



WIFI Module User Manual

(Revision 1.3.0)

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Part 1 Product Introduction

Wifi is a new generation product of our Shuncom. It is an industrial embedded module which provides UART interface for data transfer based on WIFI wireless network standard. It integrates IEEE802.11 and TCP/IP protocol. It can easily make the traditional devices access to wireless network.

Interface:

Double pins interface
Baud rate: 1200—115200bps
power supply: 3.3V or 5V

wireless:

Compatible IEEE standard 802.11b/g/n
IEEE standard 802.11 RF transceiver
Unique serialized Mac address
Data Rate: 1 or 2 Mbps
Distance: up to 400M (1300 feet)
Working in ISM band 2.400–2.484GHz
Can choose 14 channels
Support 802.1x and 802.1i safety: WEP、WPA-PSK and WPA2-PSK
Support two network: Infra and Adhoc
Small U.FL SMA Antenna
America (FCC)、Canada (IC)、Europe (ETSI) and Japan (ARIB) Radio regulatory approvals
Pass Wi-Fi® certification

Others:

Support multiple network protocols: TCP、UDP、DHCP、ICMP、DNS
Support UART transparent transmission
PC Configuration
Support simple AT command to configure

Application:

1. Public utilities and smart energy: Thermostats, smart meters
2. Consumer electronics: remote control, home security, toys, etc.
3. Industrial control: sensors, industrial safety, M2M communication
4. Remote device management: location asset tracking, automotive
5. Retail, health care, etc. the Internet of things industry

Part 2 Technical Parameters

| Name | Parameters | WIFI wireless module |
|---------------------|------------------------|--|
| Wireless network | Wireless standard | IEEE802.11b |
| | Frequency range | 2.400~2.484 GHz |
| | Receiver Sensitivity | The typical sensitivity is -91dBm when on 1Mbps |
| | Data rate | 1 and 2 Mbps |
| | Modulation | DSSS |
| | Transmit Power | The typical transmit Power is +10 dBm (but we test it is +7dBm) |
| Hardware | Interface | UART (RS232/RS485/TTL) |
| | Data rate | 1200~115200 bps |
| | Power supply | 5V or 3.3V |
| | Antenna | IPEX antenna |
| | Receiving Current | 160mA |
| | Transmitting current | 200mA(Peak current 250mA) |
| | Wireless Certification | America (FCC)、Canada (IC)、Europe (ETSI) and Japan (ARIB) Radio regulatory approvals |
| Software | Network Type | Infra/Adhoc |
| | Security Mechanisms | WEP/WPA-PSK/WPA2-PSK |
| | Network protocol | TCP/UDP/ICMP/DHCP/DNS |
| | URAT command | AT command |
| | Network protocol | TCP/ ICMP/DHCP/DNS |
| Working Environment | Operating Temperature | -20°C ~ 85°C |
| | Storage Temperature | -40°C ~ 125°C |

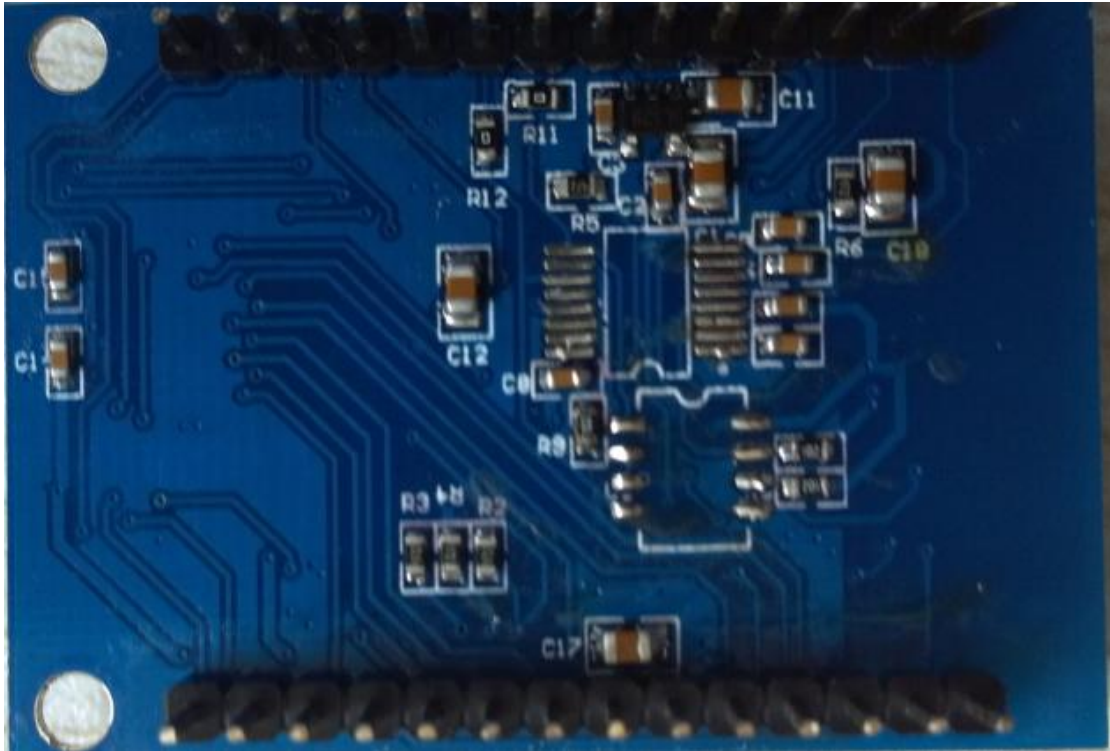
Part 3 Product Review

3.1 Outline

This part is the introduction of WIFI module by the hardware and functions. Interface is the standard 2.54 double pins for convenient to connect to user device. See the picture as follows:

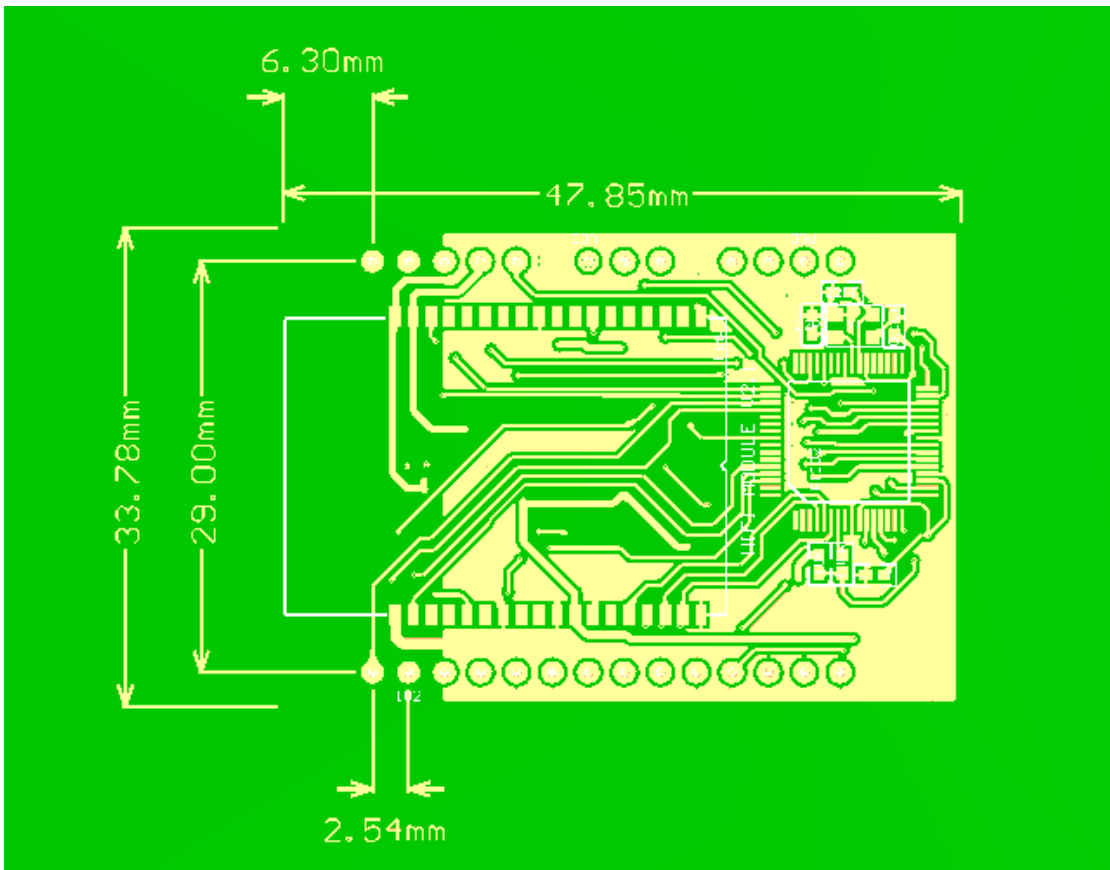


Product front view



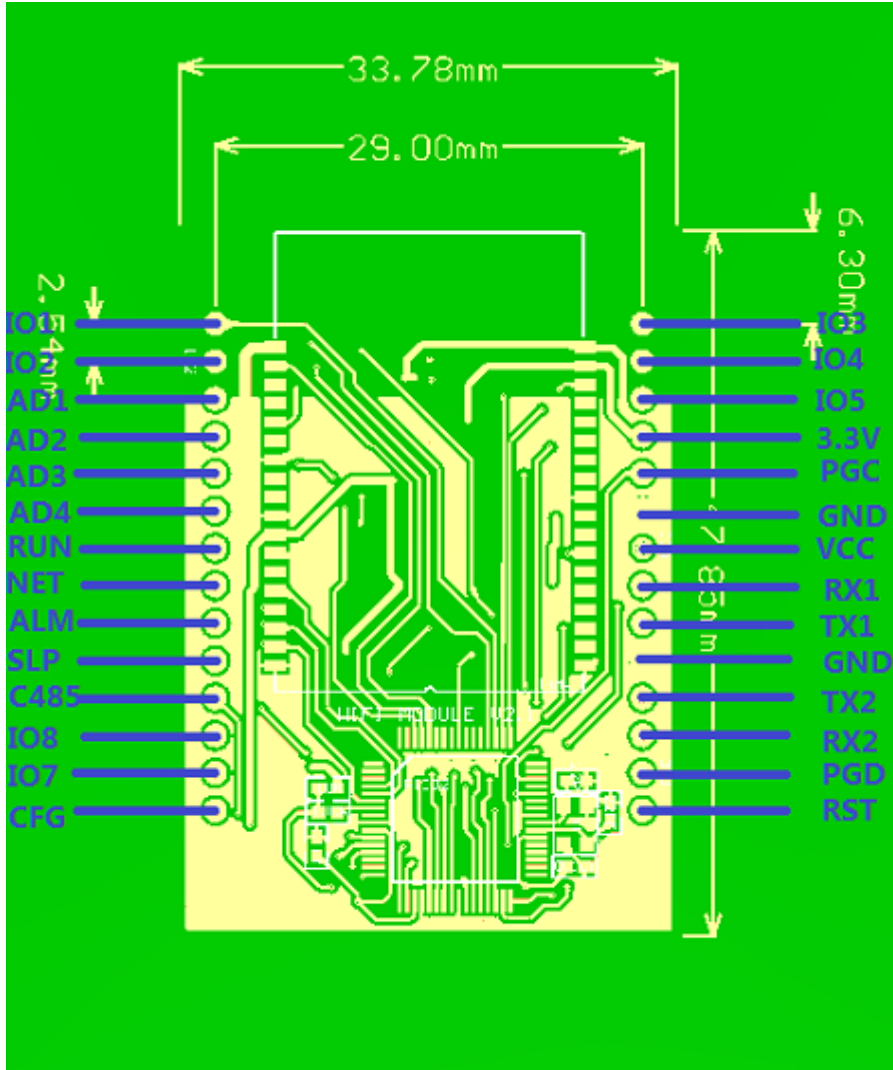
Product opposite view

3.2 Dimensions and Size



Size: 48mmX34mmX10mm (length*width*height)

3.3 Pins Definition:



| Pin | Description |
|---------|--|
| VCC | The cathode of power, +5V |
| GND | System Ground |
| RX1 | UART receive (TTL) |
| TX1 | UART Transmit (TTL) |
| RX2 | RS232 or RS485 receive |
| TX2 | RS232 or RS485 transmit |
| C485 | RS485 control |
| CFG | Configuration |
| RST | Reset |
| PGD、PGC | this port for program debugging |
| RUN | RUN light flashes in 1 seconds when operating normally |
| NET | NET light is on when on network, off means not on network. |

| | |
|---------------------|---|
| IO1、IO2、IO3、IO4、IO5 | IO1、IO2、IO3、IO4、IO5 can realize 5 way PWM output (reserved ports, now can't realize) |
| AD1、AD2、AD3、AD4 | AD1、AD2、AD3、AD4 can realize 4 way 10 AD Sampling (reserved ports, now can't realize) |
| ALM、SLP、IO7、IO8 | ALM、SLP、IO7、IO8 is IO port, can realize the normal IO input and output. (reserved ports, now can't realize) |

Notes: now only have the function of serial port transparent data transmission, other ports haven't open, just for reserved.

3.4 Antenna

This module has an IPX antenna interface.

WIFI module can use the following antennas which have passed the related certifications:

表 2-2: 经过认证的外部天线列表

| 部件编号 | 类型 | 增益 (dBi) | VSWR 最大值 | 连接器 | 厂商 |
|---|-----|----------|----------|---------|-----------|
| RFA-02-P05 | PCB | 2 | 2.0 | IPEX | Aristotle |
| RFA-02-L6H1-70-35 | 双极 | 2 | 2.0 | IPEX | Aristotle |
| RFA-02-D3 | 双极 | 1.5 | 2.0 | IPEX | Aristotle |
| RFA-02-L2H1 | 双极 | 2 | 2.0 | IPEX | Aristotle |
| RFA-02-3-C5H1 | 双极 | 3 | 2.0 | IPEX | Aristotle |
| RFA-02-5-C7H1 | 双极 | 5 | 2.0 | IPEX | Aristotle |
| RFA-02-5-F7H1 | 双极 | 5 | 2.0 | IPEX | Aristotle |
| WF2400-15001A | 双极 | 5 | 2.0 | IPEX | Saytec |
| WF2400-15001AR | 双极 | 5 | 2.0 | RF-IPEX | Saytec |
| WF2400-10001I | 双极 | 2 | 2.0 | IPEX | Saytec |
| WF2400-10001R | 双极 | 2 | 2.0 | RF-IPEX | Saytec |
| AN2400-5901RS, 与连接器 SMASFR8-3152H-00X00I 配合使用 | 全向 | 9 | 2.0 | IPEX | Saytec |
| AN2400-5901RS, 与连接器 SMASFR8-3152H-00X00IR 配合使用 | 全向 | 9 | 2.0 | RF-IPEX | Saytec |

3.5 Wireless network choosing

Wireless network includes Infra and Adhoc, our WIFI module can support both of them.

There are two concepts we need to know:

AP, in computer networking, a wireless access point (AP) is a device that allows wireless devices to connect to a wired network using Wi-Fi, or related standards. The

AP usually connects to a router (via a wired network) if it's a standalone device, or is part of a router itself.

A station (STA) is a device that has the capability to use the 802.11 protocol. For example, a station may be a laptop, a desktop PC, PDA, access point or Wi-Fi phone.

Infra Network:

Infra is created by AP, lots of STA access into it. AP is the network center, all the communication is transfer by AP.

1. Can expand the communication range by wireless router
2. The IP address can be dynamically allocated by the router's DHCP function
3. Can set WPA2 encryption to protect the data safe in network

If you use Shuncom WIFI module, As long as the work area have wireless internet to access, Shuncom WIFI module can access the Internet. In other any place, if you can serve on the internet, you can control the Shuncom WIFI module by network.

Adhoc Network:

Adhoc is organized by at least two STA, not exist AP. It has the following characteristics:

1. Not need router
2. Can support many modules to access
3. Need to set static IP

It is a low cost, easy-to-use mode, you can directly connect module by laptop or mobile phone not depending on wireless router.

3.6 Security Mechanisms

This module supports multiple wireless encryption modes to make sure the user data safe.

The encryption includes:

OPEN (no encryption)
 WEP64
 WEP128
 WPA-PSK
 WPA2-PSK

3.7 UART transparent transmission

This module is for the UART transparent data transmission. User firstly needs to configure the following wireless network parameters before communication:

Network name (Ssid)
 Safety mode

Encryption (depends on your need to choose)

Defaulted TCP/UDP connection parameters:

Protocol type

Connection type

Destination address

Destination port

3.8 WIFI Configuration Tool

For convenient to use, we provide the simple configuration tool to configure. All the parameters will be saved in the chip flash after configuration until there is a new configuration.

3.9 AT command configuration

Besides WIFI configuration tool, you also can use the **AT command** to configure. The details please see the back chart of **AT command**

3.10 TCP/IP Protocol

Shuncom WIFI module is embedded a complete TCP/IP protocol which supports TCP/UDP/ICMP/ DHCP/DNS etc. protocols.

Part 4 How to use the WIFI module

4.1 Preparation

Hardware:

Shuncom WIFI module

Shuncom WIFI board

Serial port wire

Software:

WIFI configuration tool V1.0

Com Tool: sscom32

Network Assistant Tool

4.2 Web parameters configuration

If the laptop supports WIFI, or the mobile phone supports WIFI and ADHOC, you can use the web to do configuration. If not, please see 4.3 to use Serial port tool to configure.

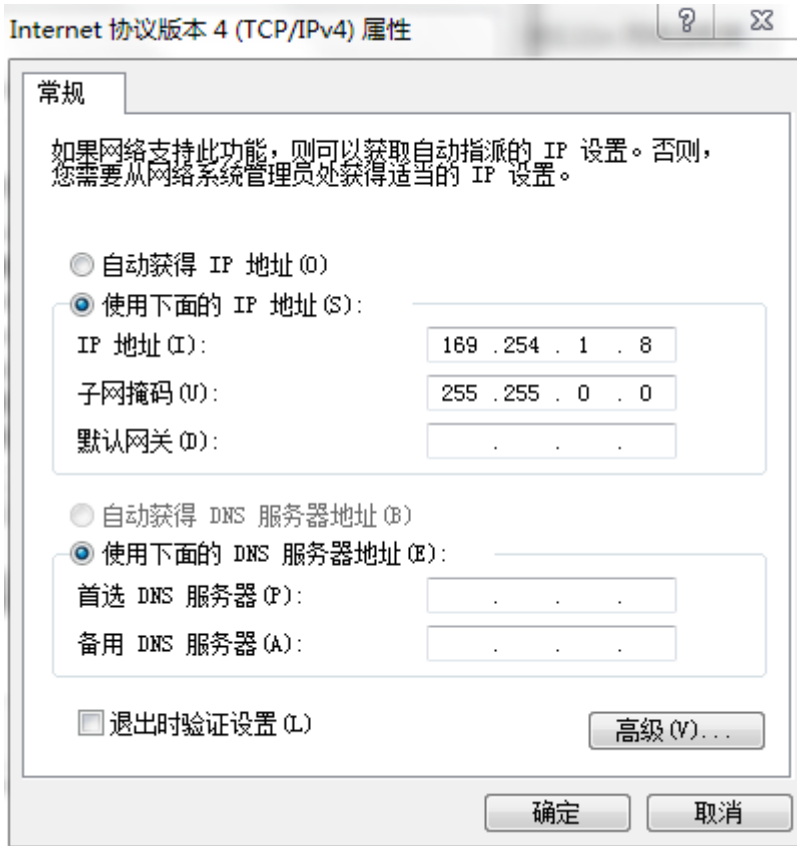
If the first time power supply, module will create a point-to-point network by using defaulted parameters. Defaulted SSID: SHUNCOM_hoc, Defaulted IP address: 169.254.1.1

