

Arduino Support for ESP8266 with simple test code Contents ▾

ESP8266 packs a lot of punch. It is not just a WiFi module, it also has a decent micro-controller in built. Now the best part is the community has made programming this inbuilt micro-controller extremely easy by adding Arduino support. In this small tutorial, I will show you how easy it is to add Arduino Support

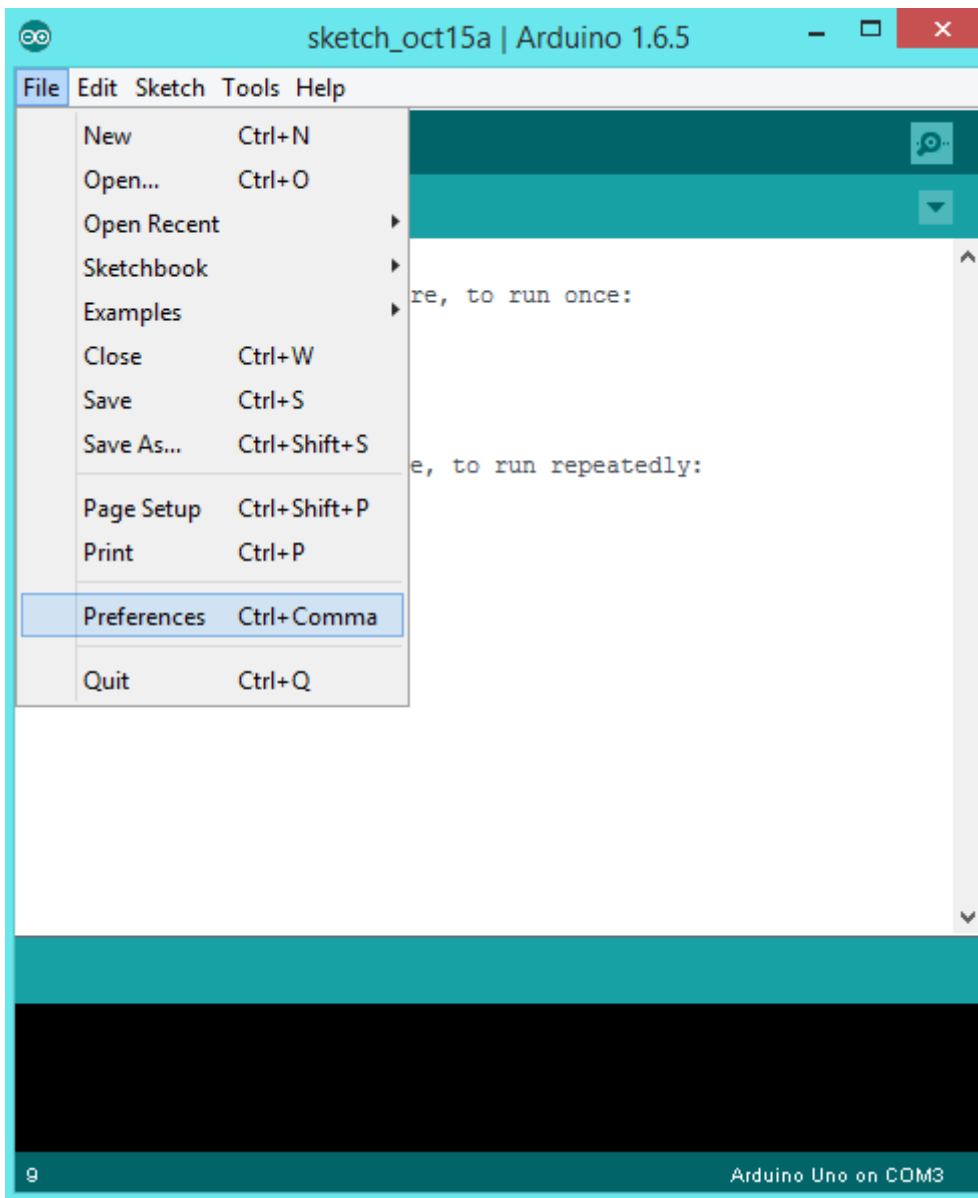
Arduino support for ESP8266

Download Arduino IDE from Arduino.cc (1.6.4 or greater)

