



IR300 Series of Industrial Routers Quick Installation Manual

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Overview

This manual is for the installation and operation of IR300 series routers of InHand Network Company. InHand makes every effort to provide accurate information in this manual, but InHand does not guarantee that there is no error in the manual. All statements, information and recommendations in this manual do not constitute any expressed or implied warranty.

Please confirm the product model and packaging accessories (power terminal, antenna). Please purchase SIM cards from local network operators.

I. Packing list

Each IR300 product includes common accessories (such as standard accessories list), please check carefully, when you receive our products. Please contact the sales staff of InHand, if there is any missing or damage.

In addition, according to different site characteristics, InHand can provide customers with optional accessories. For details, please refer to the list of optional accessories.

Standard Accessories

Accessories	Unit	Description
IR 300	1	IR300 series industrial 4G router/routers
Hanging ear	1	Fixed router
Power terminal	1	2-pin Green Power Terminal
Ethernet cable	1	1.5 m Ethernet cable
Antenna	1	3G /4G antenna
Product warranty card	1	Warranty period 1 year
Certificate of approval	1	IR 300 series industrial 4 G router certification

Optional accessories

Accessories	Unit	Description
Power supply	1	VDC power adapter
Antenna	1	WiFi antenna
Equipment slippery course	1	Fixed router

II. Panel Introduction and Structural Size

2.1 Panel Introduction

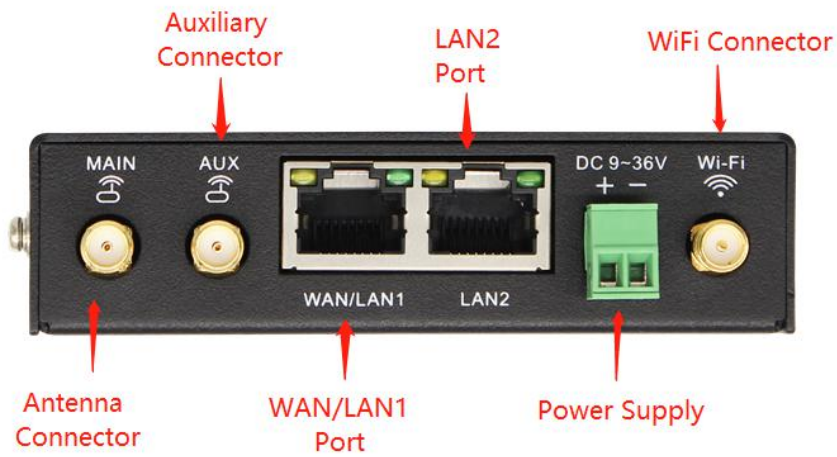


Figure 2-1 Equipment Panel

2.2 Structural Size

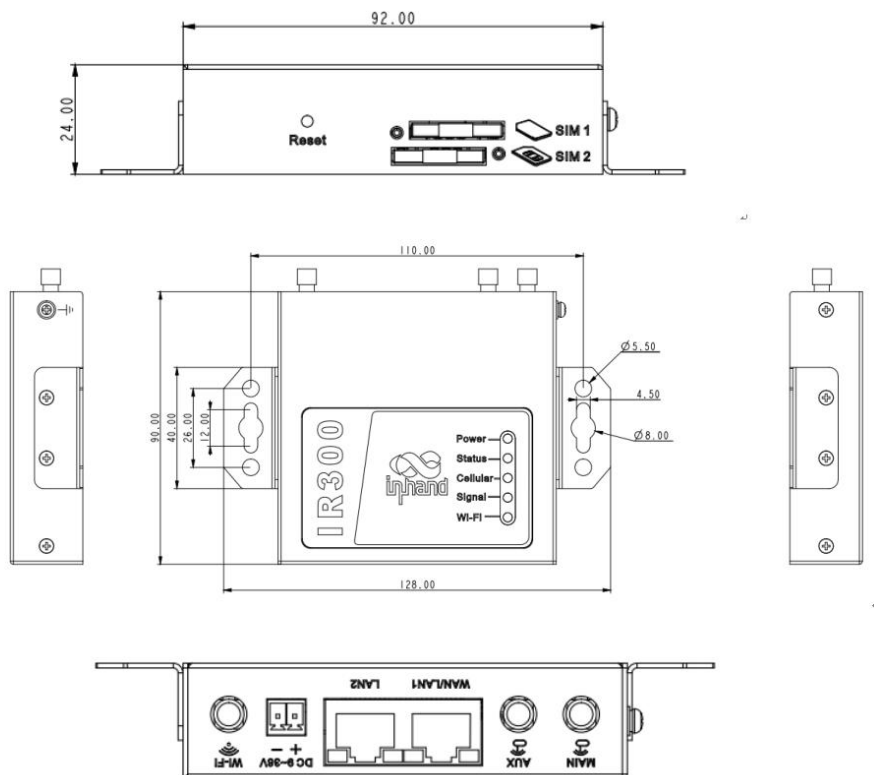


Figure 2-2 Equipment Structure

III. Installation of Wireless Routers

Precautions for installation:

- Power requirements :12v DC (9~36 v DC), please pay attention to the power voltage levell; rated current is 0.2~0.22 A.
- environmental requirements: working temperature-20°C~70°C, storage temperature-40°C~85°C, relative humidity 5%~95%(no frosting), equipment surface may be high temperature, installation needs to consider the surrounding environment, should be installed in the restricted area
- Avoid direct sunlight, away from heat sources or areas with strong electromagnetic interference
- Routers support wall hanging & Slippy course installation
- Check for cables and connectors required for installation

3.1 Slippy Course Installation and Disassembly

3.1.1 Slippy Course Installation

The steps are as follows:

Step 1: Select the installation location of the device and make sure there is enough space.

Step 2: Tilt the equipment to the right 45°, so that the upper part of the DIN rail seat is stuck on the DIN rail, holding the lower end of the equipment, up slightly to rotate the equipment, the DIN rail seat can be stuck on the DIN rail. Verify that the equipment is fixed on DIN rail



Figure 3-1-1 Slippy Course Installation

3.1.2 Slippy Course Disassembly

The steps are as follows:

Step 1: Hold the bottom end of the equipment with one hand and the top end of the slippy course side with the other hand, push lower end of the device to leave the DIN rail.

Step 2: Turn the equipment clockwise and lift the equipment, removed the equipment from the DIN rail

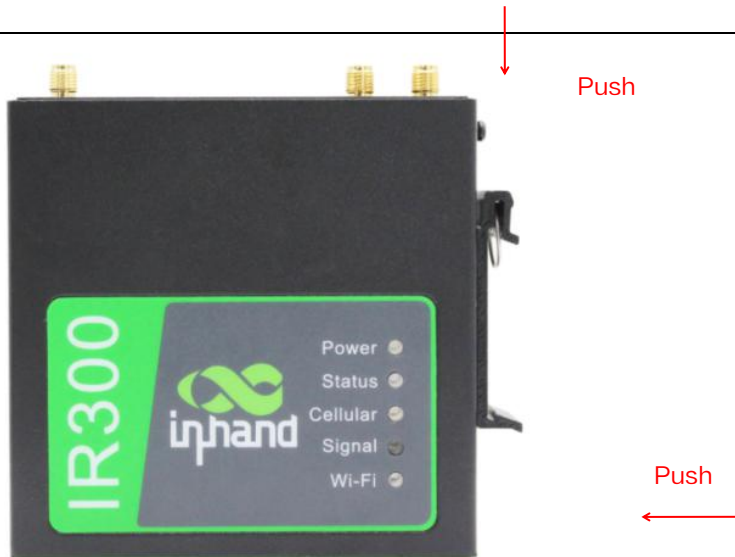


Figure 3-1-2 Slippery Course Disassembly

3.2 Wall Hanging Installation and Disassembly

3.2.1 Wall Hanging Installation

The steps are as follows:

Step 1: Fix the hanging ear to both sides of the device with screws

Step 2: Fix the hanging ear to the wall with screws.



Figure .3-2-1 Wall Hanging Installation

3.2.2 Wall Hanging Disassembly

Use one hand to hold the device and the other hand to remove the screws with screwdriver, remove device

from the fixed position

3.3 SIM Card Installation

IR300 support dual SIM card, hold down SIM pop-up button will pop up the card holder, load the SIM card



Figure 3-3 SIM Card Installation

3.4 Antenna Installation

Rotate the metal interface clockwise until the movable part can not be rotated, do not hold the black glue stick to twist the antenna.



Figure 3-4-a Glue Stick Antenna Installation



Figure 3-4-b Chuck Antenna Installation



IR300 support dual antennas, ANT antenna and AUX antenna. The ANT antenna is the antenna which receives and transmits data, AUX antenna can only enhance the antenna signal degree and can not receive and send data, so it can't be used alone. Generally, only use ANT antenna. According to the requirements of the local certification institution, the North American model needs to be equipped with dual antennas.

3.5 Power Installation

The steps are as follows:

Step 1: Remove power terminal from router;

Step 2: Unscrew the locking screw on the power terminal;

Step 3: Insert the power cable into the terminal and lock the screws



Figure 3-5 Power Supply Installation

3.6 Ground Installation

The steps are as follows:

Step 1: Unscrew the ground nut;

Step 2: Put the grounding ring of the cabinet ground wire into the ground stud;

Step 3: Tighten the ground nut.



Attention

In order to improve the anti-jamming ability of the router, the router must be grounded when it is used, and the ground wire is connected to the grounding stud of the router according to the actual use environment.

IV. Quick access to Internet

The device supports three ways of accessing the Internet: Wired, Cellular Dial-Up, WiFi

note: when the device does not use Cellular Dial-up access, the "dial-up interface" must be disabled, otherwise the device cycle dial-up to the maximum number, it will lead to device restart, network business interruption.

