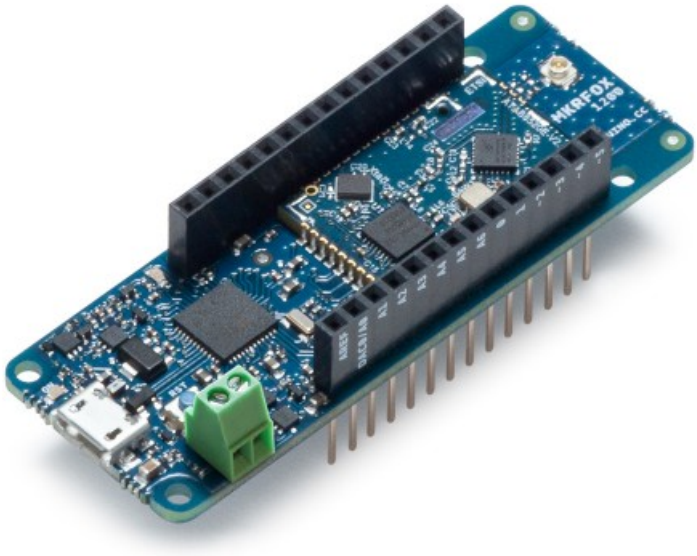
ARDUINO® MKR FOX 1200

Code: ABX00014

MKR FOX 1200 is a powerful board that combines the functionality of the Zero and SigFox connectivity. It is the ideal solution for makers wanting to design IoT projects with minimal previous experience in networking having a low power device. You'll get 2-year free subscription to Sigfox network with the board (for up to 140 messages per day), as well as free access to Spot'it geolocation service that allows you to track the board without GPS or any extra hardware.



Arduino® MKR FOX 1200 has been designed to offer a practical and cost effective solution for makers seeking to add SigFox connectivity to their projects with minimal previous experience in networking. It is based on the Atmel SAMD21 and a ATA8520 SigFox module.

The design includes the ability to power the board using two 1.5V AA or AAA batteries or external 5V. Switching from one source to the other is done automatically. A good 32 bit computational power similar to the Zero board, the usual rich set of I/O interfaces, low power SigFox communication and the ease of use of the Arduino Software (IDE) for code development and programming. All these features make this board the preferred choice for the emerging IoT battery-powered projects in a compact form factor. The USB port can be used to supply power (5V) to the board. The Arduino MKR FOX 1200 is able to run with or without the batteries connected and has limited power consumption.

Warning: Unlike most Arduino & Genuino boards, the MKRFOX1200 runs at 3.3V. The maximum voltage that the I/O pins can tolerate is 3.3V. Applying voltages higher than 3.3V to any I/O pin could damage the board. While output to 5V digital devices is possible, bidirectional communication with 5V devices needs proper level shifting.

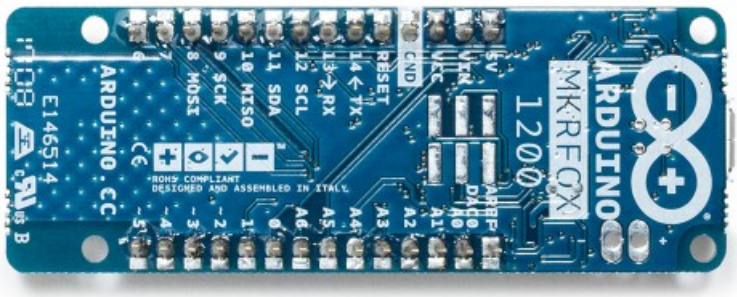
Check your area coverage on the SigFox website

This datasheet has been downloaded from http://www.digchip.com at this page



TECH SPECS

Microcontroller	SAMD21 Cortex-M0+ 32bit low power ARM MCU
Board Power Supply (USB/VIN)	5V
Supported Batteries(*)	2x AA or AAA
Circuit Operating Voltage	3.3V
Digital I/O Pins	8
PWM Pins	12 (0, 1, 2, 3, 4, 5, 6, 7, 8, 10, A3 - or 18 -, A4 -or 19)
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, A1 -or 16-, A2 - or 17)
DC Current per I/O Pin	7 mA
Flash Memory	256 KB
SRAM	32 KB
EEPROM	no
Clock Speed	32.768 kHz (RTC), 48 MHz
LED_BUILTIN	6
Full-Speed USB Device and embedded Host	
LED_BUILTIN	6
Antenna power	2dB
Carrier frequency	868 MHz
Working region	EU
Length	67.64 mm
Width	25 mm
Weight	32 gr.



OSH: Schematics

The MKR FOX 1200 is open-source hardware! You can build your own board using the following files:

EAGLE FILES IN .ZIP SCHEMATICS IN .PDF FRITZING IN .FZPZ

Pinout

Download the pinout in PNG format

Coverage

Check your area coverage on the SigFox website

Data planning

The MKRFOX1200 price includes a subscription to the SigFox network for two years. The plan will be automatically activated after the fourth message has been sent. You can send up to 140 messages per day.

Antenna

The MKR FOX 1200 need a GSM antenna that can be attached to the board with the micro UFL connector. The antenna must accept frequencies in the SigFox's range (868 Mhz).

Please note: for best result, **do not** attach the antenna to a metallic surface like car chassis, etc.

Batteries, Pins and board LEDs

Battery capacity: The connected batteries must have a nominal voltage of 1.5V

Battery connector: If you want to connect a battery pack (2x AA or AAA) to your MKR FOX 1200 use the screw terminal block.

Polarity : as reported on the silk in the bottom of the board, positive pin is the closest to the USB connector

Vin: This pin can be used to power the board with a regulated 5V source. If the power is fed through this pin, the USB power source is disconnected. This is the only way you can supply 5v (range is 5V to maximum 6V) to the board not using USB. This pin is an INPUT.

5V: This pin outputs 5V from the the board when powered from the USB connector or from the VIN pin of the board. It is unregulated and the voltage is taken directly from the inputs.

VCC: This pin outputs 3.3V through the on-board voltage regulator. This voltage is 3.3V if USB or VIN is used and equal to the series of the two batteries when they are used

LED ON: This LED is connected to the 5V input from either USB or VIN. It is not connected to the battery power. This means that it lits up when power is from USB or VIN, but stays off when the board is running on battery power. This maximizes the usage of the energy stored in the battery. It is therefore normal to have the board properly running on battery power without the LED ON being lit.

On board LED: On MKRFOX1200 the onboard LED is connected to **D6** and not D13 as on the other boards. Blink example or other sketcthes that uses pin 13 for on board LED may need to be changed to work properly