R520 Wireless Router&Access Point

User Manual

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Chapter 1：Product Overview

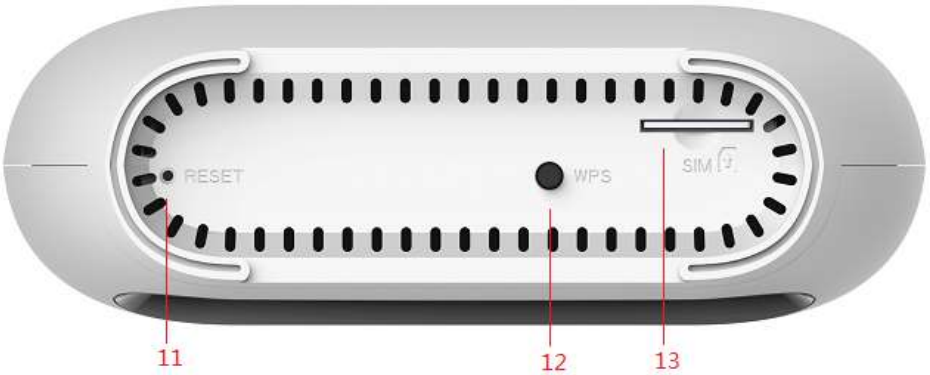
1.1 Introduction

Thanks for purchasing R520 broadband router. This router, equipped with the latest 4G and Wireless-N technology, is a full function network equipment. It can support you to freely access network connection in different occasions, such as meeting, exhibition, factory, or home. When using SIM card to access network, you could also make phone calls or send text messages simultaneously. R520 has extraordinary performance, and is very easy to use and manage. It supports multiple devices sharing one broadband link and ISP account, to offer you great convenience and cost efficiency. In the meanwhile, it provides multiple management functions, to configure system, DHCP server, firewall, static route table. R520 broadband router is easy to configure, so non-professionals could configure the device. Before you start to configure R520, please read this user guide, to fully understand the functions of R520.

1.1.1 Key Features

1.1.2 Product Layout

POWER
ON/OFF
12V 1A
1
2
6
7
8
9
10


RESET
WPS
SIM
11
12
13

Number	LED	Description
1	Power	A blink green light indicates a proper connection to the power supply
2	WIFI/WPS	1. Light up in green when WIFI is enabled; 2. Blink slowly when data transfer; 3. Blink quickly when WPS is enabled
3	LAN	For the LAN connection will shine.
4	Internet	Light up in green when Internet is enabled. Blink when data transfer.
5	Signal	Show signal strength.

Number	Connections	Description
6	Power	Turn on/off the router.
7	Power Adapter	Connect Power to DC-Jack 12V/1A Power Adapter. Using power supplies with a different voltage from the one included with the R520 will cause damage and void the warranty.
8	LAN	LAN ports provide connections to Ethernet enabled devices.
9	WAN/LAN	If the WAN is set to the WAN Mode, will be as the WAN interface, you can dial the DSL module; If WAN set to LAN MODE, will be a LAN interface
10	TEL	Connect the telephone

Number	Connections	Description
11	RESET	Press the reset button 3 seconds to restore the device to its factory default settings.
12	WPS	Click this button to start WPS encryption.
13	SIM	Insert SIM card to automatically identify registration

Chapter 2：Quick Setup Guide

2.1 System Requirements

- EthernetADSL/Cable with an Ethernet port (RJ-45) **OR**Internet SIM card
- Computer with Windows, Macintosh, or Linux-based operating system with an installed Ethernet adapter.
- Internet Explorer version 8.0 or above, Google Chrome, Safari, Firefox, Opera.

2.1.1 R520 Placement

You can place R520 on a desk or other flat surface. Please keep R520 away from heating. For optimalperformance, please place your R520 in the center of your home (office), in a location that is away from any potential interference source, such as metal walls or microwave oven.

2.2 Network Setup

2.2.1 WAN Setting

1) Connect Ethernet cable between your PC/Notebook and one of the four available LAN ports on R520.
2) Connect Ethernet cable between WAN ports of your ADSL/CABLE modem and WAN port of R520. Please make sure your ADSL/CABLE modem is working properly. Contact your ISP if you have any question.
3) Power up R520.

2.2.2 3G/4G Setting

When using SIM card to access network, you could also make phone calls or send text messages.

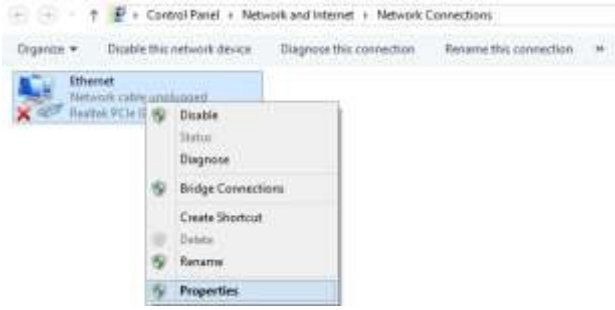
1) Insert SIM card into the port.
   (Attention:the SIM card can support the function of plugging during the operation of the equipment.)
2) Power up R520. Press Power button,then front panel will light up and remain stable.

Chapter 3：Product Setting

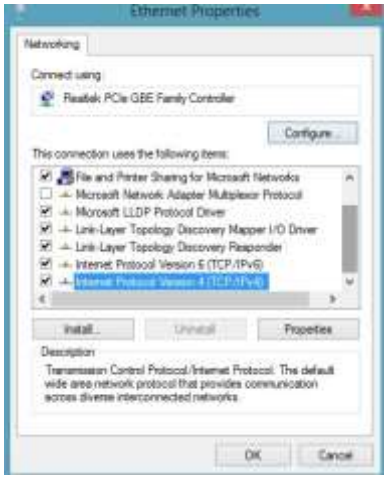
3.1Configuration wizard

3.1.1 TCP/IP Setting

Enter [Start Menu]—Select [Control panel]—Select [Network]—Select [Local Area Connection]—Select [Properties]



Select[Internet Protocol (TCP/IP)]—Click[Properties]



R520 supports [DHCP] function, please select both [Obtain an IP address automatically] and [Obtain DNS server address automatically].

3.1.2 Log In

Whenever you want to configure your network or the R520, you can access the Configuration Menu by opening the web-browser and typing in the IP Address of the R520. For example, http://192.168.0.1 Note: If you changed the default IP Address assigned to the R520, make sure to enter the correct IP Address.

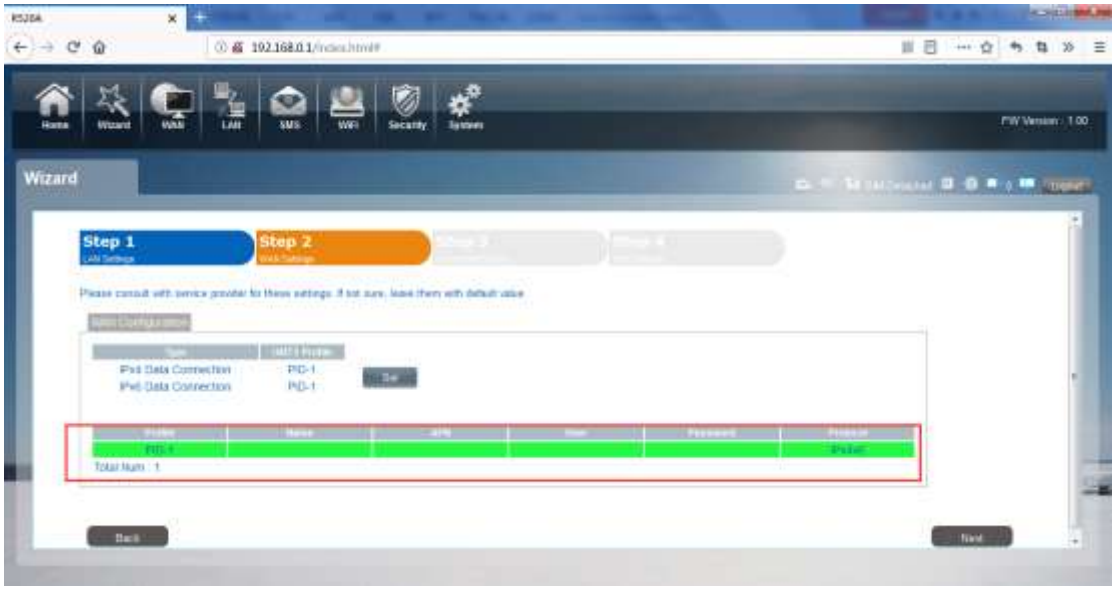
You will go to the overview and log in page. The Factory default user name and password are **admin.** It is recommended to change the admin password for security purpose. Please refer to Administrator Settings to change the admin password.

