Micro:bit Expansion Board

Serial data interface UART

Passive buzzer J1

3.7V power indicator L5

Micro:bit
motherboard interface K1

SPI interface K7

Programmable
RGB lamp W1 W2 W3

Charging interface
(5V charger) K2

Infrared reception IRQ

Infrared obstacle
avoidance IRR IRS

Charging indicator(red) L3

Full power indicator(green) L4

Switch K4

Expand IO K8

IIC interface K8

Colorful searchlight L1

PWM output interface K5

5V power indicator L6

servo interface J4J3J2
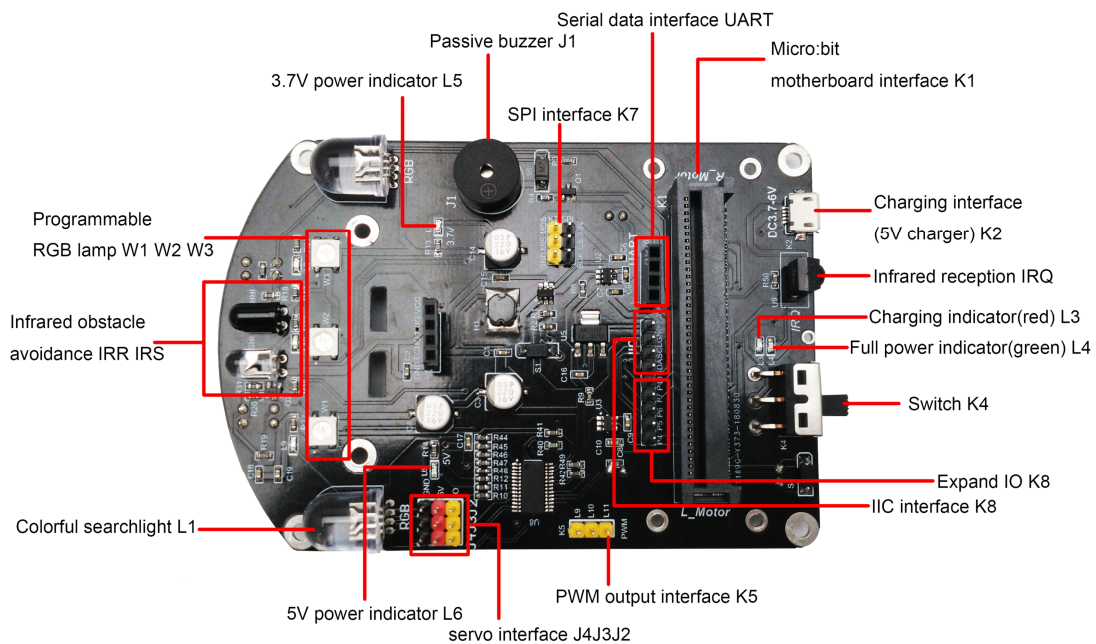
- J1 is for the buzzer
- J2,J3,J4 is for the servos
- W1,W2,W3 is for 5050 RGB LEDS
- L1 is for big led Left
- L2 is for big led right

- M1 is for right motor
- M2 is for left motor
- K5 is for PWM
- U9 is for IR control

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micro:bit is a pocket-sized micro controller designed for kids and beginners learning how to program, letting them easily bring ideas into DIY digital games, interactive projects and robotics.

micro:bit comes with a variety of on-board modules, including a 5x5 LED matrix (also supports light detection), 2 programmable buttons, motion detector, Compass and Bluetooth® Smart module. Additionally, you may attach more modules such as a servo motor, RGB LED lights through 5 I/O rings or 20 edge connectors.

micro:bit can be programmed with Microsoft Block Editor via graphical editor or JavaScript editor. The Microsoft Block Editor is available on Windows, mac OS, IOS and Android, supporting wireless programming via Bluetooth.
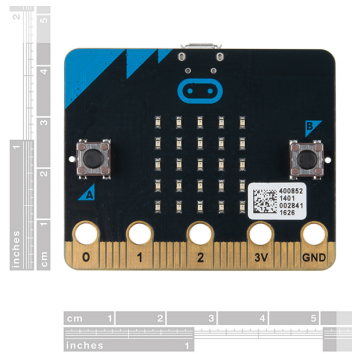
Features

- A variety of on-board modules;
- Expandable for additional sensors or actuators;
- Graphical drag and drop code editor;
- Easy and smooth program uploading;
- Bluetooth wireless programming uploading;
- Bluetooth wireless communication.

Specifications

- Microprocessor: 32-bit ARM Cortex M0 CPU.
- A 5*5 LED matrix with 25 red LEDs to light up and can display animated patterns, scrolling text and alphanumeric characters.
- Two programmable buttons.
- On-board motion detector or 3-Axis digital accelerometer that can detect movement e.g.shake, tilt, or free-fall and use it to control motion activated games.
- A built-in compass, 3D magnetometer to sense which direction you're facing and your movement in degrees and detected the presence of certain metals and magnets.
- Bluetooth Smart Technology. Connect the micro:bit to other micro:bits, devices, phones, tablets, cameras and other everyday objects.
- 20 pin edge connector: This allows the micro:bit to be connected to other devices such as Raspberry Pi, Arduino, Galileo and Kano through a standard controller.
- Micro-USB controller: This is controlled by a separate processor and presents the micro:bit to a computer as a memory stick.
- Five Ring Input and Output (I/O) including power(PWR), ground(GRD) and 3* I/O. The micro:bit can read values from sensors and control things like motors or robots.
- System LED*1 (yellow).
- System push button switch*2.