1. <https://www.arduino.cc/en/Main/Software> (<https://www.arduino.cc/en/Main/Software>)

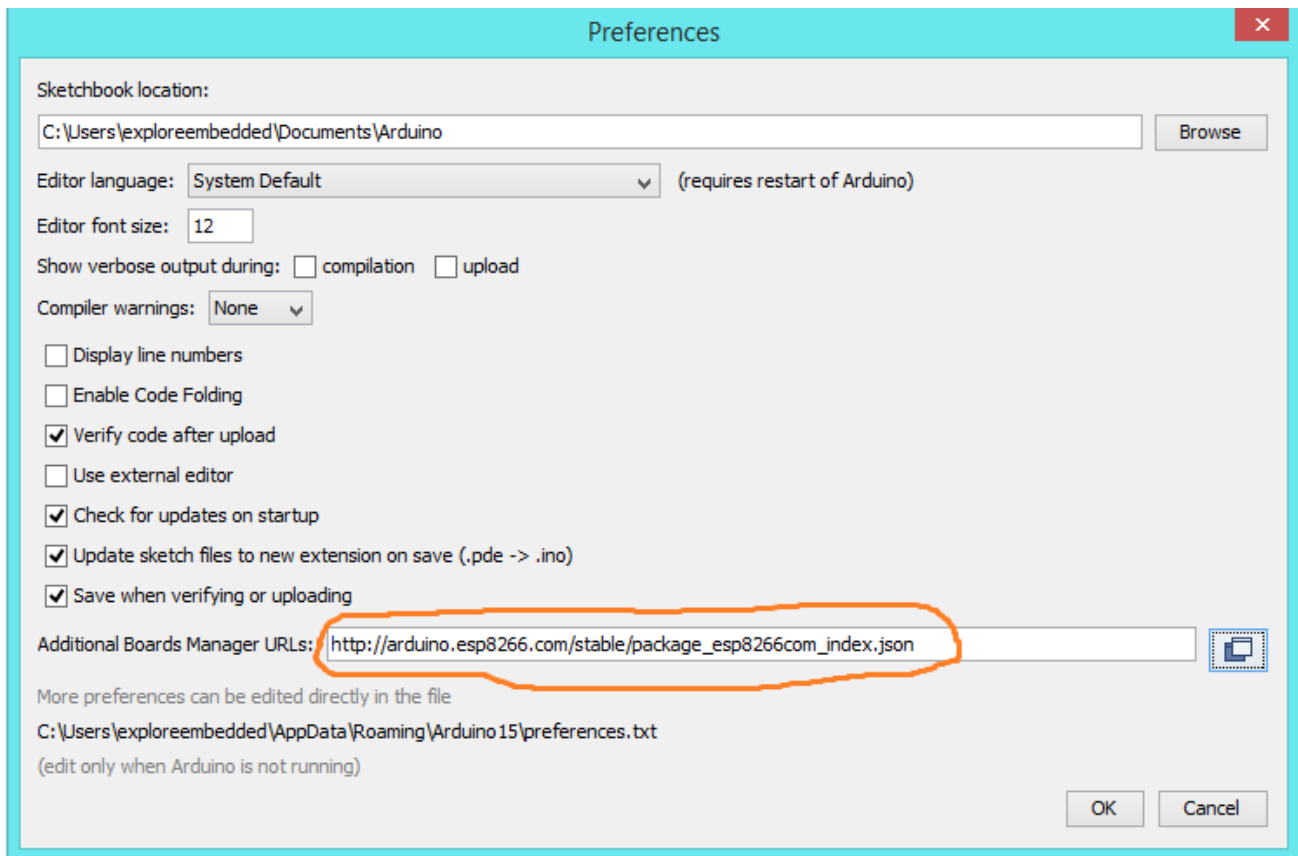
Install the ESP8266 Board Package'

Select the Preferences under File.



