WiFi Bridge/Repeater/Router
VAP11S/VAP11S-5G/VAP11G-500S

Quick Setting Guide

Declaration

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Note

The parameters used in the screenshots shown in this manual are only used as reference examples for setting examples. They may not be exactly the same as the actual situation. Please set the parameters according to your actual needs.

Due to the different software versions, the screenshots shown in this manual may not be exactly the same as the web interface of the product you purchased. Please configure your product according to the actual web interface.

This manual applies to both VAP11S and VAP11S-5G products. The"VONETS device" mentioned in the text can refer to these two products.

Form 1

Transmission Distance Parameters Form			
Model	No-barrier point to point Transmission Distance	Transmission Rate (Mbps)	Band
VAP11S/VAP11G-500S	400m--500m	300	2.4G
VAP11S-5G		900	5G

Form 2

Power Supply Parameters List			
Model	Power Supply Voltage	Input Power	Typical Power Supply
VAP11S/VAP11G-500S	DC5--DC24V	≥10W	12V/1A
VAP11S-5G			

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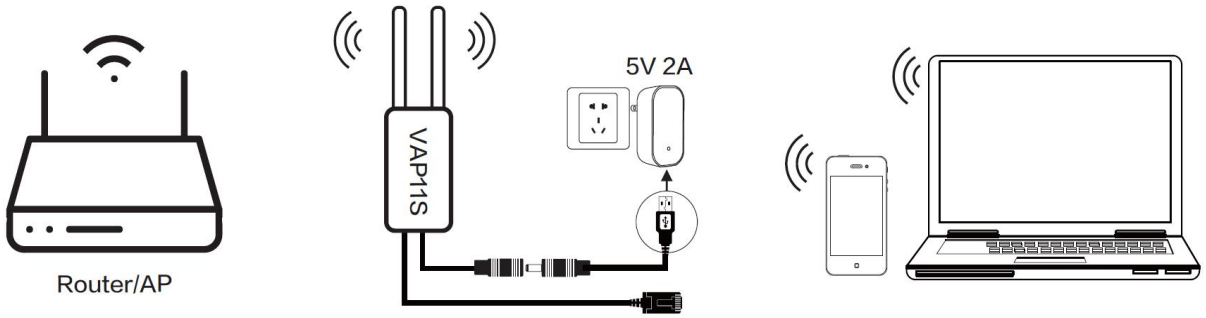
Chapter 1 Application Mode

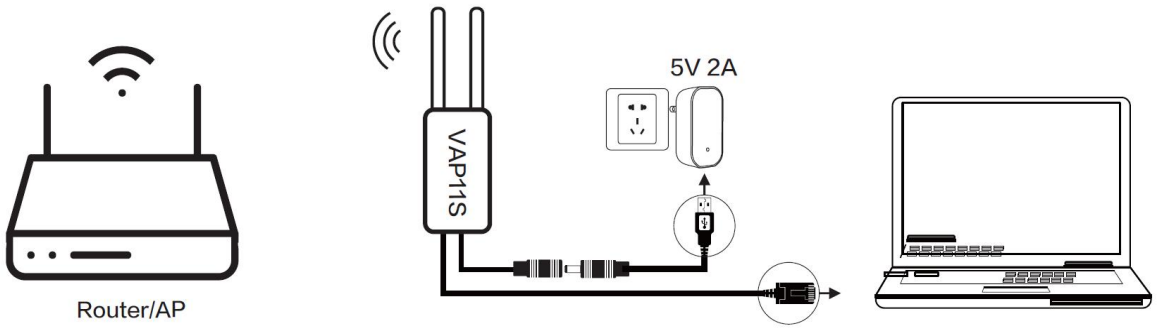
1.1 Bridge + Repeater Mode

There are three application modes for the bridge mode of VONETS device: WiFi repeater, WiFi bridge and WiFi AP.

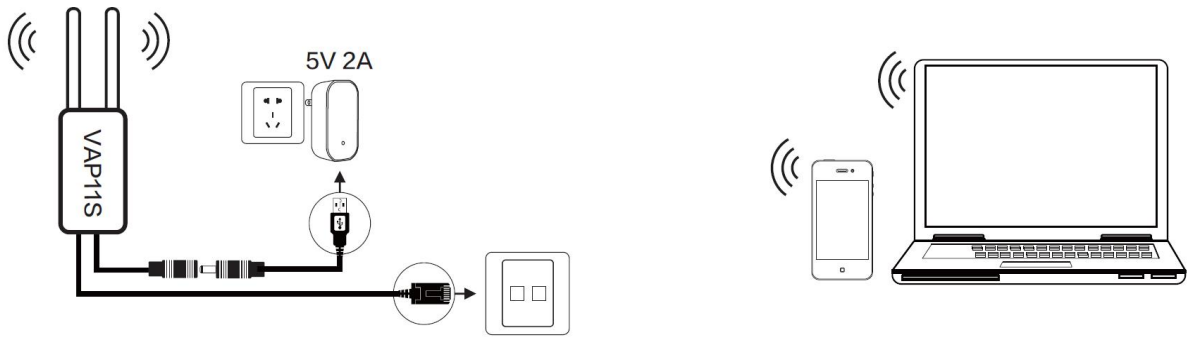
- **WiFi Repeater:**
  VONETS device as WiFi Repeater, it must be configured to source WiFi hostpot parameters, can be used to extend the wireless signal coverage of existing APs or wifi router .



- **WiFi Bridge:**
  VONETS device as WiFi bridge, it must be configured to source WiFi hotspot parameters, can be used for devices only with Ethernet ports to access wireless networks.

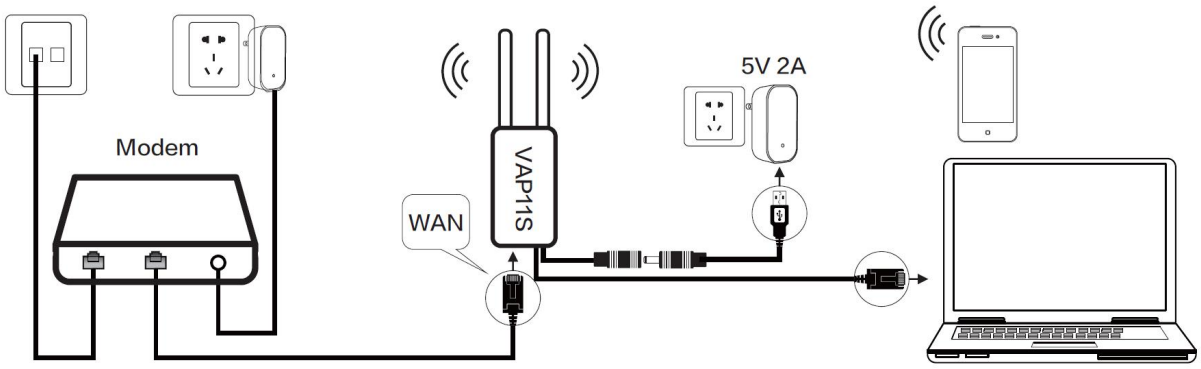


- **WiFi AP：**
  VONETS device as WiFi AP, it can achieve wireless access to wired LAN, no configuration required, plug and play.

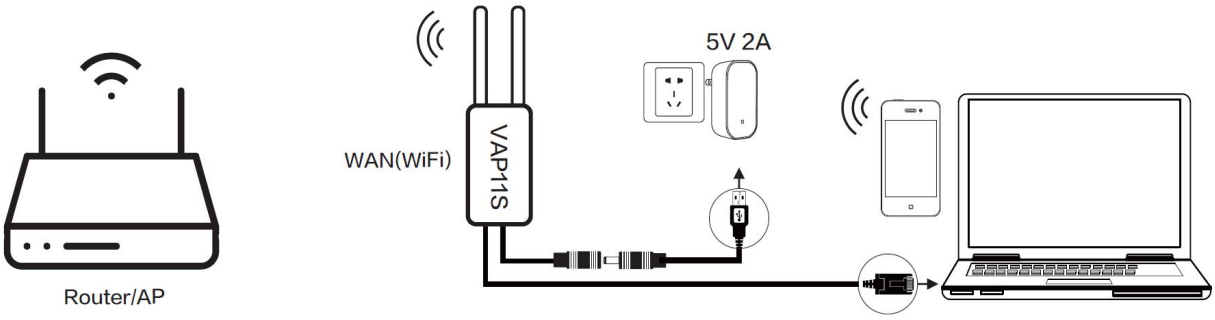


1.2 Router Mode

- VONETS device as WiFi router, the Ethernet port of VONETS device defaults to WAN port, the Ethernet cable defaults to the LAN port. WAN and LAN ports are interchangeable.



