

Camera module FAQ

Update Notes(2024.01.25):

Currently, there are two models of camera modules. One uses the ESP32-WROVER module.



Another uses the ESP32-S3-WROOM-1 module.



If you follow step 3 to upload a new program to the camera module, please select the correct board settings and program according to the camera module you have.

The following are the troubleshooting steps for mobile phones unable to see the ELEGOO-XXX WiFi signal.

1 Some of the phone models may not be compatible with the camera module. Please use another phone or a laptop to check this problem first. After you connected to the WiFi signal, you can directly input "http://192.168.4.1/Test" on the browser to see the video stream.



2 After you power on the robot car, please check if the red indicator LED on the camera module is on. If it's flashing, it means that there is a poor connection. Please reconnect the 4p cable.

In the meanwhile, when the green indicator LED flashes, it means that the camera module is not connected. If it is constantly on, it means that it's connected.

(1) Please uninstall the camera module from the car and connect the module to your computer via an USB type C cable.

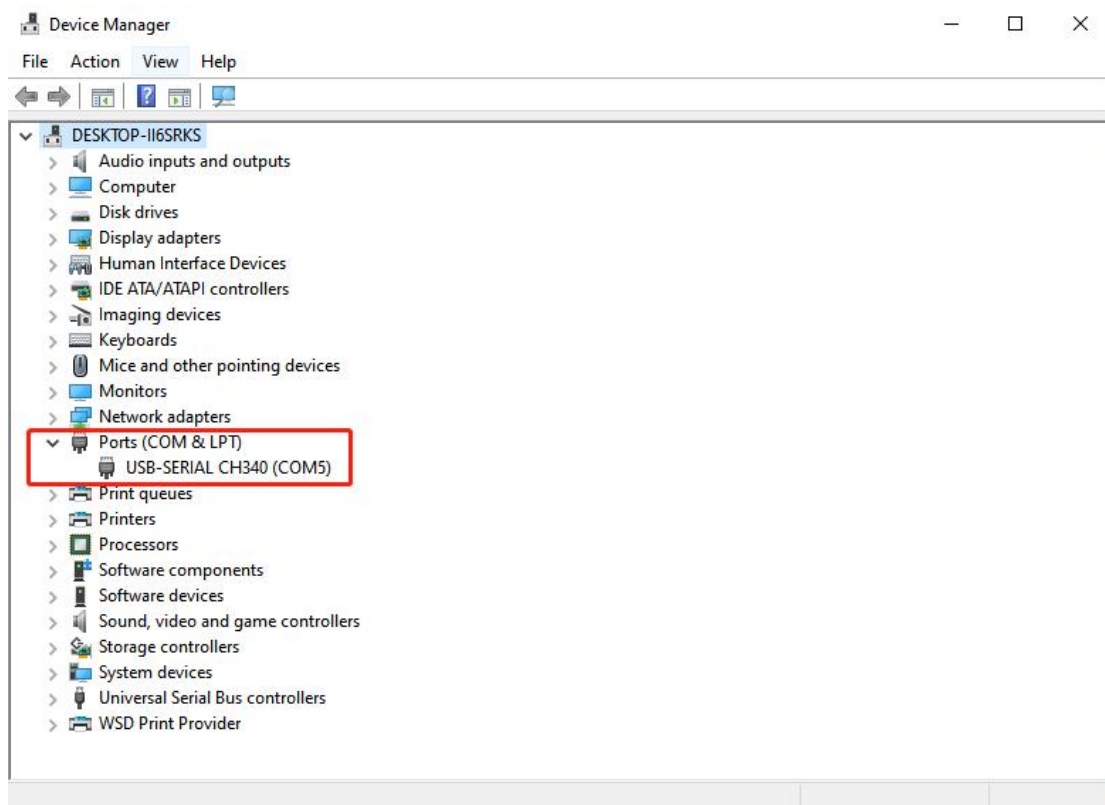
Please check if you can search for the WIFI signal.



(2) Please install Arduino IDE first. You could refer to the attached tutorial to operate:

<https://www.arduino.cc/en/guide/windows>

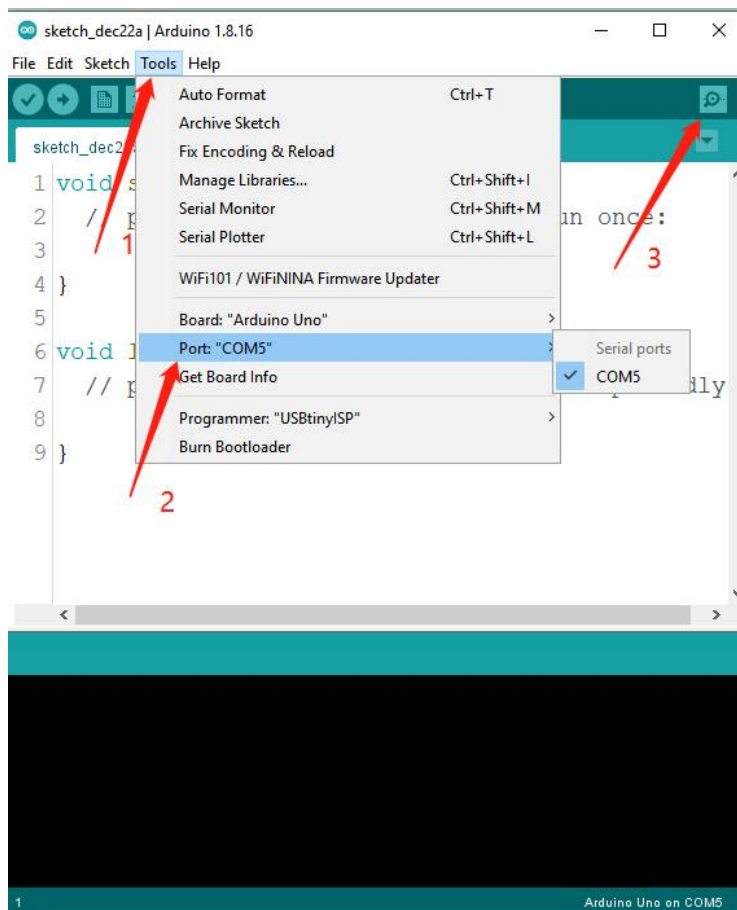
After you connect the camera module, please open the device manager and you are supposed to see a CH340 device. (The com number in different computers is different.)



