YAHBOOM

Micro:bit smart robot

Manual

①Please read this manual carefully before use

②The company reserves the right to explain the instructions

③Product appearance, please prevail in kind

④Please keep it well after reading

Solemn explanation

1.Use statement

1.1 After the user receives the product, please check the item according to the "Packing List" of the getting started guide.

1.2 Children under 12 years of age need to be accompanied by parents.

1.3 Users should install and use products according to the introductory guide and video tutorials provided by the product.

1.4 The product structure and shape have been applied for the national patent counterfeiting. The copyright of this product is owned by our company, and it will be investigated for legal liability if it is not authorized to plagiarize or spread.

2.Non warranty scope statement

2.1 Product damage is caused by natural disasters and other irresistible disasters.

2.2 The damage of the product is caused by the factors of the person.

2.3 Product damage is caused by improper use of products by users.

2.4 Due to the above non warranty factors, the defective products will be charged according to our company's standard.

2.5 The warranty scope of this product is only for the product body, and does not include the warranty of the associated consumables.

2.6 During the period of product repair, the company will not bear any responsibility for the vested interests of the shopper and the premeditated damage that may occur.

Packing list

breakout*1

BBC Micro:bit*1

tyre*2

micro usb cable*1

Infrared remote control*1

screwdriver*1

instruction manual*1

M3*40 copper pillar*4

4pin Include cable*1

acrylic board for ultrasonic sensor*1

vertical ultrasonic sensor*1

bracket*2

M3*8 screw*10

M3 nut*2

battery*1

M3 magic sticker*2

motor*2

Universal wheel support*1

M2 nut*6

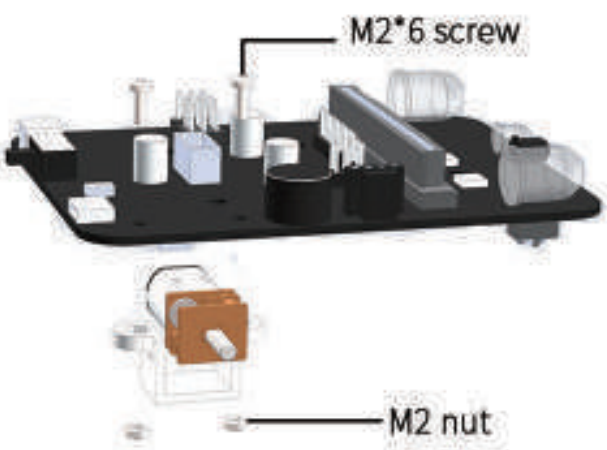
universal wheel*1

motor bracket*2

M2*6 screw*6

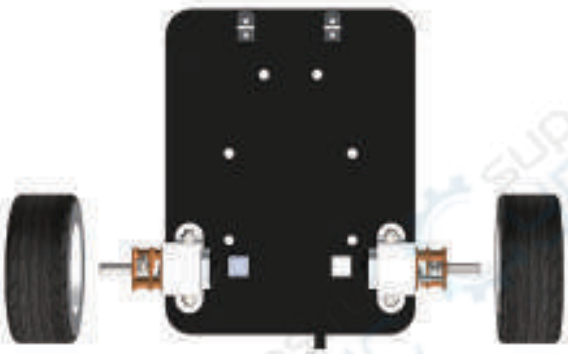
Assembly steps

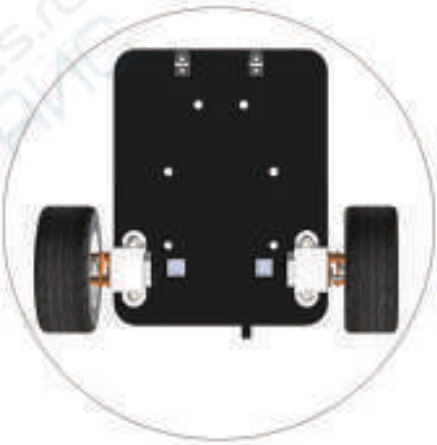
1. Assembly motor



effect figure

2 . Assembly wheel





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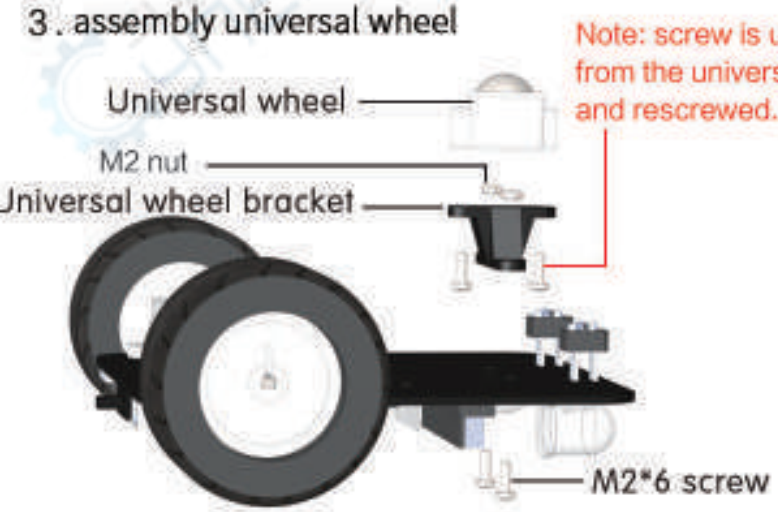
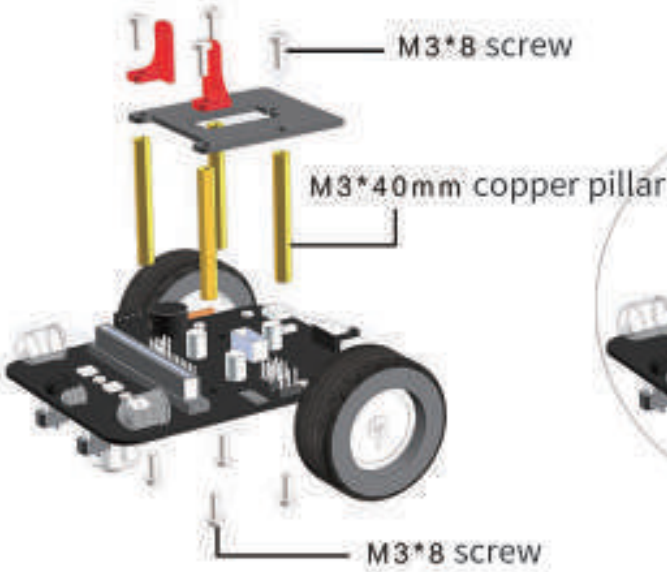
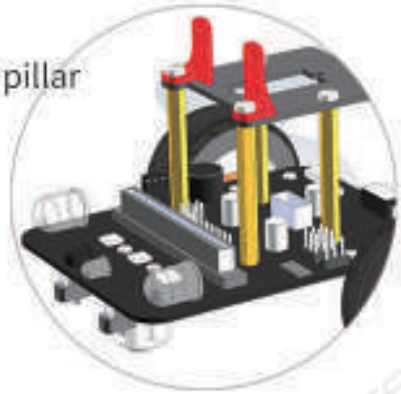
3 . assembly universal wheel