- VONETS device is used as WiFi router, WAN port can be set to connect to the WiFi hotspot for use as a secondary router, its Ethernet port and Ethernet cable both are LAN port;



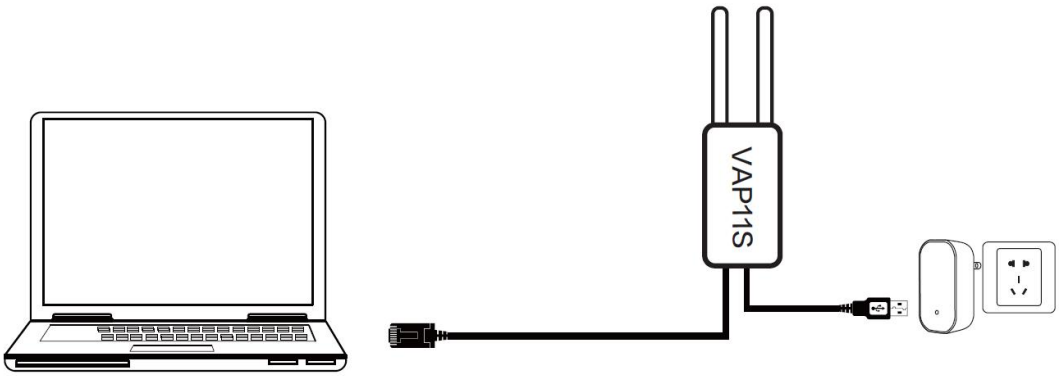
Chapter 2 Bridge+Repeater Mode Configuration Instruction

2. Method 2: Log in to the device's Web configuration page to configure

2.1 Device connect

Power on VONETS device by 5V/2A power supply, then connect to PC, there are two connection ways as below:

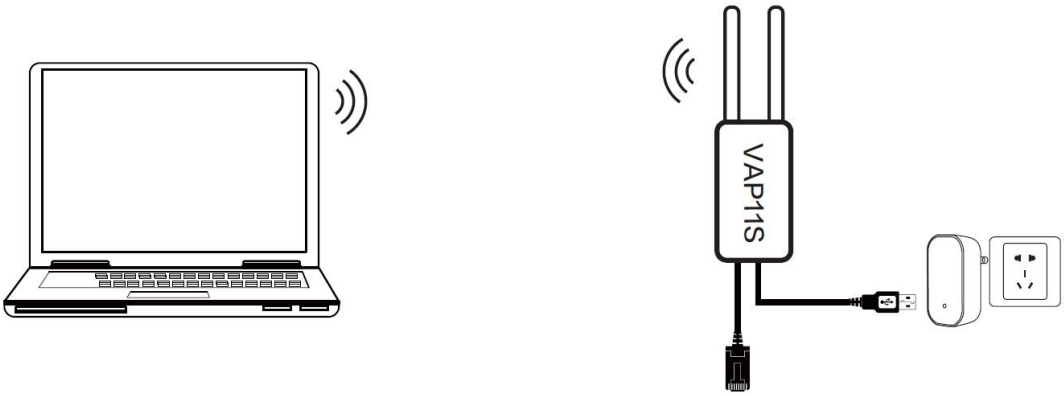
A. Computer is wired connected to LAN port of VONETS device;



（Recommend Method）

B. The computer wirelessly connects to the WiFi signal of VONETS device, its default hotspot parameters are as follows:

Model	WiFi SSID	WiFi Password
VAP11S/VAP11G-500S	VONETS_2.4G_****	12345678
VAP11S-5G	VONETS_5G_****	



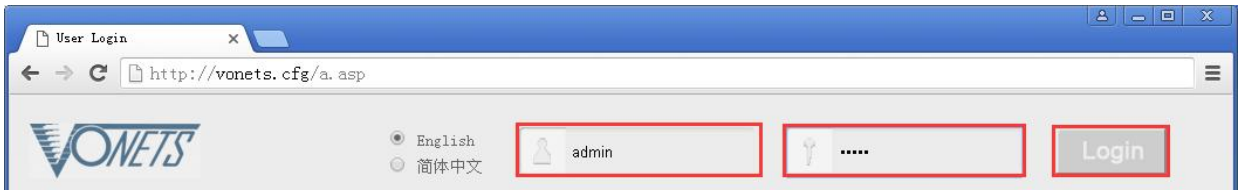
（After the WiFi parameters are configured, the WiFi will be disconnected, that is normal.）

2.2 Bridge+Repeater Application Configuration

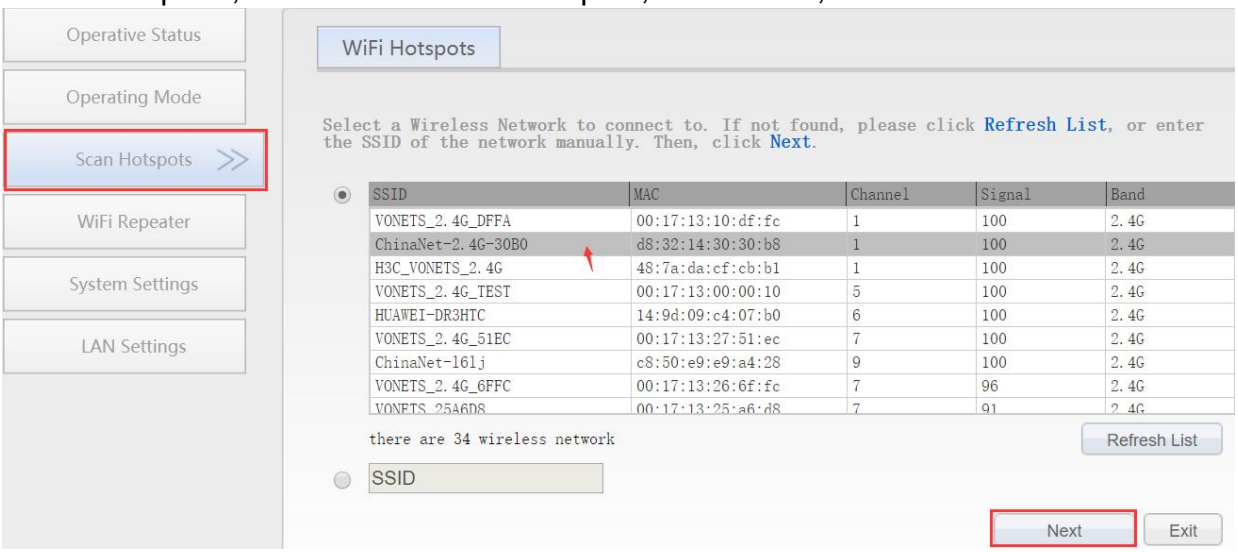
The configuration steps of VONETS device for WiFi repeater and WiFi bridge are basically the same, so this manual combines the configuration instructions of the two application modes.

1. After computer is connected to VONETS device, open browser, input configured page: http://vonets.cfg (or IP: 192.168.254.254), then press Enter;

2. Input User name and Password in login page (both are “admin”), click “Login” button to enter configured page;

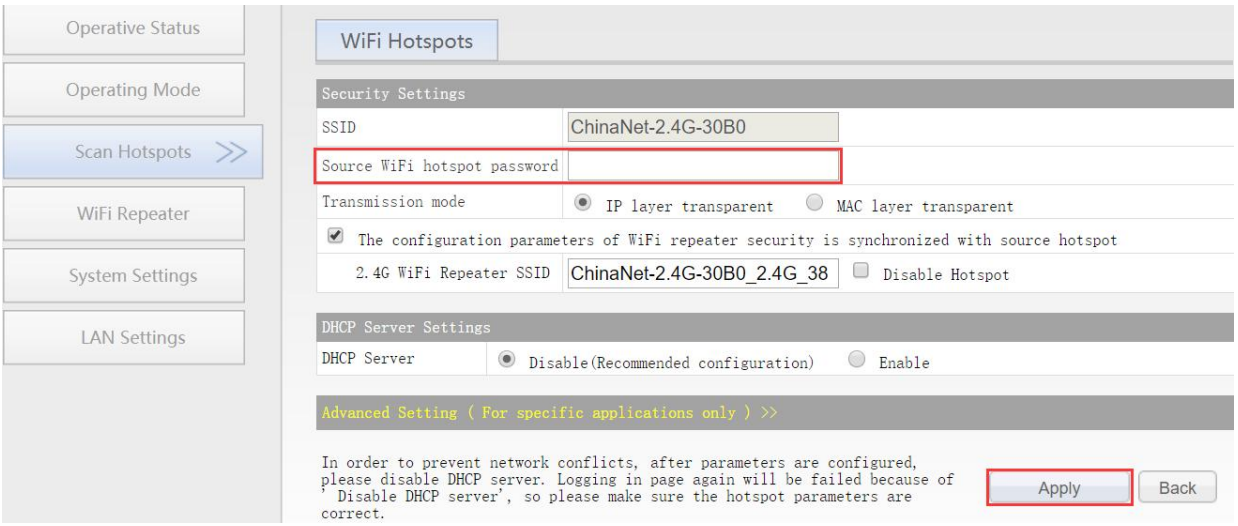


3. “Scan Hotspots”, choose the source hotspots, click “Next”;

