ESP32 S3 WiFi BT Development Board



Table of Contents

Product Introduction 1

Pin Description 2

Dimension Drawing 3

Instructions for Use 4

Product Introduction

The ESP32-S3 is a low-power MCU system-on-chip (SoC) that supports 2.4GHz Wi-Fi and low-power Bluetooth® LE wireless communication. The chip integrates a high-performance Xtensa® 32-bit LX7 dual-core processor, an ultra-low-power coprocessor, Wi-Fi baseband, Bluetooth baseband, RF module, and peripherals.

This product is a development board based on the ESP32-S3-WROOM-1 module, featuring numerous I/O ports, with an onboard WS2818 RGB connected to I/O port 48. It includes two Type-C interfaces: one is directly usable with a COM label, while the other USB port can be used via OTG or by holding down the BOOT button during power-on to display the port normally and download the program. The factory-default program automatically lights up the RGB when connected to Wi-Fi and turns off when disconnected.

Product specifications

Specifications: N8R2, N16R8

Operating voltage: 3.3–5V

IO ports: 36 IO ports

Flash: N16R8 (16M), N8R2 (8M) (optional)

PSRAM: N16R8 (8M), N8R2 (2M) (Optional)

2 I2C interfaces, 4 SPI interfaces

PCB board dimensions: 57mm x 28mm

2.4GHz rubber rod antenna:

Color: Black

Gain: 3dBi

Frequency band: 2400-2500MHz

Characteristic impedance (Ω): 50

Gain (dBi): 2 ± 0.5

Output voltage standing wave ratio (VSWR): ≤1.92

Maximum power: 10W

Polarization: Vertical polarization

Directionality: Omnidirectional

Connection type: SMA

Total height of rubber rod antenna: 11cm

IPX cable length: Approximately 15cm

Antenna housing material: TPEE

Operating temperature: -20°C to +70°C

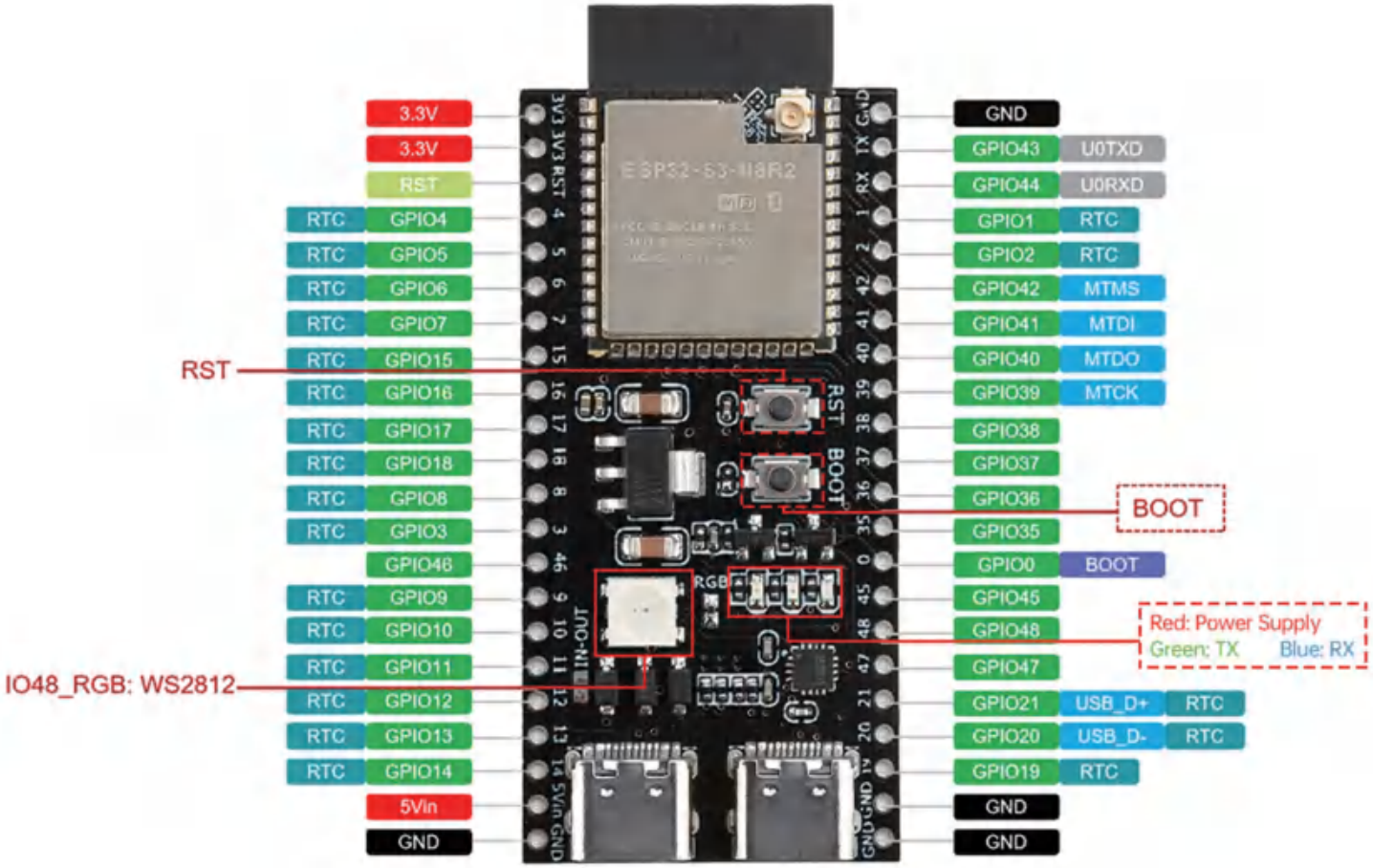
Product list

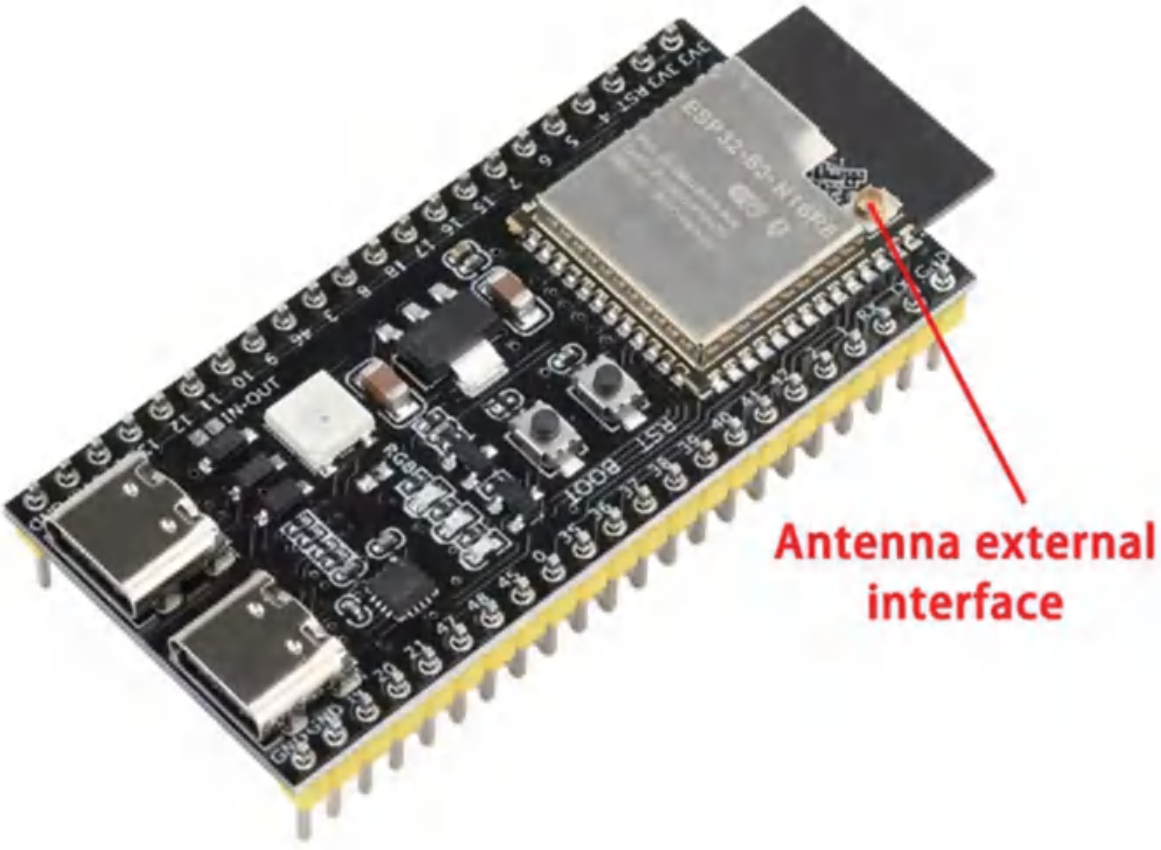
1X development board

2X pin headers (un soldered pin headers/soldered pin headers available)

1X antenna (without antenna/with antenna available)

Product Pin Description





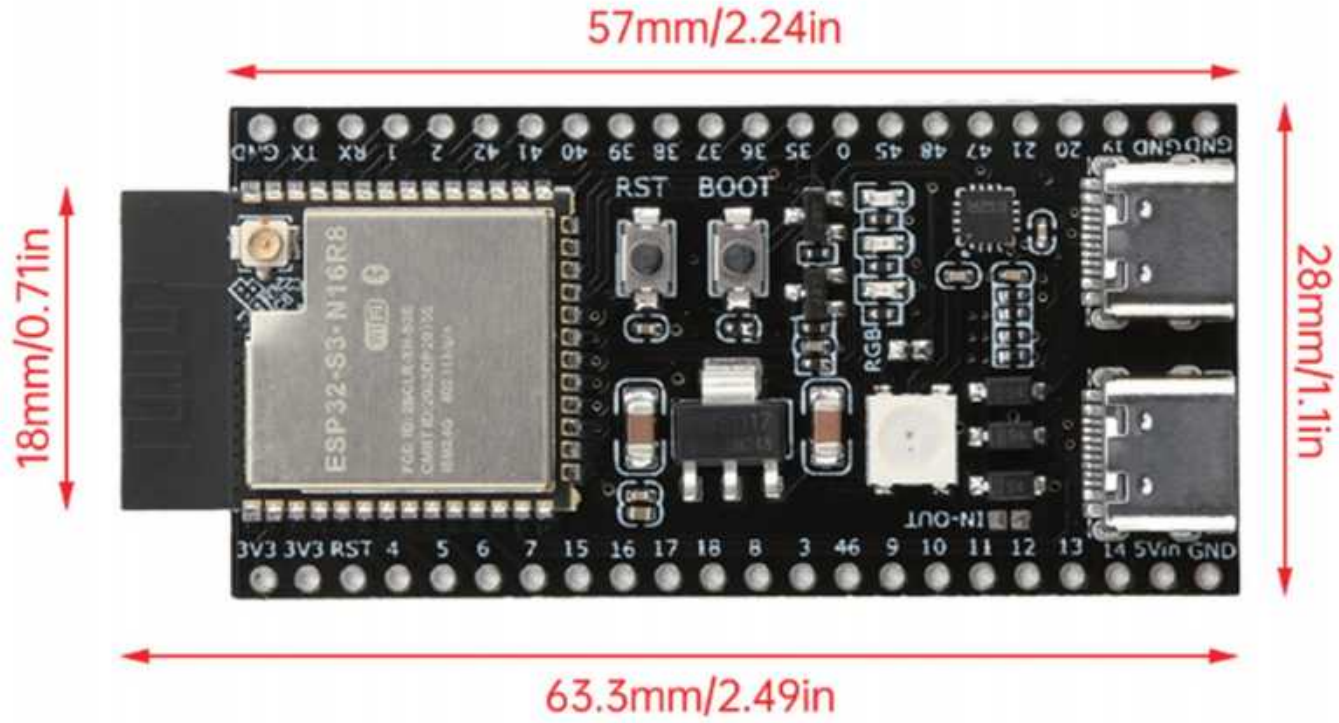
Note:

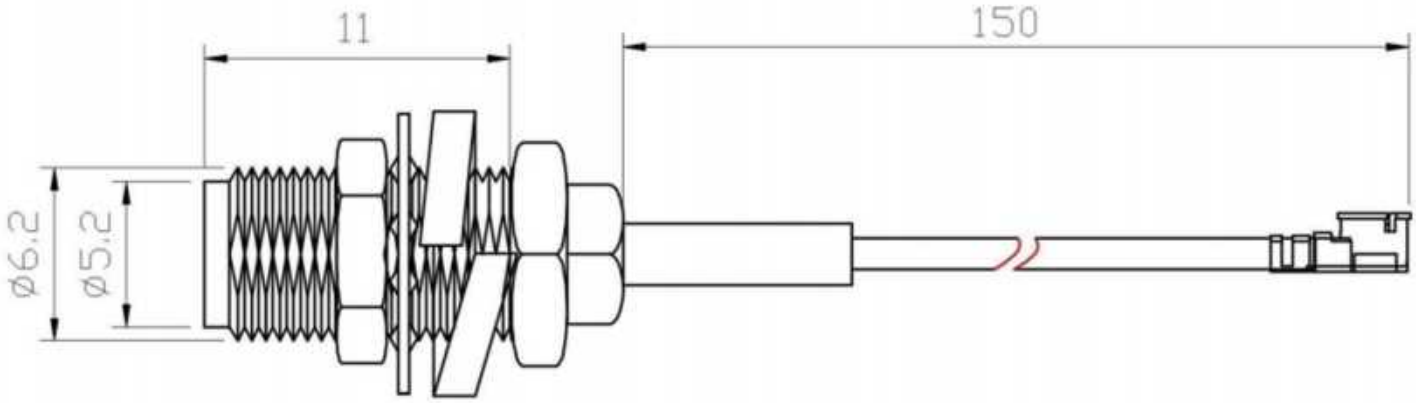
Be careful not to short-circuit the pins, as this may burn out the module.

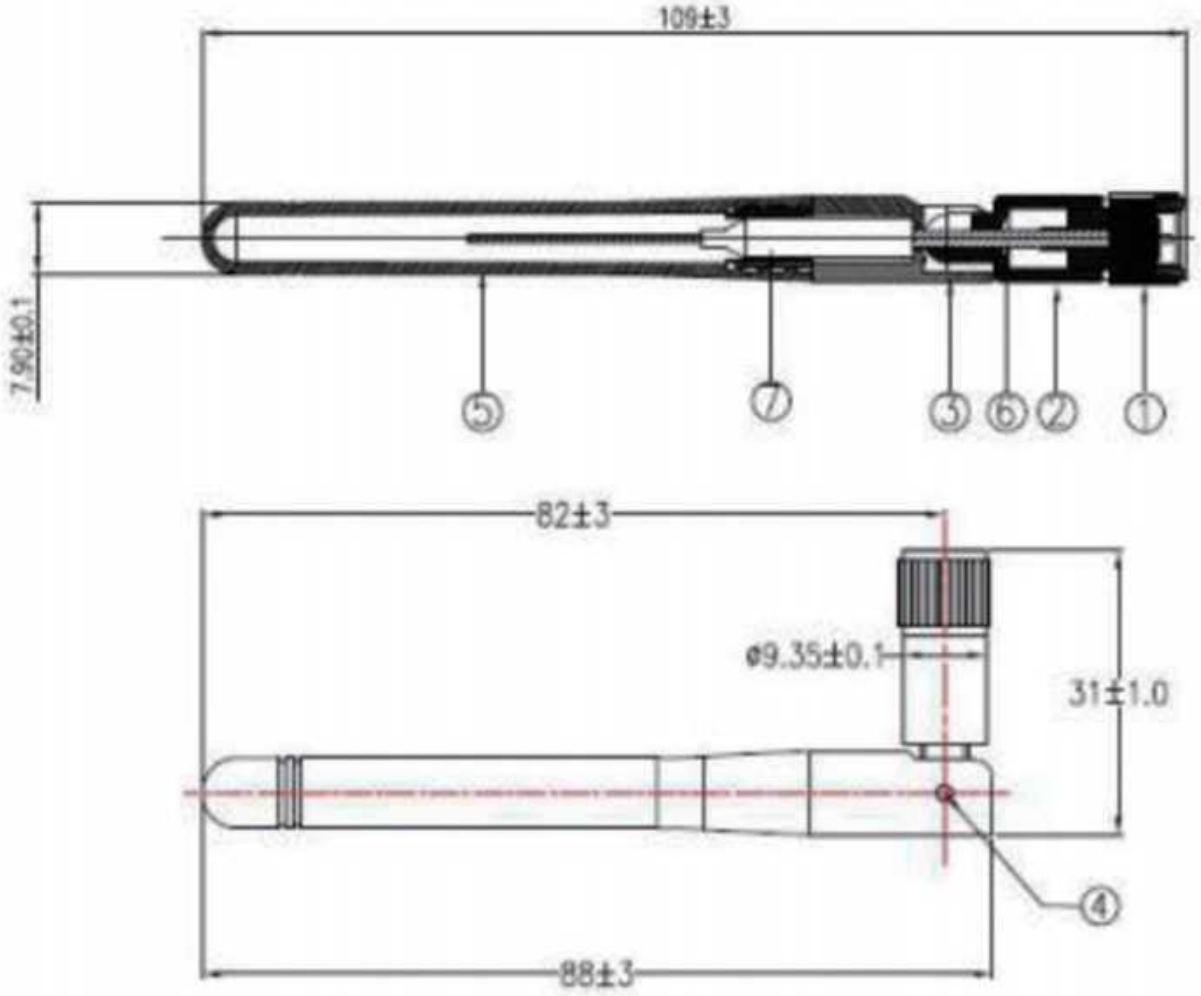
For detailed module parameters, please contact customer service to obtain the module specifications.

