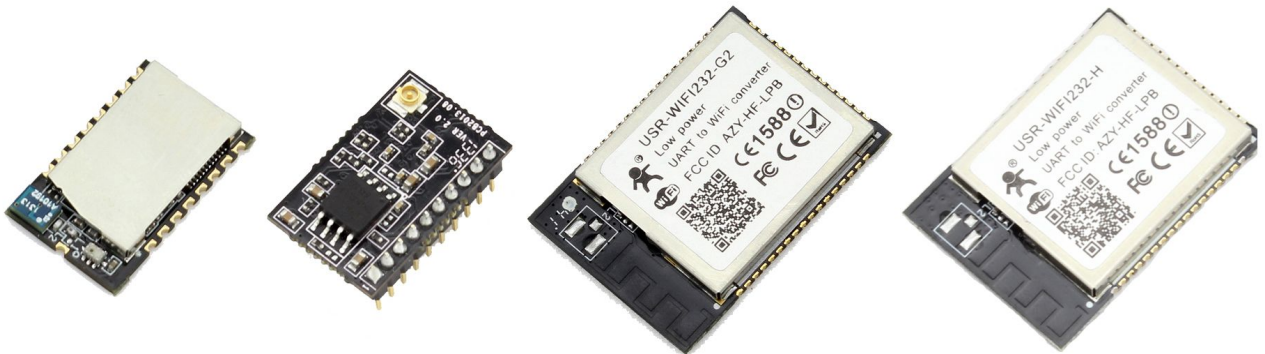


## WiFi low-power products Getting Started Manual



USR-WIFI232-S    USR-WIFI232-T    USR-WIFI232-G2    USR-WIFI232-H

This document applies to USR-WIFI232-S / T / G2 / H and their derivative products, such as USR-WIFI232-200.

This document is for all WiFi low-power series products, as a Quick Beginning, we recommend that users read this manual and follow the instructions to operate, so you will have a good understanding of this product. The user can also choose interested to chapters read as needed for specific details and instructions, please refer to the detailed manuals and application notes or website quiz.

*Information obtained from or supplied by Mpja.com or Marlin P. Jones and Associates inc. is supplied as a service to our customers and accuracy is not guaranteed nor is it definitive of any particular part or manufacturer. Use of information and suitability for any application is at users own discretion and user assumes all risk.*

## INDEX

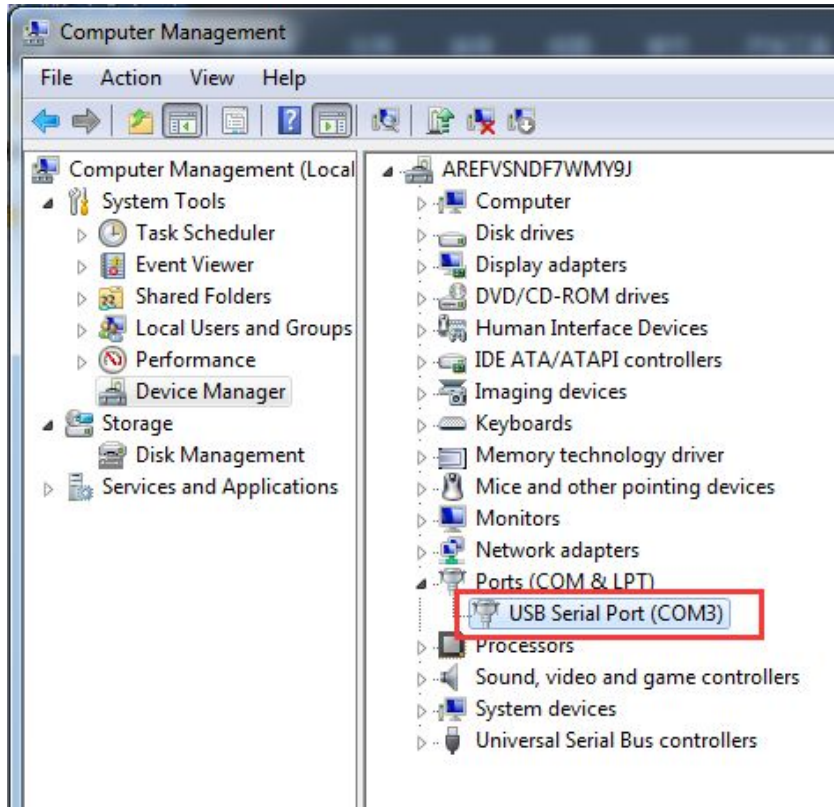
WiFi low-power products Getting Started Manual.....	1
1. Initial test.....	2
1.1. Hardware connect.....	3
1.2. Network connection.....	4
1.3. Related test software.....	5
1.4. Data send/receive test.....	5
2. Common use method.....	6
2.1. TCP Server and TCP client.....	6
2.2. AP+TCP server.....	7
2.3. Module as STA+TCP server.....	7
2.4. STA+TCP client application.....	7
2.5. AP+STA module communication.....	9
3. Module Settings.....	9
3.1. Built-in webpage.....	9
3.2. AT command configuration.....	9
4. Application example.....	10
4.1. PC remote connection WiFi module Communications.....	10
4.2. The WiFi module is connected with the server method.....	10

4.3. Mobile remote connection WiFi Module.....	11
4.4. Mobile network software to connect WiFi module.....	11
4.5. Two sockets communication application.....	12
4.6. How to achieve the function of WIFI module PWM/GPIO.....	13
4.7. WIFI module are two ways to build a transparent serial transmission of data.....	13
5. FAQ.....	13
5.1. How to restore to factory setting with the wifi module.....	13
5.2. Why module disconnect about 5ms.....	13
5.3. No signals of WIFI module searched, reasons and solution.....	13
5.4. WIFI module as STA mode join to router, how to check whether it connected or not.....	14
5.5. Serial port to send and receive network data under the AT command mode.....	14
6. Hardware circuit design reference.....	14
6.1. WiFi232 -t Test circuit reference.....	14
6.2. WiFi232 -S Hardware connection reference circuit.....	15
6.3. WiFi232 -G2 Hardware reference circuit.....	16
6.4. WiFi module and MCU communication connection diagram.....	17

