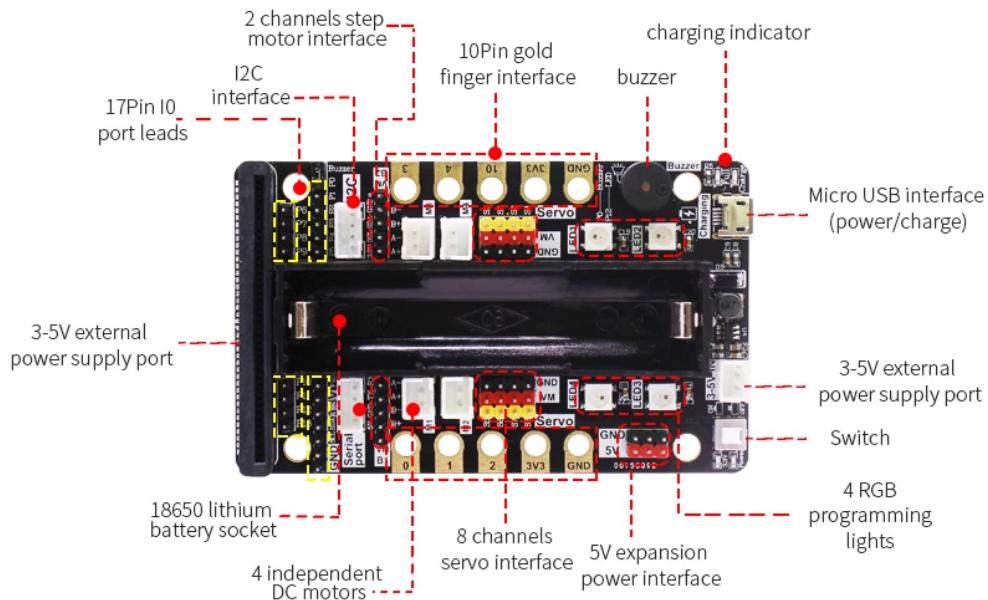


## Introduction of Super:bit expansion board



MakeCode extension package: <https://github.com/lzty634158/SuperBit>

MakeCode extension package: <https://github.com/lzty634158/Croco-Kit>

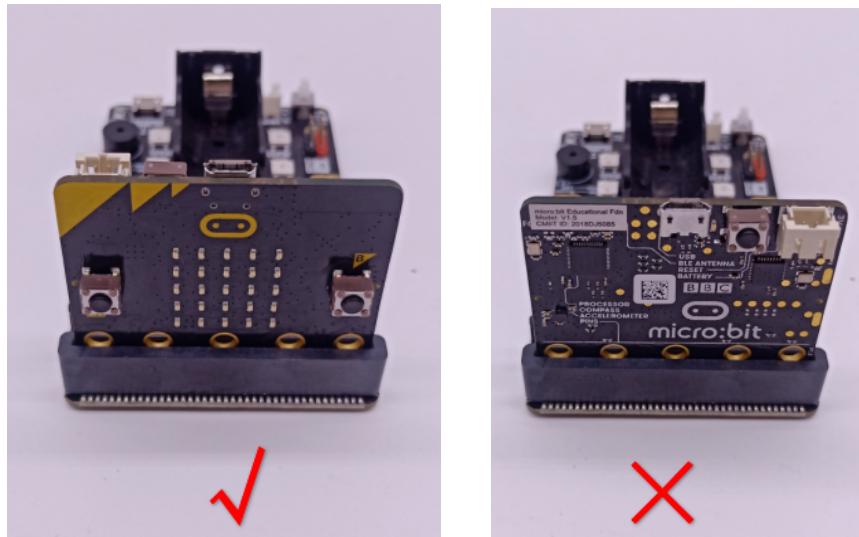
### 1. Micro:bit socket



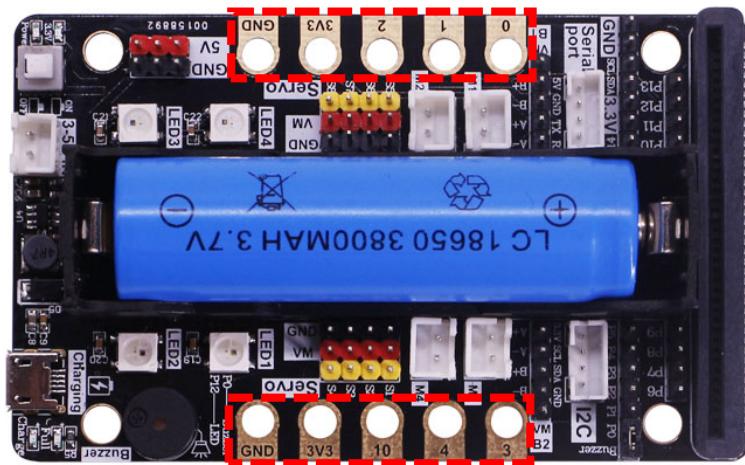
1-1 position

We can insert micro:bit board in here. As shown below.