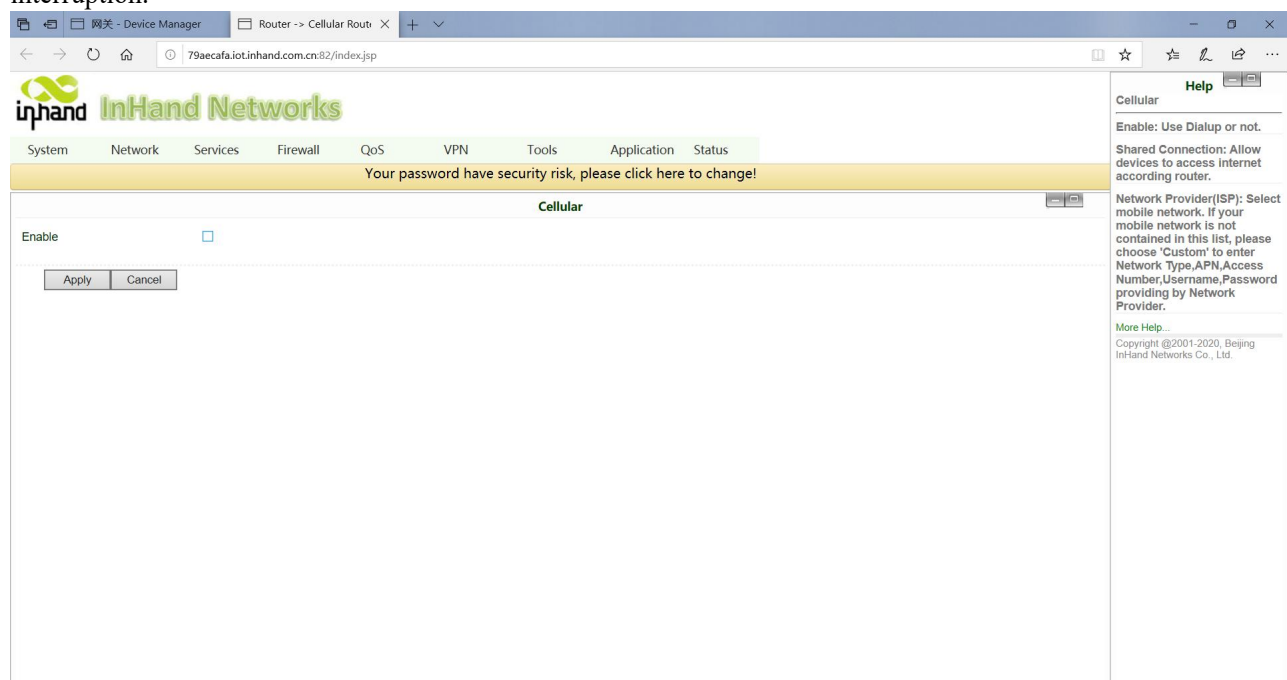


Figure 4 Disable Cellular Dial-Up

4.1 Wired to Internet

Step 1: Plug in the power cord and network cable according to the diagram, connect WAN port to the Internet, connect LAN2 port to PC.



Figure 4-1 Ethernet Connection

Step 2: Set the PC in the same network segment as the ip address of gateway device.

Method 1: DHCP automatically get the address (Recommended)

Method 2: Use fixed IP address, set the PC and gateway in the same address segment
(DHCP Server for LAN2 Port is default enabled)

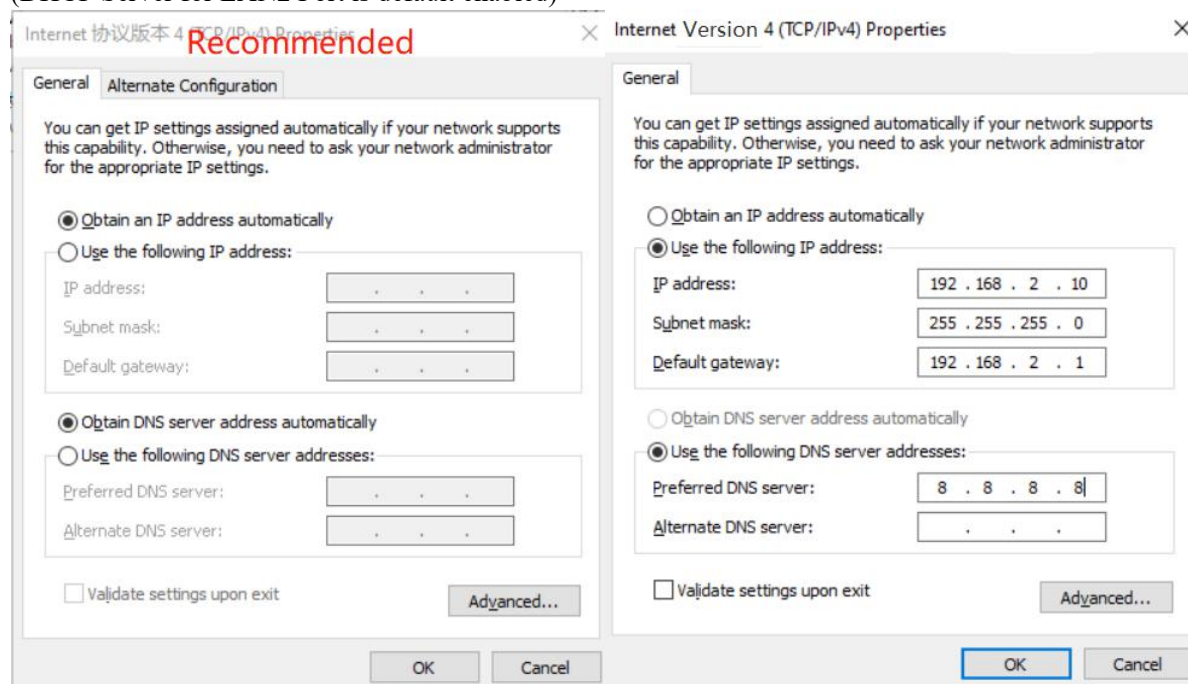


Figure 4-1-2 Dynamic acquisition/manual Configuration

PC only needs to configure the IP address to any value in:

“192.168.2.2~192.168.2.254”

The gateway is set to: “192.168.2.1”, the subnet mask is: “255.255.255.0”

The DNS is configured to “operator DNS server address”.

Step 3: Input the device default address 192.168.2.1 in the browser, enter the device Web page management

(If the page indicates that the page is not secure, open hidden or advanced, select continue to go)

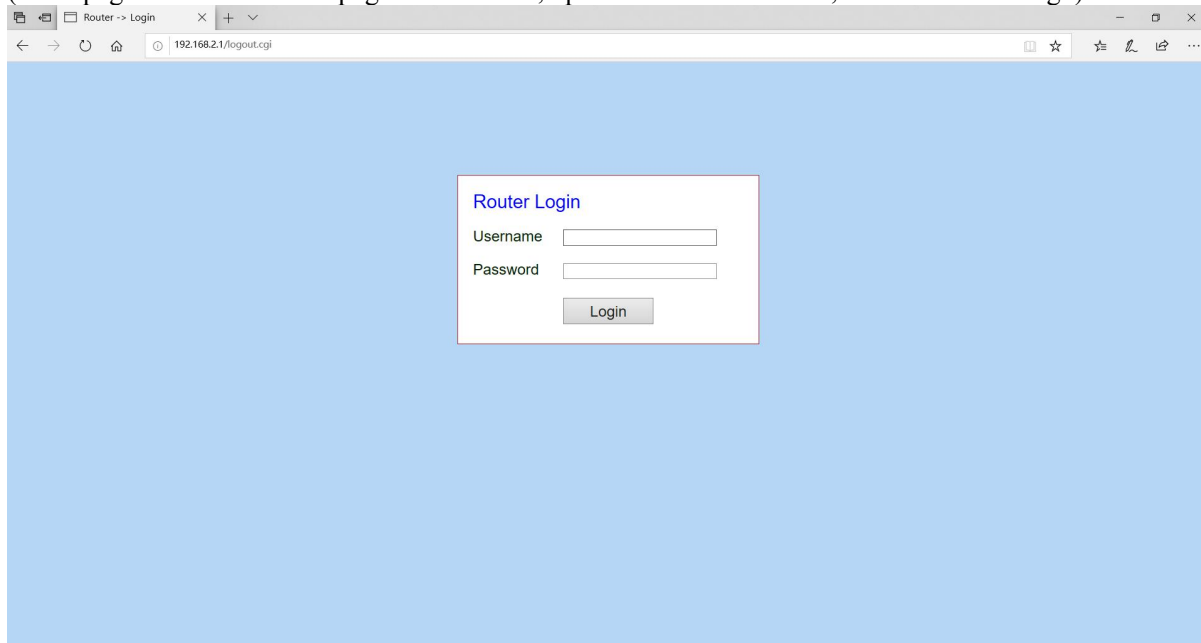


Figure 4-1-3 Login WEB Page Management

Step 4: Configuration WAN port, click on the navigation bar "Network >>WAN/LAN Switch", select WAN mode to configure IP address of Wan port, so that the device can access to the Internet..

