

VONETS VM300 Wireless Module User Guide

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Wireless module/WiFi product/Finished Product VM300/VM5G/VBG1200/VAP11AC Quick Setting Guide

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Declaration

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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 attenuated. 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 voltage range and input power requirements of the power supply input, and the ripple must be less than the required maximum power supply ripple (100mV);

Form 1

Transmission Distance Parameters F orm			
Model	No-barrier point to point Transmiss ion Distance	Transmission Rate (Mbp s)	Ban d
VM300	80m–100m	300	
VM5G/VBG1200/VAP11AC	600m–700m	300+900	5G

Form 2

Power Supply Parameters List			
Model	Power Supply Voltage	Input Power	Typical Power Supply
VM300	DC5V-15V	≥5W	5V/1A
VMSG/VBG1200	DC5V-15V	≥10W	5V/2A
VAP11AC	DC5V-24V		

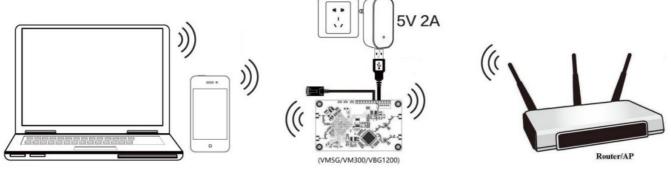
Chapter 1 Application Mode

1.1 Bridge + Repeater Mode

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

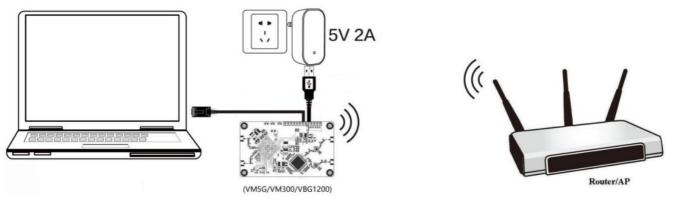
· WiFi Repeater:

VONETS module/WiFi product as WiFi Repeater, it must be configured to source WiFi hotspot parameters, can be used to extend the wireless signal coverage of existing APs or wifi router.



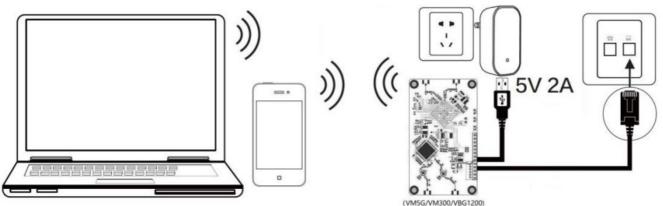
· WiFi Bridge:

VONETS module/WiFi product 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:

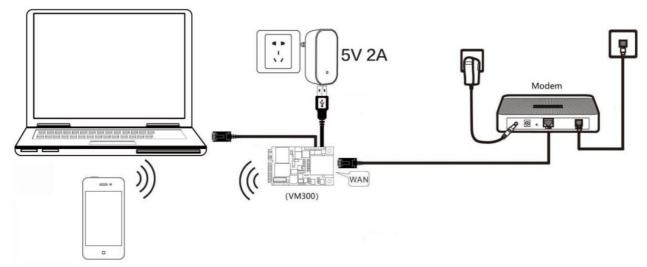
VONETS module/WiFi product as WiFi AP, it can achieve wireless access to wired LAN, no configuration required, plug and play.



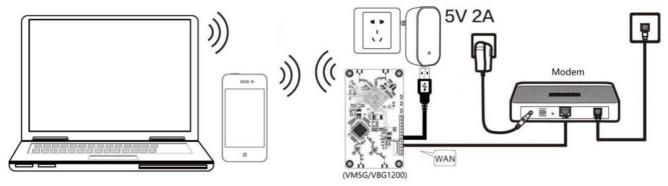
1.2 Router Mode

• VONETS module/WiFi product as WiFi router

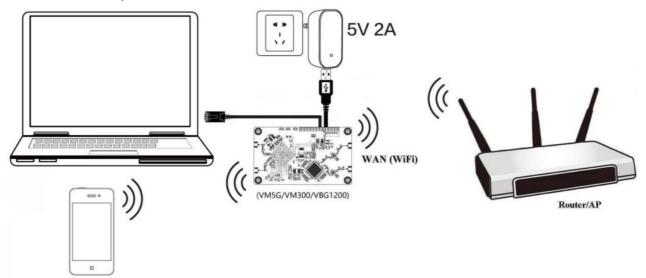
The Ethernet port of VM300 module/ VAP11AC finished product defaults to WAN port. The Ethernet cable defaults to the LAN port. WAN and LAN ports are interchangeable.