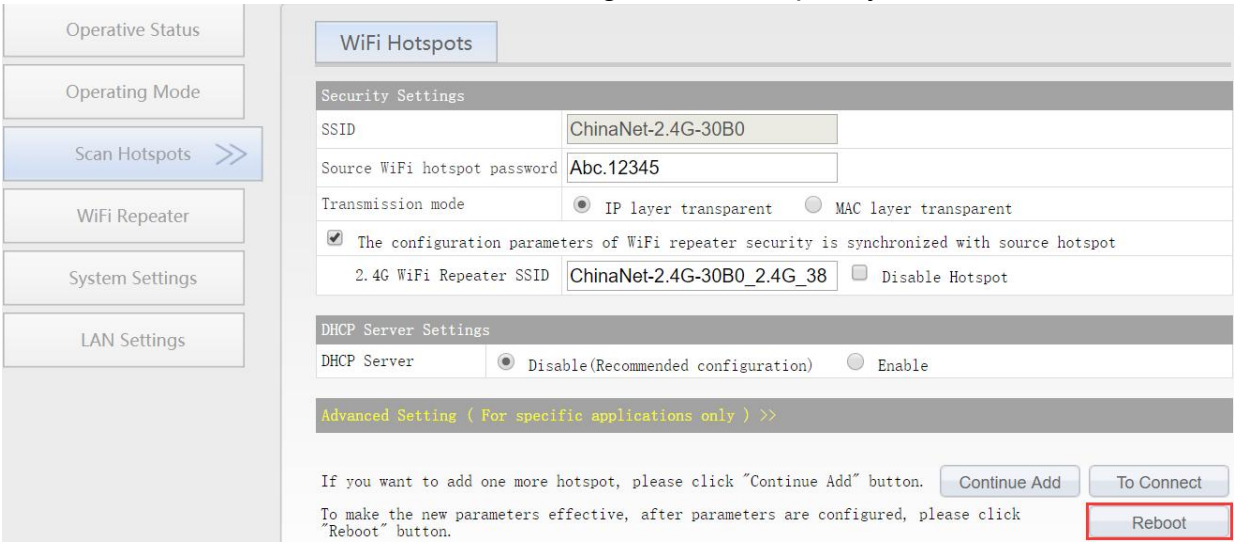


4. Input “Source wireless hotspot password”, click “Apply”;

- **IP layer transparent transmission** (factory default), transparent transmission of IP layer data, can meet most of WiFi bridge applications;
- **MAC layer transparent transmission**, transparent transmission of all data above the MAC layer (link layer) and MAC layer, including IP layer data. MAC transparent transmission can solve some special applications for MAC layer encryption, such as GoPro camera, Cisco AP, Hikvision monitoring system, etc;
- The option “**The configuration parameters of WiFi repeater security is synchronized with source hotspot**” is default ticked, it means the SSID of VONETS repeater is associated with the SSID of the source hotspot, and the WiFi password is the same as the password of the source hotspot;
- **Disable hotspot**, if you select “Disable hotspot” on the right side of the SSID, the device will not transmit the corresponding hotspot and can only be used as a bridge application;
- **Advanced Setting,**include Hot spot authentication match mode, WiFi Signal Motion Detection and SSA Signal strength alarm threshold,these options here can be kept unchanged, for instructions on this option, go to www.vonets.com and download the “V Series WiFi Bridge Advanced Features Instruction”;



5. Click “Reboot”, VONETS device will connect to the configured WiFi hotspot automatically, if connection is successful, the WiFi LED light will flash quickly;



Remark 1:

LED Light Form			
Model	Blue Light	Green Light	Yellow Light
VAP11S	WiFi Connection Status Light	/	Ethernet Cable Connection Status Light
VAP11S-5G	System Status Light	WiFi Connection Status Light	

① VONETS device is not connected to any hotspot, WiFi connection status light will flash quickly;

② VONETS device is connected to hotspot successfully, but hotspot signal strength is greater than 50%, WiFi connection status light will quick flash;

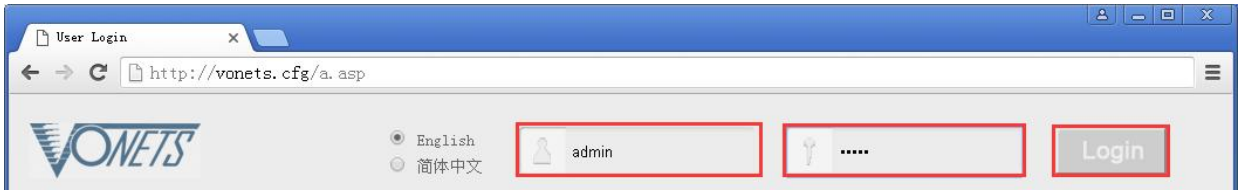
③ VONETS device is connected to hotspot successfully, but hotspot signal strength is less than 50% greater than 10%, WiFi status light will pause flash and flash;

④ VONETS device is connected to hotspot failed, WiFi connection status light will flash slowly.

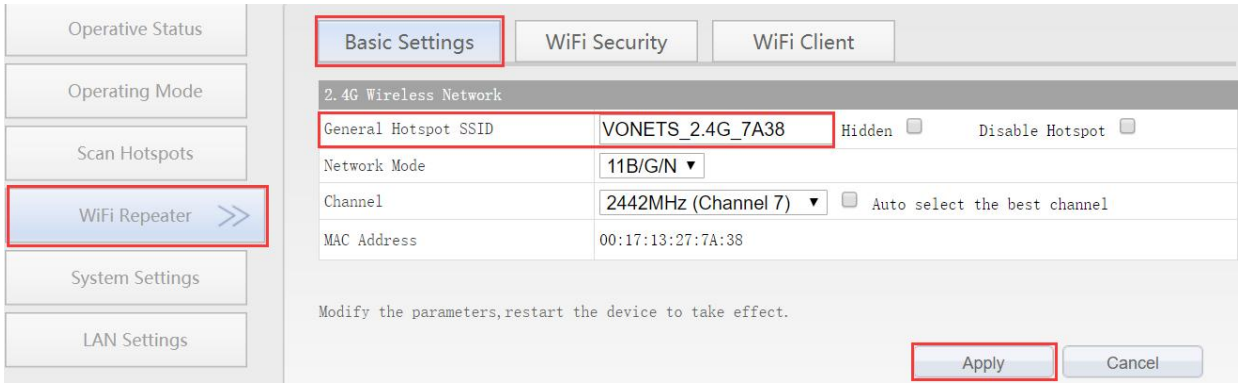
2.3 AP Application Configuration

VONETS device can be configured as an AP application, the wireless terminal device can connect to VONETS device hotspot to connect to the network; however, it is best to change its WiFi name and password for network security.

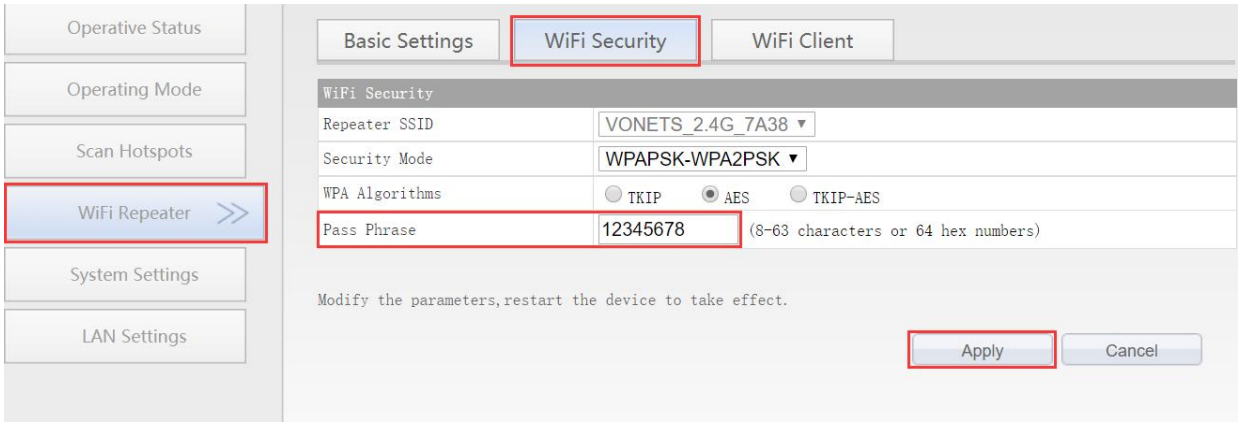
1. Log in to the configuration page http://vonets.cfg (or IP: 192.168.254.254you're your computer browser, both user name and password are "admin";