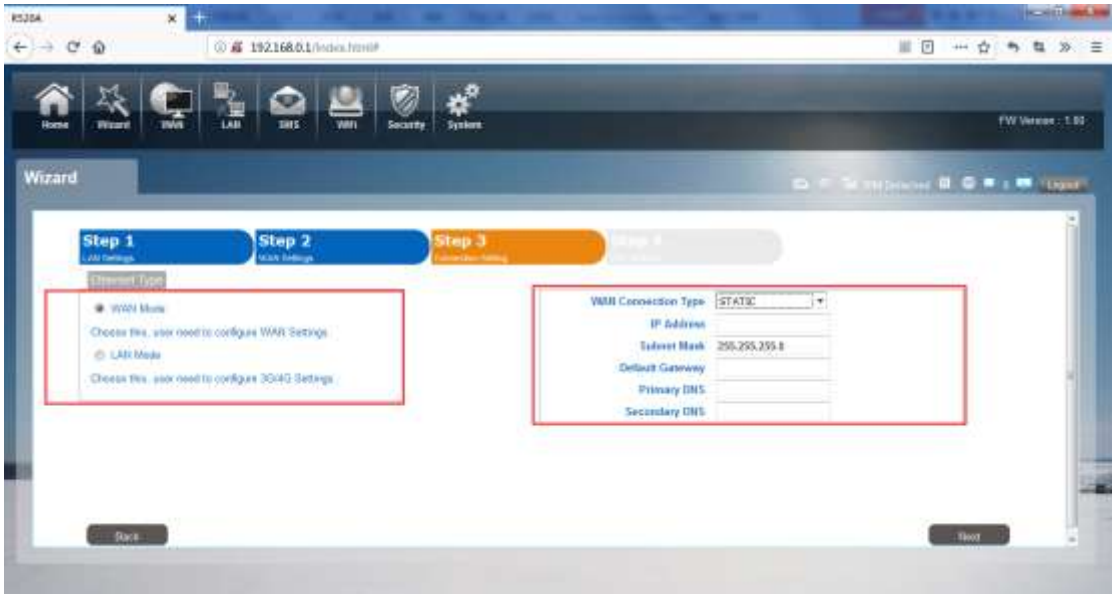
3.2 Home

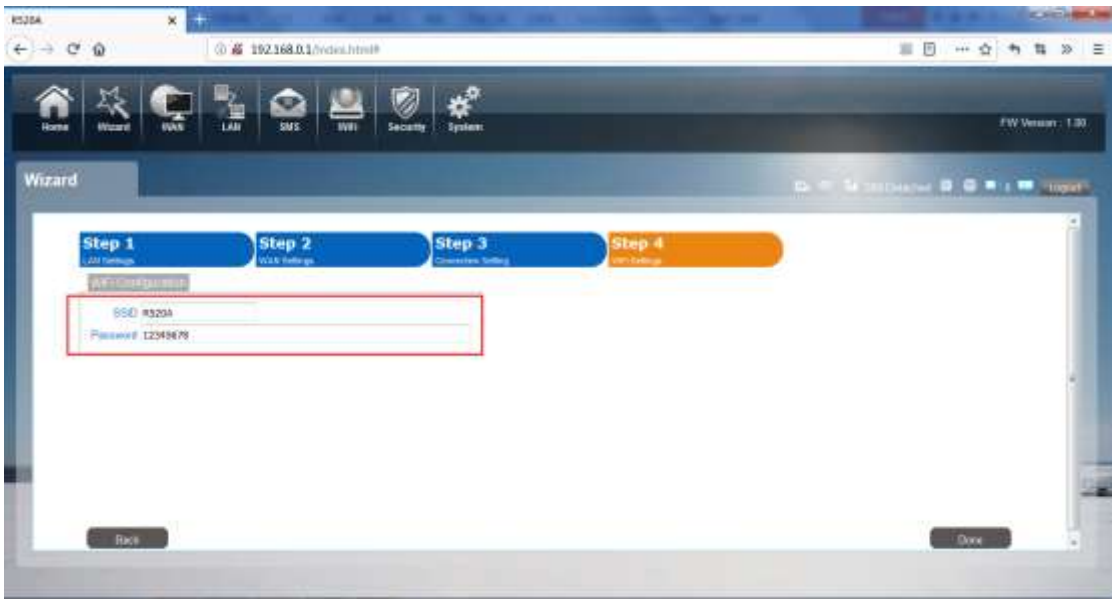
First part of the main display settings and network status information, such as IPaddress, SIM card status, type and quality of the network signal, whether it is roaming, with or without a new

message, and traffic statistics,and system uptime, and so on.

3.3 Wizard


Home
Wizard
WAN
LAN
SMS
WiFi
Security
System
Wizard
Step 1
Step 2
Back
Next


Home
Wizard
WAN
LAN
SMS
WiFi
Security
System
Wizard
Step 1
Step 2
Step 3
WAN Mode
LAN Mode
WAN Connection Type
STATIC
IP Address
Subnet Mask
Default Gateway
Primary DNS
Secondary DNS
Back
Next


Home
Wizard
WAN
LAN
SMS
WiFi
Security
System
Wizard
Step 1
Step 2
Step 3
Step 4
SSID
Password
Back
Done

You can quickly change the lanconfiguration, set the APN ,ethernet settings , and change the SSID \ password through the wizard function.

3.4 WAN

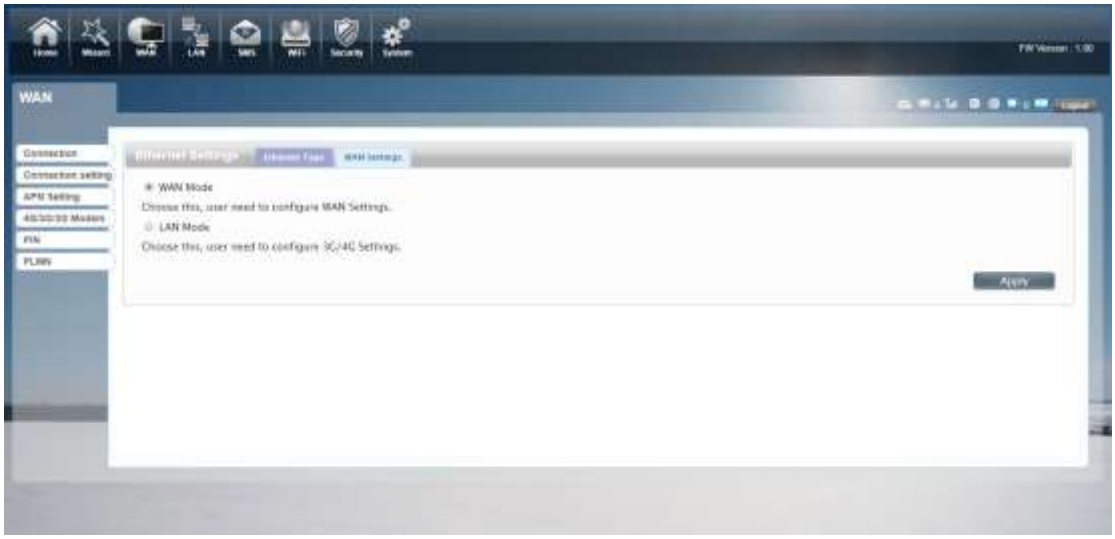
3.4.1 Connection

Dialing Mode:

Select the AutoMode, after you turn on R520 without additional operations, the device will automatically connect to the network; select the Manual Mode, you need to manually connect to the network after opening theR520 management page.