**! ! ! Note: Direction of micro: bit board**

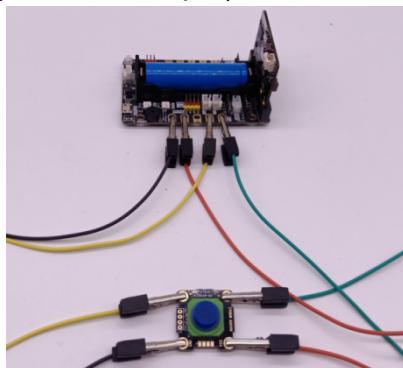


## 2. 10 pin gold finger interface

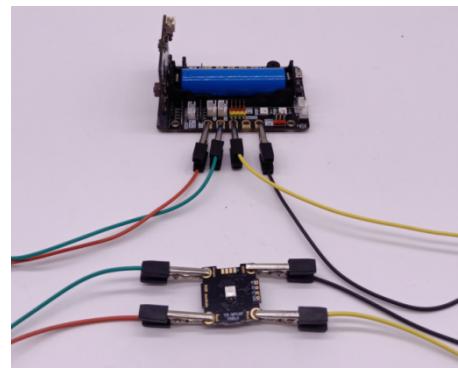


2-1 position

This crocodile clip interface is connect P0,P1,P2,P3,P4,P10,3.3V,GND. We can connect some module with crocodile clip interface. As shown below(just for example)



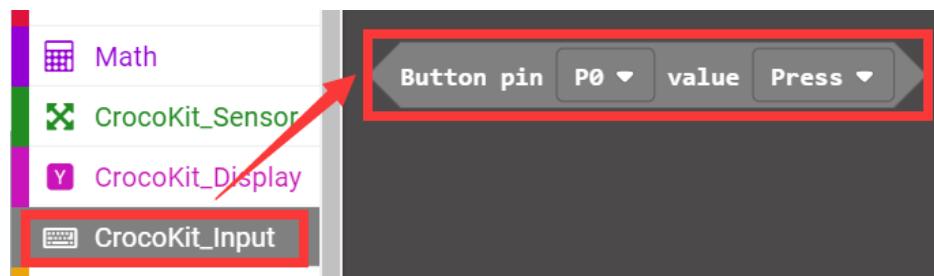
2-2 button module



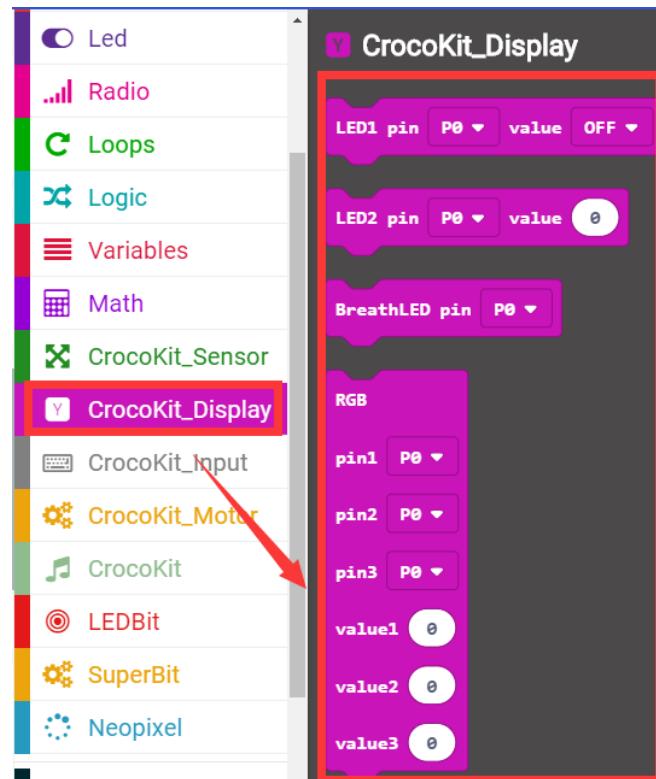
2-3 RGB light module

You need to add extension package:

<https://github.com/lzty634158/Croco-Kit>, then you can use the following building blocks to control these modules.