If not, please install the CH340 driver software from this link:

https://drive.google.com/file/d/1GYwOL6sbir1fy_6SU4QtelnhwGsX-JjY/view?usp=share_link

(3) Please select the correct com port and open serial monitor

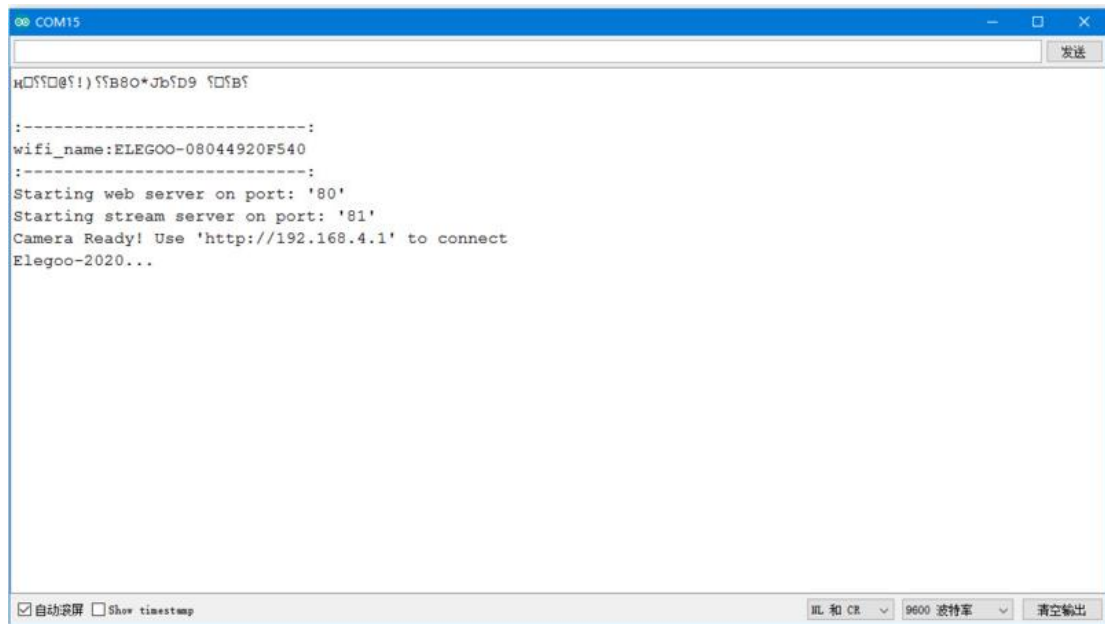


(4) Press the reset button on the camera module.



If the camera module returns the attached message. It means that the camera module is OK.

If not, maybe it's defective.

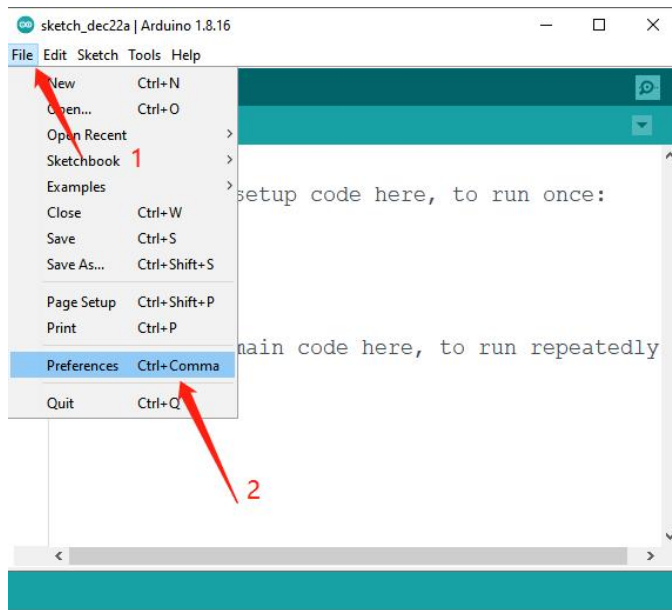


3 If you can see the WiFi signal on another phone or on a laptop, the camera module is working properly.

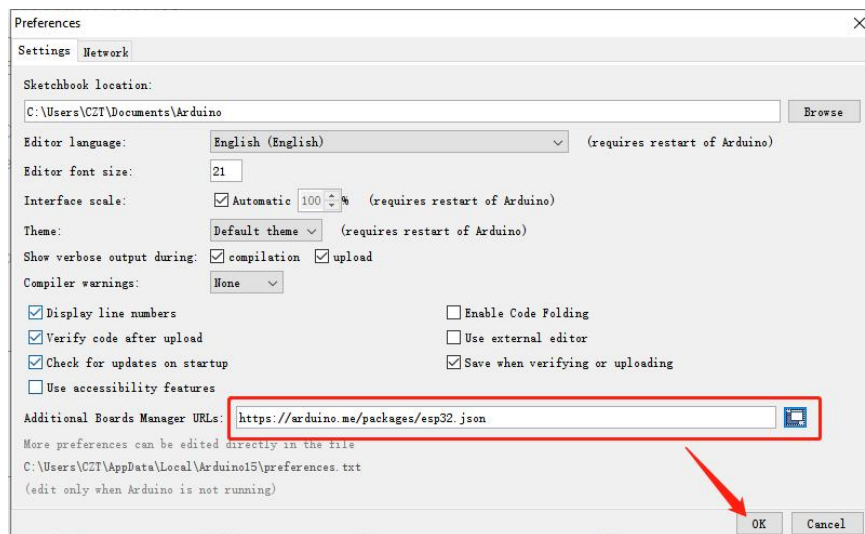
Maybe the signal channel is busy. Please try to manually change the signal channel of the camera module.

(1) Connect the module to your computer via an USB type C cable.

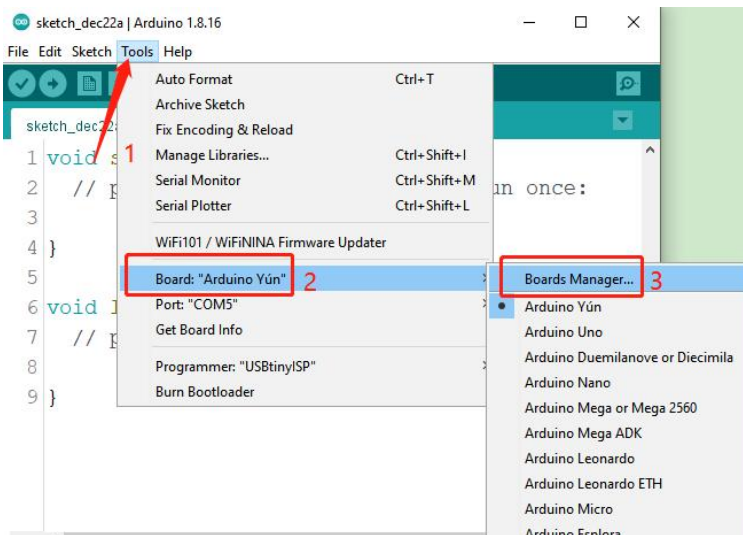
(2) Please run Arduino IDE software and open the "Preferences" window.



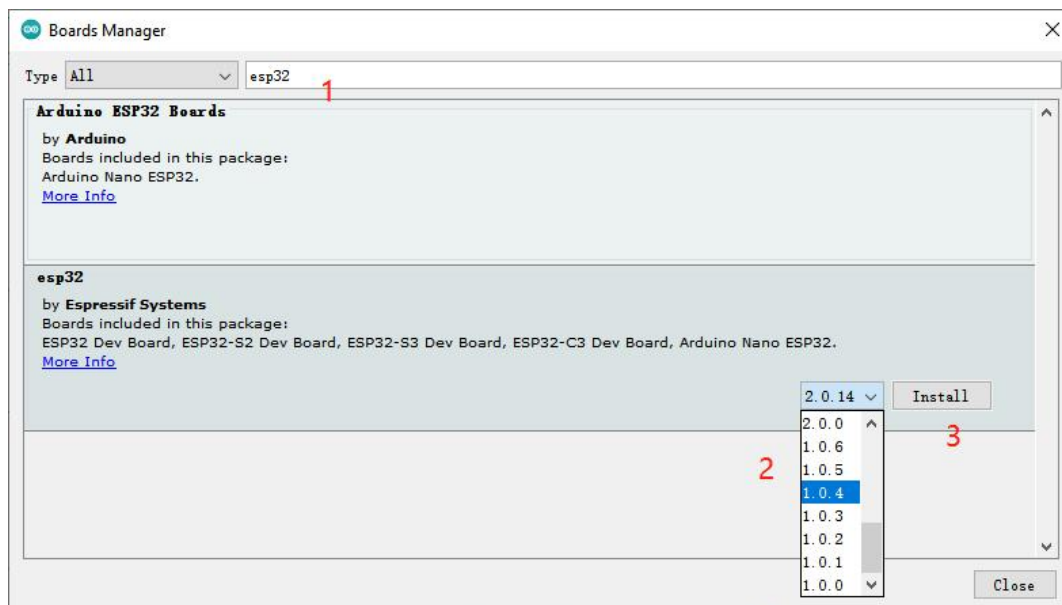
(3) Copy and paste <https://arduino.me/packages/esp32.json> to the “Additional Boards Manager URLs” bar, then click “OK”.