## 1. Initial test

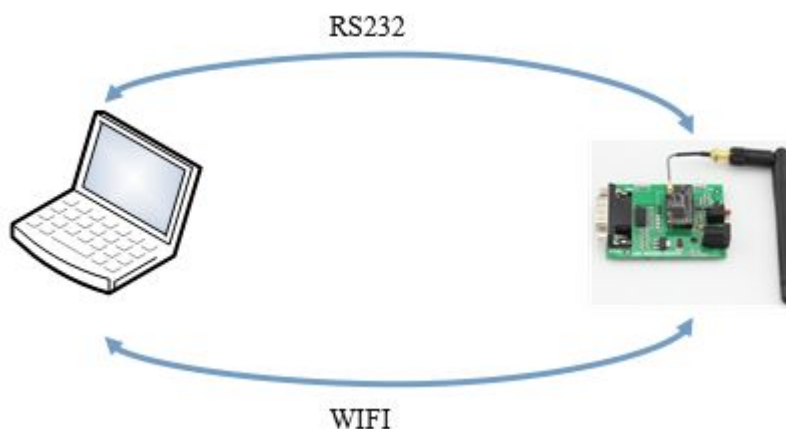
To do this initial test, one aim for have better understanding for your module, another to test if the module work normal or not.

**Notice:** PC should be disable other network cards, only leave one WIF network cards. Below PC COM port is COM 3, when you test it, you should know your PC COM ports. How to check your PC COM port: “My computer -> properties -> device manager -> port”



## 1.1. Hardware connect


In order to test module serial port to WIFI data communication, module serial port should be connect with PC serial ports, WIFI network also should be establish communication. You also can use USB to RS232 cable to connect PC.



As for serial ports connect, module pin is 3.3v TTL level, it can't connect with PC directly, user should use TTL to RS232 cable, we also suggest user to buy test kits, here USR-WIFI232-T as an example.

After hardware connection, power on the module, waiting for 3-6s, Ready light on, that's mean system completely started, we can go into next step.

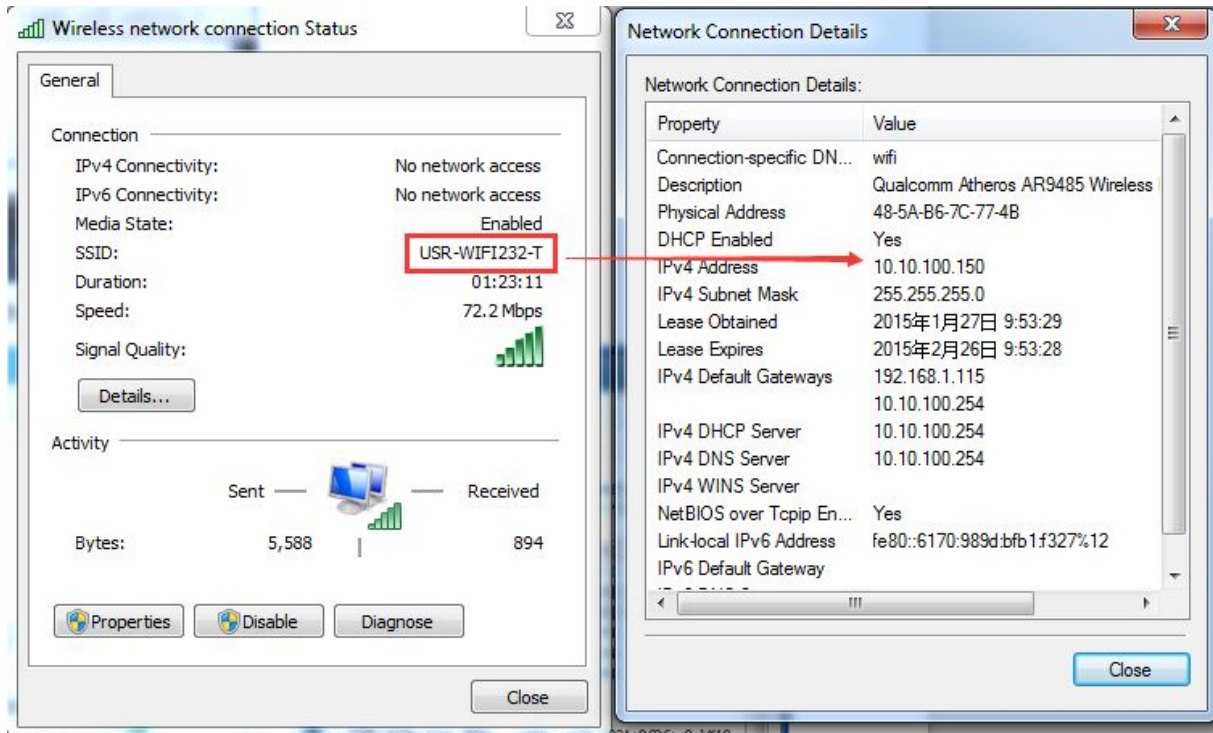
## 1.2. Network connection

Please find this icon  on your PC

Search network, as below picture, USR-WIFI232-T is default network name (SSID)



Join into network, select Automatically obtain an IP address, WIFI module support DHCP server and default as open.



Now module Link light on

### 1.3. Related test software

USR-WIFI232-Setup-AT command setup software  <http://www.usr.so/Download/183.html>