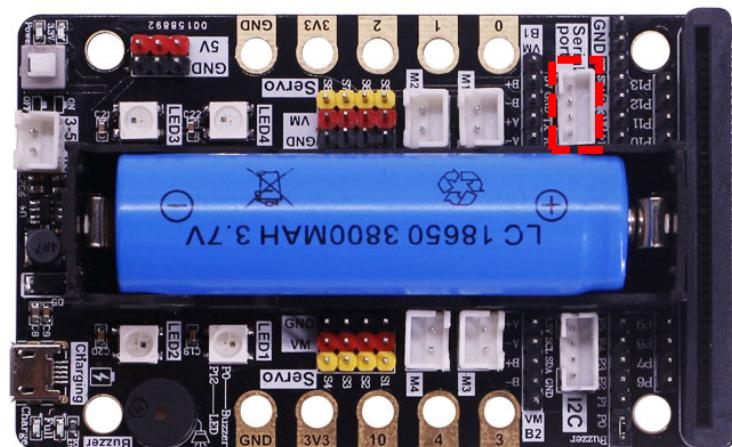


2-3-1 block



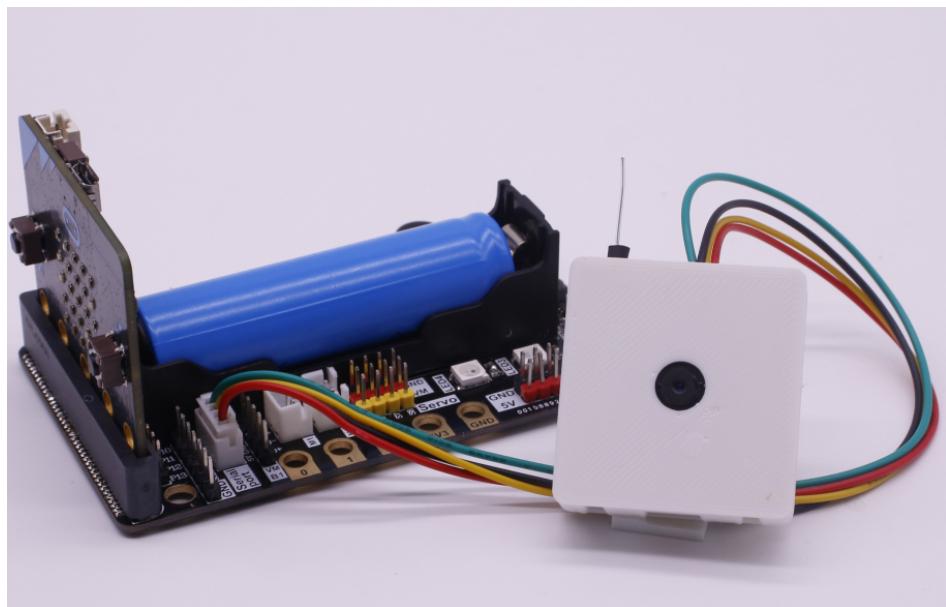
2-3-2 block

### 3. Serial Port

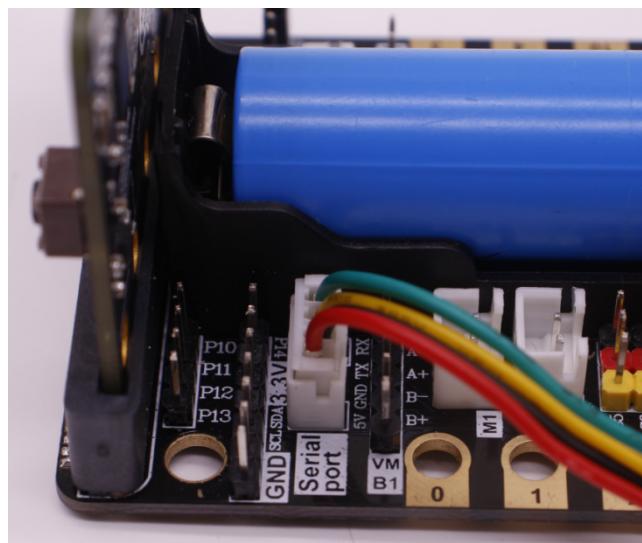


3-1 position

This interface possess 4 pin: 5v, GND, TX, RX. The type is PH2.0 4P.  
You can connect some module with Serial port communication.(For example:  
Wifi camera)  
As shown below.

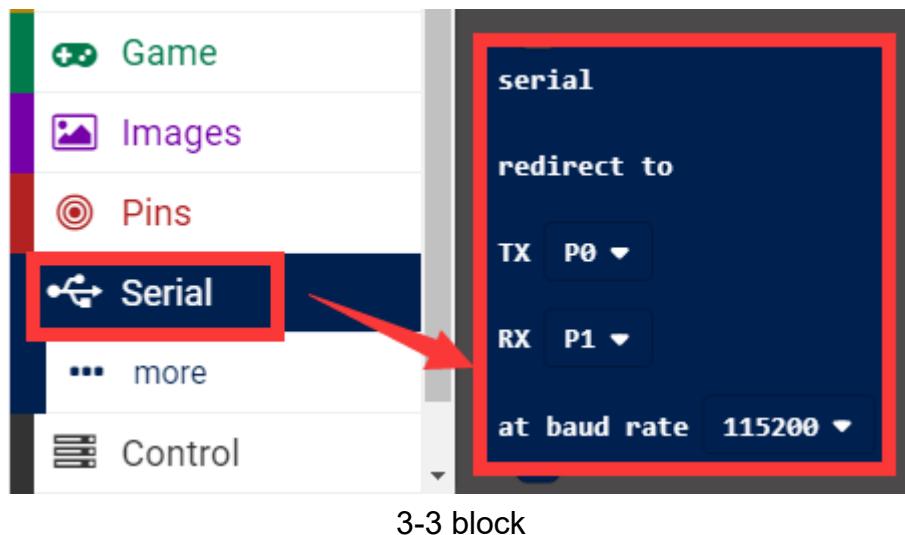


3-2-1 wiring



3-2-2 wiring

Micro:bit supports serial port redirection. If you want to use this serial port socket on the super:bit expansion board, Just set TX to P1 and RX to P2.  
As shown below.



