USR-WIFI232-X quick start guide

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WIFI232 series product is used for convert data from RS232 to WIFI TCPIP, Two-way transparent transmission, user need not know the WIFI and TCPIP detail, update the product for WIFI control. All the convert work is done by the module, for users, the RS232 side is only as a serial device, at the WIFI side, for user is TCPIP Socket data. User can setup the work detail by sample settings, setup via inside web pages or RS232 port, the setup work need only do once, then it will save the setting forever.

This doc is for USR-WIFI232-X series products, hardware name HF-A11x, as a quick user guide, we try our best to let the doc short, suggest users follow the guide to test module at first. For more detail, please look at the data sheet and applications.

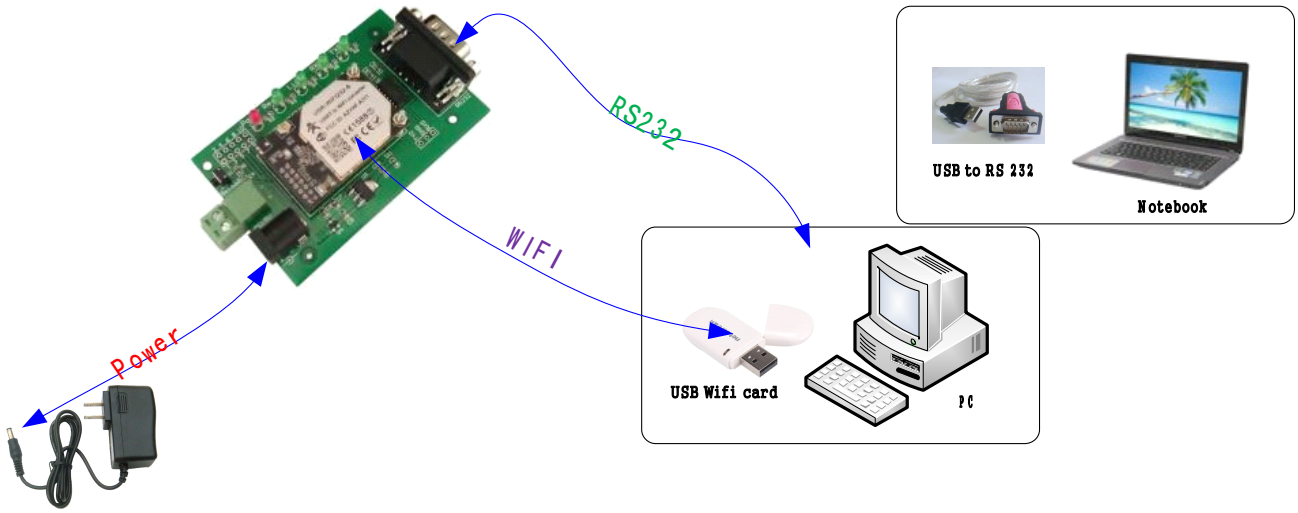
Content

1. Module Test

1.1 Hardware connect

In order to test WIFI module, we connect module RS232 to PC and also WIFI to PC.

Most PC has RS232 COM port but no WIFI while most Notebook has WIFI but no RS232 COM port. In order to has both of RS232 port and WIFI network, You may use PC add USB WIFI network Card or Notebook add USB to RS232 cable. But notice, Do use High quality USB to RS232 convert module (We suggest cables make by FT232 chip only).



USR-WIFI232-A and USR-WIFI232-B WIFI core module RS232 is 3.3V TTL lever, can not connect to PC directly, For user test, we supply some mother module, now we USR-WIFI232-2 as sample.

After hardware connect, Power on module, wait about 20 seconds (LINUX system start up), while Ready led light, it means system is ready for use, go to next step.

Notice:The cable link to PC must across the RXD and TXD(PIN2 and PIN3), and across RTS CTS(PIN7 PIN8) or not connect. We supply this special RS232 serial cable.

1.2 Network connection

Notebook enable WIFI, or PC with USB WIFI Network Card and install Drive, you may see the WIFI icon  .

Search Network, find SSID named HF-A11x_AP, as follow picture.

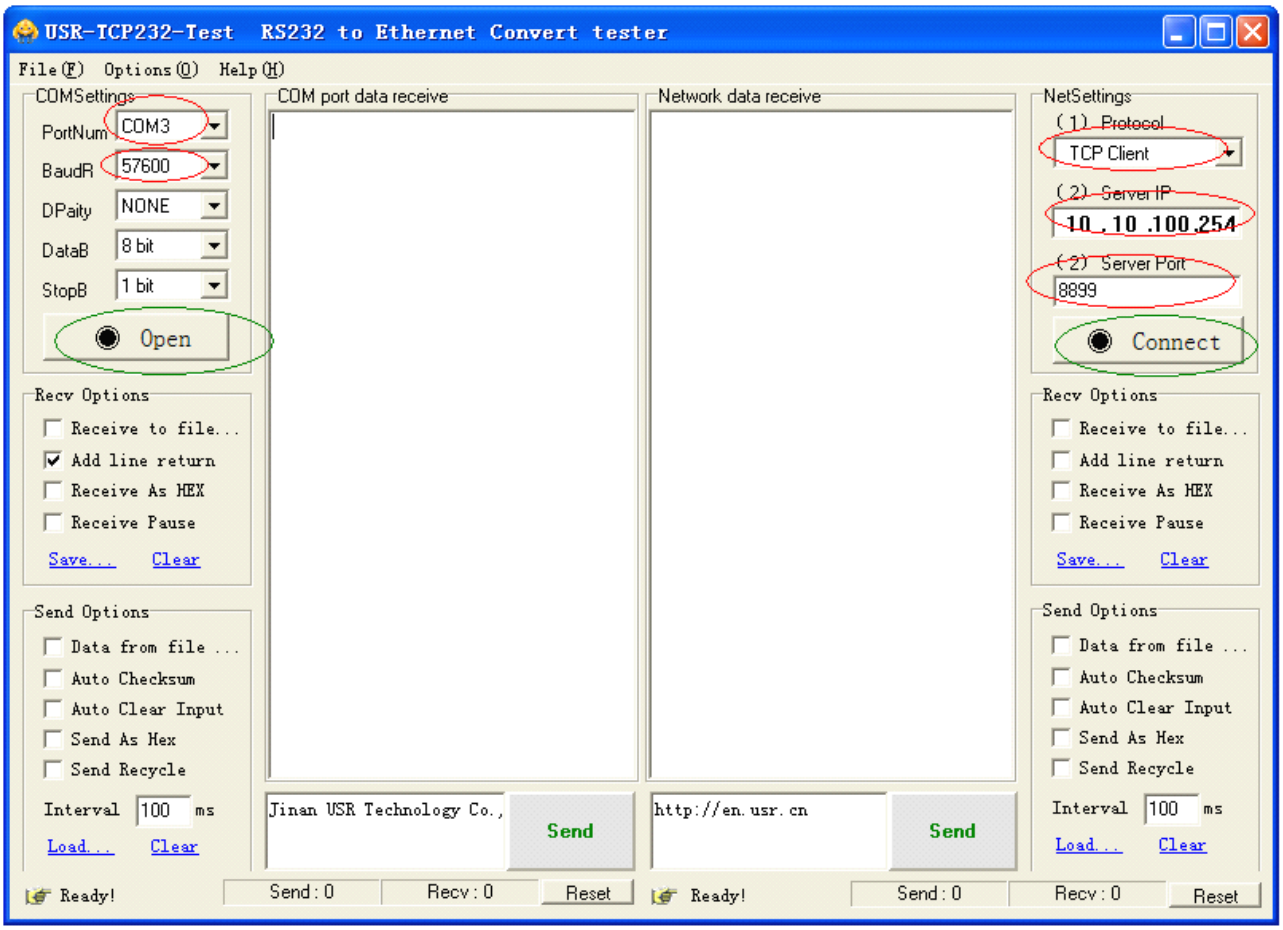
Join this network, choose auto get IP Address, WIFI module has DHCP Server function and is on by default, it will allocate an IP to PC.