3.4.2 Wan Setting

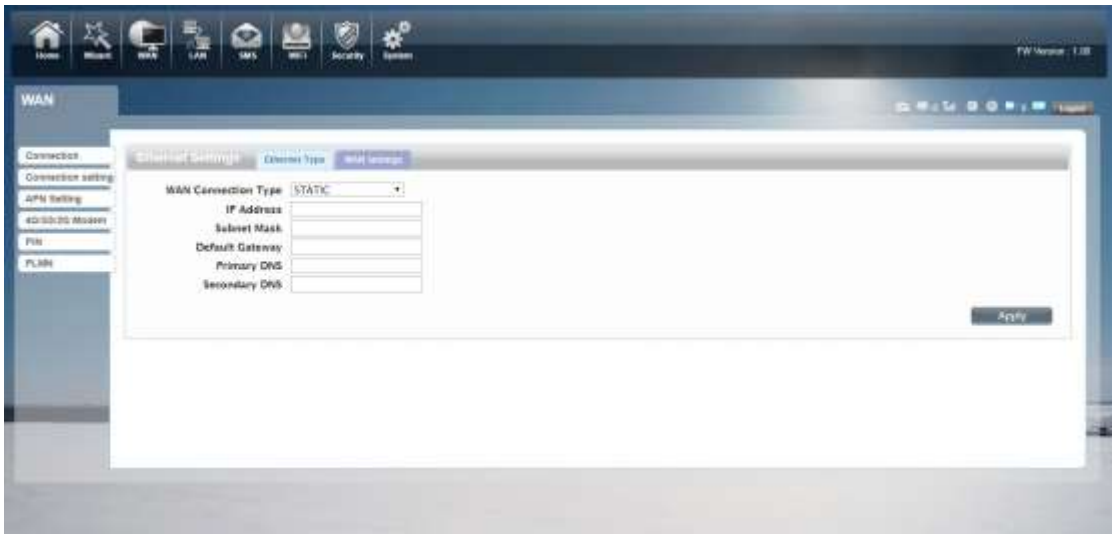
Choose you Internet Access Type.



If you choose WAN Mode,please select the type of internet connection for your router.

DHCP：A dynamic IP address connection that configures the router to automatically obtainIP address from a DHCP server on the ISP’s network.

Static Mode: Please enter the IP address information provided to you by your ISP. The Subnet Mask for R520 is preconfigured to 255.255.255.0. Other configurations can be made, but not recommended. This feature is for advanced users. Your ISP should alsoprovide the Default Gateway, Primary DNS and Secondary DNS (optional).



PPPoE: Please enter the PPPoE username and password assigned by your ISP. Choose the Operation Mode; enable the Keep Alive option to automatically re-establish the connection when an application attempts to access the Internet again. The On Demand Mode Idle Time is a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactivate longer than the Maximum Idle Time, it will be dropped.

If you choose 3G/4G SIM card to access the network, please enter "APN" and "Dial Number","Authentication" and all that at APN setting page, which are provided by your mobile networkoperator.

3.4.3 APN Setting

You can customize the network configuration or manually add the new APN and set default APN.

3.4.4 4G/3G Modem

There are four types of networks can be choose: Auto is 4G/3G, LTE Only is using only 4G, WCDMAOnly is using only 3G.

3.4.5 PIN

Open your PIN, if you reboot the device, you need to login management page, and the page will prompted to enter the correct PIN code, you can use the SIM card. PIN / PUK code supplied with the SIM card provided by your carrier, please consult your carrier.

3.4.6 PLMN

Automatic： The R520 will automatically select the most appropriate network registration connection.

Manual：click‘query’button and choose network which user selected.

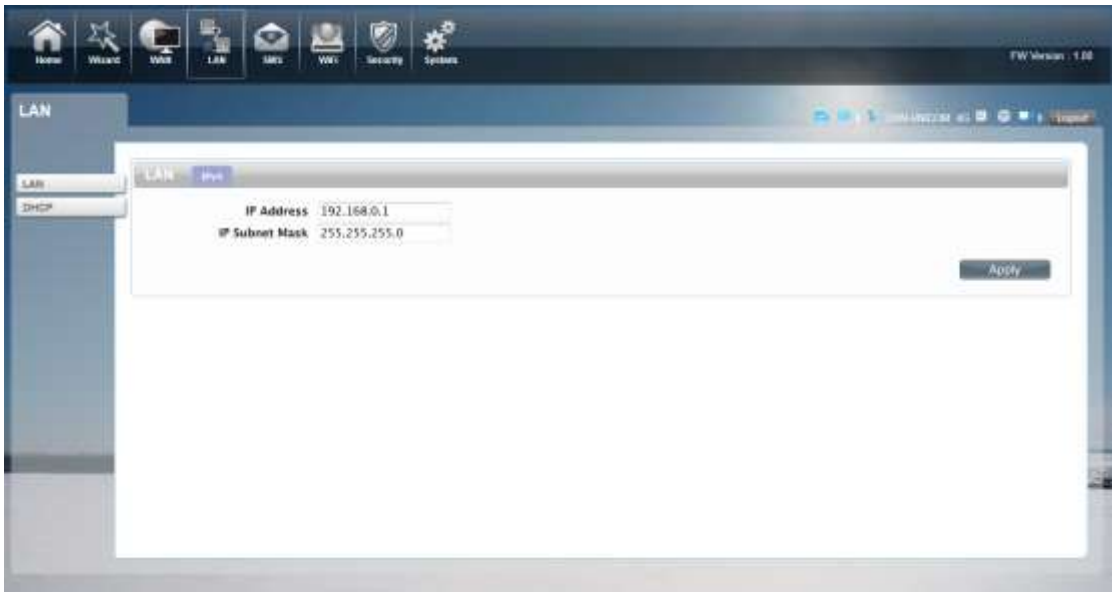
3.5 LAN

3.5.1 LAN

You can configure the LAN port parameters here.

IP Address: Set LAN IP address of the router.

IP Subnet Mask: Set subnet mask of the router.

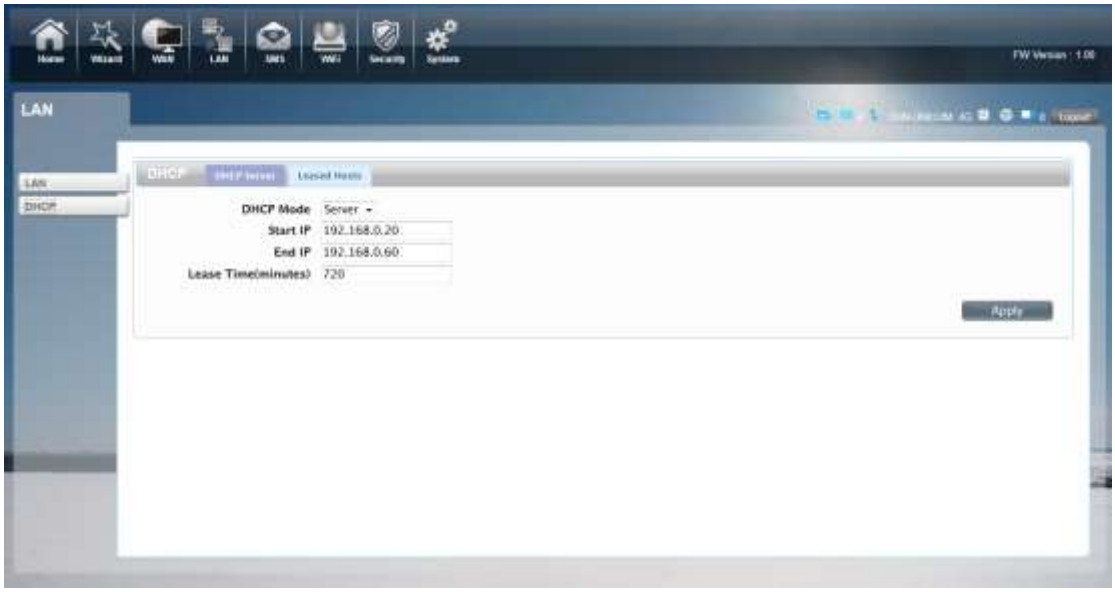


3.5.2 DHCP

You can configure the DHCP Settings parameters here.