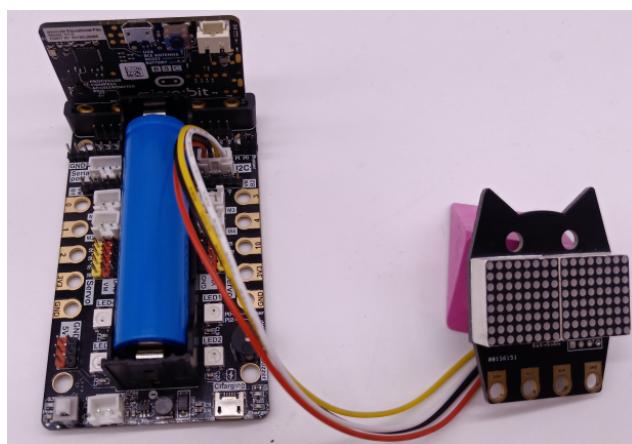
#### 4. I2C Port



4-1 position

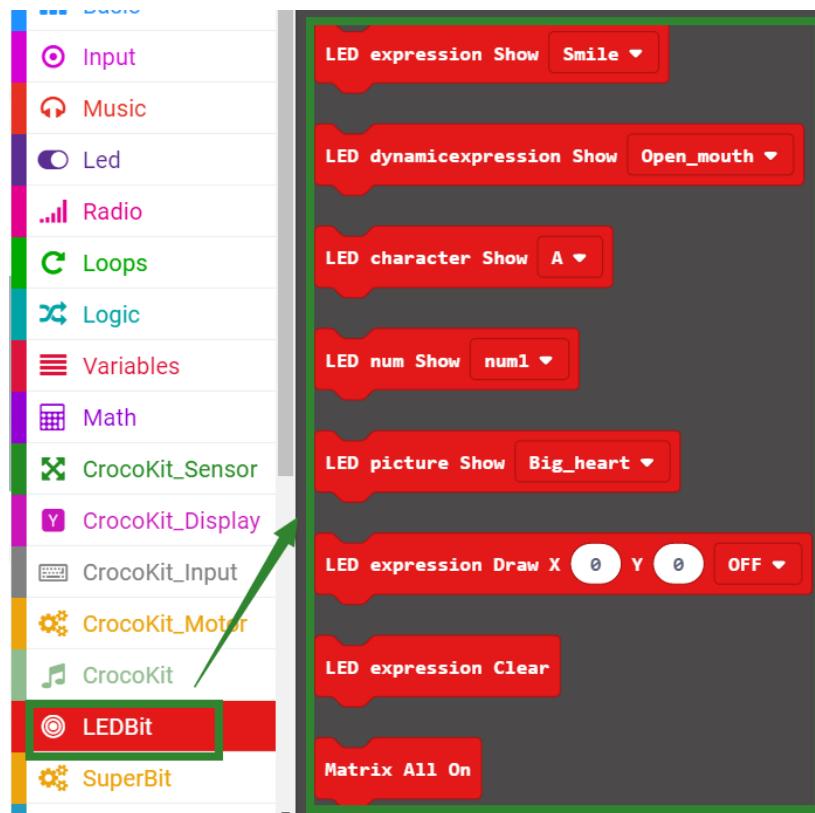
This interface possess 4 pin: 3.3v, SCL, SDA, GND. The type is PH2.0 4P. You can connect some module with I2C communication.

As shown below.



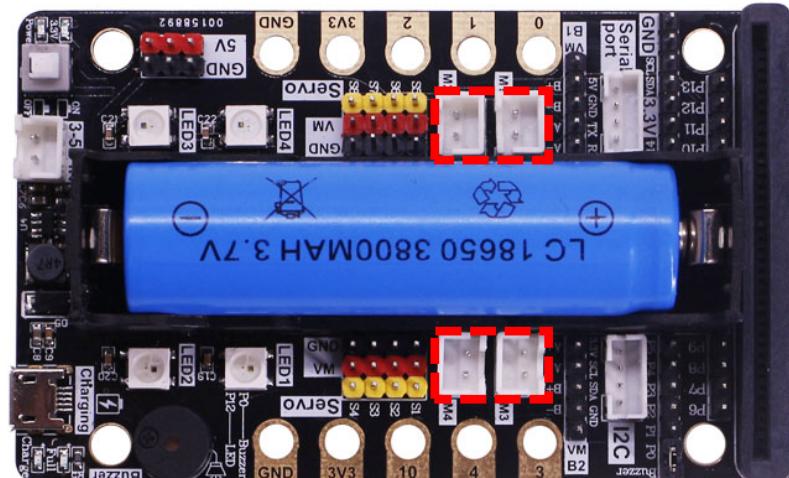
4-2 wiring

You need to add extension package:  
<https://github.com/lzty634158/Croco-Kit>, then you can use the following building blocks to control these modules.