(Make sure the interface is in WAN mode, initial default LAN mode)

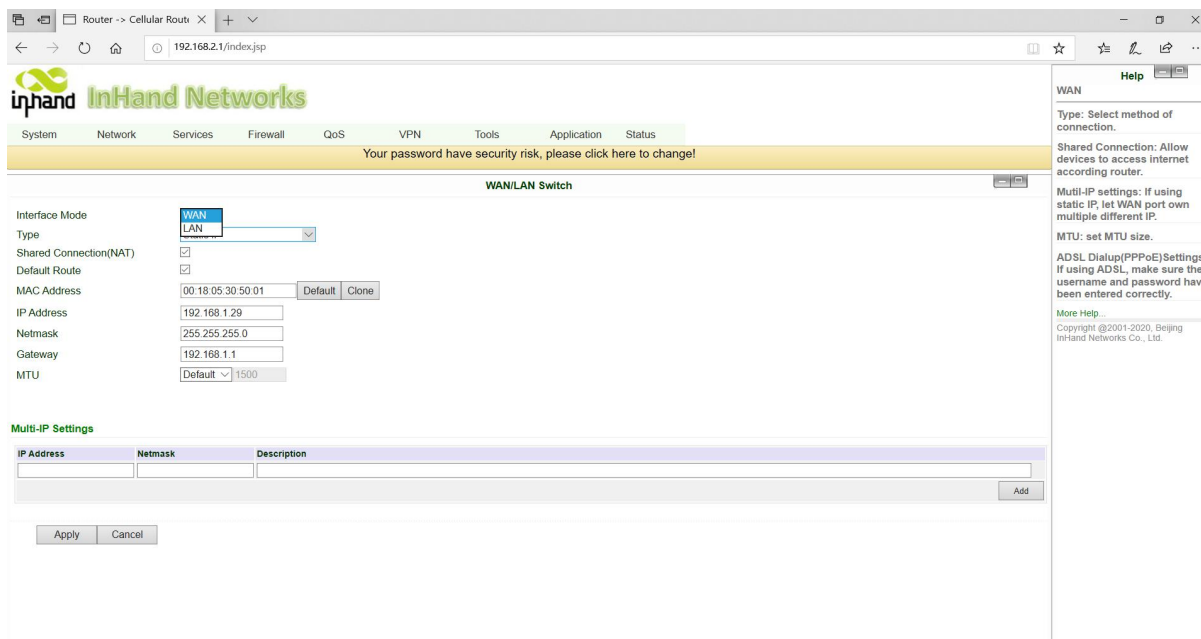
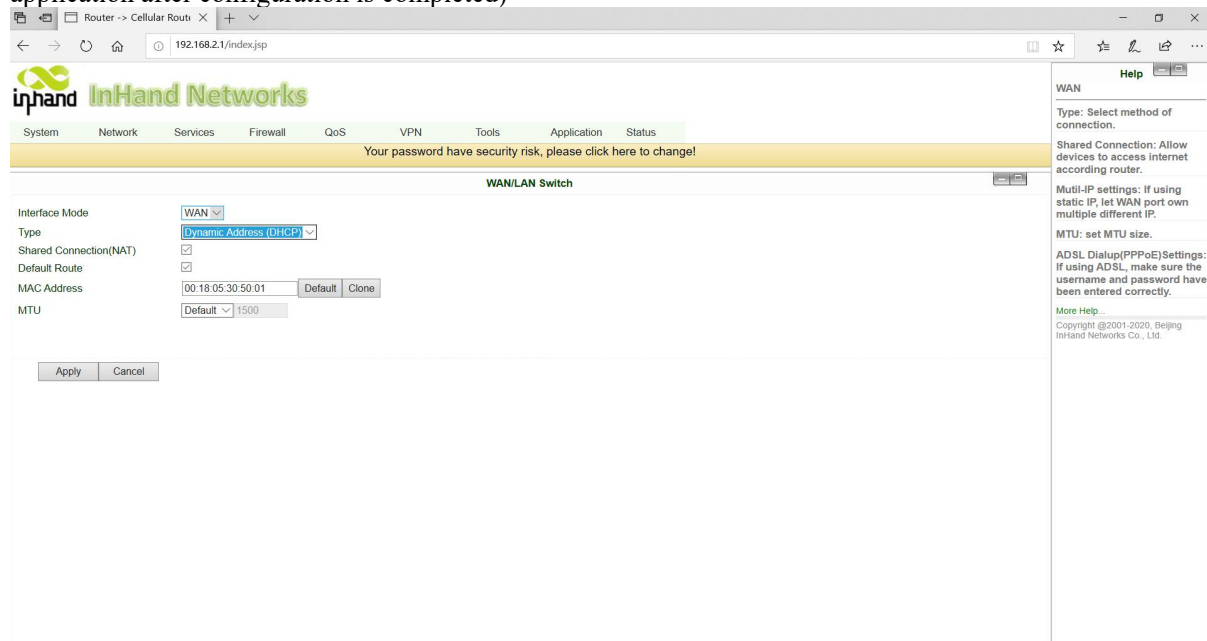


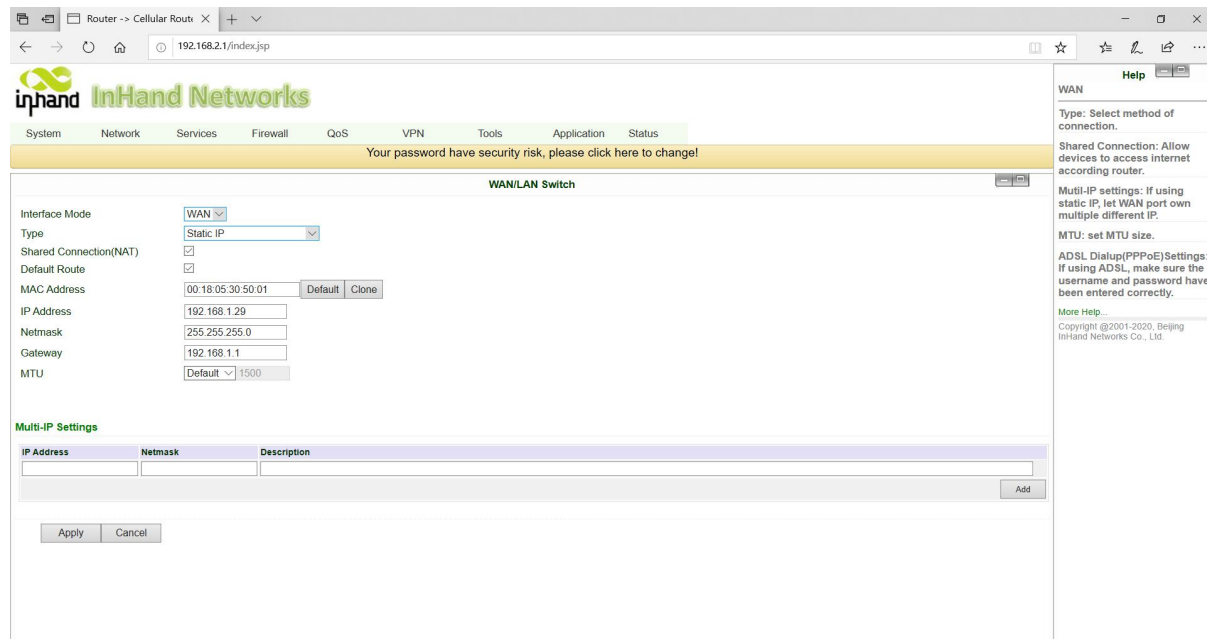
Figure 4-1-4 WAN Port Setup

Step 5: Three ways to assign address, dynamic DHCP(recommended), static address, ADSL dial (click application after configuration is completed)



The screenshot shows the InHand Networks web interface for configuring the WAN interface. The browser address bar shows '192.168.2.1/index.jsp'. The interface has a top navigation bar with tabs: System, Network, Services, Firewall, QoS, VPN, Tools, Application, and Status. A yellow warning banner states: 'Your password have security risk, please click here to change!'. The main content area is titled 'WAN/LAN Switch'. Under 'Interface Mode', 'WAN' is selected. Under 'Type', 'Dynamic Address (DHCP)' is selected. Other settings include 'Shared Connection(NAT)' checked, 'Default Route' checked, 'MAC Address' as '00:18:05:30:50:01' with 'Default' and 'Clone' buttons, and 'MTU' set to 'Default' (1500). There are 'Apply' and 'Cancel' buttons at the bottom. A right-hand sidebar contains a 'Help' section with information about WAN settings, including a note about Multi-IP settings and ADSL Dialup(PPPoE) settings.

Figure 4-1-4-a Dynamic Ip Configure of WAN



The screenshot shows the InHand Networks web interface for configuring the WAN interface with a static IP. The browser address bar shows '192.168.2.1/index.jsp'. The interface is similar to the previous one, but the 'Type' is set to 'Static IP'. The 'IP Address' field is filled with '192.168.1.29', 'Netmask' with '255.255.255.0', and 'Gateway' with '192.168.1.1'. The 'MAC Address' remains '00:18:05:30:50:01'. Below the main settings, there is a 'Multi-IP Settings' section with a table for adding multiple IP addresses. The table has columns for 'IP Address', 'Netmask', and 'Description'. There is an 'Add' button at the bottom right of the table. 'Apply' and 'Cancel' buttons are at the bottom of the page. The right-hand sidebar contains the same 'Help' section as in the previous screenshot.

Figure 4-1-4-b Static Ip Configuration of WAN

Router -> Cellular Rout X +

192.168.2.1/index.jsp

inhand InHand Networks

System Network Services Firewall QoS VPN Tools Application Status

Your password have security risk, please click here to change!

WAN/LAN Switch

Interface Mode: WAN

Type: ADSL Dialup (PPPoE)

Shared Connection(NAT): ☒

Default Route: ☒

MAC Address: 00 18 05 30 50 01 [Default] [Clone]

MTU: Default 1492

ADSL Dialup (PPPoE) Settings

Username:

Password:

Static IP: ☐

Connection Mode: Always Online

Show Advanced Options: ☐

[Apply] [Cancel]

Help

WAN

Type: Select method of connection.