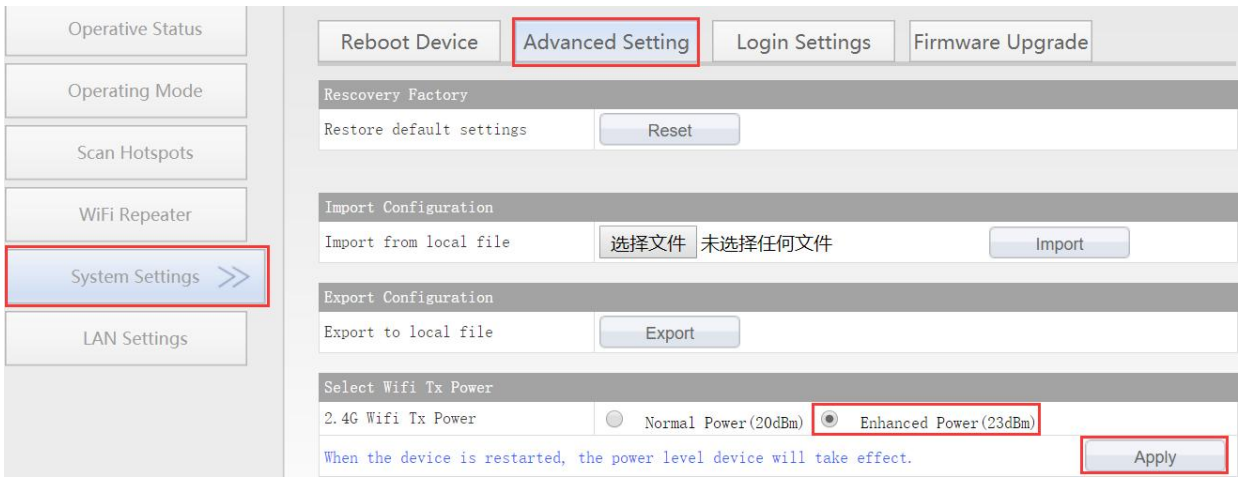
2. Revise WiFi name: Jump to "WiFi Repeater"---- "Basic Settings", enter new WiFi name in "General Hotspot SSID", click "Apply";



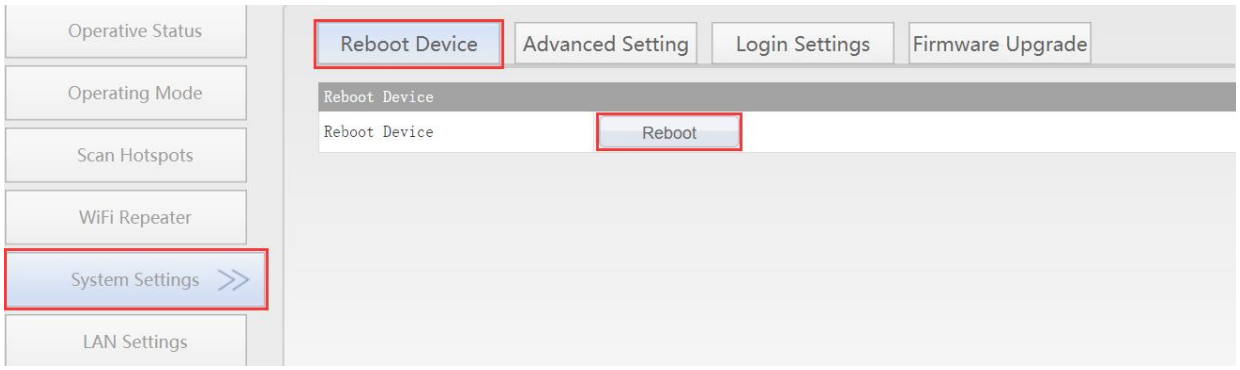
3. Revise WiFi password, in "WiFi Repeater"----"WiFi Security", enter new WiFi password in "Pass Phrase", click "Apply";



4. “WiFi Tx Power” of VONETS device can be changed, jump to “System Settings”---- “Advance Settings”, choose suitable transmit power, then click “Apply”;



5. Reboot device, jump to “System Settings”---- “Reboot Device”, click “Reboot”, when it is finished, all revised options will take effort.

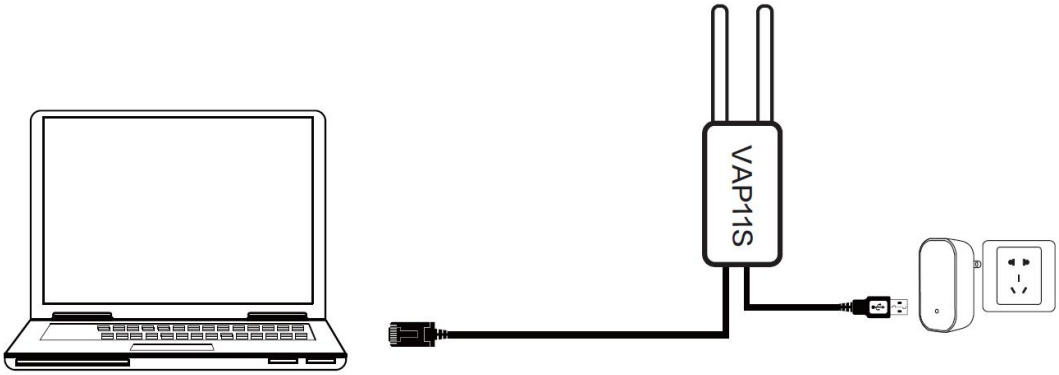


Remark 2: When VONETS device connects to external network, its IP address will be changed. At this time, when log in configured page, we suggest you enter configured domain name: http://vonets.cfg. Or in Windows command window, enter the command: ping vonets.cfg, to get the IP address of the device, then log in configuration page by this IP address.

Chapter 3 Router Mode Configuration Instruction

3.1 Change device mode

1. Power on VONETS device by 5V/2A power supply, then connect to PC, there are two connection ways as below:
   A. Computer is wired connected to LAN port of VONETS device;



（Recommend Method）

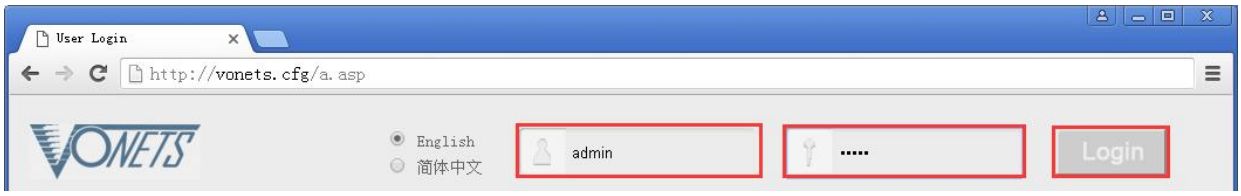
B. Computer wirelessly connects to the WiFi signal of VONETS device, its default hotspot parameters are as follows:

Model	WiFi SSID	WiFi Password
VAP11S/VAP11G-500S	VONETS_2.4G_****	12345678
VAP11S-5G	VONETS_5G_****	

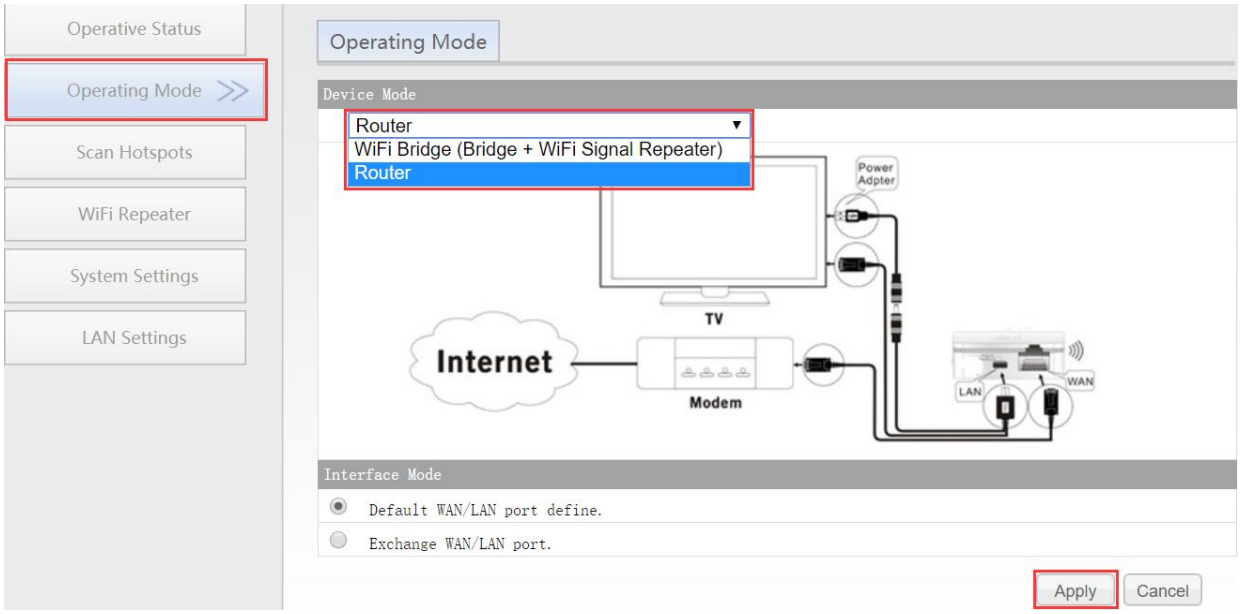
(After the WiFi parameters are configured, the WiFi will be disconnected, that is normal.)

