YL-ESP8266-A1

User Manual

Version 2.1

2015.4.1

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Symbol Conventions

The following symbols may appear in this article, they are defined as follows.

Symbol	Description
 Warning	Text with this symbol indicates a potentially hazardous situation, which if ignored, could result in equipment damage, data loss, performance degradation or unexpected results.
 Description	Text with this mark is the additional information of main body which is to emphasize and supplement

Contents

Amendment record

Version	Changed by	Time	Reason	Details
V1.0	Lemme	2014.03.10	Original	
V2.1	Lemme	2015.04.01	Update	Change Test Board picture; Change Figure 2-6 Schematics of Test Baseboard; Change 4.2.1 and 4.2.2 description;

1.Term Description

SoftAP： That is a wireless access point just like a central node of the wireless network. Wirelessrouter is a typical wireless access point.

Station： That is wireless terminal, the terminal is a wireless network.

2.Test Board Introduction

WT8266-S1 provides specialized UART 一 WiFi functional test board to facilitate the customers to test the Wi-Fi module . Via the test board, it can simulate serial devices to access WiFi network and realize data transmission, but also can simulate WT8266-S1 works as the main control chip to access data of other devices and control.

Physical Map

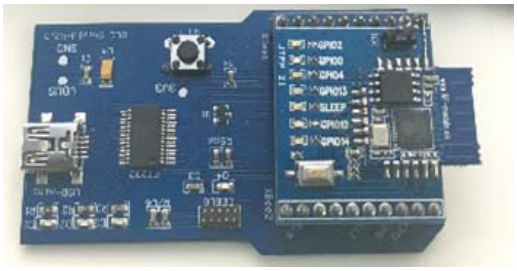
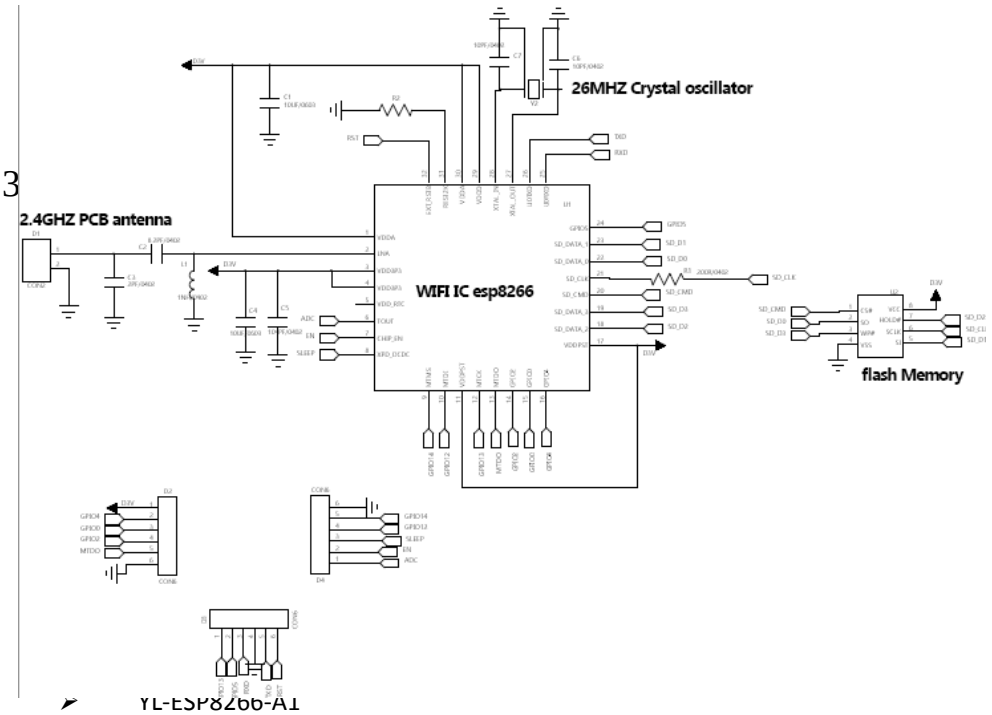


Figure 2-1 Perspective View of Test Board

Schematics



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- YL-ESP8266-A1

3.2 Test Environment

WIFI module and mobile phone (or PC) need to be connected within the same network, you can also connect to a router, you can connect your phone to the module.

3.2.1 SoftAP Mode

Phone (or PC) and WIFI module on the router, the phone (or PC) is connected directly to the router, the module link to the router through AT + CWJAP = "SSID", "PWD"

3.2.2 Station Mode

Phone (or PC) connected to the module, the module needs to be set in server mode.