After power supply, laptop begins to search the network, Point-to-point network (SHUNCOM_hoc) will appear in the list of network:

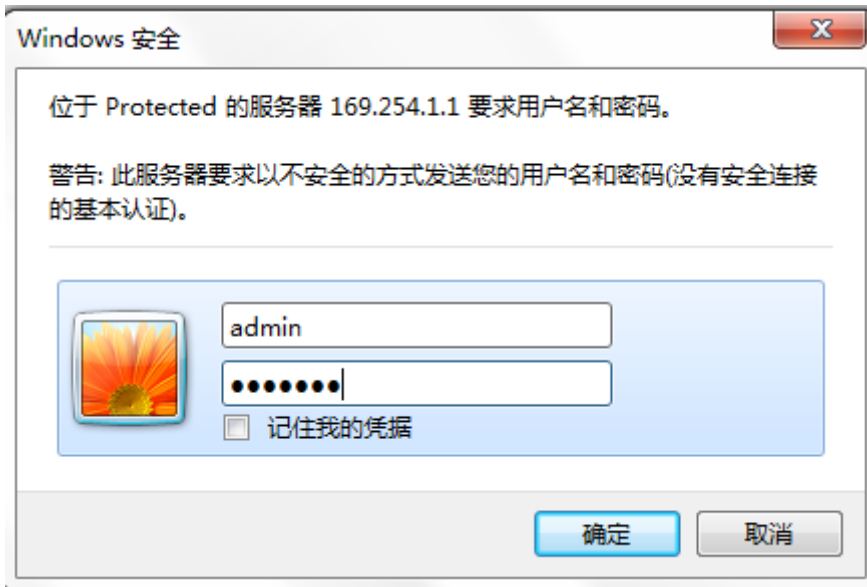


The network is not Encryption, can use it directly.

After connection, be sure that computer and WIFI module are on the same network. Then begin to configure. Change the computer IP to be static IP address: 169.254.1.xxx



Finish IP configuration, Open the browser to input: "169.254.1.1", then press "Enter" can see the User login screen, input User name: **admin** Password: **shuncom**



Click "sure", can see the Web screen as follows:



Click the “CONFIG” to enter configuration screen

SHUNCOM CONFIG

networktype:

SSID:

SecurityMode:

KeyMode:

KeyIndex:

KEY:

ENABLE DHCP

IP ADDRESS:

SUBNET MASK:

GATEWAY:

DNS ADDRESS:

TCP/UDP:

C/S MODE:

ServerIP:

Port:

BaudRate:

Checkbit:

Databit:

Stopbit:

DataLen:

DataTime:

UserName:

PassWord:

All parameters will appear here. About the meaning of parameters, please see the following chapters.

Notes: Finish configuration, please click “Save Config”, then power supply again, the configuration will be valid.

4.3 WIFI Configuration Tool configuration

- 1、Wifi module plug into WIFI board, serial port wire connection, power supply, press “CFG” on WIFI board.
- 2、Open WIFI configuration tool V1.0
- 3、Choose the right Serial port, press “connect”, then appear “connected” (if not appear, press the “CFG” on WIFI board again, meanwhile power supply, then press “connect” again .)

WIFI参数配置

顺舟科技
Wireless Anywhere

connect

1 serial part COM3

2 connect

3 not connect

networktype

serial configure

BaudRate: 19200

Checkbit: none

Datebit: 8

Stopbit: 1

DataLen:

DataTime:

configure

wireless configure

SSID:

SecurityMode:

KeyMode: KeyIndex:

KEY:

network configure

ENABLE DHCP

IP ADDRESS:

SUBNET MASK:

GATEWAY:

DNS ADDRESS:

TCP configure

TCP/UDP: TCP C/S MODE:

Server IP: Port:

save configure

- 4、 If connection successfully, it will appear the following screen. On the“network type”choose “Infra”, then according to the existed AP to configure the WIFI parameters (network name, security mode, key). If need automatically to obtain an IP, please tick the” ENABLE DHCP”. If need the fixed IP, please input “IP address, Subnet mask, Gateway, DNS address”

WIFI参数配置



顺舟科技

Wireless Anywhere

connect

serial port: COM3

connect

connected

networktype

infrastruct

serial configure

BaudRate: 115200

Checkbit: none

Datebit: 8

Stopbit: 1

DataLen: 200

DataTime: 200

configure

wireless configure

SSID: SHUNCOM123

SecurityMode: WPA2-P

HEX KeyIndex: 1

KEY: 123456789

network configure

ENABLE DHCP

IP ADDRESS: 169 . 254 . 1 . 2

SUBNET MASK: 255 . 255 . 0 . 0

GATEWAY: 169 . 254 . 1 . 1

DNS ADDRESS: 169 . 254 . 1 . 1

TCP configure

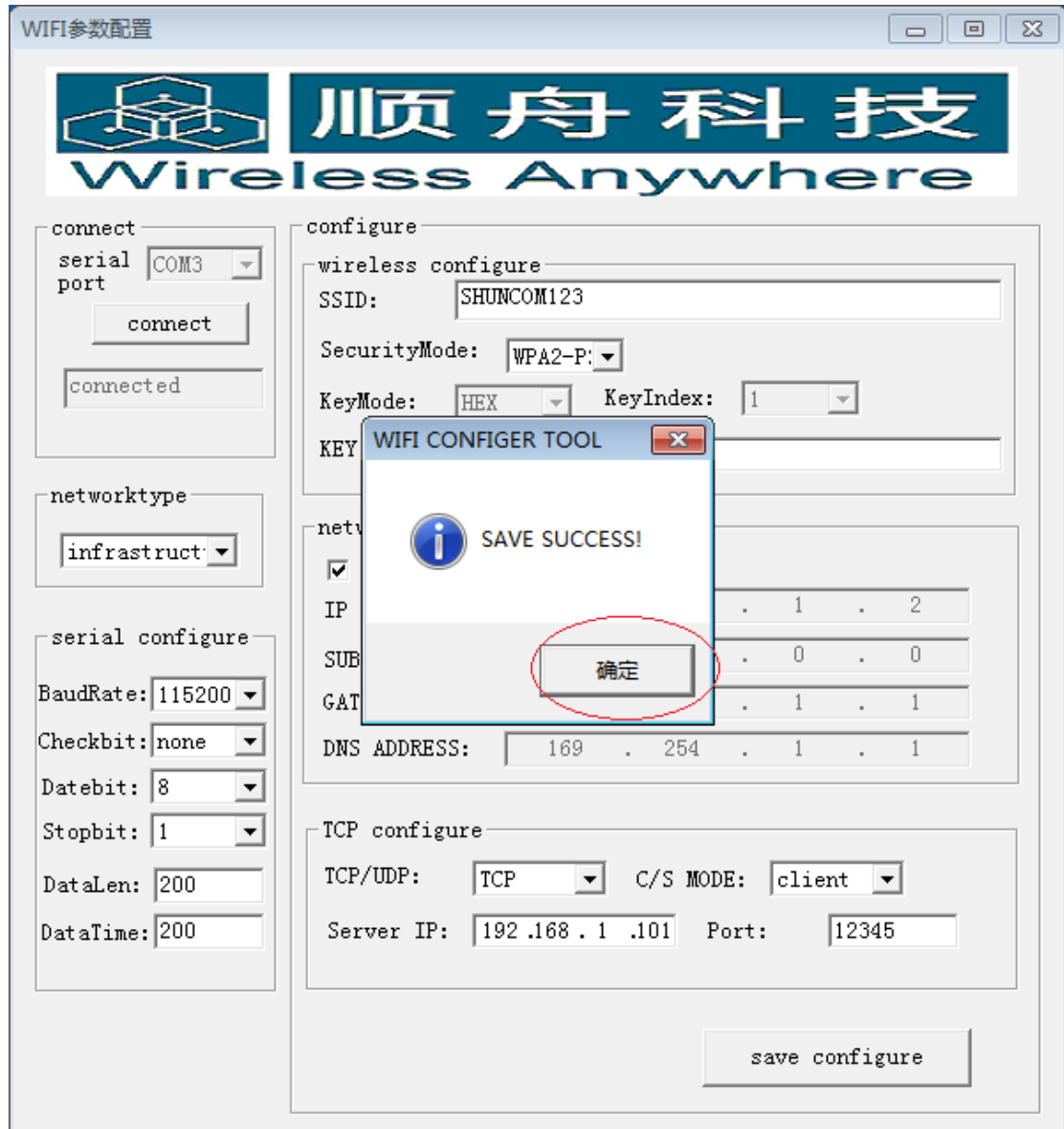
TCP/UDP: TCP C/S MODE: client

Server IP: 192.168.1.101 Port: 12345

save configure

5、 In “TCP configure”, Advice: TCP/UDP is TCP, C/S mode is client, server IP address is the PC IP address and port (port configure to be more than 1024)

