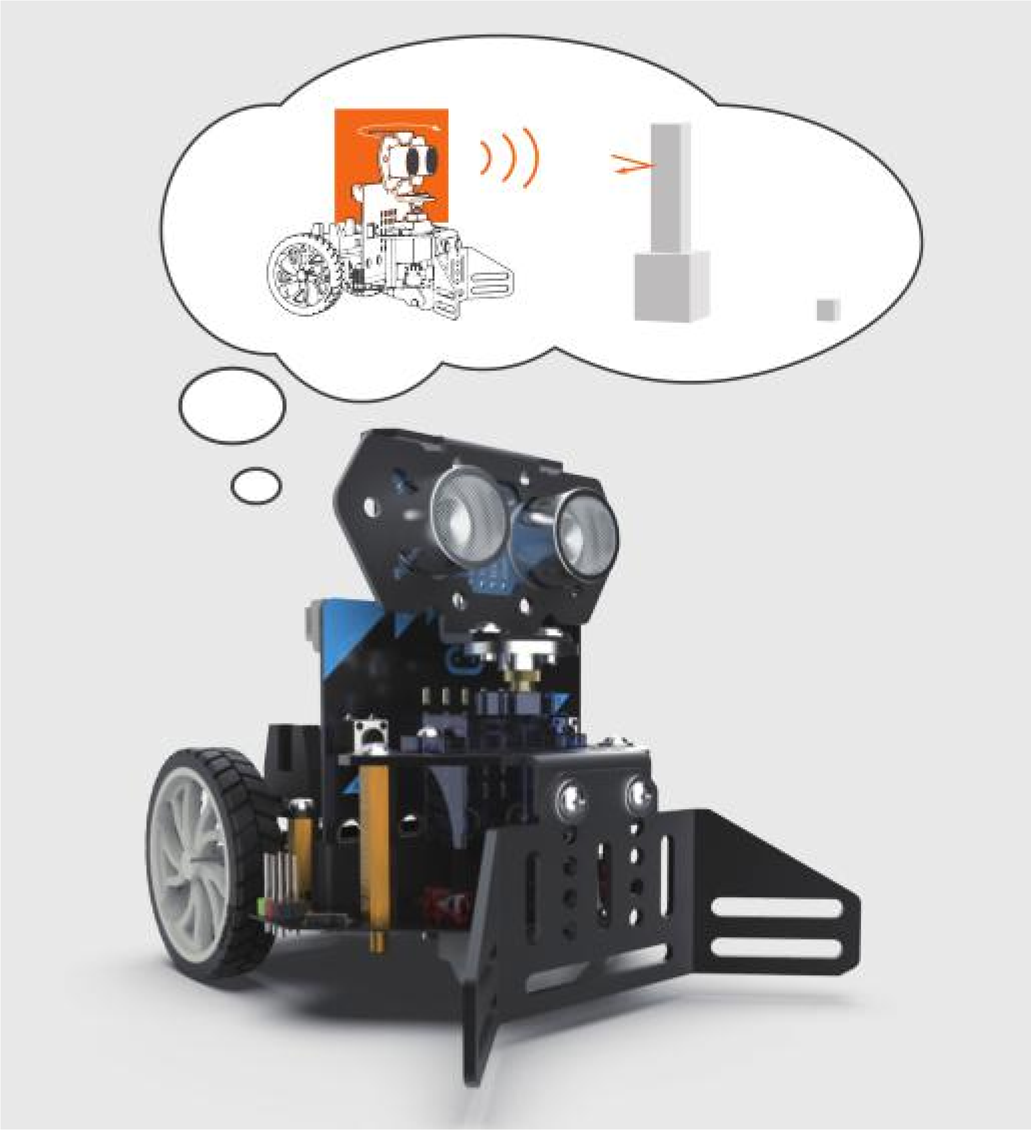
Tutorial of

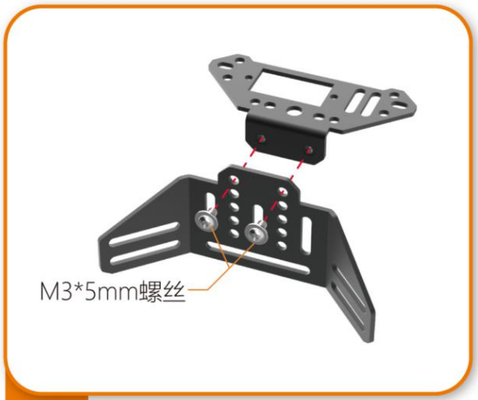
Maqueen Mechanic-Push

[ROB0156-P]

