

## Proficient carrier Micro:bit handle control

### 1.Learning goals

In this course, we mainly learn how to use handle control Proficient carrier.

### 2.Building block assembly steps

For the building block construction steps, please refer to the installation manual or building block installation picture of [Assembly course]-[Proficient carrier].

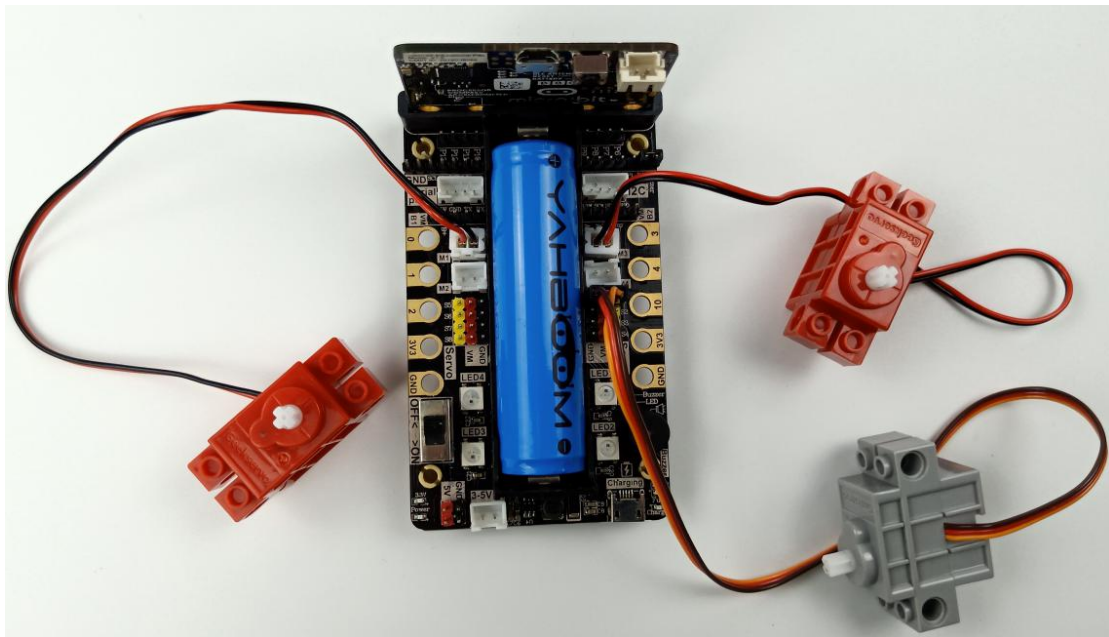
### 3.Wiring of motor and servo

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 wire 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 wire is close to the battery side;

Building block servo insert into the Super: bit expansion board S1 interface, and the orange wiring connect the yellow pin of S1.

As shown below:



#### Note:

For the first course related to building block servo, we need to remove the gear on the servo and upload the program of this course to micro: bit. Then, turn on the power switch of the Super:bit expansion board and wait for the building block servo turn to the initial position. Next, we can turn off the power, and adjust the shovel angle of the car parallel to the ground. Finally, install the servo. (If you have used programs related to clip robot before, you can skip this step)