Shared Connection: Allow devices to access internet according router.

Multi-IP settings: If using static IP, let WAN port own multiple different IP.

MTU: set MTU size.

ADSL Dialup(PPPoE)Settings: If using ADSL, make sure the username and password have been entered correctly.

More Help

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Figure 4-1-4-c ADSL Dial-up of WAN

Step 6: Use the PING tool to verify your network connection.

Router -> Cellular Rout X +

79aecaia.inhand.com.cn:82/index.jsp

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System Network Services Firewall QoS VPN Tools Application Status

Your password have security risk, please click here to change!

PING

Host: www.cisco.com [Ping]

Ping Count: 4

Packet Size: 32 Bytes

Expert Options:

PING www.cisco.com (185.53.178.70): 32 data bytes
40 bytes from 185.53.178.70: seq=0 ttl=42 time=340.470 ms
40 bytes from 185.53.178.70: seq=1 ttl=42 time=346.131 ms
40 bytes from 185.53.178.70: seq=2 ttl=42 time=352.777 ms
40 bytes from 185.53.178.70: seq=3 ttl=42 time=360.692 ms
--- www.cisco.com ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 340.470/350.017/360.692 ms

Help

PING

More Help

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Figure 4-1-5 Ping Result Diagram

4.2 SIM Card Dial-Up

Step 1: Insert the SIM card into the slot 1 and Install 3 G/4G LTE antenna to the ANT antenna connector, then Connect the network cable and power cable, at last, power the device.



To replaced or plugged SIM Card,you must power off and restart to avoid data loss or equipment damage.

Step 2: Open the browser, login device WEB interface. (refer to 4.1 Wired to Internet >> Step1, Step2)

Step 3: Click on the navigation bar "network >>Cellular" set dial-up access parameters, the device initial default on dial-up function, wait a few minutes to access the Internet.
(if not dial-up, you can restart Cellular Service).

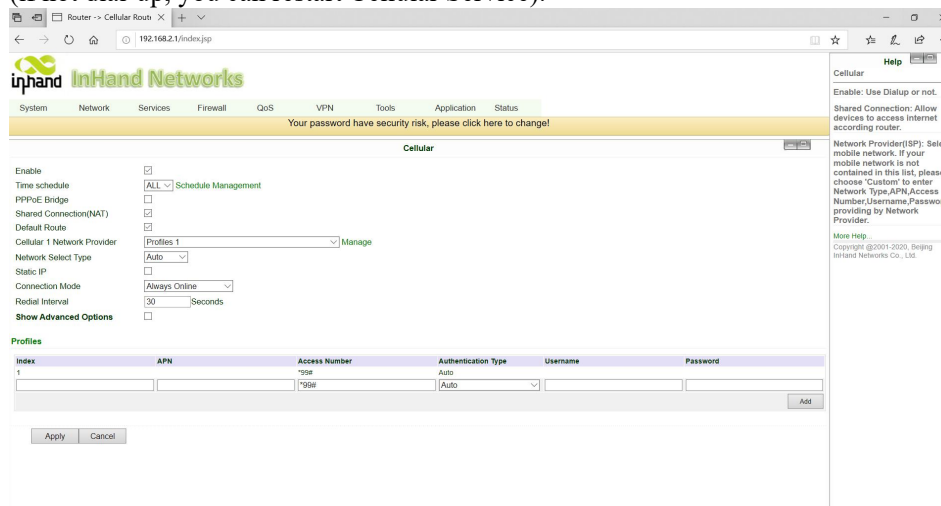


Figure 4-2-1 SIM Card Dial-Up

Step 4: The device supports dual card mode, when the SIM card insert card slot 2, need to enable dual SIM card function in advanced settings, private network dial parameters can be set in the dial parameter set, new click on the application, and then select at the cellular network operator.

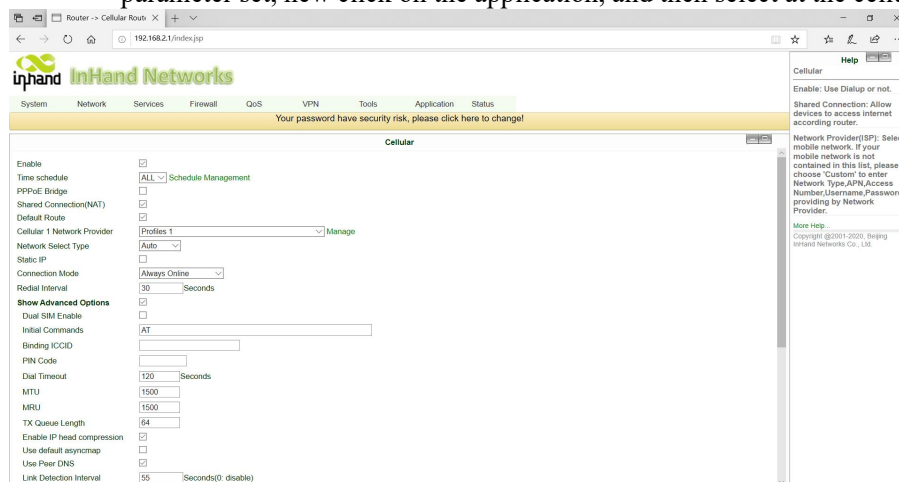


Figure 4-2-2 Dialing Parameters

Step 5: Click on the navigation bar "status >> network connection" to view the network status, showing the

connected and assigned IP address and other status, indicating that the SIM card has successfully accessed the Internet.

Cellular

Interface	Cellular 1
Connection Type	Dial-up
IP Address	10.103.60.136
Netmask	255.255.255.255
Gateway	1.1.1.3
DNS	218.6.200.139
MTU	1500
Status	Connected
Connection time	0 day,00:03:22

Figure 4-2-3 Dial-Up

4.3 WiFi to Internet

Step 1: WiFi the antenna to connect the WLAN antenna column, the network wire to the PC and insert the power supply.

(Please refer to "4.1 Wired to Internet>> Step 1, Step 2" for login WEB interface)

Step 2: Set WiFi two working modes: AP, STA.

Mode 1: AP mode (initial default mode), the device acts as a wireless access point (Access Point) radiates the wireless signal, the terminal device can be accessed through the connection AP. Ensure that the device has been connected to the Internet through the above wired, cellular dialing mode. You can Set SSID name and encryption authentication, k terminal connection password as your need.

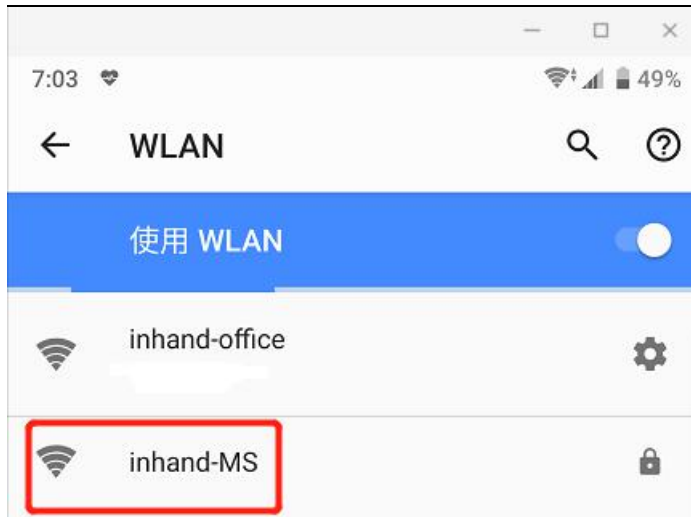


Figure 4-3-1 SSID of AP

Mode 2: STA mode means that station, device does not have the function of Internet access, it needs to connect to the AP device to provide bridges for the terminal equipment that can not connect to the AP, such as the PC device.

Step 3: Click on the navigation bar "Network >>WLAN Mode Switch" to switch the working mode to the STA, then apply and restart the device as prompted.