Now the Link Led should light, means link connected.

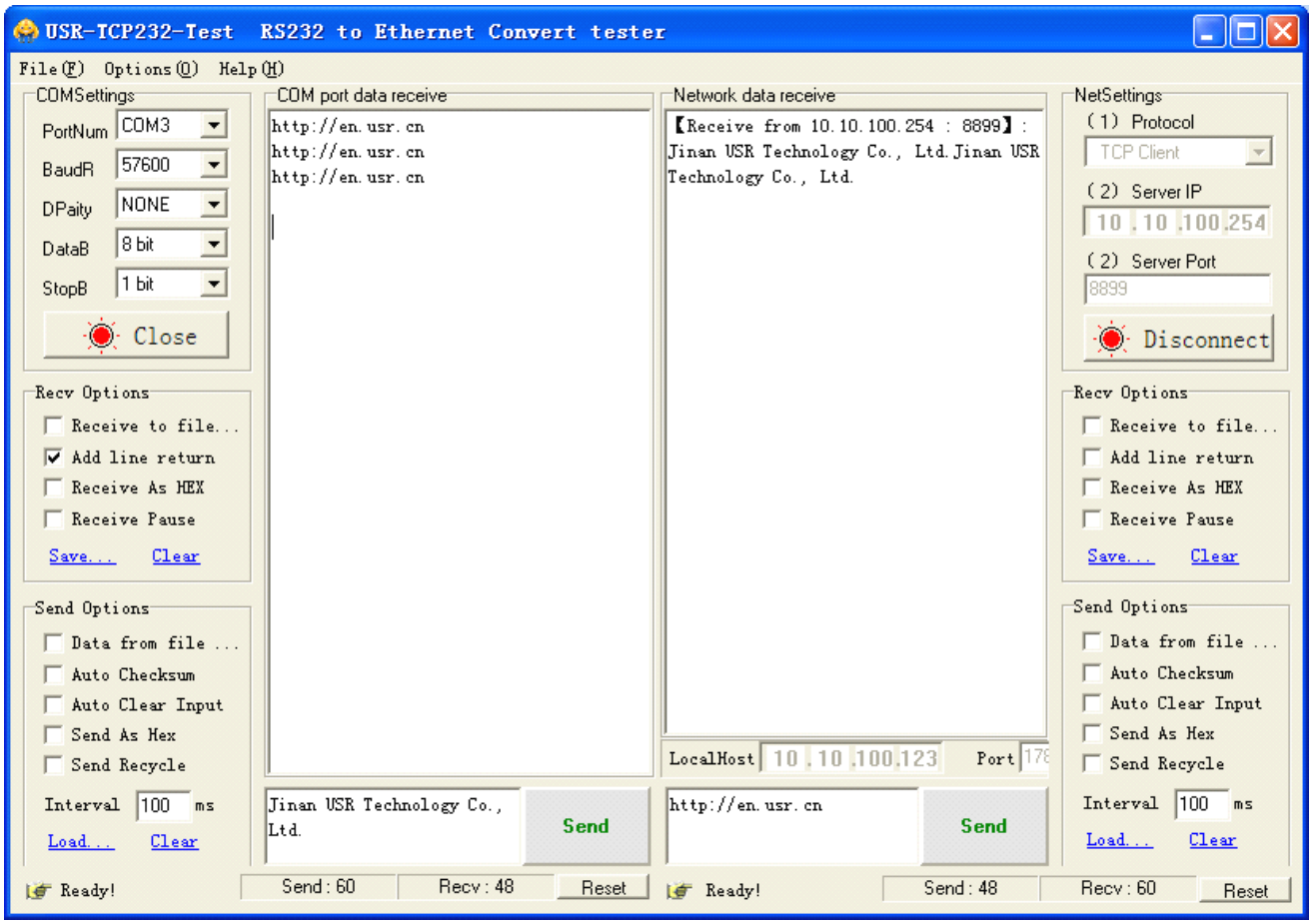
1.3 Send and Receive test

COM Settings area (left): Open the test software **USR-TCP232-Test.exe**, Choose COM port witch has connect the module, there is **COM3,** choose band rate to **57600**, this is the default band rate of WIFI module, Click **Open** COM port.

Net Settings area (right): choose **TCP client** mode,Server IP write **10.10.100.254**, it is the WIFI default IP address, Server port to **8899**, It is the default Port the WIFI module listen, Click **Connect** to link to the module.



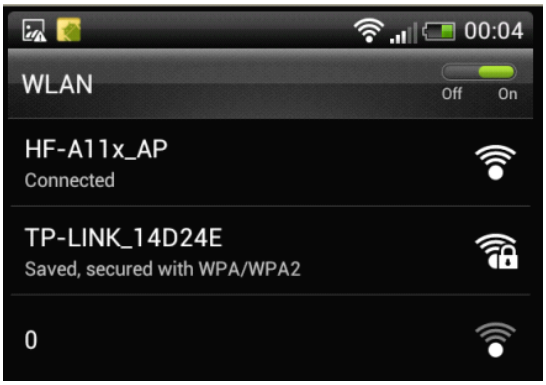
Now, you can test send data between RS232 and WIFI, COM port to WIFI: PC COM port -> Module COM Port -> Module WIFI -> PC WIFI, WIFI to COM port: PC WIFI -> Module WIFI -> Module RS232 -> PC RS232.



When you send data, you can see the TXD and RXD Led flash when data through.

1.4 Android mobile communication with COM port

Not only the test tool on PC, we supply a TCP Test tool for Android system, you can find the APK install file in CD or download by scanning the follow Two-dimensional code.

