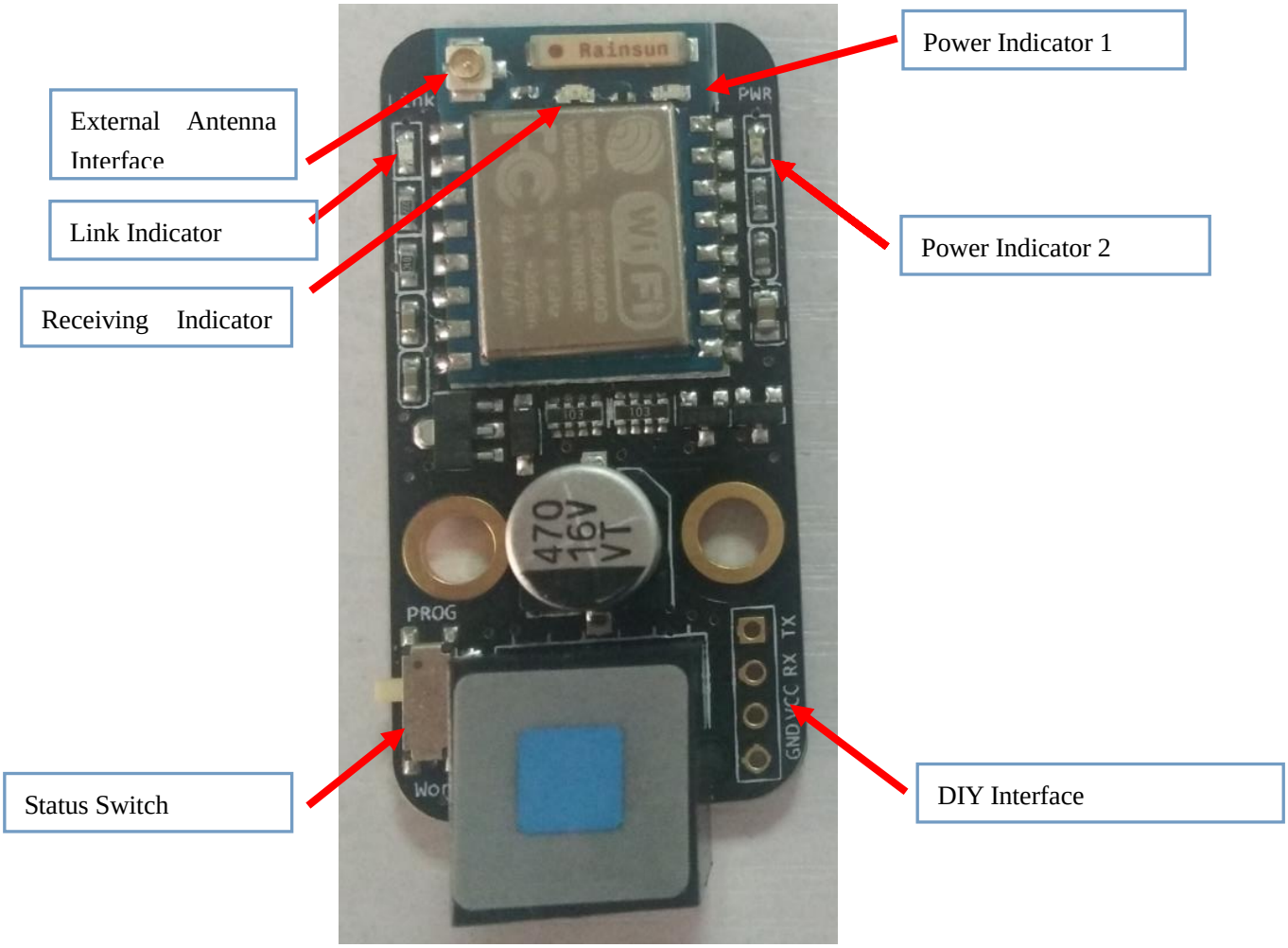
WI-FI User Guide

1. Brief Introduction

Main Chip	ESP8266
Frequency	2.412GHz~2.484GHz
Module Voltage	5V
Working Current	50mA
Peak Current	300mA
Hardware Output	UART Serial Port
Default Baud Rate	9600Bd
Working Mode	STA + AP

2. Hardware Introduction



Indicators

After the Wi-Fi module is connected the main board, the red power indicator 1 and 2 will be on. About 1 second later, the blue link indicator will start flashing, which means the module has started normally (but not connected to any mobile devices

yet).