### 4.Programming method

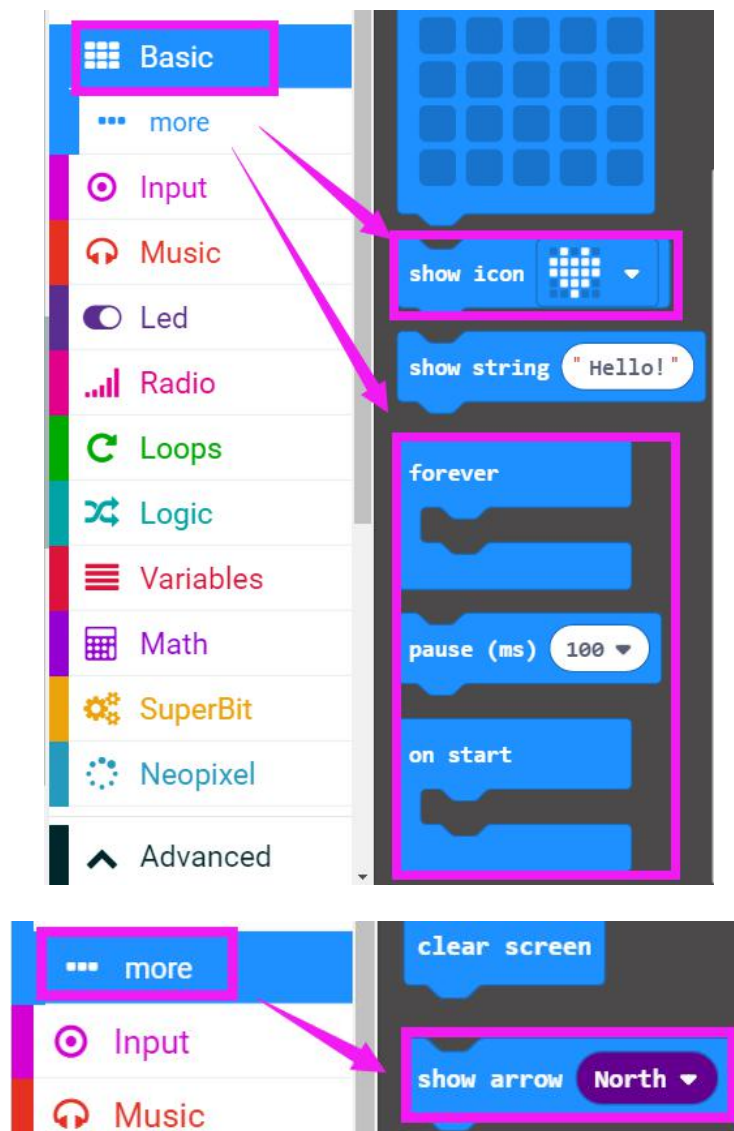
**Mode 1 online programming:** First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the