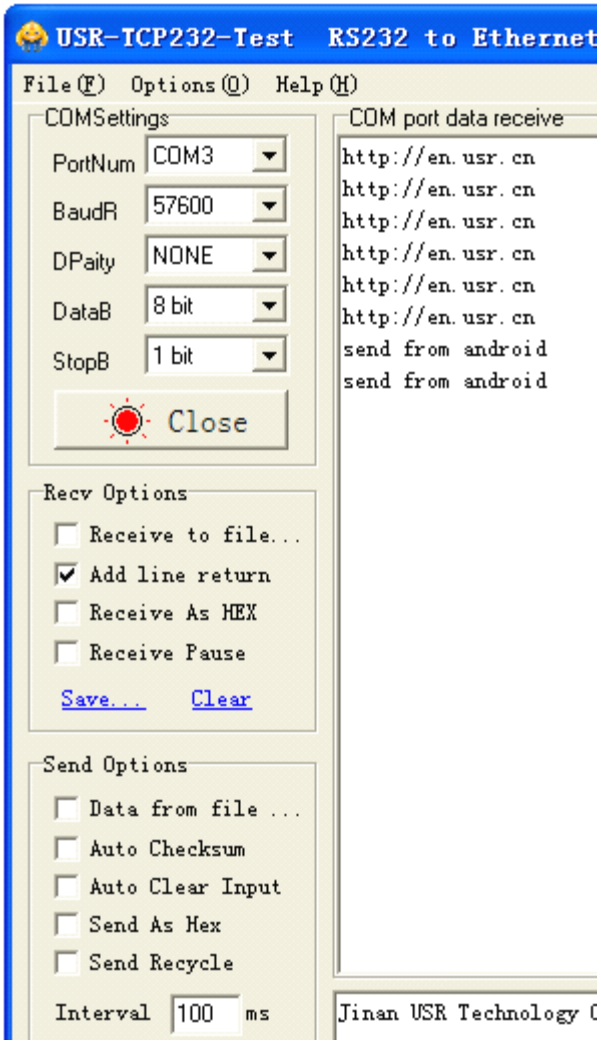


Keep the test software USR-TCP232-Test still on.

Open mobile WIFI, find HF-A11X-AP and join the WIFI network as upon right picture.

Open USR-TCP-Test software on mobile, change to TCP Client view, click Add, create a TCP Connection to 10.10.100.254 port 8899, after create success, it will auto connect.

After connect created, now you can send data from mobile to PC COM port, and when send data from PC COM port, both of WIFI on mobile and PC can receive data.



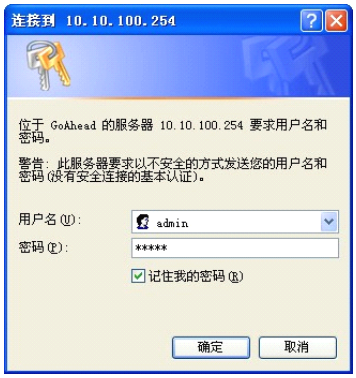
This test show the function for module works as AP can allow more than one Station for join, it support up to 32 Stations, and work as TCP Server, it support up to 32 TCP Clients.

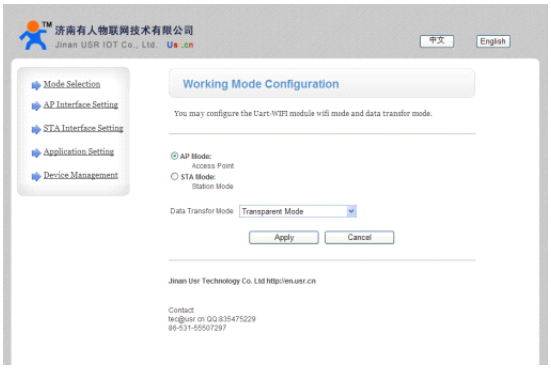
2. Module setup

Now, you can close the upon test softwares, the follow setup method, you can just use one of them.

2.1 Set up via Web pages

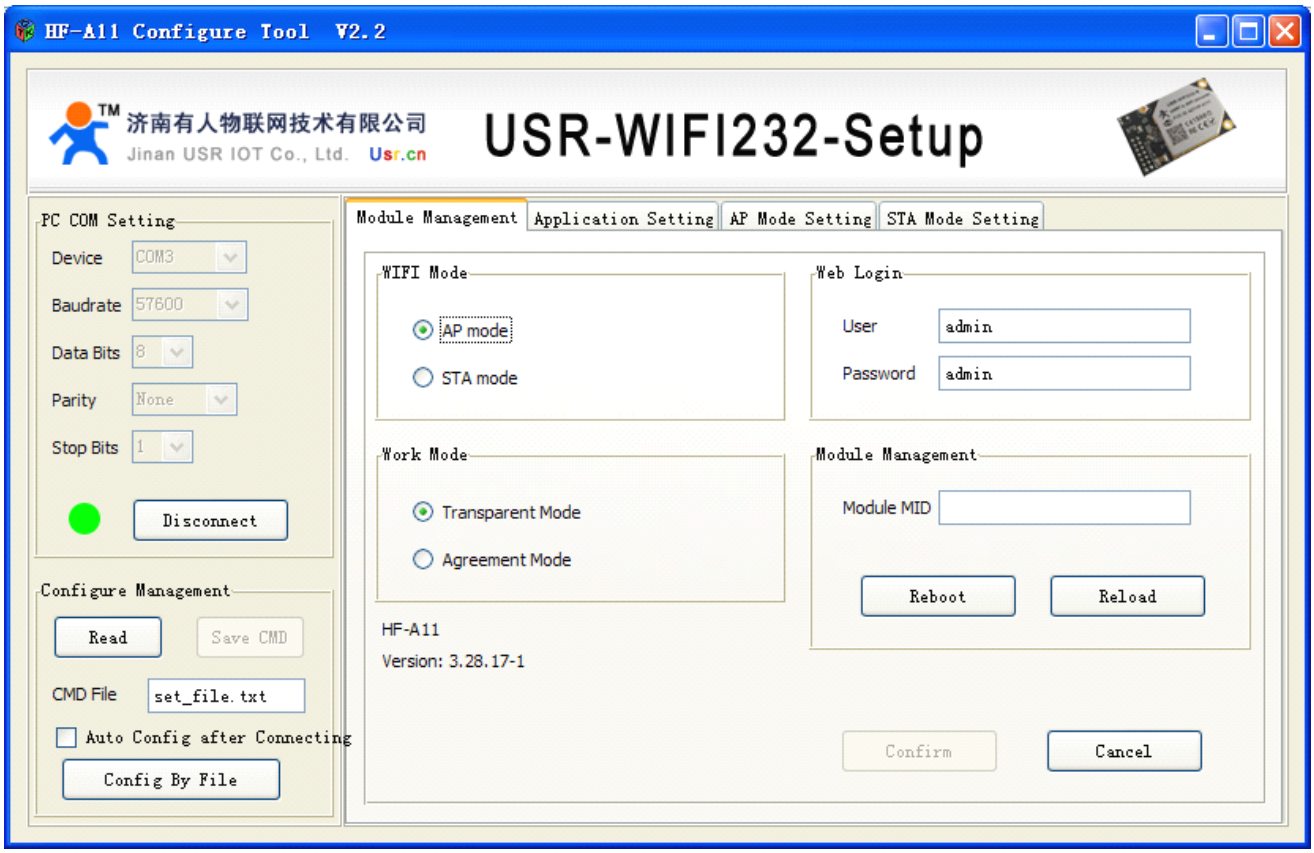
Keep WIFI network connection, login web page **http://10.10.100.254,** the user name and password are both admin.