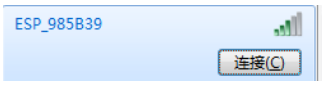
If it's connected to a device and has successfully accomplished data transfer for one time, the **link indicator** will be solid on. Meanwhile, the blue receiving indicator will keep flashing when the module is receiving data.

Status Switch

By flipping the status switch, you can choose **Work** or **PROG** working mode. **Work** means normal working status (regular status) while **PROG** refers to programming.

3. How to Use

3.1 Configuration Setting



1) Connect your computer to the Wi-Fi hotspot. (Note: no password by default).

2) Open your browser and enter 192.168.4.1.

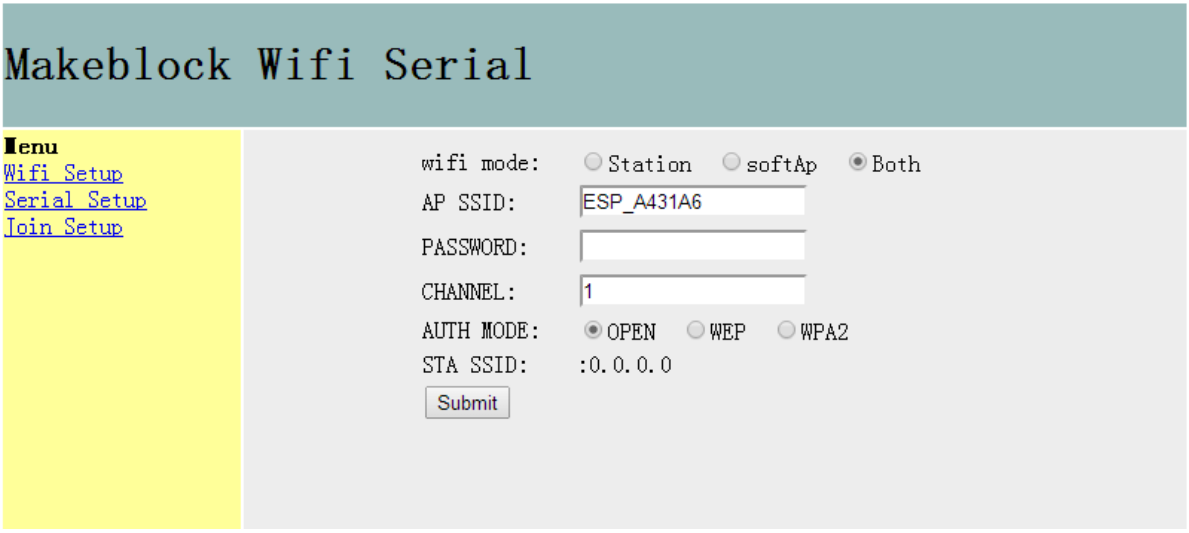


Diagram1

In **Wi-Fi Setup** page, you can set the SSID, password, etc.

- **AP SSID**: Set the name you want to use for this Wi-Fi Module
- **Password**: set a password you want or leave it blank.

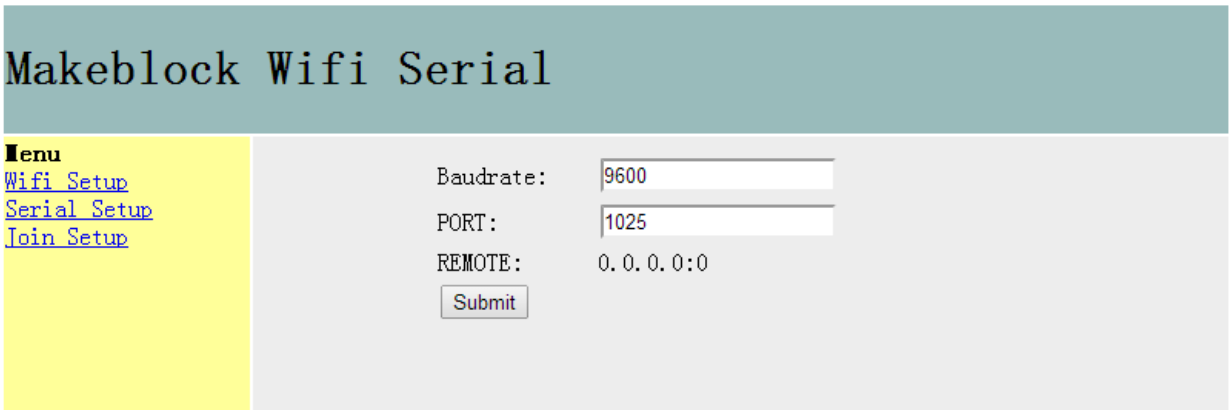


Diagram 2

In **Serial Setup** page, you can set the baud rate and port number.
Baudrate: the serial baud rate for communicating with the main control board.
Port: Set the port number. (It's not recommended setting the port number as 333 since it's the broadcast number).