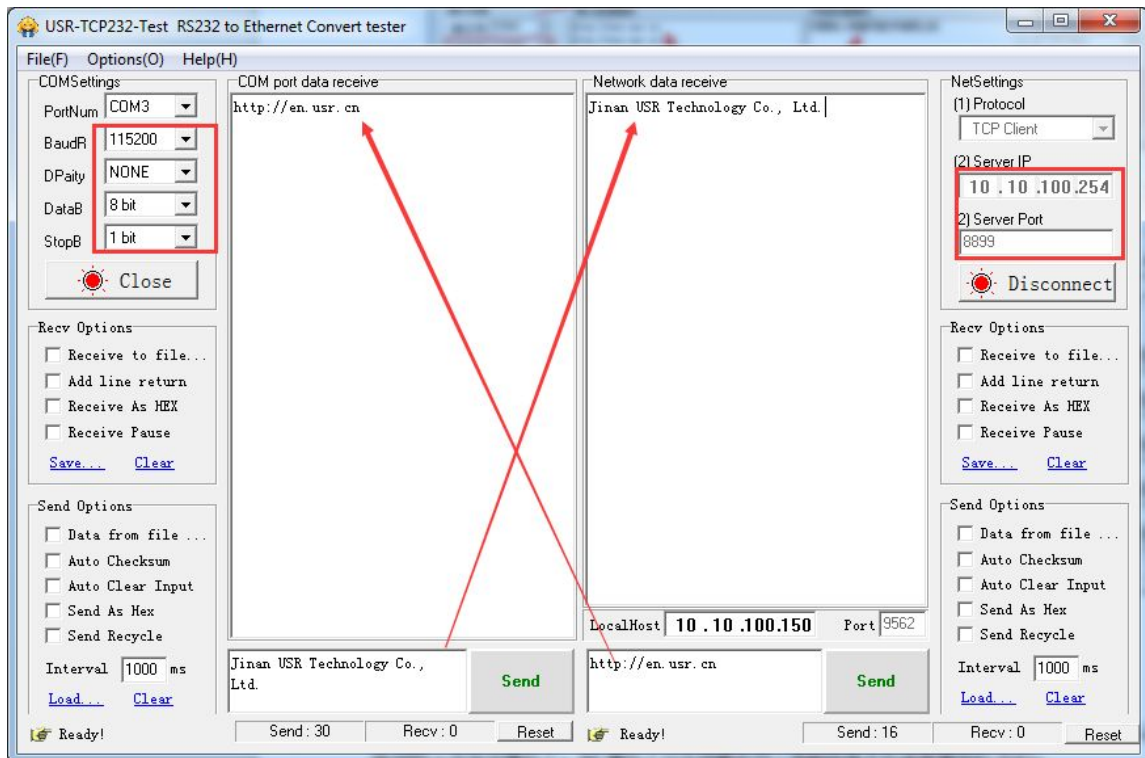
V-COM software  <http://www.usr.so/Download/31.html>

TCP232-TEST software  <http://www.usr.so/Download/121.html>

### 1.4. Data send/receive test

Open USR-TCP232-Test. exe software , select COM 3, baud rate 115200, select open serial ports

Netsetting, set as TCP client, server IP as 10.10.100.254, this is module default IP address, server port number 8899, this port for TCP listen port, detail see picture as below:

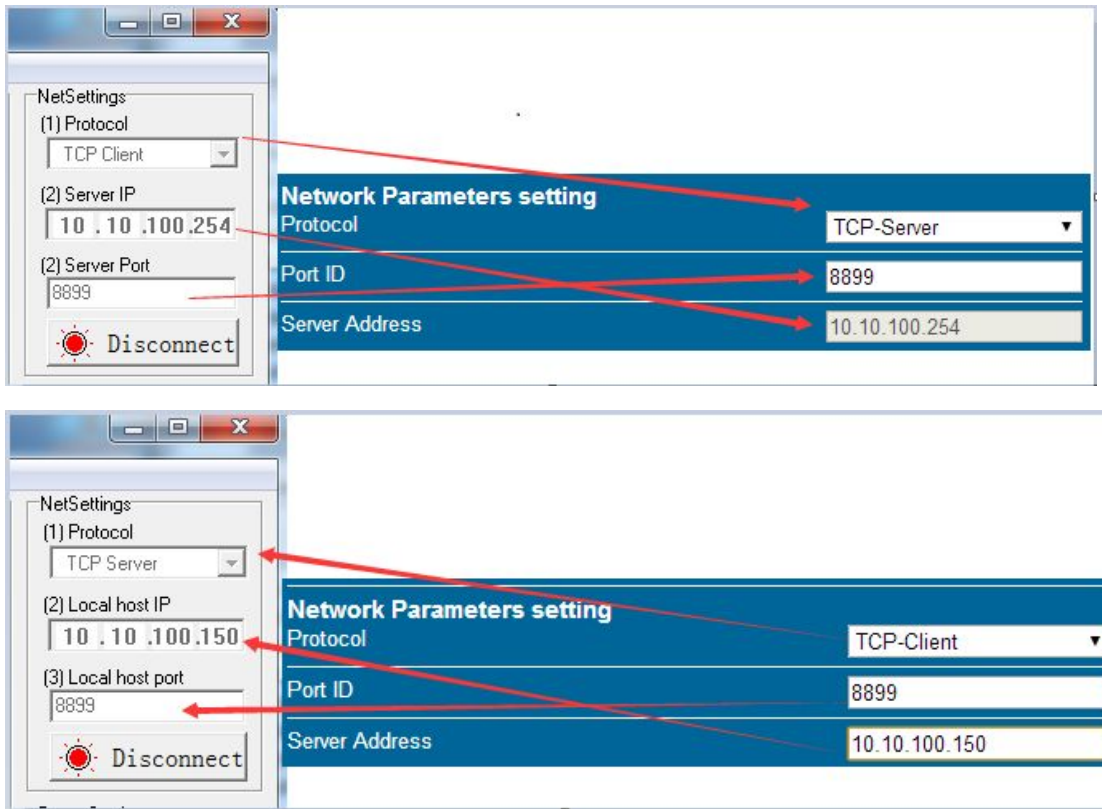


**Serial to network data flow direction: PC serial port->module serial port-> module WIFI->PC WIFI**

**Network to serial port data flow direction: PC WIFI-> module WIFI->module serial port->PC serial port**

## 2. Common use method

### 2.1. TCP Server and TCP client

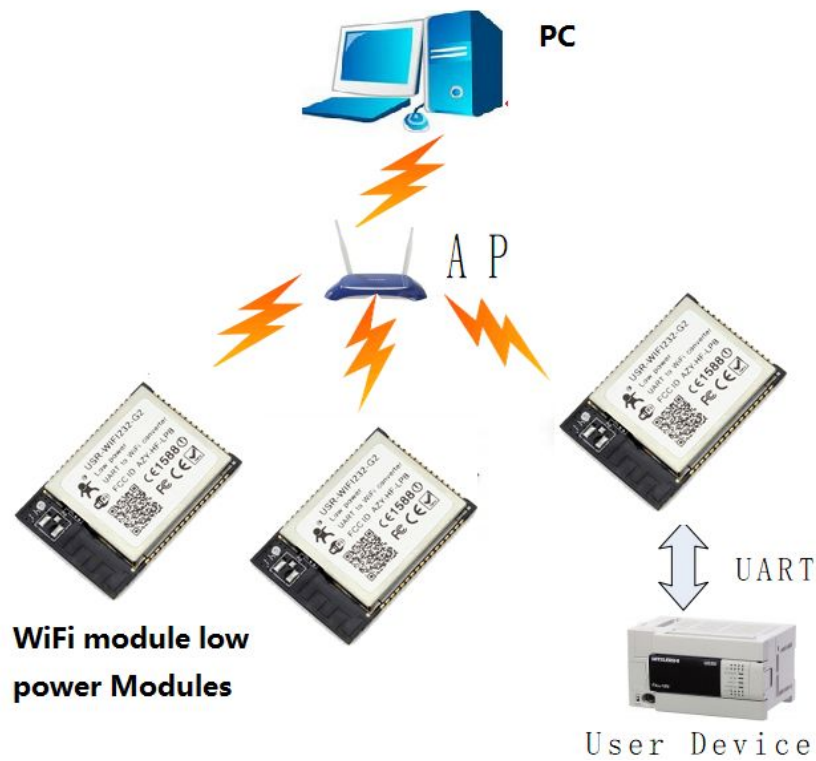


### 2.2. AP+TCP server

Detail please see first chapter module initial test

### 2.3. Module as STA+TCP server

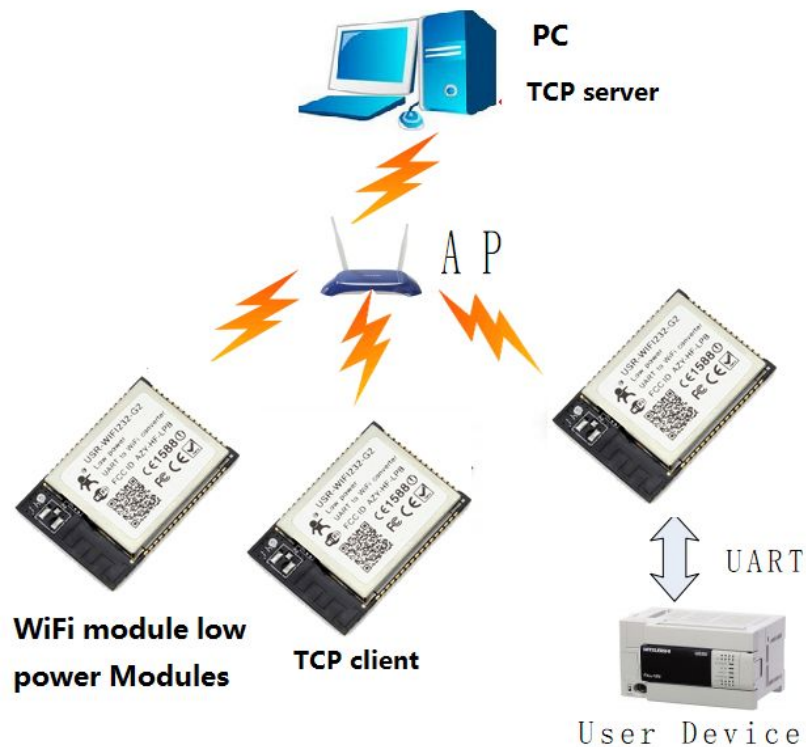
Module as STA to join to router and work as TCP server



Detail operate steps link: <http://www.usr.so/Faq/56.html>

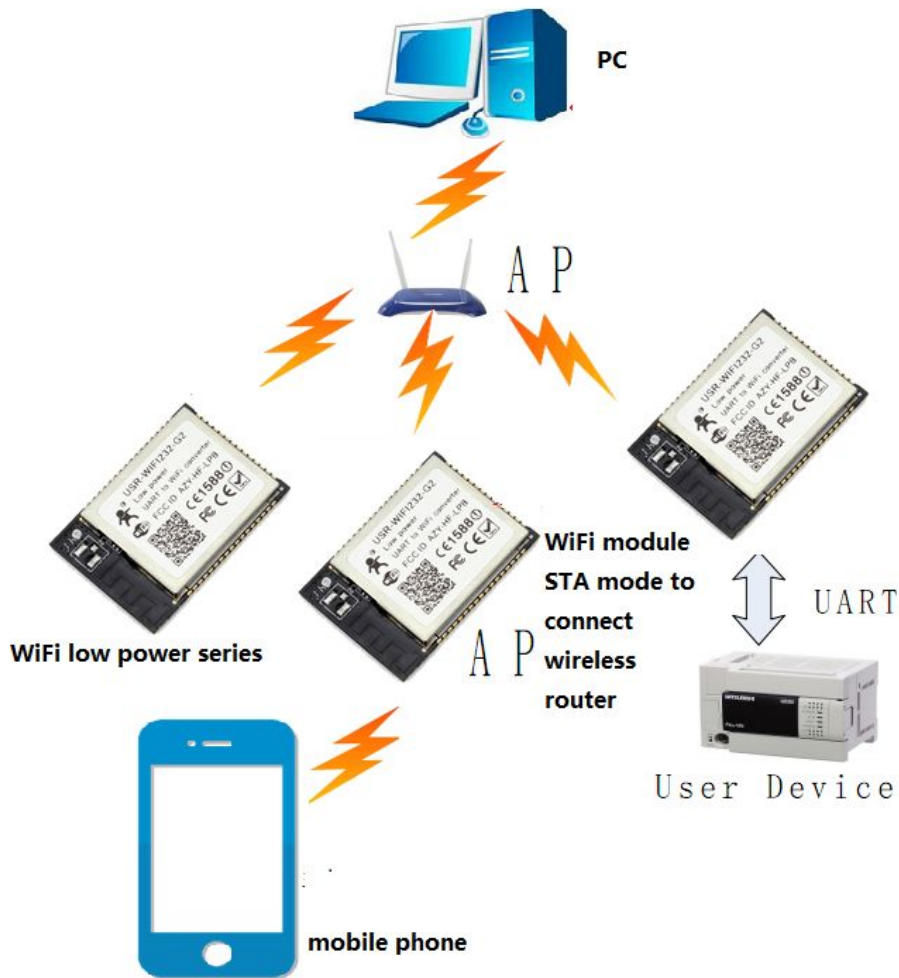
## 2.4. STA+TCP client application

Module as STA join to router and work as TCP client



Detail operate steps link: <http://www.usr.so/Faq/58.html>

## 2.5. AP+STA module communication



Reference link: <http://www.usr.so/Faq/55.html>

## 3. Module Settings

### 3.1. Built-in webpage

Module in AP mode, put 10.10.100.254 at browser , come into built-in webpage, user and password as admin