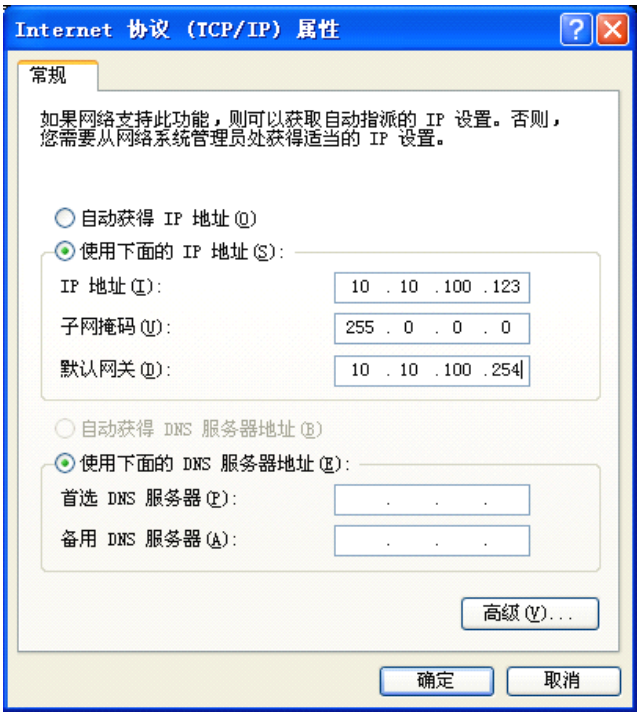
2.2 Setup via COM port software

Connect the module COM port to PC COM port, install the software runtime lib,  gtk2-runtime.exe , then run **A11_Config_serial_en.exe** , click **Connect**, after success ,click **Read** ,then you can setup the settings.

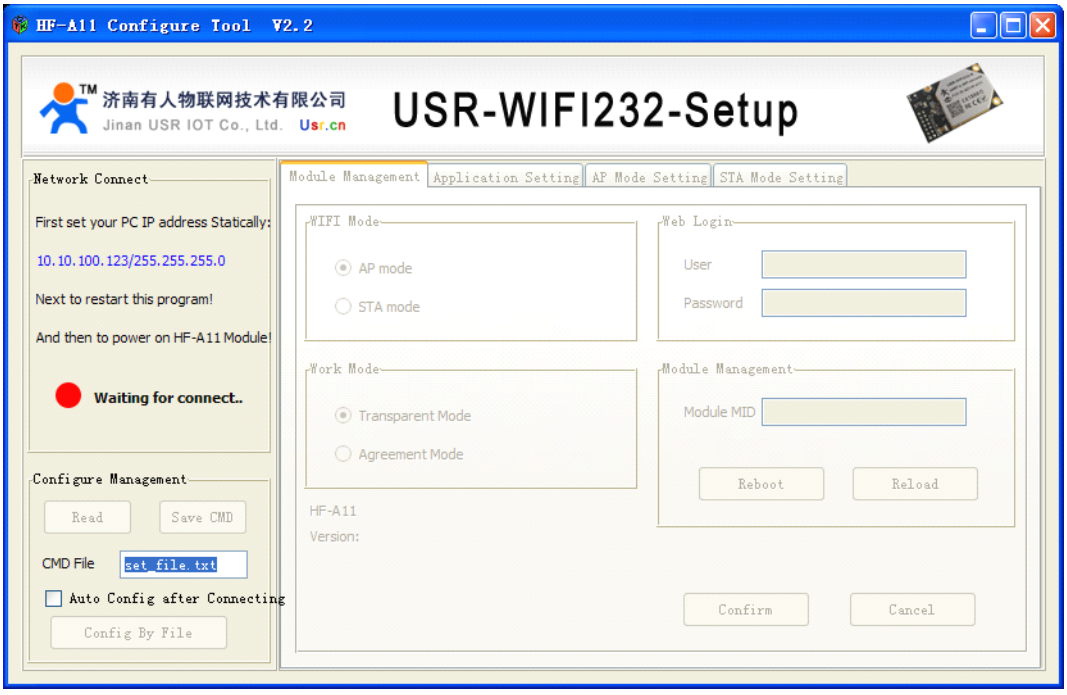


2.3 Setup via WIFI Software

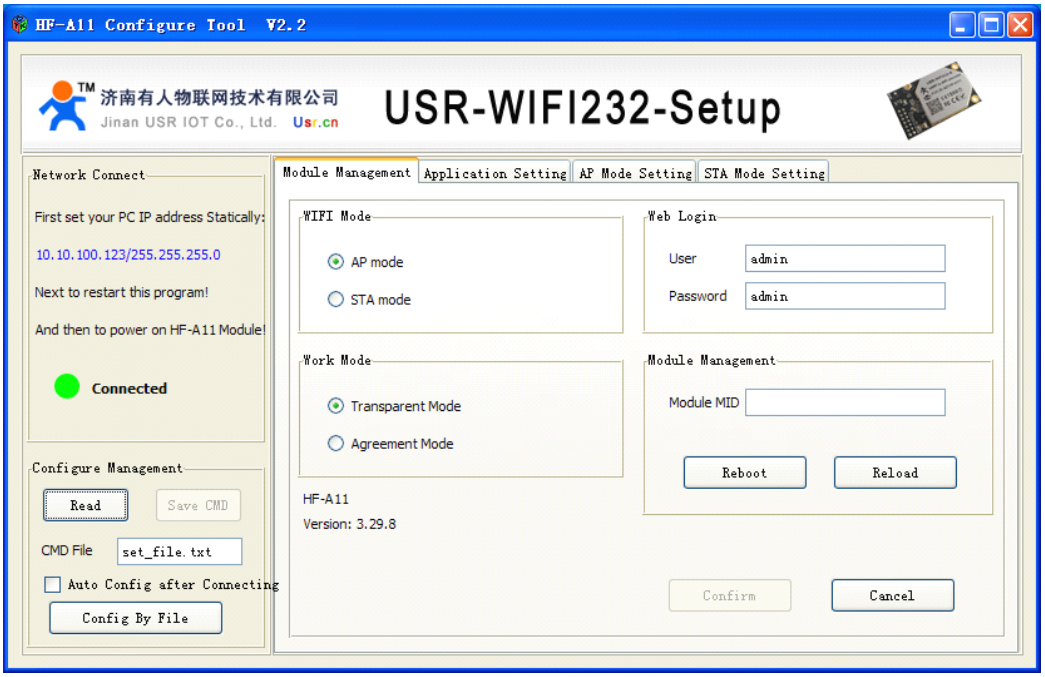
Only firmware after than 3.29.xx has this function, You can find your firmware version in the web pages, use WIFI network to setup the module, you still need to install the **gtk2-runtime.exe**, Open WIFI network card and Forbidden RJ45 network card, setup PC IP address to 10.10.100.123.