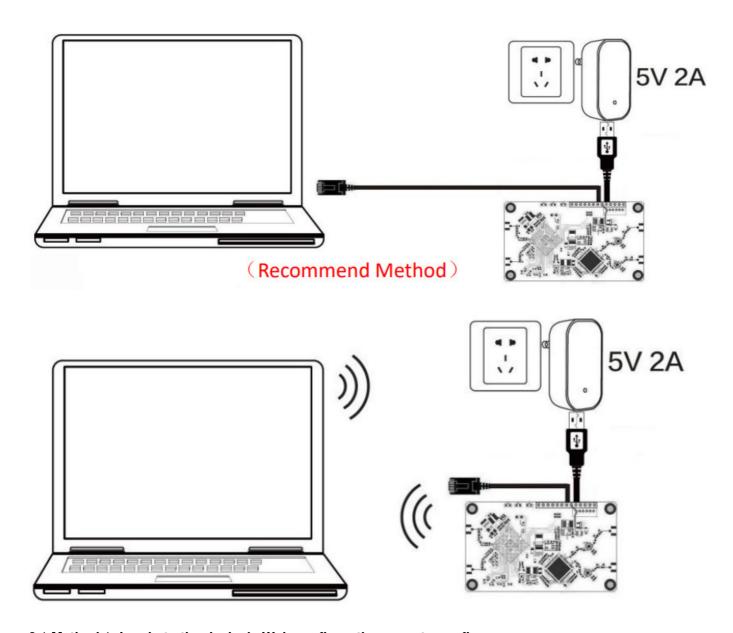
The Ethernet cable of VM5G module/VBG1200 WiFi product defaults to LAN port, you must set "WAN/LAN interchange" so that the Ethernet cable is WAN port to use the broadband dialing function.



• VONETS module/WiFi product is used as a wireless router. WAN port can be set to connect to the WiFi hotspot for use as a secondary router.



Chapter 2 Bridge + Repeater Mode Configuration Instruction



2.1 Method 1: Log in to the device's Web configuration page to configure

2.1.1 Device Connection

Power on VONETS module/WiFi product 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 module/WiFi product; **B.** The computer wirelessly connects to the WiFi signal of VONETS module/WiFi product, its default hotspot parameters are as follows: WiFi SSID: VONETS_******** (corresponding to VONETS device MAC address)

WiFi password: 12345678 (After the WiFi parameters are configured, the WiFi will be disconnected, that is normal.)

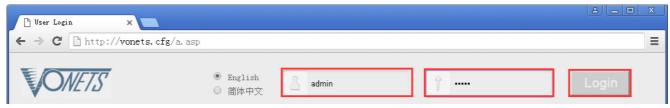
2.2 Bridge+Repeater Application Configuration

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

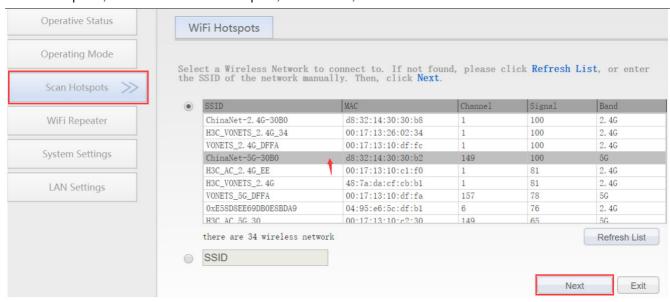
 After computer is connected to VONETS module/WiFi product, open browser, input configured page: http://vonets.cfg (or IP: 192.168.254.254), then press Enter;