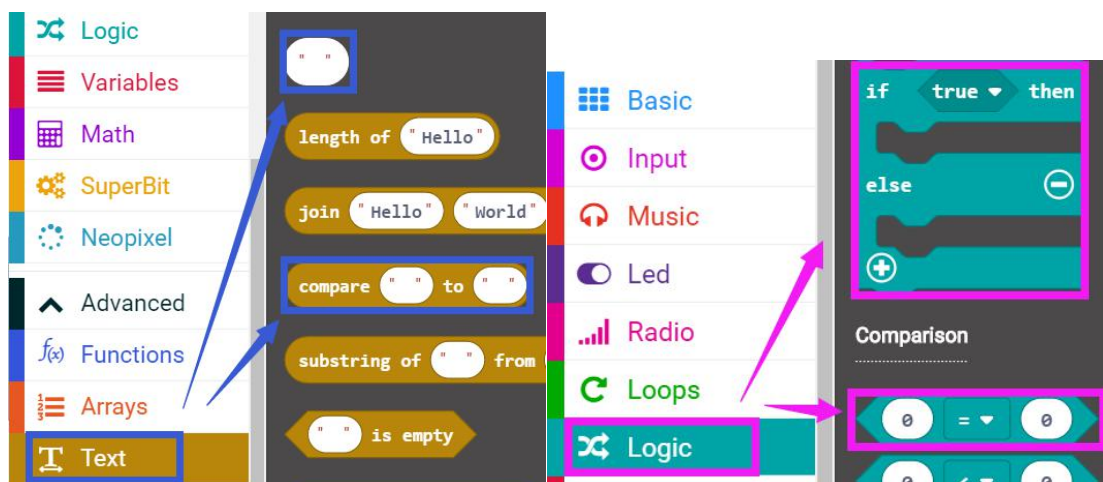
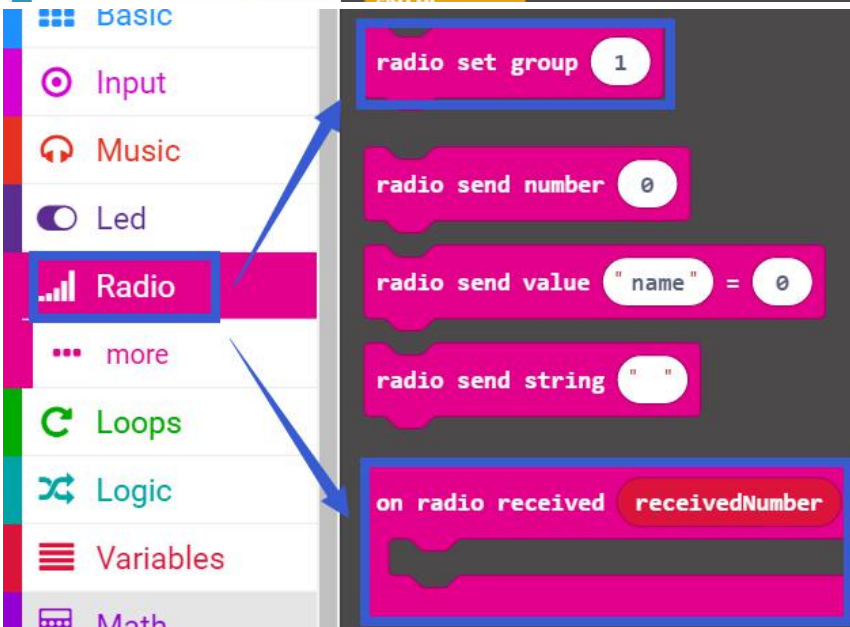
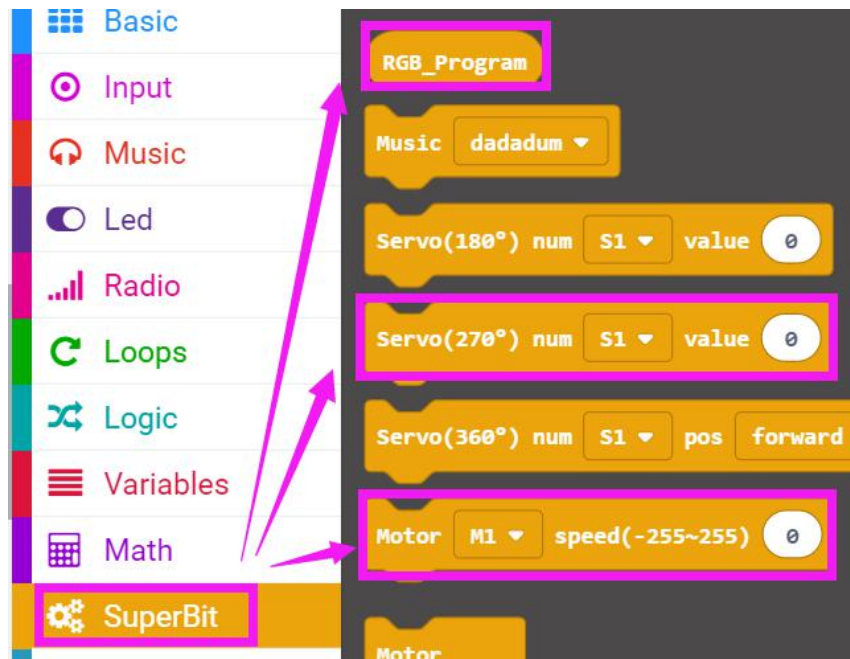
URL in the USB flash drive: <http://microbit.org/> to enter the programming interface.  
Add the Yahboom package <https://github.com/lzty634158/SuperBit> and <https://github.com/lzty634158/GHBit> to program.

