

APP control

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1. Learning objectives

In this course, we mainly learn how to use MakeCode graphical programming to achieve Bluetooth APP remote control Freestyle.

2. Building blocks

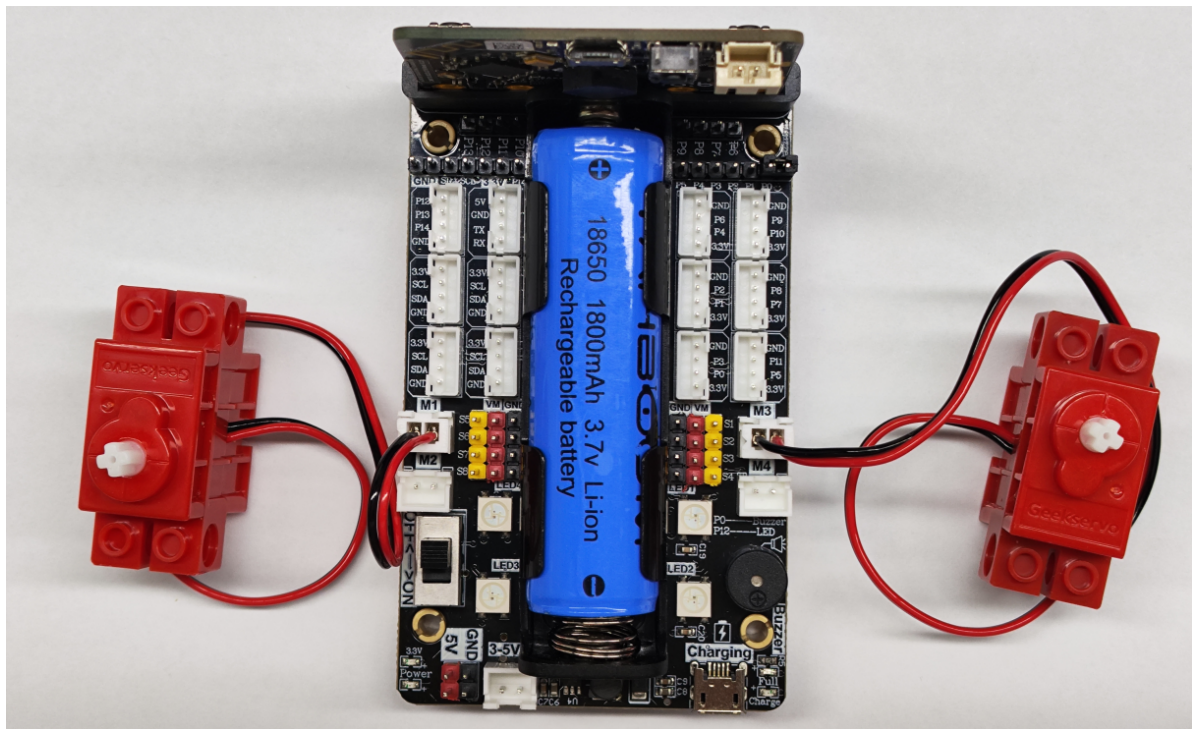
For detailed steps of building blocks, please refer to the installation drawings of **[Assembly Course]--[Freestyle]** in the materials or the building blocks installation album.

3. Motor wiring

The motor wiring on the left side of the car is inserted into the M1 interface of the Super:bit expansion board, and the black line is close to the battery side;

The motor wiring on the right side of the car is inserted into the M3 interface of the Super:bit expansion board, and the black line is close to the battery side;

As shown below:



4. Programming

Method 1 Online programming:

First, connect micro:bit to the computer via a USB data cable, and 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-Freestyle-APP-control.hex** we provide 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