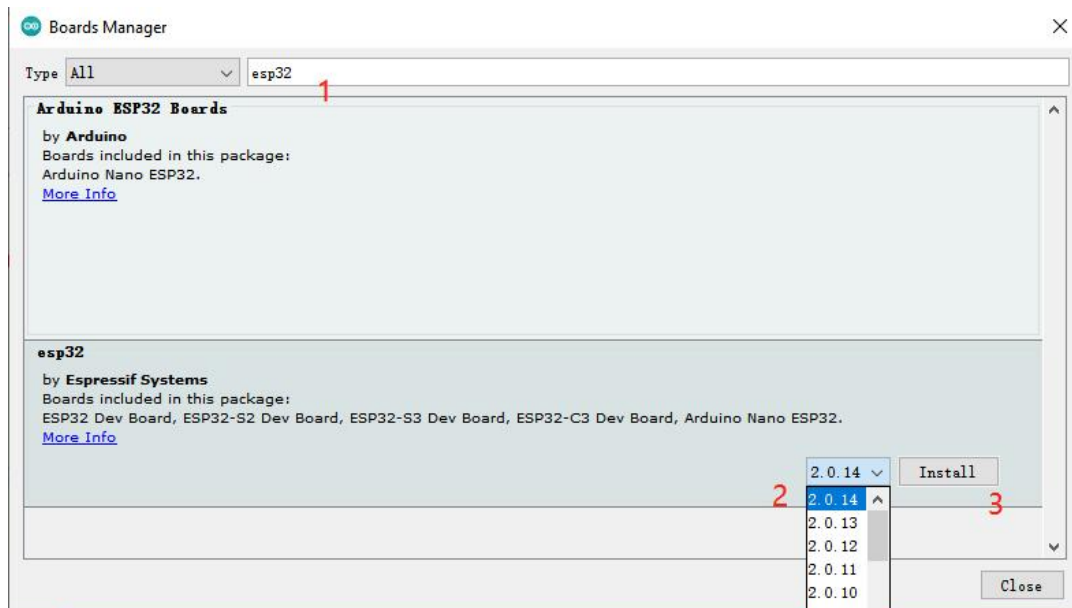
(4) Click “Tools” button and select “Boards Manager...”.



Input "esp32" in the search bar and install version 1.0.4. Then close the Arduino IDE software.



If you have the ESP32-S3-WROOM-1 module, please install version 2.0.14.



(5) Please download the program for the camera module from the attached link.

<https://drive.google.com/file/d/19IENruwaLPVMKnKpy1bk7TjwF5JThqie/view?usp=sharing>

Please extract the zip file you downloaded and open the folder according to the camera model.

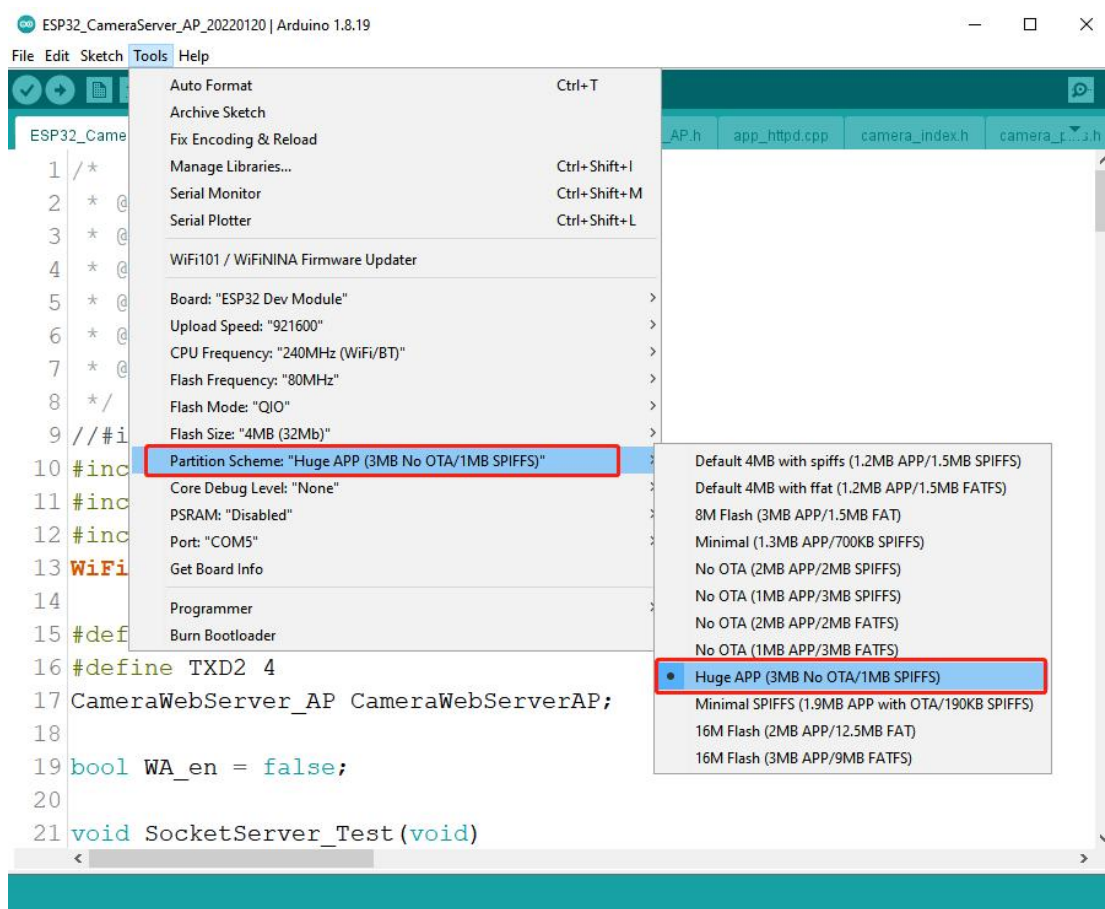
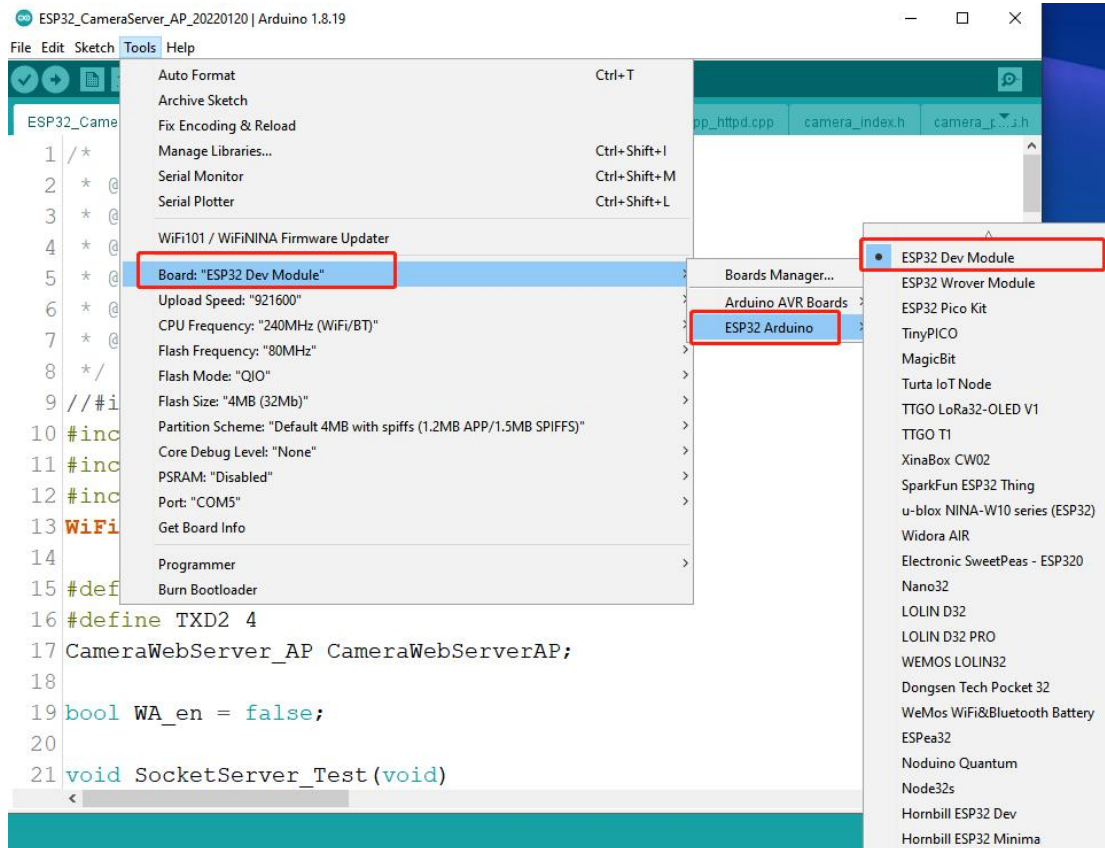
Name	Date modified	Type	Size
ESP32-S3-WROOM-1-Camera	1/25/2024 6:29 PM	File folder	
ESP32-WROVER-Camera	1/25/2024 6:29 PM	File folder	

