ReadyNet

CONNECTIVITY SIMPLIFIED

VWRT510

User Manual

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1 Preface

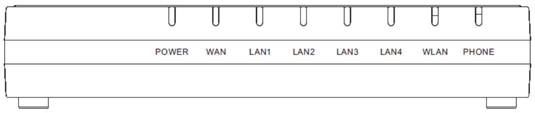
Thank you for choosing the ReadyNet VWRT510 wireless router with VoIP. This product will allow you to make ATA calls using your broadband connection and provides Wi-Fi router functions.

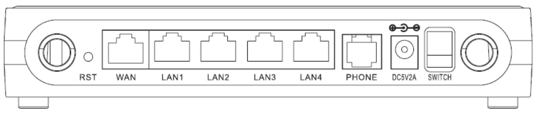
This manual provides basic information on how to install and connect the ReadyNet VWRT510 wireless router with VoIP to the Internet. It also discusses the router's features and functions and how to use them correctly. Before you can connect the VWRT510 to the Internet and use it, you must have a high-speed broadband connection installed.

The ReadyNet VWRT510 wireless router with VoIP is a stand-alone device so no computer is required to make Internet calls. The VWRT510 provides clear and reliable voice quality through the Internet, is fully compatible with SIP industry standards, and is able to interoperate with many other SIP devices and software on the market.

2 LED Indicators and Connectors

2.1 LED Indicators

Front Panel	LED	Status	Explanation
 POWER WAN LAN1 LAN2 LAN3 LAN4 WLAN PHONE	PHONE	Blinking (Green)	Not registered.
		On (Green)	Registered
	WLAN	On (Green)	Wireless access point is ready.
		Blinking (Green)	It will blink while wireless traffic goes through.
	LAN 1/2/3/4	On (Green)	The port is connected with 100Mbps.
		Off	The port is disconnected.
		Blinking (Green)	The data is transmitting.
	WAN	On(Green)	The port is connected with 100Mbps.
		Off	The port is disconnected.
		Blinking (Green)	It will blink while transmitting data.
	POWER	On (Red)	The router is powered on and running normally.
		Off	The router is powered off.
Rear Panel	**Interface**	**Description**	

 RST WAN LAN1 LAN2 LAN3 LAN4 PHONE DC5V2A SWITCH	ON/OFF	Power Switch.
	DC 5V/2A	Connector for a power adapter.
	FXS	Connect to the phone.
	WAN	Connector for accessing the Internet.
	LAN (1/2/3/4)	Connectors for local networked devices.

2.2 Hardware Installation

Step 1.Connect the Line port to a land line phone jack with an RJ-11 cable (standard phone cord).

Step 2.Connect the WAN port to an access point such as a modem, switch, or router with an Ethernet cable.

Step 3.Connect one of the LAN ports to your computer with an Ethernet cable.

Step 4.Connect one end of the power cord to the power port of this device. Connect the other end to the wall outlet of electricity.

Step 5.Push the ON/OFF switch to power on the router.

Step 6.Check the Power, WAN, and LAN LEDs to assure network connections.

3 Voice Prompt

Voice Menu Setting Options

Code	Contents
1	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "1" and the VWRT510 reports the current WAN port connection type. Step 3. Prompt "Please enter password", user needs to input password with end char # if user wants to configure WAN port connection type. ✧ Password in the IVR is same as the Web login. User can use phone keypad to enter password directly and the matching table is in Note 4. ✧ For example: WEB login password is "admin", so password in IVR is "admin" too, user inputs "23646" to access and then configure theWAN connection port. Step 4. Report "operation successful" if password is correct. Step 5. Choose the new WAN port connection type, either 1. DHCP or 2. Static. Step 6. Report "operation successful", indicates user successfully made the changes. VWRT510 will return to sound prompting **"please enter your option, one WAN Port …….".** ✧ If at any time you want to quit, press "**".

2	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "2", and the VWRT510 reports current WAN Port IP Address. Step 3. Input the new WAN port IP address with the end char #. ✧ Using "*" to replace ".", user can input 192*168*20*168 to set the new IP address 192.168.20.168. ✧ Press # key to indicate you have finished. Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
3	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "3", and the VWRT510 reports the current WAN port subnet mask. Step 3. Input a new WAN port subnet mask with the end char #. ✧ Using "*" to replace ".", user can input 255*255*255*0 to set the new WAN port subnet mask 255.255.255.0. ✧ Press # key to indicate you have finished. Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
4	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "4", and the VWRT510 reports current gateway. Step 3. Input the new gateway with the end char #. ✧ Using "*" to replace ".", user can input 192*168*20*1 to set the new gateway 192.168.20.1. ✧ Press # key to indicate you have finished. Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
5	Step 1. Pick up phone and press "****" to start IVR Step 2. Choose "5", and the VWRT510 reports current DNS Step 3. Input the new DNS with the end char # ✧ Using "*" to replace ".", user can input 192*168*20*1 to set the new gateway to 192.168.20.1 ✧ Press # key to indicate you have finished Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
6	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "6", and the VWRT510 reports "Factory Reset". Step 3. Prompt "Please enter password", inputting password is the same as in operation 1. ✧ If at any time you want to quit, press "*". Step 4. Prompt "operation successful" if the password is correct. Step 5. Press "7", reboot to make changes effective.
7	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "7", and the VWRT510s report "Reboot". Step 3. Prompt "Please enter password", inputting password is the same as in operation 1. Step 4. The VWRT510 will reboot if the operation is correct.

8	Step 1. Pick up phone and press “****” to start IVR. Step 2. Choose “8”, and the VWRT510 reports “WAN Port Login”. Step 3. Prompt "Please enter password", inputting password is the same as in operation 1. ✧ If at any time you want to quit, press “*”. Step 4. Report “operation successful” if user operation is correct. Step 5. Prompt “1enable 2disable”,choose 1 or 2 with confirm char #. Step 6. Report “operation successful” if user operation is correct.
9	Step 1. Pick up phone and press “****” to start IVR. Step 2. Choose “9”, and the VWRT510 reports “ WEB Access Port”. Step 3. Prompt “Please enter password”, inputting password is the same as in operation 1. Step 4. Report “operation successful” if user operation is correct. Step 5. Report the current WEB Access Port. Step 6. Set the new WEB access port with end char #. Step 7. Report “operation successful” if user operation is correct.
0	Step 1. Pick up phone and press “****” to start IVR. Step 2. Choose “0”, and the VWRT510 reports the current Firmware version.

Notes

- When using Voice Menu, press “*” (star) to return to the main menu.

- If any changes are made in the IP assignment mode, please reboot the VWRT510 to apply the changes.

- When entering an IP address or subnet mask, use “*” (star) to replace “.” (dot). For example, to enter the IP address 192.168.20.159 by keypad, press 192*168*20*159#, use the “#” (pound) key to indicate you have finished entering the IP address.

- When assigning an IP address in Static IP mode, you must also set the subnet mask and default gateway. If in DHCP mode, please make sure that DHCP SERVER is available in your existing broadband connection to which WAN port of VWRT510 is connected.

- The default LAN port IP address of VWRT510 is 192.168.11.1 and do not set the WAN port IP address of VWRT510 in the same network segment of LAN port of VWRT510, otherwise it may lead to the VWRT510 fail to work properly.

- Enter the password by phone keypad. The matching table between number and letters is as follows:
    - To input: D, E, F, d, e, f -- press ‘3’
    - To input: G, H, I, g, h, i -- press ‘4’
    - To input: J, K, L, j, k, l -- press ‘5’
    - To input: M, N, O, m, n, o -- press ‘6’
    - To input: P, Q, R, S, p, q, r, s -- press ‘7’
    - To input: T, U, V, t, u, v -- press ‘8’
    - To input: W, X, Y, Z, w, x, y, z -- press ‘9’
    - To input all other characters in the administrator password-----press ‘0’, e.g. password is ‘admin-admin’, press ‘23646023646’

4 Configuring Basic Settings

4.1 Two-Level Management

The VWRT510 supports user management. For user mode operation, please log in to the user interface Web Page. The Username is “user” and the default Password is the last 8 letters of the LAN port MAC address.

This section also explains how to set up a password for an administrator/root user and how to adjust basic/advanced settings for successfully accessing the Internet.

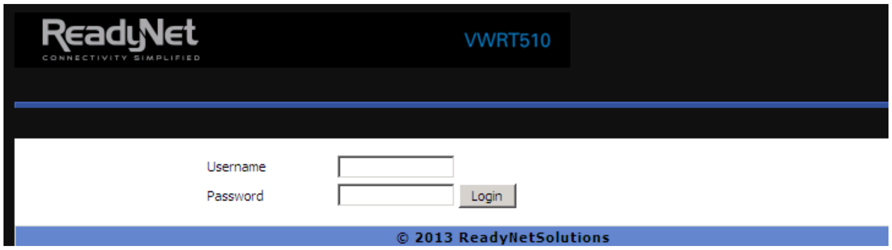
4.2 Accessing the User Interface Web Page

4.2.1 From the LAN Port

Step1. Connect your computer to one of the router’s LAN ports using an Ethernet cable.

Notice: You may either simply set up your computer to get IP dynamically from the router or set up the IP address of the computer to be the same subnet as **the default IP address of the router, which is 192.168.11.1**.

Step 2. Open a web browser on your computer, type **http://192.168.11.1.** The following login window will open.



Step 3. To login, type in the Username and Password found on the label on the bottom of the VWRT510 and click Login. (The username is “user” and the password is the last 8 characters of the LAN MAC address.)

The web page will log out after 5 minutes of no activity.

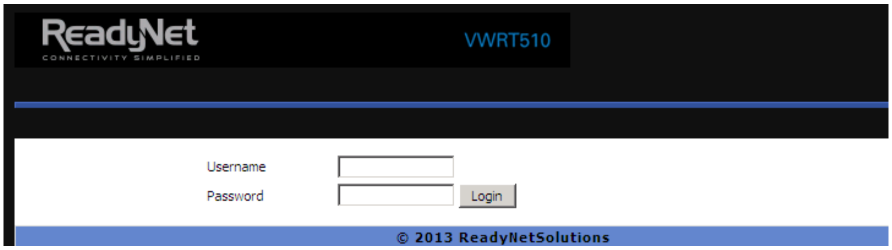
4.2.2 From the WAN Port

By default, remote web login is disabled so user will need to enable remote web login and change the password through the LAN port before attempting to login from the WAN port. The remote login port is 8080.

Step 1. Make sure your PC can connect to the router’s WAN port.

Step 2. Get the IP address of the WAN port using Voice Prompt.

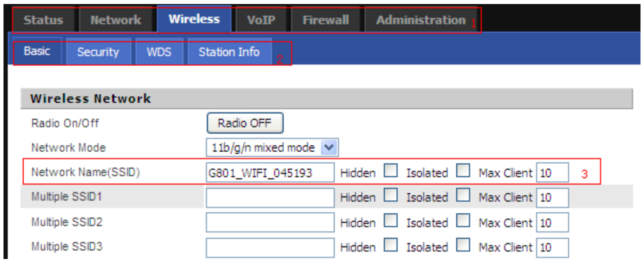
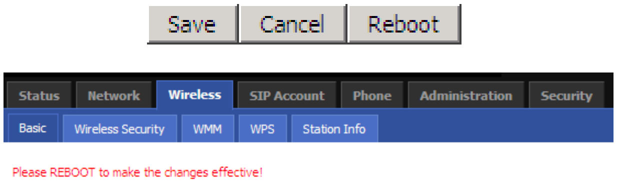
Step 3.Open a web browser on your computer and type http://the **IP address of WAN port: 8080.** The following login window will open.



Step 4.To login, type in the Username and Password found on the label on the bottom of the VWRT510 and click Login. (The username is "user" and the password is the last 8 characters of the LAN MAC address.)

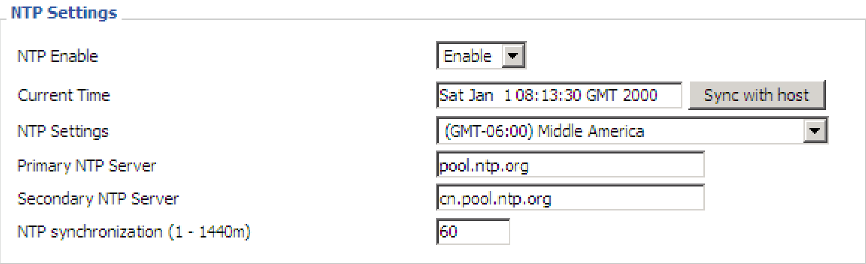
The web page will log out after 5 minutes of no activity.

4.3 Webpage

	No.	Name	Description
 Status Network Wireless VoIP Firewall Administration 1 Basic Security WDS Station Info 2 3 Wireless Network Radio On/Off: Radio OFF Network Mode: 11b/g/n mixed mode Network Name(SSID): G801_WIFI_045193 Hidden □ Isolated □ Max Client 10 Multiple SSID1: Hidden □ Isolated □ Max Client 10 Multiple SSID2: Hidden □ Isolated □ Max Client 10 Multiple SSID3: Hidden □ Isolated □ Max Client 10	1	Navigation bar	Click navigation bar, sub-navigation bars will appear on the second line.
	2	Title	Click on the sub-navigation bars to choose a configuration page.
	3	Parameter	To configure the parameters.
 Save Cancel Reboot Status Network Wireless SIP Account Phone Administration Security Basic Wireless Security WMM WPS Station Info Please REBOOT to make the changes effective!		Save	After every change, click this button to apply the change. After clicking Save, the red Please REBOOT to make the changes effective! will appear.
		Cancel	Click to cancel changes.
		Reboot	Click to reboot the router.

4.4 Setting Up the Time Zone

Open **Administration/Management** webpage as shown below, select the **Time Zone**, specify the **NTP server** and set the update interval in **NTP synchronization**.

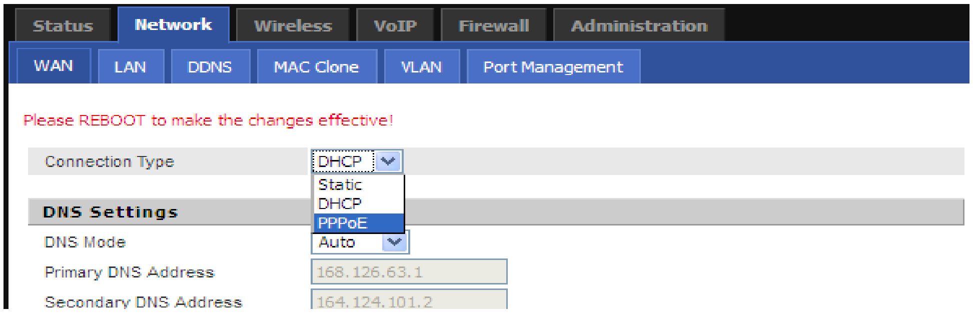


NTP Settings

NTP Enable	Enable
Current Time	Sat Jan 1 08:13:30 GMT 2000 (Sync with host)
NTP Settings	(GMT-06:00) Middle America
Primary NTP Server	pool.ntp.org
Secondary NTP Server	cn.pool.ntp.org
NTP synchronization (1 - 1440m)	60

4.5 Setting up the Internet Connection

Open the **Network/WAN** webpage as shown below and select the appropriate **IP Mode** according to the information from your ISP. There are three types offered – Static, DHCP and PPPoE.