Reference link: <http://www.usr.so/Faq/65.html>

### 3.2. AT command configuration

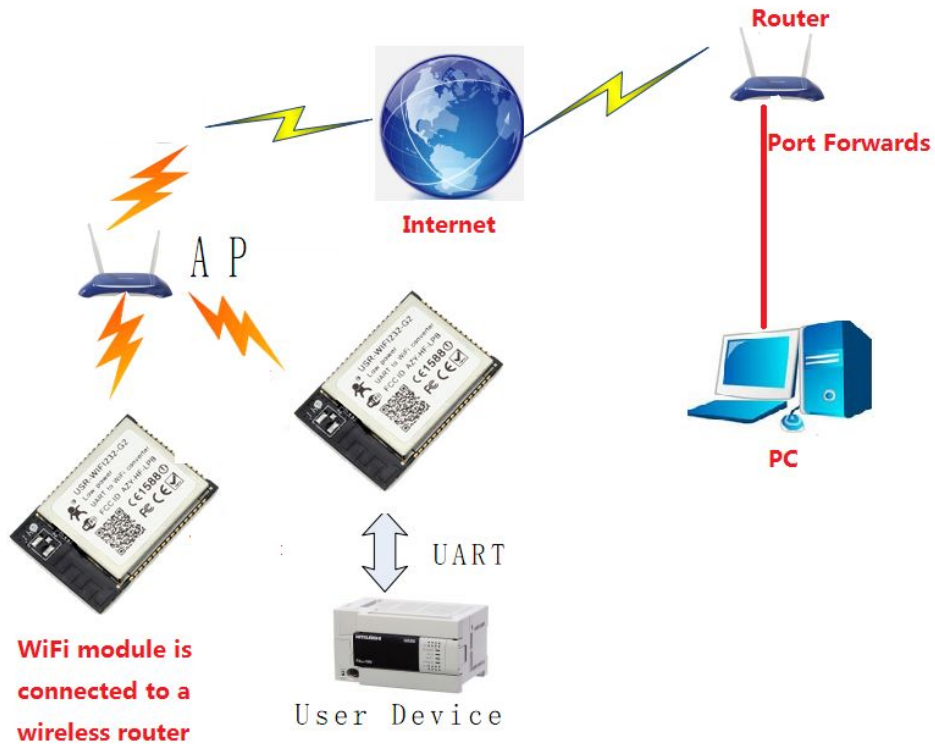
Send +++, (notice there is no enter or other character), receive a, within 3s respond a, receive +OK, then come into AT command. Send AT+H can obtain help notice, send AT+ENTM return to transparent transmission.

More reference link: <http://www.usr.so/Faq/57.html>



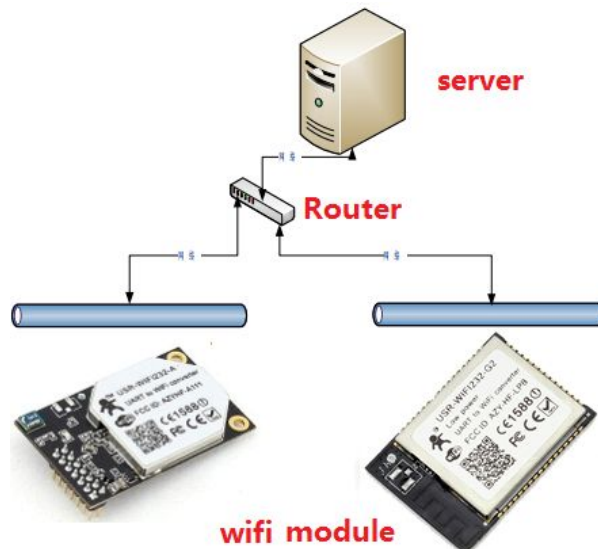
## 4. Application example

### 4.1. PC remote connection WiFi module Communications



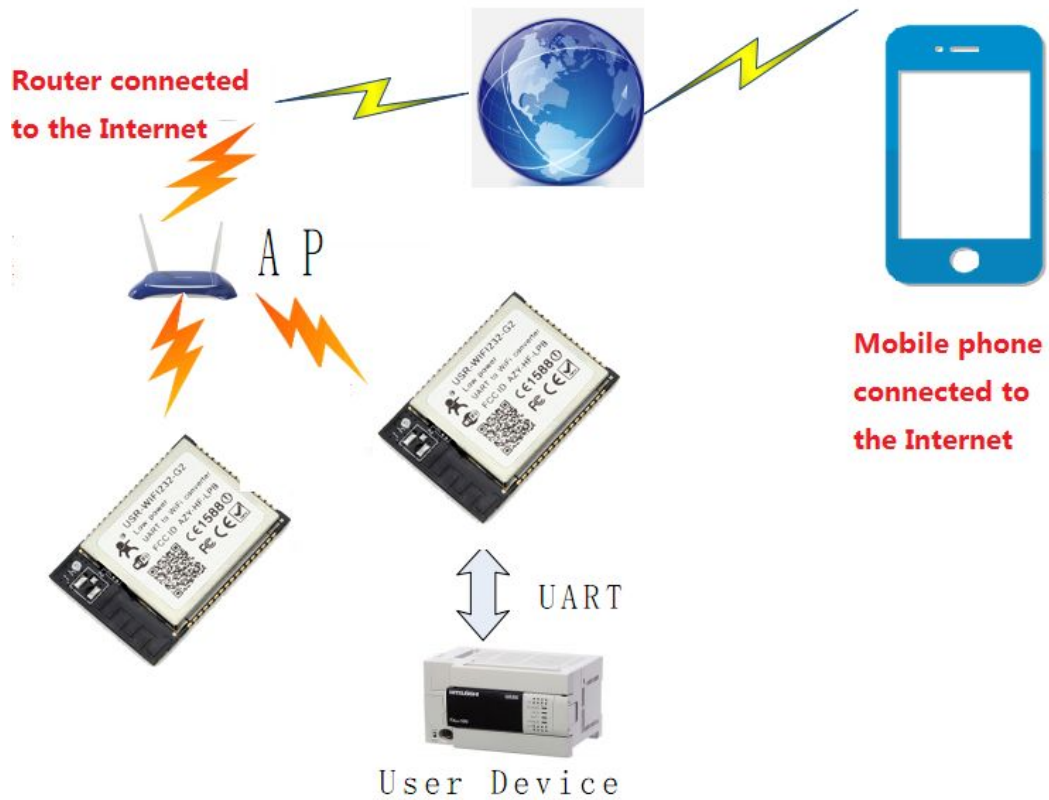
Reference link: <http://www.usr.so/Faq/62.html>

