

150M Mini WIFI Router

VAR11N

User Manual

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Declaration

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Chapter 1 Product Overview

1.1 Product Description

In order to fully utilize various functions, please read this user manual carefully.

VAR11N 150M Mini WIFI Router is designed specially to meet the needs for business people who travel frequently and that need WIFI network. It is based on IEEE 802.11N standard, can spread WIFI network wide and supply the stable transmission up to 150Mbps rate and also is compatible for IEEE 802.11B and IEEE 802.11G standard.

VAR11N is with small appearance and light to carry. It can transfer wired network signal to WIFI signal easily, and let the users that has iPad, tablet computer and smartphone that is without wired network function share internet network by Wi-Fi. At the same time, VAR11N supplies three power supply modes, omits the worries to carry a large amount of power adapters, and is flexible for usage; plug and play, and supply multiple work mode and meet the flexible network solutions. VAR11N is with practical function, superior performance, easy for management and supply multiple protective measure and can protect user's wireless network security effectively.

1.2 Main Features

- The world's smallest WIFI router, the whole size is just two-thirds of the Bank card, very useful for both business trip and household.
- The first wide power input (DC5-15V) WIFI bridge, no need dedicated power supply, most of mobile phone power supply, LCD TV USB port and other devices power supply and so on, can be used for its power supply input to reduce electronic waste generated.
- Low power, the whole power supply less than 4W, dedicated designed parallel DC power outlet and DC power cable, it is convenient to share power supply with other devices.
- 1 WAN, 1 LAN, two ports can interchangeable, such small volume has two ports, so unusual.
- Dedicated power supply cable together with Ethernet cable two in one cable connector, reduce redundant connector, convenient for usage.
- Support 11B only, 11G only, 11N only, 11BG mixed and 11BGN mixed and multiple WIFI modes.

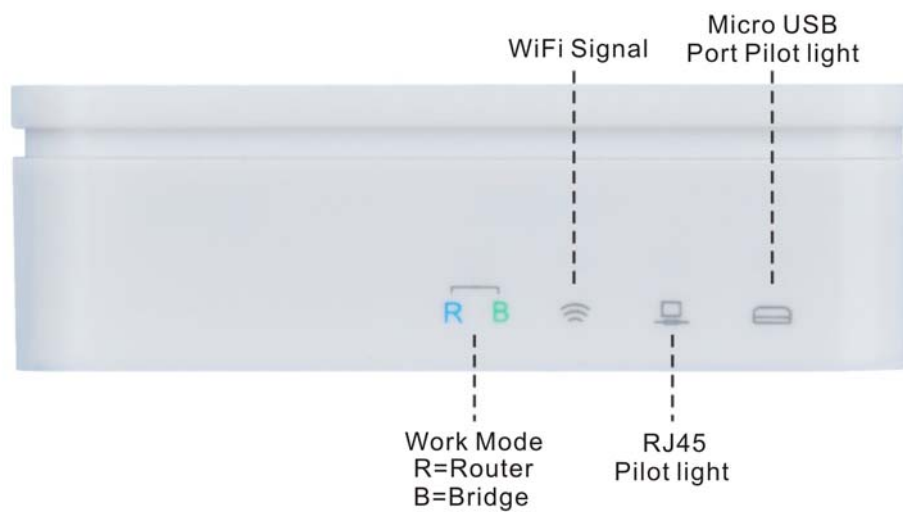
- Support SSID broadcast control, prevent SSID broadcast divulge effectively.
- Support WIFI router mode and WIFI intelligent bridge mode
In WIFI intelligent bridge mode, it can intelligent control the device WIFI mode
WIFI AP Client (it can be used for access from WIFI to wired Ethernet)
WIFI Hotspot (it is suitable for hotel room usage)
WIFI Repeater (it can extend the distance of WIFI signal coverage, ecology and safe)
In WIFI intelligent bridge mode, it supports WIFI hot spot scan automatically and
WIFI hot spot memory function.
- Support Dynamic DNS function, can supply domain name server for dynamic IP address.
- Support WEB remote firmware upgrade and can get the latest software freely.
- Support local and remote WEB management, Chinese and English webpage settings.
- Good compability, can be compatible for all smartphones, tablet computer, notebook, netbook and any WIFI devices.