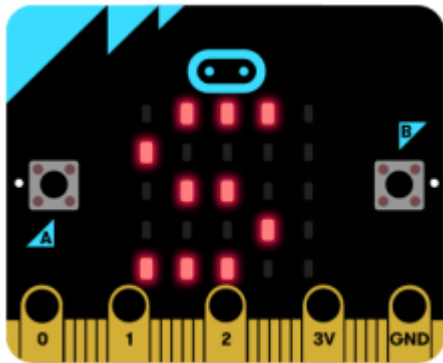


Android

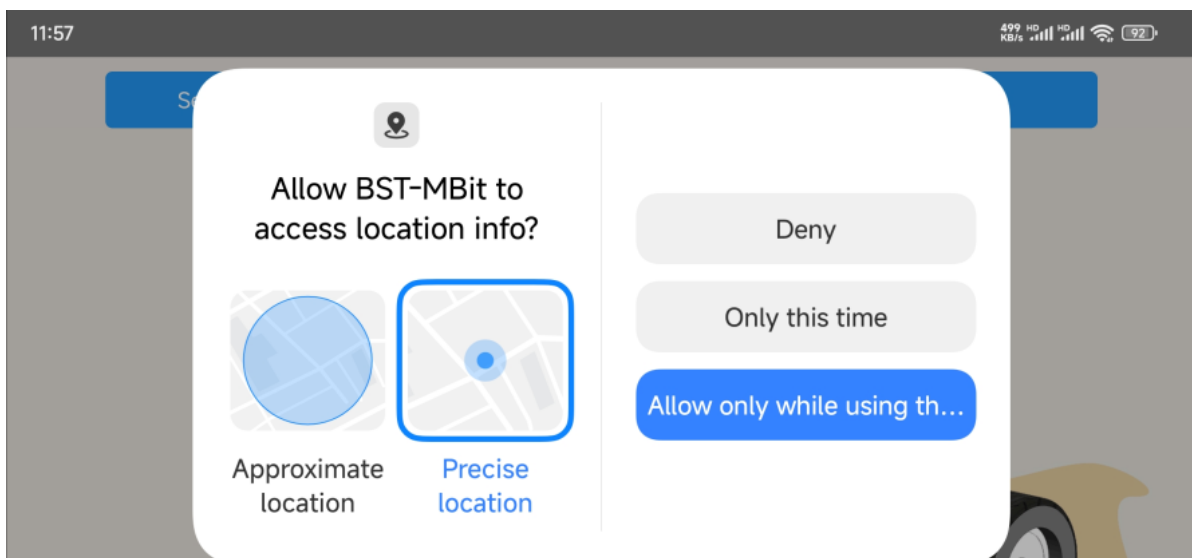
! Note: During the installation or use of the APP, if the mobile phone prompts that any permissions need to be obtained, please select "Agree".

5.2 APP remote control

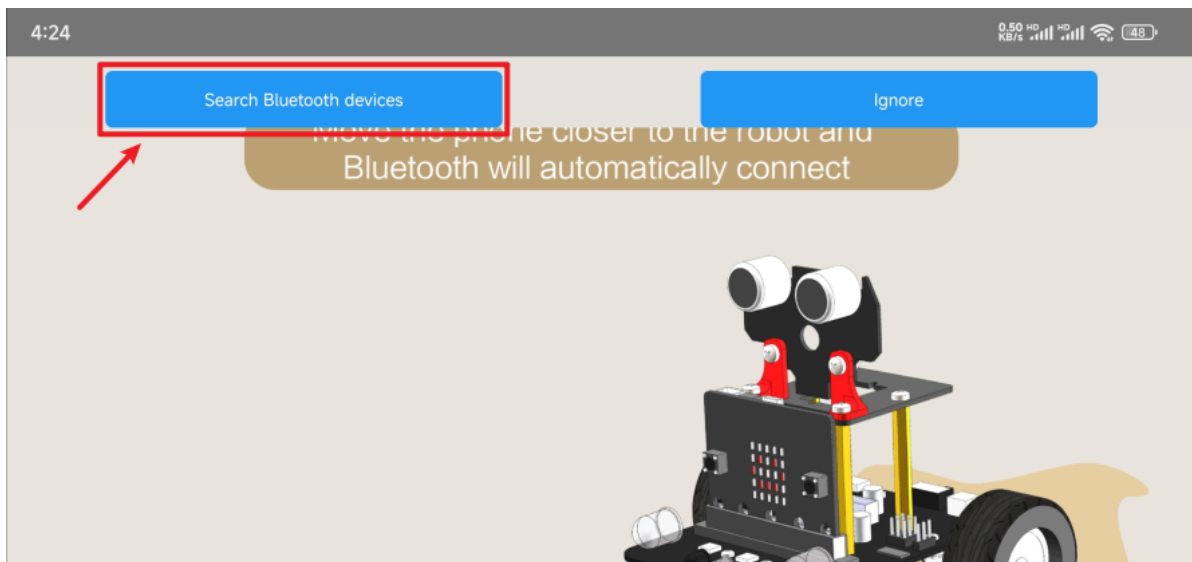
1) After the program is successfully downloaded, turn on the power switch of the car, and the micro:bit dot matrix will display the "S" pattern, as shown in the figure below, which is the state of Bluetooth not connected.