### 4.2. The WiFi module is connected with the server method



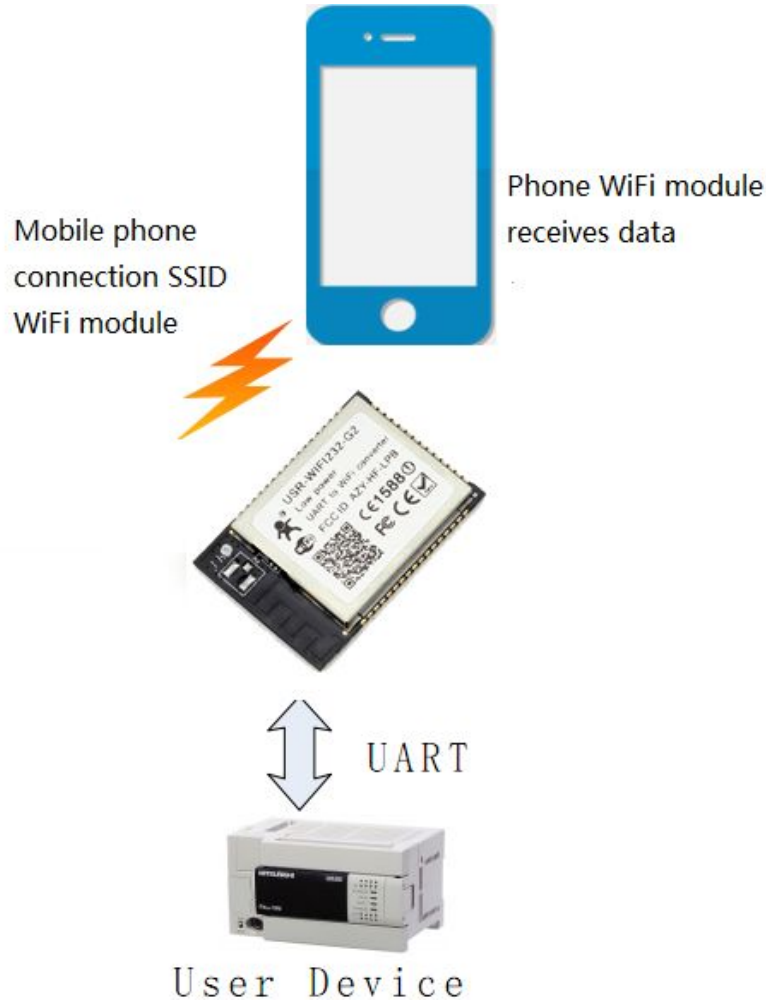
Reference link: <http://www.usr.so/Faq/60.html>

### 4.3. Mobile remote connection WiFi Module



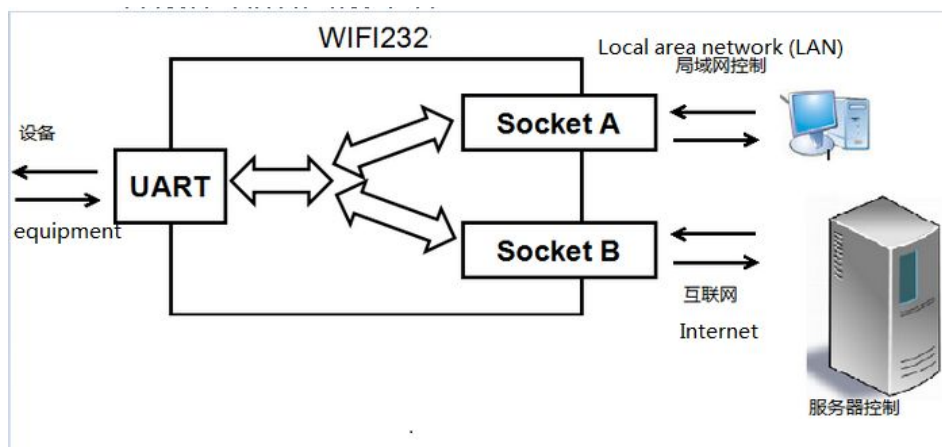
Reference link: <http://www.usr.so/Faq/63.html>

### 4.4. Mobile network software to connect WiFi module



Reference link: <http://www.usr.so/Faq/59.html>

## 4.5. Two sockets communication application



**(1).WIFI232 low-power modules. Module initiative to connect to the server, the phone connection module AP to control serial devices.**

Reference link:

<http://www.usr.so/Faq/54.html>

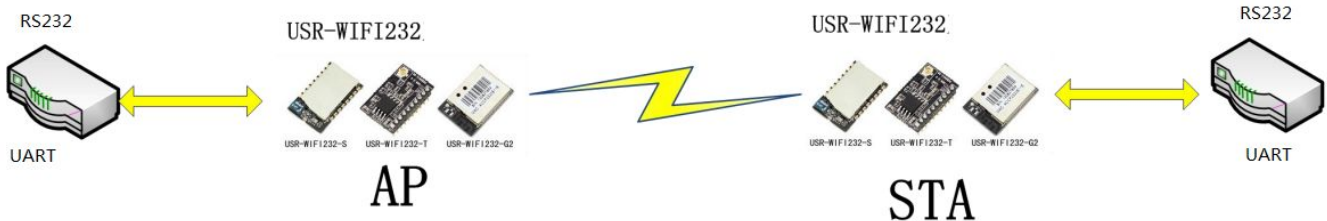
## (2).WIFI module LAN and Internet application control mode

