



Keyestudio Micro:bit Board V2



1. Description:

Micro: bit is an ARM-based microcontroller designed by BBC. Equipped with an on-board Bluetooth, an accelerometer, an electronic compass, three buttons and 5 x 5 LED dot matrix, it is only half the size of a credit card and mainly designed for programming education for teenagers.

The board and 2 pieces of instructions are packed up in a paper box for protection and a lighter and more beautiful visual experience.



2. Specifications:

- Working voltage: 3.3V
- Power supply voltage: 3-3.3V
- Micro USB program burning/power supply port: 5V
- PH2.0 power interface: 3-3.3V
- Alligator clip interface: 3-3.3V
- Detection range: 0-3.3V
- Processor: Arm Cortex-M4 32 bit processor with FPU
- Working temperature: 0-85°C
- Micro USB program burning/power supply port
- PH2.0 3V power supply port
- 4mm alligator clip interface*5
- Edge connector*20
- Product size: 43*52mm
- Weight: 9.6g



3. Features

- Support PXT graphical programming interface developed by Microsoft
- Support Windows, macos, iOS and Android system
- The programming environment is based on WEB services, no need to download additional compilers
- Burn and simulate program via USB on PC terminal
- Burn and simulate program via Bluetooth
- Support multiple programming languages including javasript, pythonand mbed c.

4. On board Resources

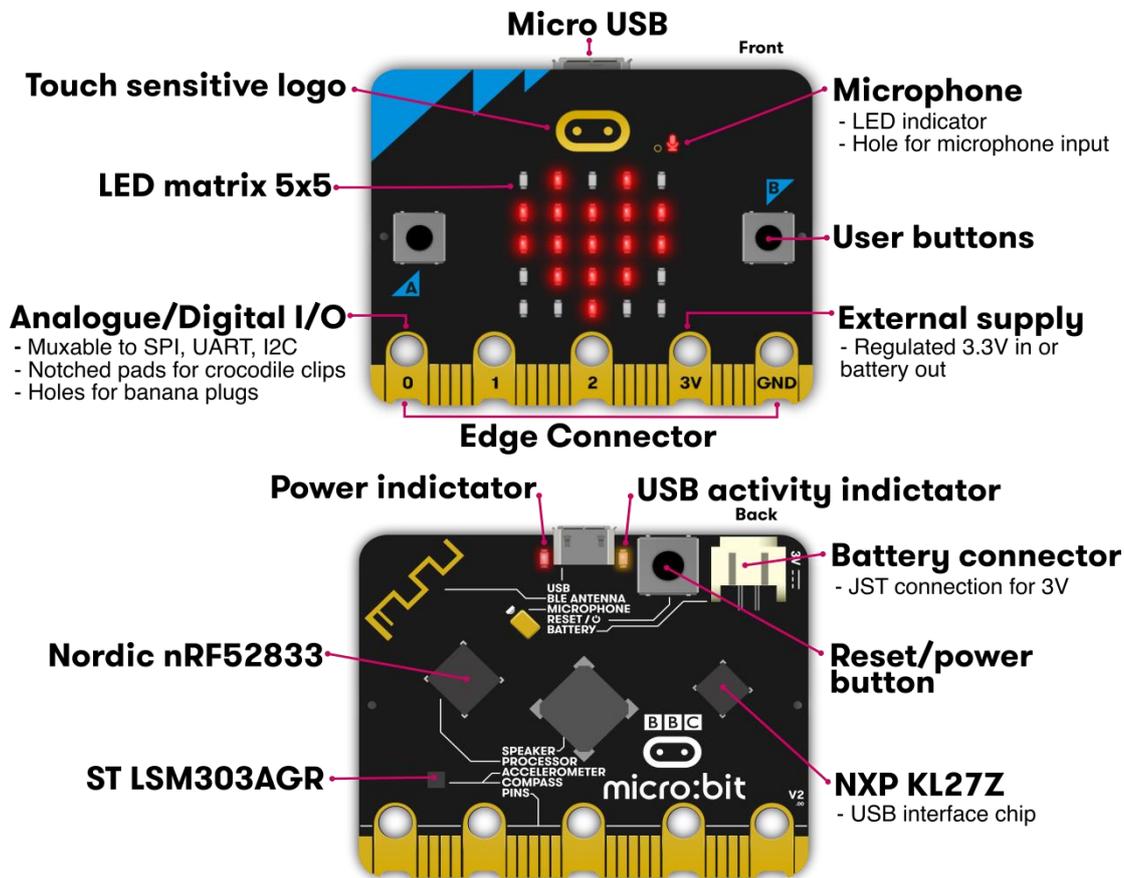
- Application Processor: Nordic nRF52833 , 64MHz ARM Cortex-M4, 512KB Flas, 128KB RAM
- Bluetooth Wireless Communication: Bluetooth 5.1 with Bluetooth Low Energy, 2.4GHz ISM , 50 2MHz channels
- Micro:bit Radio: 2.4GHz Freq band, 1Mbps or 2Mbps Channel rate
- LSM303AGR three-axis accelerator and magnetic sensor