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



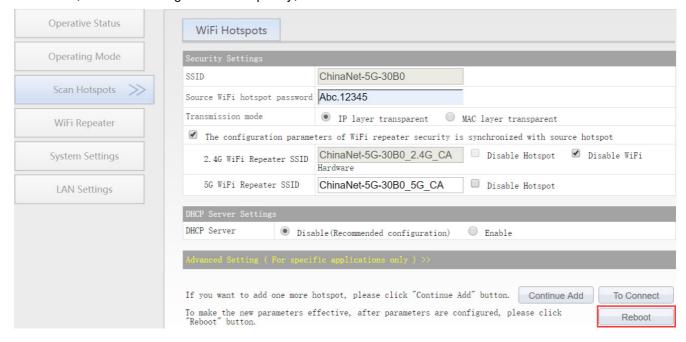
3. "Scan Hotspots", choose the source hotspots, click "Next";



- 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 module 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
VM300	WiFi Connection Statu s Light	Ethernet Cable Connection St atus Light	1
VM5G/VBG1200/VA P11AC	WiFi Connection Statu s Light	5G WiFi Connection Status Lig ht	Ethernet Cable Connection St atus Light

- 1. VONETS module/WiFi product is not connected to any hotspot, WiFi connection status light will flash quickly;
- 2. VONETS module/WiFi product is connected to hotspot successfully, WiFi connection status light will quick flash;
- 3. VONETS module/WiFi product is connected to hotspot successfully, but hotspot signal strength is less than

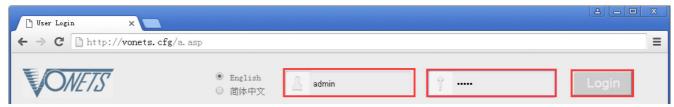
50% greater than 10%, WiFi status light will pause flash and flash;

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

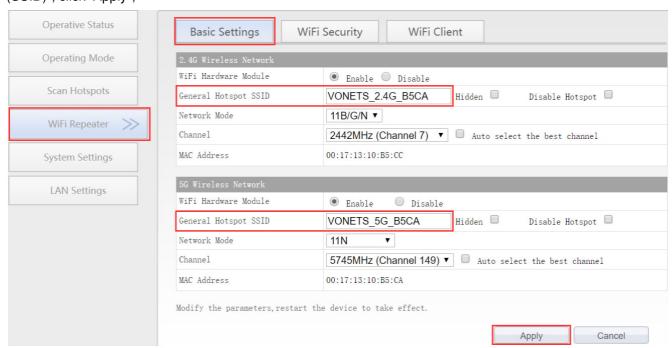
2.3 AP Application Configuration

VONETS module/WiFi product can be configured as an AP application. The wireless terminal device can connect to VONETS module/finished product 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: 192.168.254.254) in your computer browser, both user name and password are "admin"



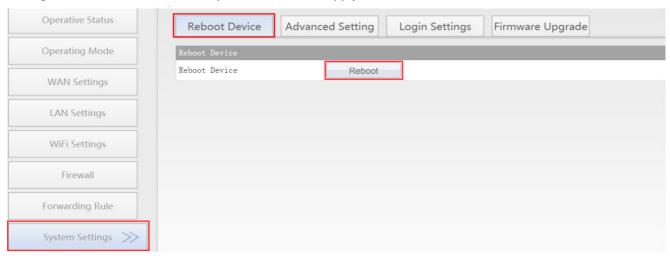
2. Revise WiFi name: Jump to "WiFi Repeater"— "Basic Settings", enter new WiFi name in "WiFi Repeater (SSID)", click "Apply";



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



4. "WiFi Tx Power" of VONETS module/WiFi product can be changed, jump to "System Settings"— "Advance Settings", choose suitable transmit power, then click "Apply";

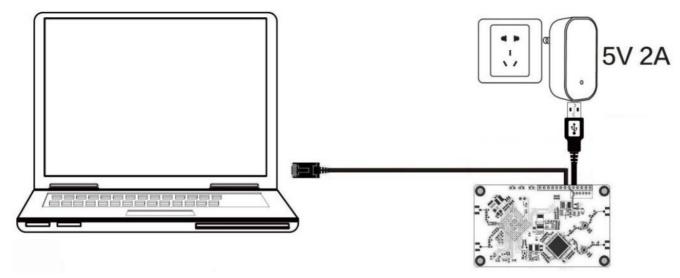


Remark 2: When VONETS module/WiFi product connect to external network, its IP address will be changed. At this time, when log in configured page, we suggest you enter configured domain name: http://vonets.cfg. Or in Windows command window, enter the command: ping vonets.cfg, to get the IP address of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