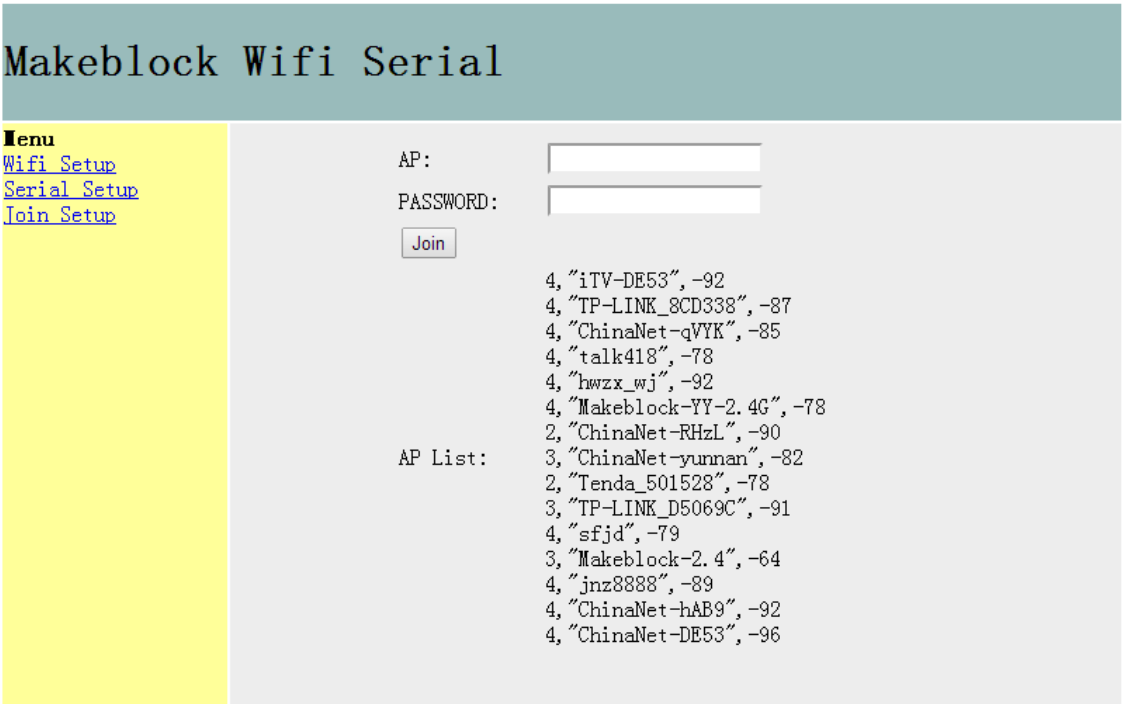
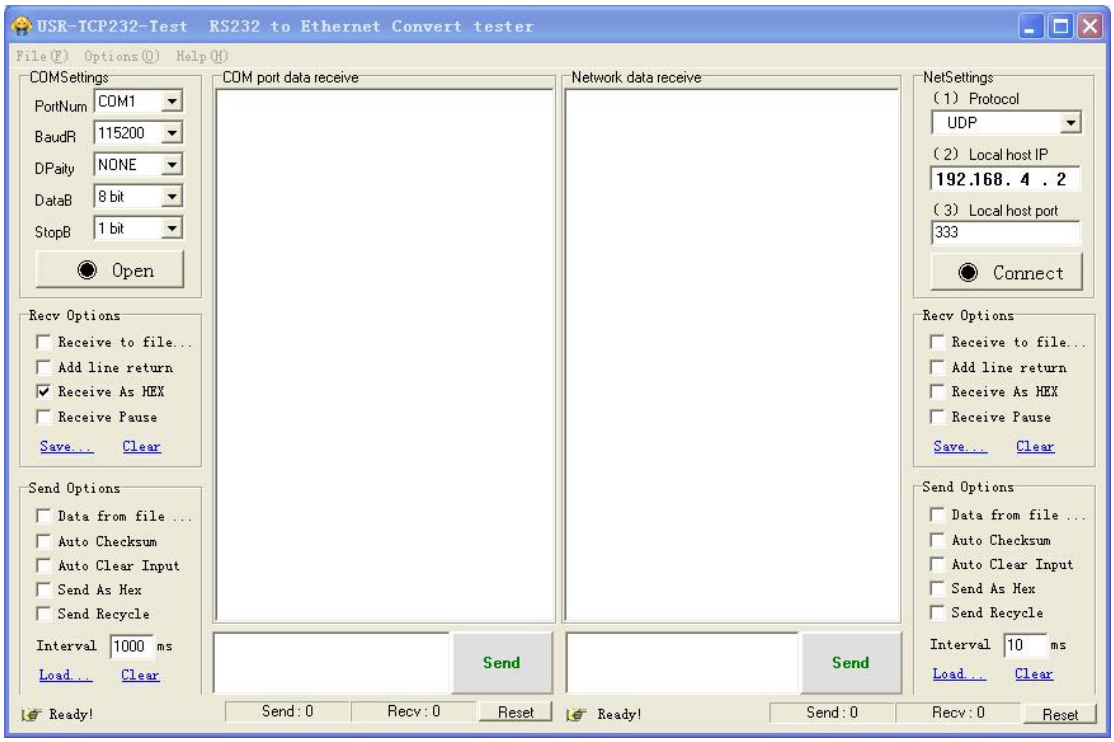