Run A11_Config_net_en.exe



Power off and on module, Wait the module start up, connect WIFI network card to the module HF-A11x_AP network, after WIFI network ok, the module will auto connect to the setup software, the led go to Green, Click **Read**, then you can configure the WIFI module settings.

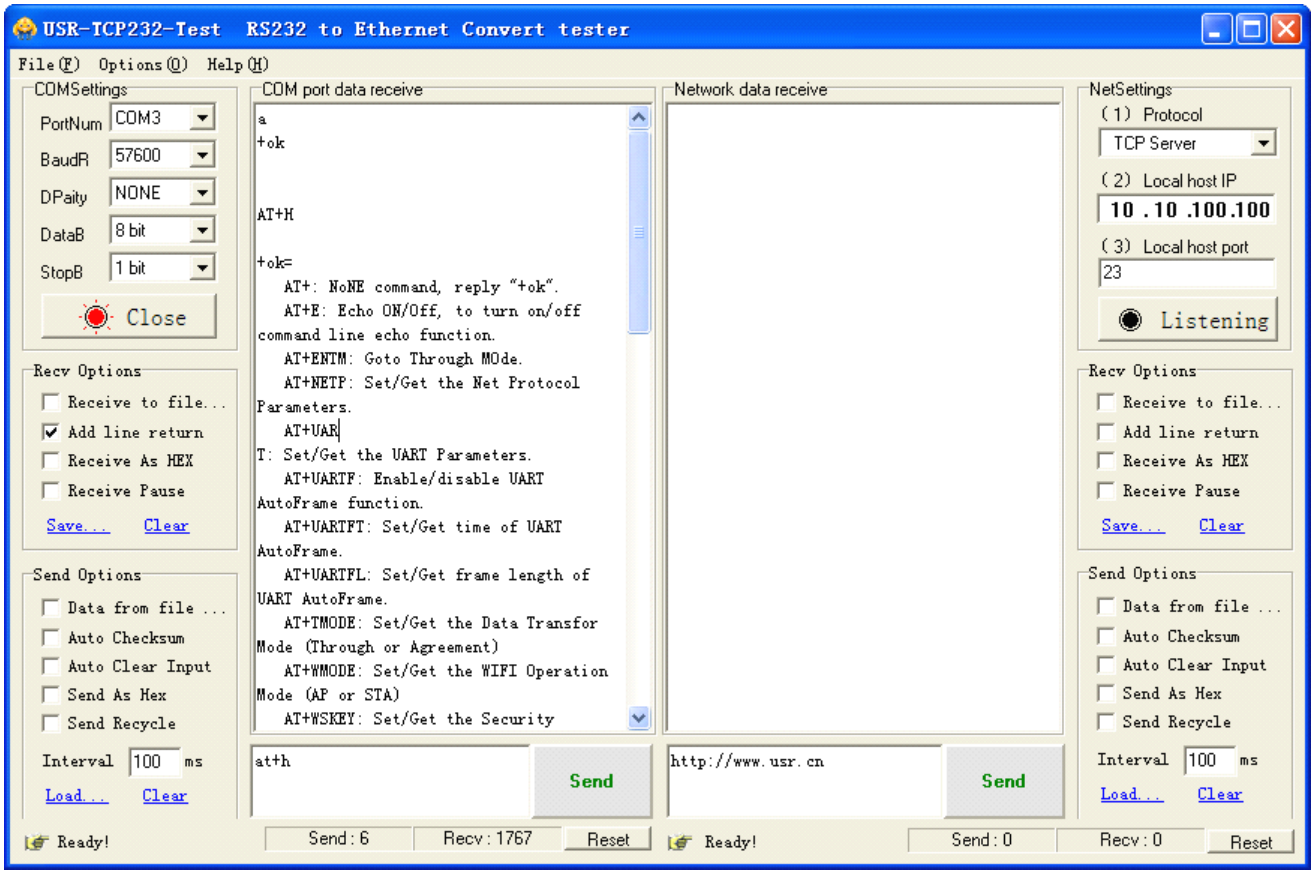


2.4 Hand AT Command

This method is similar with 2.2, it is by hand while the 2.2 do by software. This show the AT commands work detail, if you would like to configure the module via you MCU, this is important for you.

Connect your module COM Port to PC COM port.

First send three plus signs **+++**, notice only three chars, no <CR> and no <LF>, you will receive a char a send back from module, then in three seconds, send back a char a back to the module, after that you will receive +ok to notice it has go in to AT command mode, send AT+H and Enter (CR and LF ,0x0D + 0x0A) to get help, AT+ENTM and Enter for back to transparent transmission mode. More detail AT commands description please see the data sheet, the test step screen is here, (Only receive message, send chars can't be see)



3. Program demo

3.1 UART RS232 program

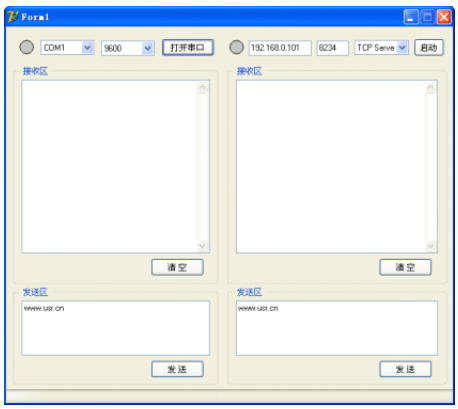
AT default transparent transmission work mode, the module UART port for user can be looks as a normal RS232 device, almost all kinds of MCU has UART use demo code, please GOOGLE them.

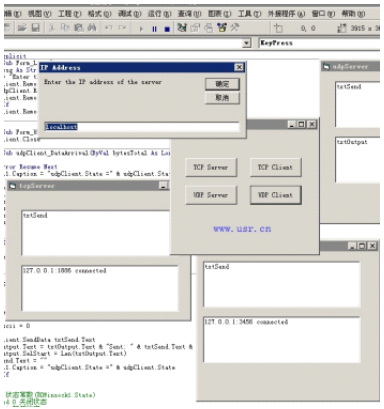
User MCU connect to WIFI module is TXD to RXD and RXD to TXD, detail please see hardware description docs.