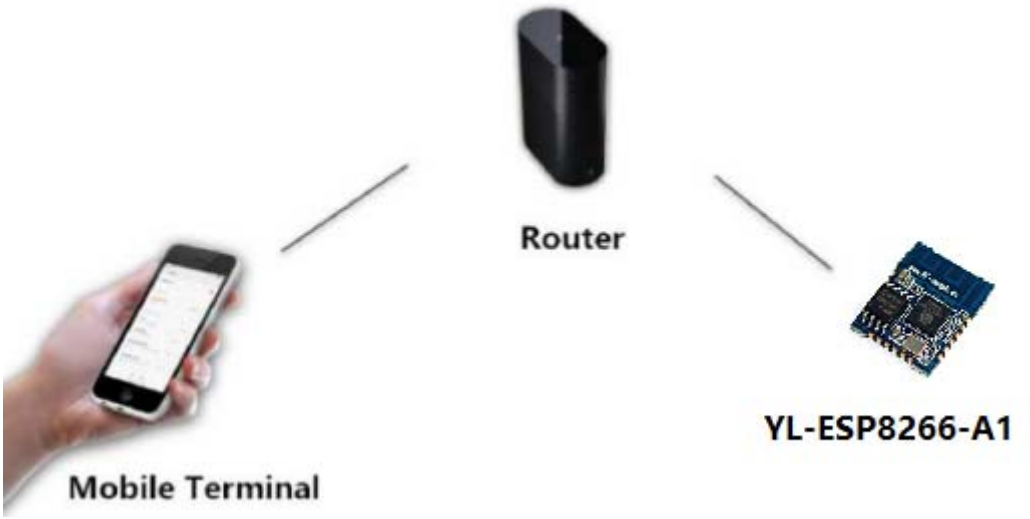


Figure 4.2 Station Network Connection Mode

3.3 Test Steps

3.3.1 SoftAP Mode

Module acts as a wireless access node in the network role, mobile phones, computers, WIFI modules and other wireless access devices, etc. can be connected to the module as the Station, formed into a LAN. In this example, module wireless connected with mobile phone, PC terminal monitor the module's data transceiver situation via configuration software.

Test Environment：

Figure 4-3 SoftAP Test System Diagram

Setting Steps：

Open the testing software of WiFi module, the software will automatically recognize port numbers, and module current mode, the baud rate to 115200. Click "Open serial port" button, the software will display "OK" in the receiving areas , it indicates that the module has been successfully connected with

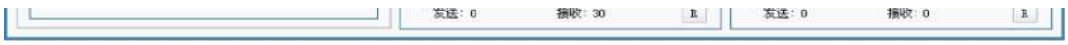
the test software.

Figure 4-4 Test Software - Module Connection

Figure 4-4 Test Software - Module Connection

Figure 4-3 Testing Software WiFi Module

Figure 4-4 Test Software - Module Connection



2、In "common functions" options , please select "AP Mode" in "working mode" and click the "Settings Button". when serial receiving area shows "OK" , it means the setting is completed.Please refer to figure 4-5.