Chapter 2 Hardware Description

2.1 Panel Layout



Picture 2-1 WIFI Router Product Picture



Picture 2-2 WIFI Router Pilot light Diagram

WAN Port:

In WIFI router mode, this port is used as WAN port, use to connect Ethernet cable or xDSL Modem/Cable Modem.

In bridge mode, this port is used as LAN port, use to connect hubs, switchboard or the computer installed network card in local area network.

LAN Port:

In WIFI router mode, this port is used as LAN port, it is RJ45 port of local area network, use to connect hubs, switchboard or the computer installed network card in local area network. In bridge mode, the function is the same.

Remark: In WIFI router mode, WAN port and LAN port can be exchanged.

Micro USB Port:

This port is used to connect USB cable and connect power by USB port.

Reset Button:

It is used to restore factory settings.

2.2 Reset

If you need restore factory settings, please make sure the router is powered, then long press RESET button, during long pressing, please observe the system status pilot light, after about 5 seconds, when the pilot light is from bright to extinguish, it means it is reset successfully, this moment, you loosen RESET button, router will reboot.

2.3 System Requirement

Broadband Internet service (Access method is Ethernet cable or via xDSL/Cable Modem access);

Has Modem with RJ45 (no need this device if it is used by Ethernet cable directly);

Support TCP/IP protocol operation system;

Web browser, such as Microsoft Internet Explorer., Mozilla Firefox, Apple Safari and so on

Chapter 3 Quick Installation Guide

This chapter introduces how to connect VAR11N and achieve multiple computers to share network successfully. If you just configure the basis setting, you just need read this chapter contents. If you need advanced configuration, please continue reading the follow-up contents.