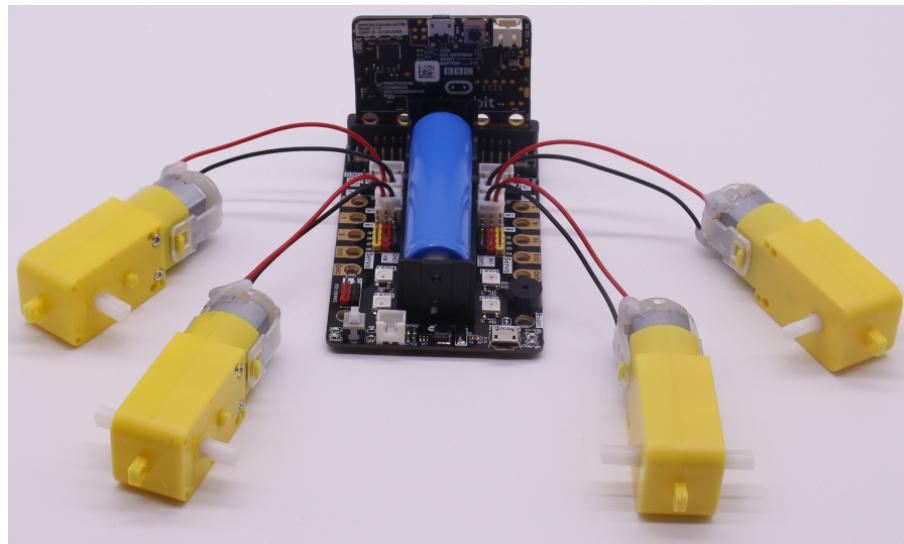
4-3 block

## 5. Motor interface

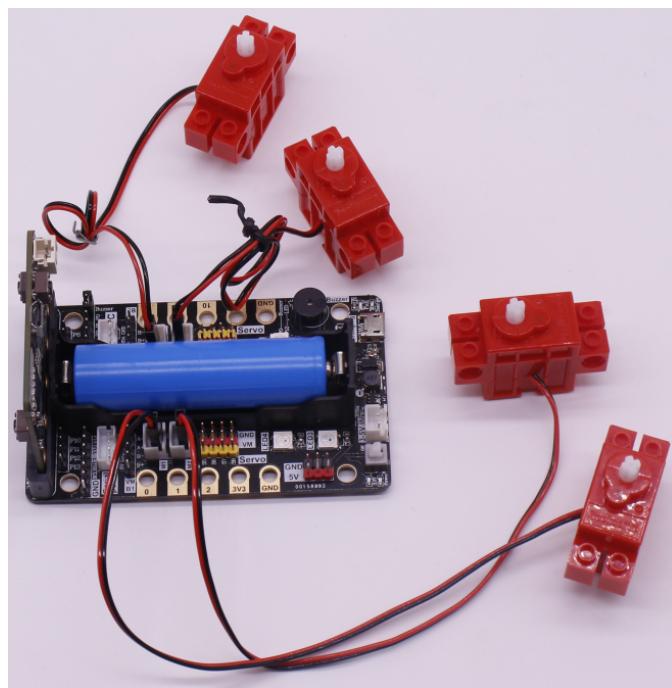


5-1 position

This interface can connect to TT DC motor or Building block motor.



5-2-1 TT DC motor

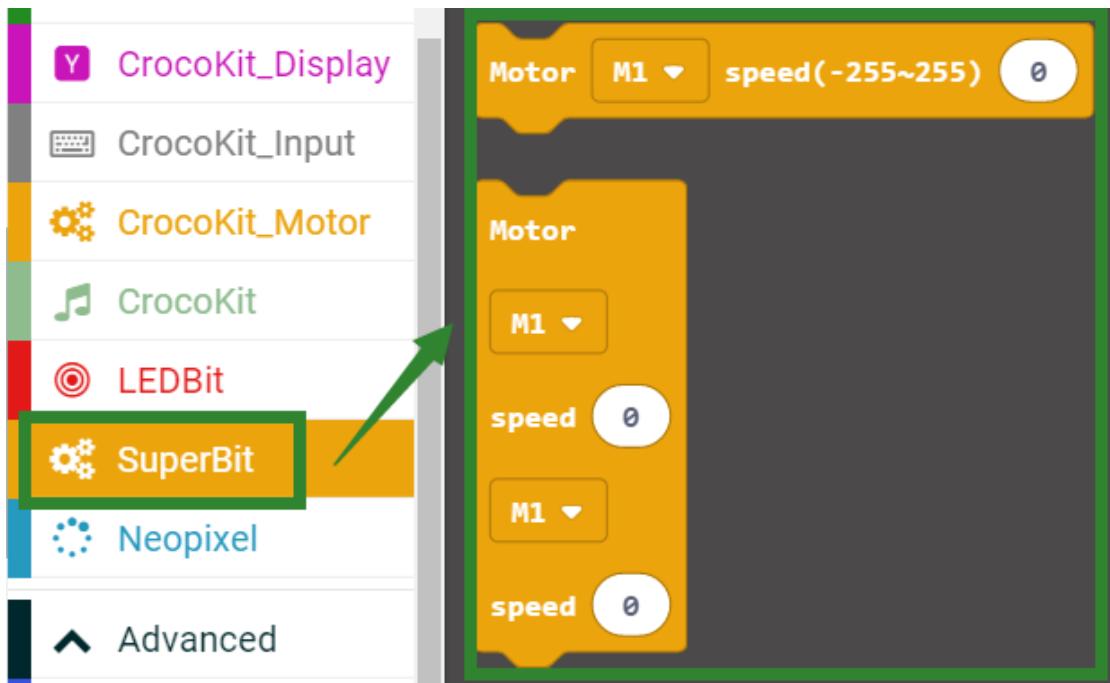


5-2-2 building block motor

**Note: The red line of the motor needs to be connected to +, The black line of the motor needs to be connected to -.**

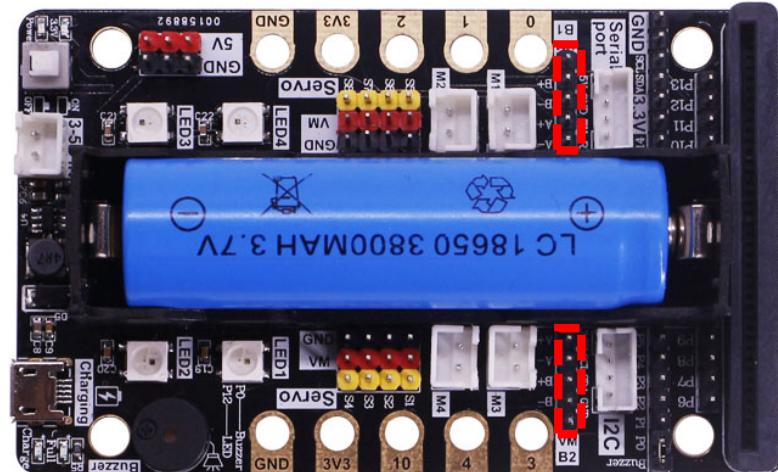
You need to add extension package:

<https://github.com/lzty634158/SuperBit>, then you can use the following building blocks to control these motor.