This document represents the product knowledge and parameters at the time of editing. Please note that any subsequent changes will not be notified separately.

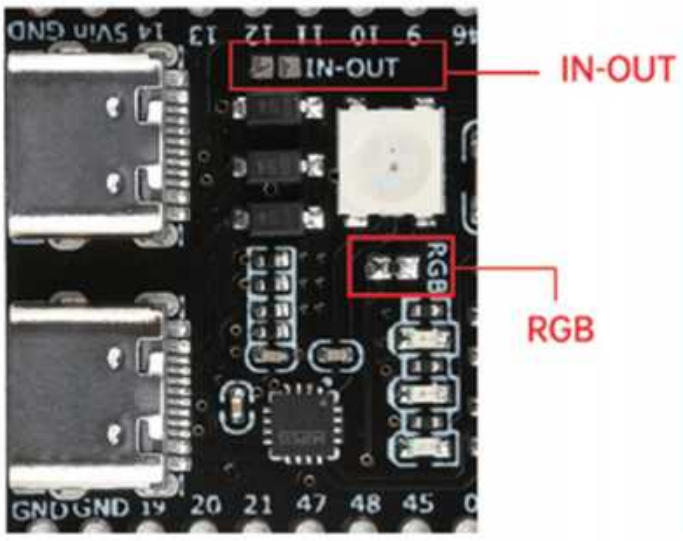
Product dimensions

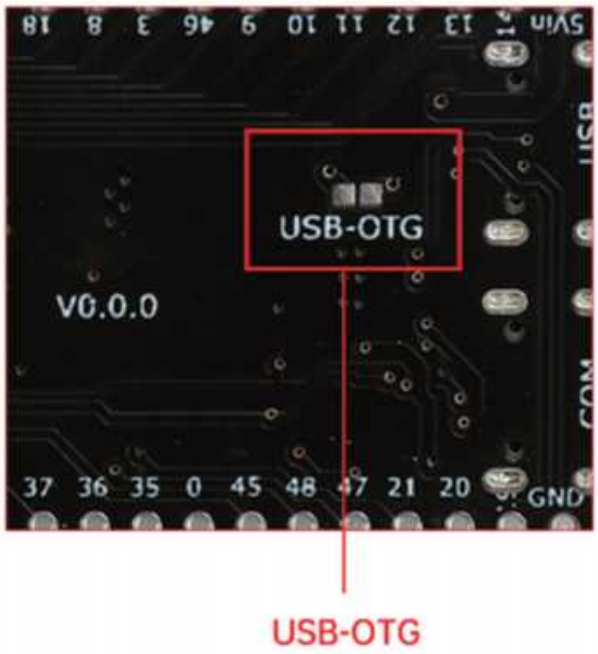






Instructions for use





IN-OUT: Short or use 0 ohm resistor to connect the 5Vin pin tooutput 5V

RGB: Short or use 0 ohm resistor to connect the RGB lamp ccan be used normally (default connection).

