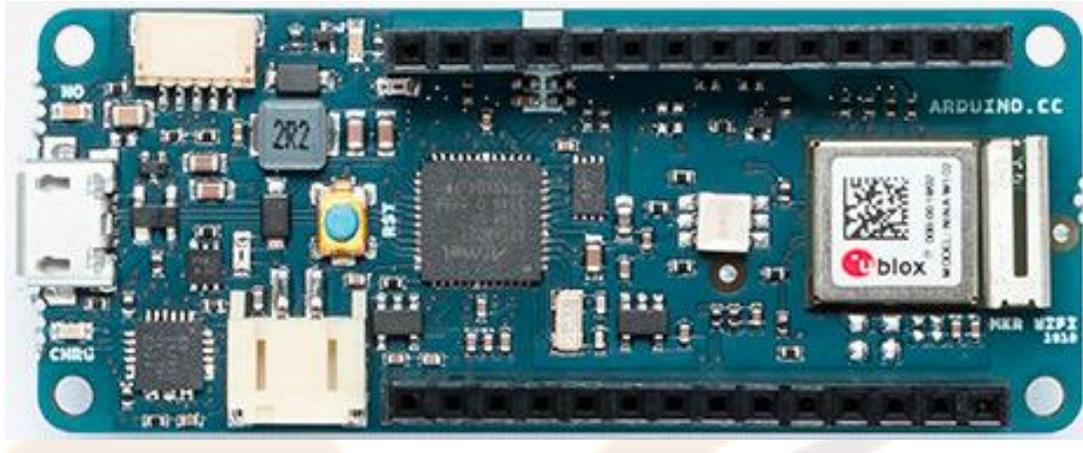


The Arduino MKR WIFI 1010



The MKR WIFI 1010 is a significant improvement on the MKR 1000 WIFI. It's equipped with an ESP32 module made by U-BLOX. This board aims to speed up and simplify the prototyping of WIFI based IoT applications thanks to the flexibility of ESP32 module and it's low power consumption.

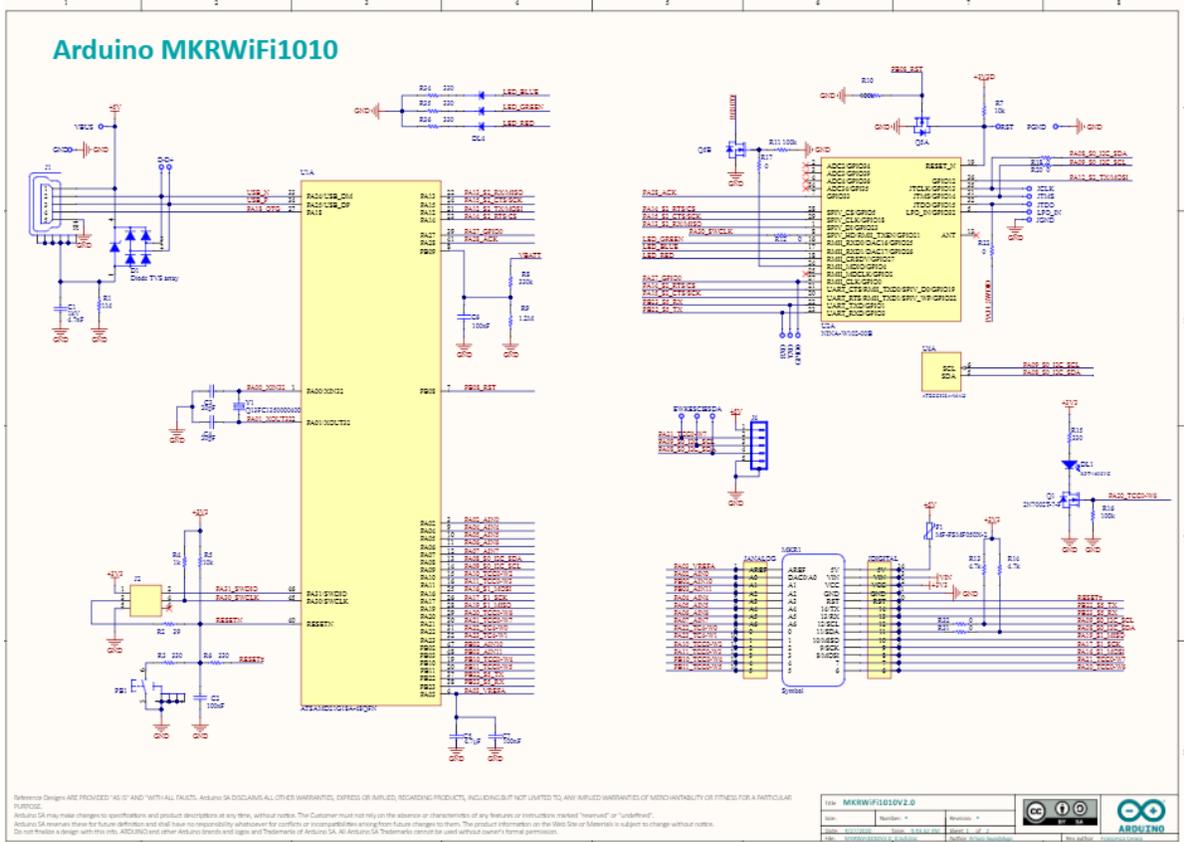
FEATURES:

- The MKR WIFI 1010 includes 32- bit computational power, the usual rich set of I/O interfaces, and low power Wi-Fi with Cryptochip for secure communication using SHA-256 encryption
- It offers ease of use Arduino Software (IDE) for the emerging IoT battery-powered projects in a compact form.
- It's USB port can be used to supply power (5V) to the board. It has a Li-Po charging circuit that allows the Arduino MKR WiFi 1010 to run on battery power or an external 5 volt source, charging the Li-Po battery while running on external power.