Please REBOOT to make the changes effective!

Connection Type: DHCP

DNS Settings

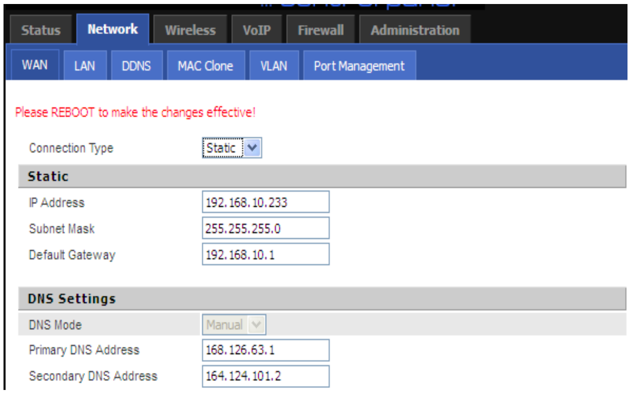
DNS Mode: Auto

Primary DNS Address: 168.126.63.1

Secondary DNS Address: 164.124.101.2

4.5.1 Static IP

You will receive a fixed public IP address or a public subnet (multiple public IP addresses) from your DSL or Cable ISP service providers. In most cases, a Cable service provider will offer a fixed public IP while a DSL service provider will offer a public subnet. If you have a public subnet, you can assign an IP address to the WAN interface.



Please REBOOT to make the changes effective!

Connection Type: Static

Static

IP Address: 192.168.10.233

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.10.1

DNS Settings

DNS Mode: Manual

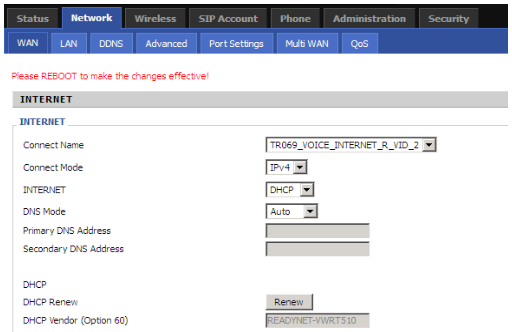
Primary DNS Address: 168.126.63.1

Secondary DNS Address: 164.124.101.2

IP Address	Type the IP address.
Subnet Mask	Type the subnet mask.
Gateway IP Address	Type the gateway IP address.
Primary DNS Server	Type in the primary IP address for the route.
Secondary DNS Server	Type in secondary IP address for necessity in the future.

4.5.2 DHCP

It is not necessary for you to type any IP address manually. Simply choose this type and the system will obtain the IP address automatically from the DHCP server.



Please REBOOT to make the changes effective!

INTERNET

INTERNET

Connect Name: TR069_VOICE_INTERNET_R_VID_2

Connect Mode: IPv4

INTERNET: DHCP

DNS Mode: Auto

Primary DNS Address:

Secondary DNS Address:

DHCP

DHCP Renew: Renew

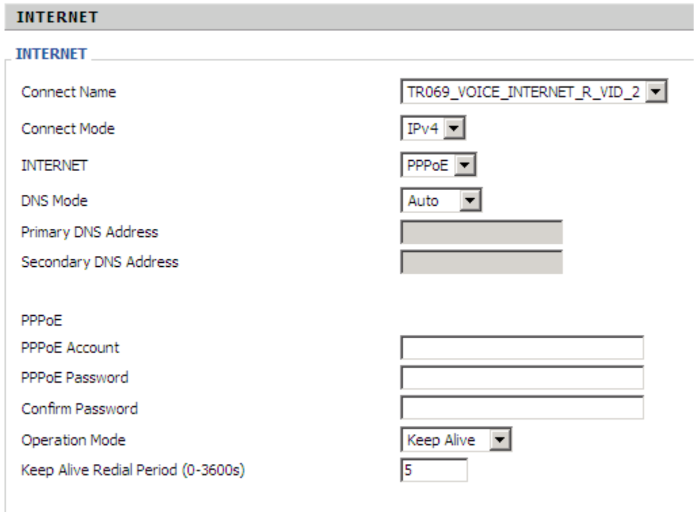
DHCP Vendor (Option 60): READYNET-VWRT510

DNS Mode	Set the DNS Mode to Auto or Manual. If user chooses Manual, fill in the primary and secondary DNS addresses.
Primary DNS Server	Type in the primary IP address for the route.
Secondary DNS Server	Type in secondary IP address for necessity in the future.

4.5.3 PPPoE

PPPoE stands for **Point-to-Point Protocol over Ethernet**. It relies on two widely accepted standards: PPP and Ethernet. It connects users through an Ethernet to the Internet with a common broadband medium, such as a single DSL line, wireless device, or cable modem. All users over the Ethernet can share a common connection.

PPPoE is often used for DSL. All local users can share one PPPoE connection for accessing the Internet. Your service provider will provide you information about user name, password, and authentication mode.



INTERNET

INTERNET

Connect Name	TR069_VOICE_INTERNET_R_VID_2
Connect Mode	IPv4
INTERNET	PPPoE
DNS Mode	Auto
Primary DNS Address	
Secondary DNS Address	
PPPoE	
PPPoE Account	
PPPoE Password	
Confirm Password	
Operation Mode	Keep Alive
Keep Alive Redial Period (0-3600s)	5

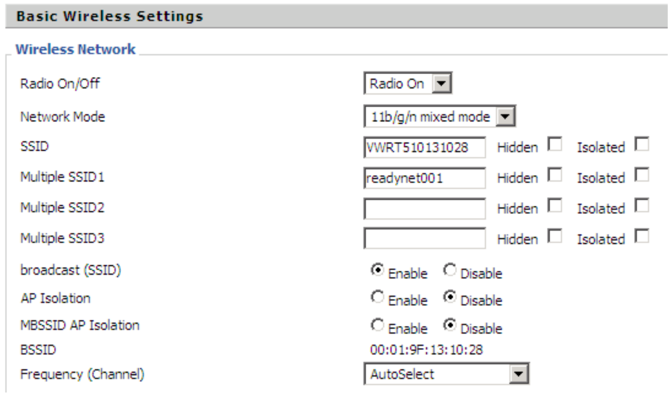
PPPoE Account	Assign a specific valid user name provided by the ISP.
PPPoE Password	Assign a valid password provided by the ISP.
Confirm Password	Input the password again.
DNS Mode	Set the DNS Mode to Auto or Manual. If Manual, fill in primary and secondary DNS addresses.
Primary DNS Server	Type in the primary IP address for the route.
Secondary DNS Server	Type in secondary IP address for necessity in the future.

4.6 Setting up the Wireless Connection

To set up the wireless connection, please follow these steps.

4.6.1 Enable Wireless and Set the SSID

Open the **Wireless/Basic** webpage as shown below.



Basic Wireless Settings

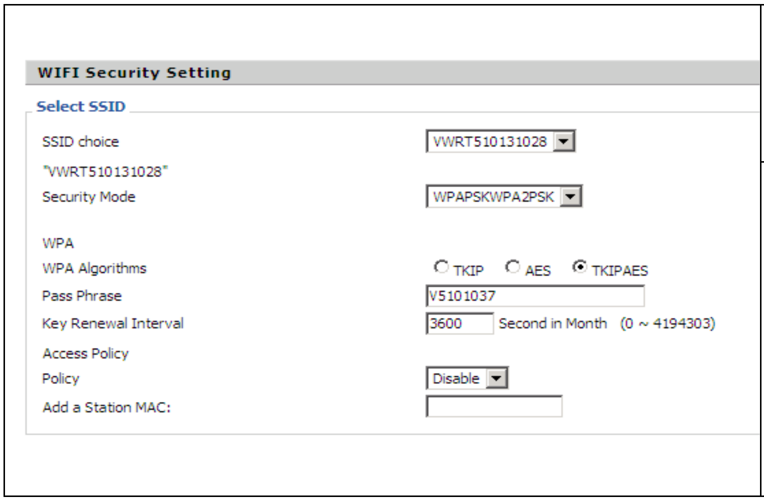
Wireless Network

Radio On/Off	Radio On		
Network Mode	11b/g/n mixed mode		
SSID	VWRT510131028	Hidden □	Isolated □
Multiple SSID1	readynet001	Hidden □	Isolated □
Multiple SSID2		Hidden □	Isolated □
Multiple SSID3		Hidden □	Isolated □
broadcast (SSID)	● Enable	○ Disable	
AP Isolation	○ Enable	● Disable	
MBSSID AP Isolation	○ Enable	● Disable	
BSSID	00:01:9F:13:10:28		
Frequency (Channel)	AutoSelect		

Radio On/Off	Press RADIO OFF to disable. Press RADIO ON to enable.
Network Mode	Choose one network mode from the drop down list.
Network Name(SSSID)	The name of the wireless name, it can be any text numbers or various special characters.
Multiple SSSD1-3	Set more wireless network.
Frequency	Choose channel frequency.

4.6.2 Encryption

Open the **Wireless/Security** webpage to set up encryption.

 **WIFI Security Setting** Select SSID SSID choice: VWRT510131028 "VWRT510131028" Security Mode: WPAPSKWPA2PSK WPA WPA Algorithms: ○ TKIP ○ AES ● TKIPAES Pass Phrase: V5101037 Key Renewal Interval: 3600 Second in Month (0 ~ 4194303) Access Policy Policy: Disable Add a Station MAC:	**SSID Choice**	Choose one SSID from Off-premises 1, off-premises 2 and Premises.
	Security Mode	Select an appropriate encryption mode for the security and privacy of your wireless data packets. Each encryption mode will bring out a different web page to offer additional configurations.

4.7 Register

4.7.1 Get a SIP Account

VWRT510 has an FXS port used for SIP calls. Before registering you will need a SIP account from your administrator or provider.

4.7.2 Connect

Connect the VWRT510 to the Internet.

4.7.3 Configure SIP from Webpage

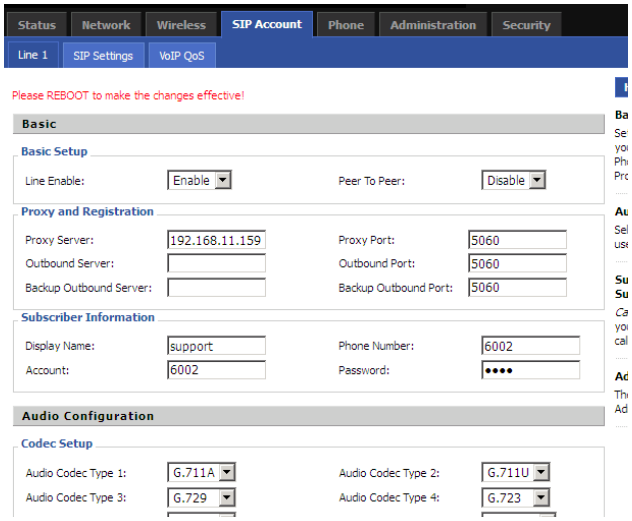
Step 1. Open SIP Account/Line 1 webpage.

Step 2. Fill in the SIP Server domain and SIP Server address (provided by your administrator or provider into Domain Name parameter, into SIP Server

Step 3. Fill account which get from you administrator into Display Name parameter, Phone Number parameter, and Account parameter.

Step 4. Fill password which get from you administrator into Password parameter.

Step 5. Click on Save in the bottom of the webpage to save changes.



Please REBOOT to make the changes effective!

Basic

Basic Setup

Line Enable: Enable   Peer To Peer: Disable

Proxy and Registration

Proxy Server: 192.168.11.159   Proxy Port: 5060

Outbound Server: Outbound Port: 5060

Backup Outbound Server: Backup Outbound Port: 5060

Subscriber Information

Display Name: support   Phone Number: 6002

Account: 6002   Password: ••••

Audio Configuration

Codec Setup

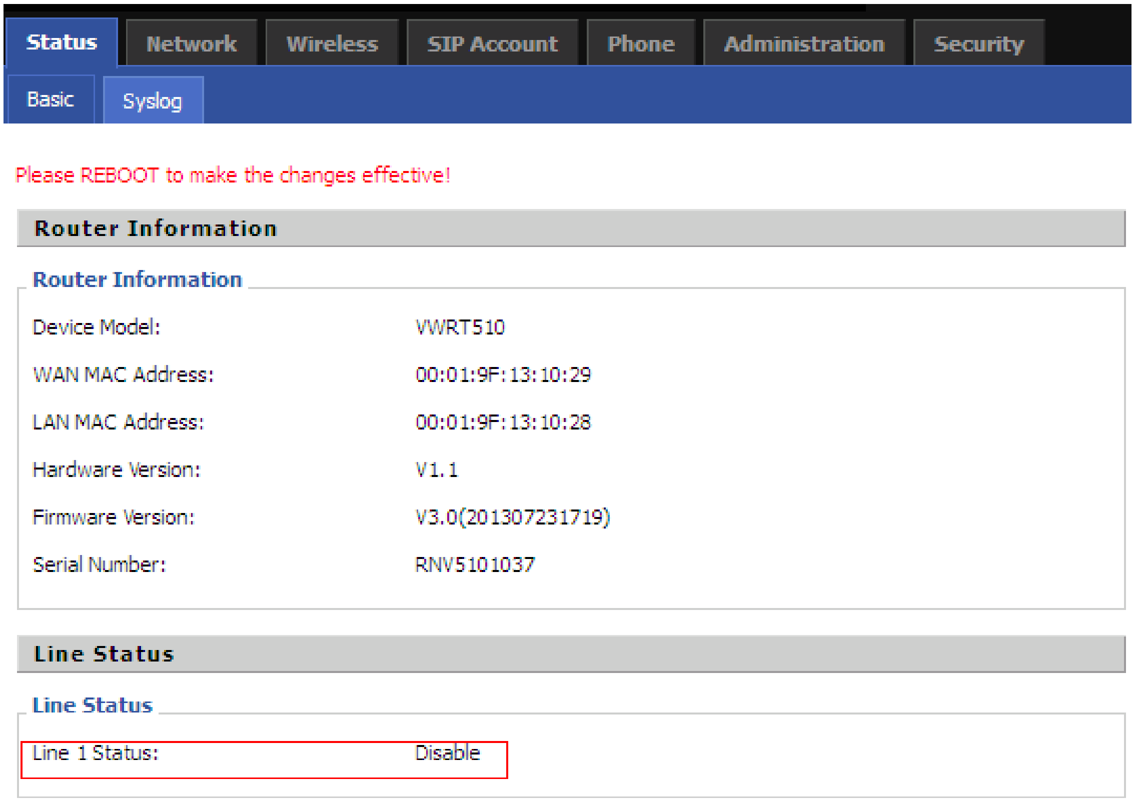
Audio Codec Type 1: G.711A   Audio Codec Type 2: G.711U

Audio Codec Type 3: G.729   Audio Codec Type 4: G.723

Note: If Please REBOOT to make the changes effective! appears, Click Reboot to make changes effective.