2. After computer is connected to VONETS device, open browser, input configured page domain name: http://vonets.cfg (or IP: 192.168.254.254), then press Enter;

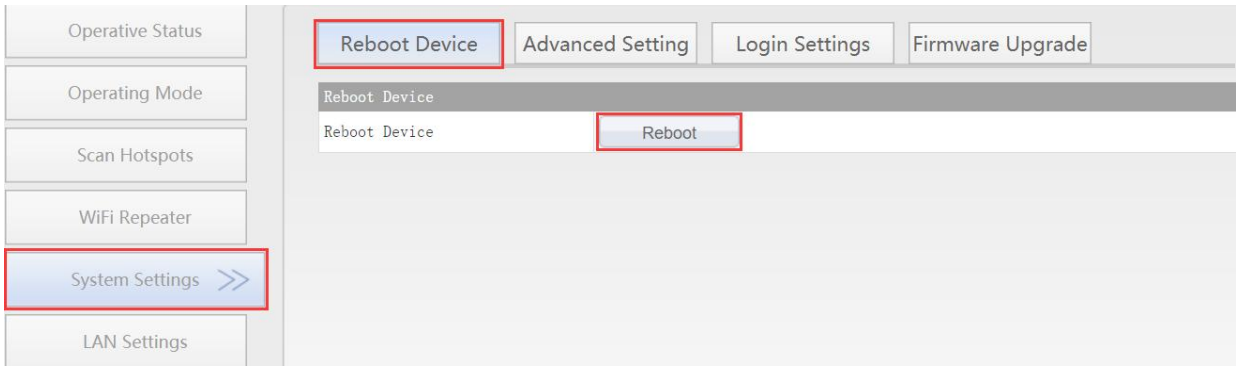
3. Enter User name and Password in login page (both are “admin”), click “Login” button to enter configured page;



4. In “Operating Mode”, change Device mode to “Router” mode, click “Apply” Button；



5. Reboot device: go to “System Settings”-- “Reboot device”, click “Reboot” button, VONETS device will automatically switch to router mode.

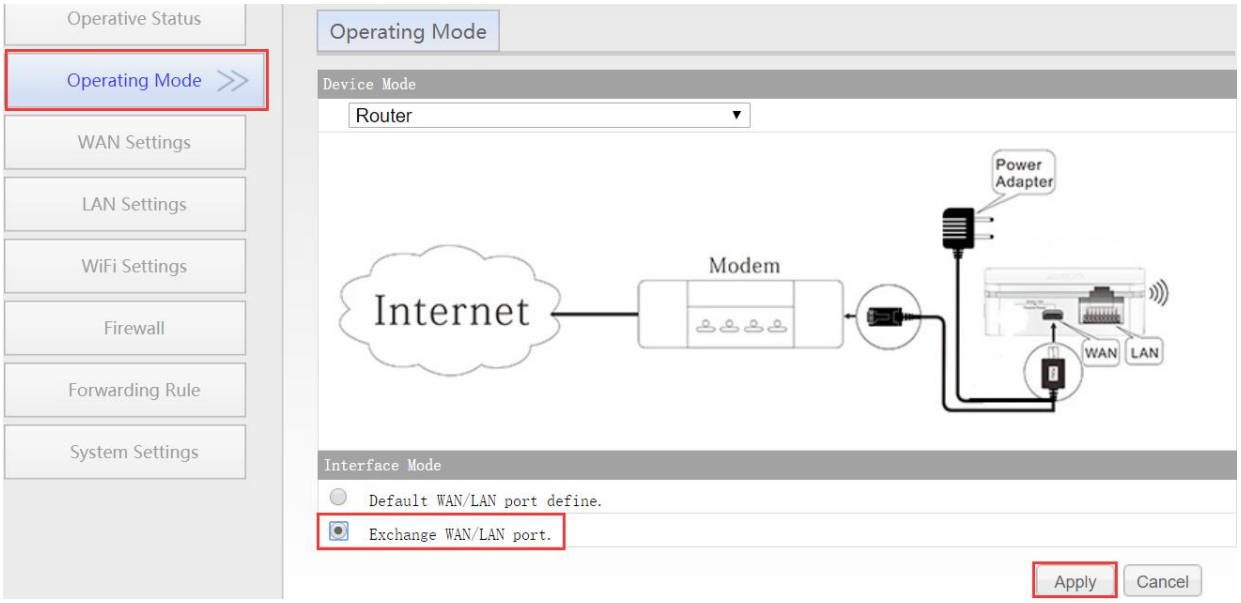


3.2 WAN port settings

3.2.1 WAN/LAN exchange

In routing mode, the Ethernet port of VONETS device is divided into a WAN port and a LAN port, and WAN/LAN can be interchanged.

The Ethernet port of VONETS device defaults to WAN port, the Ethernet cable defaults to LAN port, if the interface mode is changed to “WAN/LAN exchange”, the Ethernet cable will be WAN port and the Ethernet port will be LAN port.(This option can keep unchanged);



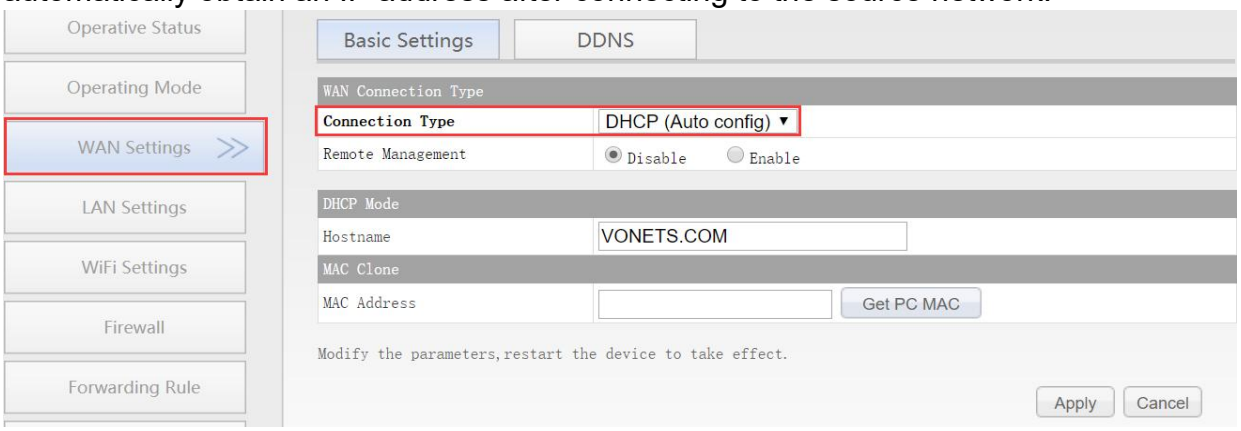
3.2.2 WAN Port connection method

By setting the WAN port of the router, you can change the network connection type according to the actual needs of the individual, there are three types of WAN port connections commonly used in the routing mode of VONETS device: DHCP(Auto Config), PPPoE(ADSL) and WiFi. DHCP and PPPoE are wired connections, and the WAN port needs to be connected to the source network through a wired connection:

- DHCP(Auto Config): WAN port connection type is selected as **"DHCP(Auto Config)"**, VONETS device will automatically obtain IP address from source network;
- PPPoE(ADSL): WAN port connection type is selected as **"PPPoE"**, that is, ADSL virtual dialing mode requires ISP (Internet Service Provider) to provide Internet account and password;
- WiFi: WAN port connection type is selected as **"WiFi"**, VONETS device uses a built-in WiFi network card (used to connect to the source hotspot) as a WAN port, and all Ethernet ports as LAN ports, while providing WiFi hotspot functions.

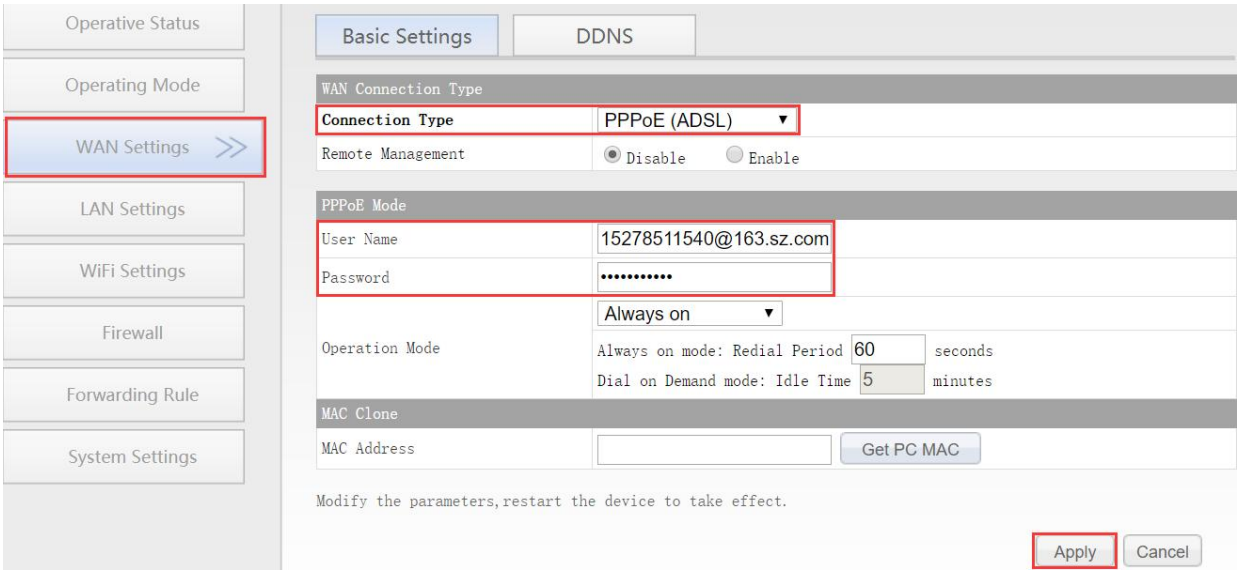
3.2.3 WAN port wired connect network——DHCP

The default WAN port connection method of VONETS device is DHCP. WAN port can automatically obtain an IP address after connecting to the source network.



