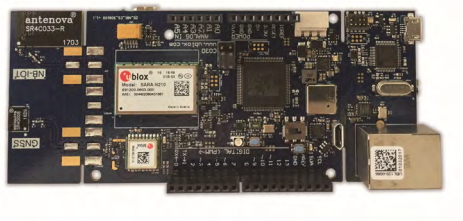
Product Summary

C030 Application Board

LTE Cat 1, Cat M1, NB-IoT and 2G/3G mbed-enabled IoT starter kit

Highlights

- Quick prototyping with Arm® Mbed™ on integrated host MCU
- Integrated GNSS for simple testing of positioning applications
- Ideal for ultra low power designs and compact form factors
- Out-of-the-box international eUICC roaming
- Easily capture sensor data with Arduino® shields
- Compatible with u-blox Bluetooth and Wi-Fi modules
- u-track* demonstration software for low power tracking



Product description

The u-blox C030 application board is an out-of-the-box rapid prototyping solution for IoT applications supporting new LPWAN (low power wide area network) cellular technologies, such as LTE Cat 1, Cat M1, NB-IoT, and existing 2G/3G networks. The board is powered by an integrated, Arm® Mbed™ compatible Cortex-M4 host MCU with 1 MB FLASH and 256 kB RAM, leaving ample space for software development and debugging.

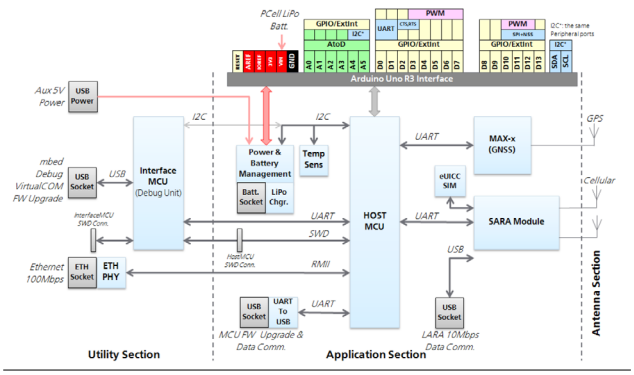
With its ultra low power design, it is ideal for applications that require long battery life in a compact form factor. It also enables straight forward development of location-aware applications based on u-blox GNSS technology. Further, it includes out-of-the-box international eUICC roaming capabilities via Jersey Telecom.

The board is compatible with u-blox Bluetooth and Wi-Fi modules, as well as Arduino® shields to capture data from sensors, drive actuators, and work with battery solutions. Integrated temperature sensor and coulomb counter are included on the board.

Kit includes

C030-R410M	IoT starter kit with SMA connectors, External cellular antenna, External GNSS antenna, Mini SIM connector
C030-R3121, C030-U201	IoT starter kit with SMA connectors, External cellular antenna, External active GNSS antenna, eUICC with 50 MB data traffic/3-month subscription with JT included and ready for use
C030-N211	IoT starter kit with integrated antennas

Block diagram (C030-SARA-U201-0 variant)



Interfaces and electrical data

A standard header connector with 6 analog inputs, 8 PWM capable outputs, 22 GPIOs, 1 SPI, 1 UART, 1 I²C

C030-R410M	SMA connector for external GNSS antenna SMA connector for external cellular antenna mini SIM connector
C030-R3121, C030-U201	SMA connector for external GNSS antenna SMA connector for external cellular antenna SIM: eUICC
C030-N211	SMA connector for external GNSS antenna SMA connector for external cellular antenna mini SIM connector
Ethernet	RJ45 connector, 10/100 Mbit/s
USB	Mini USB with Mbed Interface (ST-Link, serial port, Mbed ISP)
Power supply	Header connector pins or via extra USB connection for power boost
IO voltage	3.3 V

Software

Quickly prototype in an Arm® Mbed™ OS5 software environment within a large eco-system of free peripheral and module libraries that are built on top of the SDK. The mbed.org online compiler is all you need to write and compile embedded software. Create a program in your private workspace, then compile and download the binary to the Mbed device.

Online build environment and support forum	
Support libraries	Cellular modem driver, embedded GPS driver stack, TCP/IP stack with standard sockets and examples
Visit Mbed links	Go to "os.mbed.com/platforms" and select Platform Vendor = u-blox
u-track *	Software tool replicating a low power tracking app.

* u-track software only works with the C030-R410M variant.

Product variants

Each product variant includes GNSS capabilities and a Cortex M4 MCU.

C030-R410M-0	Mbed enabled IoT starter kit with SARA-R410M (LTE Cat M1 / NB1) and ZOE-M8B GNSS modules
C030-R3121-0	Mbed enabled IoT starter kit with LARA-R3121 (LTE Cat 1) with integrated GNSS
C030-U201-0	Mbed enabled IoT starter kit with SARA-U201 (HSPA / GSM) and MAX-M8C GNSS modules
C030-N211-0	Mbed enabled IoT starter kit with SARA-N211 (LTE Cat NB1) and MAX-M8C GNSS modules

Further information

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

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

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