4.7.4 View the Register Status

To view the status, open the Status webpage. If the value is registered as follows, the VWRT510 is ready to to make phone calls.



Please REBOOT to make the changes effective!

Router Information

Router Information

Device Model:	VWRT510
WAN MAC Address:	00:01:9F:13:10:29
LAN MAC Address:	00:01:9F:13:10:28
Hardware Version:	V1.1
Firmware Version:	V3.0(201307231719)
Serial Number:	RNV5101037

Line Status

Line Status

Line 1 Status:	Disable

4.8 Make Call

4.8.1 Calling phone or extension numbers

To make a phone or extension number call:

a) Both ATA and the other VoIP device (i.e., another ATA or SIP product) must have public IP addresses, or

b) Both ATA and the other VoIP device must be on the same LAN using private or public IP addresses, or

c) Both ATA and the other VoIP device can be connected through a router using public or private IP addresses.

To make a call, pick up the analog phone or turn on the speakerphone and input the IP address directly, ending the input with “#”.

4.8.2 Direct IP calls

Direct IP calling allows two phones, that is, an ATA with an analog phone and another VoIP device, to talk to each other without a SIP proxy. VoIP calls can be made between two phones if:

a) Both ATA and the other VoIP device (i.e., another ATA or SIP product) have public IP addresses, or

b) Both ATA and the other VoIP device are on the same LAN using private or public IP addresses, or

c) Both ATA and the other VoIP device can be connected through a router using public or private IP addresses.

To make a direct IP call, pick up the analog phone or turn on the speakerphone and input the IP address directly, ending the input with “#”.

4.8.3 Call Hold

While in conversation, press “*77” to put the remote end on hold. Then you will hear dial tone and the remote party will hear the hold tone.

Press “*77” again to release the hold and resume bi-directional media.

4.8.4 Blind Transfer

Assuming that call Party A and Party B are in conversation and A wants to blind transfer B to C, Party A dials “*78” to get a dial tone, dials party C’s number and immediately presses “#” (or waits 4 seconds) to dial out. Party A can then hang up.

4.8.5 Attended Transfer

Assuming that call Party A and Party B are in conversation. A wants to Attend Transfer B to C.

Step 1. Party A dials “*77” to put Party B on hold, when Party A hears the dial tone, A dials C’s number, then Party A and Party C are in conversation.

Step 2. Party A dials “*78” to transfer to C, now B and C are in conversation.

Step 3. If the transfer is not successful, A and B are in conversation again.

4.8.6 Conference

Assuming that call Party A and Party B are in conversation. A wants to add C to the conference.

Step 1. Party A dials “*77” to place Party B on hold, when Party A hears the dial tone, A dials C’s number, then party A and party C are in conversation.

Step 2. Party A dials “*88” to add C, now A, B and C are in conference.

5 Web Configuration

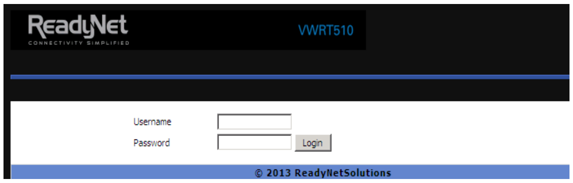
This chapter will guide users in configuring through the web interface.

5.1 Login

Step 1. Connect the LAN port of the router to your PC

Step 2. Open a web browser on your PC and type in http://192.168.11.1. The window will ask for a username and password.

Step 3. Enter the Username and Password as indicated in the router packaging or on the router's back label.



Username

Password

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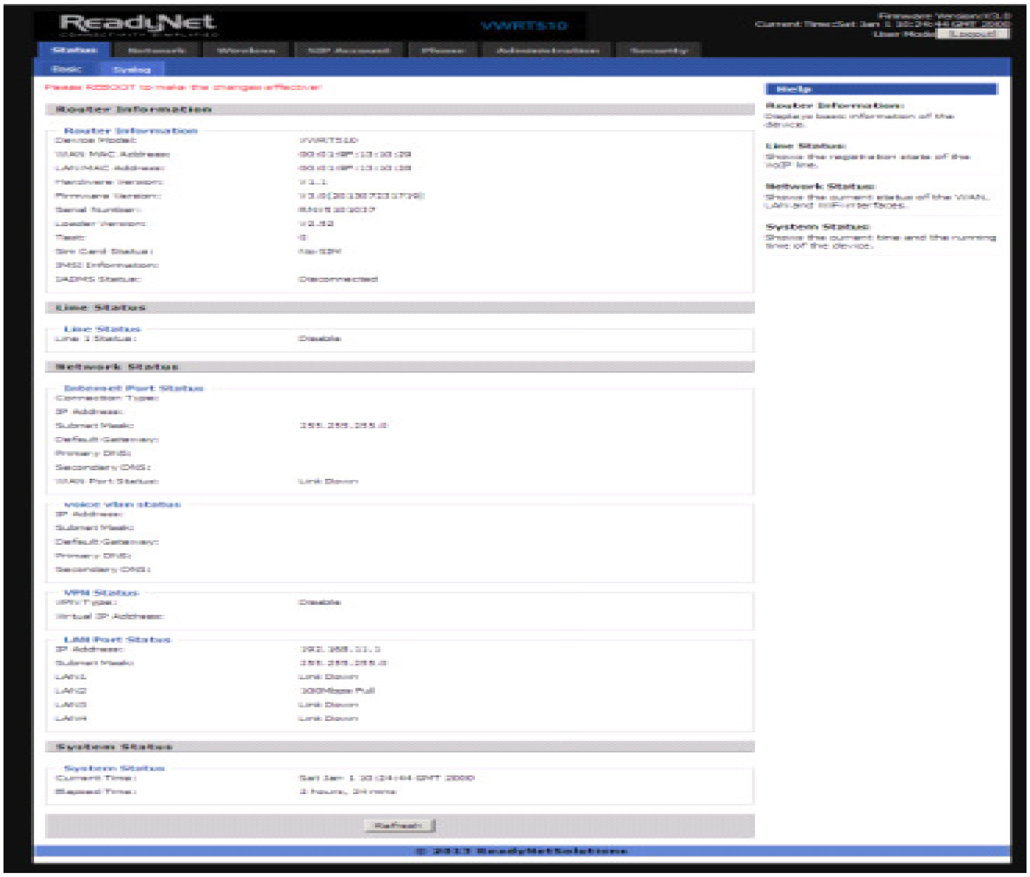
After successful login, the webpage shows basic information about the router, such as the current WAN IP, DNS server IP, WAN port connection mode, WAN link status, wireless SSID, wireless channel and firmware version.

5.2 Configuring the WAN and LAN Ports

The main webpage shows status, product, network and system information. It shows the basic information of the product, such as product name, serial number, MAC address, hardware version and software version. It also shows Link Status, WAN Port Status, and LAN Port Status and current time and running time of the product.



Firmware Version:V3.0

Current Time:Sat Jan 1 10:24:44 GMT 2000

User Mode

Please REBOOT to make the changes effective!

Router Information

Router Information

Device Model: VWRT510

WAN MAC Address: [illegible]

LAN MAC Address: [illegible]

Hardware Version: V1.1

Firmware Version: V3.0(20130723 1739)

Serial Number: [illegible]

Loader Version: V2.52

Test: 0

Sim Card Status : No SIM

IMSI Information:

DADMS Status: Disconnected

Line Status

Line Status

Line 1 Status : Disable

Network Status

Internet Port Status

Connection Type:

IP Address:

Subnet Mask: 255.255.255.0

Default Gateway:

Primary DNS:

Secondary DNS :

WAN Port Status: Link Down

voice vlan status

IP Address:

Subnet Mask:

Default Gateway:

Primary DNS:

Secondary DNS :

VPN Status

VPN Type : Disable

Virtual IP Address:

LAN Port Status

IP Address: 192.168.11.1

Subnet Mask: 255.255.255.0

LAN1 Link Down

LAN2 100Mbps Full

LAN3 Link Down

LAN4 Link Down

System Status

System Status

Current Time : Sat Jan 1 10:24:44 GMT 2000

Elapsed Time : 2 hours, 24 mins

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Help

Router Information:
Displays basic information of the device.

Line Status:
Shows the registration state of the VoIP line.

Network Status:
Shows the current status of the WAN, LAN and WiFi interfaces.

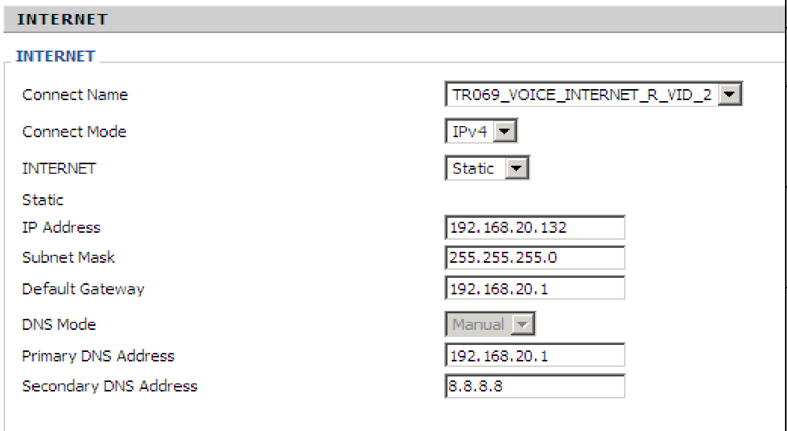
System Status:
Shows the current time and the running time of the device.

5.2.1 WAN

This page allows you to set WAN configuration with different modes. Use the Connection Type drop down list to choose one WAN mode and then the corresponding page will be displayed.

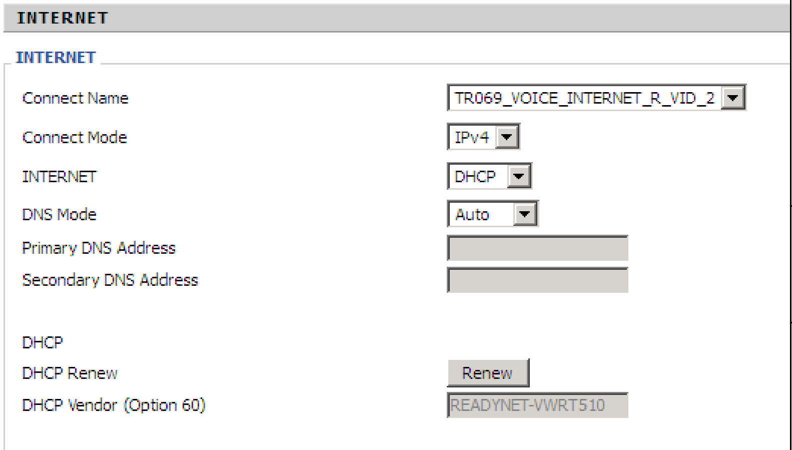
Static IP:

You will receive a fixed public IP address or a public subnet, namely multiple public IP addresses from your DSL or Cable ISP service providers. In most cases, a Cable service provider will offer a fixed public IP, while a DSL service provider will offer a public subnet. If you have a public subnet, you could assign an IP address to the WAN interface.

 INTERNET INTERNET Connect Name: TR069_VOICE_INTERNET_R_VID_2 Connect Mode: IPv4 INTERNET: Static Static IP Address: 192.168.20.132 Subnet Mask: 255.255.255.0 Default Gateway: 192.168.20.1 DNS Mode: Manual Primary DNS Address: 192.168.20.1 Secondary DNS Address: 8.8.8.8	**IP Address**	Type the IP address
	Subnet Mask	Type the subnet mask
	Gateway IP Address	Type the gateway IP address
	Primary DNS Server	Type in the primary IP address for the route
	Secondary DNS Server	Type in secondary IP address for necessity in the future

DHCP:

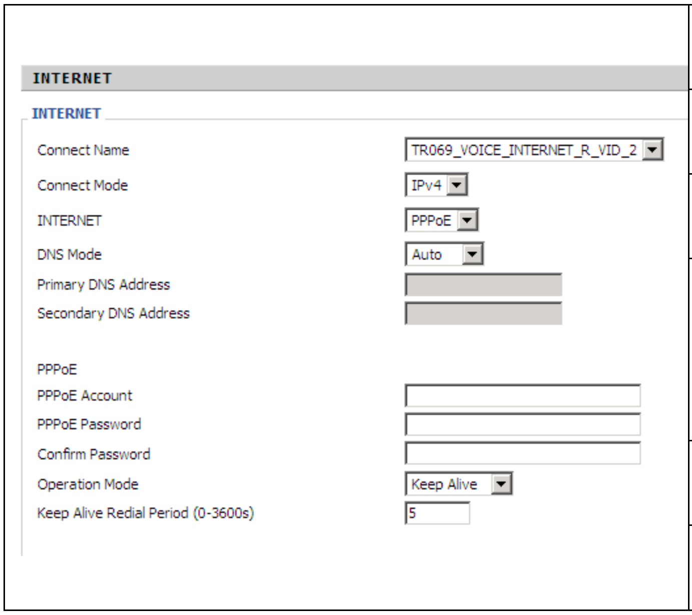
It is not necessary for you to type any IP address manually. Simply choose this type and the system will obtain the IP address automatically from DHCP server.

 INTERNET INTERNET Connect Name: TR069_VOICE_INTERNET_R_VID_2 Connect Mode: IPv4 INTERNET: DHCP DNS Mode: Auto Primary DNS Address: Secondary DNS Address: DHCP DHCP Renew: Renew DHCP Vendor (Option 60): READYNET-VWRT510	**DNS Mode**	Set the DNS Mode to Auto or Manual. If Manual, fill in the primary and secondary DNS addresses.
	Primary DNS Server	Type in the primary IP address for the route.
	Secondary DNS Server	Type in secondary IP address for necessity in the future.

