APP control

1. Learning objectives

In this course, we mainly learn how to use MakeCode graphical programming to realize Bluetooth APP remote control of Oscillating fan.

2. Building blocks

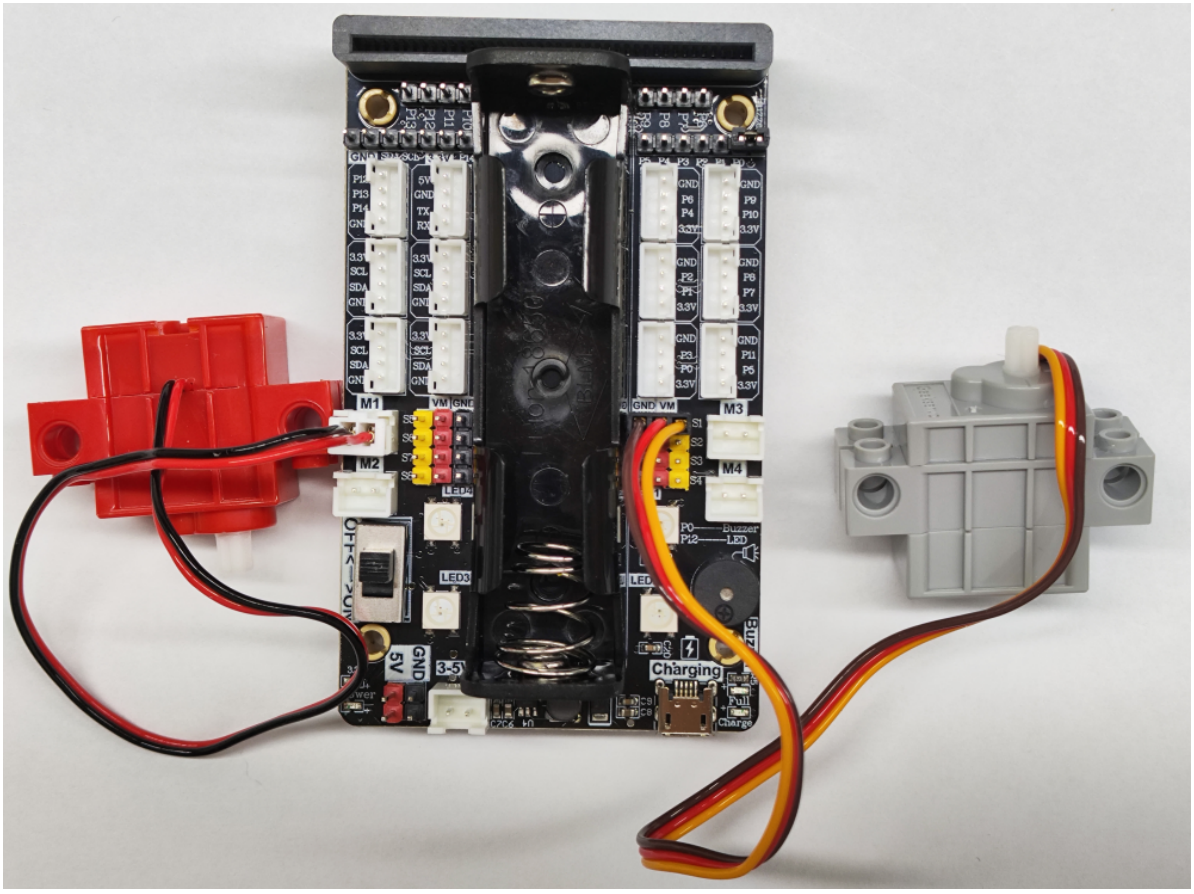
For the building blocks steps, please refer to the installation drawings of **[Assembly Course]--[Oscillating fan]** in the materials or the building blocks installation book.

3. Motor wiring

The building blocks motor wiring is inserted into the M1 interface of the Super:bit expansion board, and the black wiring is inserted into the side close to the battery.

The building blocks servo wiring is inserted into the S1 interface of the Super:bit expansion board, and the orange servo wiring is inserted into the yellow pin of S1.