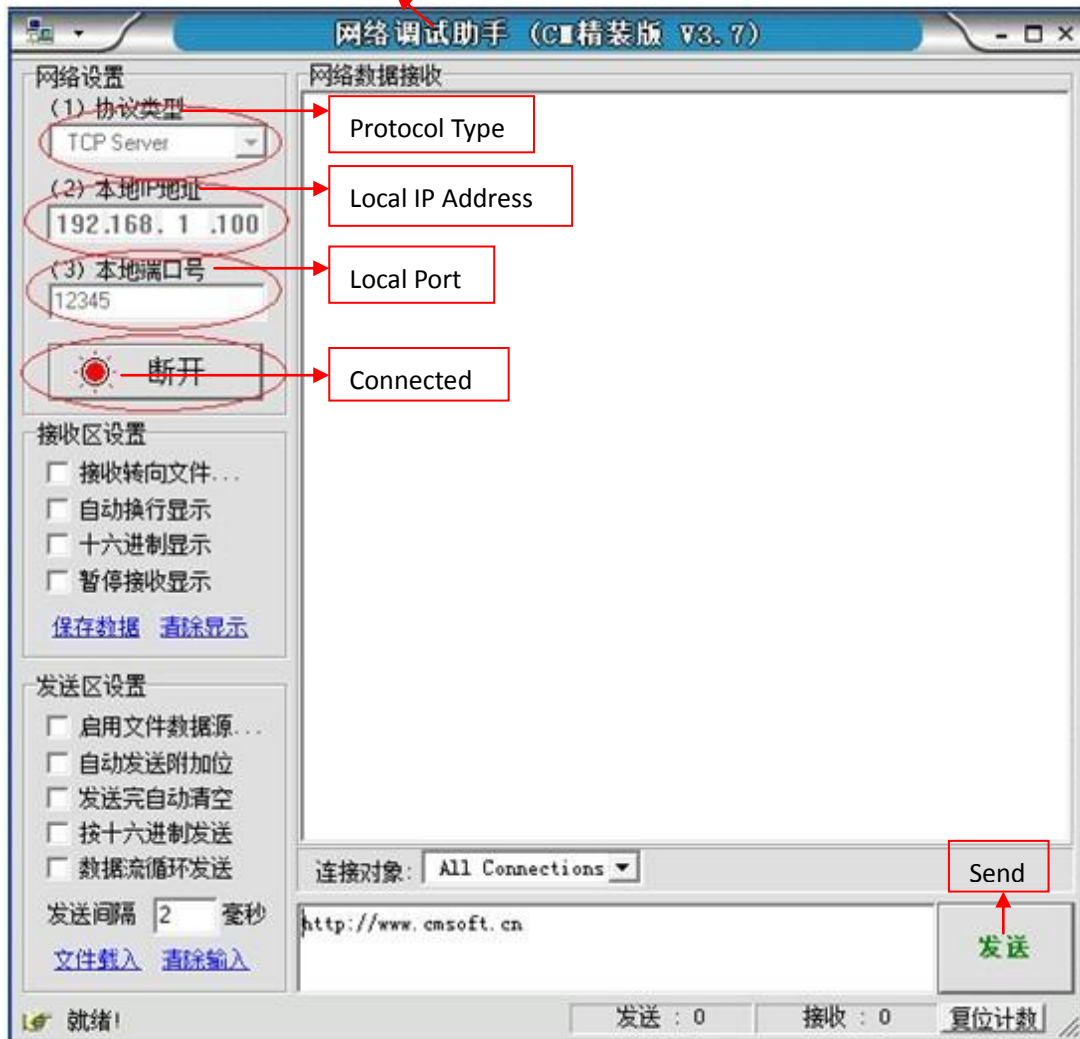
6、 On the “Serial configure” , Set the baud rate, parity, data bit, stop bit



7. Press “save configure” to save the configuration.

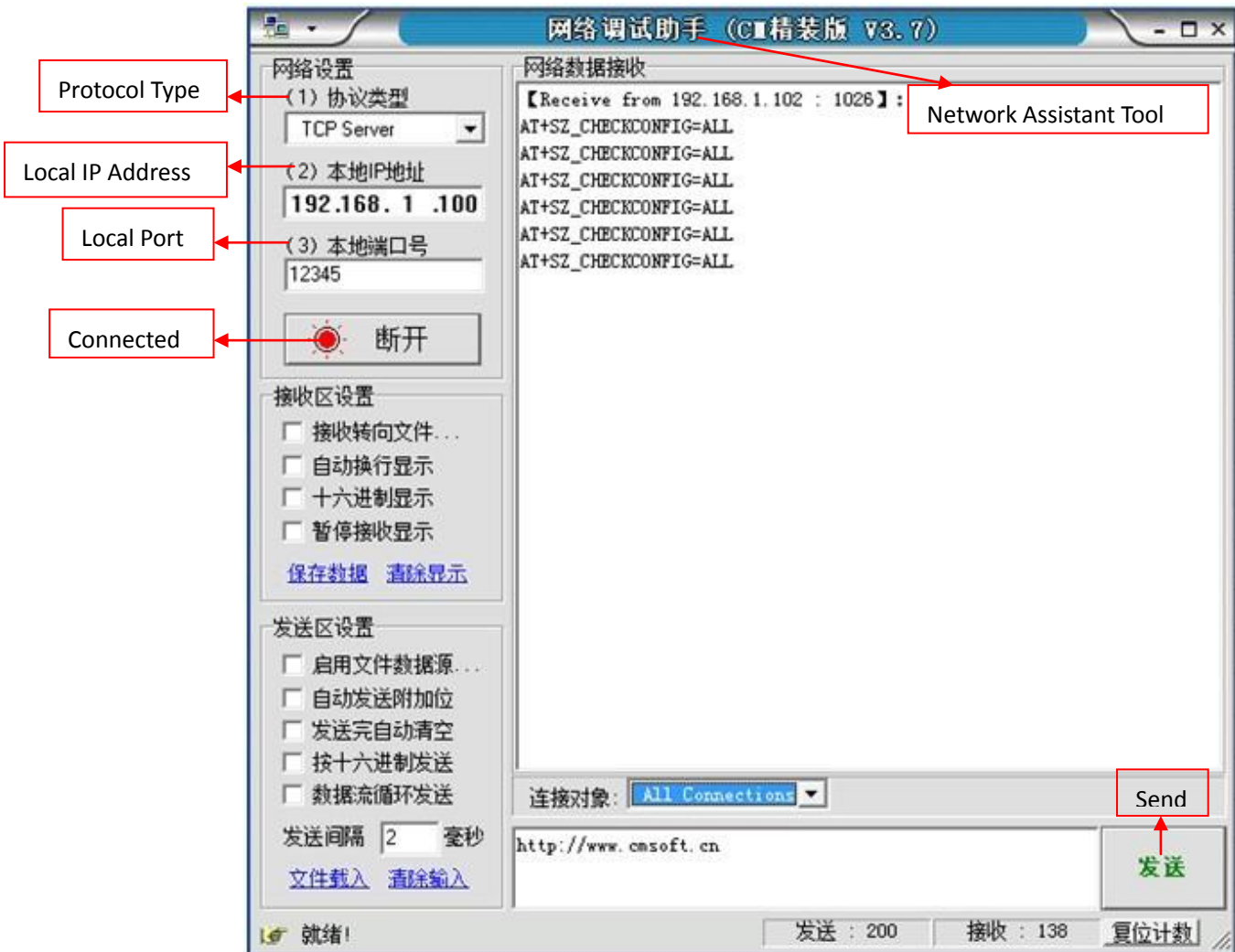
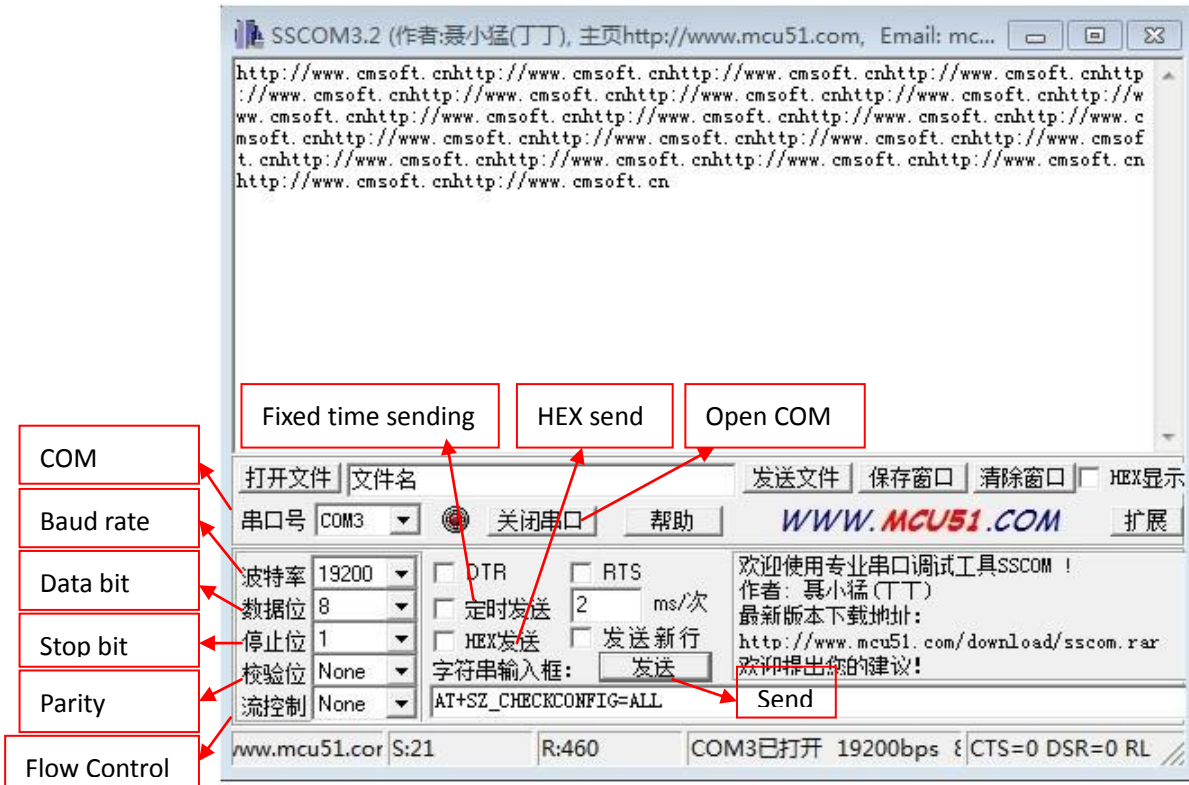
4.4 Begin to test