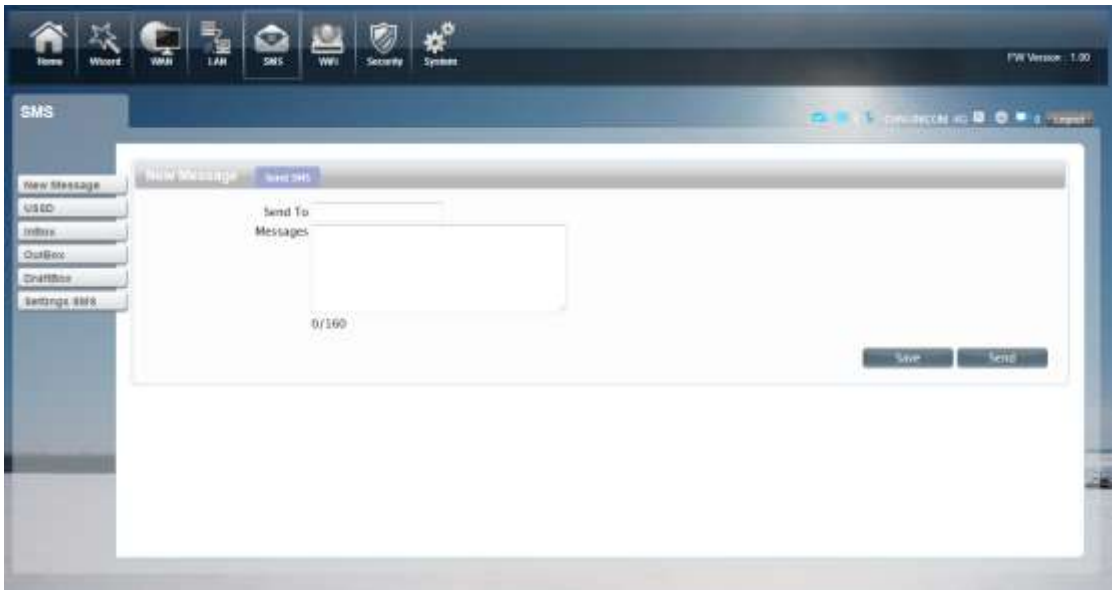
Starting IP Address&Ending IP Address: The IP range obtained through DHCP by LAN host.

Lease Time: The time limit for the IP address configuration information obtained by the client device at the DHCP server



3.6 SMS

When using SIM card to access network, you could also send text messages at the time. You can send, receive, reply , forward, and save test messages. You can send 10 text messages at the same time, SMS number intervals with a semicolon. Also you can setting the storage location of messages, and so on. We can operating the SMS in this page.



3.7 Wi-Fi

3.7.1 Basic

It shows some information of the wireless connection.

Enable: Open or close the router wireless function.

Mode: Choose Wireless network protocol such as 11b/g/n and mixed type.

Channel: The channel currently used. You can select channel from 1 to 13.The router will choose the frequency by itself if you select the “Auto”.

SSID: Set the SSID. You can connect the router by this SSID. It can be hidden or isolated. If select Hide function, the router’s SSID cannot be scanned; Select Isolated function, it can prevent wireless communications.

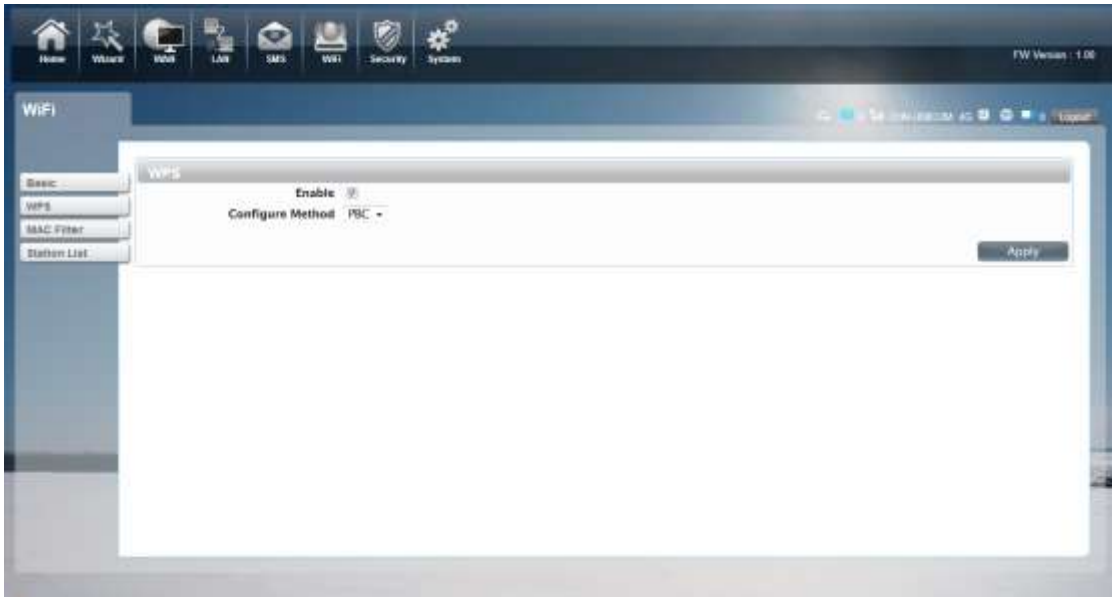
Hide SSID: Enable this function, wireless client will not scan to the router’s SSID.

The router’s security mode supports (Disable， WEP(AUTO)，WPA-PSK，WPA2-PSK，WPAPSKWPA2PSK).

3.7.2 WPS

WPS is the simplest way to establish a connection between the wireless clients and the wireless router. You do not have to select the encryption mode and fill in a long encryption passphrase every time when you try to setup a wireless connection. You only need to select enable on WPS configuration and press a button on wireless.

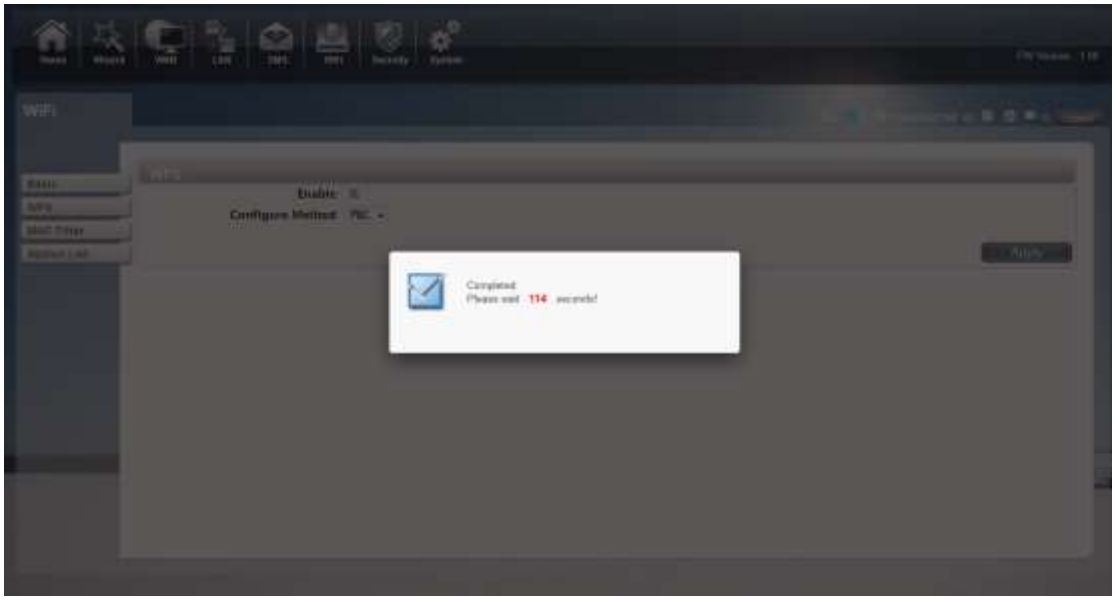
WPS PBC authentication:



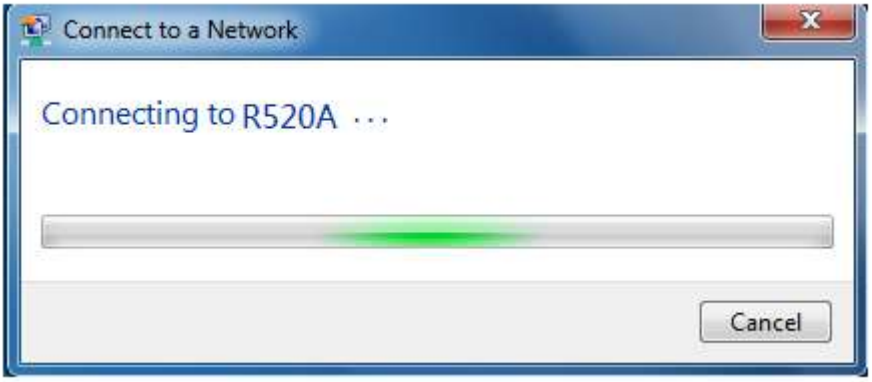
If your WIFI Enabled, Device supports WPS (WIFI Protected Setup) and you have forgotten or do not wish to enter your password to connect to your R520, you may use the following available procedures for quick access to WIFI.

Open the WPS:

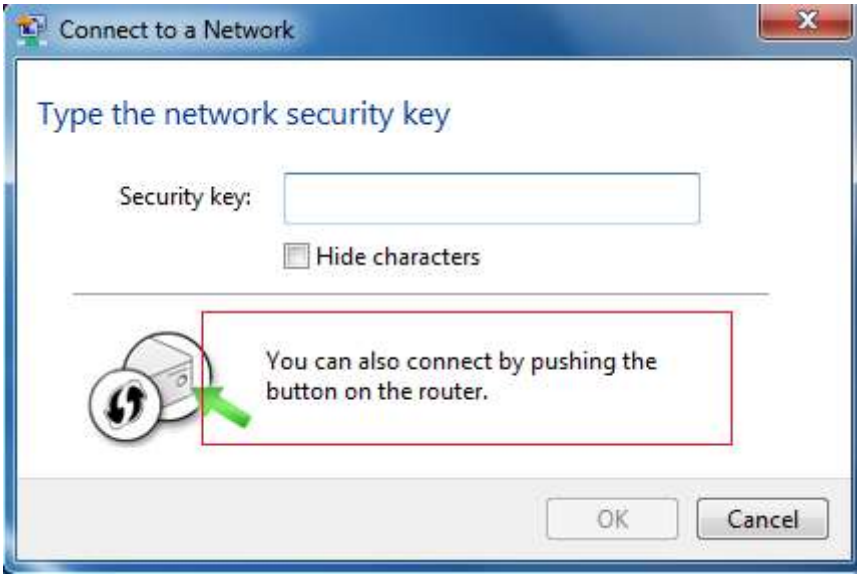
WPS can be opened by two methods. The first method is Entering the management interface page, press the ‘Apply ‘, open the WPS. It will continue 120 seconds. Like the following picture.



Select the SSID of the device and connect. Then you can see like the following picture.



The second method is, Select the SSID of the device and connect

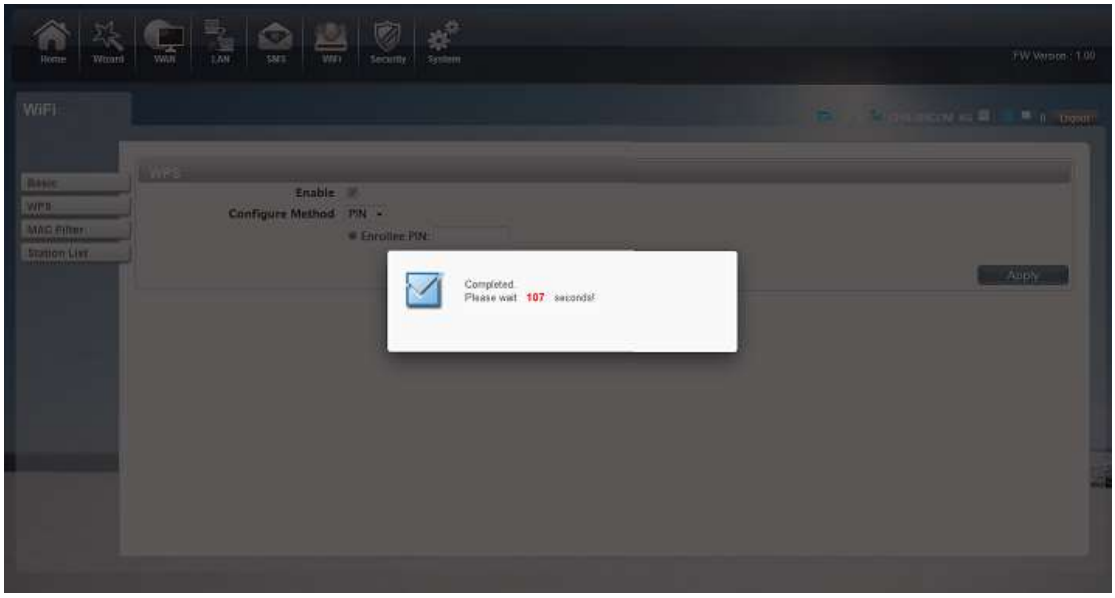


Press the WPS button on the R520, activate the WPS. It will lasting 120 seconds.

Then you can see like the following picture.

WPS PIN authentication:

The connection to the R520 is achieved by inputting the relevant PIN key into the enrollee PIN text box, which you may find in the wireless network card. When you applied. It will lasting 120 seconds. The premise is that the wireless network card or the clients must support WPS PIN authentication. Like the following pictures.

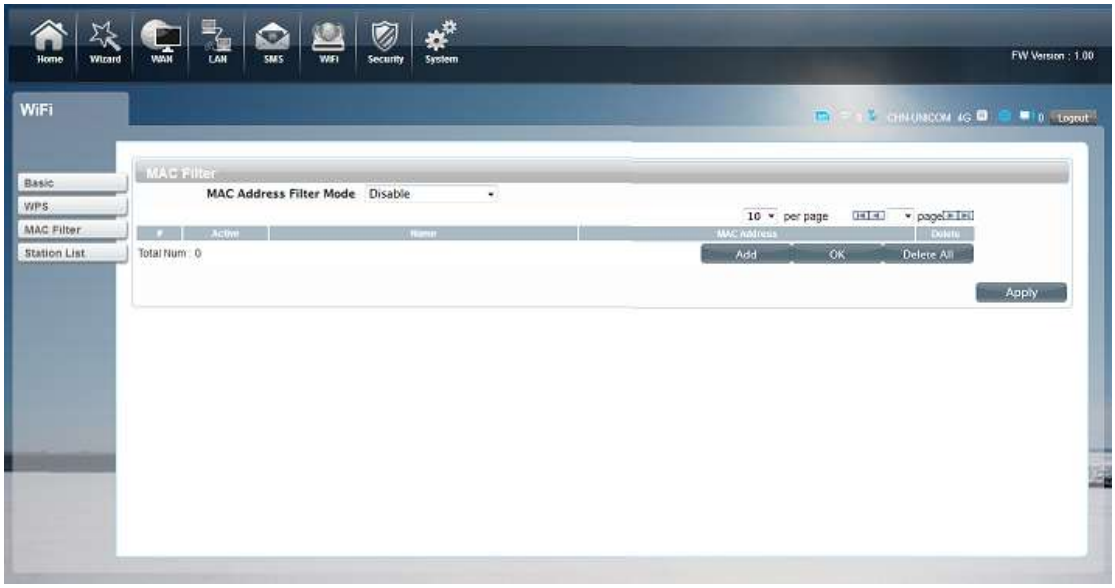


3.7.3 MAC Filter

Deny list Stations: If you add the computers or wireless devices MAC address into the list,it can prohibiting the computers or wireless devices connect to the R520.The computes or wireless devices MAC address which are not in the list can able to connect to R520.