Chapter 3 Router Mode Configuration Instruction

3.1 Change device mode

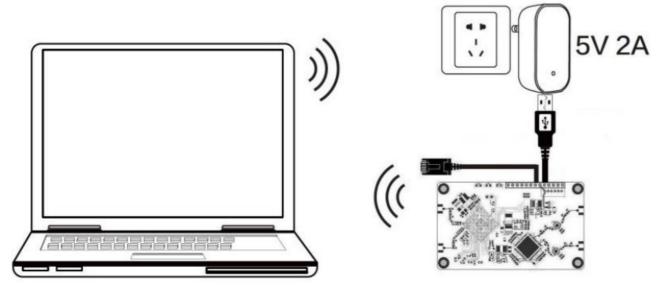
- 1. Power on VONETS module/WiFi product by 5V/2A power supply, then connect to PC, there are two connection ways as below:
 - A. Computer is wired connected to LAN port of VONETS module/WiFi product;



Recommend Method

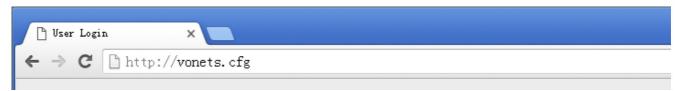
B. Computer wirelessly connects to the WiFi signal of VONETS module/WiFi product, its default hotspot parameters are as follows:

WiFi SSID: VONETS_****** (corresponding to VONETS device MAC address) WiFi password: 12345678



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

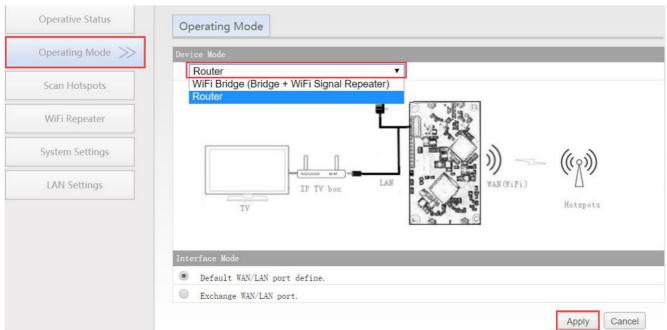
2. After computer is connected to VONETS module/WiFi product, open browser, input configured page domain name: http://vonets.cfg (or IP: 192.168.254.254), then press Enter;



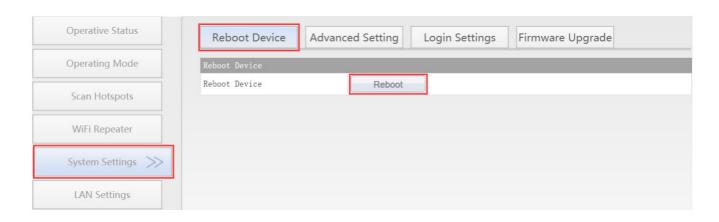
3. Enter User name and Password in login page (both are "admin"), click "Login" button to enter configured page;

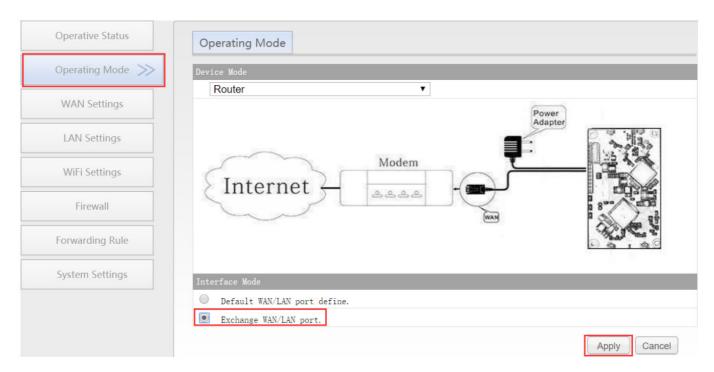


4. In "Operating Mode", change Device mode to "Router" mode, click "Apply" button;



5. Reboot device: go to "System Settings"— "Reboot device", click "Reboot" button, VONETS module/WiFi product will automatically switch to router mode.