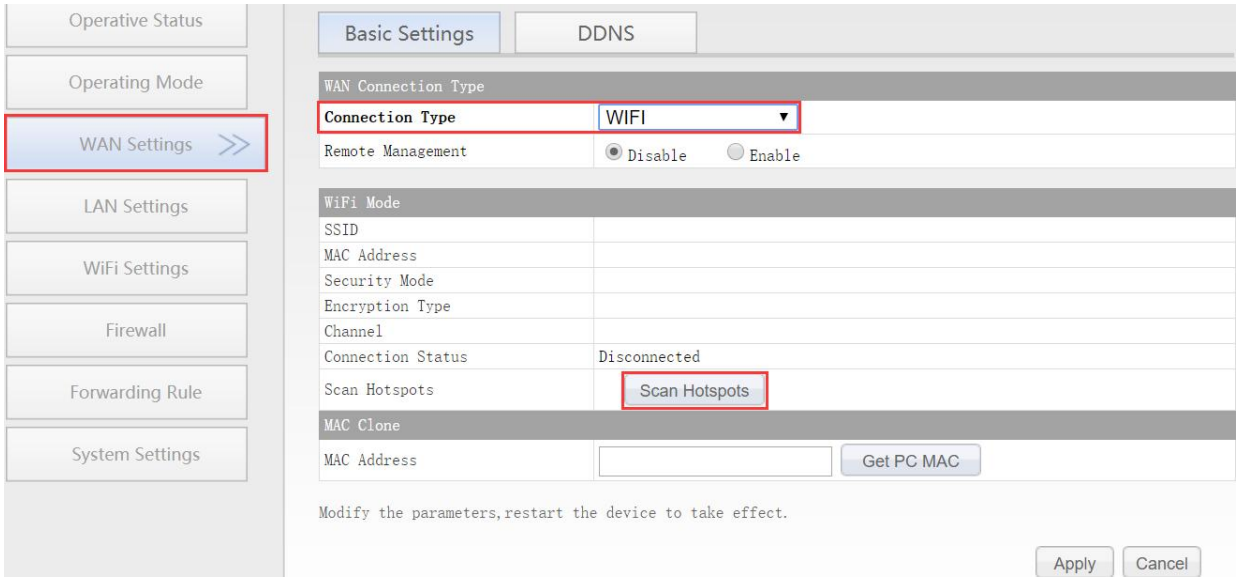
3.2.4 PPPoE WAN port wired connect network——PPPoE

In “WAN settings”, select “Basic settings”, change the connection type to “PPPoE (ADSL)”, then enter the Internet account and password provided by the ISP (Internet Service Provider), click the “Apply” button, and reboot VONETS device, then can access to network.

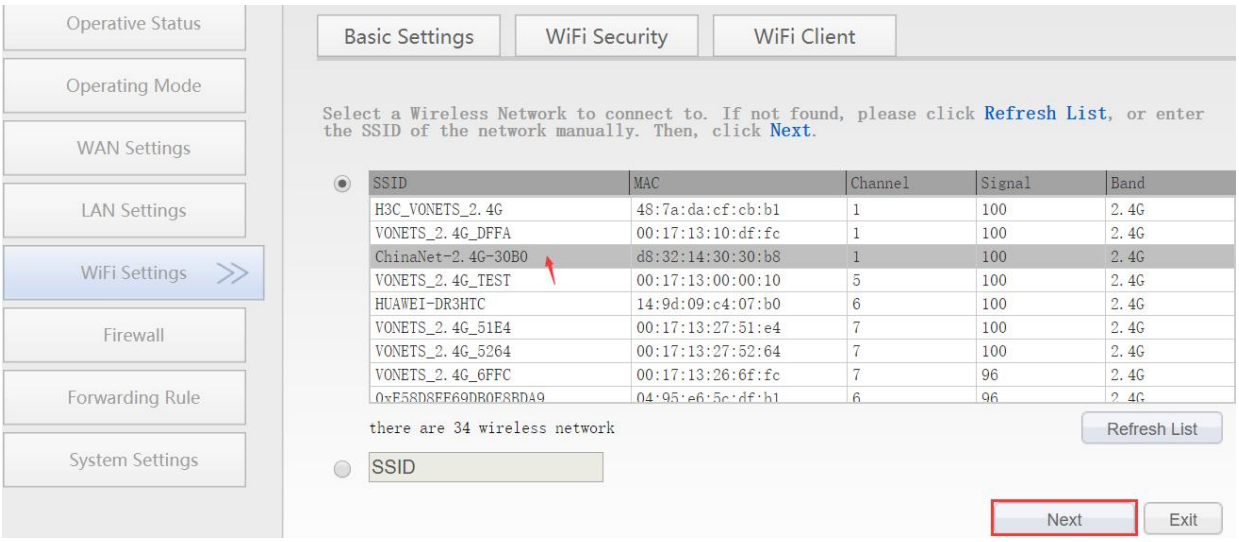


3.2.5 WAN port wireless connect network---- WiFi

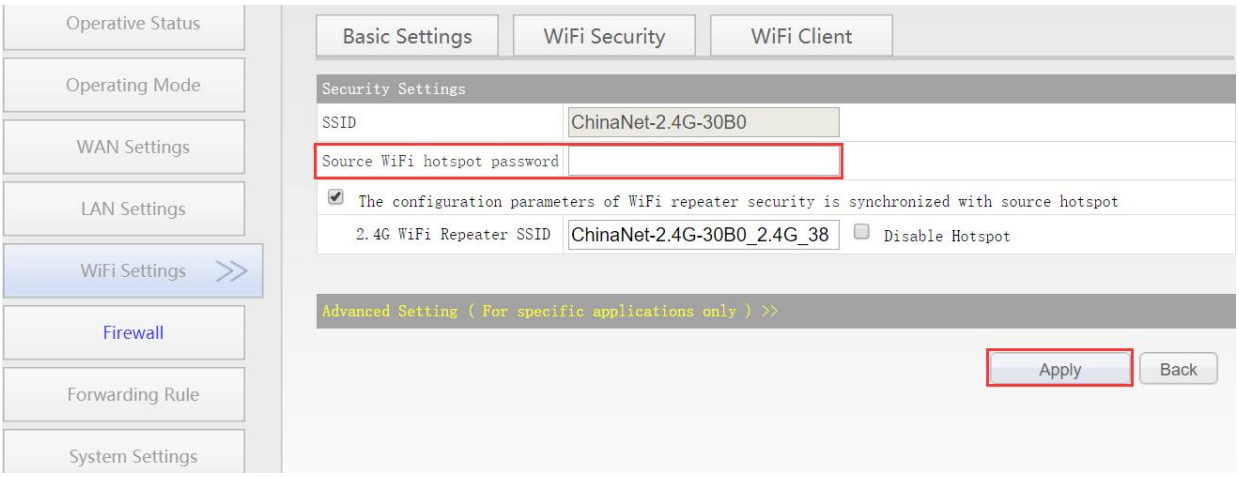
1. In “WAN Settings”, select “Basic Settings”, change Connection type to “WiFi”, then click “Scan Hotspots” to enter the scanning hotspot list.



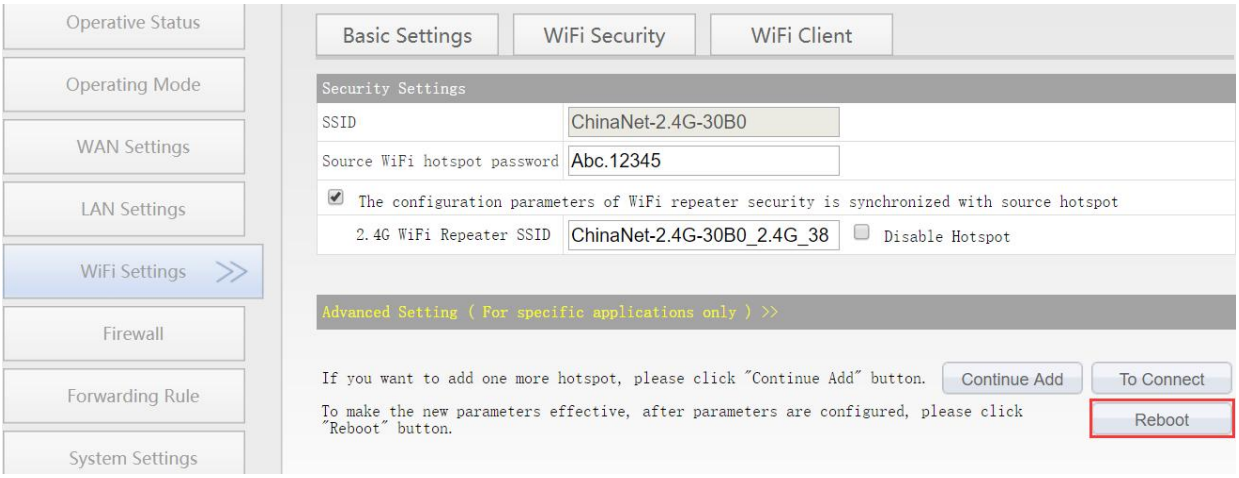
2. Choose the source hotspots, click “Next”;