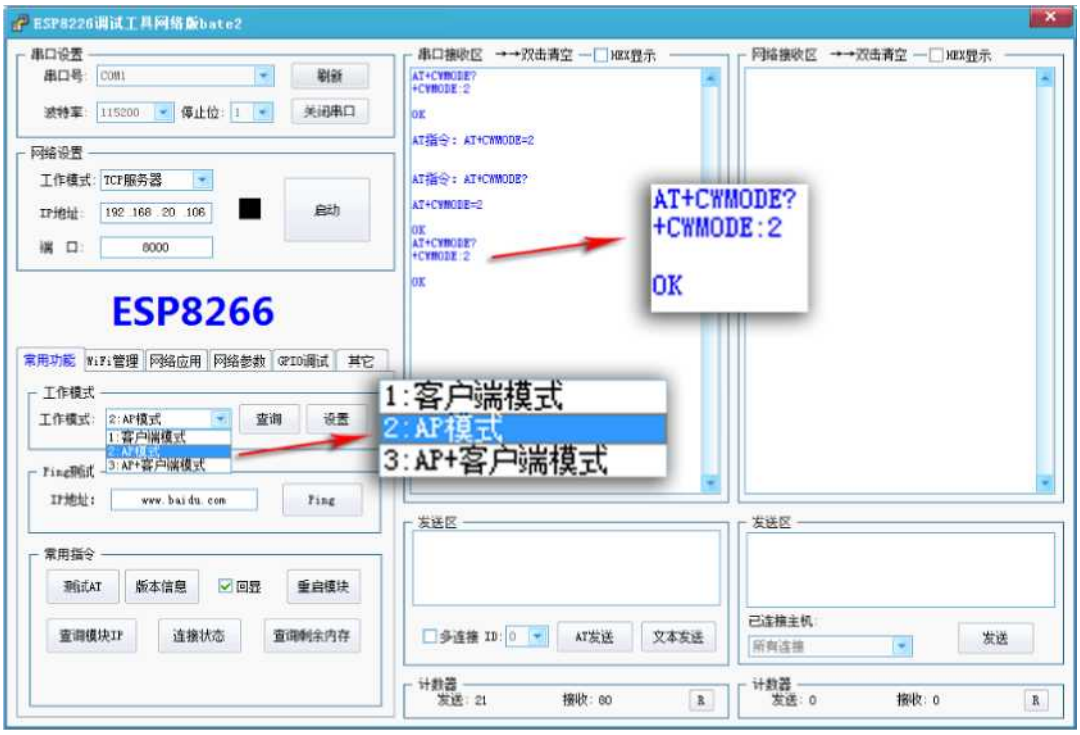


Figure 4-5 Test Software- AP Mode Setting

3、 In the "WiFi Management" option, configure SSID (network name) and password for module, and click the "Settings" button, serial port receiving area will show following figure, it means setting is OK.

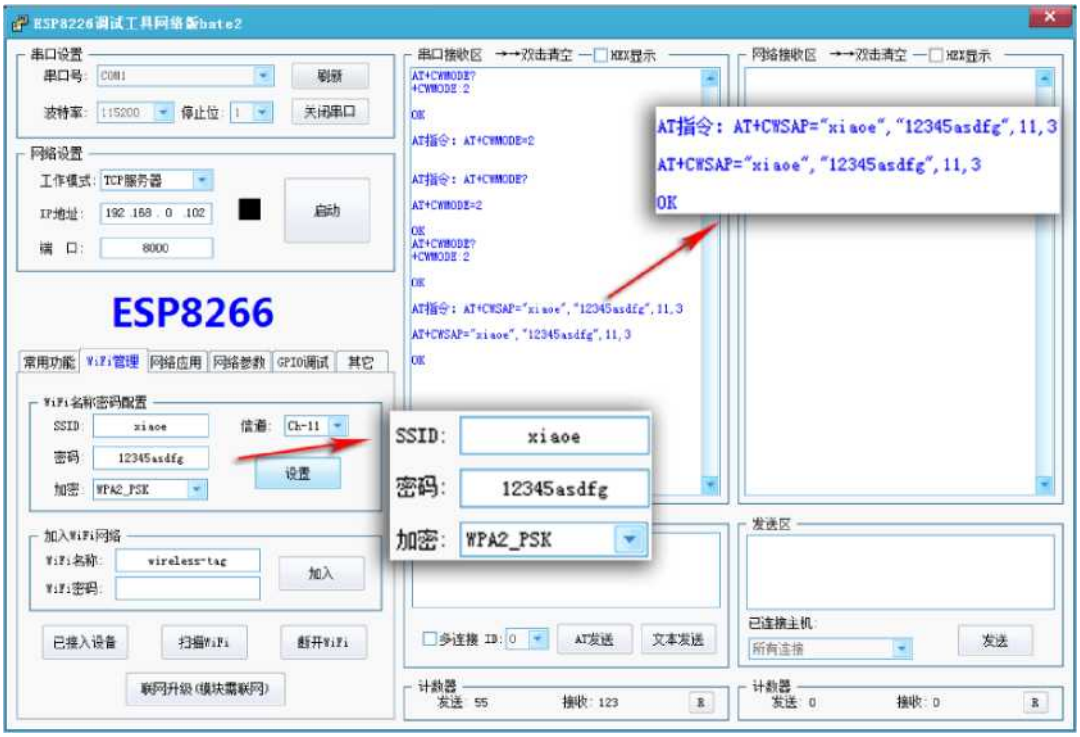


Figure 4-6 Test Software -SSID Password Settings

4、In "Network Parameters" option, read "AP IP Address", acquisition IP address ofmodule (Note: the IP address can be customized, the user only need to enter custom IP values in the format of normal IP address, and can change it by write operation, after success, it will return to OK).