Notice, because the LINUX need about 20 seconds to start up, if your data can't be lost, advise you use a GPIO connect to Ready pin, after the Pin go to Low and delay 2 seconds then send user data. Also there is a Link IO for declare the WIFI network connect status. An other compatible method is use hardware control RTS, CTS.

3.2 TCP IP Socket program

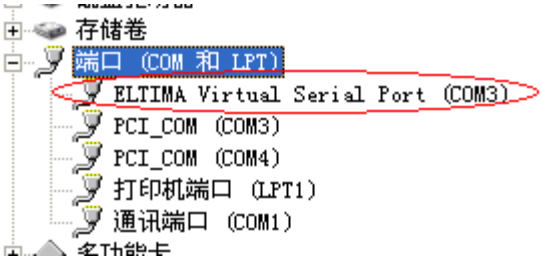
For network , it is a stand TCPIP socket data, we supply VB/Delphi/Boland C++ and android demo code for user, the socket programs always use OCX or API for communication, such as winsock.OCX, network can use TCP Server/TCP client/UDP any one of them, can be setup in the module and software opposite with it,TCP Server with TCP Client, UDP opposite UDP, follow picture is Delphi/VB and android demo code screen.

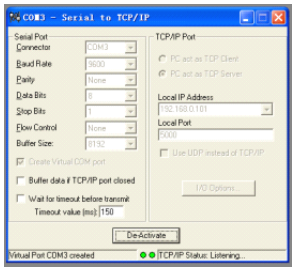




3.3 Virtual COM PORT

Sometimes the user has RS232 link system, in order to do less work, you can use Virtual COM PORT soft ware to convert TCPIP data to Virtual Serial Port, your old RS232 software can still be used, the software convert it to TCPIP and send via WIFI, it looks like an wireless RS232 COM port, More detail please look at the COM-RED software user guide and the application detail.

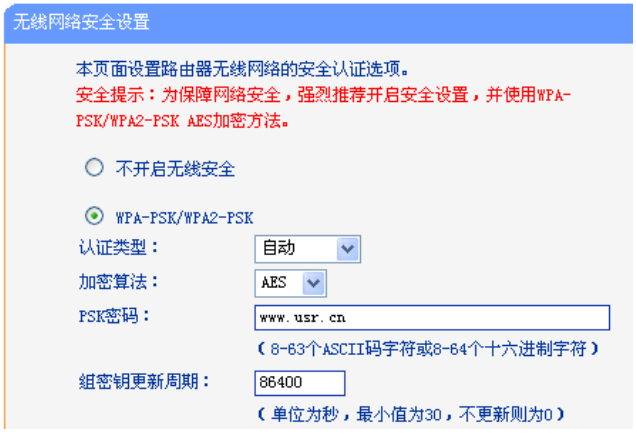




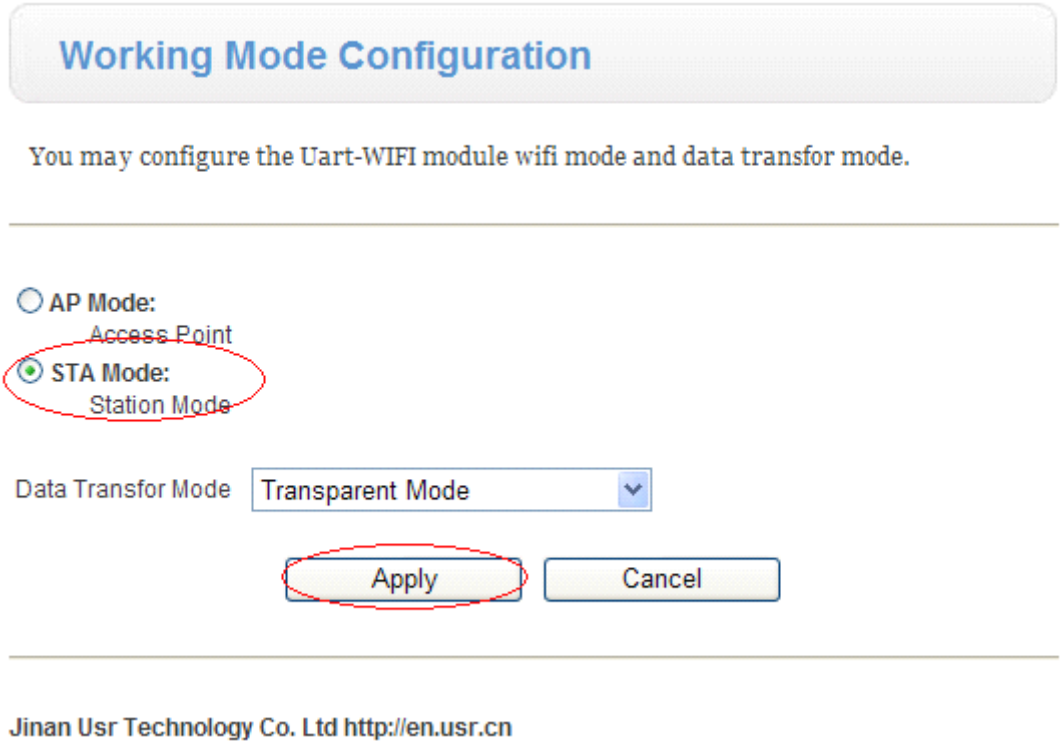
4. Join module to normal home WIFI network

Above description is just is LAN, in practical application, you may need to connect to normal WIFI network, to connect data to LAN server, now we have a short description on this.