3.2 WAN port setting

3.2.1 WAN/LAN exchange

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

The Ethernet port of VM300 module / VAP11AC finished product 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);

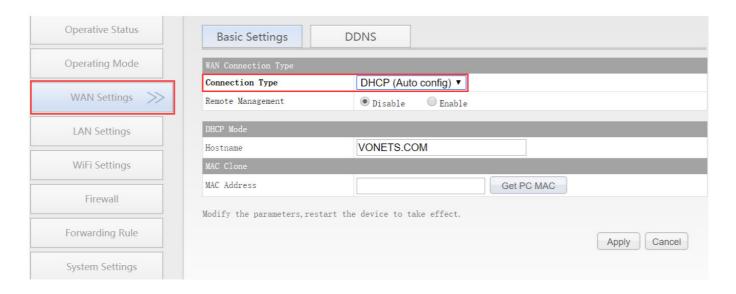
The Ethernet cable of VM5G/VBG1200 WiFi product defaults to LAN port, the interface mode must be changed to "WAN/LAN interchange" to make Ethernet cable to WAN port, click "Apply", then reboot VONETS module/WiFi product.

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 the VONETS module/WiFi product: 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:

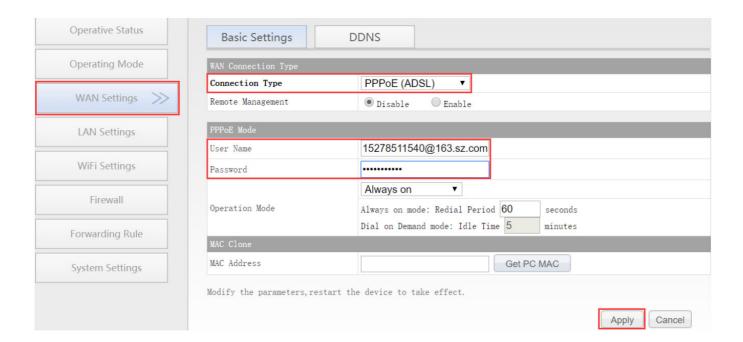
- DHCP(Auto Config): WAN port connection type is selected as "DHCP(Auto Config)", VONETS module/WiFi product will automatically obtain IP address from source network;
- PPPoE(ADSL): WAN port connection type is selected as "PPPoE", that is, ADSL virtual dialing mode requires ISP (Internet Service Provider) to provide Internet account and password.
- WiFi: WAN port connection type is selected as "WiFi", VONETS module/WiFi product 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 mode of VONETS is DHCP. The WAN port can automatically obtain an IP address after connecting with the source network.

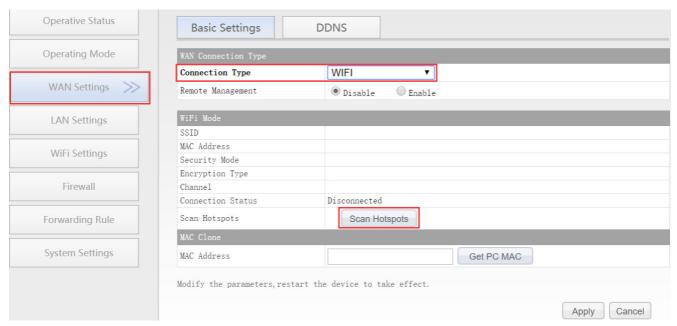


3.2.4 WAN port wired connect network——PPPoE

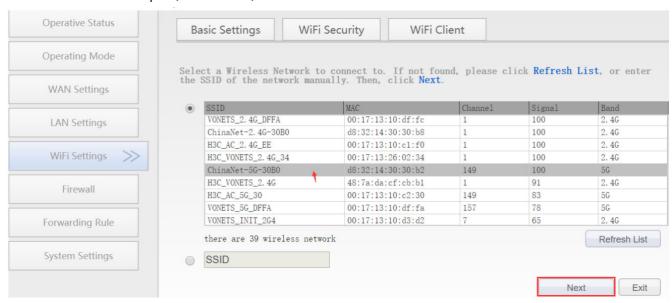
In "WAN settings", select "Basic settings", change the connection type to "PPPoE (ADSL)", then enter the Internet account and password provided by the ISP (Internet Service Provider), click the "Apply" button, and then reboot VONETS module/WiFi product, then can access to network.

