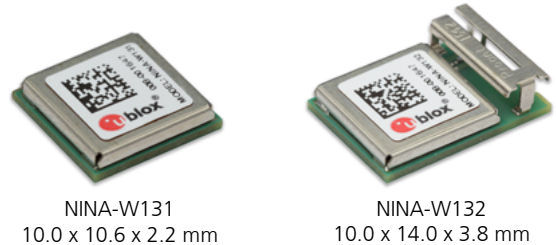
Standard Professional Automotive

SHORT RANGE

Ultra-compact stand-alone Wi-Fi modules

The most secure Wi-Fi IoT modules for industrial markets

- Ultra-low power Wi-Fi 802.11b/g/n
- Superior security functionality
- Small footprint
- Multiple antenna options
- Pin compatible with NINA Bluetooth modules
- Global certification



Product description

The NINA-W1 series ultra-compact stand-alone Wi-Fi modules integrate a microcontroller (MCU) for applications. The NINA-W1, supporting 802.11b/g/n in the 2.4 GHz ISM band, can act as a Wi-Fi station and a micro access point. It connects to a host system using either a UART or a high-speed RMII interface.

The NINA-W1 modules provide top grade security, thanks to secure boot, which ensures the module only boots up with original u-blox software. In addition, they will provide end-to-end security on the wireless link with the latest 802.11i (WPA2) standard and enterprise security to provide a secure connection to the infrastructure. This makes NINA-W1 ideal for critical IoT applications where security is important.

Intended applications include telematics, low power sensors, connected factories, connected buildings (appliances and surveillance), point-of-sales, and health devices.

Device design is simplified as developers can choose to either use an external antenna (NINA-W131) or take advantage of the internal antenna (NINA-W132). Additionally, the NINA-W1 modules are pin-compatible with the NINA-B1 Bluetooth low energy modules, thus offering maximum flexibility for development of similar devices offering different radio technologies.

NINA-W1 will initially be certified for the US, Europe, and Canada. Certifications for other countries are planned. The modules will be qualified for professional grade operation, supporting an extended temperature range of -40 °C to +85 °C.

Product selector*

Model	Radio				Interfaces			Features				Security			Grade				
	Wi-Fi IEEE 802.11 version	Wi-Fi output power EIRP [dBm]	Maximum Wi-Fi range [m]	Antenna type	UART	RMII	GPIO pins	Wi-Fi Station	Wi-Fi Micro access point	Point-to-Point Protocol [PPP]	Extended Data Mode [EDM] TM	WPA / WPA2	WPS	Enterprise security	Secure MAC [802.11w]	Secure boot	Standard	Professional	Automotive
NINA-W131	b/g/n	19	300	P	•	•	•	•	•	•	•	•	•	•	•	•			
NINA-W132	b/g/n	19	250	I	•	•	•	•	•	•	•	•	•	•	•	•			

* = Planned attributes for the NINA-W1 series

P = antenna pin

I = internal antenna

Features

Wi-Fi standards	802.11b/g/n 802.11d/e/i/h/w*
Wi-Fi channels	2.4 GHz channels 1-13
Wi-Fi max. transfer rates	802.11b: 11 Mbps 802.11g: 54 Mbps 802.11n: 150 Mbps (40 MHz channel bandwidth, single antenna)
Wi-Fi Output power	19 dBm radiated output power
Sensitivity	-98 dBm conducted sensitivity
Antenna	Internal antenna or antenna pin for connecting to the external antenna

Electrical data

Power supply	3.0 to 3.6 V
Power consumption	200 mA in active Wi-Fi mode (15 dBm) 2.5 µA in hibernate mode

u-blox connectivity software*

Connectivity software features	Wi-Fi station Wi-Fi micro access point
Security features	WPA/WPA2 WPS Enterprise security (EAP-TLS, LEAP, PEAP) Secure boot Secure MAC (802.11w)
Extended Data Mode™	For individually controlled multipoint data channels
Point-to-Point Protocol	For UART-based IP connectivity between the host and the module; enables individually controlled data channels and AT commands in parallel

Interfaces

NINA-W131 and NINA-W132	UART, RMII*, GPIO*
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* = Planned features

Package

Dimensions	NINA-W131: 10.0 x 10.6 x 2.2 mm NINA-W132: 10.0 x 14.0 x 3.8 mm
Weight	< 1 g
Mounting	Machine mountable Solder pins

Environmental data, quality & reliability

Operating temperature	-40 °C to +85 °C
Storage temperature	-40 °C to +85 °C
Humidity	RH 5-90% non-condensing

Certifications and approvals¹

Type approvals	Europe (ETSI R&TTE); US (FCC/CFR 47 part 15 unlicensed modular transmitter approval); Canada (IC RSS); Japan (MIC); Taiwan (NCC); 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	IEC 60601-1-2

¹ Pending approvals

Support products

EVK-NINA-W131	Evaluation kit for u-blox connectivity software module with antenna pin
EVK-NINA-W132	Evaluation kit for u-blox connectivity software module with internal antenna

Product variants

NINA-W131	With antenna pin and u-blox connectivity software
NINA-W132	With internal antenna and u-blox connectivity software

Further information

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

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