Diagram 3

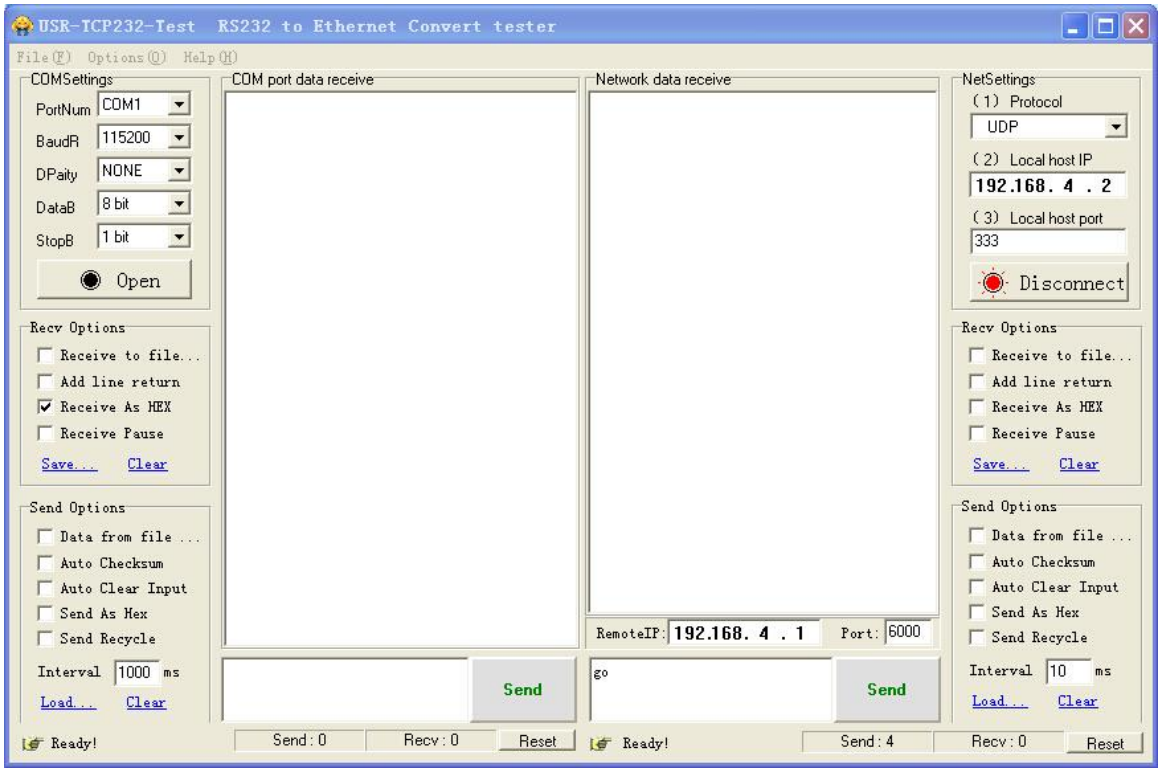
In **Join Setup** page, you can select the network you want, then enter the name and its password.
AP: Copy/enter the name of the network you want to connect to. (You can see all the Wi-Fi names the Wi-Fi module has found in the AP list)
Password: Enter the password of the network you choose.