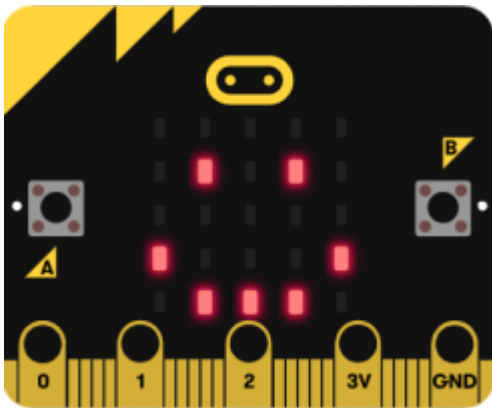
2) Turn on the Bluetooth of your mobile phone and open our APP. You can see the interface as shown below. Click **Allow APP to use location information**.



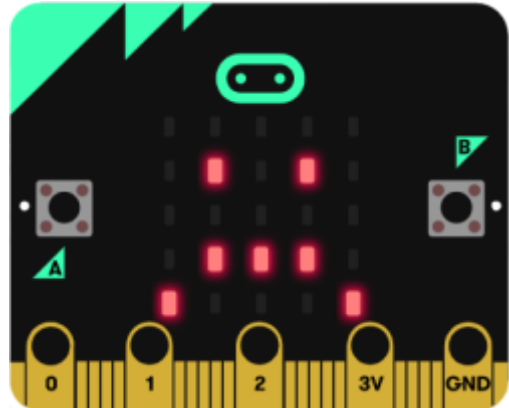
3) After the mobile phone is close to the car and waits for a while, the Bluetooth will automatically connect; if it is not automatically connected, we can click [Search Bluetooth devices] to search for the device to connect.



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]

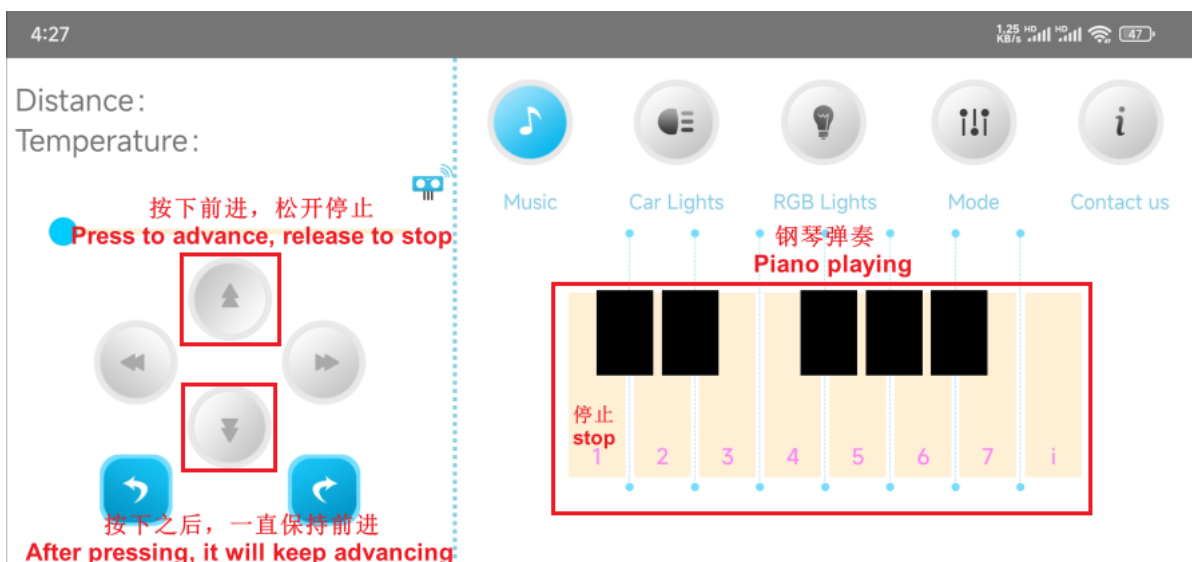


[Bluetooth disconnection status]