- 1、 Using Network Assistant Tool to create a TCP SERVER of monitoring port is 12349, as follows:



2、 Start Com Tool sscom32 to configure the baud rate, parity, data bit, stop bit

3、 After module and PC create TCP connection, then can send the data between Network Assistant Tool and Com Tool, as follows:



Part 5 How to Configuration

5.1 Network type

1. When module try to connect with AP, please choose “Infra”
2. If need point-to-point network (such as laptop and mobile phone to connect to module, or module to module communication), please choose “ Adhoc”,
If have network, it will connect to the existed network automatically, if not, it will create a new network.

WIFI参数配置

顺舟科技
Wireless Anywhere

connect
serial port: COM3
connect
connected

networktype
infrastruct
infrastructure
adhoc

serial configure
BaudRate: 115200
Checkbit: none
Datebit: 8
Stopbit: 1
DataLen: 200
DataTime: 200

configure
wireless configure
SSID: shuncom123
SecurityMode: OPEN
KeyMode: HEX KeyIndex: 1
KEY: 123456789

network configure
 ENABLE DHCP
IP ADDRESS: 169 . 254 . 1 . 2
SUBNET MASK: 255 . 255 . 0 . 0
GATEWAY: 169 . 254 . 1 . 1
DNS ADDRESS: 169 . 254 . 1 . 1

TCP configure
TCP/UDP: TCP C/S MODE: client
Server IP: 192.168.1.100 Port: 12345

save configure

5.2 wireless configuration

Wireless configuration includes network name (SSID), security mode, key mode, key index, key.

As follows:

The screenshot shows a web-based configuration interface for a SHUNCOM device. The title bar reads "WIFI参数配置". The main header features the SHUNCOM logo and the slogan "Wireless Anywhere". The interface is divided into several sections:

- connect:** Includes a "serial port" dropdown menu, a "connect" button, and a "not connect" button.
- networktype:** A dropdown menu for selecting network type.
- serial configure:** Fields for "BaudRate" (set to 19200), "Checkbit" (set to none), "Datebit" (set to 8), "Stopbit" (set to 1), "DataLen", and "DataTime".
- configure:** This section is highlighted with an orange border and contains:
 - wireless configure:** Fields for "SSID", "SecurityMode", "KeyMode", "KeyIndex", and "KEY".
 - network configure:** Includes a checkbox for "ENABLE DHCP" and input fields for "IP ADDRESS", "SUBNET MASK", "GATEWAY", and "DNS ADDRESS".
 - TCP configure:** Includes "TCP/UDP" (set to TCP), "C/S MODE", "Server IP", and "Port".
- save configure:** A button at the bottom right to save the settings.

Network Name:

Wifi Network ID: 1 to 32 ASCII characters.

Fill a network name in following:

configure

wireless configure

SSID:

SecurityMode:

KeyMode: KeyIndex:

KEY:

Security mode:

It contains OPEN、WEP64、WEP128、WPA-PSK、WPA2-PSK。
Choose the suitable one as your requirement on the drop-down menu

configure

wireless configure

SSID:

SecurityMode:

KeyMode: KeyIndex:

KEY:

network configure

Key mode:

You can choose HEX or ASCII under the security mode of WEP64 and WEP128

configure

wireless configure

SSID:

SecurityMode:

KeyMode: KeyIndex:

KEY:

Key Index:

You can choose from 1 to 4 under the security mode of WEP64 and WEP128

The screenshot shows a configuration window titled 'configure' with a sub-section 'wireless configure'. The fields are: SSID: shuncom123; SecurityMode: WEP64; KeyMode: HEX; KeyIndex: 1 (with a dropdown menu open showing options 1, 2, 3, 4); and KEY: 123456789. An orange box highlights the KeyIndex dropdown menu.

Key:

Different key have different length:

| | |
|------------------------|-----------------|
| WEP64 (HEX) : | 10 characters |
| WEP64 (ASCII) : | 5 characters |
| WEP128 (HEX) : | 26 characters |
| WEP128 (ASCII) : | 13 characters |
| WPA/WPA2-PSK (ASCII) : | 8~63 characters |

Notes: If **WPA**, Module fist time connects network, it will take a long time. After that, it will become very fast.

Fill key in the following:

The screenshot shows the same configuration window as above, but with an orange box highlighting the KEY field, which contains the value '123456789'.

5.3 Network configuration

It contains: whether use DHCP to obtain IP address, IP address, Subnet mask, Gateway, DNS, as follows:

WIFI参数配置

 **顺舟科技**
Wireless Anywhere

connect

serial port: COM3

connect

connected

networktype

infrastruct

serial configure

BaudRate: 115200

Checkbit: none

Datebit: 8

Stopbit: 1

DataLen: 200

DataTime: 200

configure

wireless configure

SSID: shuncom123

SecurityMode: WEP64

KeyMode: HEX KeyIndex: 1

KEY: 123456789

network configure

ENABLE DHCP

IP ADDRESS: 169 . 254 . 1 . 2

SUBNET MASK: 255 . 255 . 0 . 0

GATEWAY: 169 . 254 . 1 . 1

DNS ADDRESS: 169 . 254 . 1 . 1

TCP configure

TCP/UDP: TCP C/S MODE: client

Server IP: 192 168 1 100 Port: 12345

save configure

Start DHCP (automatically obtain IP address):

If choose “ENABLE DHCP”, it will automatically obtain an IP address. All other parameters will become invalid

Notes: please don't use this one if on point-to-point mode. You have to define your IP address, Subnet mask, Gateway, DNS

network configure

ENABLE DHCP

IP ADDRESS: 169 . 254 . 1 . 2

SUBNET MASK: 255 . 255 . 0 . 0

GATEWAY: 169 . 254 . 1 . 1

DNS ADDRESS: 169 . 254 . 1 .

IP address:

If not choose "ENABLE DHCP", Input your IP address

network configure

ENABLE DHCP

IP ADDRESS: 169 . 254 . 1 . 2

SUBNET MASK: 255 . 255 . 0 . 0

GATEWAY: 169 . 254 . 1 . 1

DNS ADDRESS: 169 . 254 . 1 .

Subnet mask:

If not choose "ENABLE DHCP", Input your subnet mask

network configure

ENABLE DHCP

IP ADDRESS: 169 . 254 . 1 . 2

SUBNET MASK: 255 . 255 . 0 . 0

GATEWAY: 169 . 254 . 1 . 1

DNS ADDRESS: 169 . 254 . 1 .

Gateway:

If not choose "ENABLE DHCP", input Gateway address

```
network configure
 ENABLE DHCP
IP ADDRESS: 169 . 254 . 1 . 2
SUBNET MASK: 255 . 255 . 0 . 0
GATEWAY: 169 . 254 . 1 . 1
DNS ADDRESS: 169 . 254 . 1 .
```

DNS Server:

If not choose "ENABLE DHCP", Input DNS address:

```
network configure
 ENABLE DHCP
IP ADDRESS: 169 . 254 . 1 . 2
SUBNET MASK: 255 . 255 . 0 . 0
GATEWAY: 169 . 254 . 1 . 1
DNS ADDRESS: 169 . 254 . 1 .
```

5.4 Working mode setting (TCP configure)

Working mode setting (TCP configure) includes: protocol, C/S mode, server IP, port. Set as follows:

WIFI参数配置

顺舟科技
Wireless Anywhere

connect
serial port: COM3
connect
connected

networktype
infrastruct

serial configure
BaudRate: 115200
Checkbit: none
Datebit: 8
Stopbit: 1
DataLen: 200
DataTime: 200

configure

wireless configure
SSID: shuncom123
SecurityMode: WEP64
KeyMode: HEX KeyIndex: 1
KEY: 123456789

network configure
 ENABLE DHCP
IP ADDRESS: 169 . 254 . 1 . 2
SUBNET MASK: 255 . 255 . 0 . 0
GATEWAY: 169 . 254 . 1 . 1
DNS ADDRESS: 169 . 254 . 1 .

TCP configure
TCP/UDP: TCP C/S MODE: client
Server IP: 192.168.1.100 Port: 12345

save configure

Protocol Type:

We create the defaulted protocols which are TCP and UDP

TCP configure

TCP/UDP: TCP C/S MODE: client
Server IP: 192.168.1.100 Port: 12345

C/S mode:

Create Defaulted C/S mode which are Server and client.

TCP configure

TCP/UDP: C/S MODE:

Server IP: Port:

Server IP:

If C/S mode is Client, the connected server can be IP address or domain name. It will invalid if C/S mode is server.