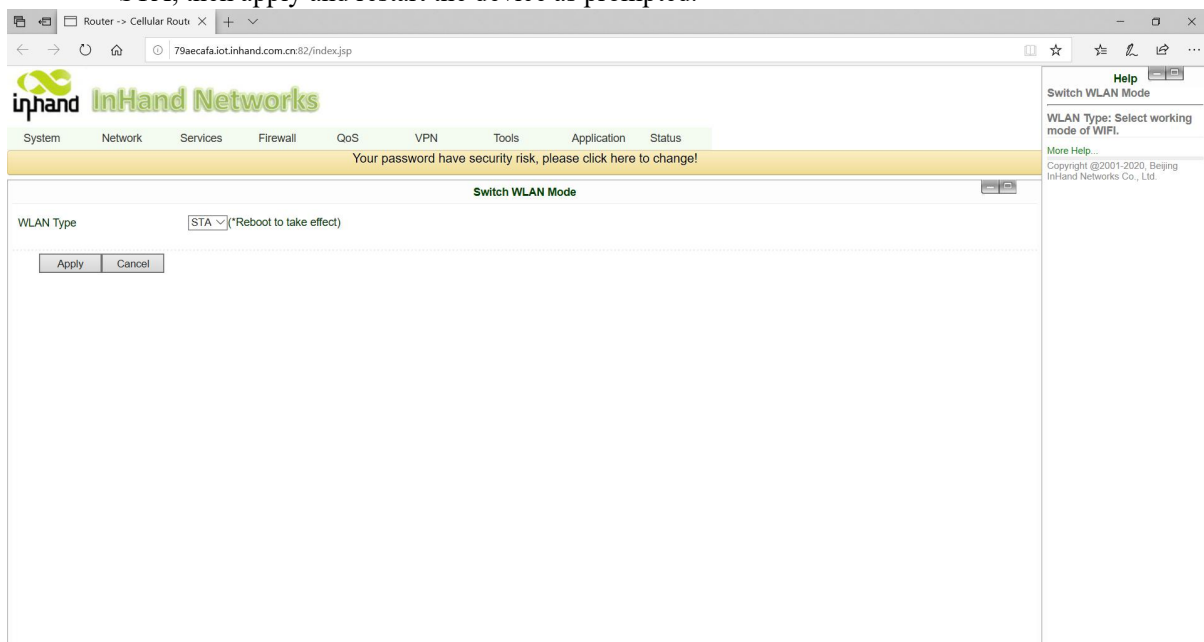


Figure 4-3-2- WLAN Mode Switch

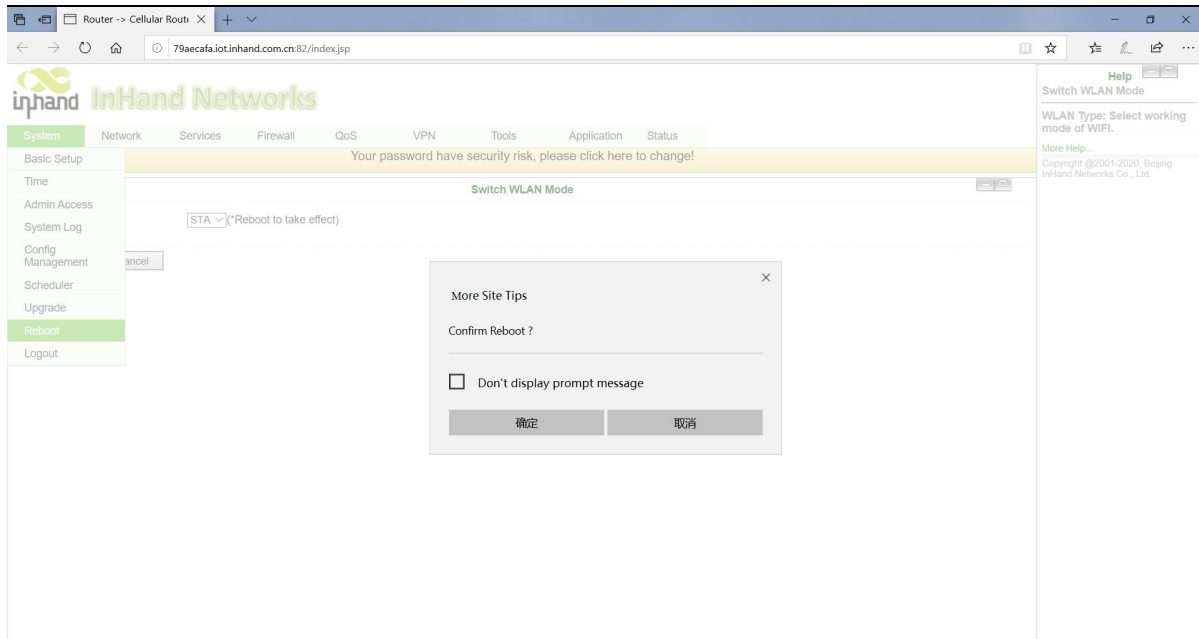


Figure 4-3-2- Reboot Device

Step 4: Click on the navigation bar "Network >>WLAN Client ", click on the scan to select the target SSID, set encryption and password.

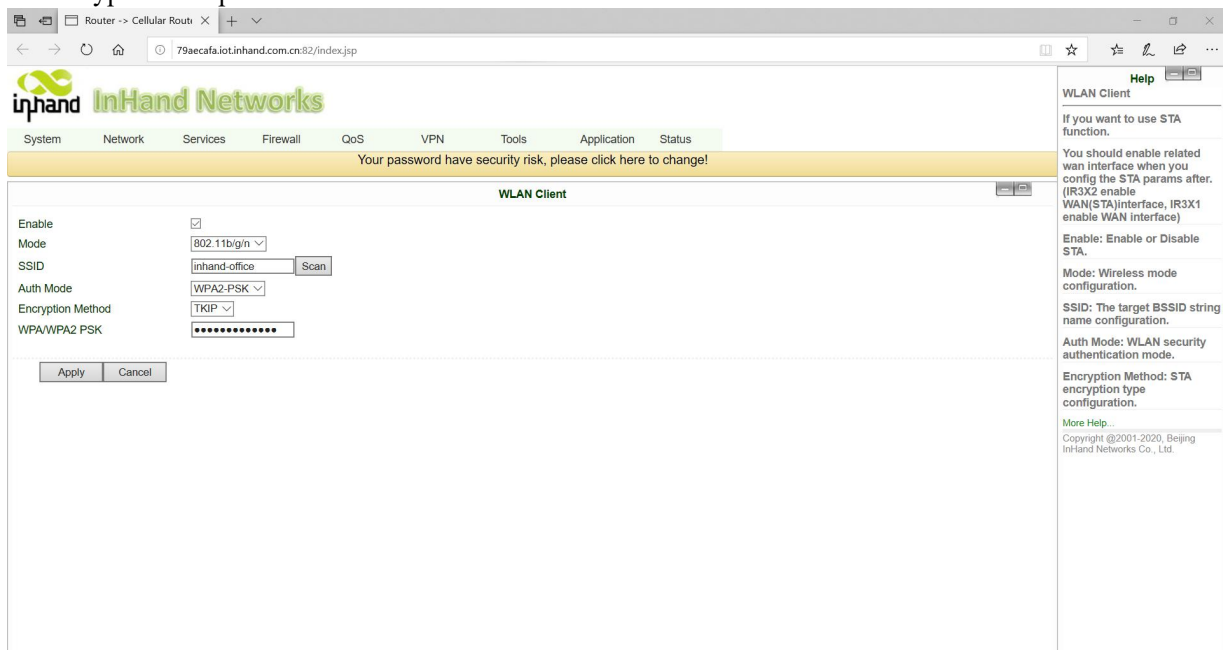


Figure 4-3-4 Selected SSID

Step 5: Click on the navigation bar "Network >>WAN (STA)", set WAN port IP parameter
 Three ways: dynamic address (recommended), static IP,ADSL dial.