Figure 4-7 Test Software …Read and Write IP

5、 In "'Network Application" option, in "' Transparent Transmission Settings", select "Multi-Connection Mode", set the port number for the module in "Server Mode" , and click "Open Service."

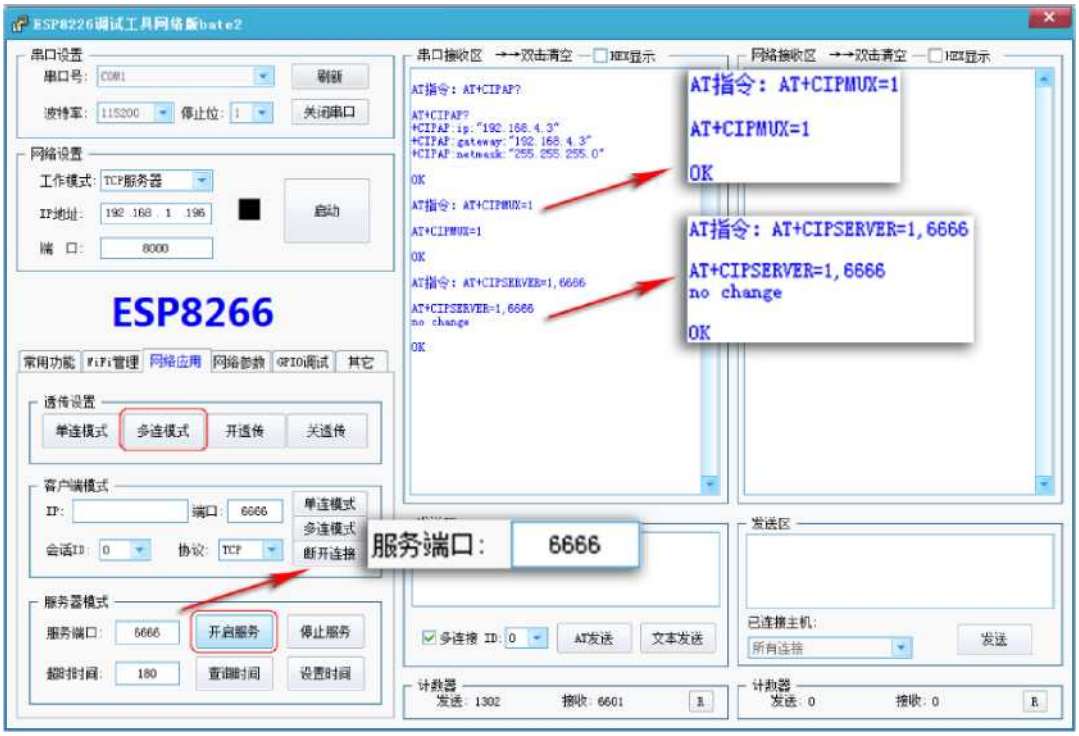


Figure 4-8 Test Software - Connection Mode

6、Open the terminal device which needs to connect with the module, connected to module WiFi network in WiFi settings.

Figure 4-9 APP- Network Connection

7、Open the "Xiao e APP" in the terminal equipment, in the customer terminal mode, set the IP address (consistent with the WiFi module address) and port (consistent with the WiFi module port number), click the "TCP Protocol" and connect with the WiFi module.

Figure4-10 APP-IP Port Settings

8、After APP and WiFi module successfully connected, APP will return the IP address and port number of the module. Xiao eWiFi module test software (PC end) returns "0, CONNECT", as

shown below.

Figure 4-11 APP-IP Port Settings

Figure 4-12 Testing Software -IP Port Settings

9、Send data to the APP from Xiao e WiFi module testing software (PC) through WiFi module, need to select "Multi-Connection" in the transmission area.

Figure 4-13 Testing Software - Data Transmission (AP mode)

Figure 4-14 APP - Data Receiving (AP Mode)

10、Send data to the module by the APP, input "WT8266-S1" in the input box , click send. On PC testing software, you can view the data transmitted from the APP.