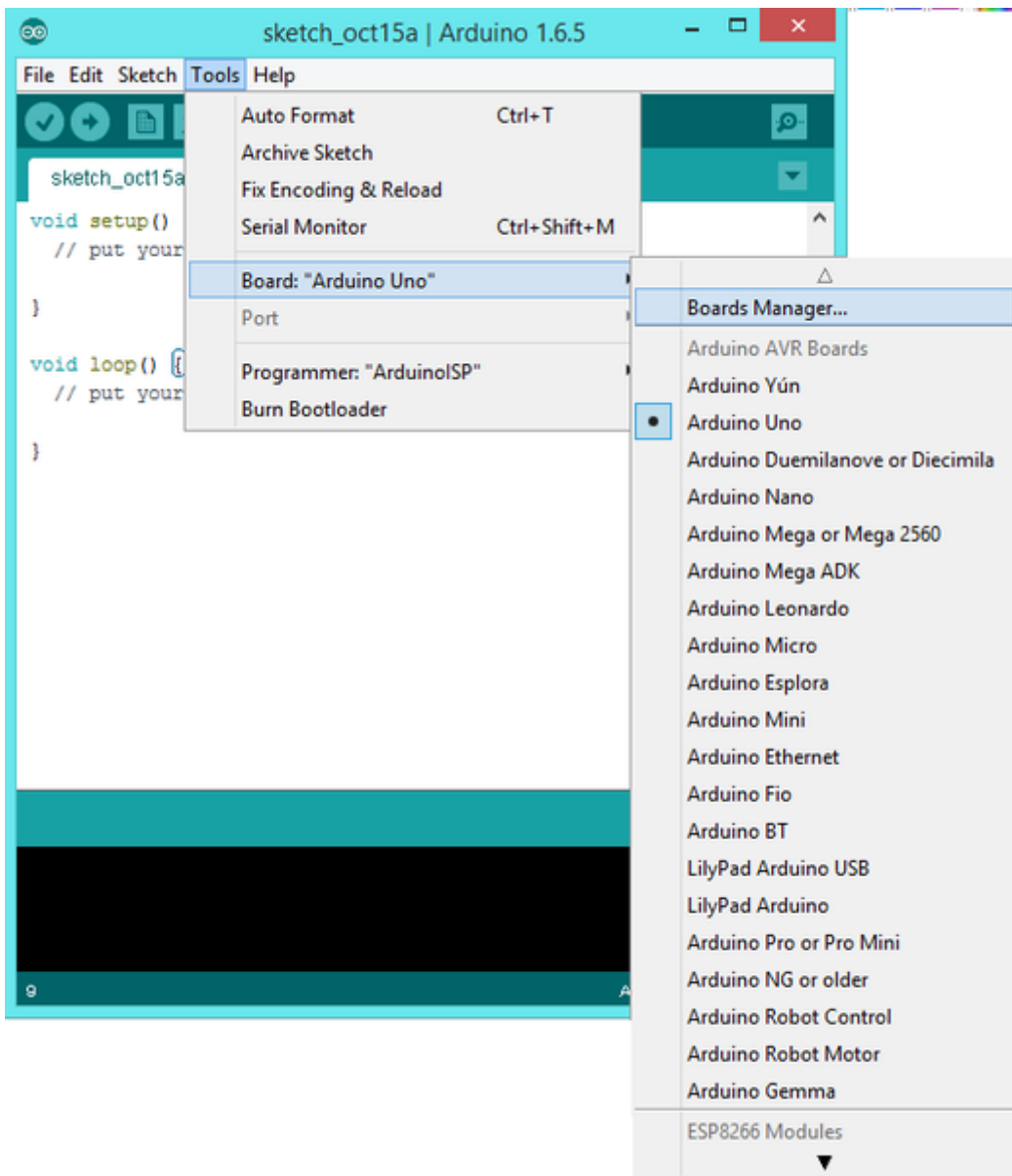
(/wiki/File:File-preference.png)

Enter http://arduino.esp8266.com/stable/package_esp8266com_index.json (http://arduino.esp8266.com/stable/package_esp8266com_index.json) into Additional Boards Manager URL's field under preferences as shown below.