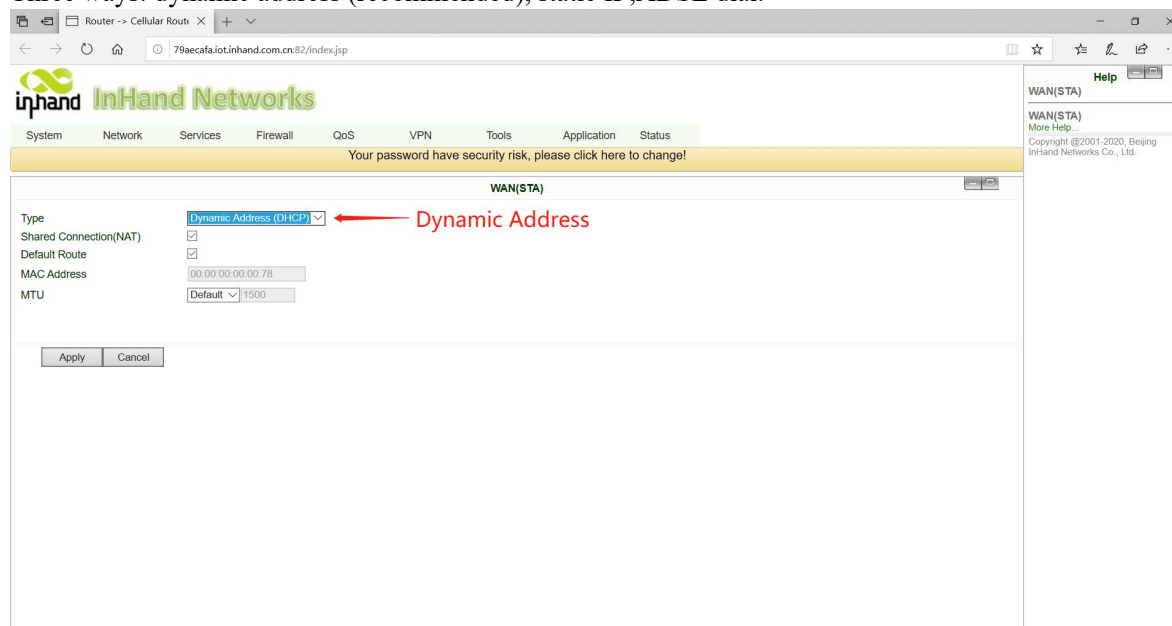


Figure 4-3-5-a Dynamic Acquisition WAN (STA) Address

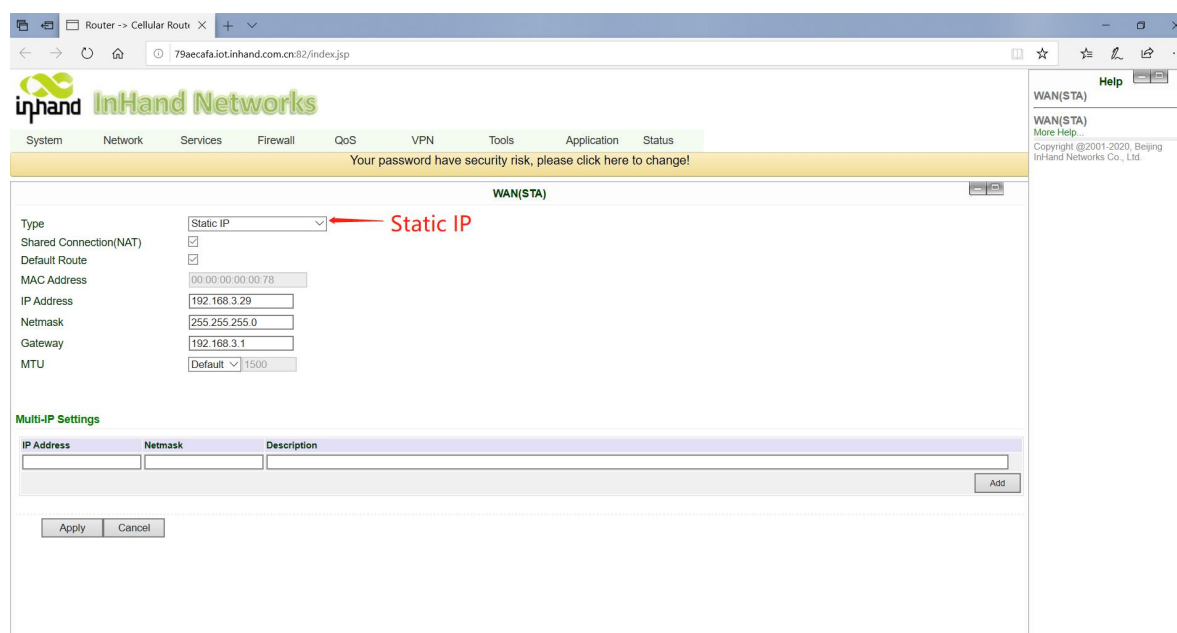


Figure 4-3-5- b Static IP Configuration of WAN (STA)

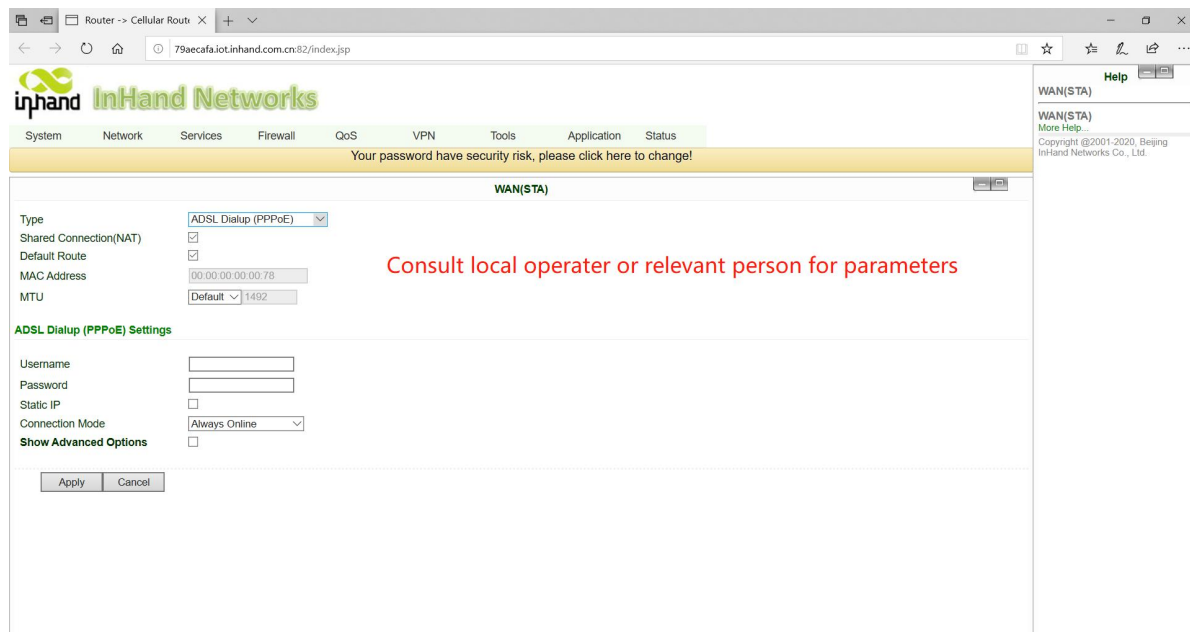


Figure 4-3-5- c ADSL Dial Configuration of WAN (STA)

Step 6: Click on the navigation bar "Status >> Network Connection" to see the connection status, if connected and get the dynamic DHCP address, it means that the device is online.

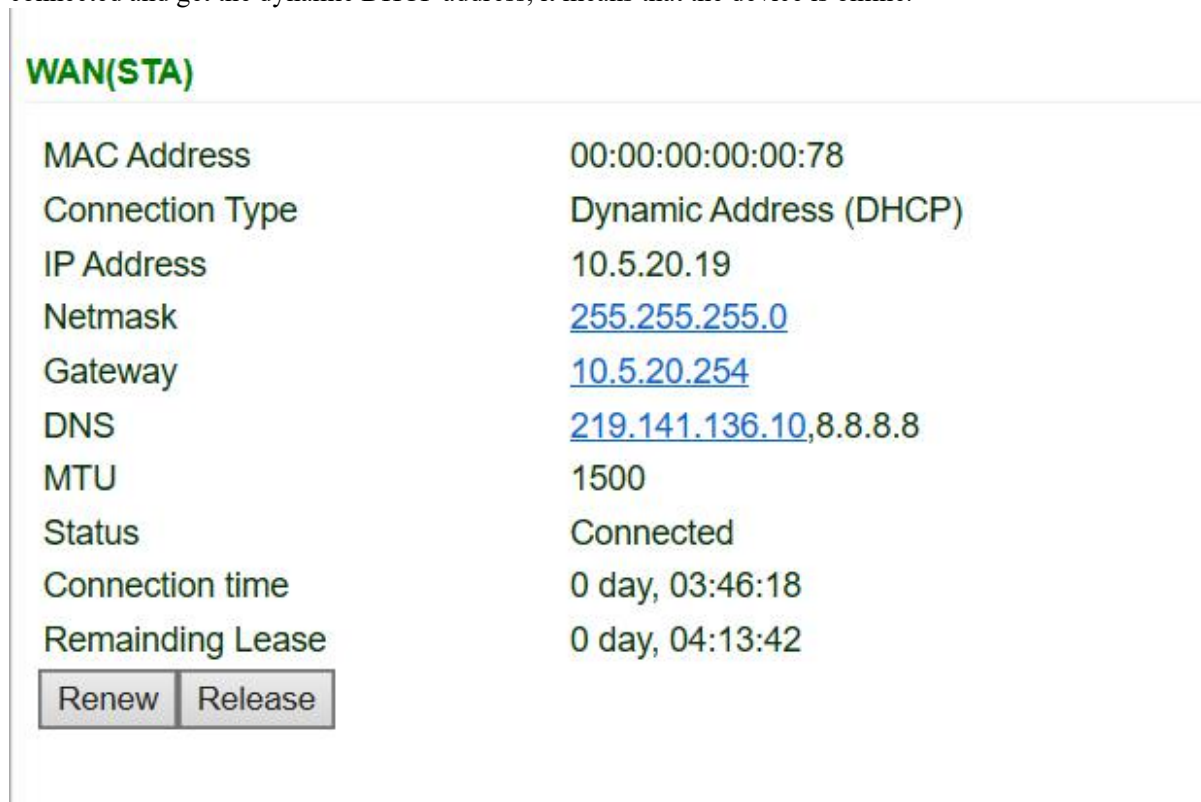


Figure 4-4-6 Schematic diagram of wireless networking results

V. DM Cloud Management Platform

5.1 Environmental Conditions

Make sure the device has been successfully accessed Internet, click on the "Service >> Device remote management platform" of the navigation menu to set up the access of DM Cloud Platform.
(Follow-up version supports user experience plan, which can automatically access Inhand Cloud Platform and enjoy efficient and convenient service)

Server address: the address of the Device Manager. The address of the Device Manager developed by InHand is as follows:

Domestic version Device Manager: **c.inhandcloud.com**

Overseas version Device Manager: **iot.inhandnetworks.com**

Domestic version InConnect: **ics.inhandiot.com**

Overseas version InConnect: **ics.inhandnetworks.com**

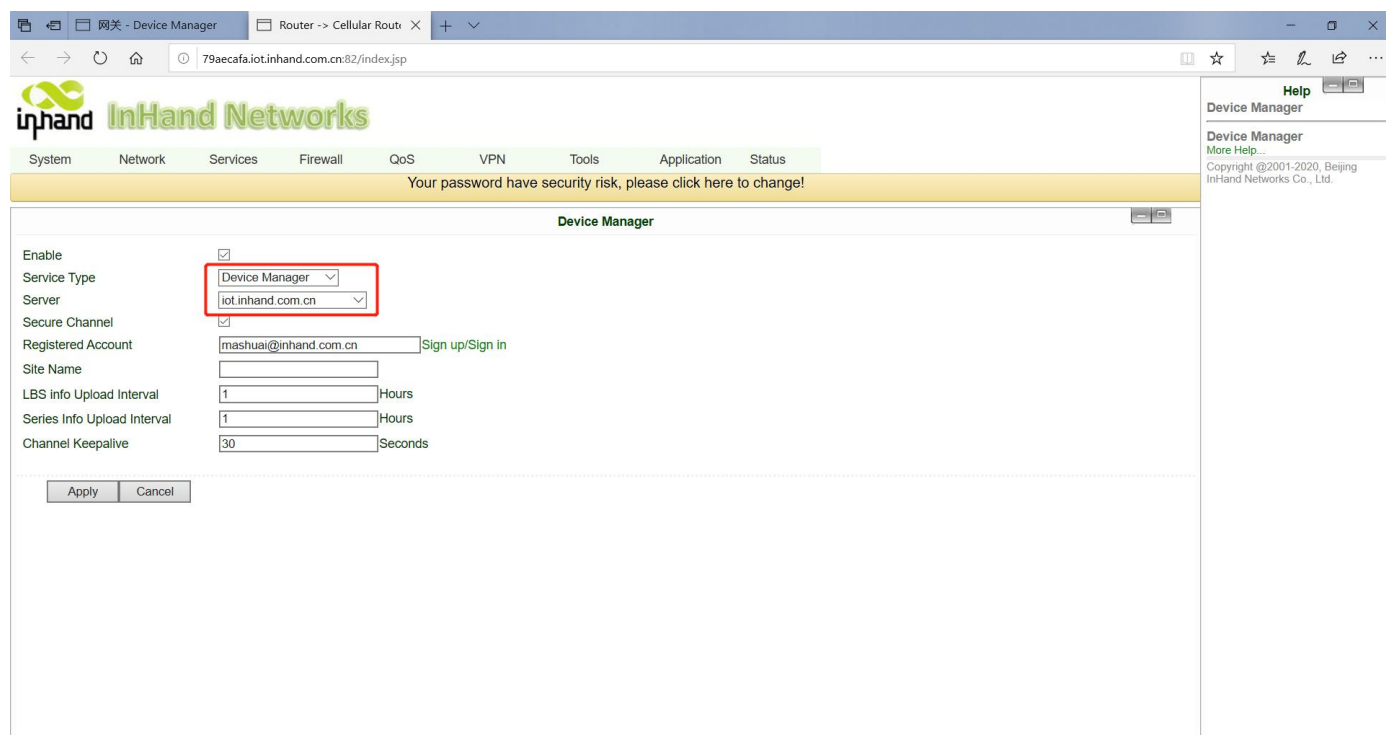


Figure 5-1 Remote Platform Configuration

5.2 Platform Account Creation

Jump to the registration/login page through the link below for user registration.

Link: <https://iot.inhandnetworks.com>.

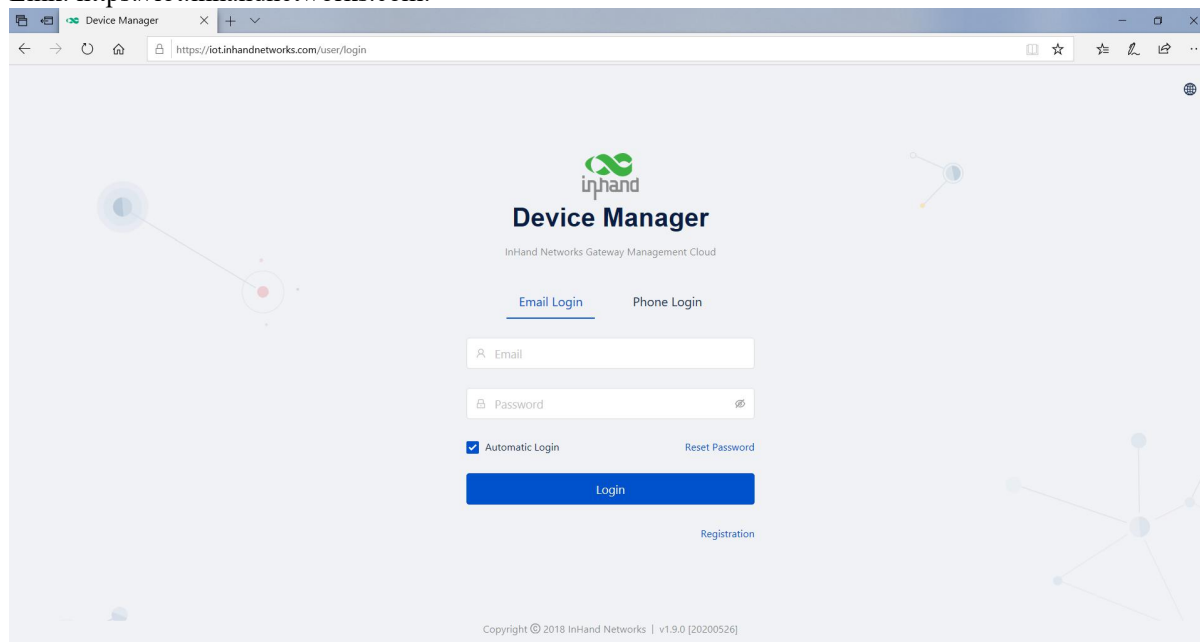


Figure 5-2 Account Registration/Login

5.3 Add Device to Platform

Login to DM platform address <https://iot.inhandnetworks.com>, click on "Gateway >> Create" menu to add device.

Name the device and fill in the serial number, the device can be added to the cloud platform.

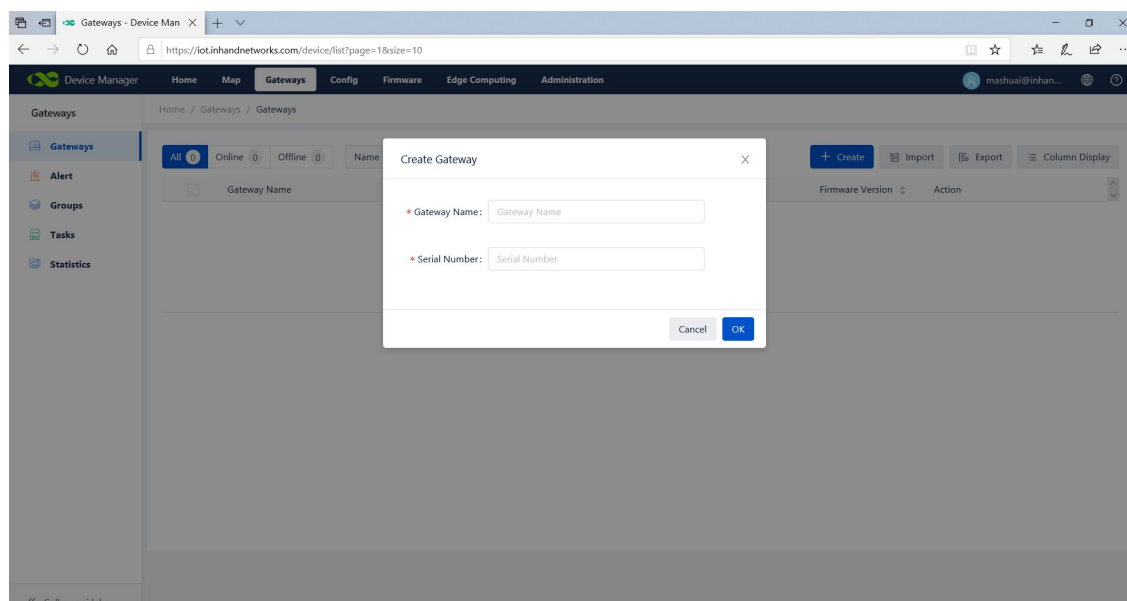


Figure 5-3- Add Device to Platform

View Serial Number Method

Click on the navigation bar "status" to view the device sequence and other basic information, or on the back of the device to view the serial number.

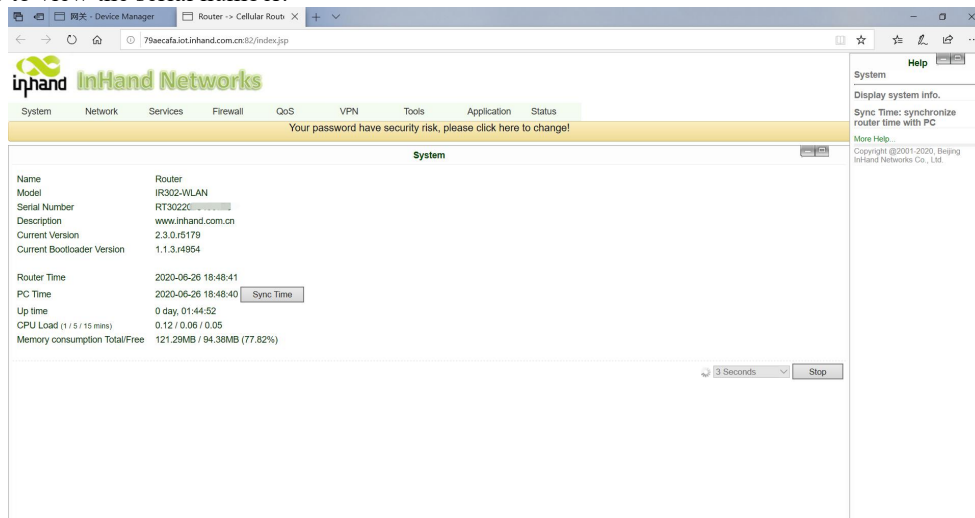


Figure 4-5-3- b Serial Number Query

VI. Quick-Use Guidance

6.1 Restore Factory Setting

6.1.1 Web Setting

Login to the WEB page, click on the "System>> Configuration Management" menu in the navigation tree to enter the "configuration management" interface. Click the "restore factory settings" button to determine the recovery of the factory after the configuration, restart the system, restore factory success.