Figure 4-15 APP - Data Transmission (AP Mode)

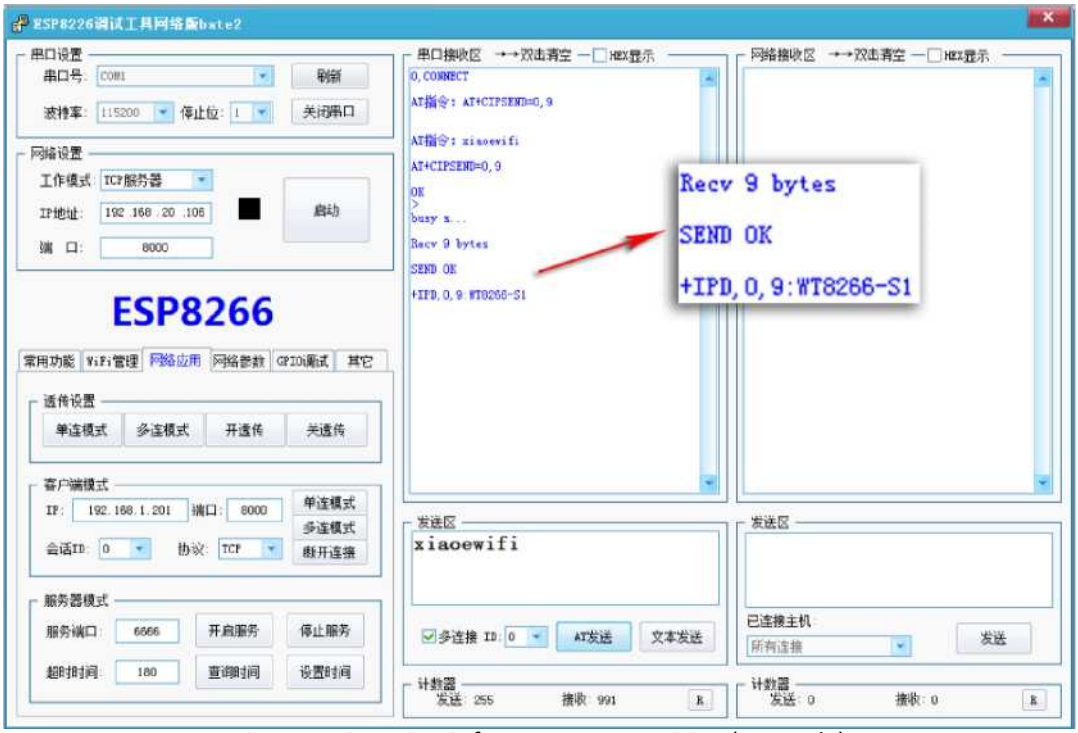


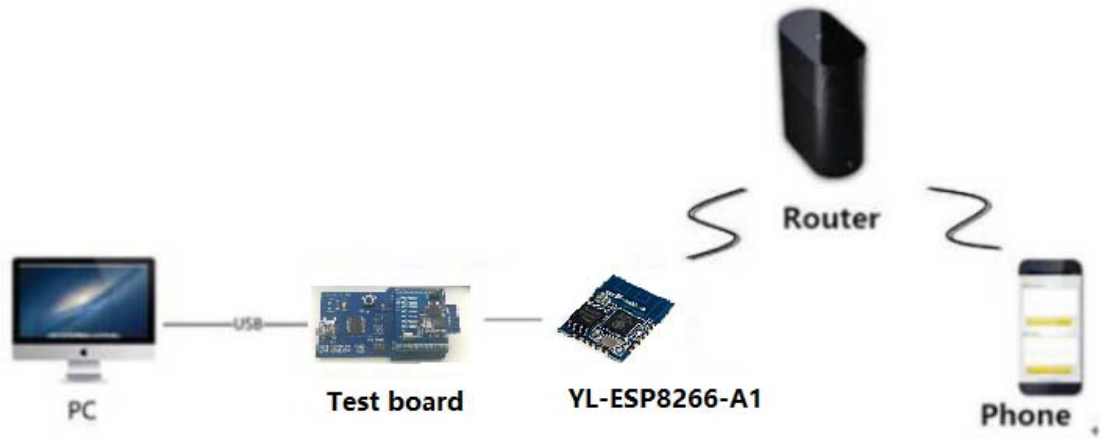
Figure 4-16 Testing Software - Data Receiving (AP Mode)

4.3.2 Station Mode

Module work as a station and connect to router, mobile phone (or PC) connect to the same

local network, mobile phone and module build up network communications so as to realize data exchange between module and mobile phone.

Test Environment:



Setting Steps:

1、The first step is the same to that of softAP mode.

2、In "Common Functions" option, select "Client Mode" for module's "Work Mode" and click the "Settings" button, serial port receiving area will display the following figure which means the setting is completed.