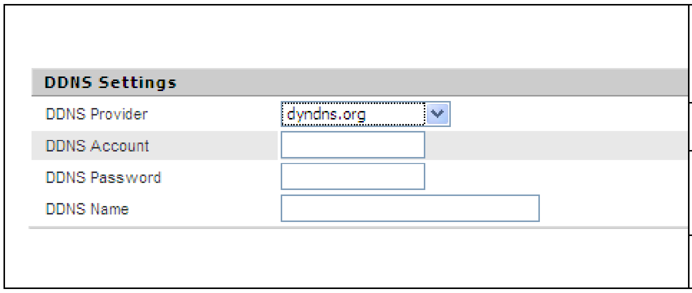
PPPoE:

PPPoE stands for **Point-to-Point Protocol over Ethernet**. It relies on two widely accepted standards: PPP and Ethernet. It connects users through an Ethernet to the Internet with a common broadband medium, such as a single DSL line, wireless device or cable modem. All the users over the Ethernet can share a common connection.

PPPoE is mostly used by DSL modem users. All local users can share one PPPoE connection for accessing the Internet. Your service provider will provide you information about user name, password, and authentication mode.

 INTERNET INTERNET Connect Name: TR069_VOICE_INTERNET_R_VID_2 Connect Mode: IPv4 INTERNET: PPPoE DNS Mode: Auto Primary DNS Address Secondary DNS Address PPPoE PPPoE Account PPPoE Password Confirm Password Operation Mode: Keep Alive Keep Alive Redial Period (0-3600s): 5	**PPPoE Account**	Assign a specific valid user name provided by the ISP.
	PPPoE Password	Assign a valid password provided by the ISP.
	PPPoE Auto-Dial	If or not enable PPPoE Password.
	DNS Mode	Set the DNS Mode to Auto or Manual. If Manual, fill in the primary and secondary DNS addresses.
	Primary DNS Server	Type in the primary IP address for the route.
	Secondary DNS Server	Type in secondary IP address for necessity in the future.

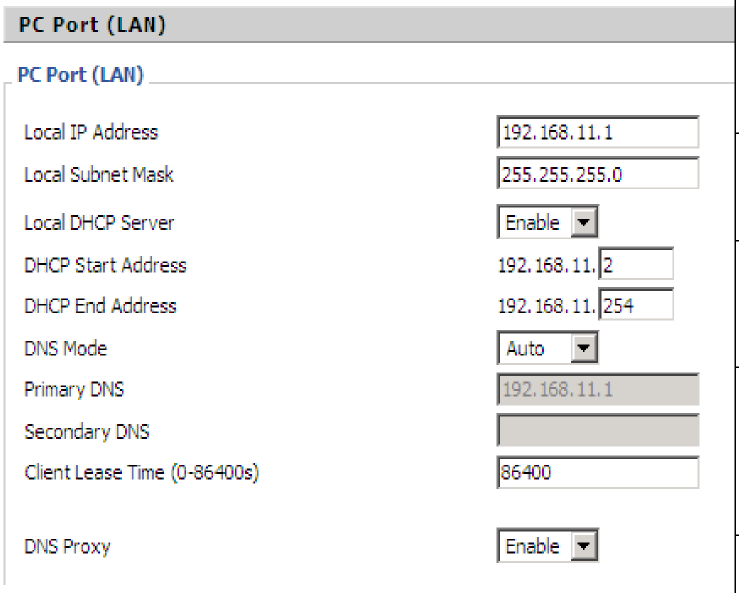
DDNS Setting

 DDNS Settings DDNS Provider: dyndns.org DDNS Account DDNS Password DDNS Name	**DDNS Provider**	Use the drop down list to select one DDNS Provider domain.
	DDNS Account	Fill in the DDNS account.
	DDNS Password	Fill in the DDNS Password.
	DDNS Name	Fill in the DDNS name.

5.2.2 LAN

LAN Port:

The most generic function of the router is NAT, which translates packets from public IP addresses to local IP addresses to forward the right packets to the right host and vice versa.



PC Port (LAN)

PC Port (LAN)

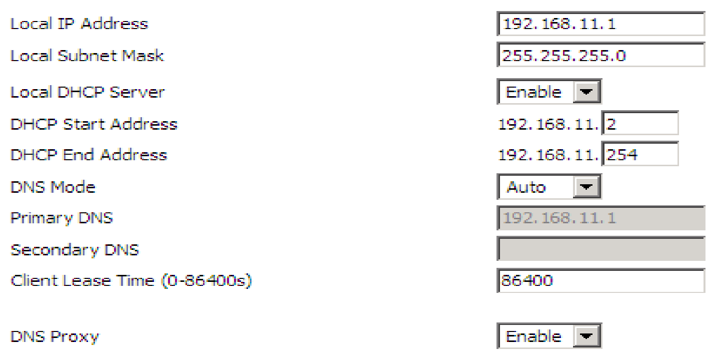
Local IP Address	192.168.11.1
Local Subnet Mask	255.255.255.0
Local DHCP Server	Enable
DHCP Start Address	192.168.11.2
DHCP End Address	192.168.11.254
DNS Mode	Auto
Primary DNS	192.168.11.1
Secondary DNS	
Client Lease Time (0-86400s)	86400
DNS Proxy	Enable

Local IP Address	Type in local IP address (Default: 192.168.11.1)
Local Subnet Mask	Type in an address code that determines the size of the network. (Default: 255.255.255.0/ 24)
Local DHCP Server	If or not enable DHCP server.
DHCP Start/End Address	The DHCP start/end address.
DNS Mode	Set the DNS Mode to Auto or Manual. If Manual, fill in the primary and secondary DNS addresses.
Primary DNS Server	Type in the primary IP address for the route
Secondary DNS Server	Type in the secondary IP address for the route

DHCP Server:

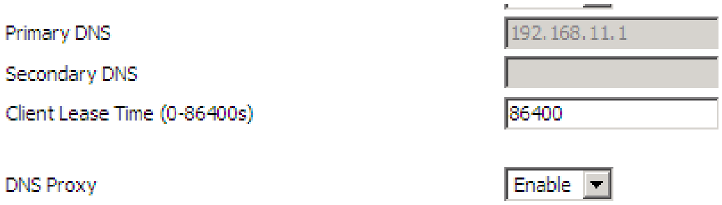
The router has a built-in DHCP server that assigns private IP address to each local host.

DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts as a DHCP server for your network so it automatically dispatches related IP settings to any local user configured as a DHCP client. It is highly recommended you leave the router enabled as a DHCP server if you do not have a DHCP server for your network.



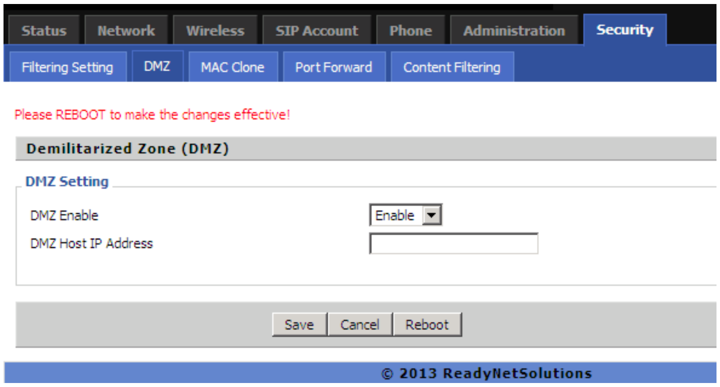
Local IP Address	192.168.11.1
Local Subnet Mask	255.255.255.0
Local DHCP Server	Enable
DHCP Start Address	192.168.11.2
DHCP End Address	192.168.11.254
DNS Mode	Auto
Primary DNS	192.168.11.1
Secondary DNS	
Client Lease Time (0-86400s)	86400
DNS Proxy	Enable

Local DHCP Server	To enable DHCP server.
DHCP Starting Address	Enter a value of the IP address pool for the DHCP server to start with when issuing IP addresses.
DHCP Ending Address	Enter a value of the IP address pool for the DHCP server to end with when issuing IP addresses.

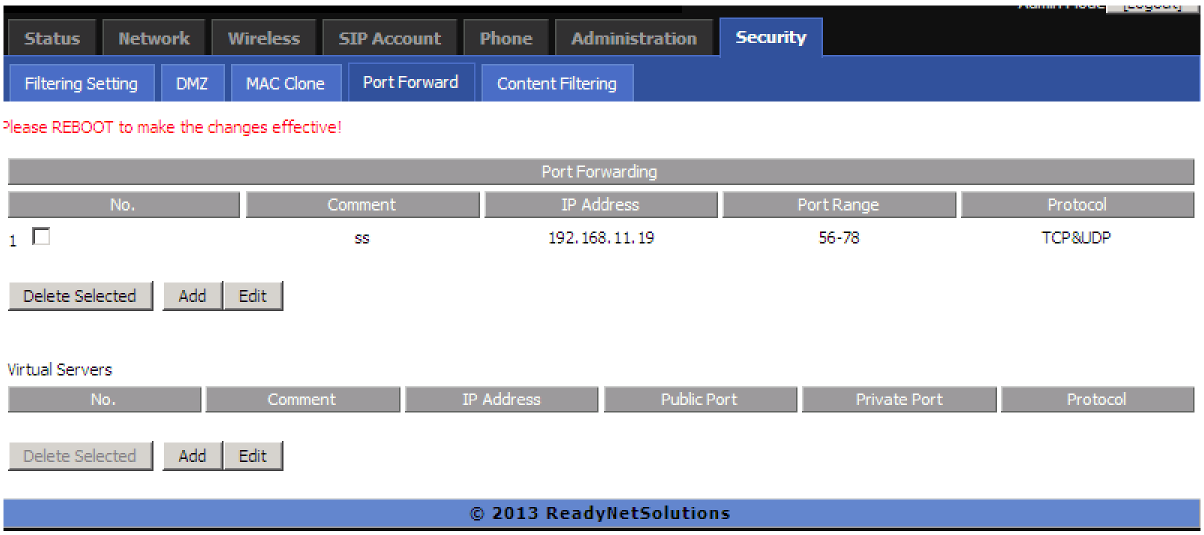
 Primary DNS 192.168.11.1 Secondary DNS Client Lease Time (0-86400s) 86400 DNS Proxy Enable	**Primary/Secondary DNS**	Input the primary or secondary DNS IP address.
	Primary DNS	You must specify a DNS server IP address here because your ISP should provide you with usually more than one DNS Server. If your ISP does not provide it, the router will automatically apply default DNS Server IP address: 202.96.134.33 to this field.
	Secondary DNS	You must specify a DNS server IP address here because your ISP should provide you with usually more than one DNS Server. If your ISP does not provide it, the router will automatically apply default DNS Server IP address: 202.96.128.86 to this field. If both the Primary and Secondary IP Address fields are left empty, the router will assign its own IP address to local users as a DNS proxy server and maintain a DNS cache.
	Client Lease Time	It allows you to set the leased time for the specified PC.
	DNS Proxy	If or not enable DNS proxy.

5.2.3 DMZ/Port Forward

DMZ

 Status Network Wireless SIP Account Phone Administration Security Filtering Setting DMZ MAC Clone Port Forward Content Filtering Please REBOOT to make the changes effective! Demilitarized Zone (DMZ) DMZ Setting DMZ Enable Enable DMZ Host IP Address © 2013 ReadyNetSolutions	**DMZ Enable**	Enable DMZ
	DMZ Host IP Address	Enter the private IP address of the DMZ host

Port Forward



Please REBOOT to make the changes effective!

Port Forwarding

No.	Comment	IP Address	Port Range	Protocol
1 □	ss	192.168.11.19	56-78	TCP&UDP

Delete Selected | Add | Edit

Virtual Servers

No.	Comment	IP Address	Public Port	Private Port	Protocol

Delete Selected | Add | Edit

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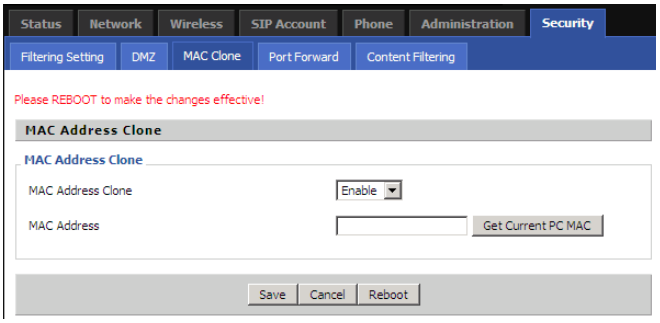
5.2.4 MAC Clone

Some ISPs will require you to register your MAC address. If you do not wish to re-register your MAC address, you can have the router clone the MAC address that is registered with your ISP. To use the Clone Address button, the computer viewing the Web-base utility screen will have the MAC address automatically entered in the Clone WAN MAC field.



Please REBOOT to make the changes effective!

MAC Address Clone

MAC Address Clone

MAC Address Clone	Enable
MAC Address	Get Current PC MAC

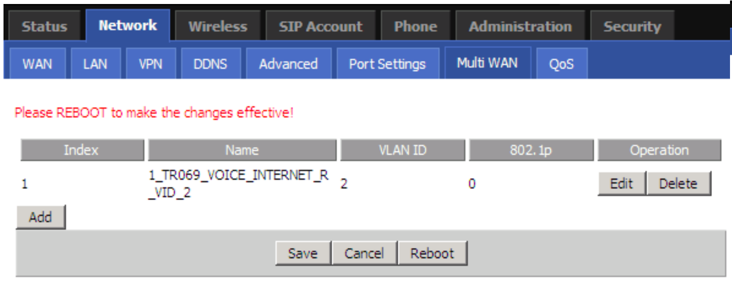
Save | Cancel | Reboot

Step 1. Press Get Current PC MAC to clone the current PC or MAC address to router's Internet port..

Step 2. Press Save to save the changes.

Step 3. Press Reboot to make changes effective.

5.2.5 Multi WAN

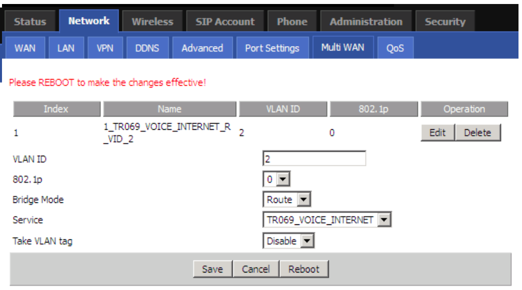


Please REBOOT to make the changes effective!

