

IoT explorer kit

Platform for end-to-end IoT proof-of-concept

- Multipurpose explorer kit for IoT applications
- LTE-M/NB-IoT, Wi-Fi, Bluetooth®, GNSS
- Designed for use with u-blox services
- Embedded SIM with MQTT Anywhere trial subscription
- Dual-core Arm® Cortex®-M33 application MCU
- Application and cloud software examples

Product description

The XPLR-IOT-1 explorer kit provides a complete platform for developing various proof-of-concept IoT applications. The kit includes everything needed for an out-of-the-box experience. Its embedded SIM with u-blox MQTT Anywhere and MQTT Now trial accounts enable connection to the Thingstream IoT service delivery platform. With only a few initial manual steps, the kit can publish data to the cloud and demonstrate a complete end-to-end solution.

The device supports Wi-Fi, Bluetooth, and LTE-M/NB-IoT cellular communication. A dedicated low-power GNSS receiver provides accurate positioning data. It has integrated sensors for temperature, humidity, pressure, ambient light, magnetometer, gyroscope, accelerometer, and battery gauge. With the embedded SIM, the device is pre-configured for cellular networks in many countries across the globe. Alternatively, the user can leverage the available nano SIM slot to connect with a network operator of choice. When connecting with the u-blox MQTT Anywhere service, the XPLR-IOT-1 kit uses the MQTT-SN protocol for power and data-efficient communication to the Thingstream platform. If Wi-Fi is preferred, the built-in Wi-Fi module and the u-blox MQTT Now service offers an alternate route to the cloud.

The XPLR-IOT-1 kit comes with pre-flashed application software, also available as source code. It collects sensor and positioning data from the device for publication to the Thingstream platform, where the Data Flow Manager receives and processes the data. The available Node-RED programming example shows a quick and easy dashboard visualization of the data.

The device is controlled with the Nordic Semiconductor nRF5340 wireless System-on-Chip (SoC) in the NORA-B1 wireless MCU module. It features a dual-core Arm Cortex-M33 MCU with up to 128/64 MHz clock frequency and 512 + 64 kB RAM memory and 1024 + 256 kB flash. The SoC can host custom applications developed with the Nordic nRF Connect SDK or the Zephyr development environment.

Related documentation

Visit www.u-blox.com/product/xplr-iot-1

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8 x 14 x 3 cm

Communication and positioning features

Cellular	SARA-R510S: LTE-M, and NB-IoT
Wi-Fi	NINA-W156: Wi-Fi 4, 2.4 GHz
Bluetooth	NORA-B106: v5.2 Low Energy
Satellite positioning	MAX-M10S: BeiDou, Galileo, and GLONASS, GPS

Electrical data and interfaces

Power supply	USB or embedded battery
Application MCU	Dual-core Arm Cortex M33, 128/64 MHz
Communication interface	UART over USB
Debug interface	SWD
I2C connector	Sparkfun Qwiic®
Current measurement	Jumpers on MAX-M10, NINA-W15, NORA-B1, SARA-R5, and the full system
Sensors	Temperature, humidity, pressure, ambient light, magnetometer, battery gauge, gyroscope, and accelerometer
Antennas	LTE, Bluetooth, Wi-Fi, GNSS, NFC

Product variants

XPLR-IOT-1	IoT explorer kit with cellular, Wi-Fi, Bluetooth, GNSS technology. MQTT Anywhere and MQTT Now communication services.
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Kit includes

- Application board in plastic casing
- Application software example in source code
- Embedded SIM with global roaming
- Three months free MQTT Anywhere subscription
- Thingstream data flow example
- Node-RED dashboard example

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.