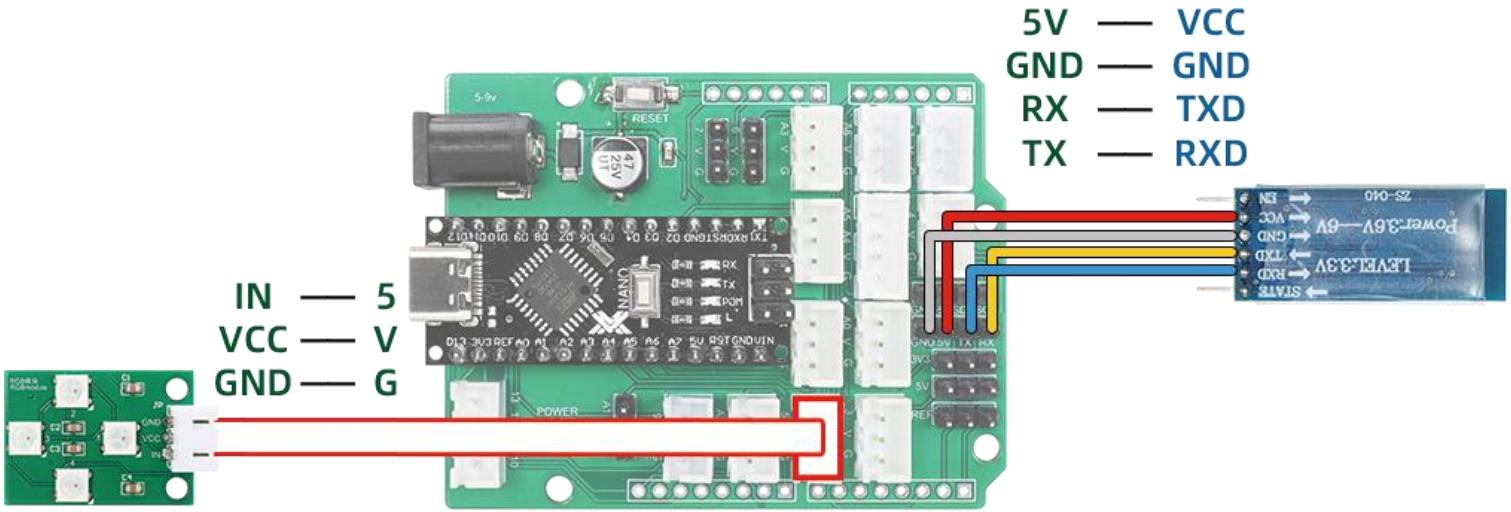
Project 25-Bluetooth Control sw2812B

1. project description

Through this project, you can learn how to use ZY -type-c Nano to control the sw2812B RGB light by receiving commands from a Bluetooth device . The function of this program is to receive specific button information sent by the Bluetooth device to control different effects of the RGB lights .

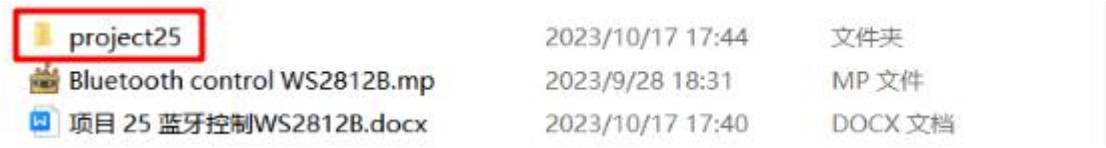
2. Project wiring diagram



3. Download Arduino code

Please confirm that the Adafruit_NeoPixel.zip library has been installed. If not, please return to "Project 6" to see how to install the library.

Open the project Arduino code file (path: Project 25 Bluetooth Control WS2812B\project25\project25.ino)



Connect the main control board to the computer using USB, select the board type as Nano, select the newly displayed COM number, click "Download" to start compiling and downloading the program to the main control board. (At the same time, you should unplug the Bluetooth before downloading, and then plug the Bluetooth back in after the download is successful.)

Code analysis:

```
#include <Adafruit_NeoPixel.h>
#define NUMPIXELS 4   // 定义ws2812 灯数      Number of ws2812b lamps
#define RGB_PIN  5    // 定义ws2812引脚5      ws2812b pin definition 5

Adafruit_NeoPixel pixels(NUMPIXELS, RGB_PIN, NEO_GRB + NEO_KHZ800);//实例化灯对象   Creating light objects

//Variable definition
int count_R=0;                //R/G/B变量初始值   Initial values for R/G/B variables
int count_G=0;
int count_B=0;
int ser_val=0;                //蓝牙按键信息赋值变量    Bluetooth key information assignment variable
int rotate=0;                 //流水灯序号        Serial number of running lamp
```