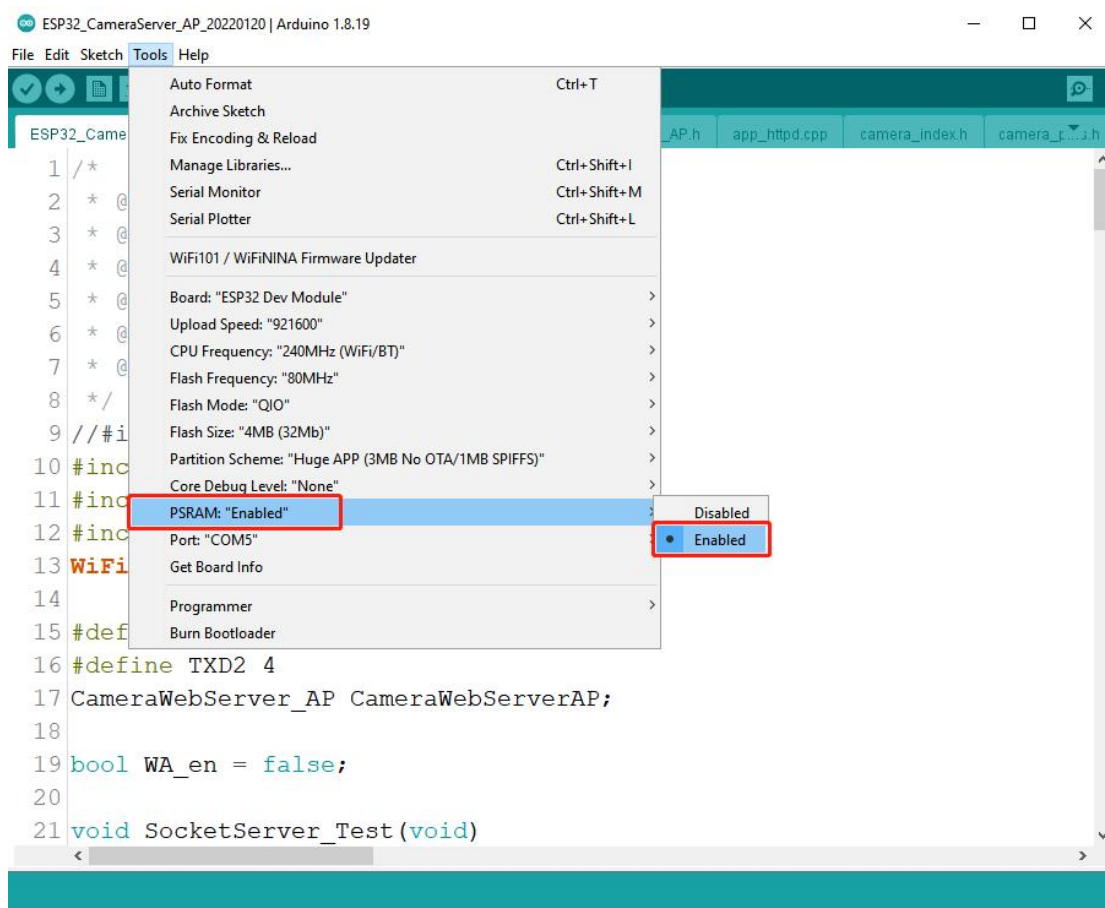
The WIFI signal channel in each folder is different. Double click the ESP32_CameraServer_AP_xxx.ino file to open it via Arduino IDE.