Index	Name	VLAN ID	802.1p	Operation
1	1_TR069_VOICE_INTERNET_R_VID_2	2	0	Edit Delete

Add

Save | Cancel | Reboot



Please REBOOT to make the changes effective!

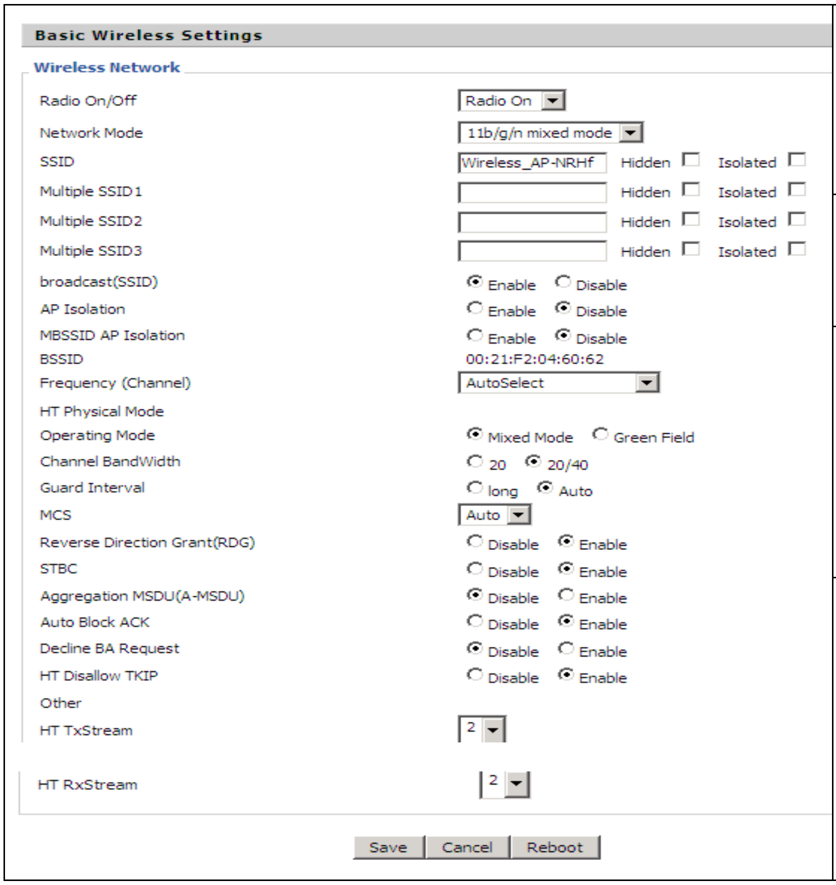
Index	Name	VLAN ID	802.1p	Operation
1	1_TR069_VOICE_INTERNET_R_VID_2	2	0	Edit Delete

VLAN ID	2
802.1p	0
Bridge Mode	Route
Service	TR069_VOICE_INTERNET
Take VLAN tag	Disable

Save | Cancel | Reboot

5.3 Wireless

5.3.1 Basic

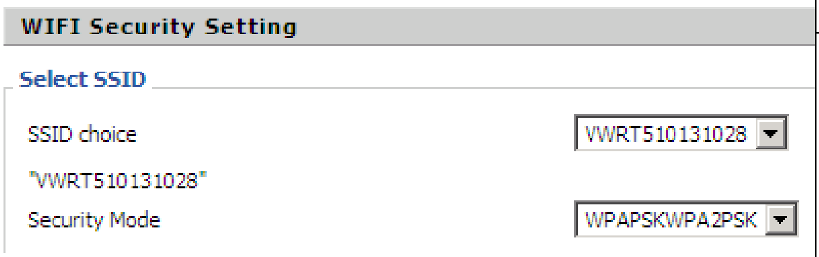
	**Radio On/Off**	Select Radio On to enable the wireless, select Radio Off to disable wireless.
	Network Mode	Choose one network mode from the five types.
	SSID	The name of the wireless. It can be any text numbers or various special characters. The default SSID is "VWRT510XXXXX (last 5 digits of the LAN MAC)".
	Multiple SSID1-3	User can set multiple SSIDs.
	Broadcast (SSID)	Enable SSID broadcast.

Basic Wireless Settings

Wireless Network

Radio On/Off	Radio On
Network Mode	11b/g/n mixed mode
SSID	Wireless_AP-NRHf Hidden □ Isolated □
Multiple SSID1	Hidden □ Isolated □
Multiple SSID2	Hidden □ Isolated □
Multiple SSID3	Hidden □ Isolated □
broadcast(SSID)	● Enable ○ Disable
AP Isolation	○ Enable ● Disable
MBSSID AP Isolation	○ Enable ● Disable
BSSID	00:21:F2:04:60:62
Frequency (Channel)	AutoSelect
HT Physical Mode	
Operating Mode	● Mixed Mode ○ Green Field
Channel BandWidth	○ 20 ● 20/40
Guard Interval	○ long ● Auto
MCS	Auto
Reverse Direction Grant(RDG)	○ Disable ● Enable
STBC	○ Disable ● Enable
Aggregation MSDU(A-MSDU)	● Disable ○ Enable
Auto Block ACK	○ Disable ● Enable
Decline BA Request	● Disable ○ Enable
HT Disallow TKIP	○ Disable ● Enable
Other	
HT TxStream	2
HT RxStream	2

5.3.2 Wireless Security

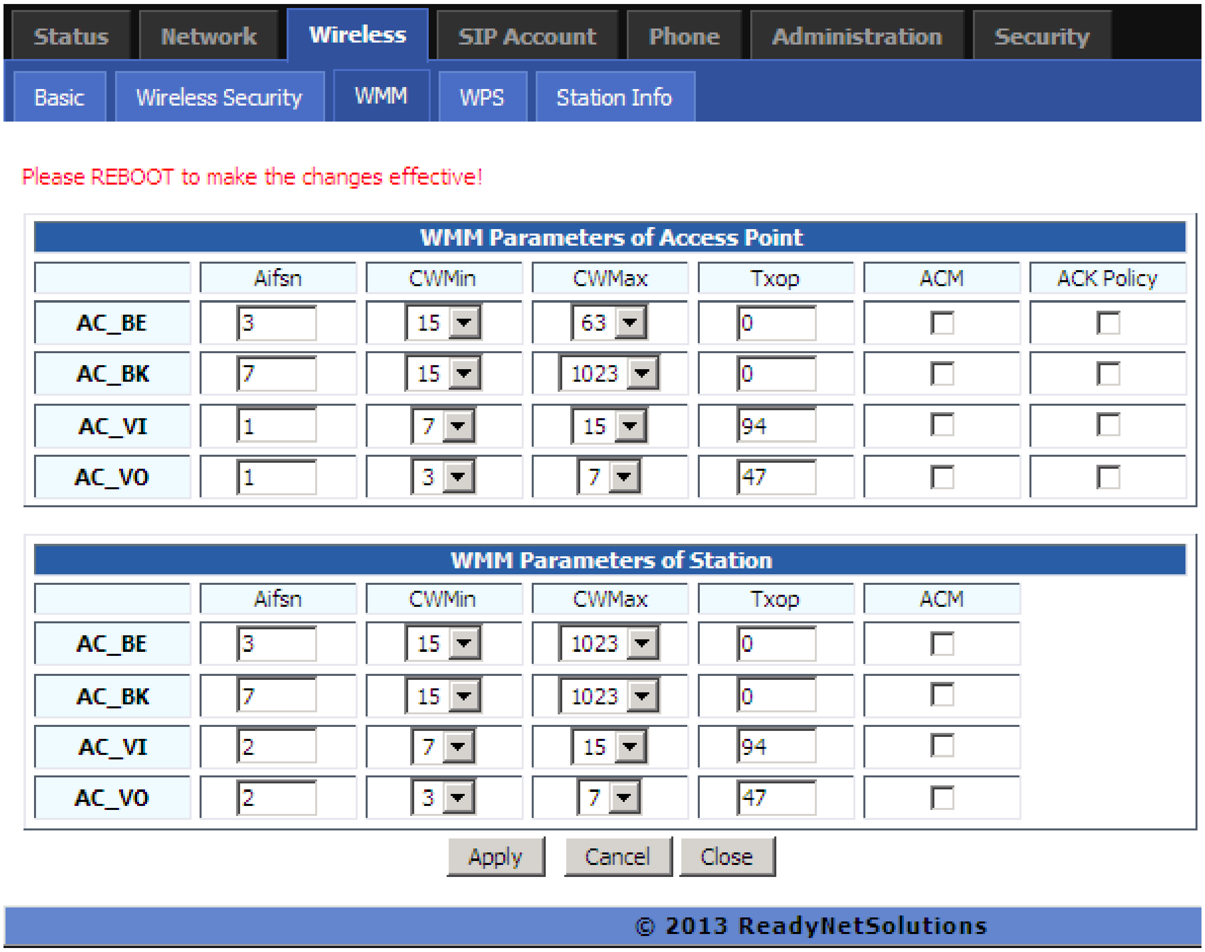
	**SSID Choice**	Choose one SSID from SSID, Multiple SSID1, Multiple SSID2 and Multiple SSID3.
	Security Mode	Select an appropriate encryption mode to improve the security and privacy of your wireless data packets. Each encryption mode will activate a different web page to configure.

WIFI Security Setting

Select SSID

SSID choice	VWRT510131028
"VWRT510131028"	
Security Mode	WPAPSKWPA2PSK

5.3.3 WMM



Please REBOOT to make the changes effective!

WMM Parameters of Access Point

	Aifsn	CWMin	CWMax	Txop	ACM	ACK Policy
AC_BE	3	15	63	0	☐	☐
AC_BK	7	15	1023	0	☐	☐
AC_VI	1	7	15	94	☐	☐
AC_VO	1	3	7	47	☐	☐

WMM Parameters of Station

	Aifsn	CWMin	CWMax	Txop	ACM
AC_BE	3	15	1023	0	☐
AC_BK	7	15	1023	0	☐
AC_VI	2	7	15	94	☐
AC_VO	2	3	7	47	☐

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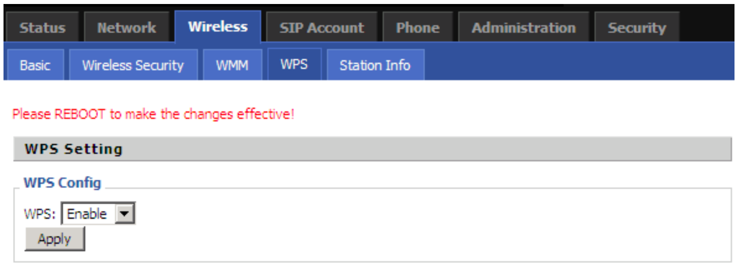
5.3.4 WPS

WPS (**Wi-Fi Protected Setup**) provides an easy procedure to make a network connection between a wireless station and a wireless access point (router) with the encryption of WPA and WPA2.

It is the simplest way to build a connection between wireless network clients and the router. Users do not need to select any encryption mode or type a long encryption passphrase to set up a wireless client every time. Users need only press a button on the wireless client and WPS will connect the client and router automatically.

	**WPS**	Enable WPS.
	Apply	Press the button to apply.

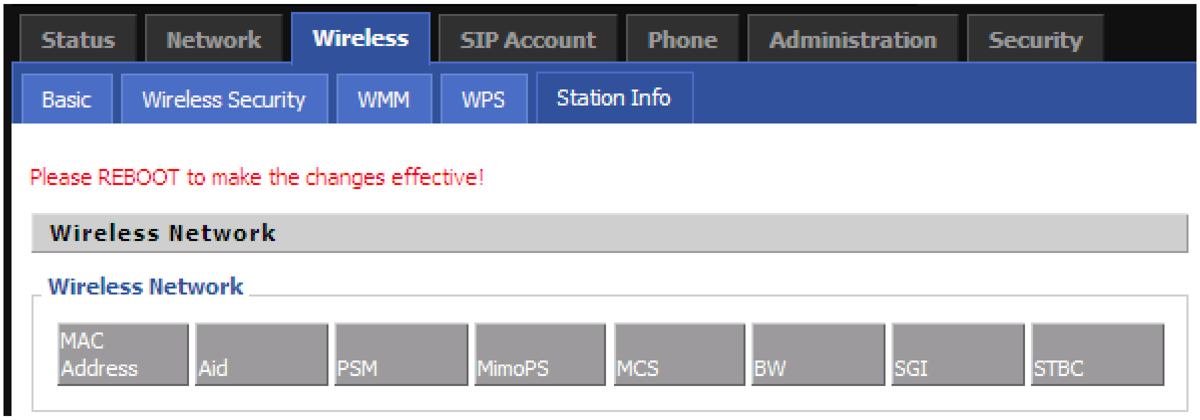
Please REBOOT to make the changes effective!