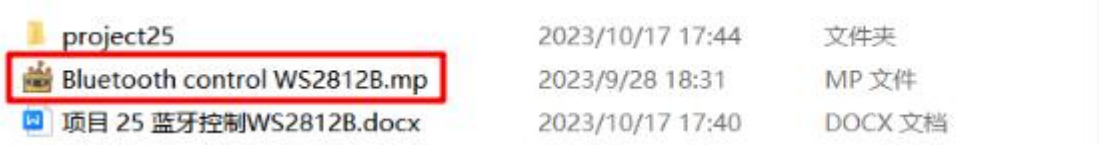
```
//Initialization function
void setup ()
{
  pixels.begin();               //初始化ws2812库函数     Initialize ws2812 library functions
  pixels.show();
  Serial.begin(9600);           //设置波特率9600    Set the baud rate to 9600
}

void loop()
{
  if (Serial.available() > 0)   //是否接收到蓝牙信号    have we received an Bluetooth signal?
  {
    ser_val = Serial.read();    //将接收到的蓝牙信息保存到变量ser_val   Save the received Bluetooth information to the variable ser_val
    Serial.println(ser_val);    //将接受到蓝牙信息打印输出到串口监视器 Print the received infrared coded value to the serial port monitor
  }
  // pixels.clear();              //照明功能   Lighting function
  RGB();                        //RGB函数    RGB function
}

void RGB()
{
  switch(ser_val)             //判断蓝牙按键赋值变量    Determine the Bluetooth key assignment variable
  {
    case 'A' :          //亮白灯    The white light is on
      pixels.setPixelColor(0, pixels.Color(180, 180, 180));
      pixels.setPixelColor(1, pixels.Color(180, 180, 180));
      pixels.setPixelColor(2, pixels.Color(180, 180, 180));
      pixels.setPixelColor(3, pixels.Color(180, 180, 180));
      pixels.show();
```

4. Download Mind+ graphical code

Open the project Mind+code file (path: project 25 Bluetooth control WS2812B\Bluetooth control WS2812B.mp)

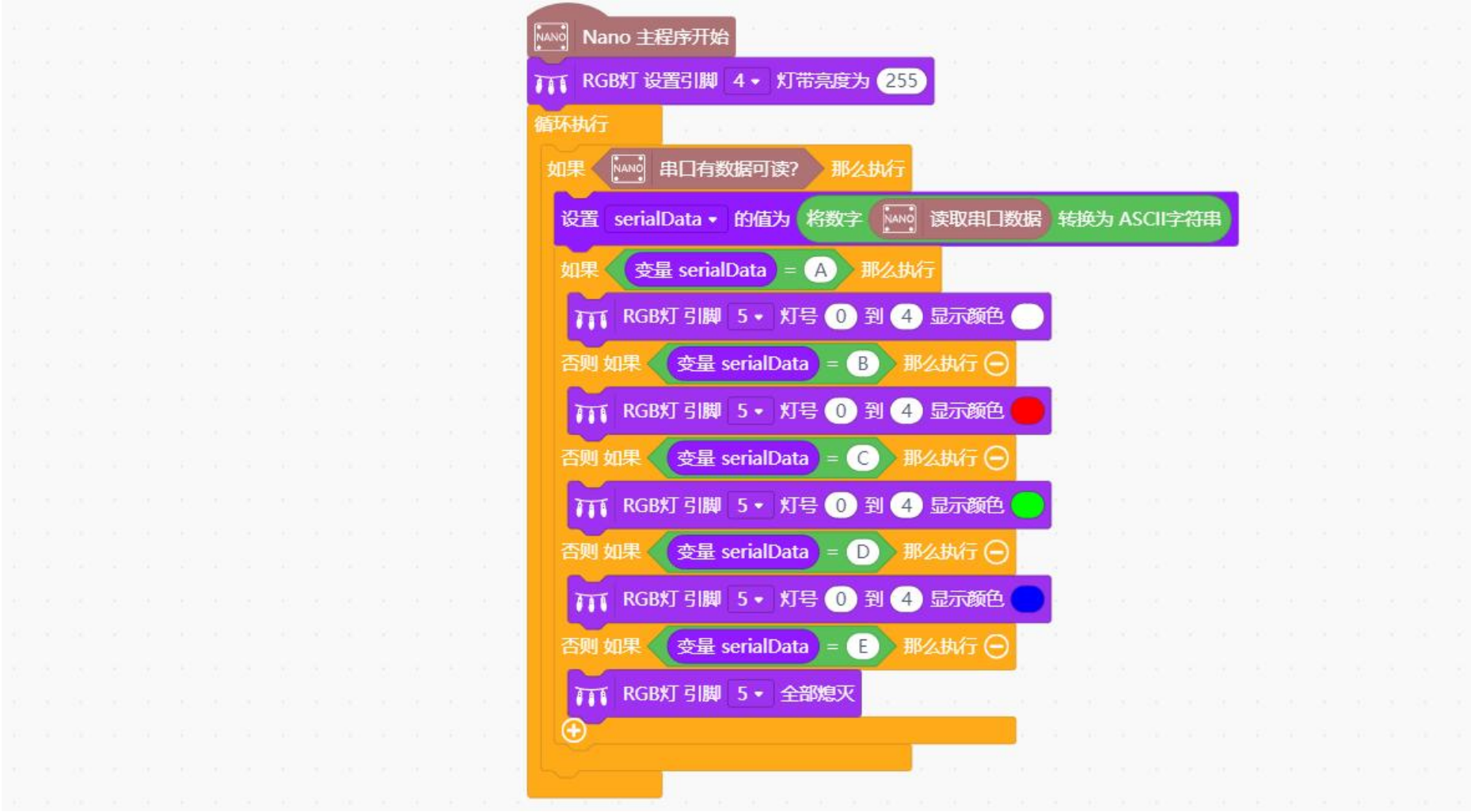


Connect the main control board to the computer with a USB cable and select the newly appeared CH340 serial port COM number. Click "Upload to Device" to complete the code upload.