3.2 Connect PC to Wi-Fi Module

AP mode refers to hotspot mode which requires no router connection.
Open software USR-TCP232-TesT, and make sure your computer has already connected to the Wi-Fi generated by the Wi-Fi module before opening the software.



Choose **"UDP"** in **Protocol** at the to-right corner, and then **Connect**



Enter 192.168.4.1 for **RemoteIP**;
Enter the port number you set in **Serial Setup page** (Diagram 2) for **Port**

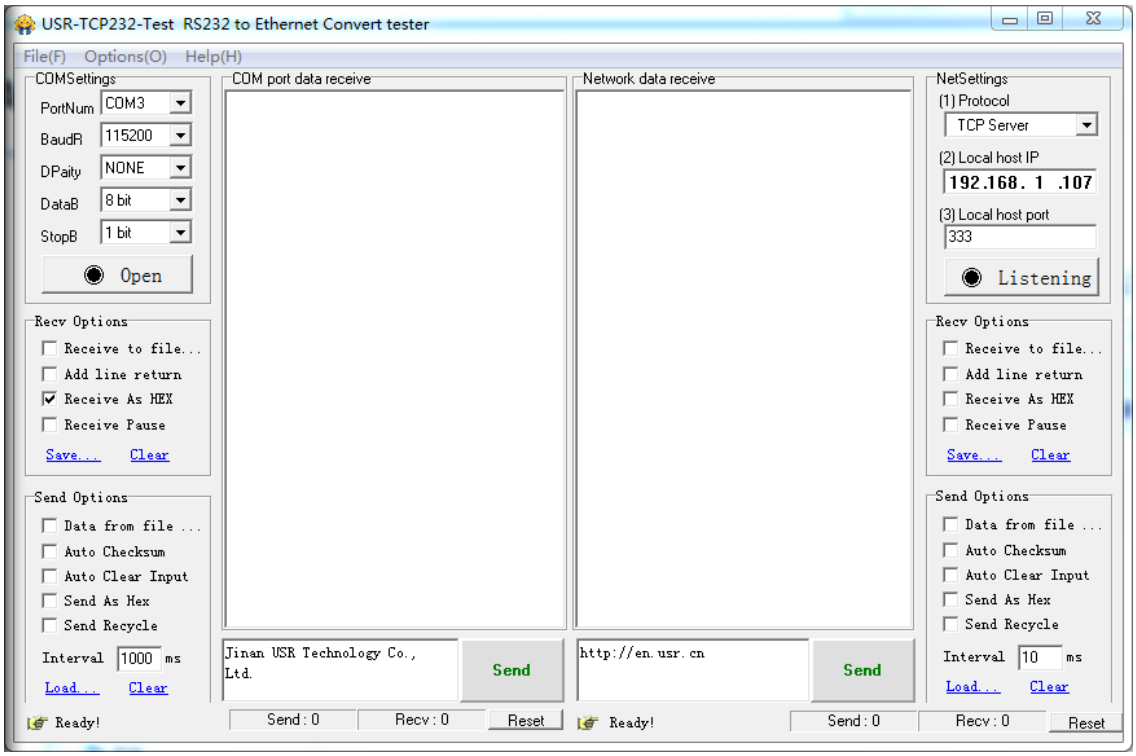
In the meantime, write the following program in Arduino

```
#include <Makeblock.h>
#include <Arduino.h>
```

```
#include <SoftwareSerial.h>
#include <Wire.h>

MeWifi Wifi(PORT_4);

void setup()
{
    Serial.begin(9600);
    Wifi.begin(9600);
    Serial.println("Bluetooth Start!");
}

void loop()
{
    char inDat;
    char outDat;
    if(Wifi.available())
    {
        char c = Wifi.read();
        Serial.print(c);

    }
    if(Serial.available())
    {
        outDat = Serial.read();
        Wifi.write(outDat);
    }
}
```

Open the Arduino serial port to realize Wi-Fi passthrough, hence to receive and send data.