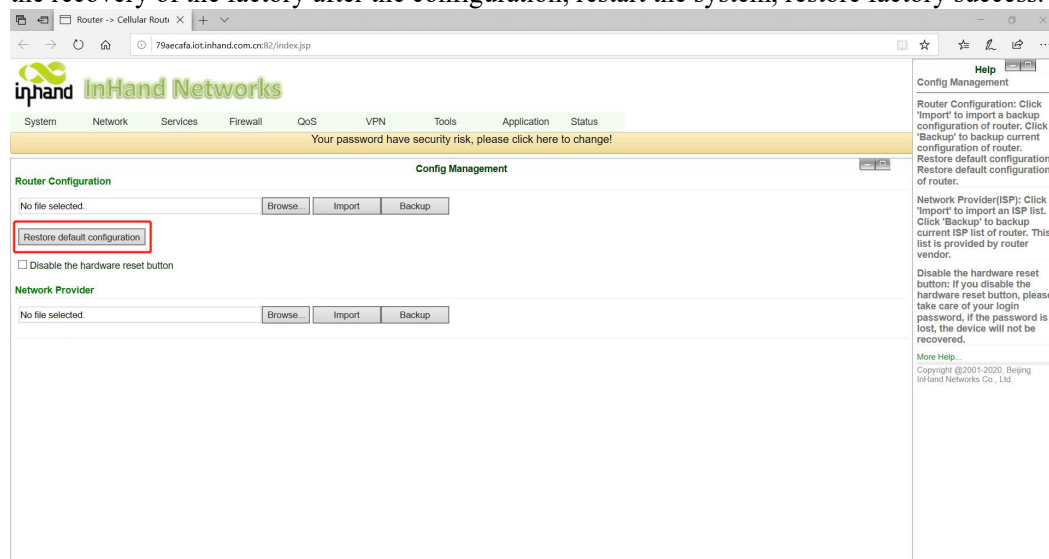


Figure 6-1-1 Restore Factory Settings

6.1.2 Hardware Restored

Steps:

Step 1: Find the RESET reset key on the device panel.

Step 2: Hold down the RESET key for 10 seconds.

Step 3: When you see the Status light on, release the RESET key;

Step 4: After a few seconds when the Status lights go out, then re-hold the RESET key not release;

Step 5: When you see the Status light flashing release the RESET key, indicating that the recovery factory settings are successful.

6.2 Import/Export Configuration

Login to the WEB page, click on the "System>> Configuration Management" menu in the navigation tree to enter the "configuration management" interface.

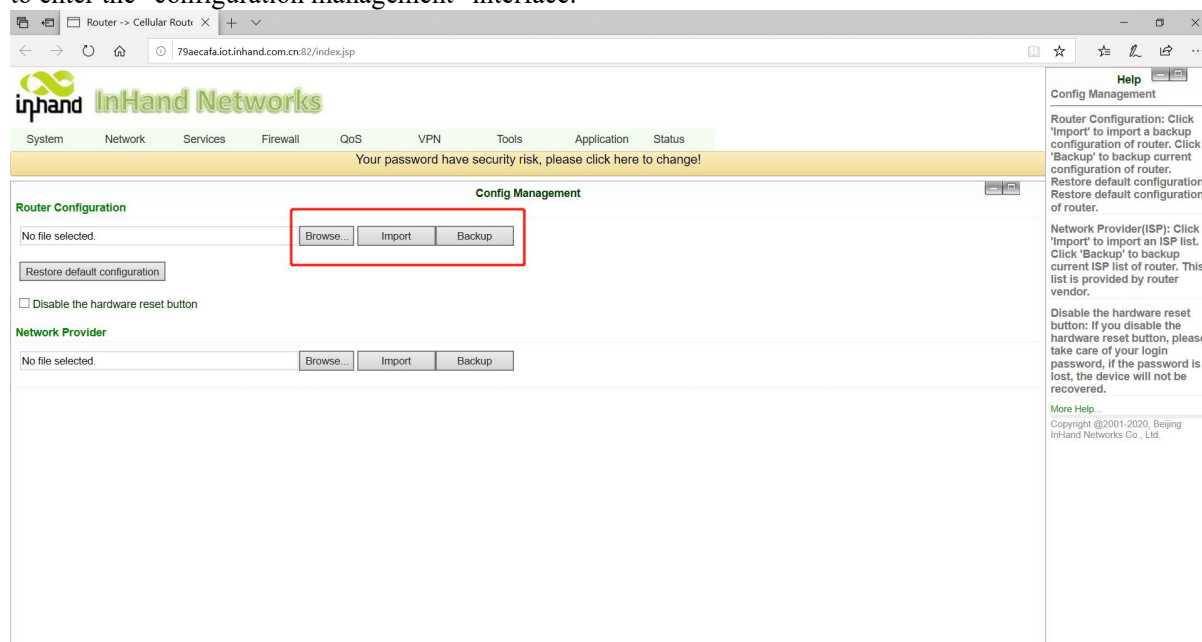


Figure 6-2 Restore Factory Settings on Web

Click Browse to select the profile, and then click the Import button. After importing the configuration file, restart the system to take effect.

Click Backup to export the configuration parameter file currently being applied and the exported file is .dat format, default file name config.dat.

6.3 Log and Diagnostic Records

log in to the Web page, click on the "Status >> Log" menu in the navigation tree to enter the "system log" interface. Click the corresponding button to complete the log and diagnostic records download.

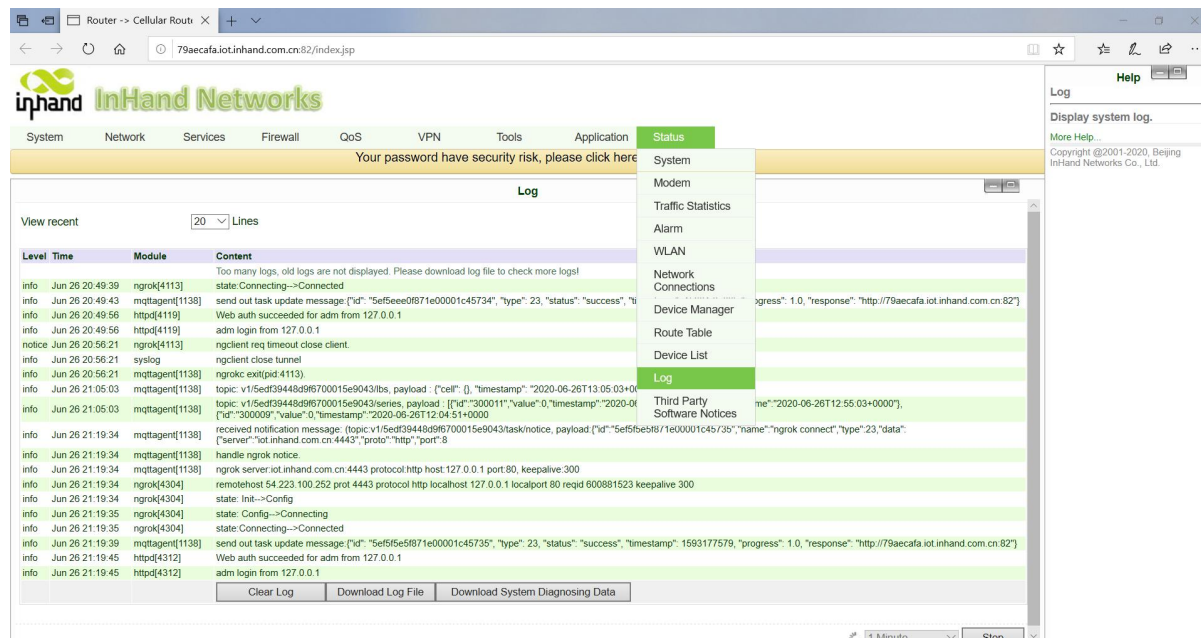


Figure 6-3 Diagnostic Log Function

VII. Description of panel indicator

7.1 Panel LED Indicator Description

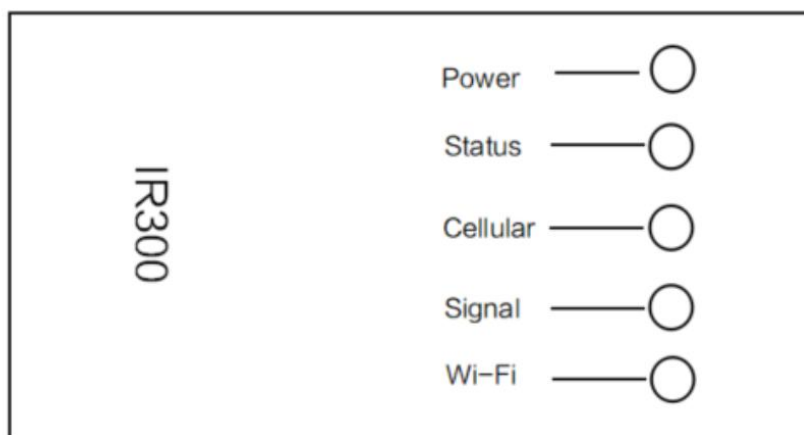


Figure 7-1 Led Indicator Description

Equipment LED Light Description Table:

Power(red)	Status(Green)	Cellular(Wong)	Definition
Off	Off	Off	No Power

On	Off	Off	System Fault
On	On	Off	Module or SIM Card not identified
On	On	Flash	Dialing
On	On	On	Dialing Success
On	Flash	On	System Upgrade
On	Flash -> On	Off	Finalized Writing -> Finalized Writing
reset key description (both start-up and run support to restore factory): Power 1. device, press reset button immediately, hold for 10 seconds until Status is on 2. release the Reset, Status destroy 3. immediately hold down Reset, then Status flicker, release the Reset button, restore factory success			

Note:

Signal	Red	Signal values 0~10
	Yellow	Signal value 11~20
	Green	Signal value 21~30
Wi-Fi(Green)	Not enabled	Destruction
	AP	Flash
	STA	Data flash
Lamps	Driven Control	Yellow green, data flash

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