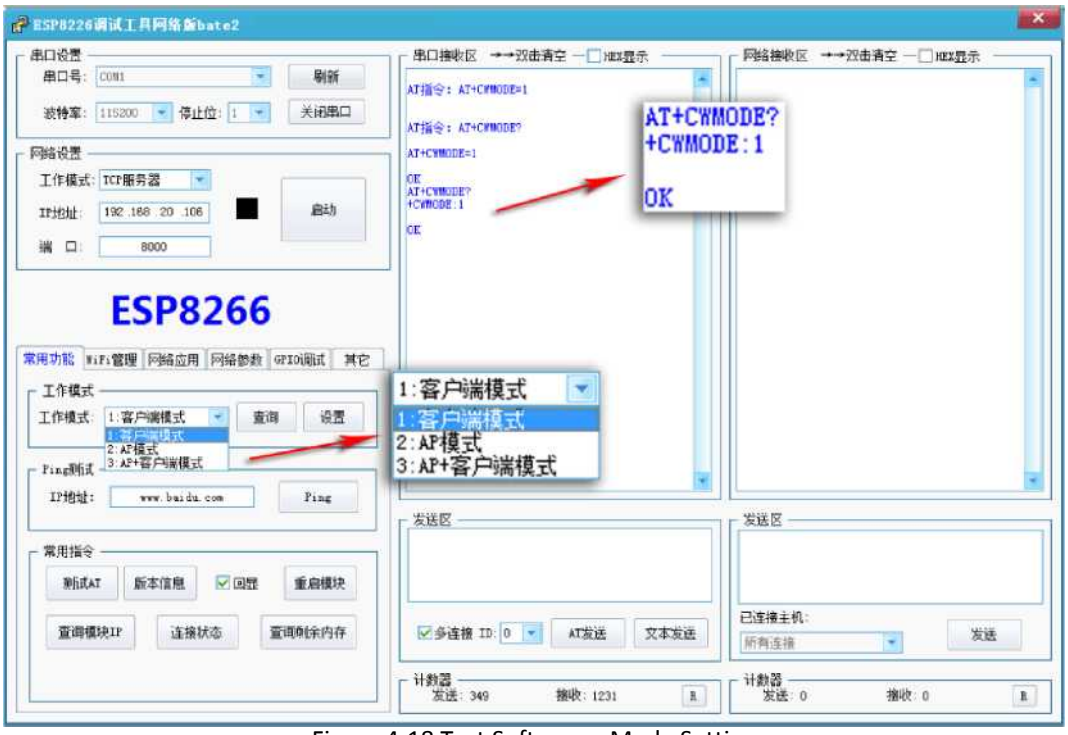


Figure 4-18 Test Software - Mode Setting

3、 In the "WiFi Management" option, click "Scan WiFi", find existed WiFi network, set the network's name and password that need to add in"Join WiFi network" option.

When serial reception area display as figure 4-20, it means complete to join in the network.