effect figure

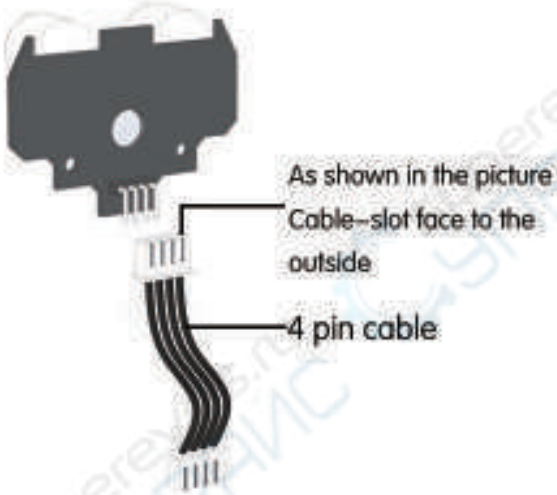
4.Assembly ultrasonic sensor





effect figure

5.ultrasonic interface



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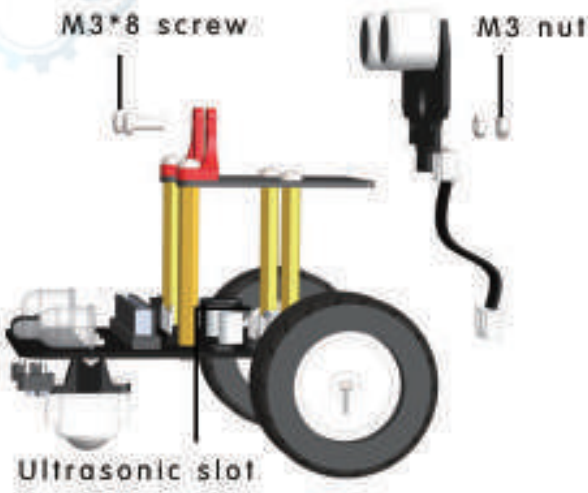
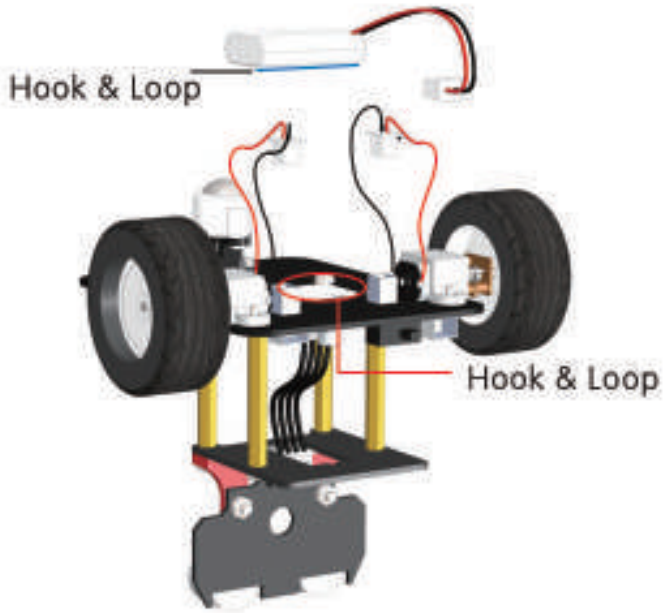
6.Assembly ultrasonic sensor