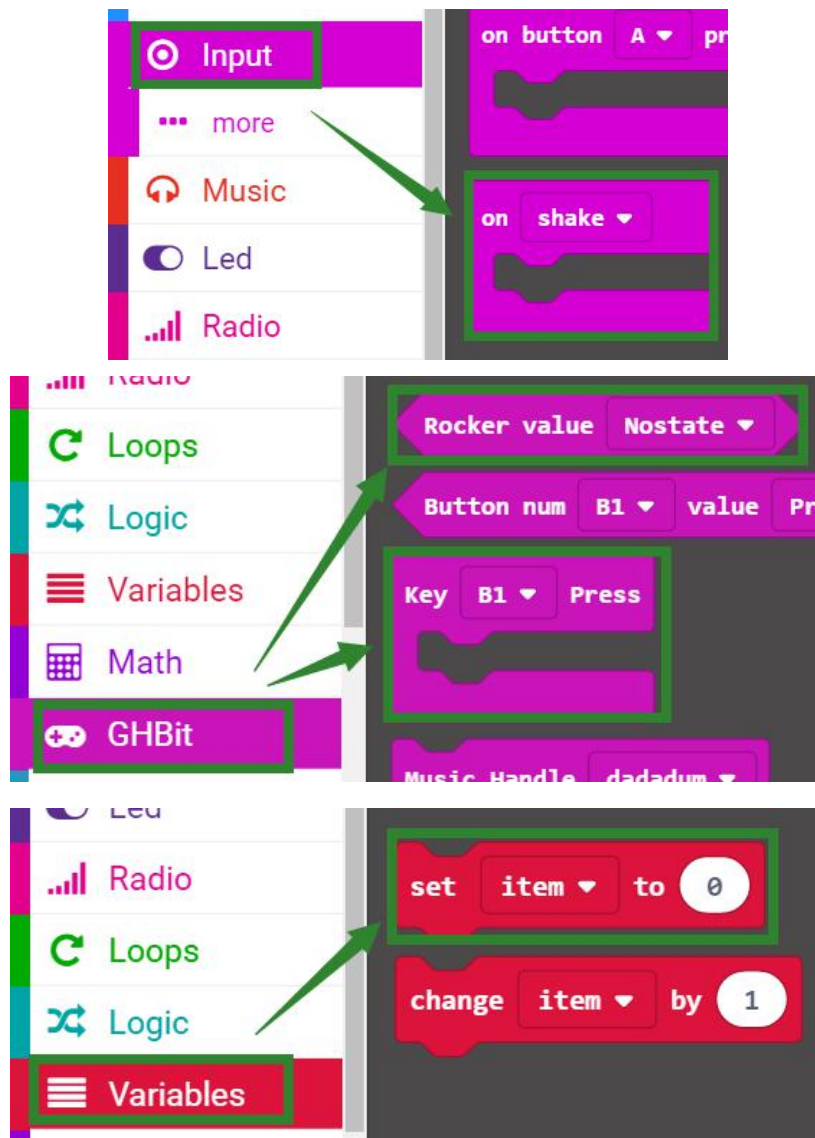
**Mode 2 offline programming:** We need to open the offline programming software. After the installation is complete, enter the programming interface, click 【New Project】 , add Yahboom package: <https://github.com/lzty634158/SuperBit> and <https://github.com/lzty634158/GHBit> , you can program.

## 5.Looking for blocks

The following is the location of the building blocks required for this programming.

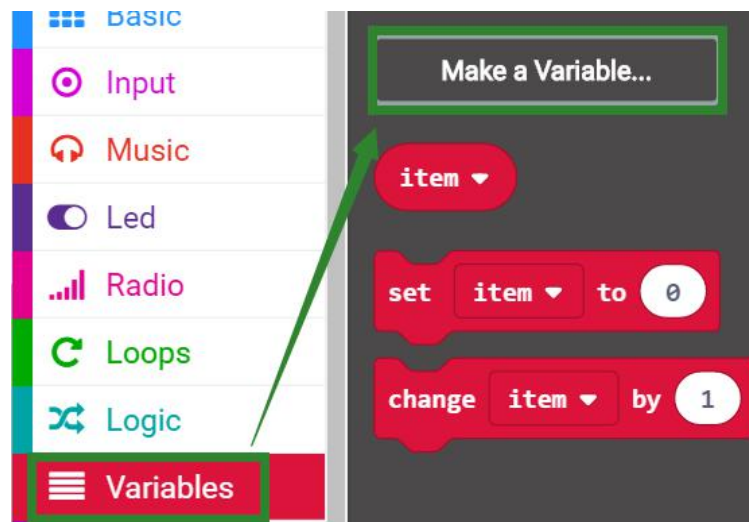






How to create a new variable

① Find the [Variable] option in the building block column-[Make a Variable]



② Enter the name of variable to complete the new variable.



New variable name:

Ok ✓ Cancel ✕

## 6.Combine block

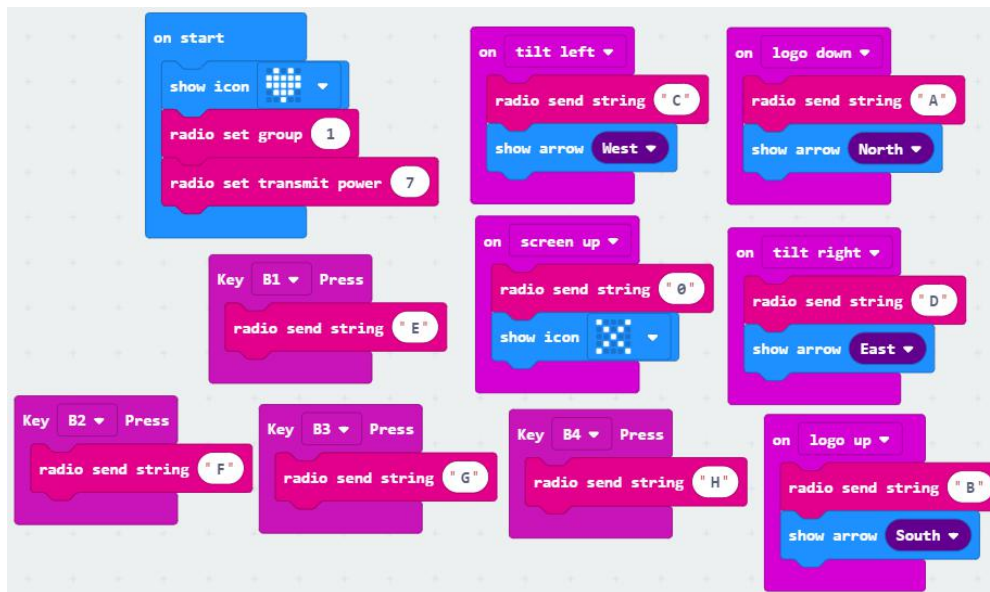
The Proficient carrier program is shown below.

```

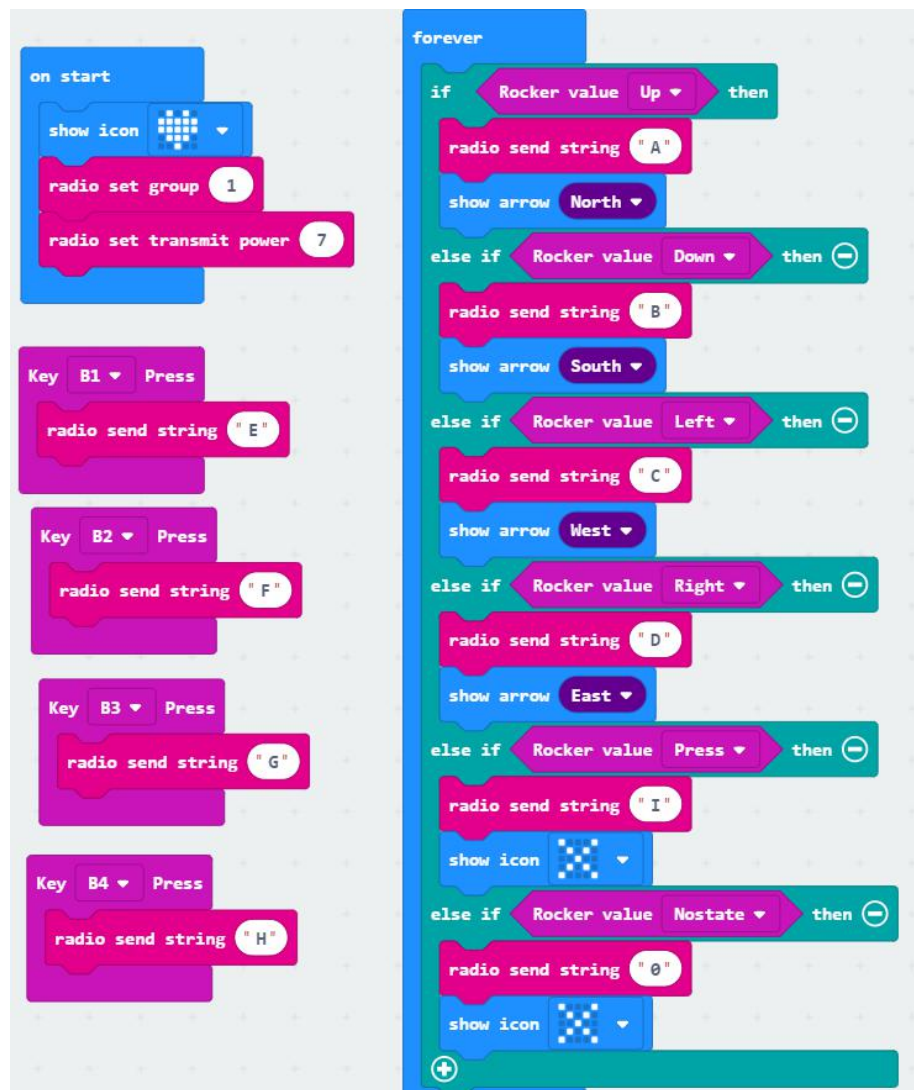
on start
  radio set group 1
  radio set transmit power 7
  Servo(270°) num S1 value 0
  show icon robot

on radio received receivedString
  set item to receivedString
  if compare item to "A" = 0 then
    Motor M1 speed(-255~255) 255
    Motor M3 speed(-255~255) 255
  else if compare item to "B" = 0 then
    Motor M1 speed(-255~255) -255
    Motor M3 speed(-255~255) -255
  else if compare item to "C" = 0 then
    Motor M1 speed(-255~255) -255
    Motor M3 speed(-255~255) 255
  else if compare item to "D" = 0 then
    Motor M1 speed(-255~255) 255
    Motor M3 speed(-255~255) -255
  else if compare item to "0" = 0 then
    Motor M1 speed(-255~255) 0
    Motor M3 speed(-255~255) 0
  else if compare item to "E" = 0 then
    Servo(270°) num S1 value 60
    RGB_Program show color red
    RGB_Program show
  else if compare item to "F" = 0 then
    Servo(270°) num S1 value 120
    RGB_Program show color green
    RGB_Program show
  else if compare item to "G" = 0 then
    RGB_Program show color blue
    RGB_Program show
  else if compare item to "H" = 0 then
    Servo(270°) num S1 value 180
    RGB_Program show color yellow
    RGB_Program show
  else if compare item to "I" = 0 then
    RGB_Program clear
    RGB_Program show
  