- Temperature sensing: on-core NRF52, Sensing range: -40°C ~ 105°C
- Speaker: JIANGSU HUANENG MLT-8530
- Microphone: Knowles SPU0410LR5H-QB-7 MEMS, -38dB ±3dB @ 94dB SPL
- 25 Pcs red LEDs A 5*5 LED dot matrix
- Three mechanical buttons including two user buttons and a reset button
- A touch-sensitive logo
- Micro USB power-supply/download connector, power socket, edge connector, including SPI, PWM, I2C, support 17 pcs GPIO



5. Components:





GPIO	P0, P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, P15, P16, P19, P20
ADC/DAC	P0, P1, P2, P3, P4, P10
I2C	P19(SCL), P20(SDA)
SPI	P13(SCK), P14(MISO), P15(MOSI)
PWM	P0, P1, P2, P3, P4, P10
Occupied	P3(LED Col1), P4(LED Col2), P5(BUTTON A), P6(LED Col9), P7(LED Col8), P9(LED Col7), P10(LED Col3), P11(Button B)



7. Comparison between Board V2.0 & V1.5



	V1.5	V2
PROCESSOR	Nordic Semiconductor nRF51822	Nordic Semiconductor nRF52833
MEMORY	256KB Flash, 16KB RAM	512KB Flash, 128KB RAM
INTERFACECHIP	NXP KL26Z, 16KB RAM	NXP KL27Z, 32KB RAM
MICROPHONE	N/A	MEMS microphone and LED indicator
SPEAKER	N/A	On board speaker
TOUCH	N/A	Touch sensitive logo
EDGE CONNECTOR	25pins,PWM,I2C,SPI and Extension interface. 3 ring pins for connectin crocodile clips/banana plugs.	
	3 dedicated GPIO	4 dedicated GPIO Notched for easier connection
I2C	Shared (mux) I2C bus	Dedicated I2C bus
WIRELESS	2.4GHz Radio/BLE Bluetooth 4.0	2.4GHz Radio/BLE Bluetooth 5.0
POWER	Micro USB 5V power supply, 3V port or battery power supply	Micro USB 5V power supply, 3V port or battery power supply LED Indicator, Power off (push and hold power button)
CURRENT AVAILABLE	90mA	200mA
MOTION SENSOR	ST LSM 303	
PROGRAMMING SOFTWARE	C++, Makecode, Python, Scratch	
SIZE	5cm(W) x 4cm(H)	



8. Resources:

[micro:bit official website: http://microbit.org/](http://microbit.org/)

<http://microbit.org/zh-CN/code/>

<http://microbit.org/zh-CN/ideas/>

<http://microbit.org/zh-CN/guide/>

(Google Chrome is recommended.)