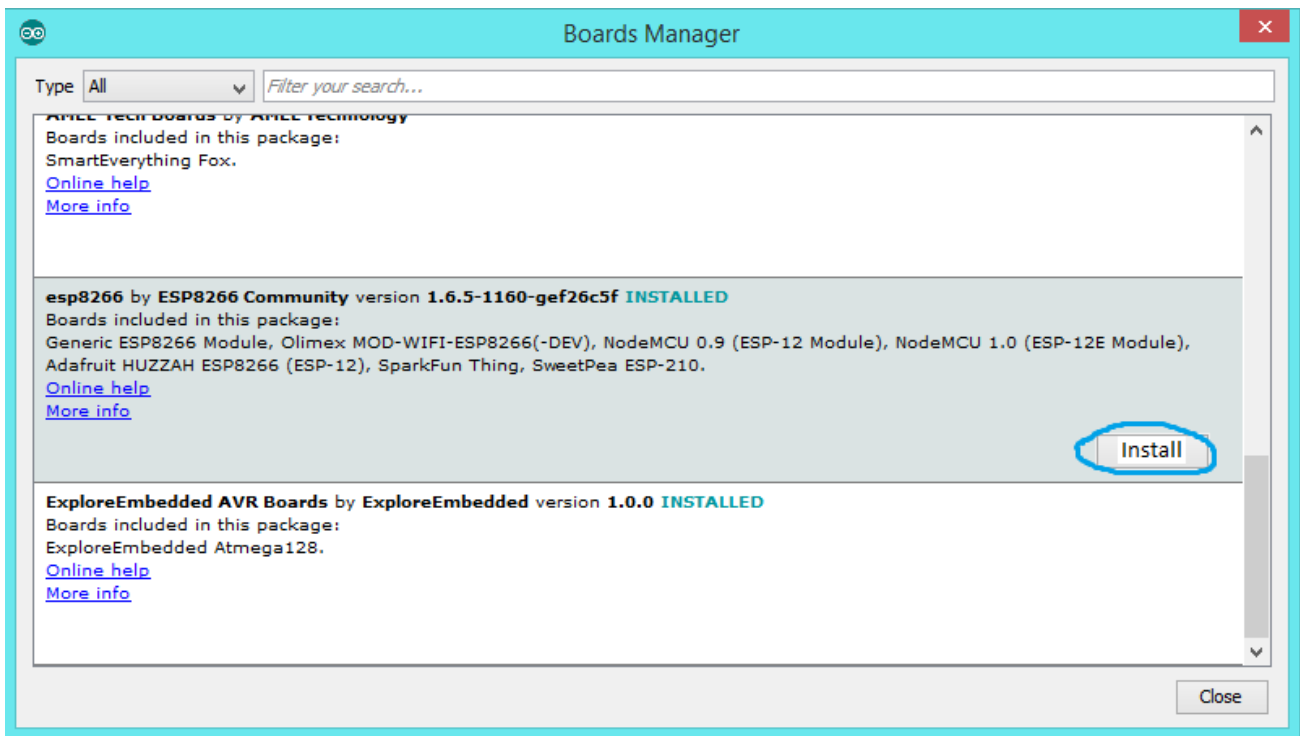
(/wiki/File:Preference_json.png)

Next, Select the **Board manager** under Tools.



