Product summary
NORA-W36 series

Stand-alone dual-band Wi-Fi modules with Bluetooth Low Energy

S

Standard

Professional

Automotive

Compact dual-band Wi-Fi and Bluetooth modules with u-connectXpress

- Dual-band Wi-Fi 4 and Bluetooth Low Energy 5.3
- u-connectXpress software for accelerated time to market
- Wide range of embedded security features
- Small footprint, multiple antenna options, pin compatible with other NORA modules
- Global certification

10.4 × 14.3 × 1.9 mm

NORA-W361

NORA-W366

Product description

NORA-W36 series are small, stand-alone, dual-band Wi-Fi and Bluetooth Low Energy modules, perfect for integrating wireless connectivity in end products. With Wi-Fi 4 (802.11a/b/g/n) in the 2.4 and 5 GHz bands it can be a Wi-Fi station or an access point. NORA-W36 can assume Bluetooth peripheral and central roles, or both simultaneously. It can be a GATT client or server.

With the u-connectXpress software pre-flashed to the modules, end-product integration is simplified, and time-to-market reduced. The host controller configures the wireless communication using high-level AT commands without need for expertise in Wi-Fi and Bluetooth protocols stacks.

The software comes with a TCP/IP stack that allows for both point-to-point as well as point-to-multipoint use cases.

For secure communication with cloud-based applications and services, support for TLS encryption and MQTT protocols is provided. NORA-W36 has secure authentication methods like WPA2/WPA3, Wi-Fi enterprise security, and Bluetooth LE secure connections. Many other features are also supported, all accessible through the AT command interface.

The modules are suited to a wide range of applications, including industrial automation, smart buildings and homes, smart cities, metering and utilities, healthcare, and EV charging. NORA-W366 has an internal PCB antenna to provide a robust low-profile solution with high performance and an extensive range, while NORA-W361 has a module pin to connect to an external antenna of choice. The NORA-W36 series will be globally certified for use with the internal antenna or a range of external antennas, reducing time, cost and effort for customers integrating Wi-Fi and Bluetooth Low Energy in their designs.

NORA-W36 modules have the same size and position of critical pads and interfaces as other NORA modules. This offers maximum flexibility for the development of similar end-devices with different radio technologies. The modules support operation in an extended temperature range of −40°C to +105°C and are qualified for professional grade applications.

	NORA-W361	NORA-W366
Grade		
Automotive		
Professional	•	•
Standard		
Radio		
Chip inside	Realtek RTL8720DF	
Bluetooth qualification	v5.3	v5.3
Bluetooth Low Energy	•	•
Bluetooth output power EIRP [dBm]	TBD	TBD
Antenna type (see footnotes)	pin	pcb
Wi-Fi 2.4 / 5 [GHz]	2.4 and 5	2.4 and 5
Wi-Fi IEEE 802.11 standards	a/b/g/n	a/b/g/n
Wi-Fi output power EIRP [dBm]	TBD	TBD
Max Wi-Fi range [meters]	TBD	TBD
Application software		
u-connectXpress	•	•
Interfaces		
UART	•	•
Features		
AT command interface	•	•
Access Point [max stations]	5	5
TCP/IP stack	•	•
MQTT client	•	•
Wi-Fi throughput [Mbit/s] *	TBD	TBD
WPA2/WPA3	•	•
Wi-Fi enterprise security	•	•
End-to-end security (TLS)	•	•
Maximum Bluetooth connections	3	3
Low Energy Serial Port Service	•	•
Secure boot	•	•

pin = Antenna pin
pcb = Internal PCB antenna

* = User data throughput over UART

u-blox

NORA-W36 series

Features

Wi-Fi standards	802.11a/b/g/n
Wi-Fi channels	2.4 GHz: 1-13 (depending on region) 5 GHz: 36-165, U-NII Band 1, 2, 2e, 3 (depending on region)
Wi-Fi maximum transfer rates	802.11a/g: 54 Mbit/s 802.11b: 11 Mbit/s 802.11n: 150 Mbit/s
Output power (conducted)	Wi-Fi 2.4 GHz: 18 dBm Wi-Fi 5 GHz: 16 dBm Bluetooth Low Energy: 10 dBm
Sensitivity (conducted)	Wi-Fi 2.4 GHz: –98 dBm Wi-Fi 5 GHz: –93 dBm Bluetooth Low Energy: –97 dBm
Bluetooth	5.3 Bluetooth Low Energy
Bluetooth PHY rate	1 Mbit/s, 2 Mbit/s
Antenna	Internal PCB antenna or antenna pin for connecting to an external antenna

Electrical data

Power supply	3.3 V (±10%)
Power consumption	TBD

u-connectXpress software

This section describes the NORA-W36 features integrated in the u-connectXpress software. All modules are delivered with this software pre-flashed and configured using AT commands.

Wi-Fi features	Wi-Fi station Wi-Fi access point
Bluetooth features	u-blox Low Energy Serial Port Service (SPS) GATT server and client Simultaneous central and peripheral roles Central role with up to 3 simultaneous links
Security features	WPA2/WPA3 Enterprise security (EAP-TLS, PEAP) End-to-end security with TLS 1.2/1.3 Protected Management Frames (PMF) Secure boot Secure simple pairing Bluetooth LE secure connections
IoT features	TCP/UDP client/server MQTT client DHCP client/server
Throughput (user data)	Bluetooth Low Energy: TBD Wi-Fi: TBD
Support tools	s-center

Package

Dimensions	10.4 x 14.3 x 1.9 mm
Weight	< 1 g
Mounting	Machine mountable solder pads

Environmental data, quality & reliability

Operating temperature	–40 °C to +105 °C
Storage temperature	–40 °C to +105 °C
Humidity	RH 5-90% non-condensing
RoHS directive	RoHS 2 and RoHS 3

Certifications and approvals [1]

Type approvals	Europe (ETSI RED), Great Britain (UKCA), 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 62368-1, IEC 62311
Medical Electrical Equipment	IEC 60601-1-2
Bluetooth qualification	Low Energy 5.3, qualification pending

1 = All certifications are pending

Support products

EVK-NORA-W361	Evaluation kit for NORA-W361 module with antenna pin
EVK-NORA-W366	Evaluation kit for NORA-W366 module with internal PCB antenna

Product variants

NORA-W361	Multiradio module with u-connectXpress and antenna pin
NORA-W366	Multiradio module with u-connectXpress and internal PCB antenna

Further information

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

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