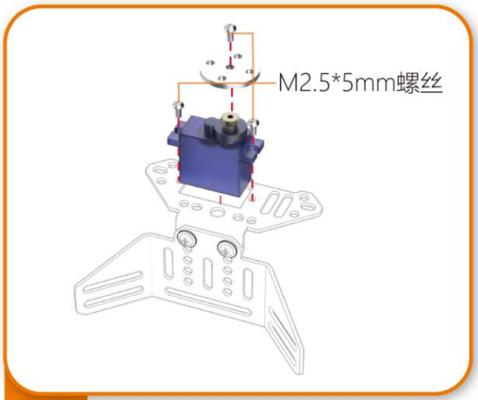


www.DFRobot.com

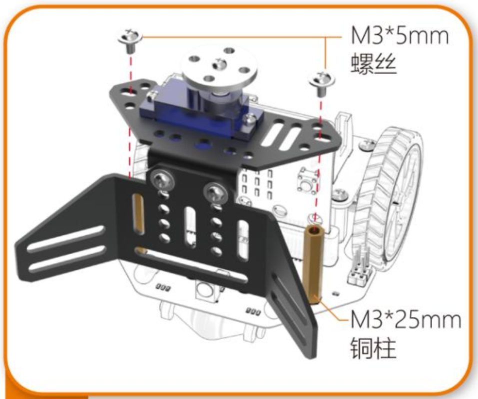
Installation Diagram



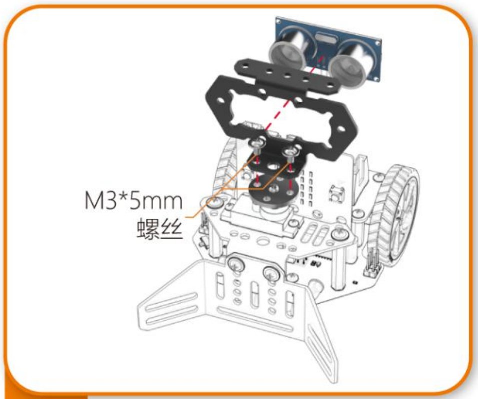
1



2


M3*5mm
螺丝
M3*25mm
铜柱

3



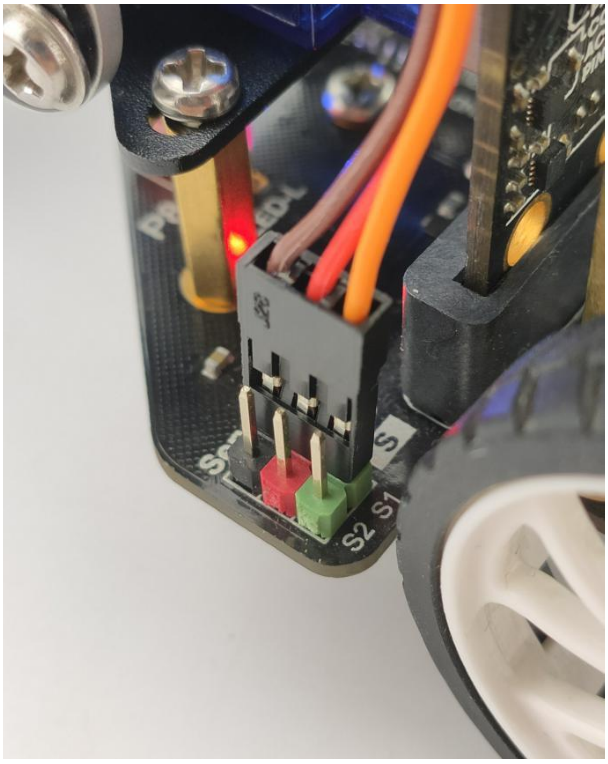
4

Method to Control

1. wiring

Plug the 3pin servo wire into port S1 or S2 of Maqueen, shown as below:

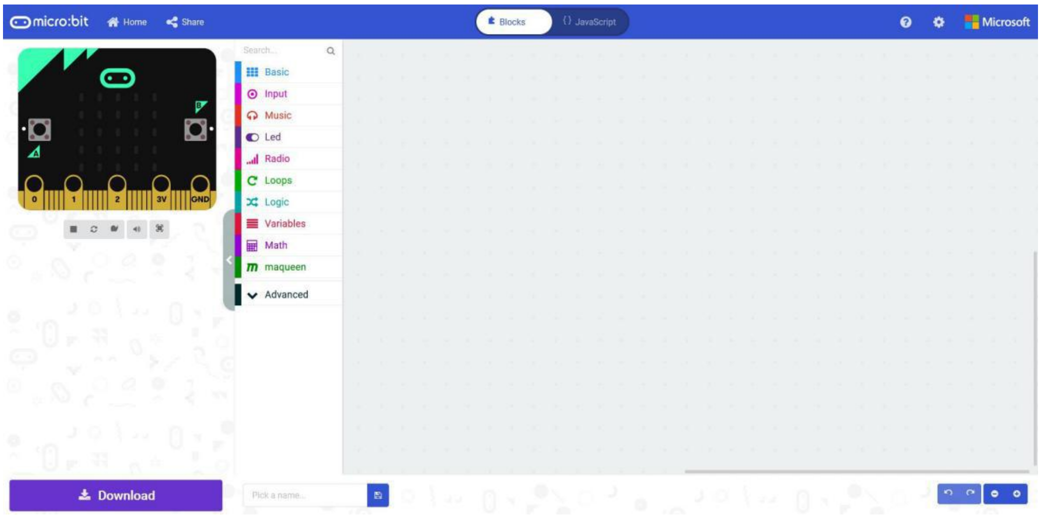
- Brown wire to Black pin
- Red wire to Red pin
- Orange wire to Green pin



2.Makecode Tutorial

1. **Click to open the Makecode programming web :**

   https://makecode.microbit.org/#editor


micro:bit
Home
Share
Blocks
JavaScript
Microsoft
Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
maqueen
Advanced
Download
Pick a name...

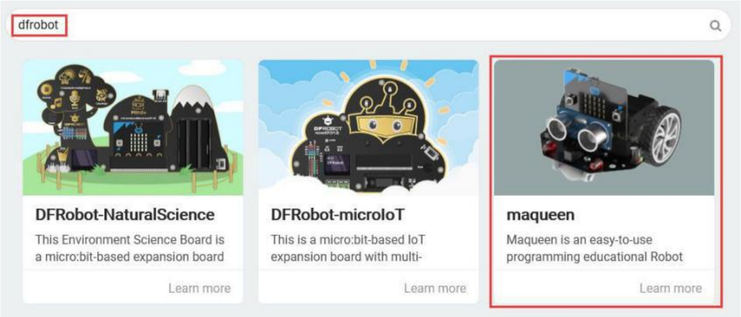
2. Import Extensions for Maqueen:

1) Click **More**

2) Click **Extensions**

3) Search **dfrobot**

4) Click to select **Maqueen**



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This Environment Science Board is a micro:bit-based expansion board
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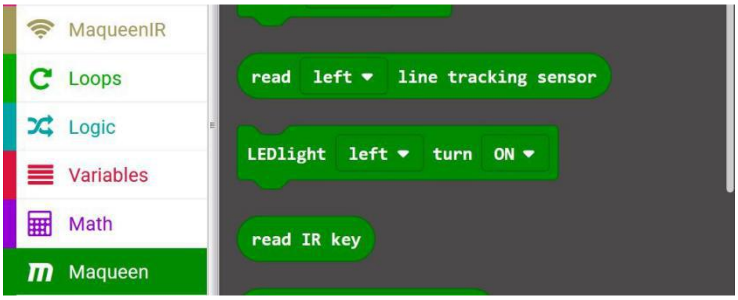
DFRobot-microIoT
This is a micro:bit-based IoT expansion board with multi-
Learn more

maqueen
Maqueen is an easy-to-use programming educational Robot
Learn more


MaqueenIR
Loops
Logic
Variables
Math
Maqueen

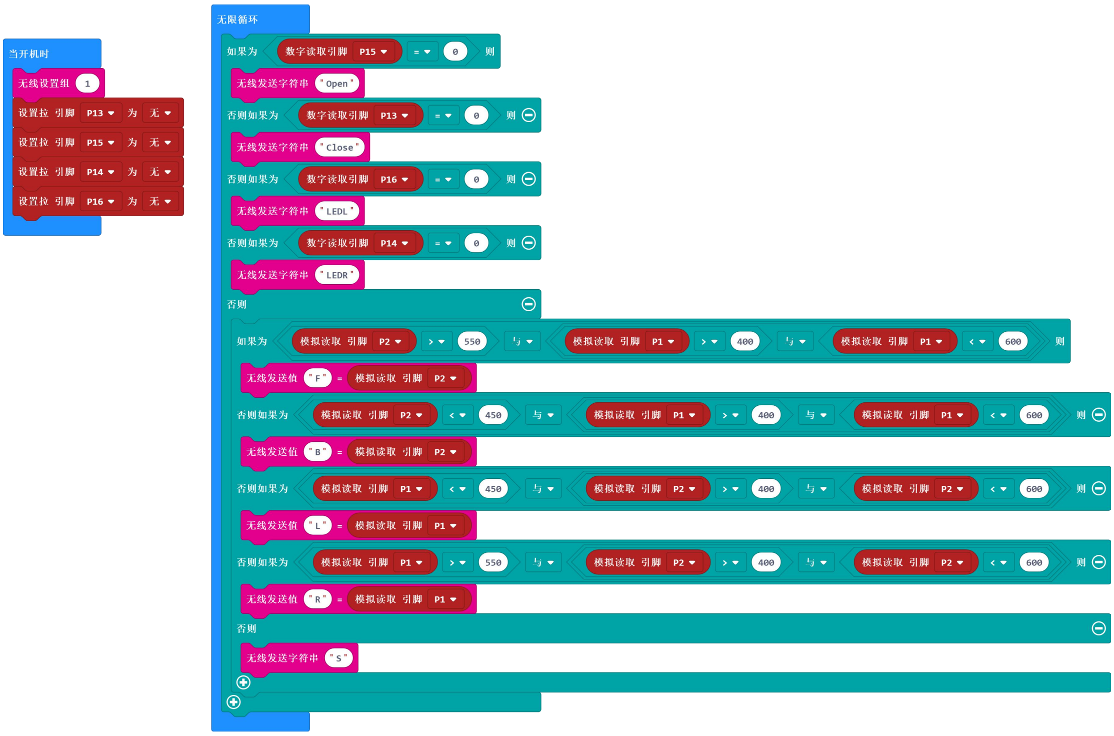
```
read left ▾ line tracking sensor
LEDlight left ▾ turn ON ▾
read IR key
```