As shown below:



4. Programming

Method 1 Online Programming:

First, connect micro:bit to the computer via a USB data cable. The computer will pop up a U disk. Click the URL in the U disk: https://makecode.microbit.org/ to enter the programming interface. Then, add the Yahboom software package **https://github.com/YahboomTechnology/SuperBitLibV2** to start programming.

Method 2 Offline Programming:

Open the offline programming software MakeCode and enter the programming interface. Click [New] and add the Yahboom software package **https://github.com/YahboomTechnology/SuperBitLibV2** to start programming.

For the summary program of this course, please open the **microbit-Oscillating-fan-APP-control.hex** we provided in the MakeCode programming interface to view it.

5. Experimental phenomenon

5.1 Download APP

Android users please use the mobile browser to scan the following QR code to download and install the APP;

Apple users please use the hand camera to scan the QR code to download and install the APP.

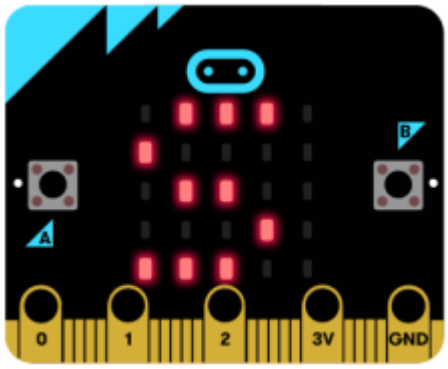
IOS

Android

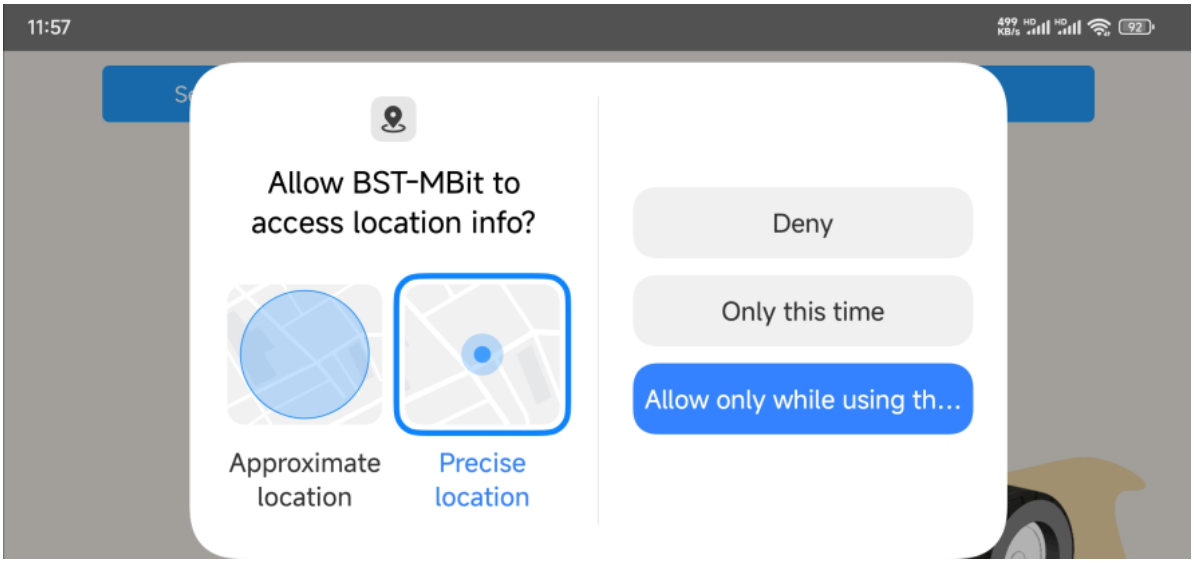
! Note: During the installation or use of the APP, if the phone prompts that any permissions need to be obtained, please select "Agree".