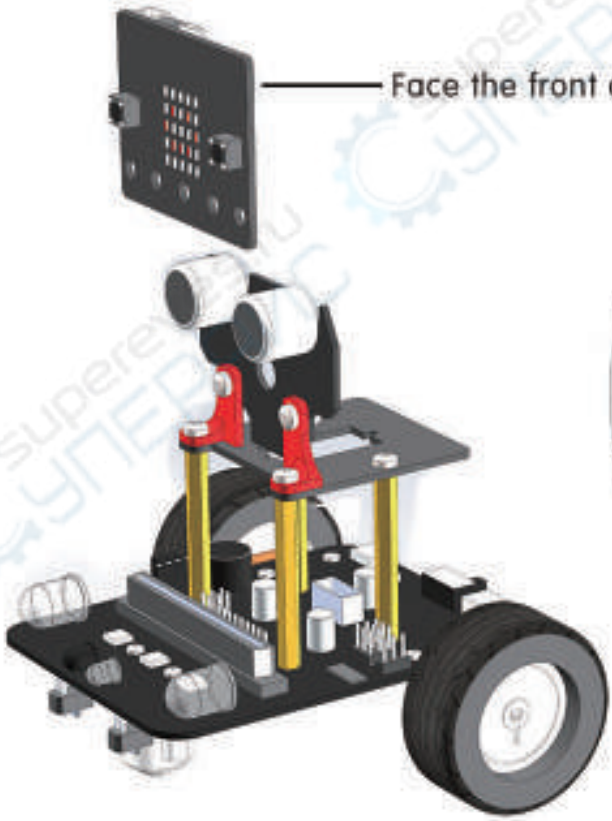
effect figure

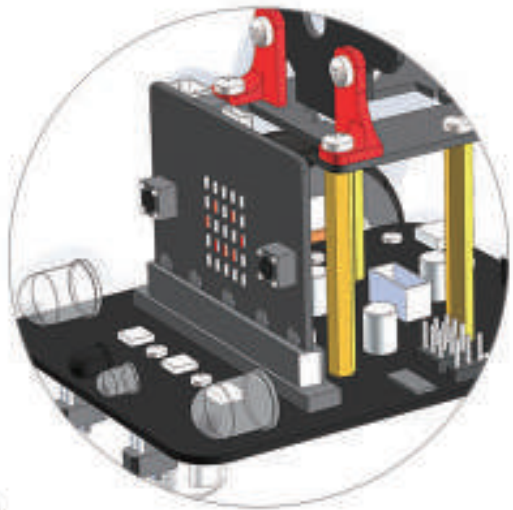
7.Assembly battery



effect figure

8.Assembly micro:bit

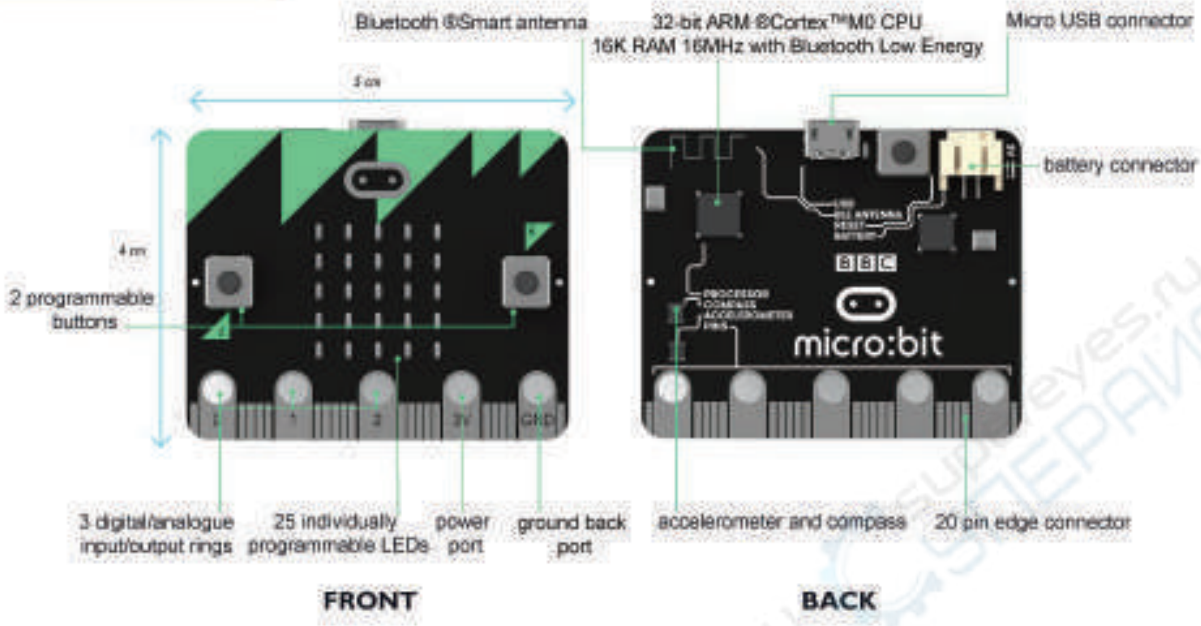




effect figure

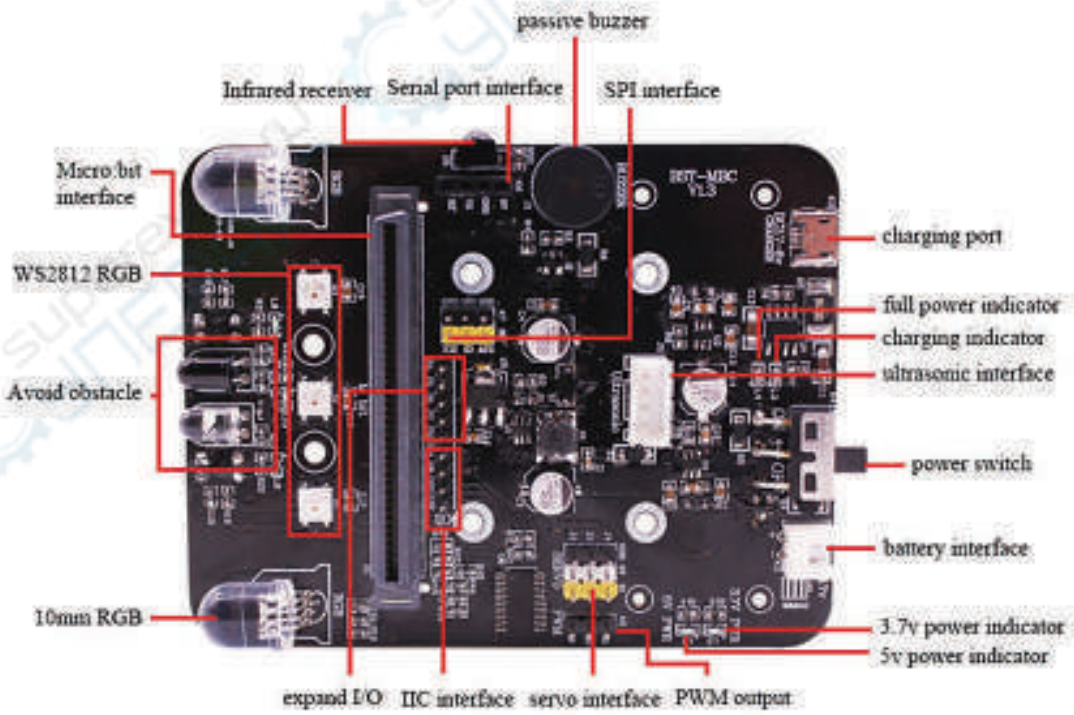
Controller & expansion board

micro:bit



Note: The program download interface is on micro:bit and is connected directly to the computer via a micro USB cable.

expansion board



Back: Patrol probe, Hook & Loop area and motor interface.

Note: the charging interface is on the expansion board, and the charging voltage is 5V.

Instructions

Download

Download the program file "Bluetooth remote control.hex". Connect the computer and micro:bit with micro USB line, and the computer will show the micro:bit hard disk.