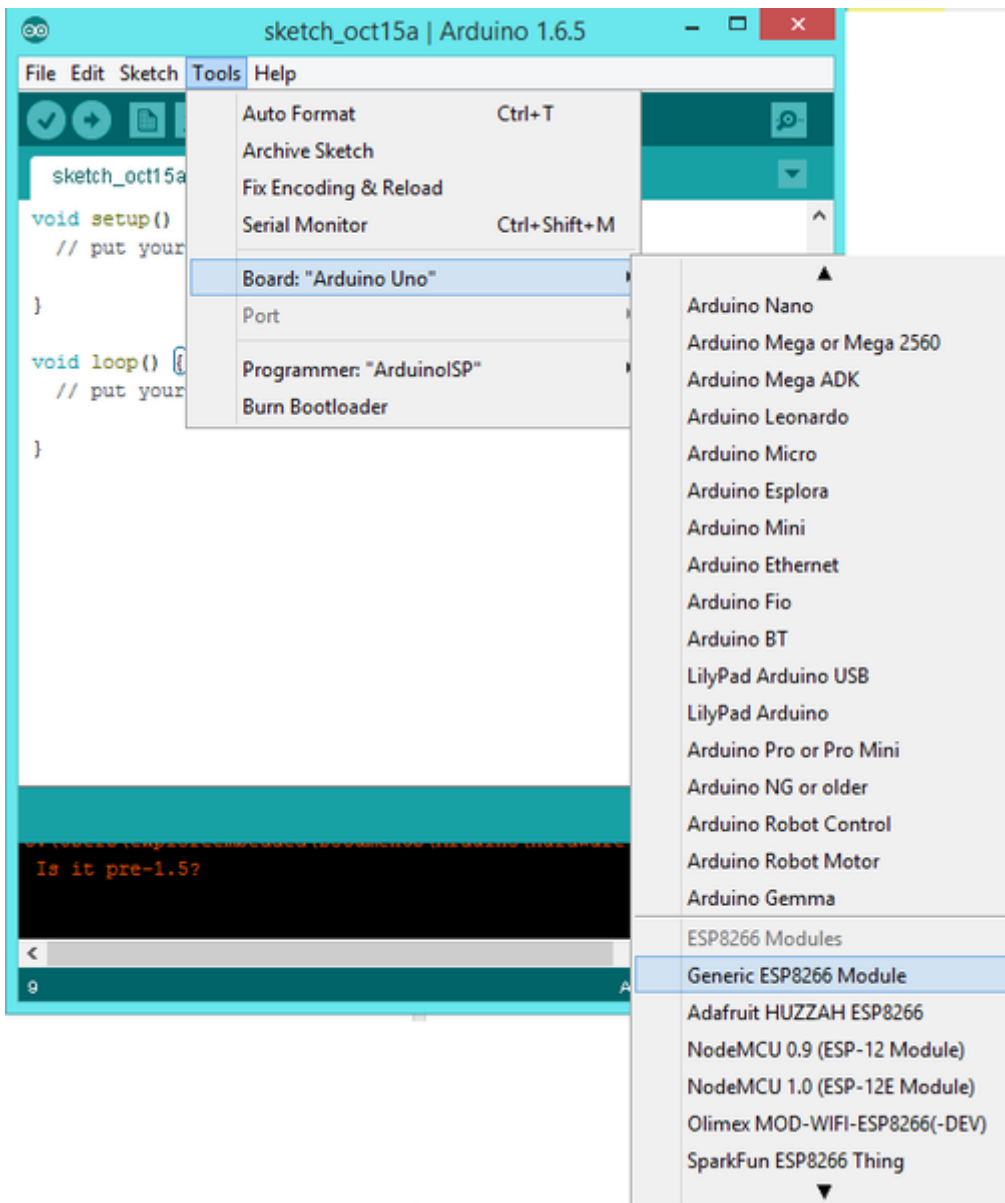
(/wiki/File:Board_manager.png)

Next, use the **Board manager** to install the ESP8266 package.



