Product summary

NORA-W5 u-connectXpress

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Stand-alone Wi-Fi™ 6 multiradio modules

Standard

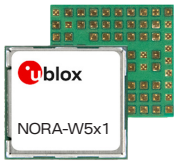
Professional

Automotive

Compact Wi-Fi 6 and Bluetooth® LE modules with AT-command connectivity

- Single- and dual-band Wi-Fi 6 and Bluetooth LE
- u-connectXpress software for accelerated time to market
- High-level AT command interface - no wireless stack expertise required
- Integrated TCP/IP stack with cloud-ready protocols
- Internal and external antenna options
- Pin compatible with other NORA modules and global certification

10.4 x 11.2 x 1.9 mm



10.4 x 14.3 x 1.9 mm

Product description

The NORA-W56/W57 series consists of small, stand-alone Wi-Fi 6 and Bluetooth® LE connectivity modules designed for effortless integration of wireless functionality into end products. The modules are controlled by an external host processor using the u-connectXpress software and a high-level AT command interface.

u-connectXpress simplifies product development by eliminating the need for in-depth knowledge of Wi-Fi and Bluetooth protocol stacks. All wireless connectivity, security, and networking functions are handled by the module, enabling fast and robust integration with a wide range of host MCUs and processors.

The software includes an integrated TCP/IP stack supporting both point-to-point and point-to-multipoint connectivity. Secure communication with cloud services is supported through TLS-protected TCP, MQTT, and HTTP protocols, alongside WPA2/WPA3, Wi-Fi enterprise security, and Bluetooth LE secure connections.

SPI host interface support enables significantly higher data throughput compared to UART-based connectivity, supporting data-intensive applications such as gateways, displays, and performance-critical cloud connectivity.

NORA-W5 u-connectXpress enables Matter application offloading by managing the connectivity functionality for Matter applications, simplifying host design and accelerating development of Matter-enabled end-products using standardized and secure connectivity services.

The NORA-W5 u-connectXpress series supports both internal PCB antennas and antenna pin variants, and is globally certified, reducing time, cost, and effort for regulatory approvals. Typical applications include industrial automation, smart buildings and homes, Matter-based smart devices, gateways, healthcare equipment, and EV infrastructure.

	NORA-W561	NORA-W566	NORA-W571	NORA-W576
Grade				
Automotive				
Professional	•	•	•	•
Standard				
Radio				
Chip inside	CC3501E		CC3551E	
Qualified against Bluetooth Core	5.4	5.4	5.4	5.4
Bluetooth LE	•	•	•	•
Bluetooth output power [dBm]	18	18	18	18
Wi-Fi bands [GHz]	2.4		2.4 and 5	
Wi-Fi IEEE 802.11 standards	b/g/n/ax		a/b/g/n/ax	
Wi-Fi output power [dBm]	18	18	18	18
Antenna type (see footnotes)	pin	pcb	pin	pcb
Application software				
u-connectXpress	•	•	•	•
Interfaces				
UART	•	•	•	•
SPI	•	•	•	•
Application programming Interface				
AT-commands	•	•	•	•
C API via u-connectClient	•	•	•	•

pin = Antenna pin
pcb = Internal PCB antenna

NORA-W5 u-connectXpress

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Features

Wi-Fi standards	IEEE 802.11 b/g/n/ax (NORA-W56x) IEEE 802.11 a/b/g/n/ax (NORA-W57x)
Wi-Fi channels	2.4 GHz channels 1-13 5 GHz channels 36-64, 100-169 (depending on region)
Wi-Fi PHY rate	86 Mbps (MCS 7)
Bluetooth	Bluetooth LE
Bluetooth PHY rate	125 kbps, 500 kbps, 1 Mbps, 2 Mbps
Output power (conducted)	Wi-Fi 2.4 GHz: 18 dBm Wi-Fi 5 GHz: 18 dBm Bluetooth: 18 dBm
Sensitivity (conducted)	Wi-Fi 2.4 GHz: -99 dBm (1 Mbps DSSS) Wi-Fi 5 GHz: -92 dBm (6 Mbps OFDM) Bluetooth: -102 dBm (125 Kbps) Bluetooth: -98 dBm (1 Mbps)
Antenna	Internal PCB antenna or antenna pin for connecting to an external antenna

Electrical data

Power supply	3.3 V and 1.8 V
Power consumption	Wi-Fi 2.4 GHz RX: 60 mA Wi-Fi 2.4 GHz TX, 18 dBm: 430 mA Wi-Fi 5 GHz RX: 96 mA Wi-Fi 5 GHz TX, 18 dBm: 490 mA Bluetooth LE RX: 65 mA Bluetooth LE TX @ 0 dBm: 170 mA

u-connectXpress

This section describes the NORA-W5 features integrated in the u-connectXpress software. All modules are delivered with this software pre-flashed and configured using AT commands.

Wi-Fi	Wi-Fi station Wi-Fi access point
Bluetooth	Low Energy Serial Port Service (SPS) GATT server and client Simultaneous central and peripheral roles
IoT & networking	TCP/UDP client/server MOTT client HTTP client DHCP client/server NTP
Security	WPA2/WPA3 Wi-Fi enterprise security End-to-end security with TLS Secure boot and secure updates

Package

Dimensions	NORA-W561/W571: 10.4 x 11.2 x 1.9 mm NORA-W566/W576: 10.4 x 14.3 x 1.9 mm
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
RoHS directive	RoHS 2 and RoHS 3

Certifications and approvals [1]

Type approvals	Europe (RED), Great Britain (UKCA), US (FCC), Canada (ISED), Japan (MIC), Taiwan (NCC), South Korea (KCC), Australia (ACMA), New Zealand
Health and safety	EN 62479, EN 62368-1, IEC 62311
Medical Electrical Equipment	IEC 60601-1-2
Bluetooth	Qualified against Bluetooth Core 5.4

1 = Certifications are pending

Support products

EVK-NORA-W571	Evaluation kit for NORA-W5 u-connectXpress series with antenna pin
EVK-NORA-W576	Evaluation kit for NORA-W5 u-connectXpress series with internal PCB antenna

Product variants

NORA-W561-00B	Single-band Wi-Fi, Bluetooth LE, network co-processor with u-connectXpress and antenna pin.
NORA-W566-00B	Single-band Wi-Fi, Bluetooth LE, network co-processor with u-connectXpress and internal PCB antenna.
NORA-W571-00B	Dual-band Wi-Fi, Bluetooth LE, network co-processor with u-connectXpress and antenna pin.
NORA-W576-00B	Dual-band Wi-Fi, Bluetooth LE, network co-processor 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.