5.2 APP remote control

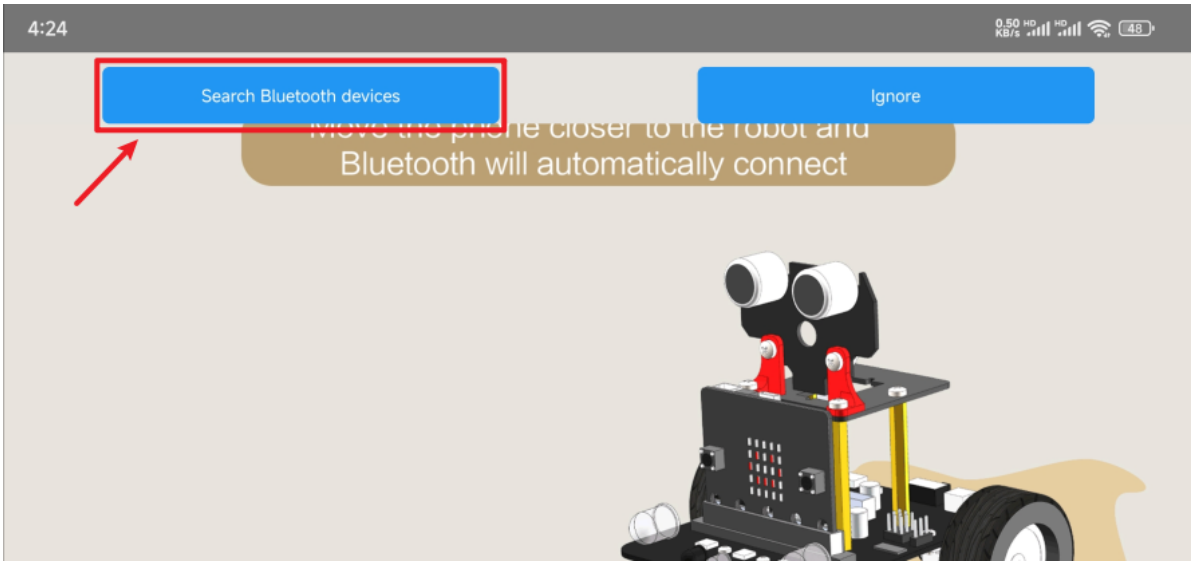
1) After the program is successfully downloaded, turn on the power switch of the car, and the micro:bit dot matrix will display the "S" pattern, as shown in the figure below. This is the state of Bluetooth not connected.



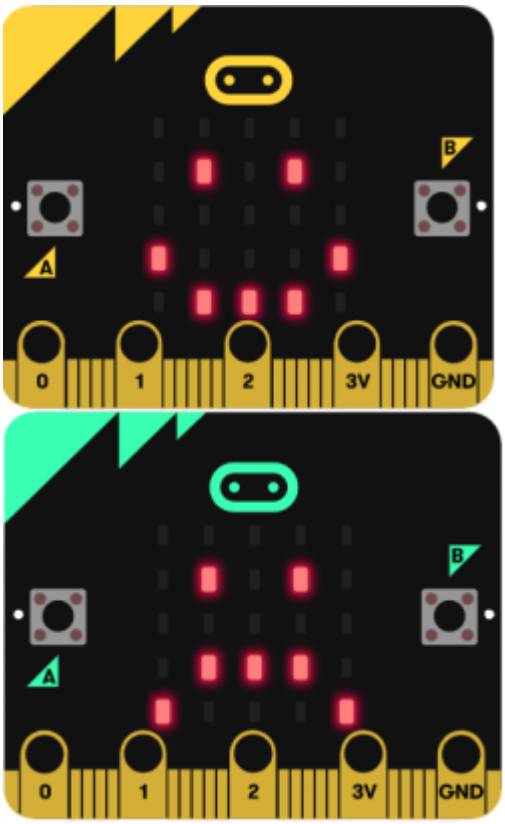
2) Turn on the mobile phone Bluetooth, open our APP, you can see the interface shown in the figure below, click **Allow APP to use location information**.