Copy the program "Bluetooth remote control.hex" which has just been downloaded to micro:bit hard disk, and complete the download of the program.
At this time, a "S" pattern is displayed on the dot matrix of micro:bit, which is the unconnected state of Bluetooth.

Android mobile APP remote control

1.Use Android mobile browser to scan the QR code, download and install APP.

2.Bluetooth connectivity

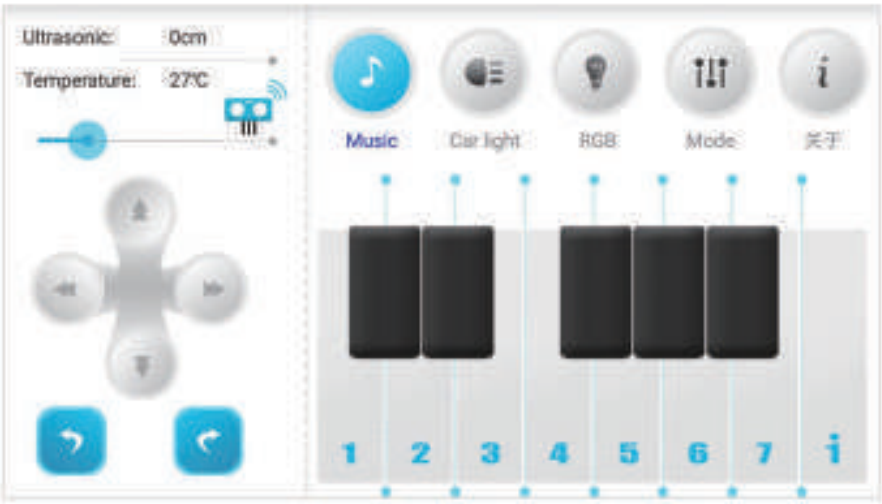
After opening the Bluetooth, the APP software is installed. Move the power switch on the expansion board to "ON"

If your cell phone is near micro:bit, Bluetooth will connect automatically. If you are not close to the connection, you can click on the CONNECT above the screen to connect. After connecting, the APP interface jumps to the remote control interface as shown below.