USB-OTG: Short or use 0 ohm resistor to connect, the TypeC port of the silk-screened USB can be used for OTG function.

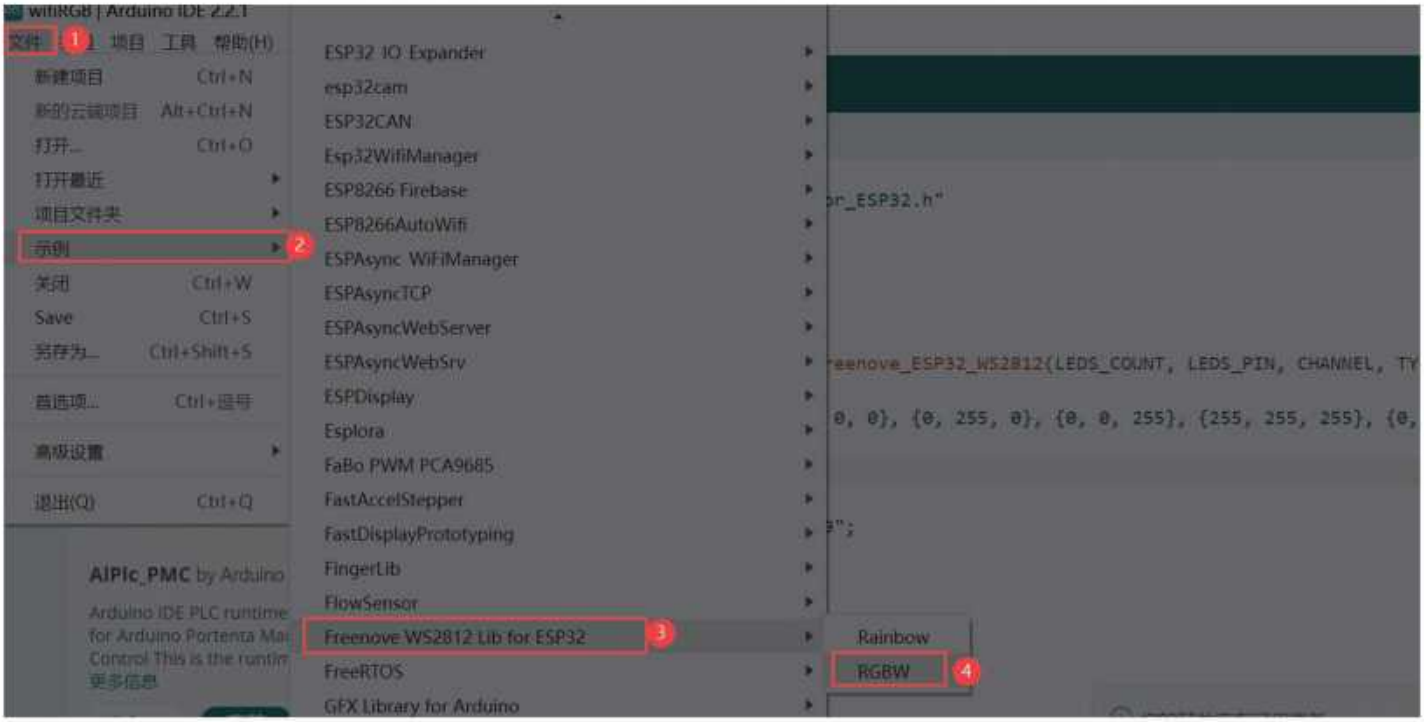
Product usage