3) After the phone is close to the car and waits for a while, the Bluetooth will automatically connect; if it does not automatically connect, we can click [Search Bluetooth devices] to search for the device to connect.



After the Bluetooth is successfully connected, a smiley face pattern will be displayed on the micro:bit dot matrix; if the Bluetooth is disconnected, a crying face pattern will be displayed on the dot matrix.



[Bluetooth successful connection status]

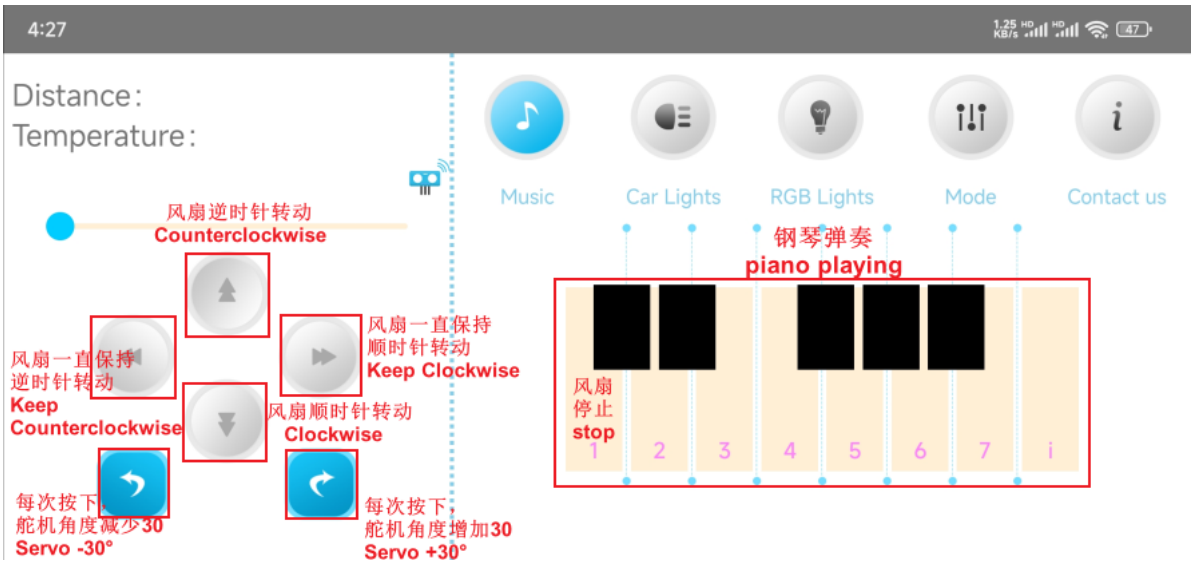
[Bluetooth disconnection status]

APP interface function introduction:

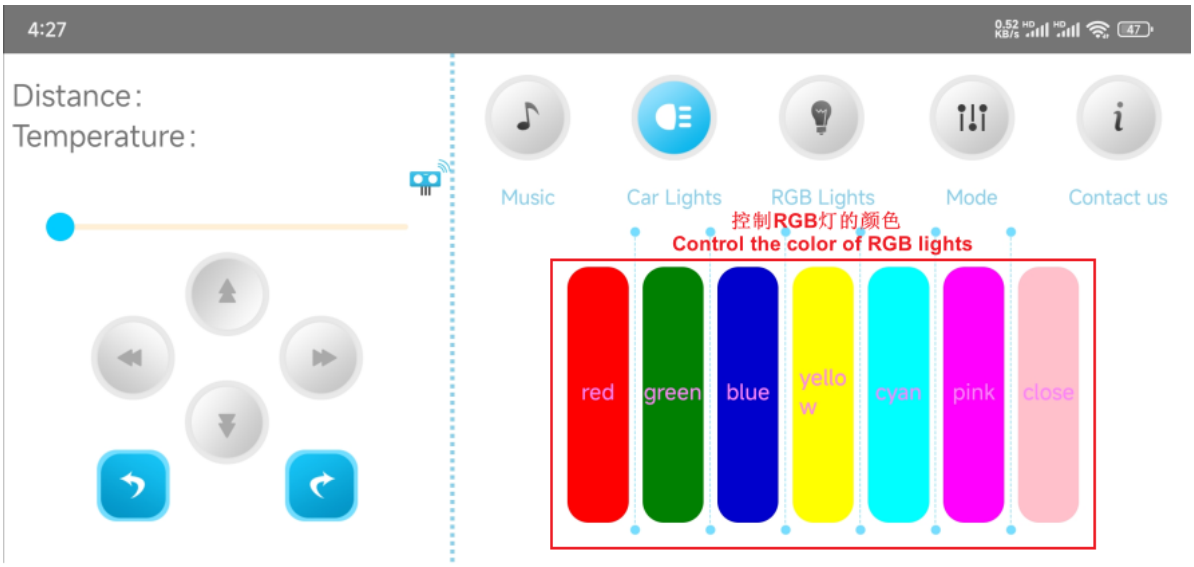
Main control interface:

- The forward button controls the Oscillating fan to rotate counterclockwise, and it stops when released;
- The backward button controls the Oscillating fan to rotate clockwise, and it stops when released;
- The left turn button controls the Oscillating fan to rotate counterclockwise all the time;
- The right turn button controls the Oscillating fan to rotate clockwise all the time;
- The piano key 1 controls the Oscillating fan to stop rotating;
- The left turn button controls the fan to shake its head to the left;

- The right turn button controls the fan to shake its head to the right;
- Press the piano key to hear the buzzer play different tones

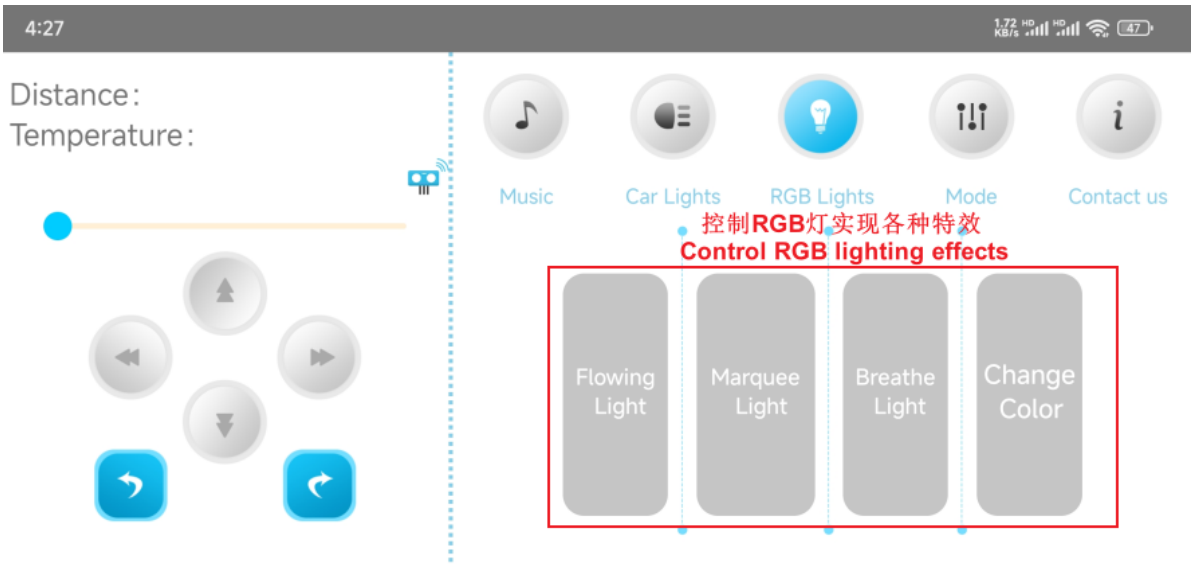


Car light interface:



RGB light interface:

Due to the upgrade of micro:bit V2 motherboard, the Bluetooth code control has deleted the RGB light control and changed to dot matrix display.



The buttons under the mode option have not yet defined any functions.