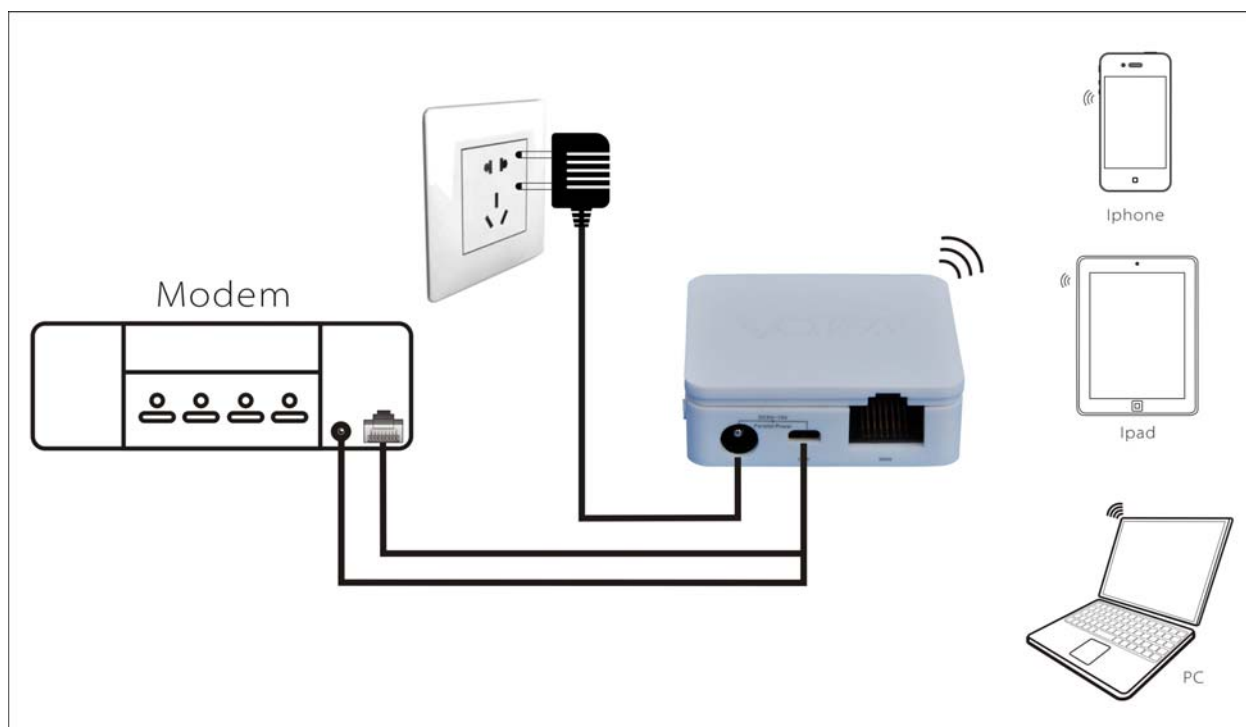
3.1 Work Mode Introduction

3.1.1 WIFI Router Mode

In this mode, VAR11N default Ethernet cable as LAN port, the port as WAN port, users can switch during work mode. The following diagram is the status connection after switching (after switching, Ethernet cable as WAN port usage, the port as LAN port usage), connect VAR11N to ADSL Modem or wired network, then share the power supply to VAR11N, the whole house can achieve WIFI coverage easily. Smartphones, tablet computer and other WIFI devices can get WIFI signal in any corner of this house.

In this mode, VAR11N DHCP server should be open, we suggest to set the IP address

and DNS address of computer to dynamic. Please see the following connection diagram of this mode:



Picture 3-1 Router Mode Connection Diagram

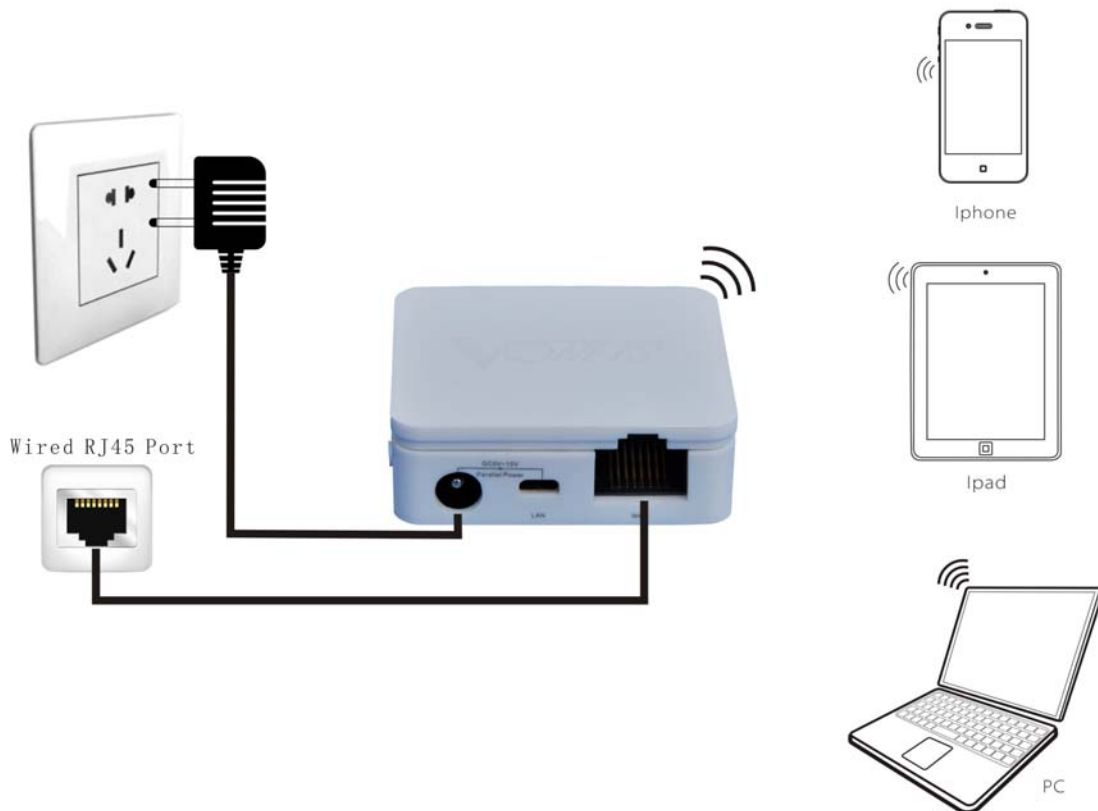
3.1.2 WIFI Bridge Mode

WIFI bridge mode includes four kinds of connections: Hotel mode(Access Point), Repeater Mode(Repeater), Bridge mode(Bridge with AP) and Client mode(Client). This moment, VAR11N RJ45 port as LAN port.