The dot matrix on micro:bit displays the "mouth" pattern, which is connected to the Bluetooth state.

If Bluetooth even after the break, micro:bit dot matrix display "cry" pattern, Bluetooth has been disconnected.

3.Use of APP



（1）basic function

[Ultrasonic] Displays the obstacle distance, and [Temperature] displays the current micro:bit chip temperature value (temperature value may be slightly higher than room temperature, which is a normal phenomenon).

Below is the remote control button for the robot to turn around, left rotation and right rotation.

（2）Music

Click on the piano button, and the buzzer plays different tones.

（3）Car light

Can change the color of the car light.

（4）RGB

The color and lighting mode of the switchable RGB LED.

(5) Mode

① **Tracking mode:**

put the robot on the black line of the patrol track, then click the "tracking mode", and the robot starts to patrol. You can quit this mode until you click "tracking mode" again.

② **avoid obstacle mode:**

click on the "avoid obstacle mode", the robot goes forward, when confronted with obstacles, turn left to avoid. You can quit this mode until you click the "avoid obstacle mode" again.

③ **Following mode:**

click on the "following mode", when the current obstacles exist, the robot moves forward. You can quit this mode until you click the "avoid obstacle mode" again.

Common problems and solutions

1.Why did we download the lesson 5 Direction follower, but the arrow was confused. What should I do?

A: When the magnetometer first starts working (after being placed in a new position), the system automatically requires us to turn the micro:bit board in a circle for calibration. The return value of the calibration period is 1003 (when the calibration is required to return 1004), the correct calibration method is to keep the plate horizontal rotation. It should be noted that if there are metal objects nearby, it may affect the accuracy of reading and calibration.

2. Why do I use micro:bit to connect earphones to play music, only one voice?

A: Most headsets on the market (headphones are not included in the product) are four segments.
Ground, MIC, right channel, left channel. So only one earphone can have sound at a time.

3. After downloading Lesson 8, why both the light and the light on the dot are the sun/moon?

A: This has a certain relationship with the light intensity. It may be that the light intensity is not enough/too high. It is recommended to use it first.

4. Why do we download the advanced lesson 5- full light control, and then control the downloads of other programs? Will the water lamp still be lit?

A: before downloading the new program, we need to turn off the power and disconnect the micro:bit data line, otherwise the water lantern will always be on the way.

5. Why is the dot always showing 0 after using ultrasound?

A: Ultrasonics must be connected to 5v and be connected to a GND with micro:bit. In addition, the requirement of ultrasound for voltage is stricter. If it can not be shown, it is recommended to fill up the electricity and do experiments again.

6. Why no response after download the robot lesson 4-Sing and dance?

A: we need to press the A button to sing and dance. This is the only lesson that needs keypad to start.

7. Why can't we do experiments after downloading infrared remote control?

A: The infrared sensors are used in these experiments. They need to be operated in an indoor environment to avoid the interference of sunlight on the sensors.

8. Why do robots continue to turn left after they download the robot lesson 8-Ultrasonic obstacle avoidance?

A: Ultrasonics must be connected to 5v and be connected to a GND with micro:bit. In addition, the requirement of ultrasound for voltage is stricter. If it can not be shown, it is recommended to fill up the electricity and do experiments again. You can download the advanced lesson 9 for the car first. If always displayed 0, you can fill the battery and then perform the experiment. The robot lesson 8 can be seen in detail.

Tel: 0755-86965197
+86 15220249125
Email: sales@yahboom.com
Company address: Room 306, C Building, Guanlong Comprehensive building, Guanlong Road, Xili Sub-district, Nanshan District, Shenzhen City