3. Examples

1. GamePad Remote Control Bulldozer

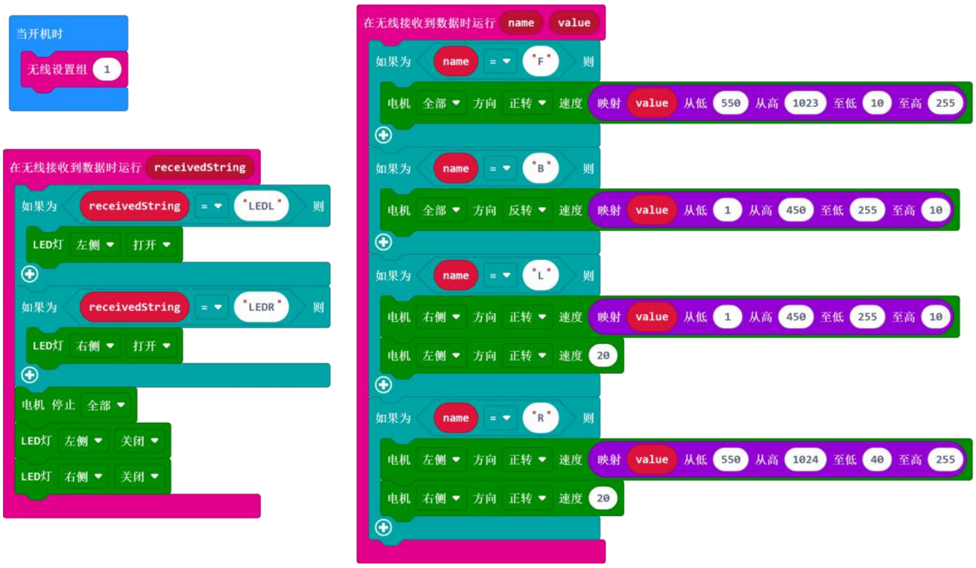
This program uses GamePad to remote control the Maqueen Mechanic-Push by wireless communication of two micro:bit boards. Through remote control, controlled-type Maqueen competition can be organized. In this sample, the joystick is set as an analog quantity while controlling the car’ s speed and direction simultaneously. The more the joystick moves, the faster it goes. The left and right buttons control the lights on and off

GamePad End Program: https://makecode.microbit.org/_Wmxd6k2Era7z



```
当开机时
    无线设置组 1
    设置拉 引脚 P13 为 无
    设置拉 引脚 P15 为 无
    设置拉 引脚 P14 为 无
    设置拉 引脚 P16 为 无

无限循环
    如果为 数字读取引脚 P15 = 0 则
        无线发送字符串 "Open"
    否则如果为 数字读取引脚 P13 = 0 则
        无线发送字符串 "Close"
    否则如果为 数字读取引脚 P16 = 0 则
        无线发送字符串 "LEDL"
    否则如果为 数字读取引脚 P14 = 0 则
        无线发送字符串 "LEDR"
    否则
        如果为 模拟读取 引脚 P2 > 550 与 模拟读取 引脚 P1 > 400 与 模拟读取 引脚 P1 < 600 则
            无线发送值 "F" = 模拟读取 引脚 P2
        否则如果为 模拟读取 引脚 P2 < 450 与 模拟读取 引脚 P1 > 400 与 模拟读取 引脚 P1 < 600 则
            无线发送值 "B" = 模拟读取 引脚 P2
        否则如果为 模拟读取 引脚 P1 < 450 与 模拟读取 引脚 P2 > 400 与 模拟读取 引脚 P2 < 600 则
            无线发送值 "L" = 模拟读取 引脚 P1
        否则如果为 模拟读取 引脚 P1 > 550 与 模拟读取 引脚 P2 > 400 与 模拟读取 引脚 P2 < 600 则
            无线发送值 "R" = 模拟读取 引脚 P1
        否则
            无线发送字符串 "S"
```