The following is about the four connections of four modes:

Hotel Mode

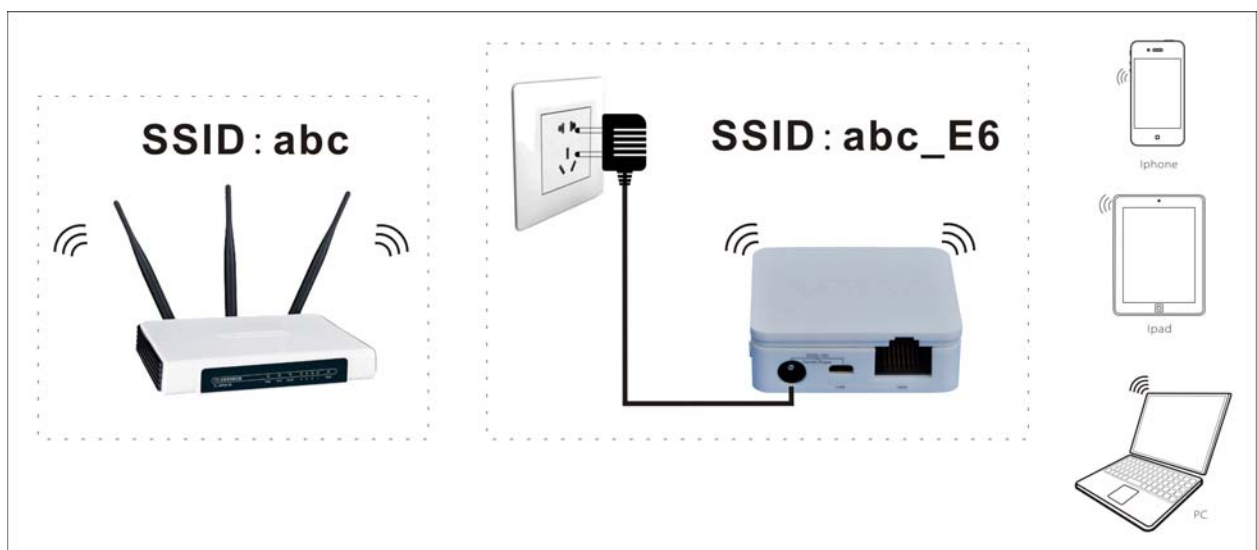
In this mode, VAR11N can transfer wired network to WIFI network. VAR11N connect to wired network, computer/WIFI mobile phone/tablet computer can connect to VAR11N to get network by WIFI. Please see the following connection diagram of this mode:



Picture 3-2 hotel Mode Connection diagram

Repeater Mode

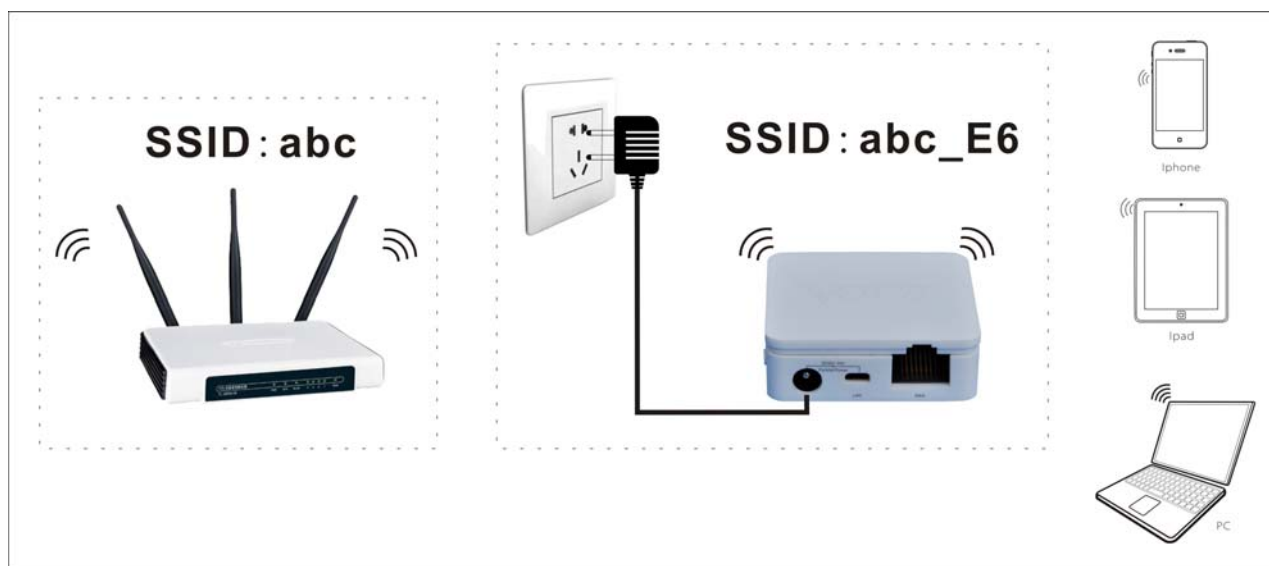
Repeater mode is used for expanding the WIFI signal coverage of AP or WIFI router. In this mode, RJ45 port as LAN port, computer can be connected to VAR11N through wired or WIFI. The encryption method of VAR11N and WIFI router should be the same, SSID is WIFI router name + the last two characters of VAR11N, users can change VAR11N SSID and encryption method. Please see the following connection diagram of this mode:



Picture 3-3 Repeater hotel Mode Connection diagram

Bridge Mode (Bridge with AP)

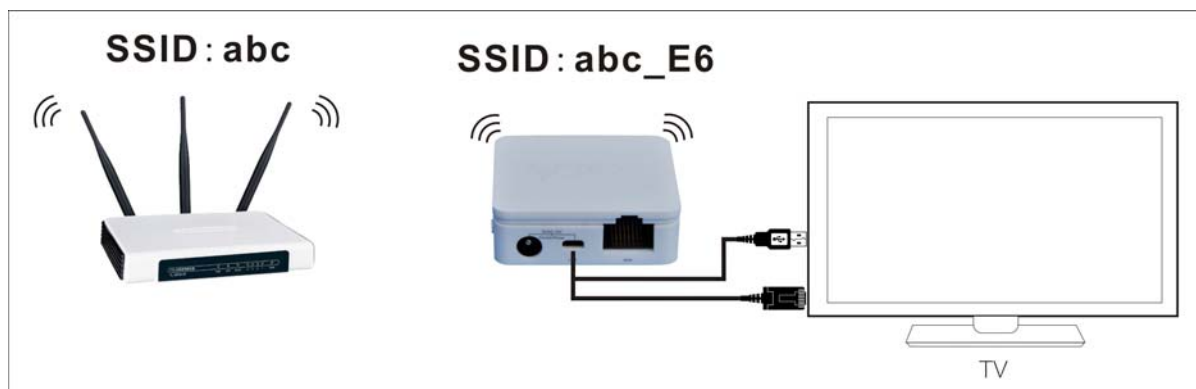
Bridge mode is similar with Repeater mode, is used for expanding the WIFI signal coverage of AP or WIFI router. To avoid the IP address conflict with the WIFI router, the IP address of VAR11N LAN port should be changed to different IP address of WIFI router. In this mode, VAR11N DHCP server is closed, if you need login the webpage of VAR11N, you should configure the computer IP address in the same segment of WIFI router manually. Please see the following connection diagram of this mode:



Picture 3-4 Bridge with AP Mode Connection diagram

Client Mode (Client)

The client mode is similar with wireless network card, it is used for connecting WIFI hot spot signal or WIFI router, can make the devices without wireless function to join WIFI network. To avoid IP address conflict with WIFI router, the IP address of LAN port should be changed to the different IP address from WIFI router. In this mode, VAR11N DHCP server is closed, if you need login the webpage of VAR11N, you should configure the computer IP address in the same segment of WIFI router manually. Please see the following connection diagram of this mode:



Picture 3-5 Client Mode Connection diagram

Chapter 4 Hardware Connect

According to the different work modes, connect the device correctly based on **3.1 work mode introduction** connection diagram.