WPS Setting

WPS Config

WPS: Enable

5.3.5 Station list



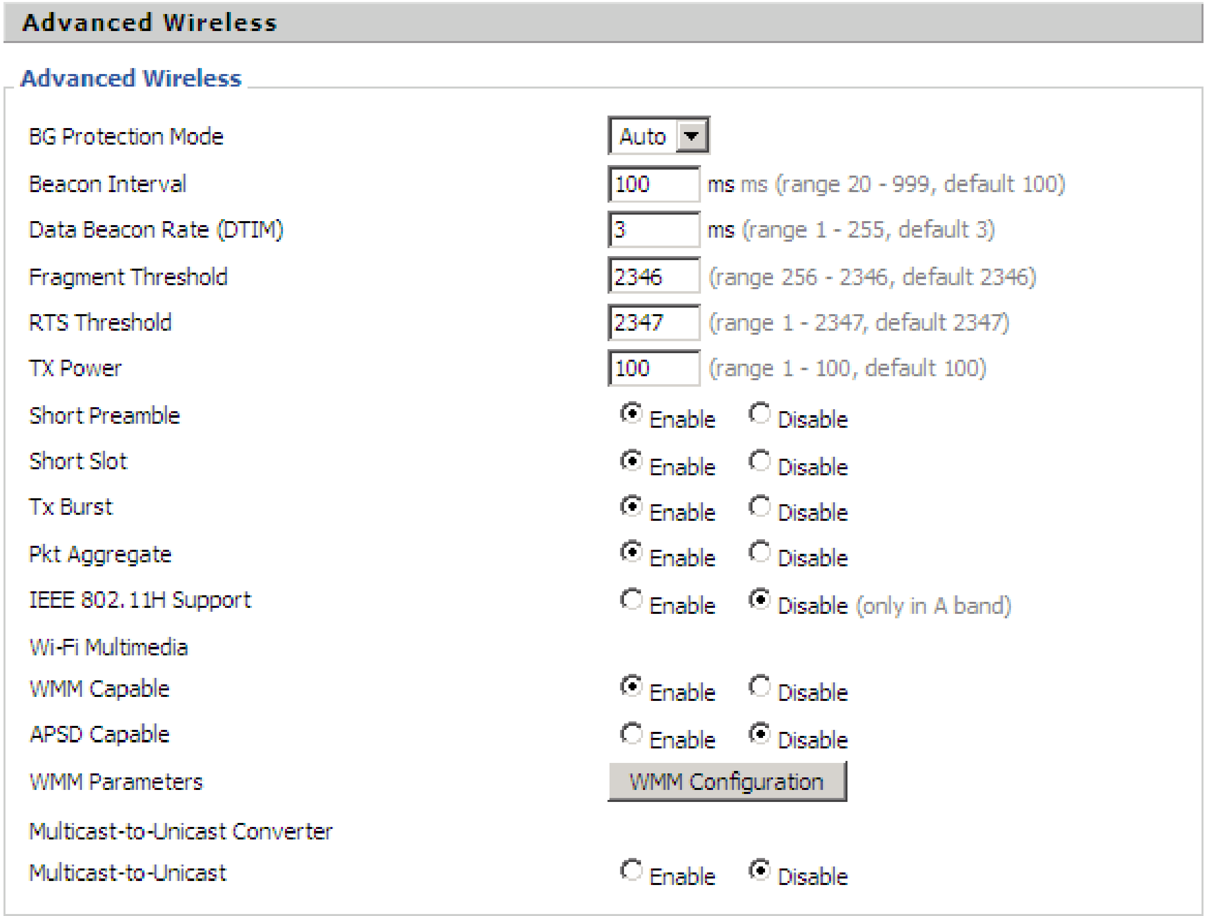
Please REBOOT to make the changes effective!

Wireless Network

Wireless Network

MAC Address	Aid	PSM	MimoPS	MCS	BW	SGI	STBC

5.3.6 Advanced



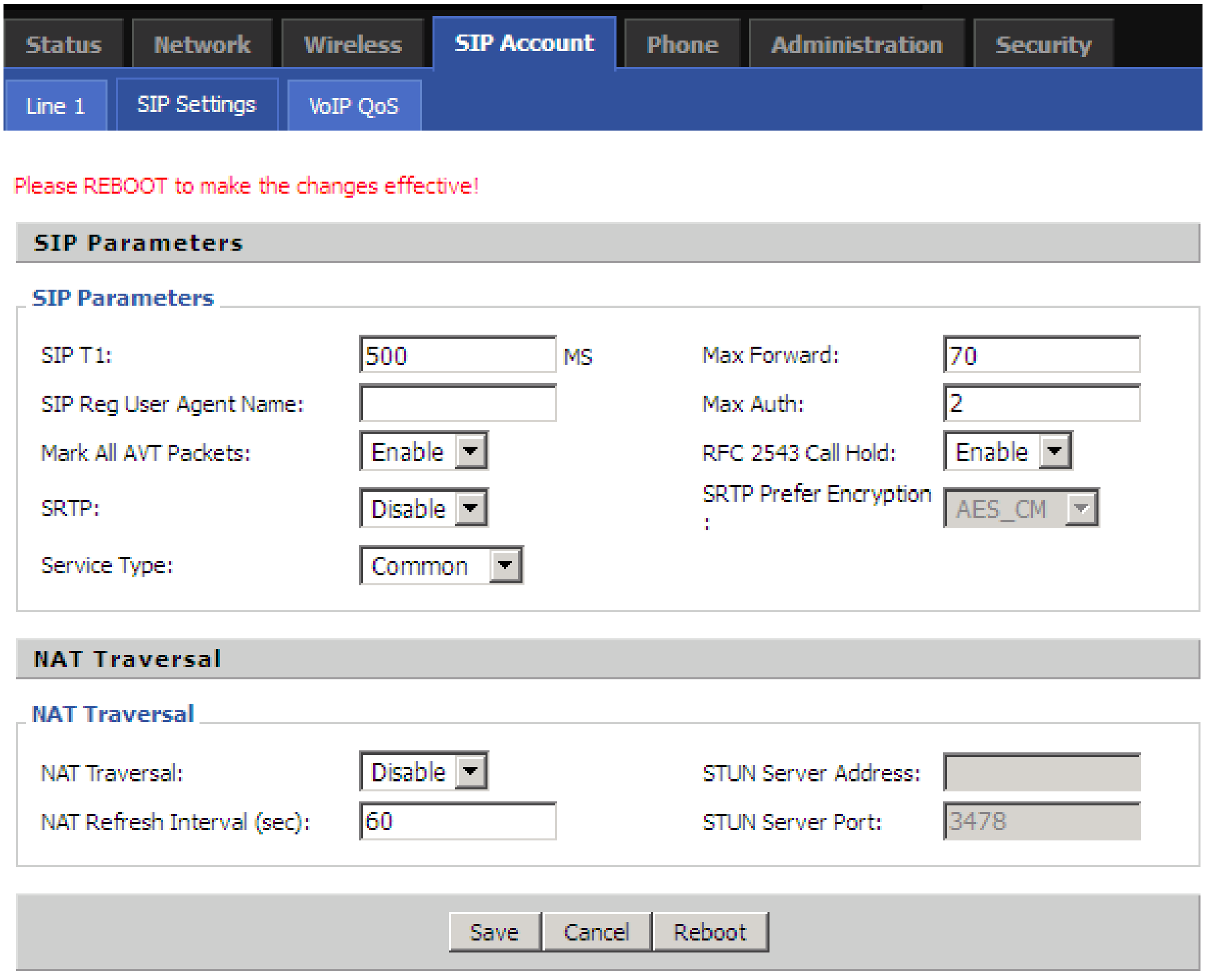
Advanced Wireless

Advanced Wireless

BG Protection Mode	Auto ▾
Beacon Interval	100 ms ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	3 ms (range 1 - 255, default 3)
Fragment Threshold	2346 (range 256 - 2346, default 2346)
RTS Threshold	2347 (range 1 - 2347, default 2347)
TX Power	100 (range 1 - 100, default 100)
Short Preamble	● Enable ○ Disable
Short Slot	● Enable ○ Disable
Tx Burst	● Enable ○ Disable
Pkt Aggregate	● Enable ○ Disable
IEEE 802.11H Support	○ Enable ● Disable (only in A band)
Wi-Fi Multimedia	
WMM Capable	● Enable ○ Disable
APSD Capable	○ Enable ● Disable
WMM Parameters	WMM Configuration
Multicast-to-Unicast Converter	
Multicast-to-Unicast	○ Enable ● Disable

5.4 SIP Account

5.4.1 SIP Settings



Please REBOOT to make the changes effective!

SIP Parameters

SIP Parameters

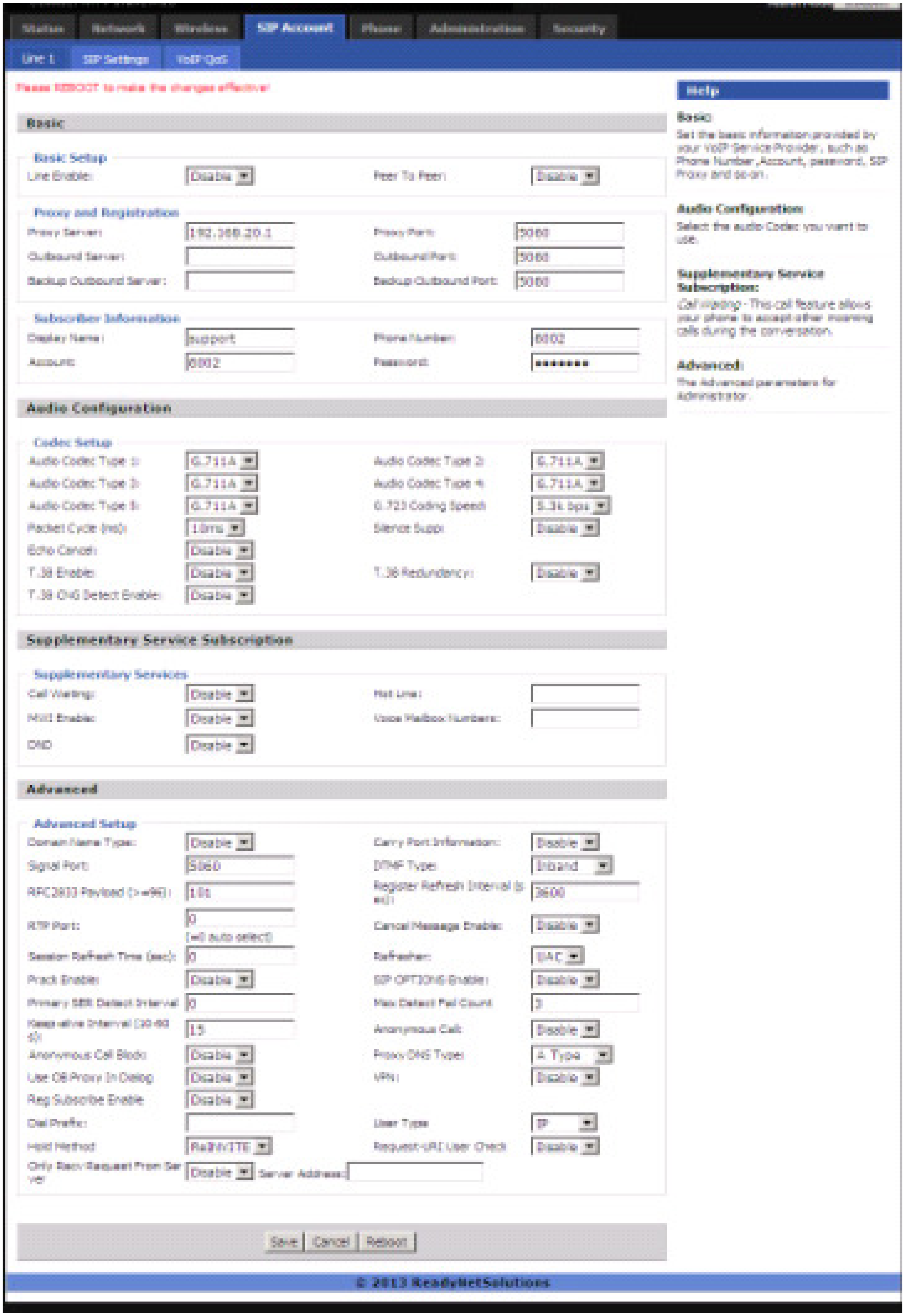
SIP T1:	500 MS	Max Forward:	70
SIP Reg User Agent Name:		Max Auth:	2
Mark All AVT Packets:	Enable	RFC 2543 Call Hold:	Enable
SRTP:	Disable	SRTP Prefer Encryption :	AES_CM
Service Type:	Common		

NAT Traversal

NAT Traversal

NAT Traversal:	Disable	STUN Server Address:	
NAT Refresh Interval (sec):	60	STUN Server Port:	3478

5.4.2 Line 1



Please REBOOT to make the changes effective!

Basic

Basic Setup

Line Enable:	Disable	Peer To Peer:	Disable

Proxy and Registration

Proxy Server:	192.168.20.1	Proxy Port:	5060
Outbound Server:		Outbound Port:	5060
Backup Outbound Server:		Backup Outbound Port:	5060

Subscriber Information

Display Name:	support	Phone Number:	8002
Account:	8002	Password:	••••••••

Audio Configuration

Codec Setup

Audio Codec Type 1:	G.711A	Audio Codec Type 2:	G.711A
Audio Codec Type 3:	G.711A	Audio Codec Type 4:	G.711A
Audio Codec Type 5:	G.711A	G.723 Coding Speed:	5.3k bps
Packet Cycle (ms):	10ms	Silence Supp:	Disable
Echo Cancel:	Disable		
T.38 Enable:	Disable	T.38 Redundancy:	Disable
T.38 CNG Detect Enable:	Disable		

Supplementary Service Subscription

Supplementary Services

Call Waiting:	Disable	Hot Line:	
MWI Enable:	Disable	Voice Mailbox Numbers:	
DND	Disable		

Advanced

Advanced Setup

Domain Name Type:	Disable	Carry Port Information:	Disable
Signal Port:	5060	DTMF Type:	Inband
RFC2833 Payload (>=96):	101	Register Refresh Interval (sec):	3600
RTP Port:	0 (=0 auto select)	Cancel Message Enable:	Disable
Session Refresh Time (sec):	0	Refresher:	UAC
Prack Enable:	Disable	SIP OPTIONS Enable:	Disable
Primary SER Detect Interval	0	Max Detect Fail Count	3
Keep-alive Interval (10-60 s):	15	Anonymous Call:	Disable
Anonymous Call Block:	Disable	Proxy DNS Type:	A Type
Use OB Proxy In Dialog	Disable	VPN:	Disable
Reg Subscribe Enable	Disable		
Dial Prefix:		User Type:	IP
Hold Method:	ReINVITE	Request-URI User Check	Disable
Only Recv Request From Server	Disable Server Address:		

Help

Basic:
Set the basic information provided by your VoIP Service Provider, such as Phone Number, Account, password, SIP Proxy and so on.

Audio Configuration:
Select the audio Codec you want to use.

Supplementary Service Subscription:
Call Waiting - This call feature allows your phone to accept other incoming calls during the conversation.

Advanced:
The Advanced parameters for Administrator.

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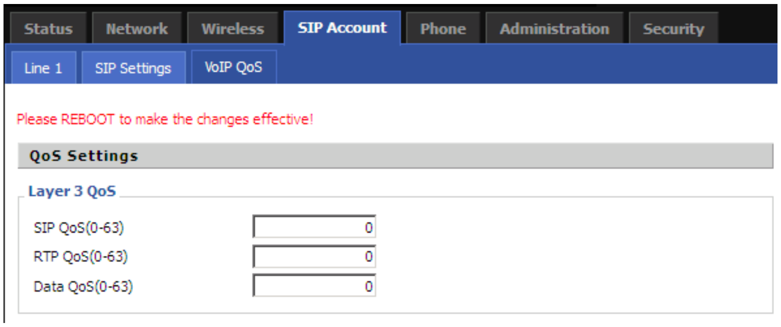
5.4.3 VoIP QoS



Please REBOOT to make the changes effective!