(/wiki/File:Install_esp8266.png)

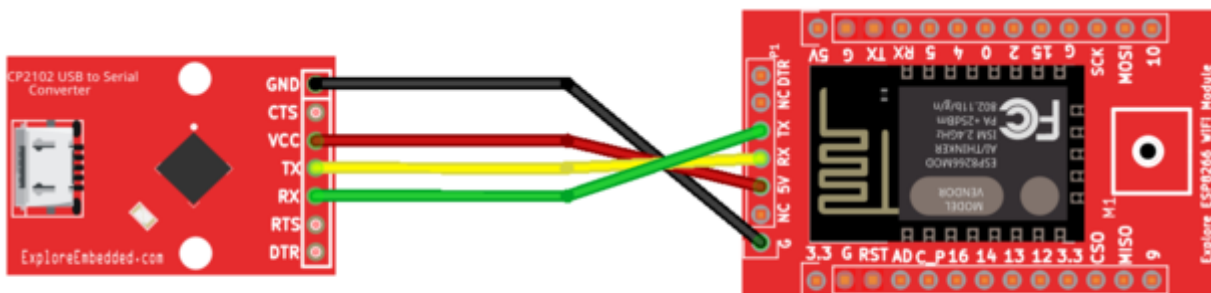
Restart the Arduino IDE and Select the specific Board.



(/wiki/File:Board_selecting.png)

Test Example

To program ESP8266, you need a USB to serial converter. Image below shows connections made from Explore USB to Serial and Explore Wifi boards. Note that the Explore Wifi board has on board 3.3v regulator and circuitry to reset the board and put it in programming mode.



fritzing

(/wiki/File:619px-UART_with_ESP.png)

Test Code

I have used the sample code below to scan and display the available WiFi Networks.

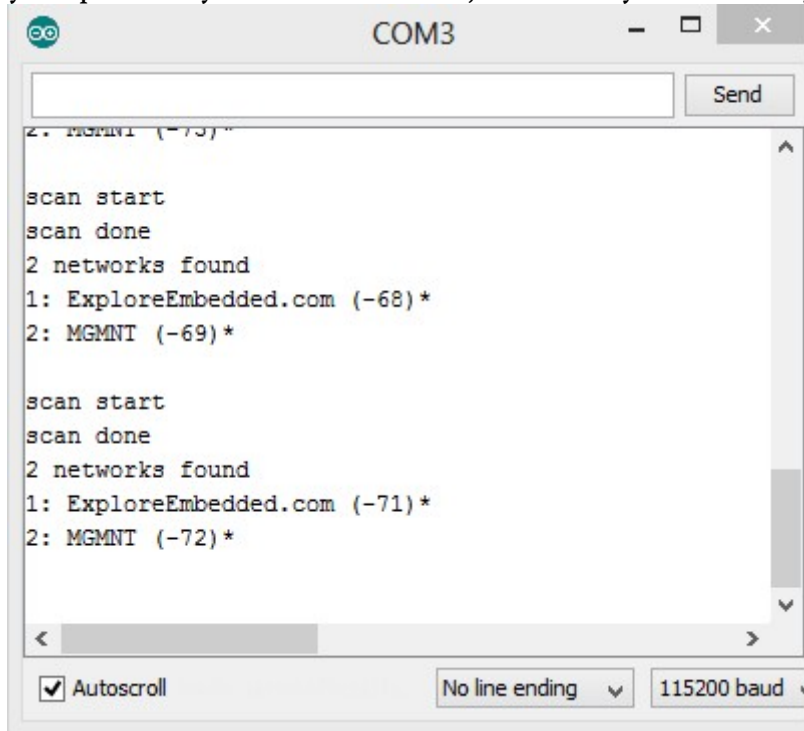
```
1.  /*
2.   * This sketch demonstrates how to scan WiFi networks.
3.   * The API is almost the same as with the WiFi Shield Library,
4.   * the most obvious difference being the different file you need to include:
5.   */
6.  #include "ESP8266WiFi.h"
7.
8.  void setup() {
9.    Serial.begin(115200);
10.
11.    // Set WiFi to station mode and disconnect from an AP if it was previously connected
12.    WiFi.mode(WIFI_STA);
13.    WiFi.disconnect();
14.    delay(100);
15.
16.    Serial.println("Setup done");
17.  }
18.
19.  void loop() {
20.    Serial.println("scan start");
21.
22.    // WiFi.scanNetworks will return the number of networks found
23.    int n = WiFi.scanNetworks();
24.    Serial.println("scan done");
25.    if (n == 0)
26.      Serial.println("no networks found");
27.    else
28.    {
29.      Serial.print(n);
30.      Serial.println(" networks found");
31.      for (int i = 0; i < n; ++i)
32.      {
33.        // Print SSID and RSSI for each network found
34.        Serial.print(i + 1);
35.        Serial.print(": ");
36.        Serial.print(WiFi.SSID(i));
37.        Serial.print(" (");
38.        Serial.print(WiFi.RSSI(i));
39.        Serial.print(")");
40.        Serial.println((WiFi.encryptionType(i) == ENC_TYPE_NONE)? " ":"*");
41.        delay(10);
42.      }
43.    }
44.    Serial.println("");
45.
```



```
46.    // Wait a bit before scanning again
47.    delay(5000);
48. }
```