Take lighting up RGB with Arduinol DE 2.2.1 as an example

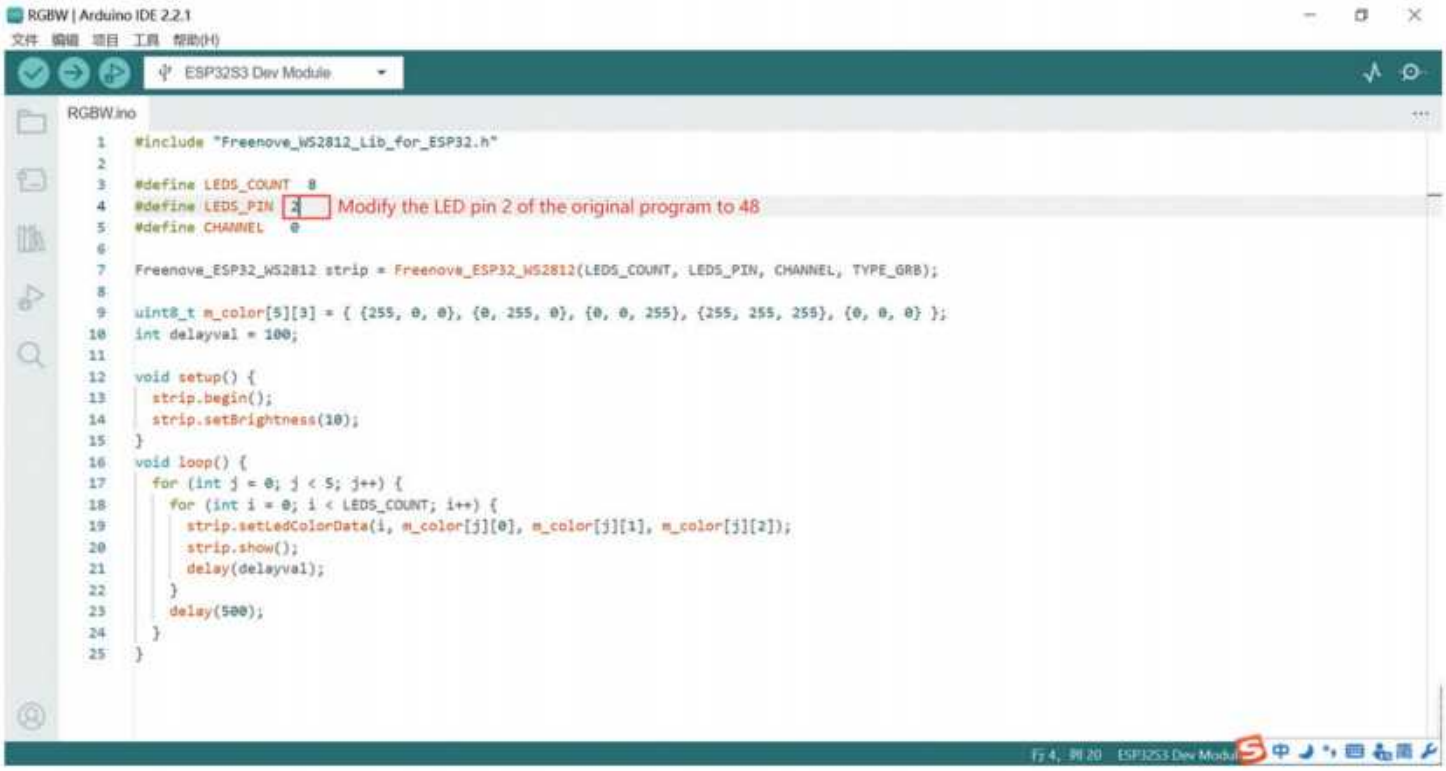
1. First, install the WS2812 library corresponding to ESP32