Reference link: <http://www.usr.so/Faq/50.html>

## 4.6. How to achieve the function of WIFI module PWM/GPIO

Reference link: <http://www.usr.so/Faq/42.html>

## 4.7.WIFI module are two ways to build a transparent serial transmission of data



Reference link:

<http://www.usr.so/Faq/51.html>

## 5. FAQ

### 5.1. How to restore to factory setting with the wifi module

- 1、Module work mode (Ready light on), pull down reload pin for 3-5s, (short connect GND to reload), after that loosen it, waiting for module reload.
- 2、Use AT command, AT+RELD
- 3、Come into module built-in webpage, to select reload button

Reference link: <http://www.usr.so/Faq/61.html>

### 5.2. Why module disconnect about 5mis

Reference link: <http://www.usr.so/Faq/16.html>

### 5.3. No signals of WIFI module searched, reasons and solution

Reference link: <http://www.usr.so/Faq/37.html>

## 5.4. WIFI module as STA mode join to router, how to check whether it connected or not

Reference link as below:

<http://www.usr.so/Faq/18.html>

<http://www.usr.so/Faq/40.html>

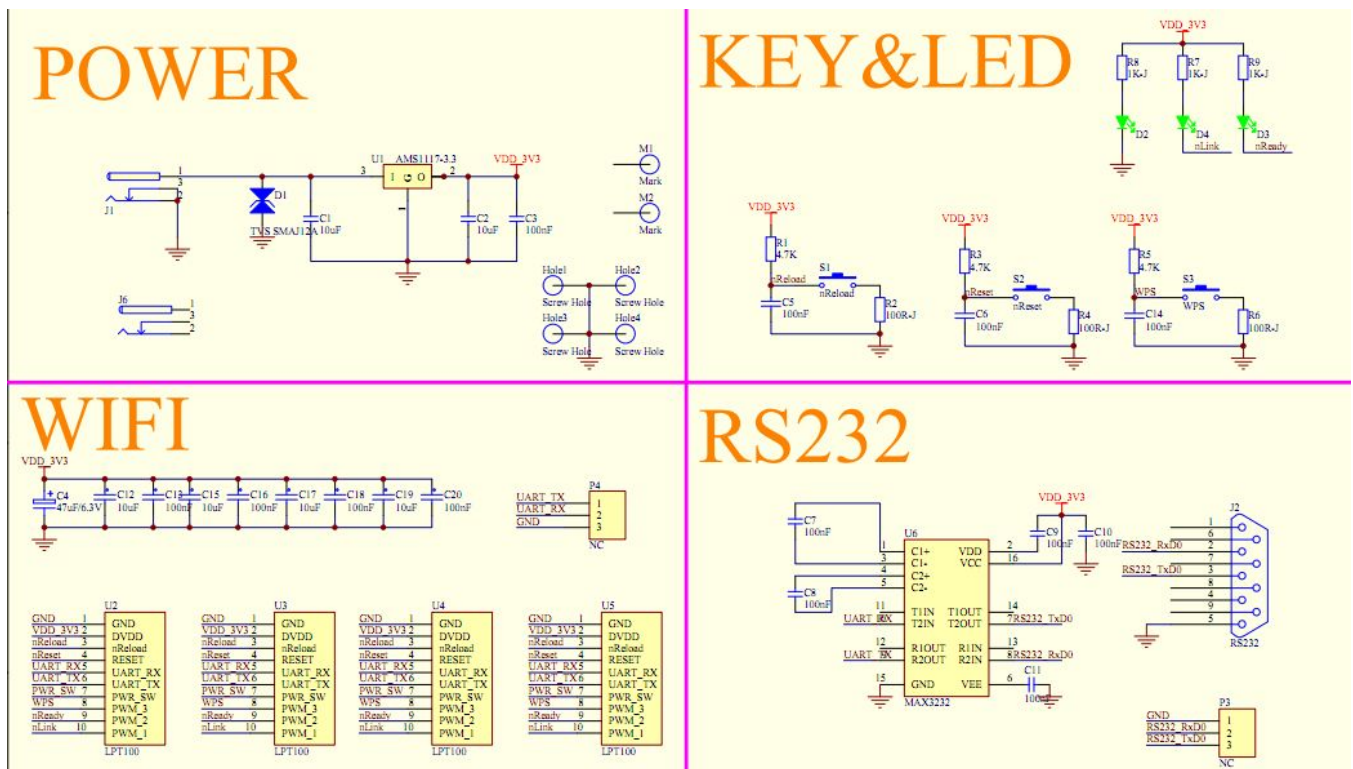
## 5.5. Serial port to send and receive network data under the AT command mode