Output

Once you upload the program, you should be able to see the WiFi networks available at your place. If you don't have one, what will you connect your ESP too?



(/wiki/File:Wifiscan.jpg)

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**Rakesh Menon**

—

 7 years ago

hello,

I followed all the procedures with above described modules, but I'm unable to dump the code on to esp 12e board, the arduino ide shows something like this

Sketch uses 233,411 bytes (53%) of program storage space. Maximum is 434,160 bytes.

Global variables use 31,992 bytes (39%) of dynamic memory, leaving 49,928 bytes for local variables. Maximum is 81,920 bytes.

warning: espcomm_send_command: wrong
direction/command: 0x00 0x08, expected 0x01 0x08

warning: espcomm_send_command: wrong
direction/command: 0x00 0x08, expected 0x01 0x08

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direction/command: 0x00 0x08, expected 0x01 0x08

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direction/command: 0x00 0x08, expected 0x01 0x08

warning: espcomm_send_command: wrong
direction/command: 0x00 0x08, expected 0x01 0x08

warning: espcomm_send_command: wrong
direction/command: 0x00 0x08, expected 0x01 0x08

warning: espcomm_sync failed

error: espcomm_open failed

error: espcomm_upload_mem failed

Category (/wiki/Special:Categories) WiFi ESP8266 (/wiki/Category:WiFi_ESP8266)

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Rishaba T Menon

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6 years ago

mine too have a same problem

name@example.com

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Lotians Group

Rakesh Menon


7 years ago

There is a pin 0 on the board just connect it to the ground and restart

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Luís Henrique


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7 years ago

I have done everything successfully, but my serial monitors always shows
scan start
scan done
no networks found

But there are several wifi network available...
I have tried with 2 different boards... I can program, blink a led, etc just fine... but both of them always show "no networks found" if I run this code..
Any clue?

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Sandeep Patil


Mod

Luís Henrique

7 years ago edited

Sorry for the delayed response, not sure why. Have you tried, connecting to a specific network without searching for it. I mean by hard-coding the SSID and Password.

02 • Reply • Share ›



Agung Rumecko

7 months ago

thanks, i am newbie on arduino, this sample help me much to learn arduino. on me this run without any

much to learn arduino, on the this run without any problem, thanks bro :D

0 0 • Reply • Share ›

AS

anand sai

🕒 3 years ago

Hi Sir, I tried connecting Arduino with ESP 8266. All the connections are correct but I was not getting the signal (blue light not glowing). Please help me find a solution for the issue.

<http://bigbelectronics.in/p...>

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F

farshid

🕒 5 years ago

```
Sketch uses 236,729 bytes (52%) of program storage space. Maximum is 454,160 bytes.  
Global variables use 31,916 bytes (38%) of dynamic memory, leaving 49,984 bytes for local variables. Maximum is 81,920 bytes.  
Uploading 230880 bytes from C:\Users\mehdi\AppData\Local\Temp\build5486f4cd558f53d9fa1fcfd8e9aca27.cmp\sketch_jul25a.ino.bin to flash at 0x00000000  
+ 255 +
```