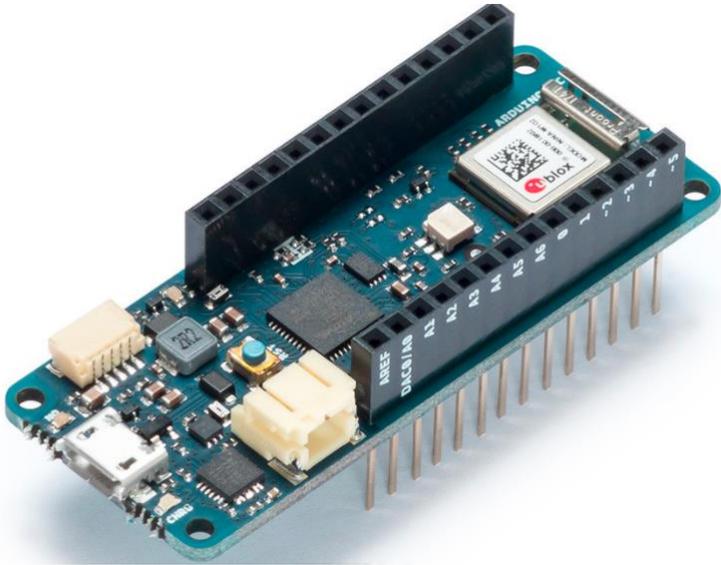
SPECIFICATIONS:

- Microcontroller: SAMD21 Cortex- M0+32 bit low power ARM MCU
- Radio module: U- Blox NINA-W 102
- Board power supply (USB/VIN): 5v
- Secure element: ATECC508
- Supported battery: Li-Po single cell, 3.7V,1024 mAh minimum
- Circuit operating voltage: 3.3V
- Digital I/O Pins: 8
- PWM Pins: 13 (0,...8,10,12,18/A3, 19/A4)
- UART: 1
- SPI: 1
- I2C: 1
- Analog input pins:7 (ADC 8/10/12 bit)
- Analog output pins: 1 (DAC 10 bit)
- External interrupts: 8 (0,1,4,5,6,7,8,16/A1,17/A2)
- DC current per I/O pin: 7 mA
- CPU flash memory: 256 KB (internal)
- SRAM: 32 KB
- EEPROM: no
- Clock speed: 32.768 kHz (RTC),48 MHz
- LED_BUILTIN: 6
- USB: Full-speed USB device and embedded host
- Size: 61.5mm x 25mm
- Weight: 32 gm

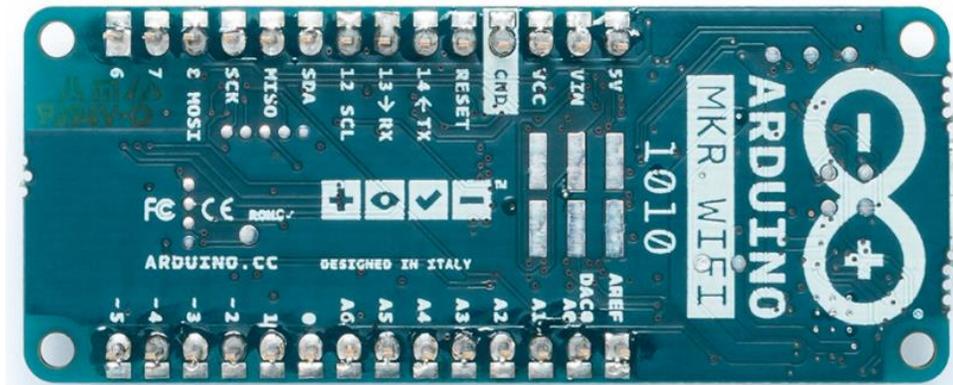
SCHEMATIC DIAGRAM OF ARDUINO MKR WIFI 1010:



- It measures 61.4mm x 25mm and only weighs 32 grams.
- Power: The Arduino MKR WiFi 1010 can be powered with an 5V input, or with a Micro-USB connector.



- It operates at 3.3V. This is a very important distinction with Arduino Uno, which operates at 5V. 3.3V is the maximum voltage the I/O pins can support.
- Processor: The Arduino MKR WiFi 1010 board comes with a low power SAMD21 Cortex-M0+ 32-bit ARM processor. The processor is 32 bit. The Arduino Uno board features the ATmega328 processor, which is 8 bit.
- Memory: The board has 256KB of Flash Memory and 32KB of SRAM.



- I/O Pins: The Arduino MKR WiFi 1010 provides 8 Digital I/O pins, pins 0 - 7. It has 7 Analog Input pins (ADC 8/10/12 bit), pins A0 / A6 and 1 Analog Output pin (DAC 10 bit), the pin identified with DAC0/A0. The DC current per I/O pin is 7mA. Pins 0, 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 18, 19 are PWM pins

- I/O Connectivity: The Arduino MKR WiFi 1010 provides a WiFi module, the WiFi U-BLOX NINA-W10 Series Low Power 2.4GHz. It supports the protocol 802.11 b/g/n and also provides Bluetooth Low Energy (BLE).
 - Security: The board comes with a crypto chip that enables SHA-256 secure connections, the ATECC508.
 - Li-Po charging circuit: When charging the board through the Micro-USB port, the Arduino MKR WiFi 1010 can charge an external battery through its Li-Po charging circuit. The battery needs to be a Li-Po Single Cell, 3.7V, 700mAh minimum. When the USB power is disconnected, the device will switch to the external battery automatically.
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