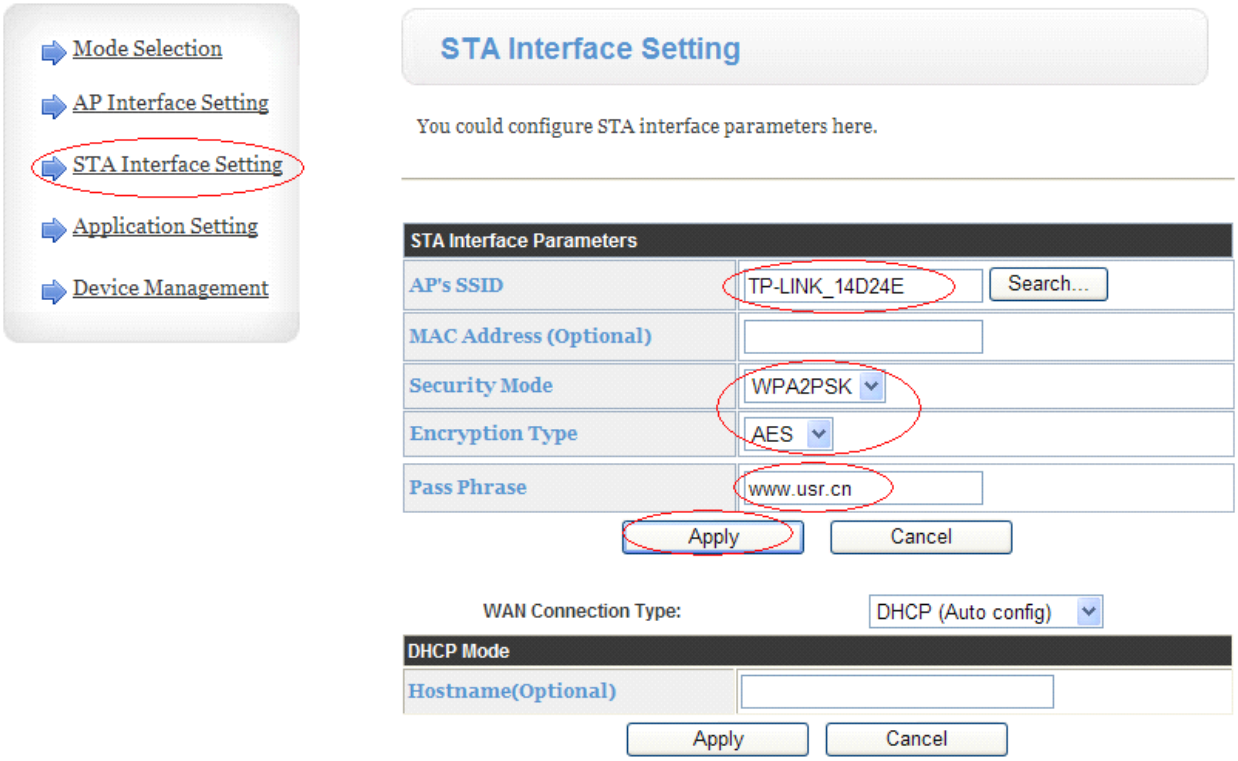
4.1 first, you need to login to your WIFI router to see some information, SSID name, user name and password, Encrypt type.



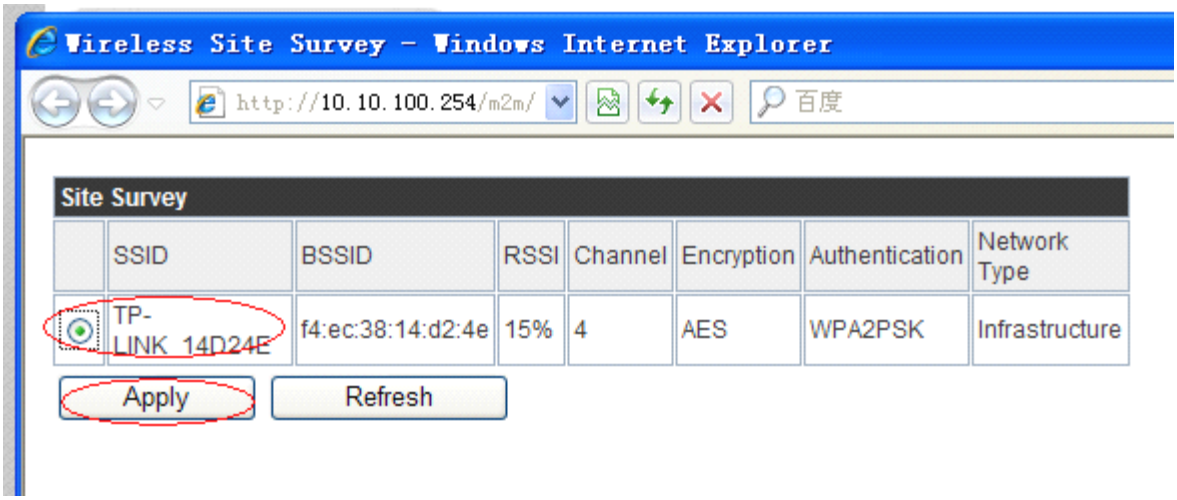
4.2 visit http://10.10.100.254 go to setup web page. Choose Station work mode.



4.3 Go to STA Interface Setting page, fill the settings, SSID, Security Mode and password then click Apply.

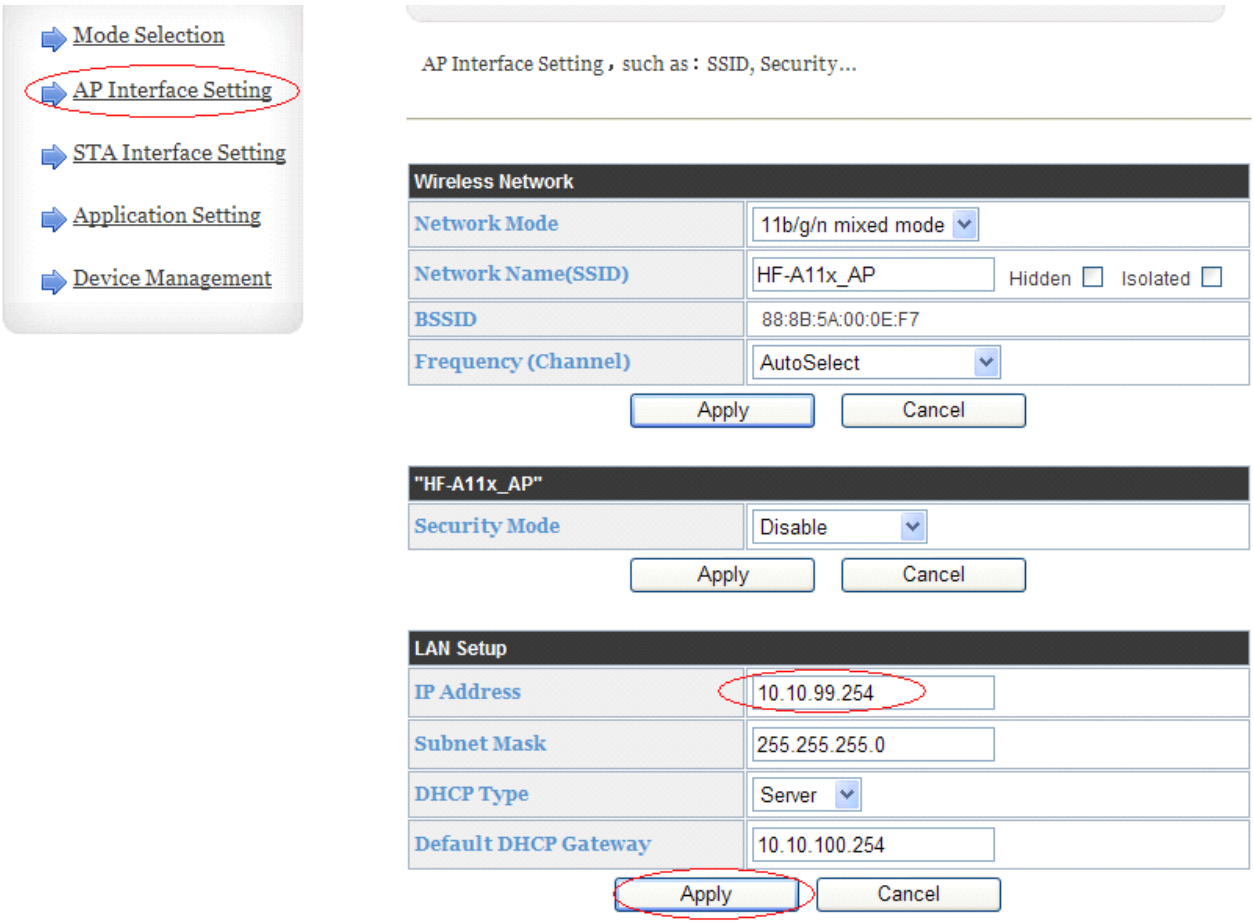


Also we supply a new function for search router after firmware 3.29.xx, Click **Search** near the SSID input form,