Maqueen End Program: https://makecode.microbit.org/_3fiYv2b8zc2y



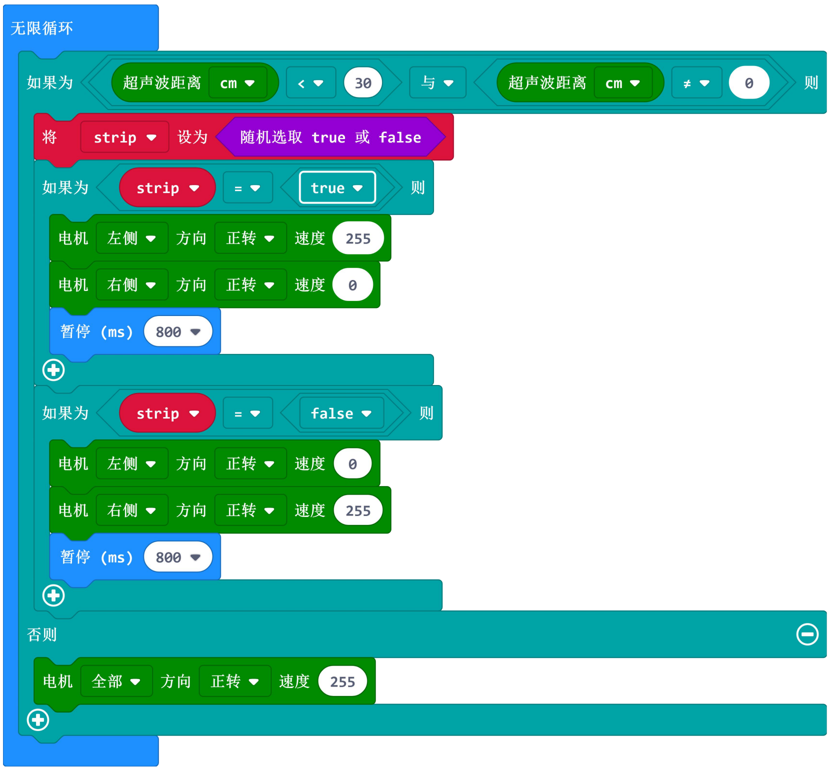
```
当开机时
    无线设置组 1

在无线接收到数据时运行 receivedString
    如果为 receivedString = "LEDL" 则
        LED灯 左侧 打开
    如果为 receivedString = "LEDR" 则
        LED灯 右侧 打开
    电机 停止 全部
    LED灯 左侧 关闭
    LED灯 右侧 关闭

在无线接收到数据时运行 name value
    如果为 name = "F" 则
        电机 全部 方向 正转 速度 映射 value 从低 550 从高 1023 至低 10 至高 255
    如果为 name = "B" 则
        电机 全部 方向 反转 速度 映射 value 从低 1 从高 450 至低 255 至高 10
    如果为 name = "L" 则
        电机 右侧 方向 正转 速度 映射 value 从低 1 从高 450 至低 255 至高 10
        电机 左侧 方向 正转 速度 20
    如果为 name = "R" 则
        电机 左侧 方向 正转 速度 映射 value 从低 550 从高 1024 至低 40 至高 255
        电机 右侧 方向 正转 速度 20
```

2. Ultrasonic Obstacle Avoidance Vehicle

In this sample program, the front ultrasonic sensors on Maqueen car will detect the distance between itself and obstacle ahead. If the distance is less than 30cm, the robot car will turn left or right randomly to avoid the obstacle.

Program Link: https://makecode.microbit.org/_FxFPvxDzVR8P

Program Screenshot:



```
无限循环
    如果为 超声波距离 cm < 30 与 超声波距离 cm ≠ 0 则
        将 strip 设为 随机选取 true 或 false
        如果为 strip = true 则
            电机 左侧 方向 正转 速度 255
            电机 右侧 方向 正转 速度 0
            暂停 (ms) 800
        如果为 strip = false 则
            电机 左侧 方向 正转 速度 0
            电机 右侧 方向 正转 速度 255
            暂停 (ms) 800
    否则
        电机 全部 方向 正转 速度 255
```