3. Input “Source wireless hotspot password”, click “Apply”
   - The option “**The configuration parameters of WiFi repeater security is synchronized with source hotspot**” is default ticked, it means the SSID of VONETS repeater is associated with the SSID of the source hotspot, and the WiFi password is the same as the password of the source hotspot;
   - **Disable hotspot**, if you select “Disable hotspot” on the right side of the SSID, the device will not transmit the corresponding hotspot and can only be used as a bridge application;
   - **Advanced Setting**,include Hot spot authentication match mode, WiFi Signal Motion Detection and SSA Signal strength alarm threshold,these options here can be kept unchanged, for instructions on this option, go to www.vonets.com and download the “V Series WiFi Bridge Advanced Features Instruction”;



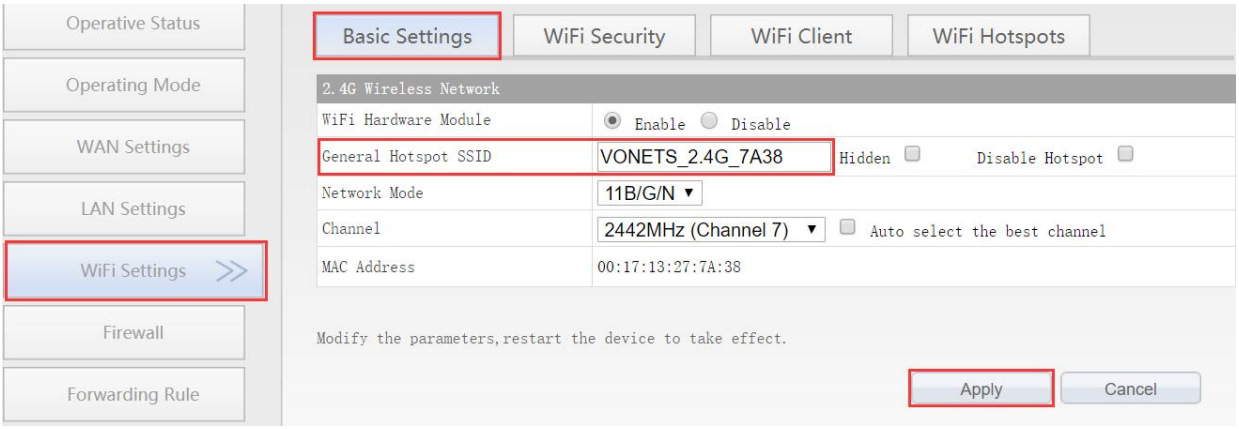
4. Click “Reboot”, VONETS device will connect to the configured WiFi hotspot automatically, if connection is successful, the WiFi LED light will flash quickly;(Please refer to Remark 1 for the description of the LED light.)



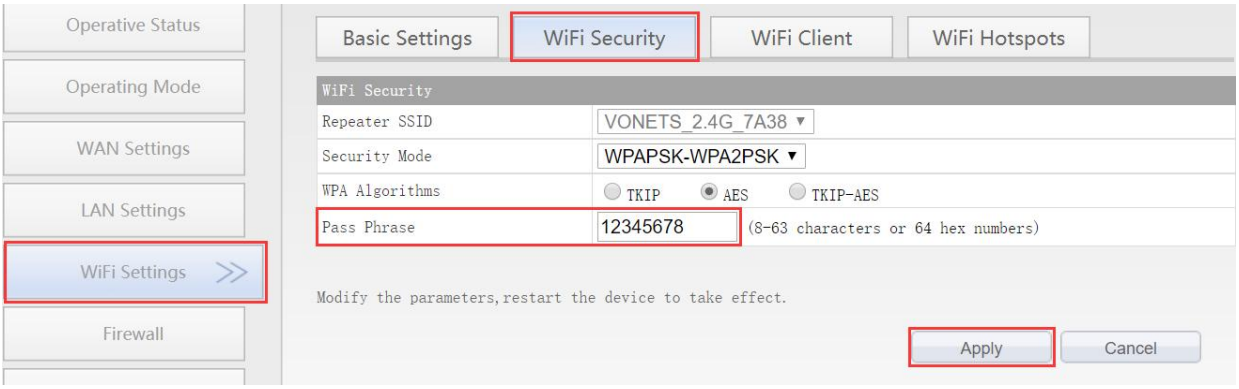
Remark 3: After VONETS device sets the WAN port to access the WiFi hotspot in the routing mode, its LAN port IP is still 192.168.254.254, and the terminal device also obtains the IP address of the same network segment, can login configuration page by 192.168.254.254 or http://vonets.cfg.

3.3 Set WiFi hotspot parameters

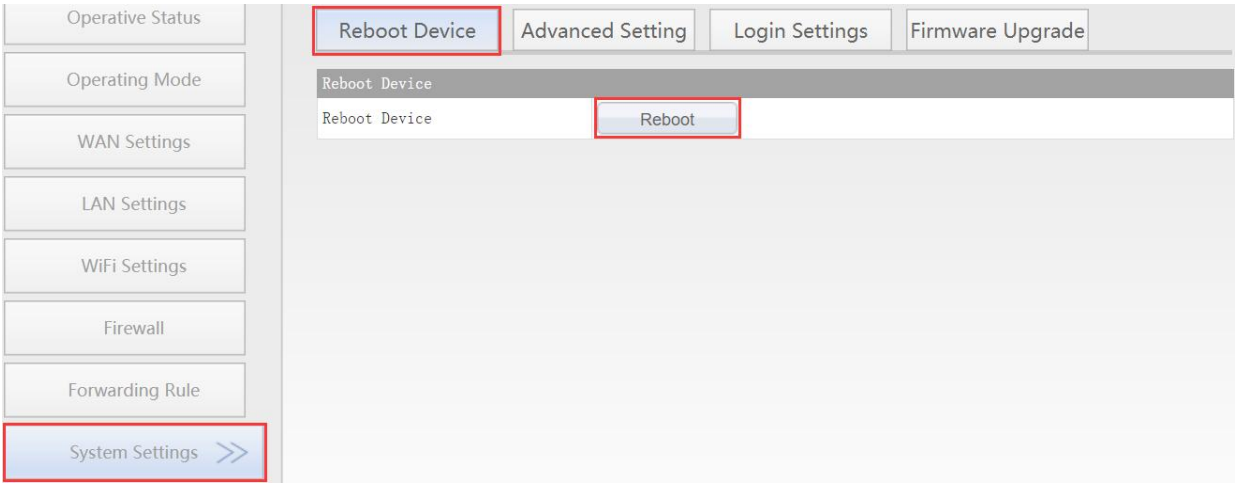
1. Revise WiFi name: Jump to “WiFi Repeater”---- “Basic Settings”, enter new WiFi name in “General Hotspot SSID”, click “Apply”;



2. Revise WiFi password, in “WiFi Repeater”----“WiFi Security”, enter new WiFi password in “Pass Phrase”, click “Apply”;



3. Reboot device, jump to “System Settings”---- “Reboot Device”, click “Reboot”, when it is finished, all revised options will take effort.



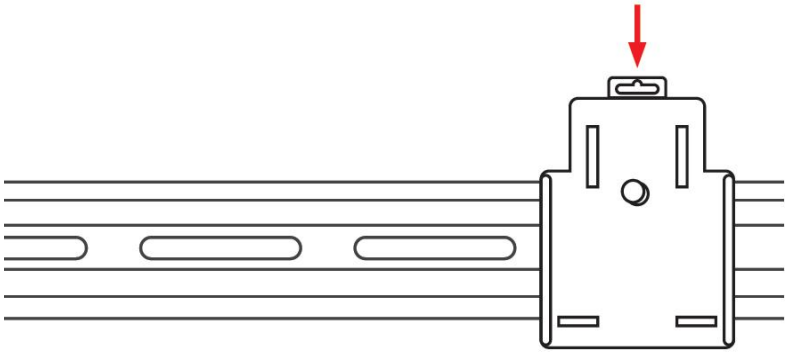
Chapter 4 Other components and installation method