Name	Date modified	Type
channel5	1/25/2024 6:28 PM	File folder
channel6	1/25/2024 6:28 PM	File folder
channel7	1/25/2024 6:28 PM	File folder
channel8	1/25/2024 6:28 PM	File folder
channel9	1/25/2024 6:28 PM	File folder
channle 9 with password	1/26/2024 4:07 PM	File folder

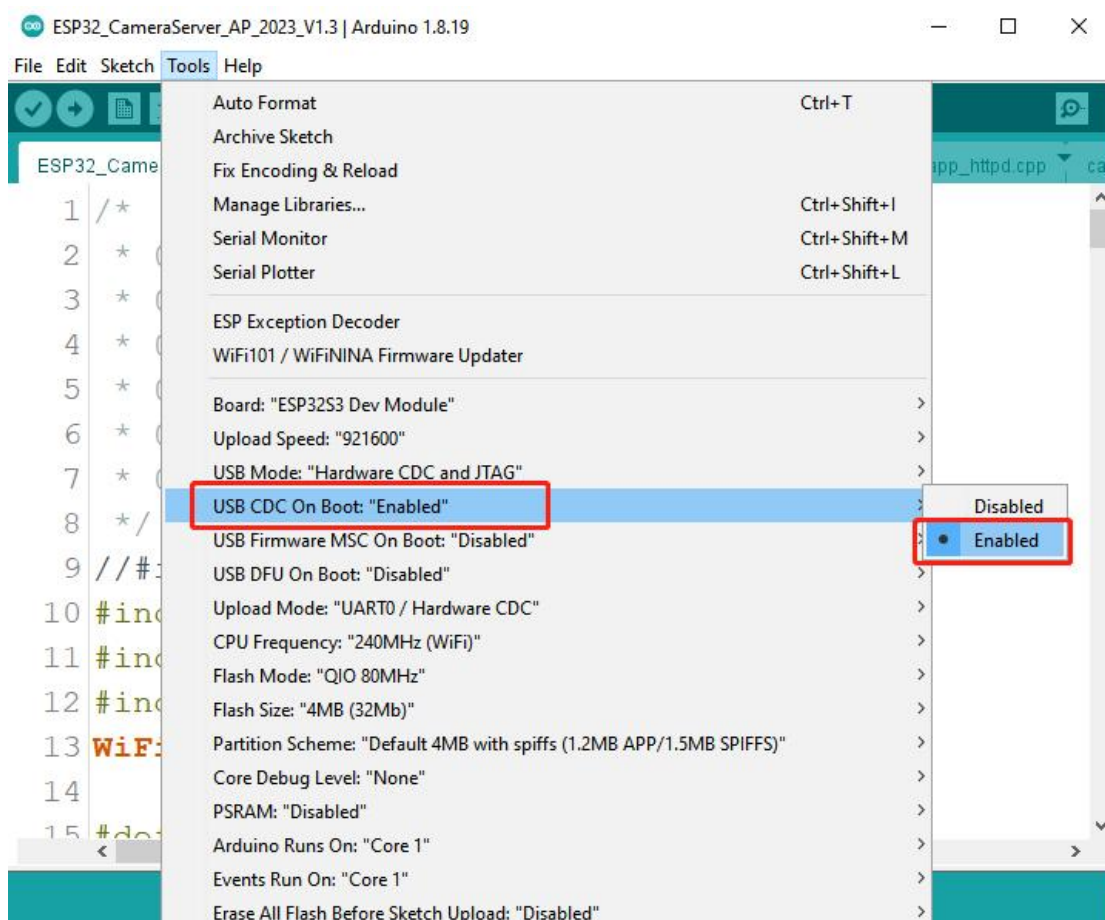
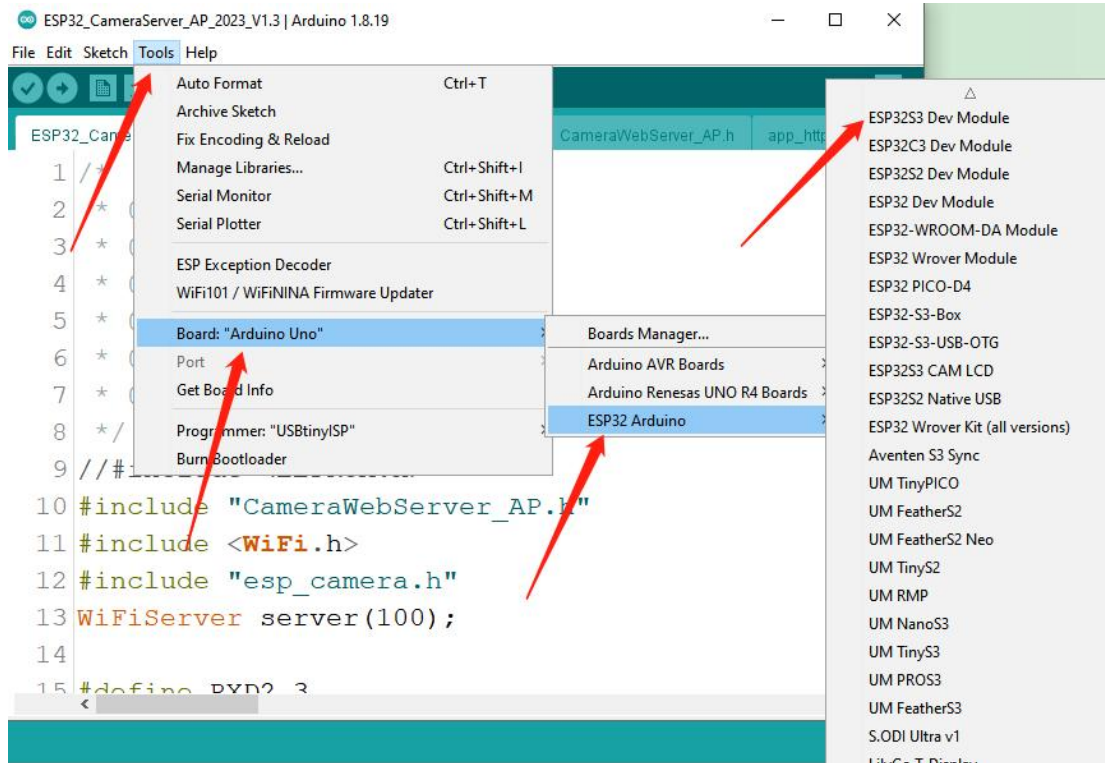
(6) Please open the device manager and remember the com number of the CH340 device. Then select the same com port in Arduino IDE.