(At the same time, you should unplug the Bluetooth before downloading, and then plug the Bluetooth back in after the download is successful.)

Set RGB brightness (0~255) as needed. The larger the value, the higher the brightness.

Complete code:



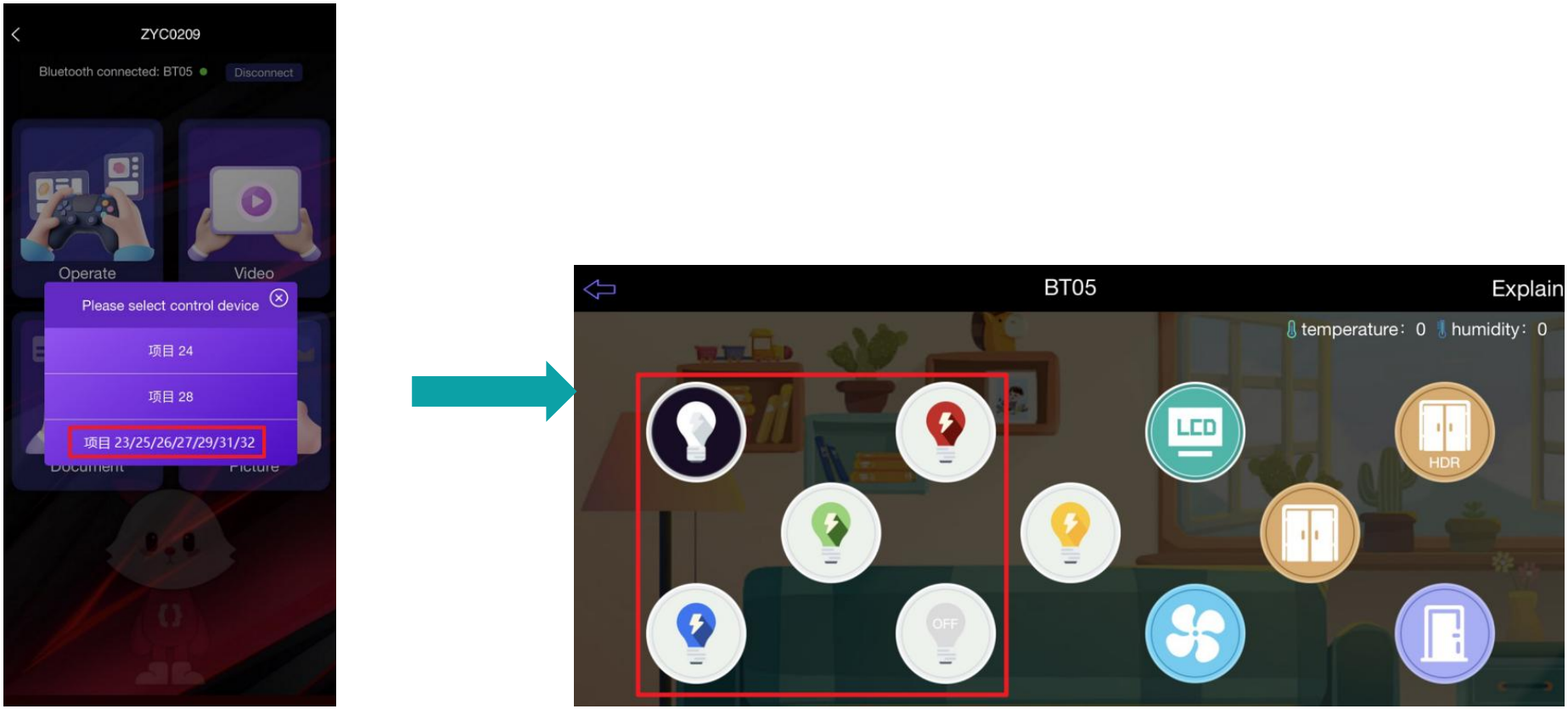
5. Operation on APP

5.1 Please confirm that the TSCINBUNY.apk APP has been installed. If it is not installed, please go back to item 23 to see how to install the APP. Android users will send "TSCINBUNY.apk" to the mobile phone and install it. When you see this tutorial, there may be a newer version of the software. , please allow the upgrade when prompted and keep your phone connected to the network.

For ios device users, please open the App Store, search and install TSCIBUNY

5.2 TSCINBUNY remote control APP enters the project interface

After successfully connecting to Bluetooth, enter the project. This project is 25, so please select the third column. (How to search and connect Bluetooth? Please see item 23)



Project effect: Clicking different buttons will light up different colors of lights or turn them off.