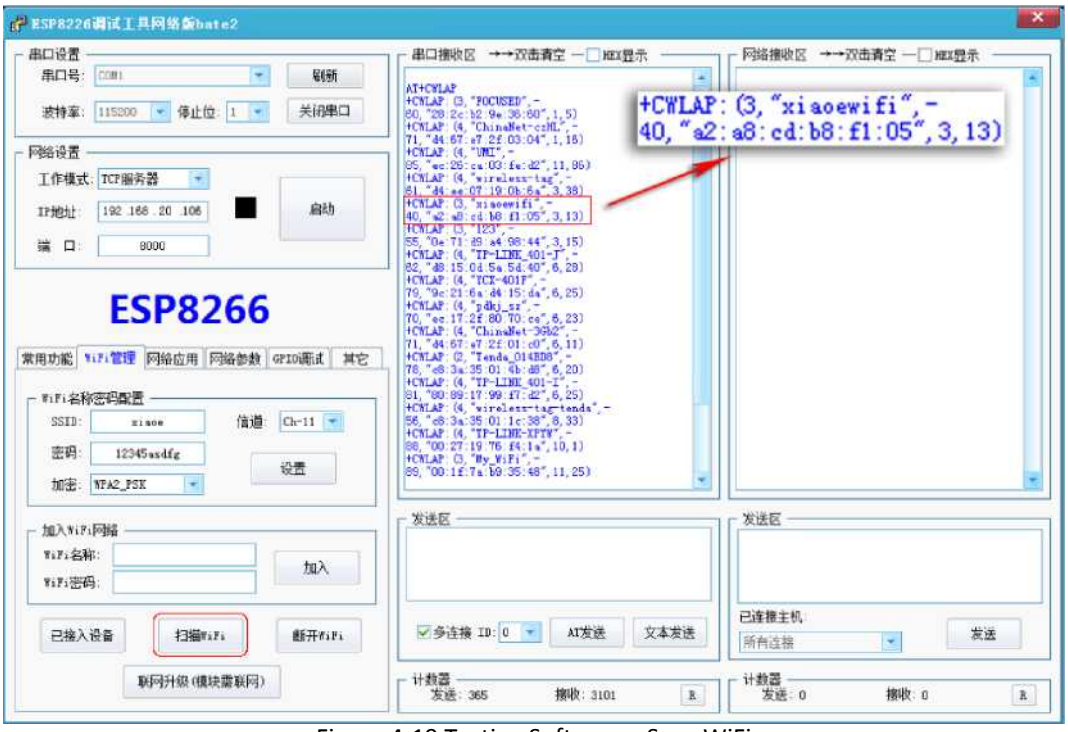


Figure 4-19 Testing Software - Scan WiFi

Figure 4-20 Test Software - Join WiFi

4、Open the terminal device, connect the terminal device to WiFi network firstly, the network need to be consistent to that of WiFi module.

Figure 4-21 APP-WiFi Settings

5、Open APP, select "server" mode, set the port to "6666" (random setting, consistent with the PC side), click "TCP Protocol" to enter the receive and transmission interface. Click the "Start" button in the upper right corner, so that the terminal device successfully created a TCP server. After successfully created, the server will automatically obtain an IP address, set a good server port before return.

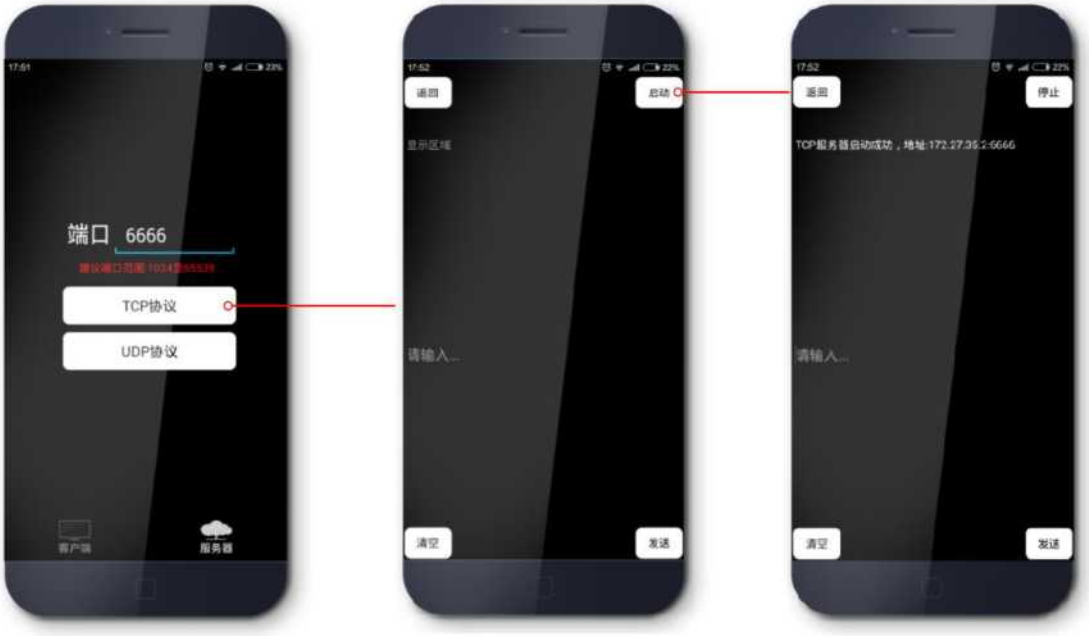


Figure 4-22 APP- Server Settings

6、 Select "Network Applications", select "Multi-Connection Mode" in "Transparent Transmission Settings", and then enter the server's IP and port number in "Client Mode", and click the "Multi-Connection Mode". After successful setting, the serial receive area returns the following figure.