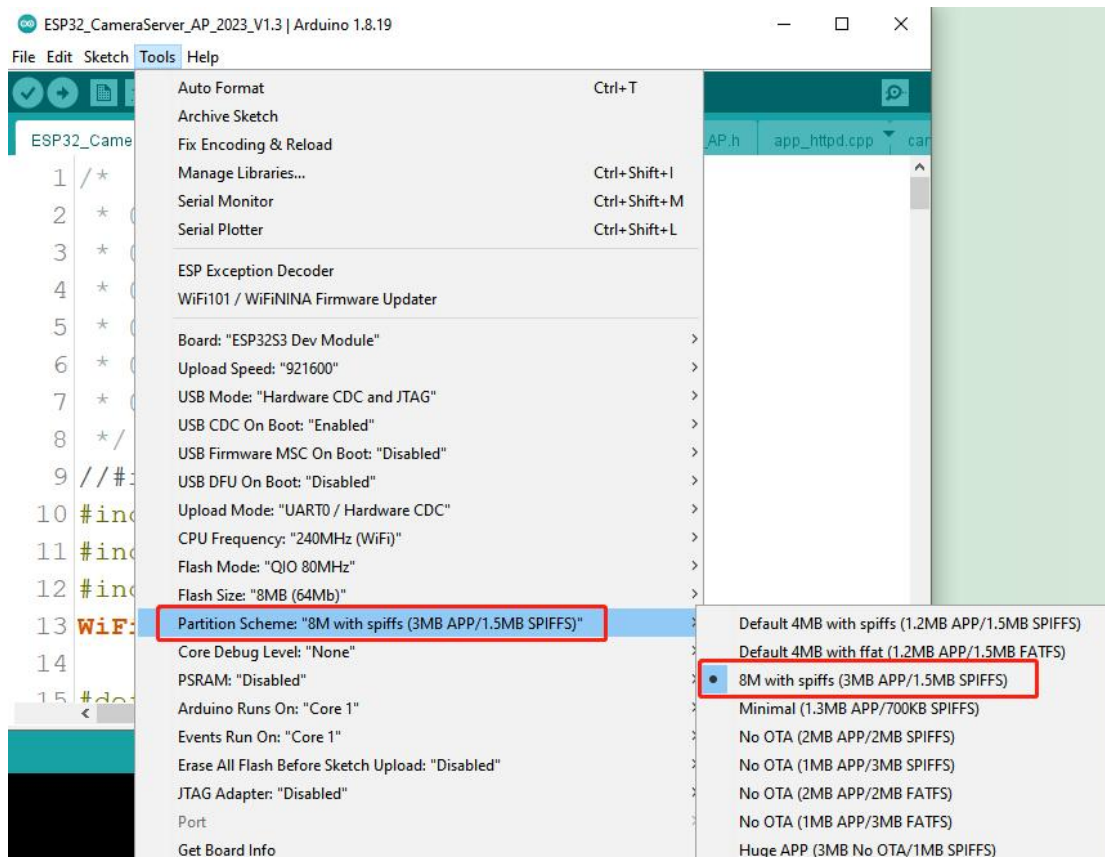
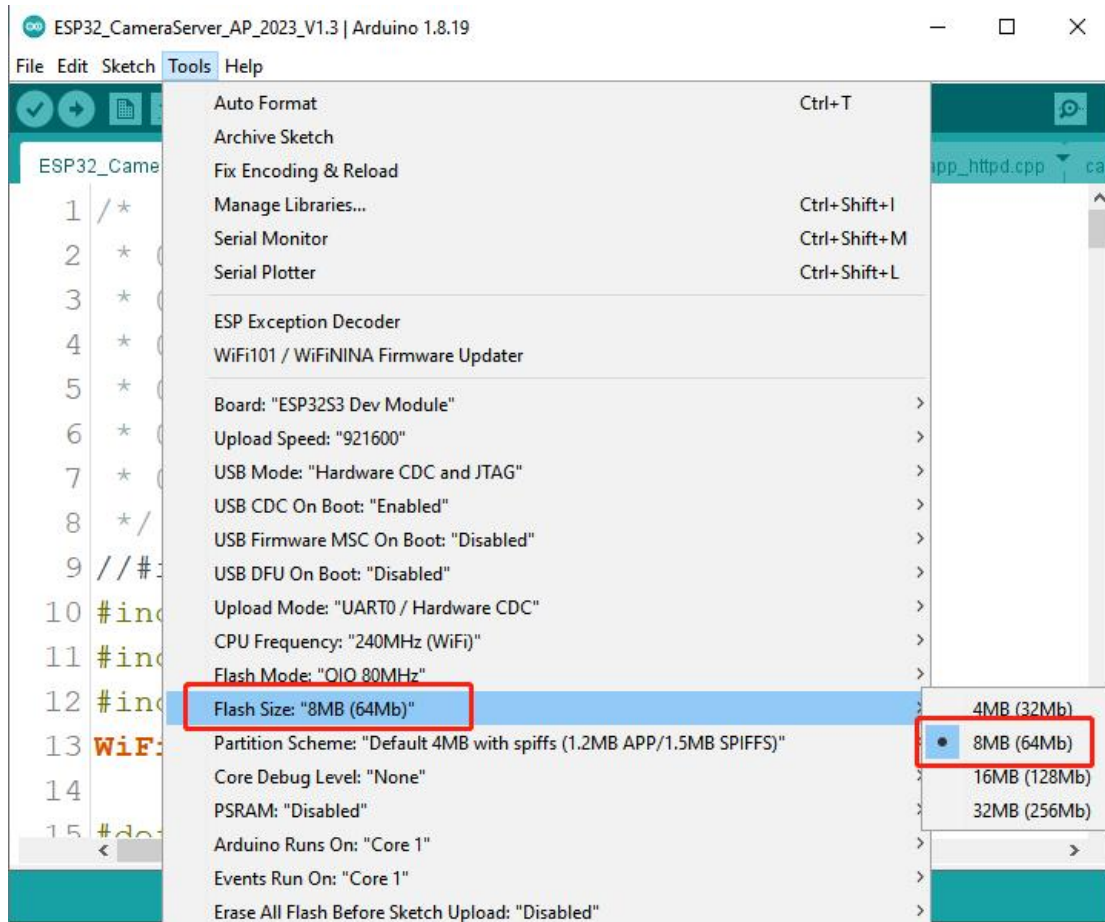
(7) If you have the **ESP32-WROVER module**, please select "ESP32 Dev Module" on the board option and refer to the attached pictures to select the correct setting. Except for the settings in the attached pictures, the other settings are kept as default.