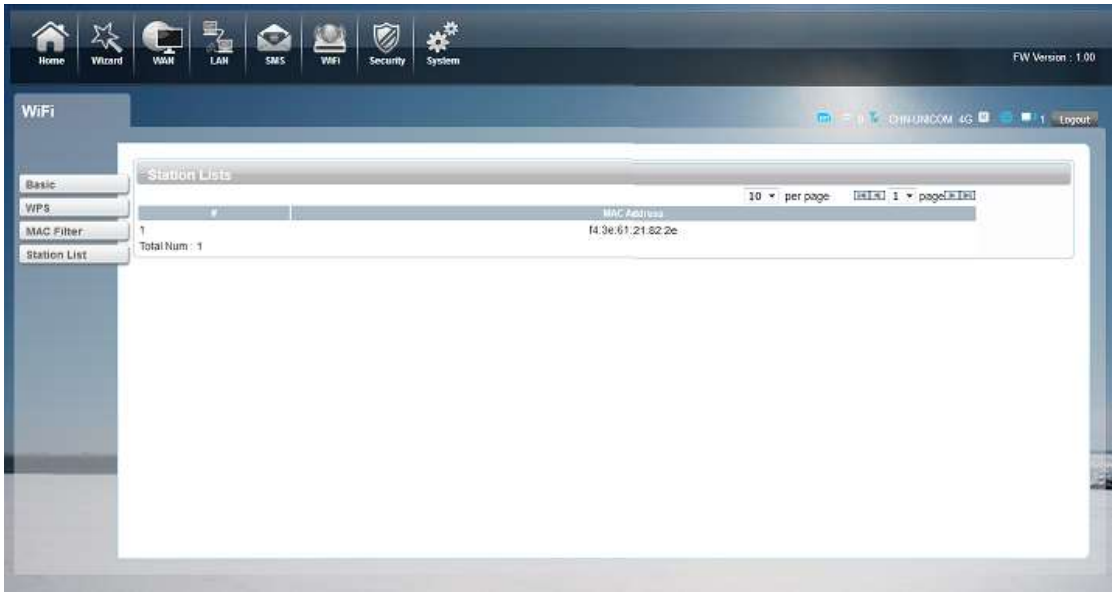
Allow list Stations:Opposite with Deny list Stations. It only allows the devices in the list to connect to the R520, other wireless devices are unable to connect to the R520

Disable: It means close the function of the MAC Address Filter.



3.7.4 Station List

Show the information of wireless devices which are connected to the R520.

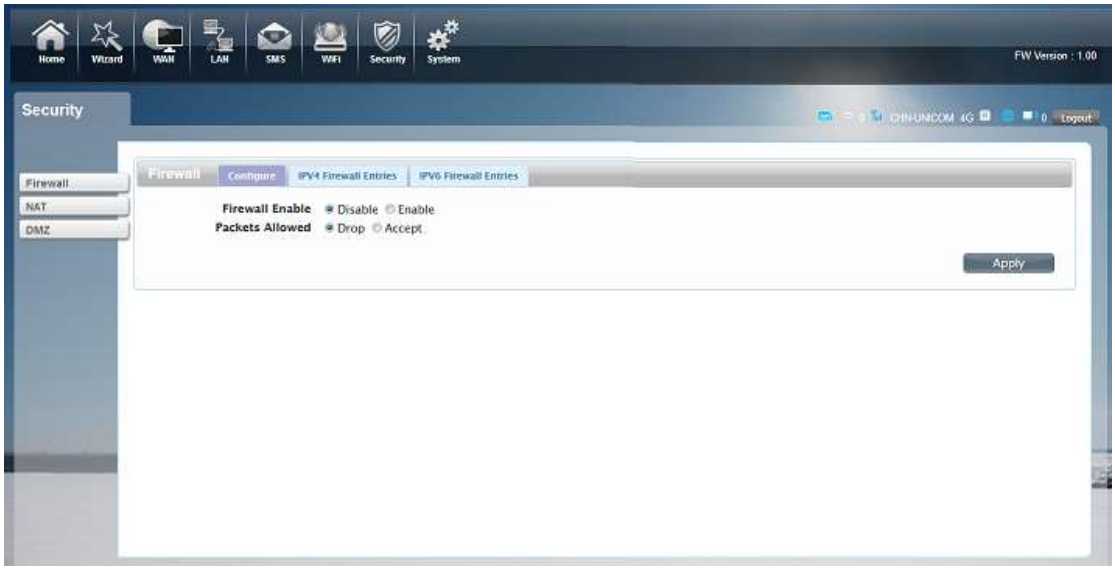


3.8 Security

3.8.1 Firewall

Firewall configuration: You can Disable or Enable the Firewall function. Also you can set the matching packets rule to receive or reject.

You can add the rule in the list.



If you want to enable the firewall function, please go to the IPV4 Firewall Entries or IPV6 Firewall Entries tab and configure the necessary parameters.

E.g:

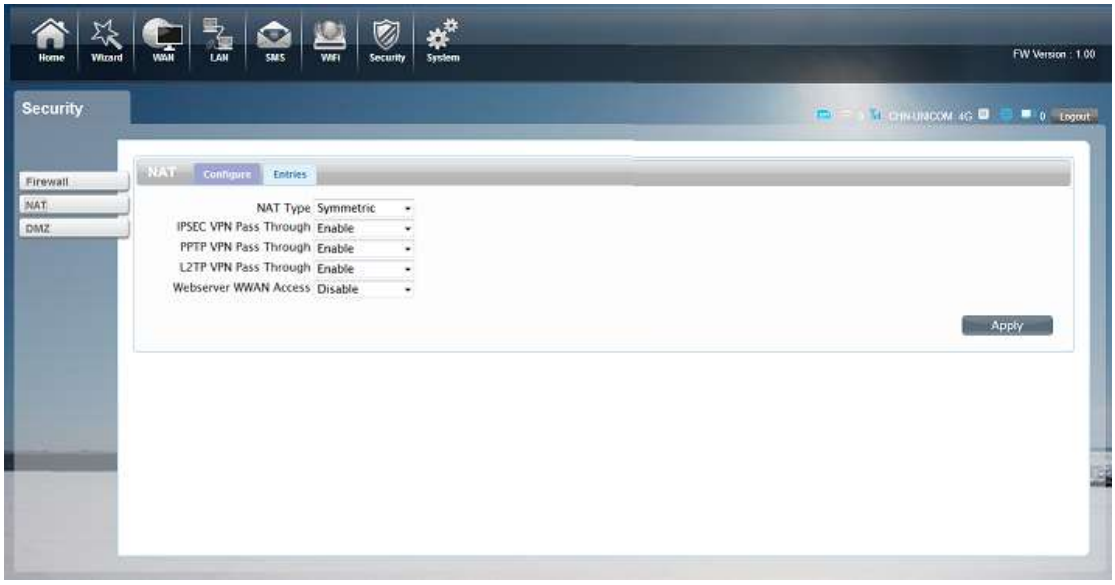
Situation 1:
Firewall Enable select Enable
Packet Allowed select Drop (blacklist)
In the router, the LAN-IP address is 192.168.1.5 to 192.168.1.7 and the 3 network addresses, ICMP protocol, are all filtered.