In STA mode, the Wi-Fi module needs to be mounted to a nearby router (as shown in Diagram 3). After successful connection of the Wi-Fi module and the router, the router will assign IP address automatically. (Check the IP address in **STA SSID** from **Wi-Fi Setup page** as shown in Diagram 1)



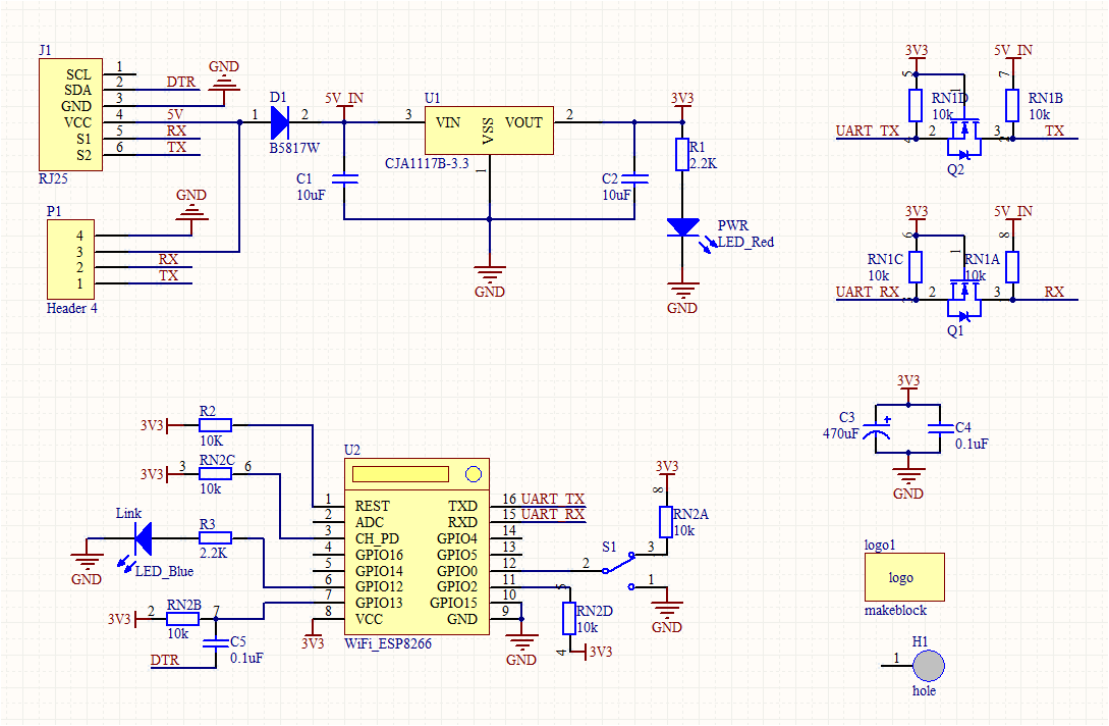
Set the proper serial port and then configure the network. Choose **"TCP Client"** in the **Local host IP** at the up-right corner; enter the assigned IP in **Server IP**; enter "333" as the **Server Port.**

To realize receiving and sending data, click **Open** the serial port on the left side of USR-TCP232-test and the **Connect** on the right side.

4. FAQ

The module will get slightly warm while working, it's completely normal.

5. Schematic Diagram


J1
SCL
SDA
GND
VCC
S1
S2
RJ25
DTR
5V
RX
TX
GND
D1
B5817W
5V_IN
U1
VIN
VSS
VOUT
CJA1117B-3.3
C1
10uF
C2
10uF
3V3
R1
2.2K
PWR
LED_Red
P1
Header 4
RX
TX
RN1D
10k
RN1B
10k
UART_TX
TX
Q2
RN1C
10k
RN1A
10k
UART_RX
RX
Q1
R2
10K
RN2C
10k
Link
R3
2.2K
LED_Blue
RN2B
10k
C5
0.1uF
U2
REST
ADC
CH_PD
GPIO16
GPIO14
GPIO12
GPIO13
VCC
TXD
RXD
GPIO4
GPIO5
GPIO0
GPIO2
GPIO15
GND
16 UART_TX
15 UART_RX
WiFi_ESP8266
S1
RN2A
10k
RN2D
10k
C3
470uF
C4
0.1uF
logo1
logo
makeblock
H1
hole