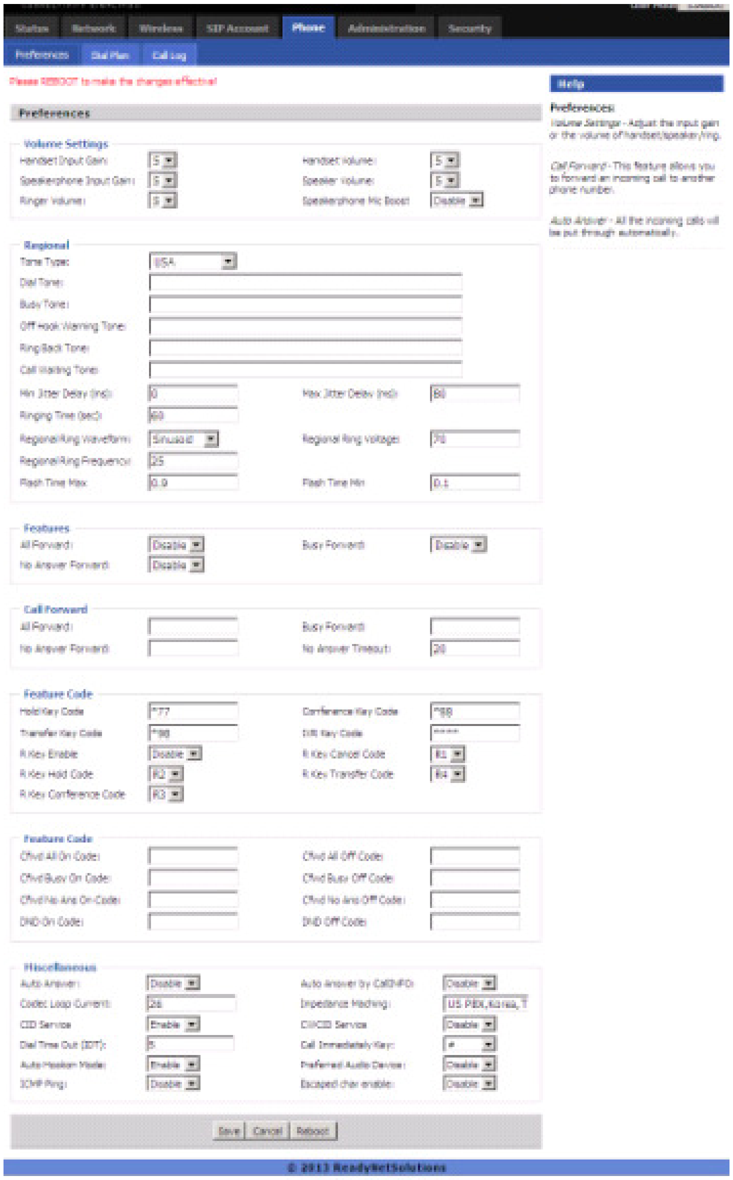
QoS Settings

Layer 3 QoS

SIP QoS(0-63)	0
RTP QoS(0-63)	0
Data QoS(0-63)	0

5.5 Phone

5.5.1 Preferences



Please REBOOT to make the changes effective!

Preferences

Volume Settings

Handset Input Gain:	5	Handset Volume:	5
Speakerphone Input Gain:	5	Speaker Volume:	5
Ringer Volume:	5	Speakerphone Mic Boost	Disable

Regional

Tone Type:	USA		
Dial Tone:			
Busy Tone:			
Off Hook Warning Tone:			
Ring Back Tone:			
Call Waiting Tone:			
Min Jitter Delay (ms):	0	Max Jitter Delay (ms):	80
Ringing Time (sec):	60		
Regional Ring Waveform:	Sinusoid	Regional Ring Voltage:	70
Regional Ring Frequency:	25		
Flash Time Max	0.9	Flash Time Min	0.1

Features

All Forward:	Disable	Busy Forward:	Disable
No Answer Forward:	Disable		

Call Forward

All Forward:		Busy Forward:	
No Answer Forward:		No Answer Timeout:	20

Feature Code

Hold Key Code	*77	Conference Key Code	*88
Transfer Key Code	*98	IVR Key Code	****
R Key Enable	Disable	R Key Cancel Code	R1
R Key Hold Code	R2	R Key Transfer Code	R4
R Key Conference Code	R3		

Feature Code

Cfwd All On Code:		Cfwd All Off Code:	
Cfwd Busy On Code:		Cfwd Busy Off Code:	
Cfwd No Ans On Code:		Cfwd No Ans Off Code:	
DND On Code:		DND Off Code:	

Miscellaneous

Auto Answer:	Disable	Auto Answer by Call-INFO:	Disable
Codec Loop Current:	26	Impedance Matching:	US PBX,Korea,T
CID Service	Enable	CWCID Service	Disable
Dial Time Out (IDT):	5	Call Immediately Key:	#
Auto Hookon Mode:	Enable	Preferred Audio Device:	Disable
ICMP Ping:	Disable	Escaped char enable:	Disable

Help

Preferences:

Volume Settings - Adjust the input gain or the volume of handset/speaker/ring.

Call Forward - This feature allows you to forward an incoming call to another phone number.

Auto Answer - All the incoming calls will be put through automatically.

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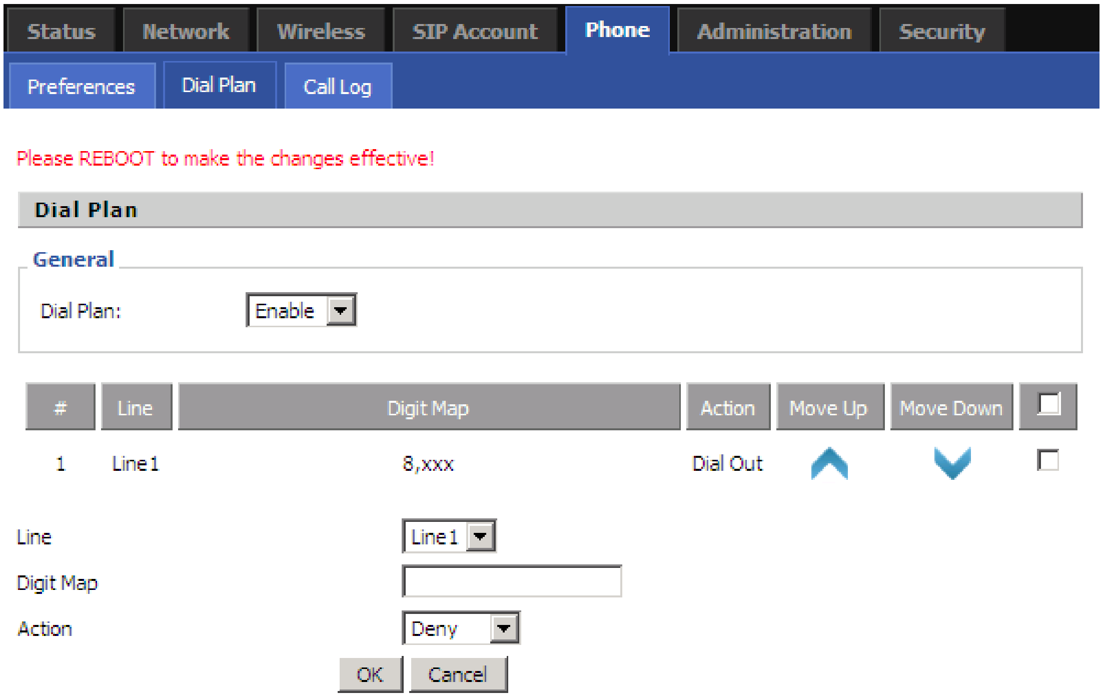
5.5.2 Dial Plan



Please REBOOT to make the changes effective!

Dial Plan

General

Dial Plan: Enable

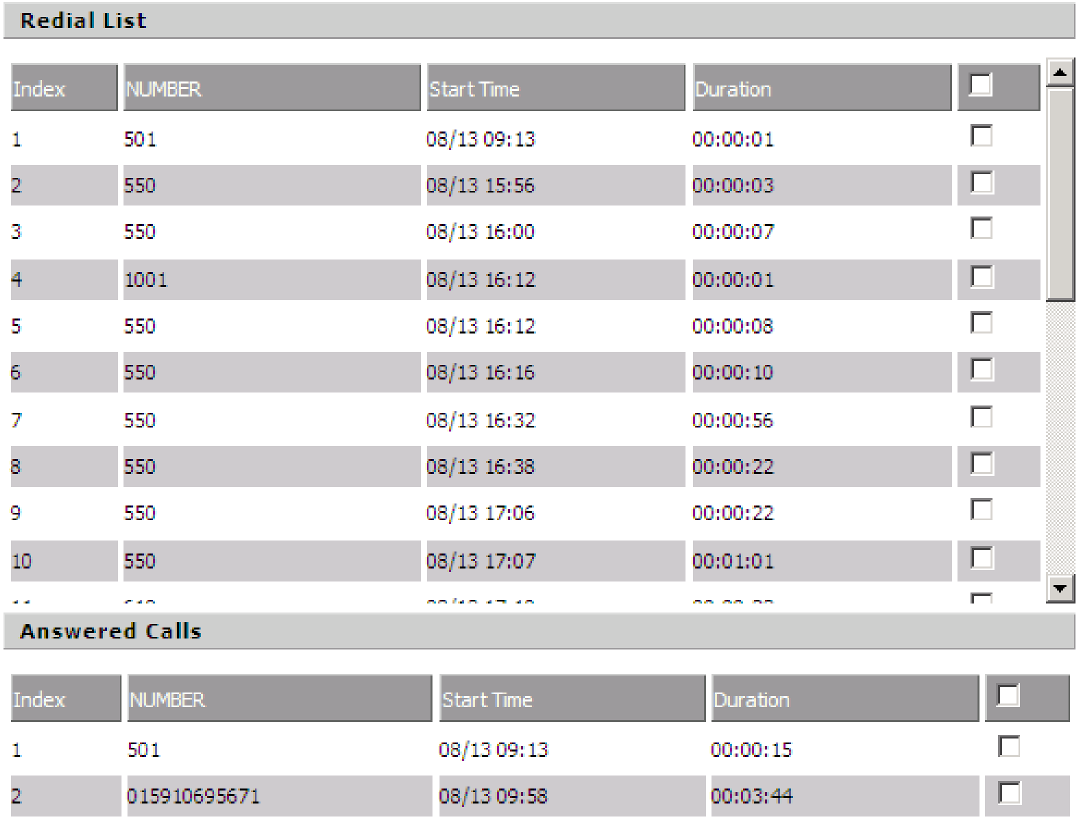
#	Line	Digit Map	Action	Move Up	Move Down	□
1	Line1	8,xxx	Dial Out	⌃	⌄	□

Line: Line1

Digit Map:

Action: Deny

5.5.3 Call Log



Redial List

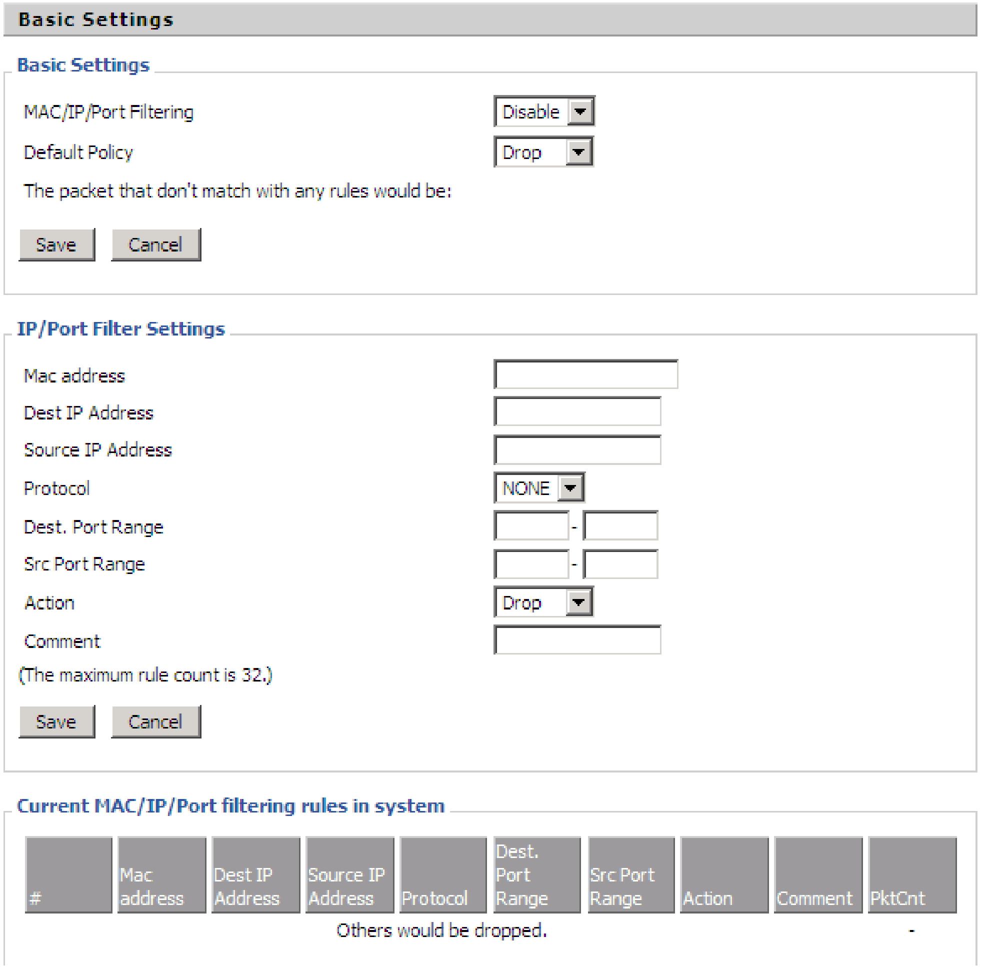
Index	NUMBER	Start Time	Duration	□
1	501	08/13 09:13	00:00:01	□
2	550	08/13 15:56	00:00:03	□
3	550	08/13 16:00	00:00:07	□
4	1001	08/13 16:12	00:00:01	□
5	550	08/13 16:12	00:00:08	□
6	550	08/13 16:16	00:00:10	□
7	550	08/13 16:32	00:00:56	□
8	550	08/13 16:38	00:00:22	□
9	550	08/13 17:06	00:00:22	□
10	550	08/13 17:07	00:01:01	□

Answered Calls

Index	NUMBER	Start Time	Duration	□
1	501	08/13 09:13	00:00:15	□
2	015910695671	08/13 09:58	00:03:44	□

5.6 Security

5.6.1 Filtering Setting



Basic Settings

Basic Settings

MAC/IP/Port Filtering: Disable

Default Policy: Drop

The packet that don't match with any rules would be:

IP/Port Filter Settings

Mac address:

Dest IP Address:

Source IP Address:

Protocol: NONE

Dest. Port Range: -

Src Port Range: -

Action: Drop

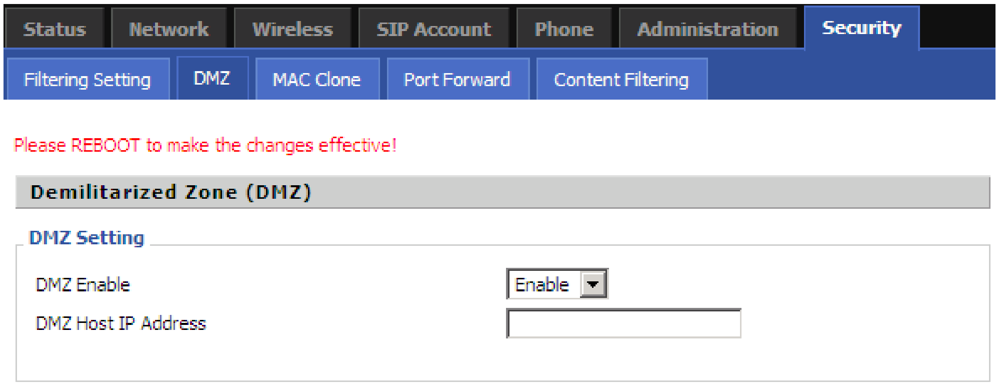
Comment:

(The maximum rule count is 32.)