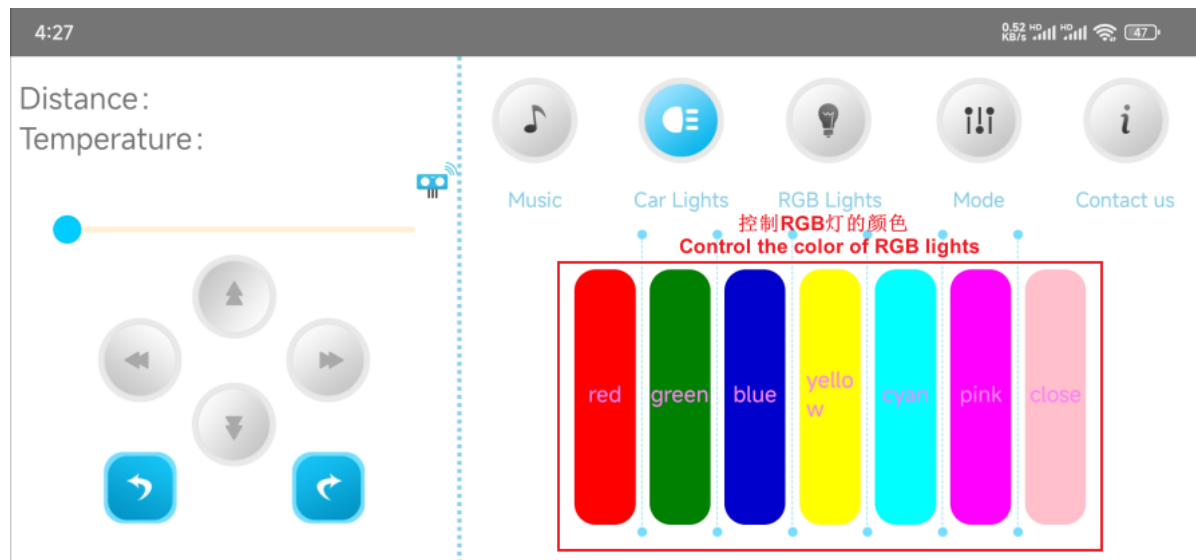
APP interface function introduction:

Main control interface:

- The forward button controls Freestyle to move forward, and it stops when released;
- The backward button controls Freestyle to keep moving forward;
- Press the piano key 1 to stop the Freestyle that is moving forward;
- Press the piano key to hear the buzzer play different tones

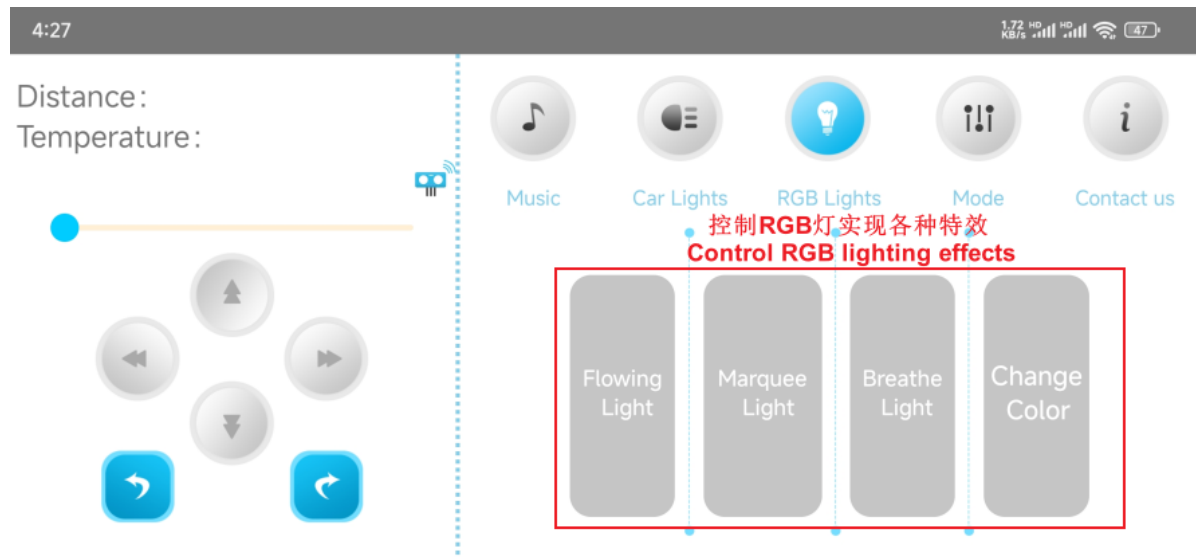


Car light interface:



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.