3.2.5 WAN port wireless connect network—- WiFi

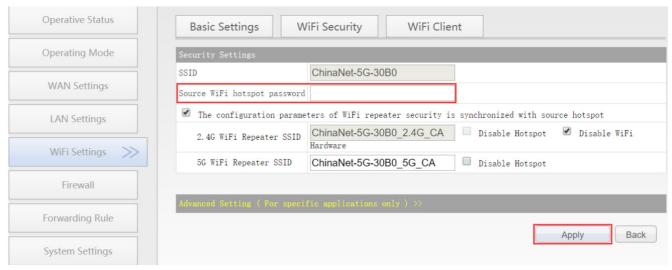
1. In "WAN Settings", select "Basic Settings", change Connection type to "WiFi", then click "Scan Hotspots" to enter the scanning hotspot list.



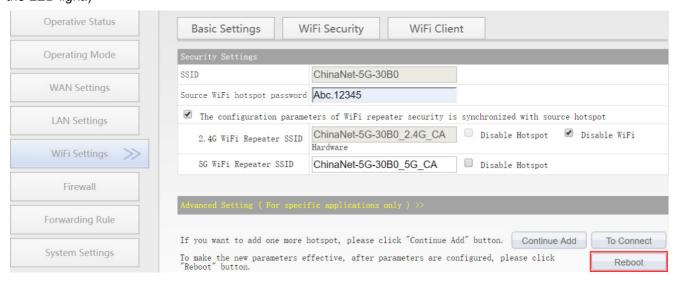
2. Choose the source hotspots, click "Next";



- 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 module/WiFi product 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 module/WiFi product sets the WAN port to access the WiFi hotspot in the routing mode, its LAN port IP is still <u>192.168.254.254</u>, and the terminal device also obtains the IP address of the same network segment, can login configuration page by <u>192.168.254.254</u> or <u>http://vonets.cfg</u>. **3.3 Set WiFi hotspot parameters**

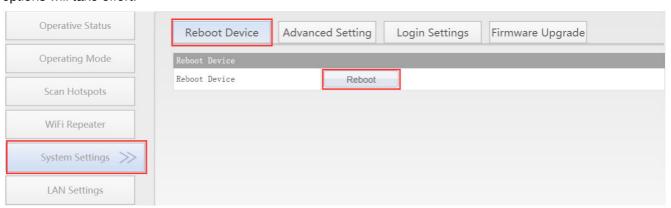
1. Revise WiFi name: Jump to "WiFi Repeater"—- "Basic Settings", enter new WiFi name in "WiFi Repeater (SSID)", click "Apply";



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.



Appendix Frequently Asked Questions

- 1. How to restore the factory default parameters of the VONETS module/WiFi product?
- Please refer to the information below to reset the factory default parameters of the VONETS module/WiFi product

- VM300: http://www.vonets.com/serviceView.asp?D ID=213
- VM5G: http://www.vonets.com/serviceView.asp?D_ID=306
- VBG1200: After the device is powered on for about 60 seconds, press and hold the Reset button for 5 seconds and then release, the blue indicator light will flash a few times, and then the device will automatically restore the factory default parameters (the restoring process takes about 80 seconds). During operation, the product cannot be powered down, otherwise it may cause damage to the product.

2. Does VONETS module/WiFi product support firmware upgrade, how to upgrade?

VONETS module/WiFi product t supports 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 been 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?

- First, check the status light to know the current state of the device, then according to the state of the device to analyze the fault reasons;
- **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 the device;

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>.

FCC STATEMENT:

This device 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.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the 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.

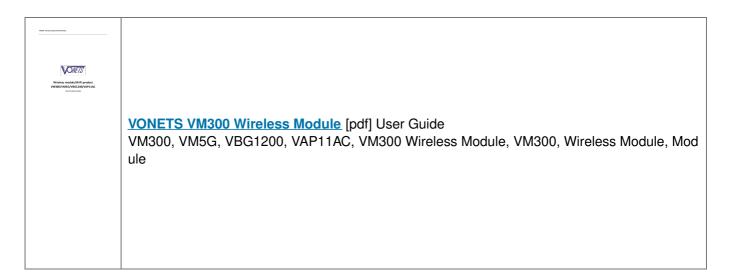
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. Operation of this device in the band 5150-5250 MHz is restricted to indoor use only



Documents / Resources



References

- O VONETS WiFi bridge, Wireless bridge, mini wifi router, wireless repeater, wlan repeater How to restore the factory default settings for VM300?--FAQ--Services
- O VONETS WiFi bridge, Wireless bridge, mini wifi router, wireless repeater, wlan repeater How to restore the factory default settings for VM5G?--FAQ--Services