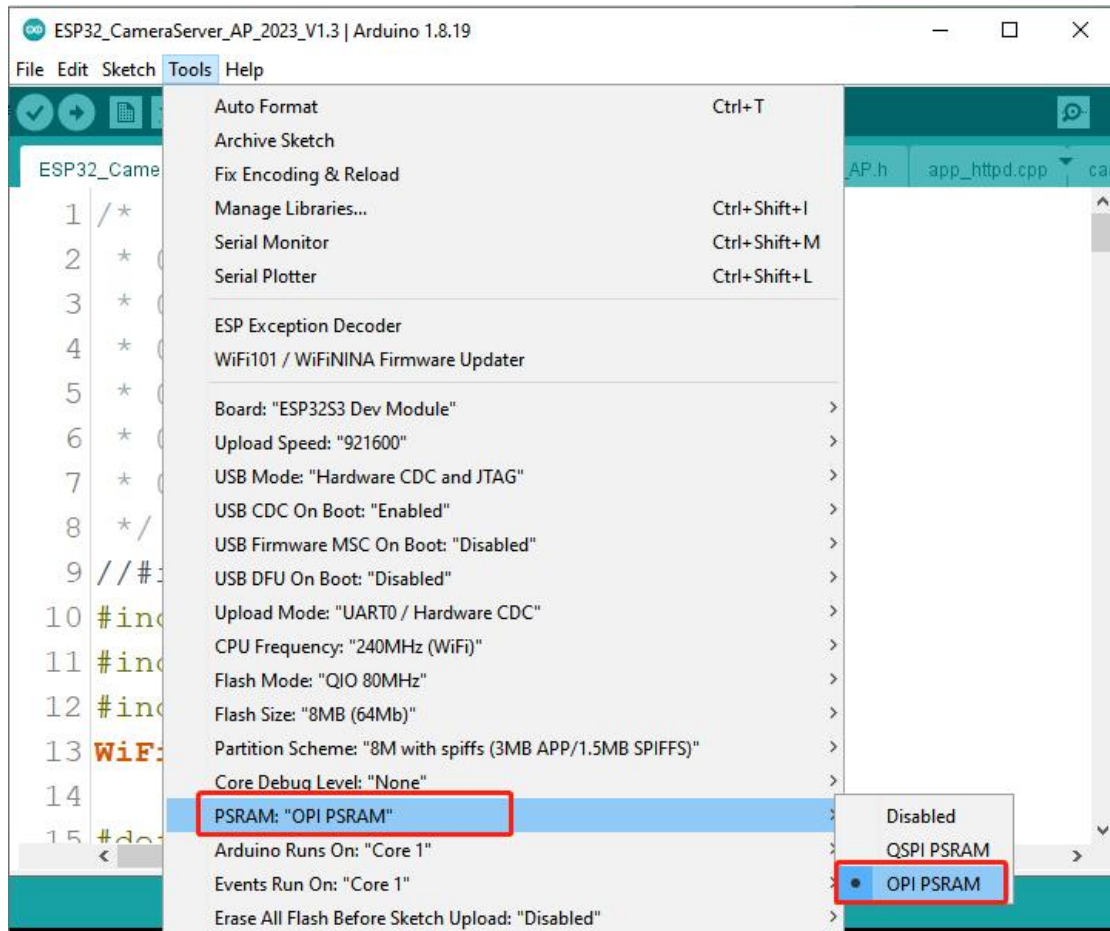




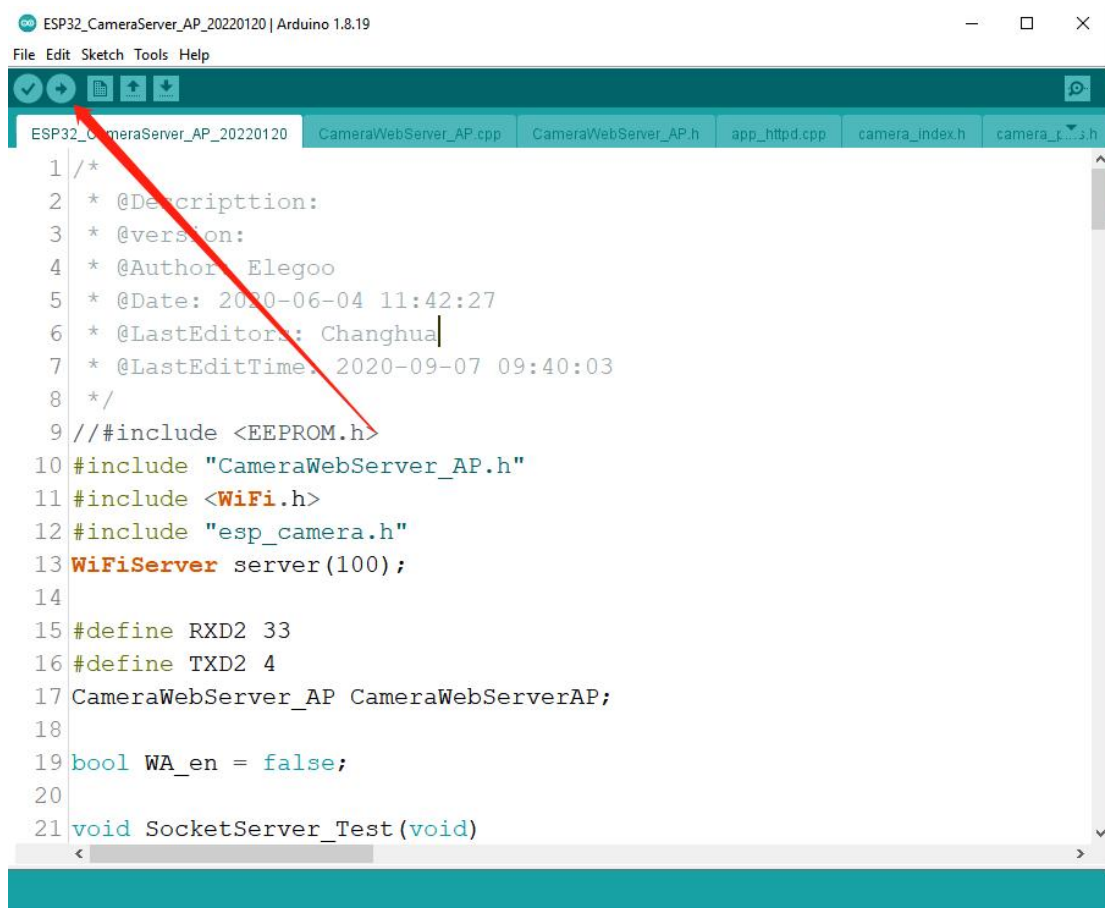
(8) If you have the **ESP32-S3-WROOM-1 module**, please select "ESP32S3 Dev Module" on the board option and refer to the attached pictures to select the correct setting. Except for the settings in the attached pictures, the other settings are kept as default.







(9) At last, please upload the code file to the camera module.



```
ESP32_CameraServer_AP_20220120 | Arduino 1.8.19
File Edit Sketch Tools Help

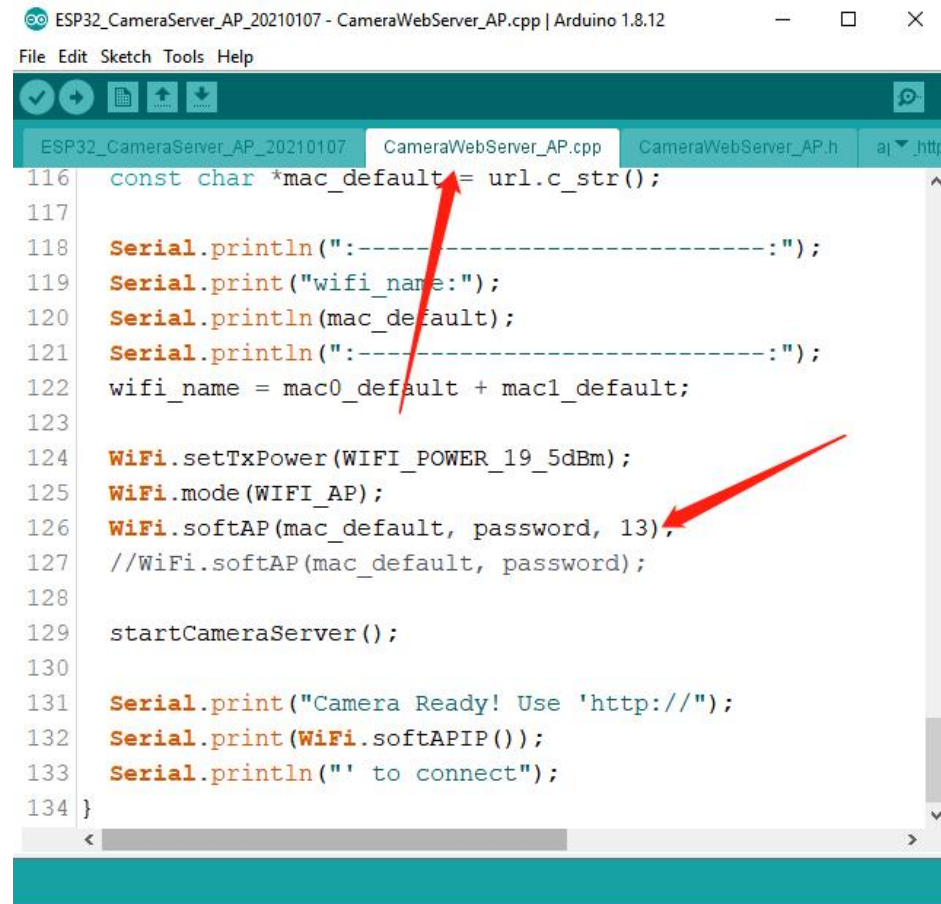
ESP32_CameraServer_AP_20220120 CameraWebServer_AP.cpp CameraWebServer_AP.h app_httpd.cpp camera_index.h camera_pins.h

1 /*
2  * @Description:
3  * @version:
4  * @Author: Elegoo
5  * @Date: 2020-06-04 11:42:27
6  * @LastEditor: Changhua
7  * @LastEditTime: 2020-09-07 09:40:03
8  */
9 // #include <EEPROM.h>
10 #include "CameraWebServer_AP.h"
11 #include <WiFi.h>
12 #include "esp_camera.h"
13 WiFiServer server(100);
14
15 #define RXD2 33
16 #define TXD2 4
17 CameraWebServer_AP CameraWebServerAP;
18
19 bool WA_en = false;
20
21 void SocketServer_Test(void)
```

