Product Summary

NINA-W15 series

S

Stand-alone multiradio modules

Standard

Professional

Automotive

Secure industrial multiradio made easy

- Simultaneous Wi-Fi 802.11b/g/n and Bluetooth dual-mode
- Superior security functionality with built-in secure boot
- Feature rich, out-of-the-box connectivity software
- Small footprint and multiple antenna options
- Pin compatible with other NINA modules
- Global certification

10.0 × 10.6 × 2.2 mm

10.0 × 14.0 × 3.8 mm

Product description

The NINA-W15 series stand-alone multiradio modules integrate Wi-Fi, Bluetooth BR/EDR and Bluetooth low energy in a compact form factor. The NINA-W15 modules support simultaneous operation on Wi-Fi and Bluetooth dual-mode and can thus serve as a gateway between Bluetooth and Wi-Fi or Ethernet. They can act as both Wi-Fi station and micro access point and connect to a host system using either a UART or a high speed RMII interface. Intended applications include telematics, industrial automation, connected buildings, wireless sensors, point-of-sales, and medical devices.

The modules have many security features embedded, including secure boot, which ensures that only authenticated software is run on the module.

The NINA-W15 modules are used with u-blox connectivity software, which is pre-flashed at delivery. This significantly simplifies integration in the host system and speeds up the time to market. The software provides a number of features that can be configured from the host using AT commands.

NINA-W15 modules are certified and approved for usage globally. They are qualified for professional grade operation, supporting an extended temperature range of –40 °C to +85 °C.

	NINA-W151	NINA-W152
Grade		
Automotive		
Professional	•	•
Standard		
Radio		
Bluetooth qualification	v4.2	
Bluetooth profiles	S, G	
Bluetooth BR/EDR	•	•
Bluetooth low energy	•	•
Bluetooth output power EIRP [dBm]	9	9
Wi-Fi 2.4 / 5 [GHz]	2.4	2.4
Wi-Fi IEEE 802.11 standards	b/g/n	b/g/n
Wi-Fi output power EIRP [dBm]	19	19
Max Wi-Fi range [meters]	500	400
Antenna type	p	i
Application software		
u-blox connectivity software	•	•
Interfaces		
UART	1	1
RMII	1	1
GPIO pins	13	13
Features		
AT command interface	•	•
Point-to-Point Protocol	•	•
Extended Data Mode	•	•
Low Energy Serial Port Service	•	•
Wi-Fi throughput [Mbit/s]	20	20
Maximum Bluetooth connections	5	5
Micro Access Point [max stations]	4	4
Wi-Fi enterprise security	•	•
Secure boot	•	•
WPA/WPA2	•	•

S = SPP G = GATT p = Antenna pin i = Internal antenna

NINA-W15 series

S

Features

Wi-Fi standards	802.11b/g/n 802.11d/e/i/h
Wi-Fi channels	2.4 GHz channels 1-13
Wi-Fi maximum transfer rates	802.11b: 11 Mbit/s 802.11g: 54 Mbit/s 802.11n: 72 Mbit/s
Wi-Fi output power	19 dBm EIRP
Wi-Fi Sensitivity (conducted)	–96 dBm conducted
Bluetooth output power	9 dBm EIRP (Bluetooth BR/EDR) 9 dBm EIRP (Bluetooth low energy)
Bluetooth sensitivity	-88 dBm conducted (Bluetooth BR/EDR 1 Mbit/s) -88 dBm conducted (Bluetooth low energy)
Antenna	Internal antenna or antenna pin for connecting to the external antenna

u-blox connectivity software

This section describes the NINA-W15 features integrated in the u-blox connectivity software. All NINA-W15 modules are delivered with this software and the module is configured using AT commands.

Wi-Fi features	Wi-Fi station Wi-Fi micro access point
Bluetooth features	SPP profile u-blox Low Energy Serial Port Service (SPS) GATT server and client Central and peripheral roles Up to 5 peripheral connections
Security features	WPA/WPA2 Enterprise security (EAP-TLS, PEAP) Secure boot Secure simple pairing
Extended Data Mode™	For individually controlled multipoint data channels
Point-to-Point Protocol	For UART-based IP connectivity between host and module, enables individually controlled data channels and AT commands in parallel
Configuration over air	Wireless transmission of AT commands to control the module
HW interfaces	UART, RMII, GPIO
Throughput	Bluetooth low energy: 350 kbit/s Bluetooth BR/EDR: 1 Mbit/s Wi-Fi: 20 Mbit/s
Support tools	s-center

Interfaces

NINA-W151 and NINA-W152	UART, RMII, GPIO

Package

Dimensions	NINA-W151: 10.0 x 10.6 x 2.2 mm NINA-W152: 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

Electrical data

Power supply	3.0 V to 3.6 V
Power consumption	Wi-Fi 15 dBm: 140 mA Blutooth BR/EDR: 147 mA Bluetooth low energy: 57 mA Idle mode: 36 mA

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), South Korea (KCC), Australia (ACMA) [1], New Zealand [1]; Brazil (Anatel) [1], South Africa (ICASA) [1]
Health and safety	EN 62479, EN 60950-1, IEC 60950-1
Medical Electrical Equipment	IEC 60601-1-2
Bluetooth qualification	v4.2 (Bluetooth BR/EDR and Bluetooth low energy)

1 = Pending approvals

Support products

EVK-NINA-W151	Evaluation kit for NINA-W151 module with antenna pin and external antenna
EVK-NINA-W152	Evaluation kit for NINA-W152 module with internal antenna

Product variants

NINA-W151	With u-blox connectivity software and antenna pin
NINA-W152	With u-blox connectivity software and internal antenna

Further information

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

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