5-3 block

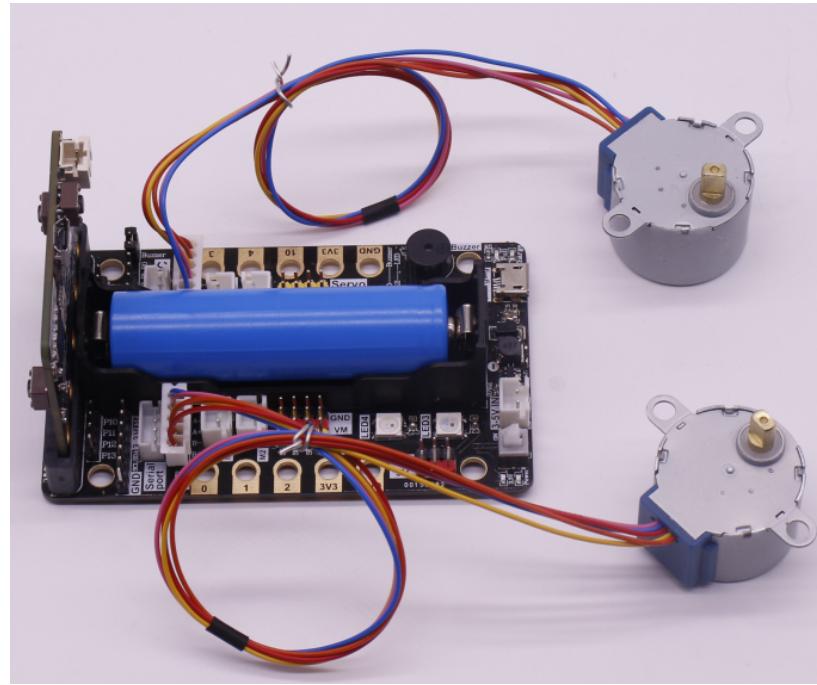
## 6. Stepper motor interface



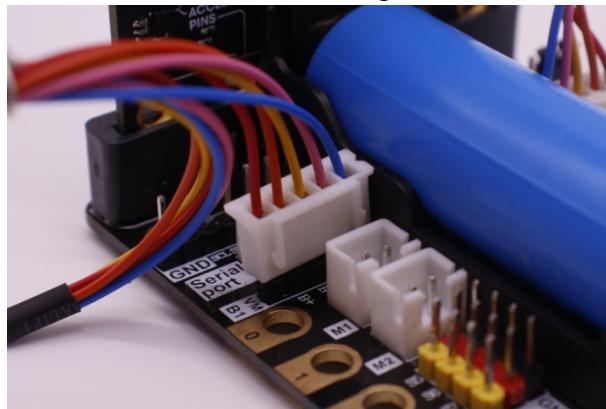
6-1 position

We can connect two stepper motor on this expansion board.

**Note: Do not wire incorrectly.**



6-2-1 wiring



6-2-2 wiring

You need to add extension package:

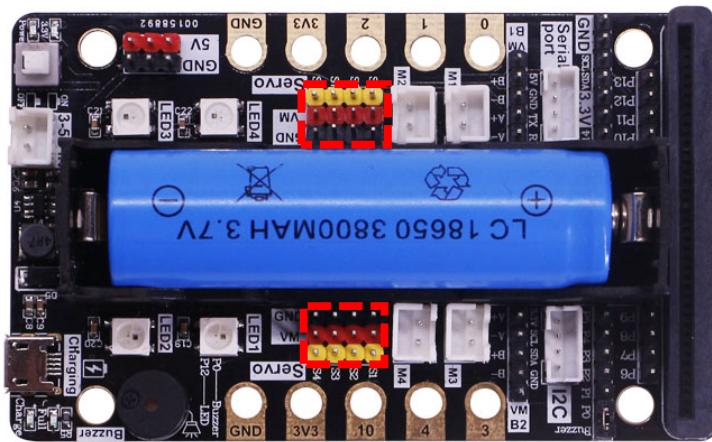
<https://github.com/lzty634158/SuperBit>, then you can use the following building blocks to control these stepper motor.

The image shows a Scratch-like programming environment with the following components:

- Categories (Left):**
  - CrocoKit\_Sensor
  - CrocoKit\_Display
  - CrocoKit\_Input
  - CrocoKit\_Motor
  - CrocoKit
  - LEDBit
  - SuperBit** (highlighted with a green border and arrow)
- Scratch Script Area (Right):**
  - Stepper Motor(28BYJ-48) B1 degree 0
  - Stepper Motor(28BYJ-48) B1 turn 1/4 circle
  - Dual Stepper Motor(Degree) M1 0 M2 0
  - PWM OFF 0

### 6-3 wiring

#### 7. Servo interface



7-1 position

Super:bit expansion board possess 8 servo interfaces(3 pin) . It can connect servo or building block servo.