Situation 2:
Firewall Enable select Enable
Packet Allowed select Accept (whitelist)
In the router, except for the three network addresses with the LAN-IP address from 192.168.1.5 to 192.168.1.7, the ICMP protocol can pass, and all other IP addresses are filtered.

For the choice of protocol, please refer to:
https://en.wikipedia.org/wiki/Transport_layer
https://en.wikipedia.org/wiki/Internet_Control_Message_Protocol

3.8.2 NAT

The R520 supports NAT/IPSEC VPN Pass Through/PPTP VPN Pass Through/L2TP VPN Pass Through/Webserver WWAN Access.

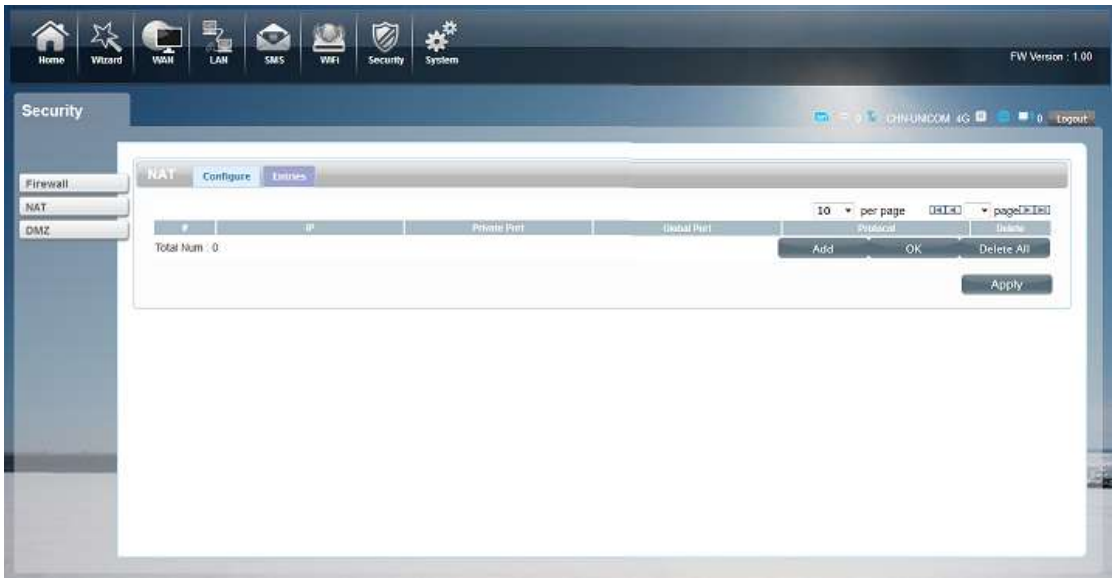


When some hosts inside the private network have already allocated the local IP address, that is, only the private address used in the private network, but now they want to communicate with the host on the Internet (no need to encrypt), we can use the NAT method.

In the NAT option, NAT Type is selected, please refer to:
https://en.wikipedia.org/wiki/Network_address_translation
When you need to set the specified device ip and port, just configure it under the "Entries" tab.

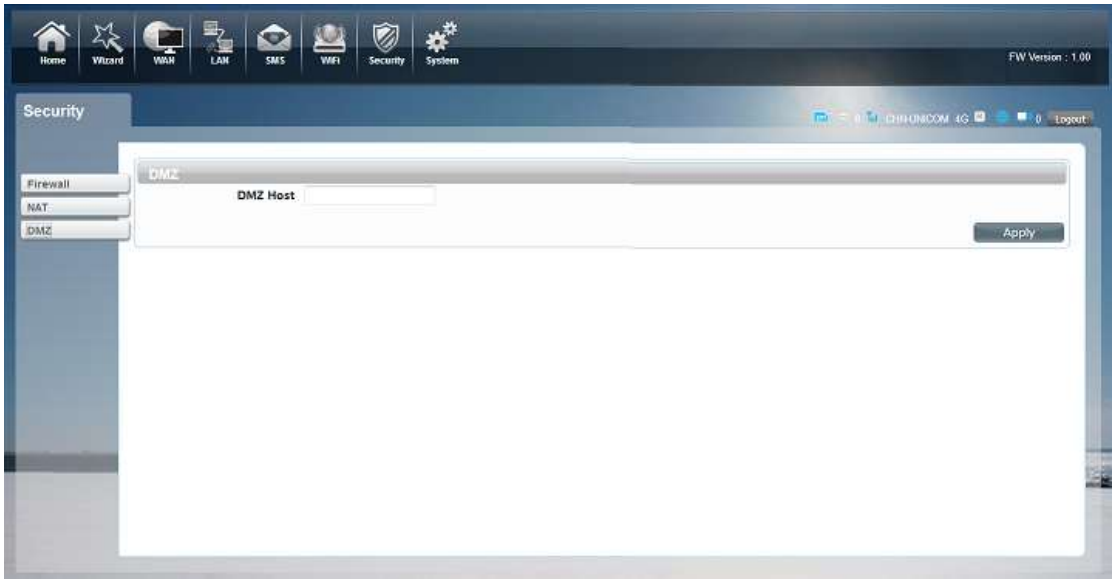
The router turns on the VPN service by default, and the VPN protocol supports IPSE/PPTP/L2TP.

After Webserver WWAN Access is turned on, you can log in to the management page through the WAN port.



3.8.3 DMZ

Receive all the data from external network interface forwarded to “DMZ IP address”
Enable DMZ: If an application has trouble working from behind the router, you can expose one computer to the Internet and run the application on that computer.
Note: Placing a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.
DMZ Address: Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication.



For details, please refer to https://en.wikipedia.org/wiki/DMZ_(computing)

3.9 System

3.9.1 About

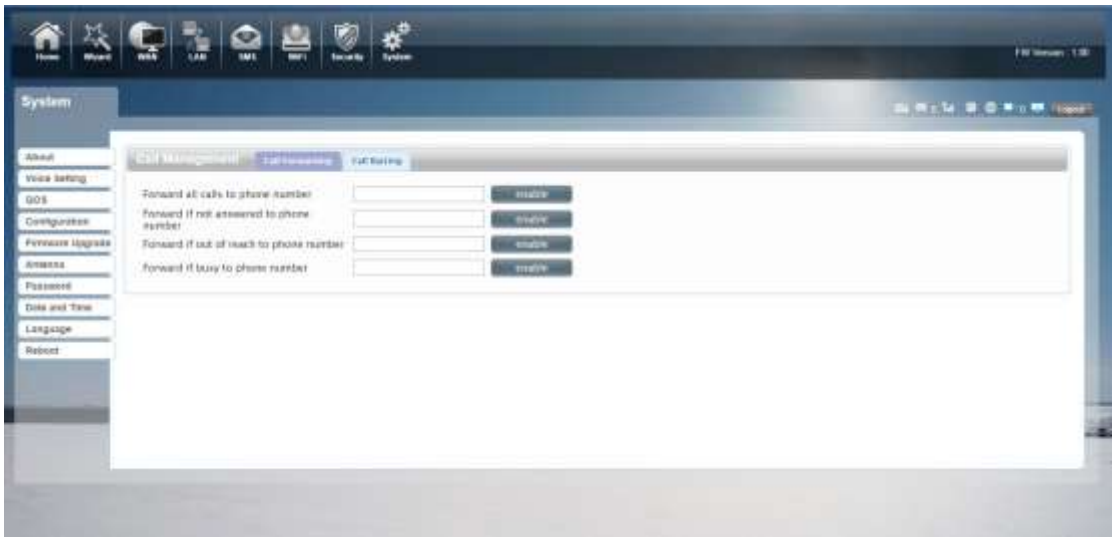
R520 displays some basic information, such as Device Name, Firmware version, IMEI, MEID, Baseband version.