Figure 4-24 Test Software - Server IP Port Settings

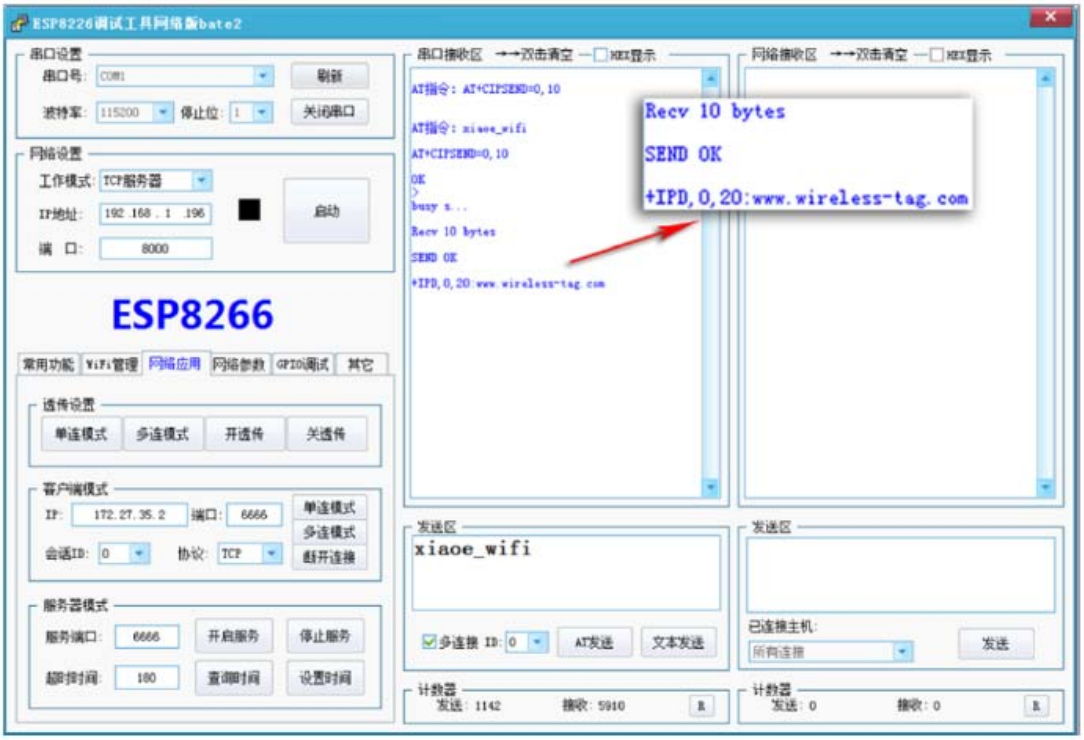
7、Sent data to server by the test software data via WiFi module, enter data "xiaoe_WiFi" in the transmission area and click "AT Send" button. You can see the data from PC test software in APP receiving area.

Figure 4-25 Test Software - Data Transmission (Station Mode)

Figure 4-26 APP - Data Reception (Station Mode)

8、 Server (APP) sends data to the module, input data "www.wireless-tag.com" in APP sending area , click "send" button, you can see the data sent from APP in receiving area.

Figure 4-27 APP - Data Transmission (Station Mode)


ESP8226调试工具网络版bate2
串口设置
串口号: COM1
刷新
波特率: 115200
停止位: 1
关闭串口
网络设置
工作模式: TCP服务器
IP地址: 192.168.1.196
端 口: 8000
启动
ESP8266
常用功能
WiFi管理
网络应用
网络参数
GPIO调试
其它
透传设置
单连模式
多连模式
开透传
关透传
客户端模式
IP: 172.27.35.2
端口: 6666
会话ID: 0
协议: TCP
单连模式
多连模式
断开连接
服务器模式
服务端口: 6666
开启服务
停止服务
超时时间: 180
查询时间
设置时间
串口接收区 →→双击清空 HEX显示
AT指令: AT+CIPSEND=0,10
AT指令: xiaoe_wifi
AT+CIPSEND=0,10
OK
busy s...
Recv 10 bytes
SEND OK
+IPD,0,20:www.wireless-tag.com
网络接收区 →→双击清空 HEX显示
Recv 10 bytes
SEND OK
+IPD,0,20:www.wireless-tag.com
发送区
xiaoe_wifi
多连接 ID: 0
AT发送
文本发送
发送区
已连接主机:
所有连接
发送
计数器
发送: 1142
接收: 5910
R
计数器
发送: 0
接收: 0
R

FCC Caution:
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation..
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception,which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.
To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.
FCC ID: 2ANYU-YLESP8266A1

This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2) This device and its antenna(s) must not be co‑located with any other transmitters except in accordance with FCC multi‑transmitter product procedures. Referring to the multi‑transmitter policy, multiple‑transmitter(s) and module(s) can be operated simultaneously without C2P.

3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end‑user regarding to Regulatory Domain change.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio‑frequency exposure guidelines for an uncontrolled
environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual:

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains FCC ID:2ANYU-YLESP8266A1 ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label:

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.