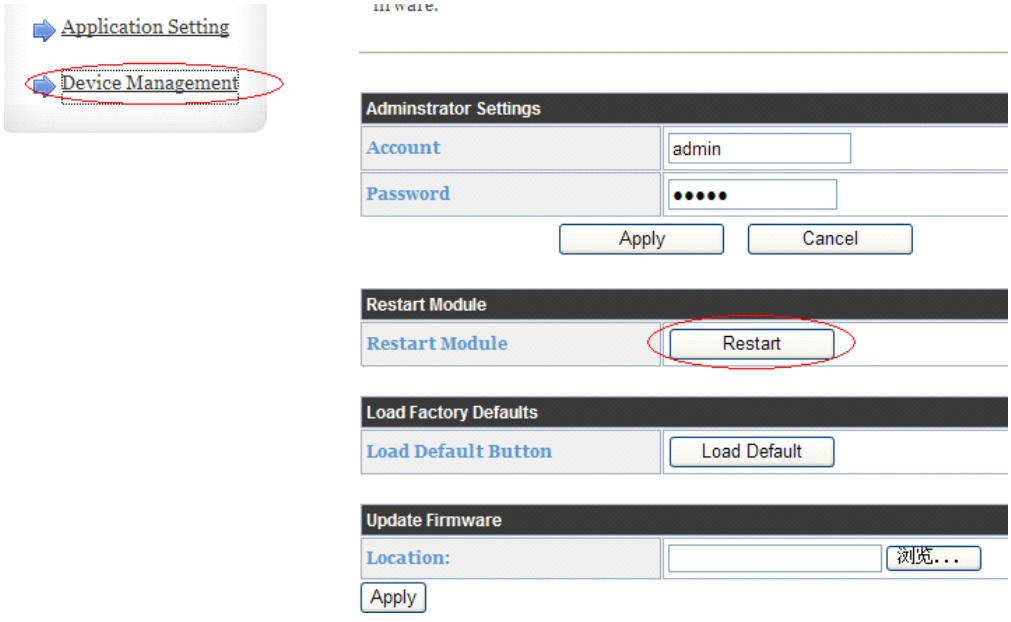


Choose the network you want to connect and Click Apply and back to fill password then apply.

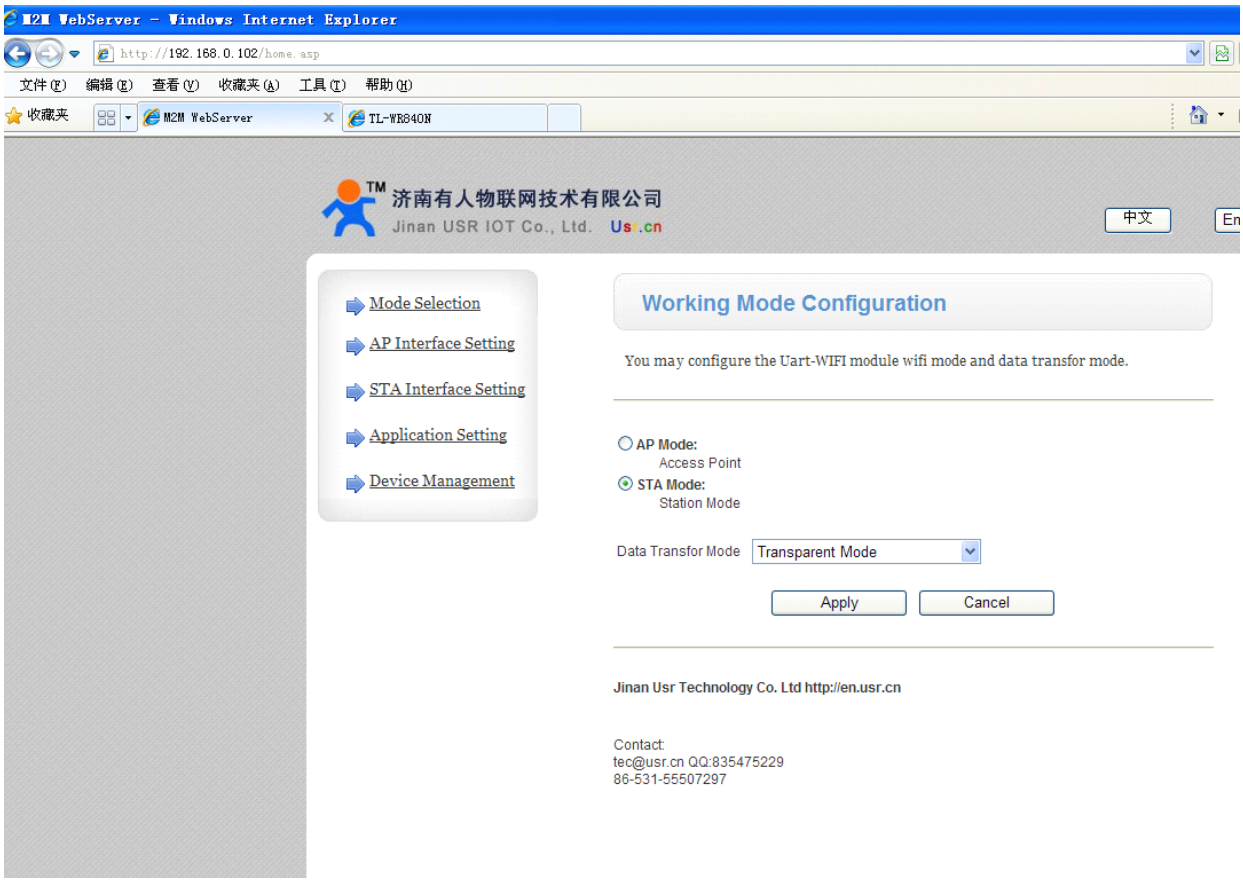
Notice: If your AP still use our module, You need to change the Module LAN IP to not same with AP, for example to 10.10.99.254, to avoid IP conflict, other wise it would not work.



4.4 Go to Device Management page, Restart module.



4.5 After that you can find your module in WIFI router DHCP device list.



Now, you may need to see the hardware description.

4. Contract information

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