3.9.2 Voice Setting

Here you can set up voice Settings, set up Call Forwarding functions here and Call Barring function.

Call Forwarding: Set to specify a number, in accord with rules set environment, when there is

telephone call routing, the phone will be diverted to set the specified number



Call Barring: Limit all or some of roaming phone call in or exhale

3.9.3 Qos

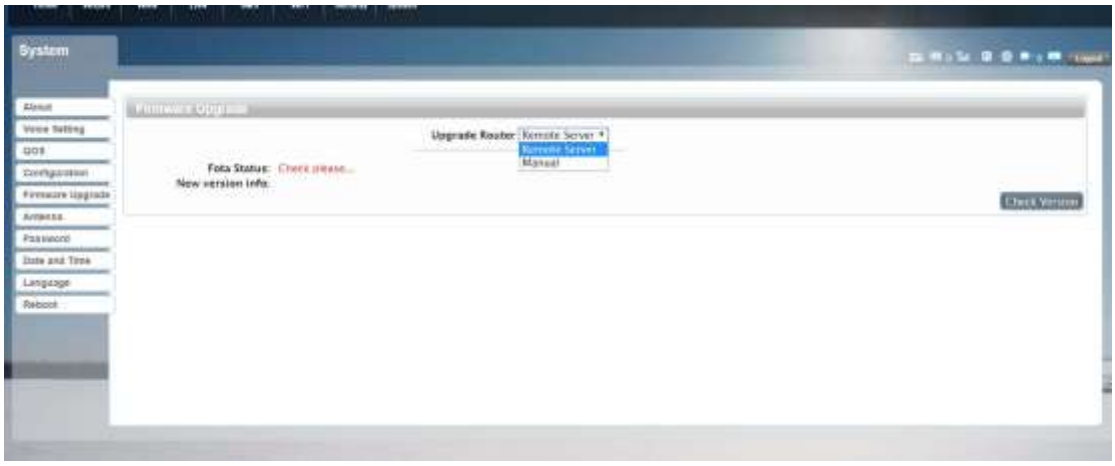
Quality of Service, by setting up some rules, to provide better service to the user specified, make some data request priority;Or restrict the network quality of some users, so that they don't affect other users

3.9.4 Configuration

Restore the factory settings, all of the personal configuration will be deleted, all configuration pages will be restored to the factory defaults.

3.9.5 Firmware Upgrade

The page allows you to upgrade the router's firmware. You can on the routing connection network conditions, check whether there is a new version, if there is a new version was detected, can be directly upgrade;Or from the official website to download updates to the local computer, and then choose to download in the page of upgrade file to upgrade.



3.9.6 Antenna

R520 is equipped with internal Antenna for WCDMA and LTE, and equipped with external antenna for 2.4G WLAN.

3.9.7 Password

Modify the login password for administrator interface. Also you can set the time to logout the UI automatically.

3.9.8 Date and Time

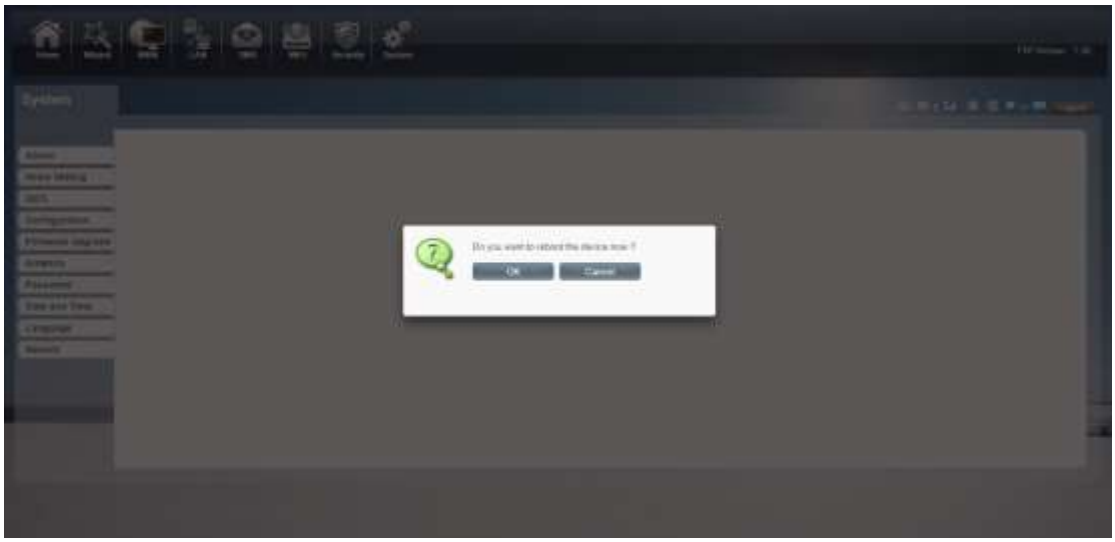
You can synchronize the local time, you can also select the time zone

3.9.9 Language

You can change the UI language in this page.

3.9.10 Reboot

Reboot the R520.



Appendix Ⅰ:

Call function:

This device provides call and text message functions. When you browse internet, you can keep connection with your family and friends.

The steps are as follows:

1) Insert 3/4G SIM card, and open the device

2) Connect the telephone through the RJ11 port of the device

3) When phone function is booted up, your telephone's signal LED will turn on. Then you can start to use the call functions.

Caution:

1. Please make sure that your SIM card supports voice call service

2. Please start to use the call functions; after call function is fully booted up (all text messages are received)

AppendixII

FAQ:

This Appendix provides solutions to some problems that could be seen when install and use the device. Please read the following instruction, it will help you to solve these problems. If you fail to solve your issues from this FAQ, please contact us.

Problem	Solution
Wireless device cannot connect to SSID.	■ Please make sure the wireless function of your PC is turned on. If it is already on, please refresh the network list. ■ Please make sure your PC is in the wireless signal coverage of the device. ■ Please make sure your device is away from the electromagnetic interference. ■ Please make sure your device's wireless function is turned on. If the problem is still not solved, please try to reset your device to default settings.
Cannot Access internet:	■ Please make sure your PC is in the wireless signal coverage of the device. ■ Please make your device's DHCP function is turned on. ■ Please make sure your firewall is turned off. If the problem is still not solved, and your PC has got connected to the network, but the wireless icon shows an yellow exclamation mark. It means your wireless card could not be allocated an IP address. Please use the static IP settings, and fill DNS and gateway according to instructions of your operator.
Input IP, but fail to login to the administration page.	■ Please make sure the problem is not caused by the Cache of the internet browser, please clean up the

	Cache. ■ Please make sure the network connection is good, and the light of connected ports are on. ■ Please make sure the username and password are correct If the problem is still not solved, and your PC already gets the IP address. You can try to use wireless connection or static IP methods to try it again. If connected via wireless connection, please try to ping 192.168.0.1 to see if there is any response. If responses are received, please check if you set an agent server for connection. If no agent server is set, then please not to set an agent server, and reset the device.
IP conflict ion when turn on the device:	■ Please make sure if your LAN has other DHCP servers. ■ Please make sure that IP address is not occupied by other computers or devices. If occupied, please change the IP address of that device to avoid the IP conflicts.

AppendixIII:

Safety warning:
Read the user guide:
Please read the user guide before using this device.

Stay away from interference:
All the wireless devices could be possibly interfered, and it will affect the performance of the device

Turn off the device in restricted area:
Please follow any instruction, turn off the device around airplanes, medical devices, gases, chemicals or explosive areas

Qualified services:
Please don't disassemble this device yourself. Please contact professionals to repair and install the device.

Accessories:
Please don't touch the device using wet hands, when it is in charge. Please only use the accessories and that are recognized to be compatible to the device.

Danger of explosion:
Turn off your device in any areas that explosion could possibly happen. Please follow all the notices in the areas where spark could cause fire or explosion.

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

NOTICE:
Changes or modifications made to this equipment not expressly approved by Manufacturer may void the FCC authorization to operate this equipment.

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection

against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.