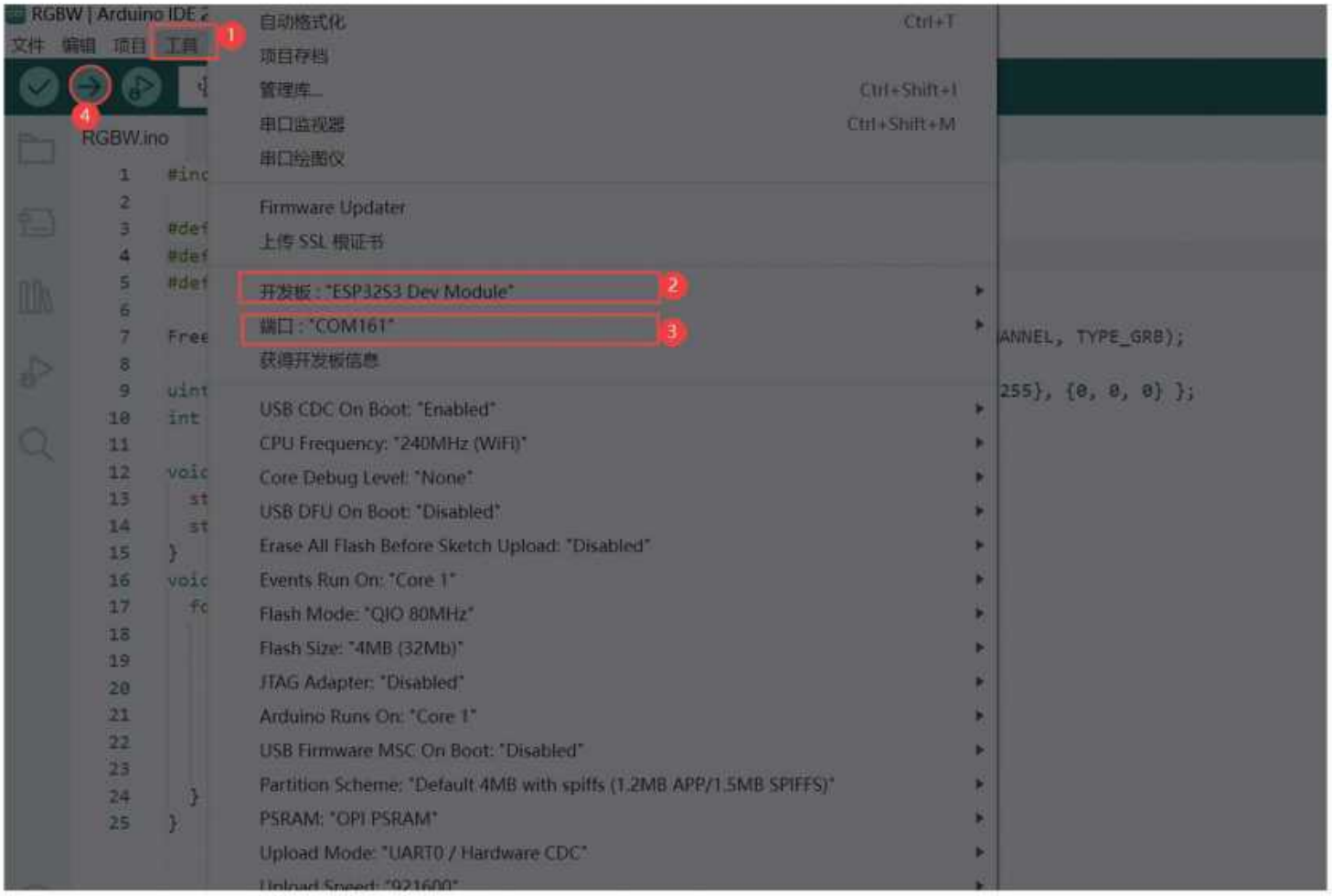
2. Select Example, find the corresponding library, and open the RGBW example.



3. Change LEDS_PIN defined in line 4 of the program to 48.



4. Select the port and development version, then click “Upload.”


RGBW | Arduino IDE 2
文件 编辑 项目 工具
1
4
RGBW.ino
自动格式化 Ctrl+T
项目存档
管理库... Ctrl+Shift+I
串口监视器 Ctrl+Shift+M
串口绘图仪
Firmware Updater
上传 SSL 根证书
开发板 : "ESP32S3 Dev Module"
2
端口 : "COM161"
3
获得开发板信息
USB CDC On Boot: "Enabled"
CPU Frequency: "240MHz (WiFi)"
Core Debug Level: "None"
USB DFU On Boot: "Disabled"
Erase All Flash Before Sketch Upload: "Disabled"
Events Run On: "Core 1"
Flash Mode: "QIO 80MHz"
Flash Size: "4MB (32Mb)"
JTAG Adapter: "Disabled"
Arduino Runs On: "Core 1"
USB Firmware MSC On Boot: "Disabled"
Partition Scheme: "Default 4MB with spiffs (1.2MB APP/1.5MB SPIFFS)"
PSRAM: "OPI PSRAM"
Upload Mode: "UART0 / Hardware CDC"
ANNEL, TYPE_GRB);
255}, {0, 0, 0} };