TCP configure

TCP/UDP: C/S MODE:

Server IP: Port:

Port:

Input the port number

TCP configure

TCP/UDP: C/S MODE:

Server IP: Port:

5.5 Communication setting (Serial Configure)

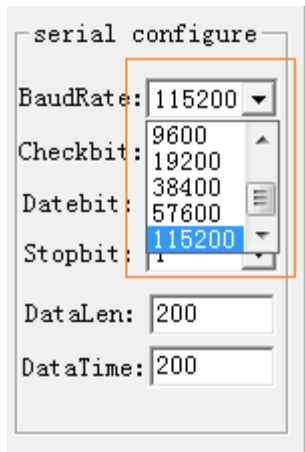
On “Serial Configure” to set baud rate, parity, data bit, stop bit, data length and data time.

The screenshot shows the 'WIFI参数配置' (WIFI Parameter Configuration) window. At the top, there is a logo for '顺舟科技' (Shunzhou Technology) with the slogan 'Wireless Anywhere'. The interface is organized into several panels:

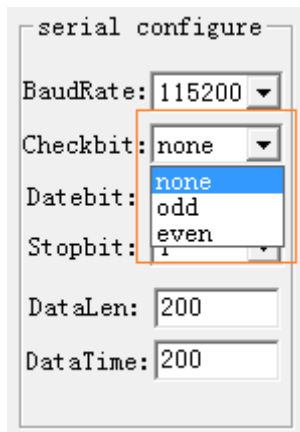
- connect**: Serial port set to 'COM3', with a 'connect' button and a 'connected' status indicator.
- networktype**: Set to 'infrastruct'.
- serial configure** (highlighted with an orange border):
 - BaudRate: 115200
 - Checkbit: none
 - Databit: 8
 - Stopbit: 1
 - DataLen: 200
 - DataTime: 200
- configure**:
 - wireless configure: SSID: shuncom123, SecurityMode: WEP64, KeyMode: HEX, KeyIndex: 1, KEY: 123456789
 - network configure: ENABLE DHCP, IP ADDRESS: 169 . 254 . 1 . 2, SUBNET MASK: 255 . 255 . 0 . 0, GATEWAY: 169 . 254 . 1 . 1, DNS ADDRESS: 169 . 254 . 1 .
 - TCP configure: TCP/UDP: TCP, C/S MODE: client, Server IP: 192 .168 . 1 .100, Port: 12345
- A 'save configure' button is located at the bottom right.

Baud rate:

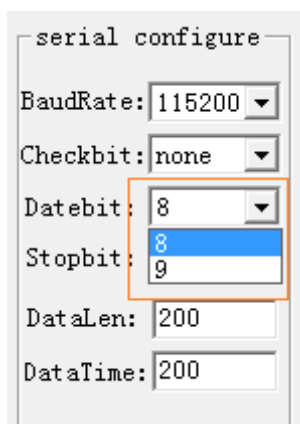
Baud rate is 1200~115200bps, defaulted setting is 19200bps

**Parity:**

It contains “none, odd or even”. Defaulted setting is “none”

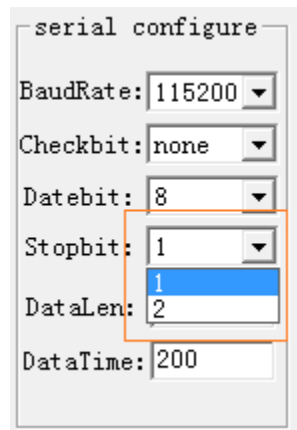
**Data bit:**

Data bit can be 8 or 9, defaulted setting is 8.



Stop bit:

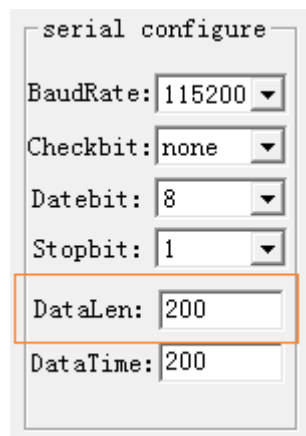
Normally it is "1" or "2",defaulted setting is "1"



The screenshot shows a 'serial configure' dialog box with the following settings: BaudRate: 115200, Checkbit: none, Datebit: 8, Stopbit: 1, DataLen: 2, and DataTime: 200. The Stopbit dropdown menu is open, showing options 1 and 2, with option 1 selected and highlighted in blue. An orange box highlights the Stopbit dropdown and the DataLen field.

Data length:

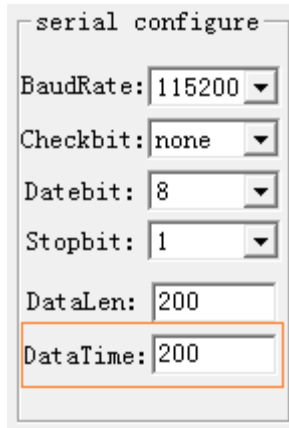
If data length to be the length you set, it will send out. Now the length we support is 0-1023 bytes. It only supports TCP but not supports UDP.



The screenshot shows the same 'serial configure' dialog box with the following settings: BaudRate: 115200, Checkbit: none, Datebit: 8, Stopbit: 1, DataLen: 200, and DataTime: 200. The DataLen field is highlighted with an orange box.

Data time:

If the data length not reach as the setting length, but data time is more than the setting data time, the data will send out. It only supports TCP but not supports UDP. The unite time is **millisecond**.



serial configure

BaudRate: 115200

Checkbit: none

Datebit: 8

Stopbit: 1

DataLen: 200

DataTime: 200

5.6 Submit parameters

After finishing configuration, it will be saved in the flash of chip. Press “save configure” to save.

WIFI参数配置

 **顺舟科技**
Wireless Anywhere

connect
serial port: COM3
connect
connected

networktype
infrastruct

serial configure
BaudRate: 115200
Checkbit: none
Datebit: 8
Stopbit: 1
DataLen: 200
DataTime: 200

configure

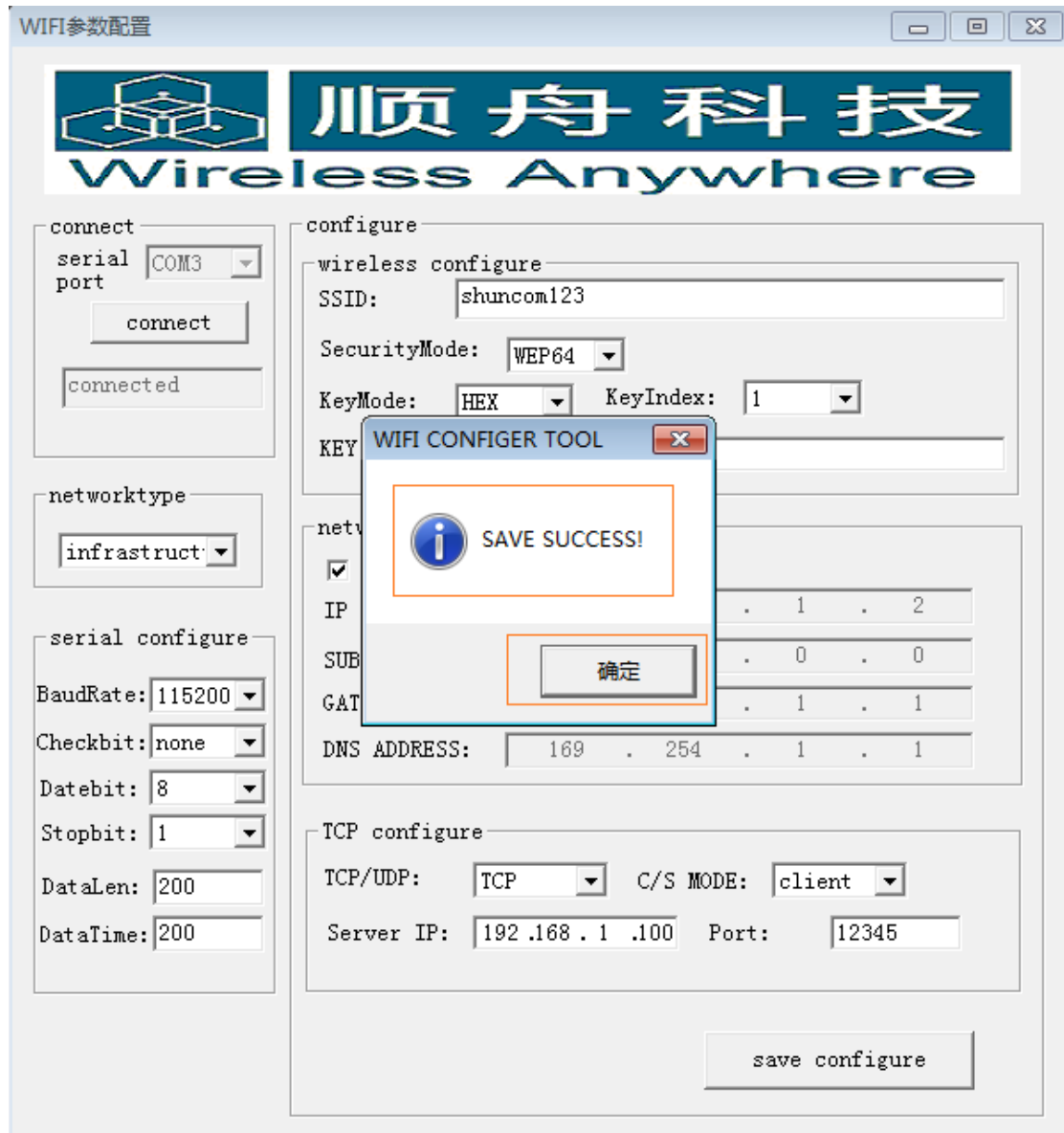
wireless configure
SSID: shuncom123
SecurityMode: WEP64
KeyMode: HEX KeyIndex: 1
KEY: 123456789

network configure
 ENABLE DHCP
IP ADDRESS: 169 . 254 . 1 . 2
SUBNET MASK: 255 . 255 . 0 . 0
GATEWAY: 169 . 254 . 1 . 1
DNS ADDRESS: 169 . 254 . 1 .