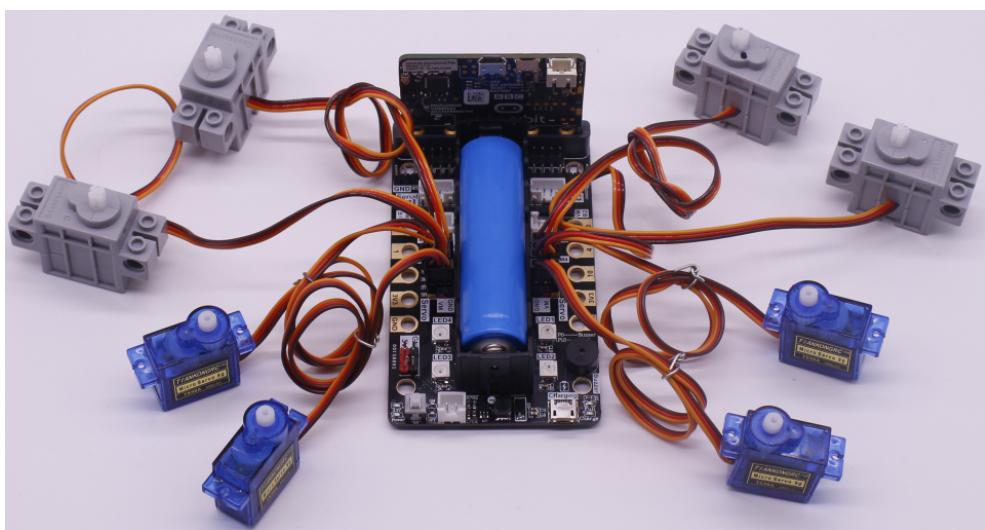
**Note:**

**Red line of servo connect to red pin of servo interface on the super:bit expansion board.**

**Orange line of servo connect to yellow pin of servo interface on the super:bit expansion board.**

**Brown line of servo connect to black pin of servo interface on the super:bit expansion board.**

As shown below.



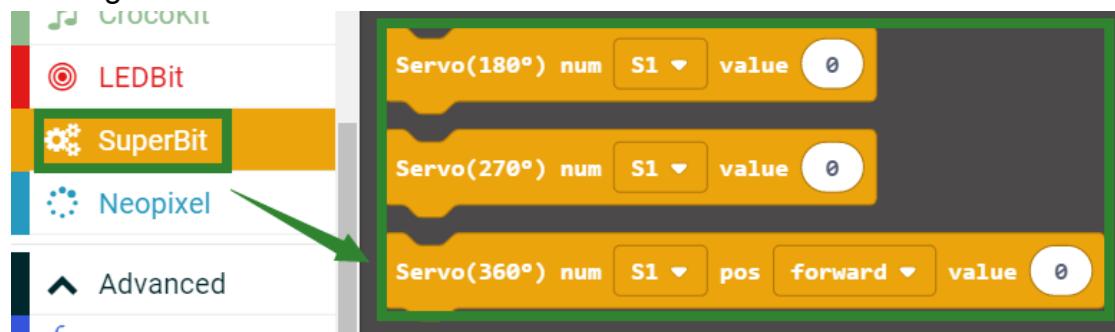
7-2-1 wiring



7-2-2 wiring

You need to add extension package:

<https://github.com/lzty634158/SuperBit>, then you can use the following building blocks to control these servo.



7-3 block

## 8. 5V/GND Pin header



8-1 position

This is 5v/GND interface, which can connect the DuPont line to power other sensor modules.

## 9. Power switch



**9-1 position**

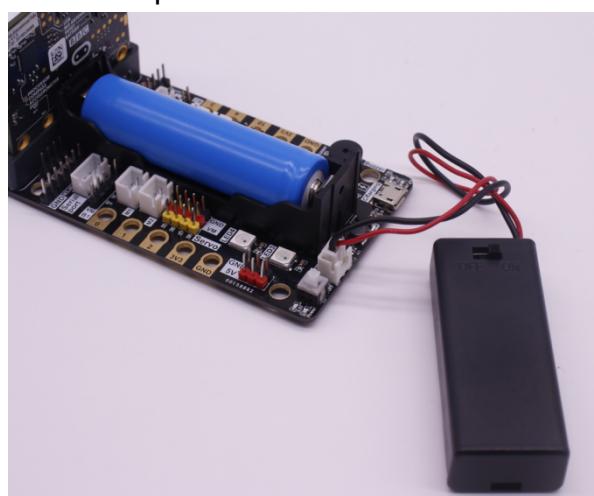
This is power switch of super:bit expansion board. When you want to use motor or servo, you must turn on this power switch to power supply .

#### 10. 3V/5V external power supply port



**10-1 position**

We can use this interface to power two AAA batteries.



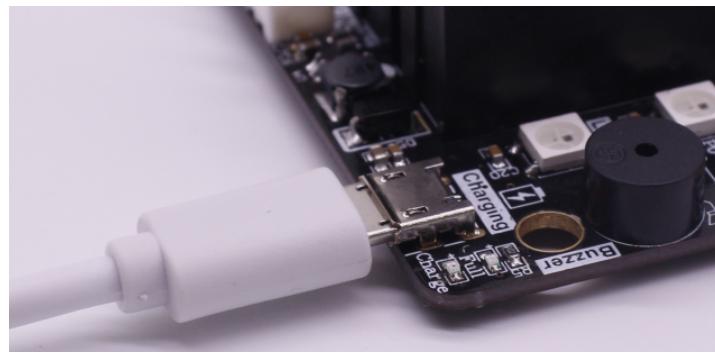
**10-2 wiring**

#### 11. Charging port



11-1 position

This is the interface for charging the 18650 battery. As shown below.