```

Handle gravity control code, as shown below.



Handle rocker control code, as shown below.



## 7.Experimental phenomena

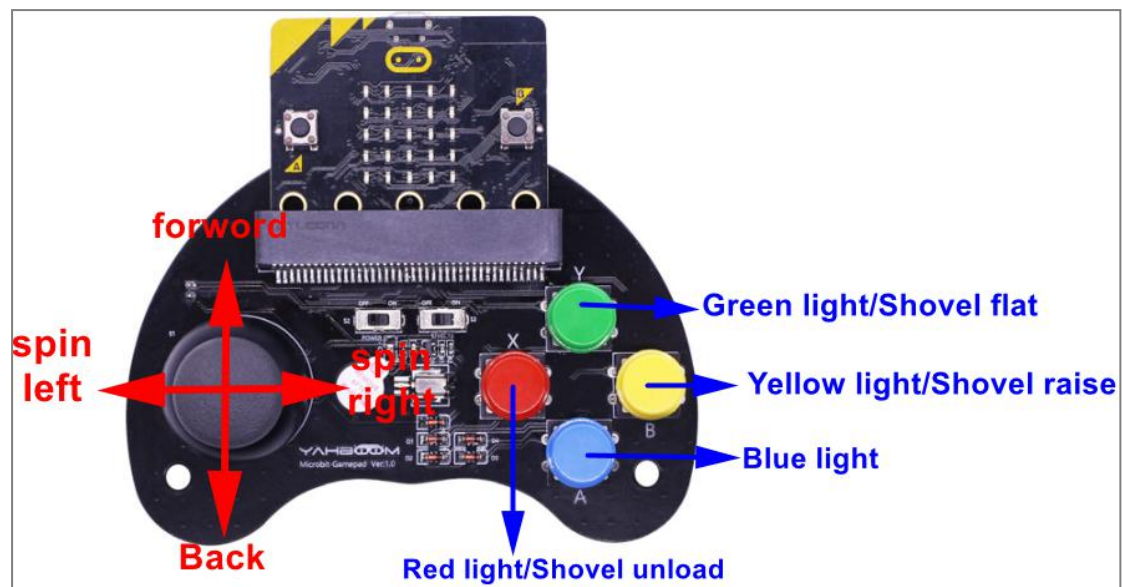
We need to download the Proficient carrier code into the micro:bit board of the Proficient carrier. Open the power switch of the car, we can see a smile pattern displayed on the micro:bit dot matrix;

We need to download the Handle code into the micro:bit board of the handle.

Open the power switch of the handle, we can see that the micro: bit dot matrix will initially display a heart pattern, and then display an "X" pattern, indicating that the handle is in the default( no data is sent).

They will automatically pairing, then, we can start remote control the Proficient carrier by handle.

The handle functions are shown below.



**! Note:**

In case of handle rocker control, press the rocker to control the RGB light closed. In case of handle gravity control, this function is not available.