TCP configure
TCP/UDP: TCP C/S MODE: client
Server IP: 192 .168 .1 .100 Port: 12345

save configure

Press “sure”, it means configuration is OK.



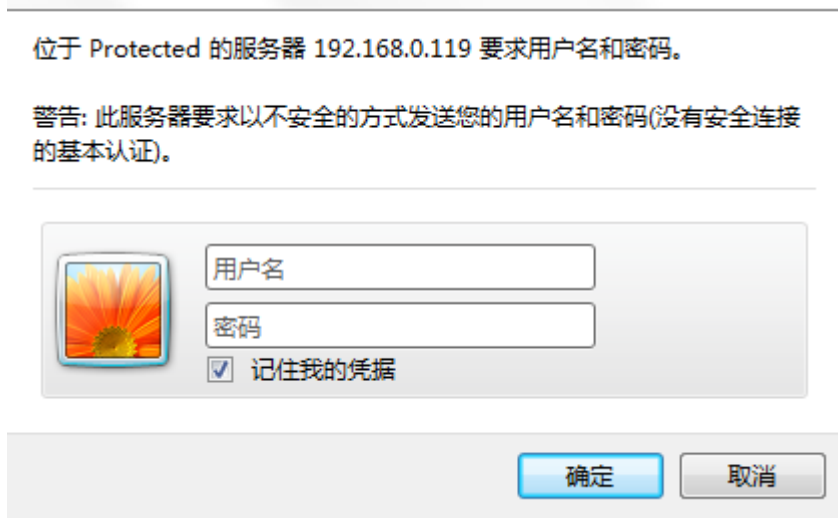
Notes: please assure that all the parameters have be set, if not complete, maybe it will affect the module to work normally.

Part 6 Embedded WEB Configuration

Our module has embedded WEB server which supports remote visit by IE browser for remote configuration and control.

Notes: Only after module connecting to network, then can visit embedded WEB.

It is easy to enter embedded WEB. Assure the device you used and our WIFI module are on the same network. Input the WIFI module's IP address in browser, then can visit WEB. As follows:



位于 Protected 的服务器 192.168.0.119 要求用户名和密码。

警告: 此服务器要求以不安全的方式发送您的用户名和密码(没有安全连接的基本认证)。

用户名

密码

记住我的凭据

确定 取消

Here input the user name and password to visit WIFI module, if first use, the user name: **admin**, password: **shuncom**. You can set them on the WEB configuration.

Input user name and password, it will appear the screen as follows:

顺舟科技WIFI模块配置与控制界面



CONFIG



CONTROL

If do configuration, Press “CONFIG”.

If need monitoring and control, press “CONTROL” (This function is reserved for the next new version, now can't use)

6.1 WEB Configuration

Press “CONFIG”, it will appear as follows:

SHUNCOM CONFIGE

nettype:

SSID:

SecurityMode:

KeyMode:

KeyIndex:

KEY:

ENABLE DHCP

IP ADDRESS:

SUBNET MASK:

GATEWAY:

DNS ADDRESS:

TCP/IP:

C/S MODE:

Server IP:

Port:

BaudRate:

Checkbit:

Datebit:

Stopbit:

DateLen:

DataTime:

UserName:

PassWord:




Save Config

The above parameters are the parameters which are saved in the WIFI module.

Notes: WEB configuration and WIFI tool configuration are the same function for configuration.


The configuration details of parameters as follows:


1、 network type


networktype: 
 
 

2、 Wireless configure

SSID:

SecurityMode: 

KeyMode: 

KeyIndex: 

KEY:

SSID:
 SecurityMode:
 KeyMode:
 KeyIndex:
 KEY:

The meaning of parameters and how to configure, please see the **Part 5**.

3. Network Configure

ENABLE DHCP

IP ADDRESS:

SUBNET MASK:

GATEWAY:

DNS ADDRESS:

ENABLE DHCP:
 IP ADDRESS:
 SUBNET MASK:
 GATEWAY:

DNS ADDRESS:

The meaning of parameters and how to configure, please see the **Part 5**.

4、TCP configure

TCP/UDP:

C/S MODE:

Server IP:

Port:

TCP/UDP:
C/S MODE:
Server IP:
Port:

The meaning of parameters and how to configure, please see the **Part 5**.

5、Communication configure

BaudRate:

Checkbit:

Datebit:

Stopbit:

DateLen:

DataTime:

BaudRate:
Checkbit:
Datebit:
Stopbit:
DateLen:
DataTime:

The meaning of parameters and how to configure, please see the **Part 5**.

6、WEB user name and password

UserName:

PassWord:

Username:

Password:

If the first time use, the user name is **admin**, password is **shuncom**
 If you change new user name and password, you should remember it.
 Once you forget them, please use **AT command** to get them. See the **part 7 AT command**.

7、 Save configuration



Finish configuration, please press “save config” to save. After the configuration, it should power off the module, then power on again, the configure parameters will become valid. If not power off and power on, the configuration will not valid.

Part 7 AT Command

For customer to easily use our embedded WIFI module, Shouncom supply simple **AT command** to configure it. User can configure it by MCU. Entering configuration the Baud rate is 19200

AT commands as follows:

1、 AT+SZ_SSID=

It is for setting the network name, add the network name behind the “=”. For example if network name is “**shuncom**”, then the whole AT command is **AT+SZ_SSID=SHUNCOM/r/n**

2、 AT+SZ_NETWORKTYPE=

It is for setting network type, if is infra network, add INFRASTRUCTURE behind “=”. If Adhoc, add ADHOC behind “=”.for example:

Infra: AT+SZ_NETWORKTYPE=INFRASTRUCTURE/r/n

Adhoc: AT+SZ_NETWORKTYPE=ADHOC/r/n

3、 AT+SZ_SECURITY=

It is for setting security mode, you can add four modes(including OPEN、 WEP64、 WEP128、 WPA/WPA2PHASE) behind “=”.For example:

OPEN: AT+SZ_SECURITY=OPEN/r/n

WEP64: AT+SZ_SECURITY= WEP64/r/n
 WEP128: AT+SZ_SECURITY= WEP128/r/n
 WPA-PSK: AT+SZ_SECURITY= WPA/WPA2PHASE/r/n
 WPA2-PSK: AT+SZ_SECURITY= WPA/WPA2PHASE/r/n

Notes: if using **AT command** to update on the mode of WPA or WPA2, security mode and key should renew at the same time.

4、AT+SZ_WEPINDEX=

It is valid only for configuring key format and key index on the mode of WEP64 and WEP128. It is made of two consecutive characters behind “=”. the first character can be “0”、“1”、“2”、“3” respectively means index 1, index 2, index 3, index 4. The second character could be “A”、“H”, A means that key is ASCII, H means that key is HEX, for example:

If index is 1, key is ASCII: AT+SZ_WEPINDEX=0A/r/n

If index is 3, key is HEX: AT+SZ_WEPINDEX=2H/r/n

5、AT+SZ_SECURITY_KEY=

It is for configuring network key. Add network key behind “=” directly, for example:

If WEP64, ASCII, password is 12345: AT+SZ_SECURITY_KEY=12345/r/n

If WEP64, HEX, password is 12345: AT+SZ_SECURITY_KEY=3132333435/r/n

If WPA/WPA2-PSK, password is 123456789:

AT+SZ_SECURITY_KEY=123456789/r/n

Notes: if using **AT command** to update on the mode of WPA or WPA2, security mode and key should be renewed at the same time.

6、AT+SZ_DHCP=

It is for choosing whether to use the automatic allocation of IP address. Add ENABLE or DISABLE behind “=”

Automatic allocation IP address: AT+SZ_DHCP=ENABLE/r/n

Not automatic allocation IP address but specified IP address: AT+SZ_DHCP=DISABLE/r/n

7、AT+SZ_IP_DEFAULT=

It is valid when not using DHCP. It is for giving shuncom WIFI module a fixed IP address. Add the IP address behind “=”, for example”

If the fixed IP is 192.168.1.123: AT+SZ_IP_DEFAULT=192.168.0.123/r/n

8、AT+SZ_MASK_DEFAULT=

This command is for giving the shuncom WIFI module a fixed subnet mask when not using DHCP, Add the subnet mask behind "=", for example"

If fixed subnet mask is 255.255.255.0: AT+SZ_MASK_DEFAULT=255.255.255.0/r/n

9、AT+SZ_GATE_DEFAULT=

It is valid when not using DHCP. It is for giving the shuncom WIFI module a fixed gateway address. Add the gateway address behind "=", for example:

If fixed gateway address is 192.168.1.1: AT+SZ_GATE_DEFAULT=192.168.1.1/r/n

10、AT+SZ_DNS_DEFAULT=

It is valid when not using DHCP. It is for giving the shuncom WIFI module a fixed DNS server. Add the DNS server behind "=", for example

If DNS server is 192.168.1.1: AT+SZ_DNS_DEFAULT=192.168.1.1/r/n

11、AT+SZ_TCPUDP_MODEL=

It is for setting work protocol type, can add TCP or UDP behind "="

TCP protocol work: AT+SZ_TCPUDP_MODEL=TCP/r/n

UDP protocol work: AT+SZ_TCPUDP_MODEL=UDP/r/n

12、AT+SZ_S_C_MODEL=

It is for configuring connection form. Adding SERVER and CLIENT behind "=" which respectively represent the module to be server or client.