Current MAC/IP/Port filtering rules in system

#	Mac address	Dest IP Address	Source IP Address	Protocol	Dest. Port Range	Src Port Range	Action	Comment	PktCnt
				Others would be dropped.					-

5.6.2 DMZ



Please REBOOT to make the changes effective!

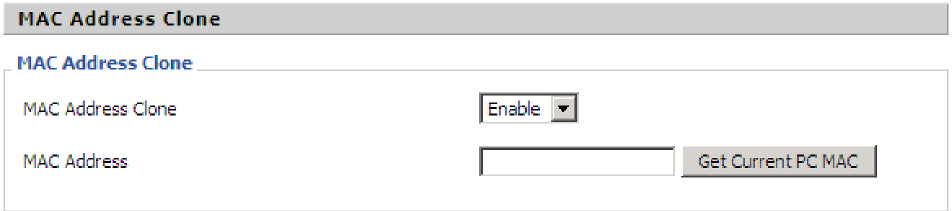
Demilitarized Zone (DMZ)

DMZ Setting

DMZ Enable: Enable

DMZ Host IP Address:

5.6.3 MAC Clone

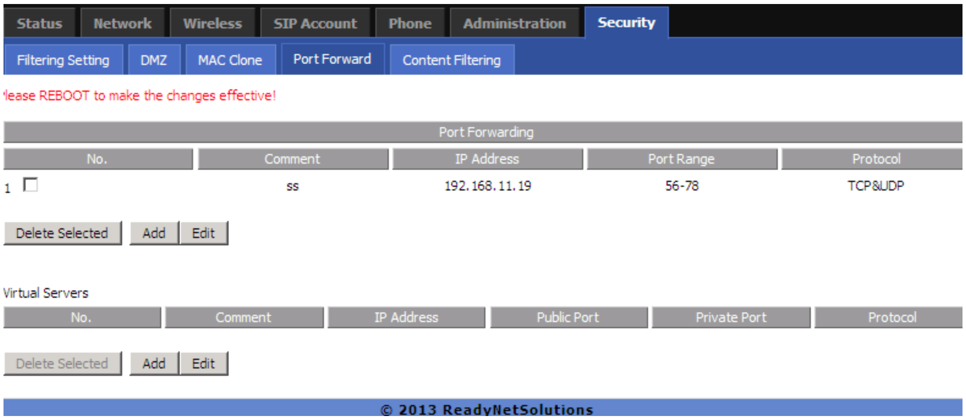


MAC Address Clone

MAC Address Clone

MAC Address Clone	Enable ▼
MAC Address	

5.6.4 Port Forward



'lease REBOOT to make the changes effective!

Port Forwarding

No.	Comment	IP Address	Port Range	Protocol
1 □	ss	192.168.11.19	56-78	TCP&UDP

Virtual Servers

No.	Comment	IP Address	Public Port	Private Port	Protocol

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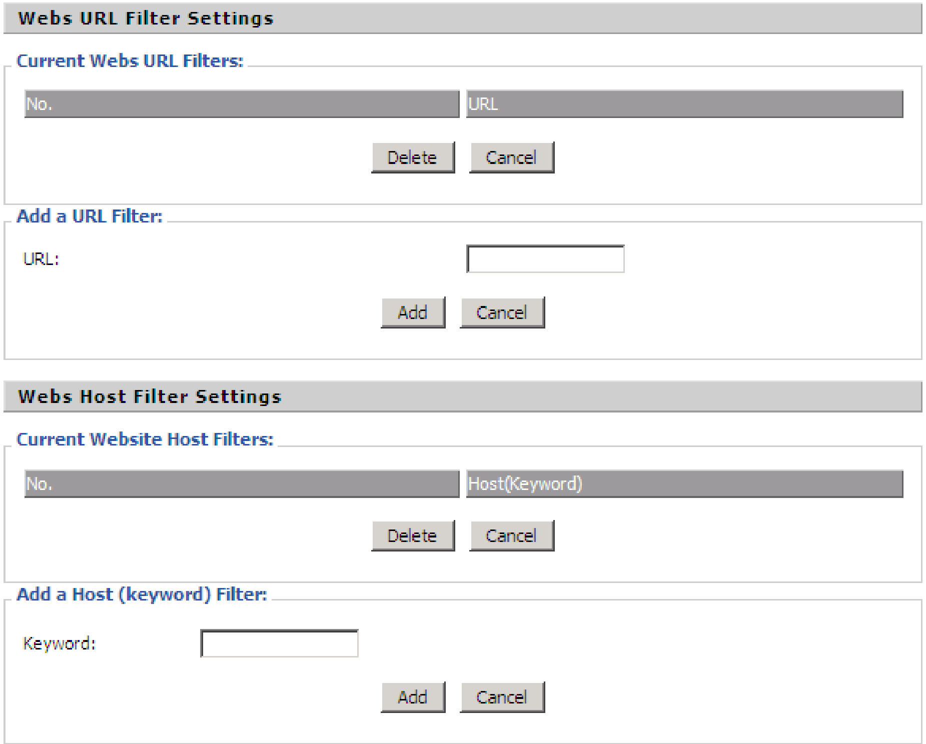
5.6.5 Content Filtering



Webs URL Filter Settings

Current Webs URL Filters:

No.	URL

Add a URL Filter:

URL:

Webs Host Filter Settings

Current Website Host Filters:

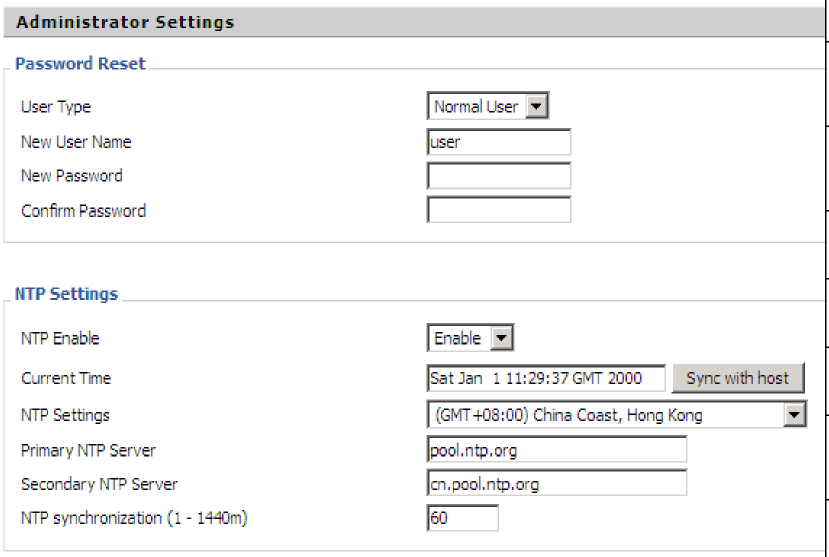
No.	Host(Keyword)

Add a Host (keyword) Filter:

Keyword:

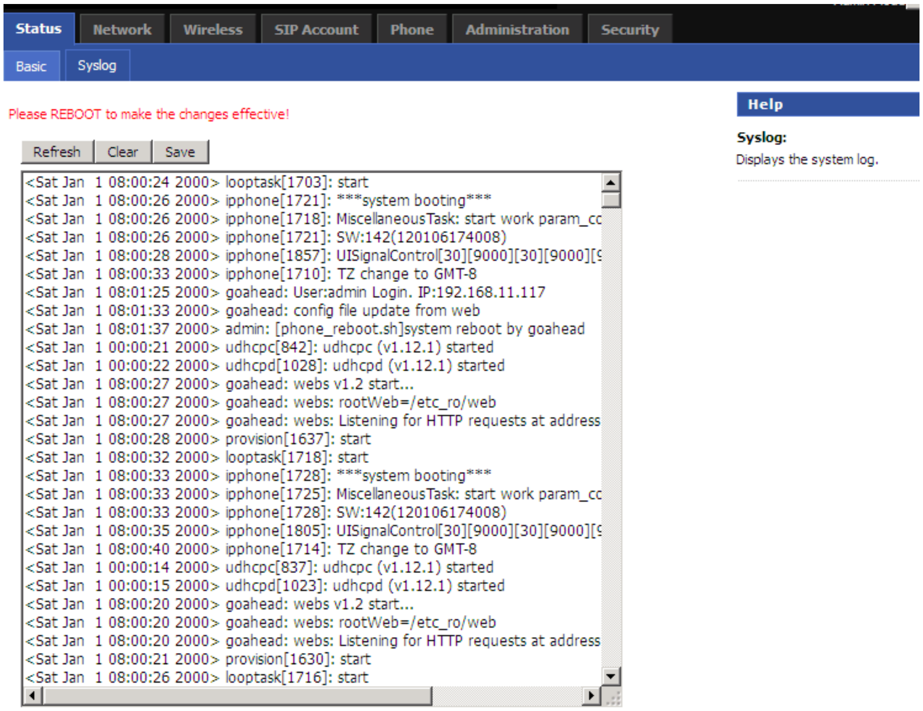
5.7 Administration

5.7.1 Management

 Administrator Settings Password Reset User Type: Normal User New User Name: user New Password: Confirm Password: NTP Settings NTP Enable: Enable Current Time: Sat Jan 1 11:29:37 GMT 2000 [Sync with host] NTP Settings: (GMT+08:00) China Coast, Hong Kong Primary NTP Server: pool.ntp.org Secondary NTP Server: cn.pool.ntp.org NTP synchronization (1 - 1440m): 60	**User Type**	Select the user type
	New User Name	User can change new user name
	New Password	Input the new password
	Confirm Password	Confirm the password
	NTP Enable	Enable NTP
	Current Time	Display the current time.
	NTP Settings	Select the time zone.
	Primary NTP Server	The primary NTP server
	Secondary NTP Server	The secondary NTP server
	NTP syn-chronization	Set the NTP synchronization.

5.8 System Log

By default, the local system log is enabled. User can check the system log in **Status-->Basic**.



Please REBOOT to make the changes effective!

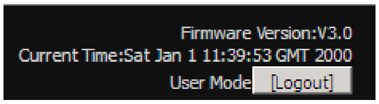
Help

Syslog:
Displays the system log.

```
<Sat Jan  1 08:00:24 2000> looptask[1703]: start
<Sat Jan  1 08:00:26 2000> ipphone[1721]: ***system booting***
<Sat Jan  1 08:00:26 2000> ipphone[1718]: MiscellaneousTask: start work param_cc
<Sat Jan  1 08:00:26 2000> ipphone[1721]: SW:142(120106174008)
<Sat Jan  1 08:00:28 2000> ipphone[1857]: UISignalControl[30][9000][30][9000][9
<Sat Jan  1 08:00:33 2000> ipphone[1710]: TZ change to GMT-8
<Sat Jan  1 08:01:25 2000> goahead: User:admin Login. IP:192.168.11.117
<Sat Jan  1 08:01:33 2000> goahead: config file update from web
<Sat Jan  1 08:01:37 2000> admin: [phone_reboot.sh]system reboot by goahead
<Sat Jan  1 00:00:21 2000> udhcpc[842]: udhcpc (v1.12.1) started
<Sat Jan  1 00:00:22 2000> udhcpd[1028]: udhcpd (v1.12.1) started
<Sat Jan  1 08:00:27 2000> goahead: webs v1.2 start...
<Sat Jan  1 08:00:27 2000> goahead: webs: rootWeb=/etc_ro/web
<Sat Jan  1 08:00:27 2000> goahead: webs: Listening for HTTP requests at address
<Sat Jan  1 08:00:28 2000> provision[1637]: start
<Sat Jan  1 08:00:32 2000> looptask[1718]: start
<Sat Jan  1 08:00:33 2000> ipphone[1728]: ***system booting***
<Sat Jan  1 08:00:33 2000> ipphone[1725]: MiscellaneousTask: start work param_cc
<Sat Jan  1 08:00:33 2000> ipphone[1728]: SW:142(120106174008)
<Sat Jan  1 08:00:35 2000> ipphone[1805]: UISignalControl[30][9000][30][9000][9
<Sat Jan  1 08:00:40 2000> ipphone[1714]: TZ change to GMT-8
<Sat Jan  1 00:00:14 2000> udhcpc[837]: udhcpc (v1.12.1) started
<Sat Jan  1 00:00:15 2000> udhcpd[1023]: udhcpd (v1.12.1) started
<Sat Jan  1 08:00:20 2000> goahead: webs v1.2 start...
<Sat Jan  1 08:00:20 2000> goahead: webs: rootWeb=/etc_ro/web
<Sat Jan  1 08:00:20 2000> goahead: webs: Listening for HTTP requests at address
<Sat Jan  1 08:00:21 2000> provision[1630]: start
<Sat Jan  1 08:00:26 2000> looptask[1716]: start
```

5.9 Logout

Press **logout** to exit.



Firmware Version:V3.0
Current Time:Sat Jan 1 11:39:53 GMT 2000
User Mode [Logout]

5.10 Reboot

Press the **Reboot** button to reboot VWRT510.

6 FCC Statement

This device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. It 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, many 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 assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices)

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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