Reference link : <http://www.usr.so/Faq/48.html>

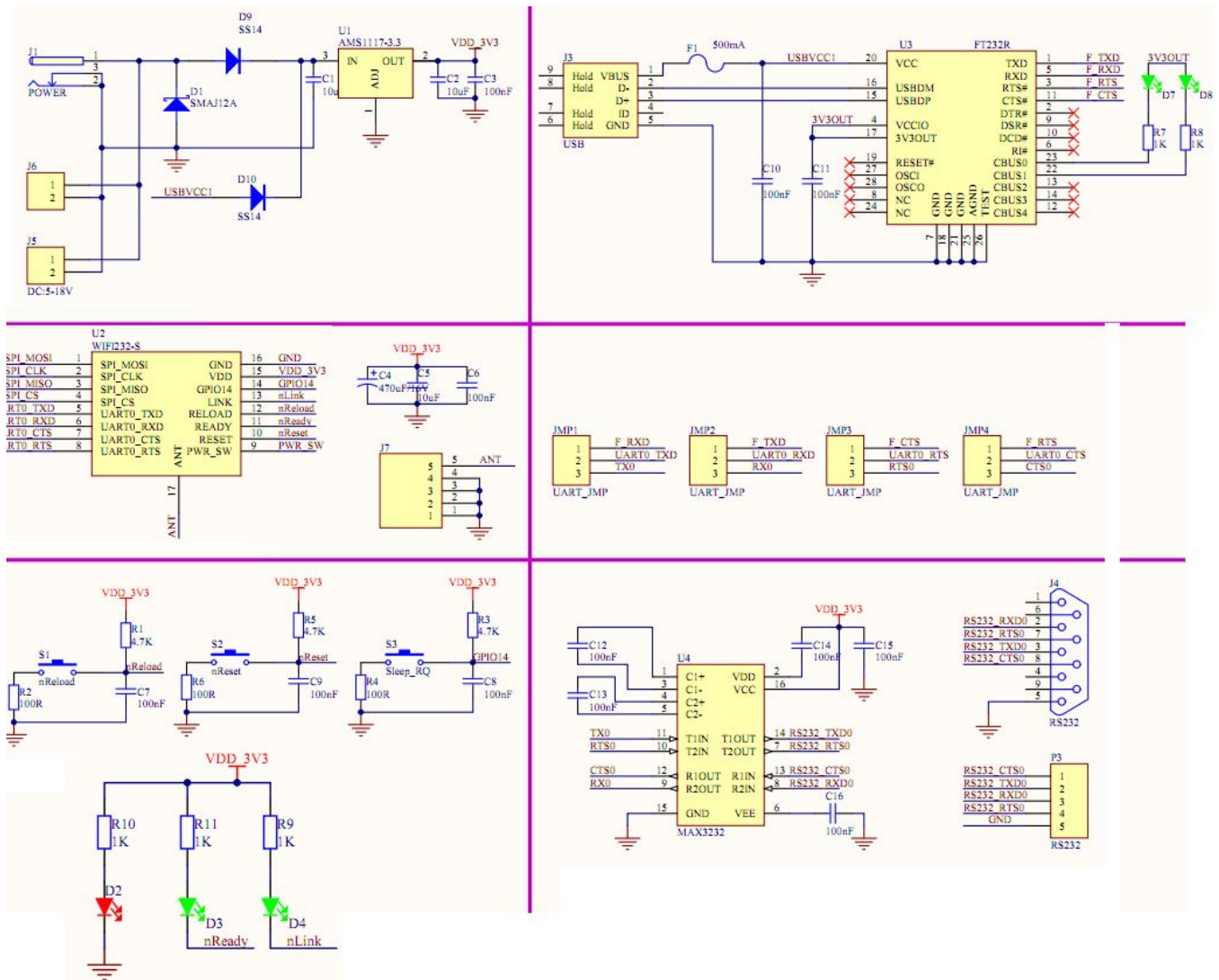
## 6. Hardware circuit design reference

Reference link: <http://www.usr.so/Download/132.html>

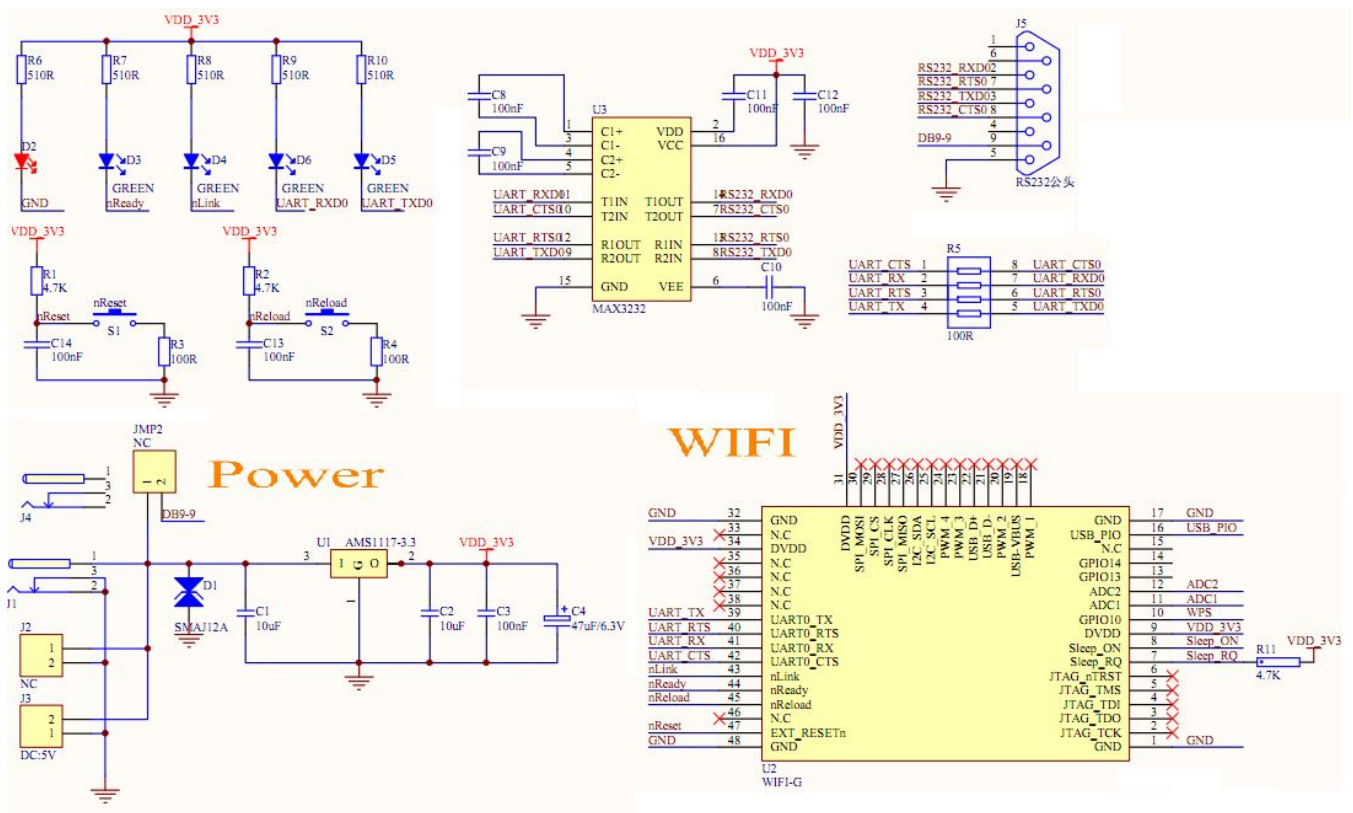
### 6.1. WiFi232 -t Test circuit reference



## 6.2. WiFi232 -S Hardware connection reference circuit



## 6.3. WiFi232 -G2 Hardware reference circuit



## 6.4. WiFi module and MCU communication connection diagram