As server: AT+SZ_S_C_MODEL=SERVER/r/n

As client: AT+SZ_S_C_MODEL=CLIENT/r/n

13、AT+SZ_TCP_SERVER_IP=

when wifi module as client, this command is valid to set IP address for connecting the server. Add IP address behind "="

If server IP address is 192.168.1.100:

AT+SZ_TCP_SERVER_IP=192.168.1.100/r/n

14、AT+SZ_S_C_PORT=

It is for connecting port number, add port number behind "=", port number could be from 0 to 65535

If TCP connected port number is 12345: AT+SZ_S_C_PORT=12345/r/n

15、AT+SZ_BAUDRATE=

Configuring serial baud rate, add the baud rate behind "=", in theory, baud rate could be set from 76 to 20M

If configure baud rate to be 19200bps: AT+SZ_BAUDRATE=19200/r/n

16、 AT+SZ_UARTDATA_BIT=

Configuring serial data bit, add data bit behind “=”.data bit could be 8 bit or 9 bit, for example:

If Set the data bit to be 8: AT+SZ_UARTDATA_BIT=8/r/n

17、 AT+SZ_UARTDATA_CHECK=

Set the parity bit, add ODD,EVEN or NONE, for example:

Set the serial to be ODD parity: AT+SZ_UARTDATA_CHECK=ODD/r/n

Set the serial to be EVEN parity; AT+SZ_UARTDATA_CHECK=EVEN/r/n

Set the serial to be NONE parity: AT+SZ_UARTDATA_CHECK=/r/n

18、 AT+SZ_UARTDATA_STOPBIT=

Configuring serial stop bit, add 1 or 2 behind “=”, respectively represent 1 stop bit or 2 stop bit

Set 1 stop bit: AT+SZ_UARTDATA_STOPBIT=1/r/n

Set 2 stop bit: AT+SZ_UARTDATA_STOPBIT=2/r/n

19、 AT+SZ_DATELENGTH=

Set data length on the mode of serial transparent transmission. Add 0 to 256 behind “=”.if the data from serial is bigger or the equal to the data length, the serial will send out the data. For example:

Setting the data length to be 0: AT+SZ_DATELENGTH=0/r/n

Setting the data length to be 256: AT+SZ_DATELENGTH=256/r/n

20、 AT+SZ_DATETIMEOUT=

Setting the data time, add any time behind “=”, the unit time is millisecond .for example:

Setting the data time to be 0: AT+SZ_DATETIMEOUT=0/r/n

Setting the data time to be 5 second: AT+SZ_DATETIMEOUT=5000/r/n

21、 AT+SZ_WEBUSERNAME=

It is for setting user name of WEB, add new user’s name behind “=”. For example:

Set WEB user name to be admin: AT+SZ_WEBUSERNAME=admin/r/n

22、 AT+SZ_WEBPASSWORD=

It is for setting the WEB password, add new password behind “=”

If set WEB password to be shuncom: AT+SZ_WEBPASSWORD=shuncom/r/n

23、 AT+SZ_SAVE_CONFIG=SAVE/r/n

This command is for saving configuration. After finishing configuration, enter this AT command for saving all of the above configured parameters. Module will be reset by itself.

If change a part of commands, make sure that input this command as saving, other parameters which not change will be keep the original configuration.

Notes: This AT command not only support single command to change but also support parts of commands to change. After a new configuration each time, it must input **AT+SZ_SAVE_CONFIG=SAVE/r/n** to save all previous configuration.

The following AT command is the query command:

24、AT+SZ_CHECKCONFIG=ALL/r/n

This command query all the save parameters in configuration mode, all the saved parameters will be output from the serial port. The output format as follows:

At original state, enter the configuration mode, input the above command, the parameters from Serial ports output are as follows:

```
NetworkType:ADHOC
SSID:SHUNCOM_hoc
Security:OPEN
Key_Mode:HEX
Key_Index:1
KEY:
DHCP:DIENABLE
IP_address:169.254.1.1
Gateway_address:169.254.1.1
Subnet_mask:255.255.0.0
DNS_server:169.254.1.1
TCPUDP_Mode:TCP
SC_Mode:Client
Server_IP:169.254.1.1
Port:12345
Baudrate:19200
Uartdata_Check:None
Uartdata_Bit:8
Uartdata_Stopbit:1
Uartdata_Long:256
Uartdata_Timeout:10
Web_Username:admin
Web_Password:shuncom
```

The following **AT command** is the signal query of the command **AT+SZ_CHECKCONFIG=ALL/r/n**

25、AT+SZ_CHECKCONFIG=NETWORKTYPE/r/n

This command query network type in the mode of configuration, network parameters will be output from the serial port as follows:

NetworkType:ADHOC

26、AT+SZ_CHECKCONFIG=SSID/r/n

This command query the parameters of network name in configuration mode, network name parameters will be output from the serial port as follows:

SSID:SHUNCOM_hoc

27、AT+SZ_CHECKCONFIG=SECURITY/r/n

This command query security mode in the mode of configuration, security mode parameters will be output from the serial port as follows:

Security:OPEN

28、AT+SZ_CHECKCONFIG=KEY_MODE/r/n

This command query encryption key parameters in configuration mode, encryption key parameters will be output from the serial port as follows:

Key_Mode:HEX

29、AT+SZ_CHECKCONFIG=KEY_INDEX/r/n

This command query encryption key index parameters in the mode of configuration, encryption key index parameters will be output from the serial port as follows:

Key_Index:1

30、AT+SZ_CHECKCONFIG=KEY/r/n

This command query encryption key parameters in the mode of configuration. Encryption key parameters will be output from the serial port as follows:

KEY:

31、AT+SZ_CHECKCONFIG=DHCP/r/n

This command query DHCP function in configuration mode, DHCP function

parameters will be output from the serial port as follows:

DHCP: DISENABLE

32、AT+SZ_CHECKCONFIG=IPADD/r/n

This command is to query IP address parameters in configuration mode , IP address parameters will be output from the serial port as follows:

IP_address:169.254.1.1

33、AT+SZ_CHECKCONFIG=GATEADD/r/n

This command query gateway parameters in configuration mode, gateway parameters will be output from the serial port as follows:

Gateway_address:169.254.1.1

34、AT+SZ_CHECKCONFIG=MASKADD/r/n

This command query subnet mask parameters in configuration mode, subnet mask parameters will be output from the serial port as follows:

Subnet_mask:255.255.0.0

35、AT+SZ_CHECKCONFIG=DNSADD/r/n

This command query DNS server parameters in configuration mode, DNS server parameters will be output from the serial port as follows:

DNS_server:169.254.1.1

36、AT+SZ_CHECKCONFIG=TCPUDP/r/n

This command query work protocol parameters in configuration mode, work protocol parameters will be output from the serial port as follows:

TCPUDP_Mode:TCP

37、AT+SZ_CHECKCONFIG=SC/r/n

This command query connection mode parameters in configuration mode. Connection mode parameters will be output from the serial port as follows:

SC_Mode:Client

38、AT+SZ_CHECKCONFIG=SERVER_IP/r/n

This command queries sever IP address parameters in configuration mode, server IP address parameters will be output from the serial port as follows:

Server_IP:169.254.1.8

39、 AT+SZ_CHECKCONFIG=SC_PORT/r/n

This command query port number parameters in configuration mode, port number parameters will be output from the serial port as follows:

Port:12345

40、 AT+SZ_CHECKCONFIG=BAUDRATE/r/n

This command query baud rate parameters in configuration mode, baud rate parameters will be output from the serial port as follows:

Baudrate:19200

41、 AT+SZ_CHECKCONFIG=UARTDATA_CHECK/r/n

This command query parity parameters in configuration mode, parity parameters will be output from the serial port as follows:

Uartdata_Check:None

42、 AT+SZ_CHECKCONFIG=UARTDATA_BIT/r/n

This command query data bit parameters in configuration mode, data bit parameters will be output from the serial port as follows:

Uartdata_Bit:8

43、 AT+SZ_CHECKCONFIG=UARTDATA_STOPBIT/r/n

This command query stop bit parameters in configuration mode, stop bit parameters will be output from the serial port as follows:

Uartdata_Stopbit:1

44、 AT+SZ_CHECKCONFIG=UARTDATA_LONG/r/n

This command query data length parameters in configuration mode, frame length parameters will be output from the serial port as follows:

Uartdata_Long:256

45、 AT+SZ_CHECKCONFIG=UARTDATA_TIMEOUT/r/n

This command query data timeout parameters in configuration mode, frame timeout parameters will be output from the serial port as follows:

Uartdata_Timeout:10

46、 AT+SZ_CHECKCONFIG=WEB_USERNAME/r/n

This command query WEB user name parameters in configuration mode. WEB user parameters will be output from the serial port as follows:

Web_Username:admin

47、 AT+SZ_CHECKCONFIG=WEB_PASSWORD/r/n

This command query embedded WEB password parameter in configuration mode, embedded WEB password parameter will be output from the serial port as follows:

Web_Password:shuncom

Part 8 Assistant Tool

8.1 Summary

Shuncom WIFI module has our own special configuration tool to configuration and remote data connection test. All tools we will be sent with the WIFI module, or you can visit our company web or consult our customer service to obtain. We advice you'd better use Shuncom configuration tools to configure your device parameters. Of course, you also can use your tool or third-party tool to configure. Please read relevant sections of this document carefully before configuration.

8.2 WIFI configuration tool

WIFI configuration tool ----It is helpful to configure WIFI module network parameters which include network type, communication setting, configuration parameter, network setting, work mode setting and so on.

8.3 Network Assistant Tool

Network Assistant Tool ---- It is for as server center to send and receive data.

8.4 Technical support

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