4.1 Other components

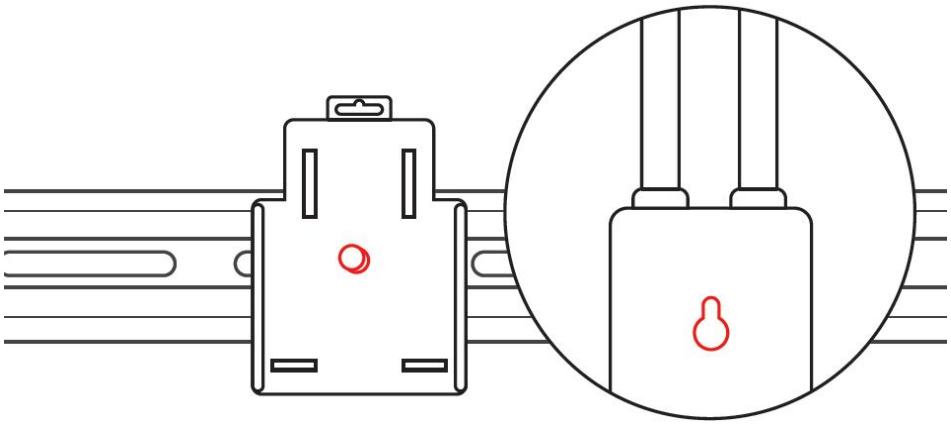
1. Industrial power supply DC connector (VAP11S standard accessories)	2. Industrial chassis track hook kit (VAP11S standard accessories)
3. Antenna extension cable (optional accessories)	4. Ethernet port expander (optional accessories)

4.2 Industrial chassis rail hook kit installation

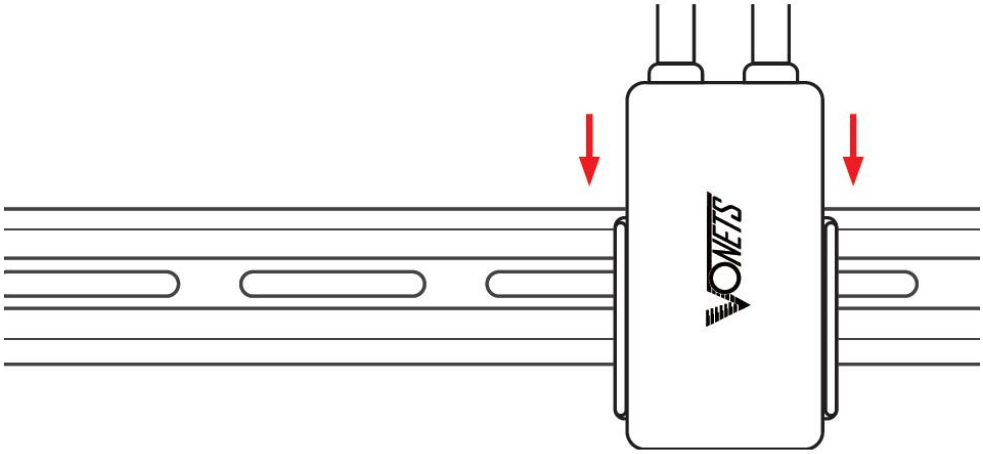
1. Install the hook kit onto the chassis rail and fasten the buckle



2. Install VONETS device onto the hook kit

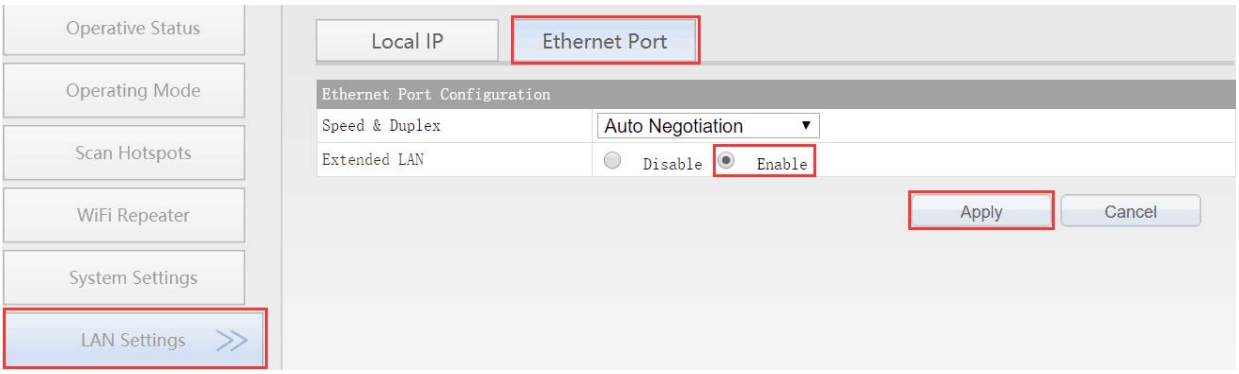


3. Fixed VONETS device on the hook kit;



4.3 Ethernet port expander installation

1. In VONETS device configured page, enable Extended LAN function, go to “LAN Settings”--->“Ethernet Port”--> “Extended LAN”--> “Enable”, then click “Apply” button;

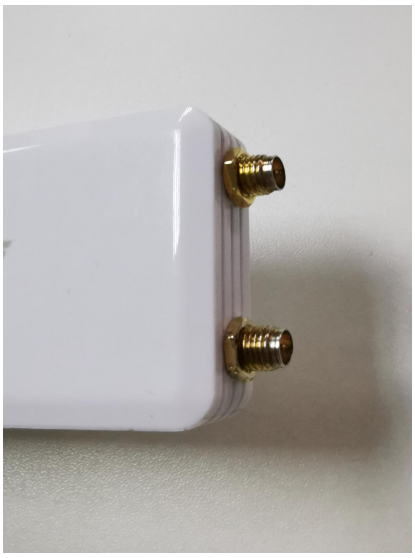


2. Connect the VONETS dedicated Ethernet extender to the Ethernet port of VONETS device;

4.4 Antenna installation instructions

1. The following is the nut bag packed with the product:

2. Put the nut on the antenna RF base and screw the nut to the end:



3. Rotate the antenna close to the nut to ensure that it will not loosen.

Appendix Frequently Asked Questions

1. How to reset to the factory default parameters?
   Power on the device, after 60 seconds, long press Reset button until 5 seconds, the blue light will flash a few, then the device will automatically reset to the factory default parameters (it will take about 80 seconds to reset the device), during the recovery of the factory operation, the product can't be powered off, otherwise it may cause the product to damage.

2. Do VONETS device support firmware upgrade, how to upgrade?
   VONETS devices support firmware upgrade, and support online upgrade, please visit website: www.vonets.com to refer to the related documents

3. The device WiFi hot spot can be found, but the smart phone or PC can't connect to this device hotspot?
   - Reason 1. Due to some unexpected operation or power down, caused the destroy of device parameters. At this time, just need to reset the device to factory default parameters;
   - Reason 2. The device WiFi doesn't work at the best channel, make the performance worse. At this time, you can try to change the source WiFi hot spot and this device WiFi channel to make the performance better;
   - Reason 3. The smart phone or PC haven't configured the correct WiFi password.

4. The device has been configured the source WiFi hot spot parameters, the smart phone or PC has connected to the device WiFi hot spot, but still doesn't get internet?
   - Reason 1. The distance between the device and source WiFi hot spot is too long, cause the communication performance degradation, finally effect the user's access to the Internet. At this time, just need shorten the distance between the device and source WiFi hot spot to solve this problem;
   - Reason 2. Due to some unexpected operation or power down, caused the destroy of

device parameters. At this time, just need to reset the device to factory default parameters;

- Reason 3. The device WiFi doesn't work at the best channel, make the performance worse. At this time, you can try to change the source WiFi hot spot WiFi channel to make it the same as the default channel of the device, the reboot the device, the device will automatically exchange to the same channel as the source WiFi hotspot, to make the performance better;
- Reason 4. There are several WiFi hot spot around the device, WiFi channel mutual interference, make the performance worse. At this time, you can try to change the source WiFi hot spot and this device WiFi channel to make the performance better;
- Reason 5. The configured source WiFi hot spot parameters are not correct. At this time, just need to configure the correct parameters then reboot.

5. The smart phone or PC has been connected the device by WiFi or Ethernet cable, but user can't log in the device WEB page, or after log in the WEB it shows error?
   - Reason 1. The users don't use the browser recommended by VONETS(IE,Google Chrome, Safari, the mobile phone browser);
   - Reason 2. The smart phone or PC installed the firewall, the security level is set too high, caused the above problem. At this time, only need to close the firewall;
   - Reason 3. The security level of browser is too high, it will also cause the above problem. At this time, just need to reduce the browser's security level, then log in again;
   - Reason 4. The IP address of the device input error. For the new device from the factory, user only need input the correct IP address according to the instruction guide; for the device that has connected the source hot spot, user only operate according to <Remark 2>.

6.Product application and secondary development precautions

1. Problems related to wireless interference:
   - 1.1 Use the ping command to test the wireless transmission performance. If it is found that the delay of the ping packet response is extremely uneven, and there are many responses with a large delay, it can basically be judged that the wireless has been strongly interfered;
   - 1.2 The product antenna should be kept as far away as possible from sources of interference, such as switching power supplies, antennas of other modules or wireless products, etc.;
   - 1.3 If it is too close to the antenna of other wireless products, it will cause mutual interference, resulting in an increase in the transmission bit error rate and a slower transmission rate. At this point, the wireless signal must be properly attenuation. The methods of attenuating the signal include adding obstacles, extending the distance, and adding a resistor in series between the antenna feed point and the antenna, etc., to meet the actual application requirements;
2. Selecting a suitable power supply is the key to good and stable wireless transmission

and stable operation of the product. Improper power supply will cause damage to the product or poor wireless performance. The selected power supply must meet the power supply Input voltage range and input power requirements, the ripple must be less than the required maximum power ripple (100mV);