If you still cannot see the ELEGOO-XXX signal, please upload the code file with another channel signal to the module. Or you could upload the code file with a password to the module. Adding a password to the module can also reduce interference by other WiFi signals.

The below steps will teach you how to change the signal channel manually. You can ignore them.

Select CameraWebServer_AP.cpp file and move to the bottom of the code. Please change the signal channel by referring to the attached code. The range is 1~13.

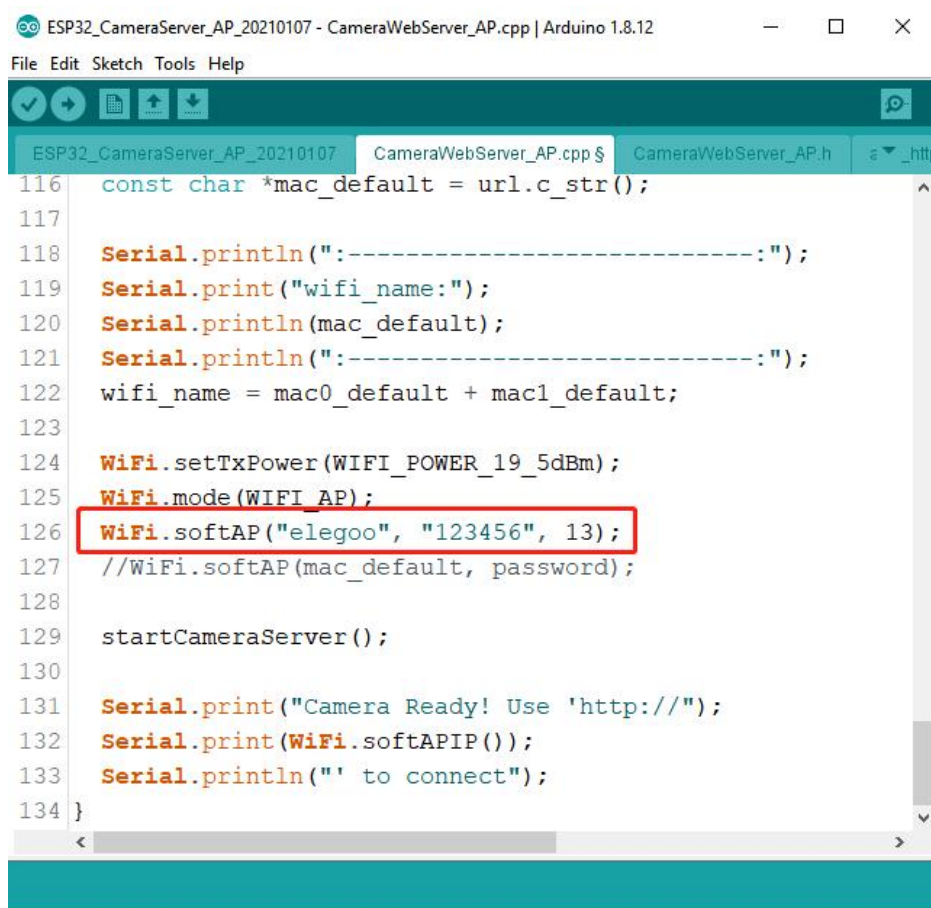


```
ESP32_CameraServer_AP_20210107 - CameraWebServer_AP.cpp | Arduino 1.8.12
File Edit Sketch Tools Help

ESP32_CameraServer_AP_20210107 CameraWebServer_AP.cpp CameraWebServer_AP.h a1 _http

116 const char *mac_default = url.c_str();
117
118 Serial.println(":-----:");
119 Serial.print("wifi_name:");
120 Serial.println(mac_default);
121 Serial.println(":-----:");
122 wifi_name = mac0_default + mac1_default;
123
124 WiFi.setTxPower(WIFI_POWER_19_5dBm);
125 WiFi.mode(WIFI_AP);
126 WiFi.softAP(mac_default, password, 13);
127 //WiFi.softAP(mac_default, password);
128
129 startCameraServer();
130
131 Serial.print("Camera Ready! Use 'http://");
132 Serial.print(WiFi.softAPIP());
133 Serial.println("' to connect");
134 }
```

You can also change the WiFi ssid and adding a password. The first value is the WiFi ssid, and the second value is the password.



```
ESP32_CameraServer_AP_20210107 - CameraWebServer_AP.cpp | Arduino 1.8.12
File Edit Sketch Tools Help
ESP32_CameraServer_AP_20210107 CameraWebServer_AP.cpp CameraWebServer_AP.h
116 const char *mac_default = url.c_str();
117
118 Serial.println("-----:");
119 Serial.print("wifi_name:");
120 Serial.println(mac_default);
121 Serial.println("-----:");
122 wifi_name = mac0_default + mac1_default;
123
124 WiFi.setTxPower(WIFI_POWER_19_5dBm);
125 WiFi.mode(WIFI_AP);
126 WiFi.softAP("elegoo", "123456", 13);
127 //WiFi.softAP(mac_default, password);
128
129 startCameraServer();
130
131 Serial.print("Camera Ready! Use 'http://");
132 Serial.print(WiFi.softAPIP());
133 Serial.println("' to connect");
134 }
```

You could also try to change the signal power. The optional value is 19_5dBm, 19dBm, 18_5dBm, 17dBm, 15dBm, 13dBm, 11dBm, 8_5dBm, 7dBm, 5dBm, and 2dBm.



```
ESP32_CameraServer_AP_20210107 - CameraWebServer_AP.cpp | Arduino 1.8.12
File Edit Sketch Tools Help
ESP32_CameraServer_AP_20210107 CameraWebServer_AP.cpp CameraWebServer_AP.h a)_http
116 const char *mac_default = url.c_str();
117
118 Serial.println(":------:");
119 Serial.print("wifi_name:");
120 Serial.println(mac_default);
121 Serial.println(":------:");
122 wifi_name = mac0_default + mac1_default;
123
124 WiFi.setTxPower(WIFI_POWER_19_5dBm);
125 WiFi.mode(WIFI_AP);
126 WiFi.softAP(mac_default, password, 13);
127 //WiFi.softAP(mac_default, password);
128
129 startCameraServer();
130
131 Serial.print("Camera Ready! Use 'http://");
132 Serial.print(WiFi.softAPIP());
133 Serial.println("' to connect");
134 }
```

After you change the code, please upload the code to the camera module.