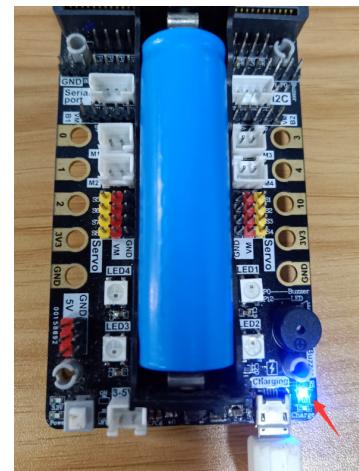
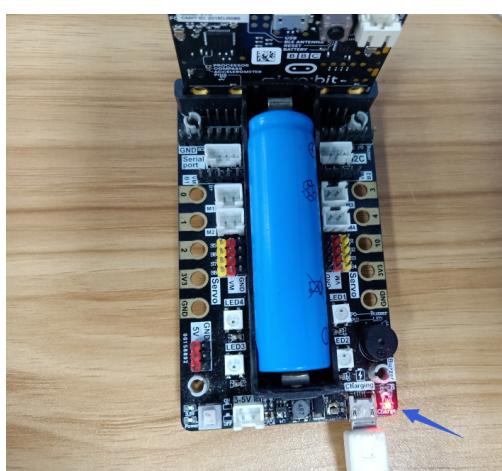


11-2 wiring

The other end of the charging cable needs to be connected to the USB interface of the computer.

#### About Battery and charging:

- 1) The battery needs to be charged in time at around **3.7V**. When the charging is completed, the battery voltage is about **4.2V**.
- 2) Turn off the power switch of the expansion board during charging.
- 3) **The charging device indicator lights up red, and the indicator light turns green when fully charged.** As shown below.



- 4) If you do not use the it for a long time, you should unplug the battery cable . Because even if the it is in standby, the battery will be worn out.
- 5) If you have not used the it for a long time, you need to fully charge the battery before using it next time.
- 6) After charging is completed, the charger and power supply should be unplugged in time to avoid overcharging and damaging the battery.

## 12. Buzzer



12-1 position

This is passive buzzer.

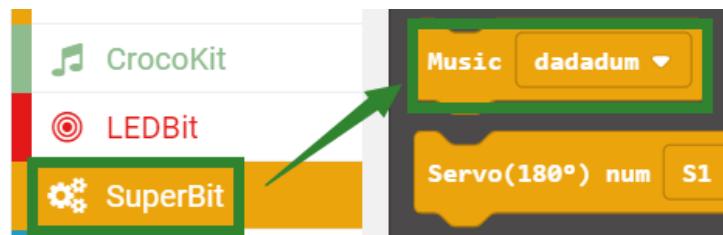
**Note: If you want to use buzzer, you must connect this jumper cap. As shown below.**



12-2 wiring

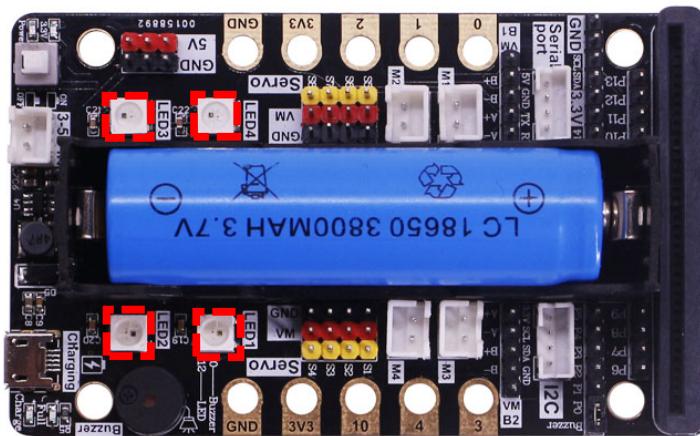
You need to add extension package:

<https://github.com/lzty634158/SuperBit>, then you can make buzzer play music.



12-3 block

### 13. LED light

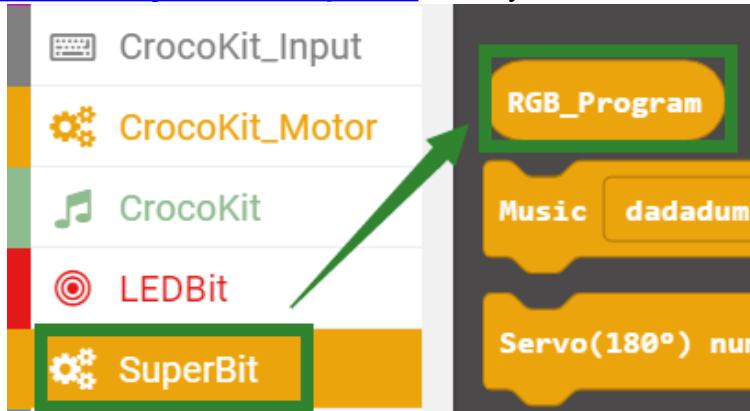


13-1 position

There are 4 LED light on the super:bit expansion board.

You need to add extension package:

<https://github.com/lzty634158/SuperBit>, then you can control 4 LED light.



13-2 block

### 14. 17pin GPIO



### 14-1 position

We expand 17 pin header IO ports to support our sensor modules.  
p0, p1,p2,p3,p4,p5,p6,p7,p8,p9,p10,p11,p12,p13,p14,SCL,SDA.