The method of connecting power supply:

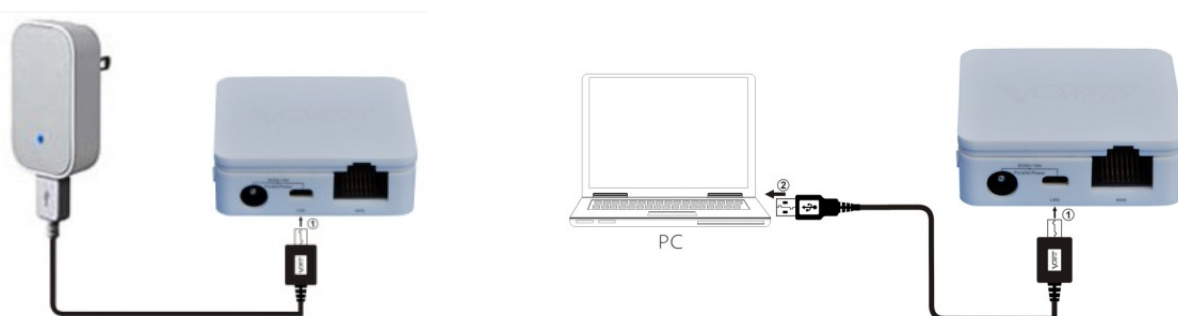
Connect DC2.0 port of VAR11N by 5-15V power supply head, then plug power supply to standard electrical outlet.



Picture 4-1 VAR11N Hardware installation diagram

Remark:

VAR11N can be powered by mobile power adapter and computer USB port, to omit the troubles to carry multiple power adapters.

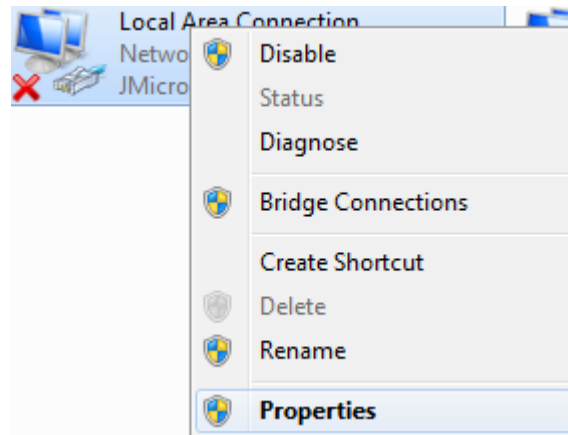


4.1 Build correct IP configuration

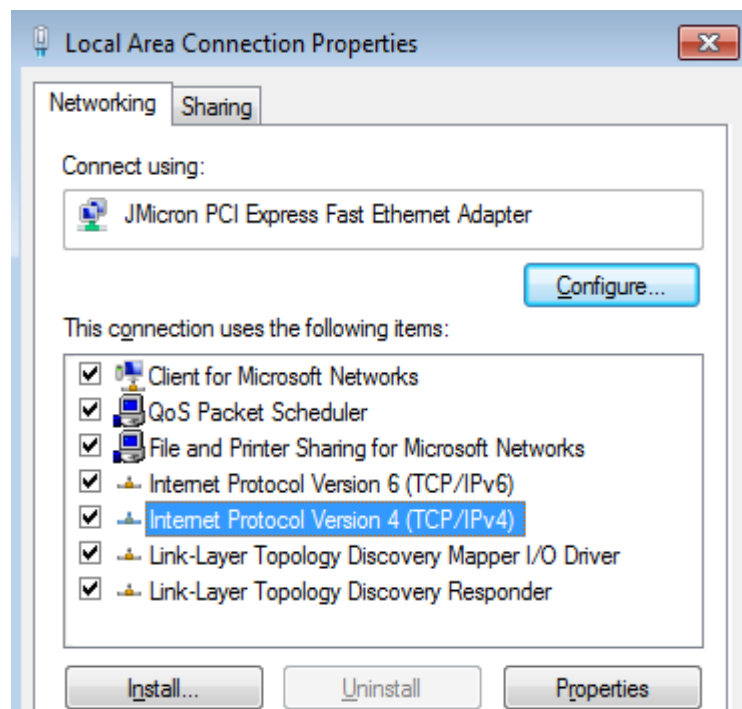
The default LAN IP address of VAR11N is 192.168.1.254, the default subnet mask is 255.255.255.0. The data can be changed based on actual need, but the instruction is according to the default. This section takes Windows 7 system for example,

introduces the steps of configuring computer parameters.

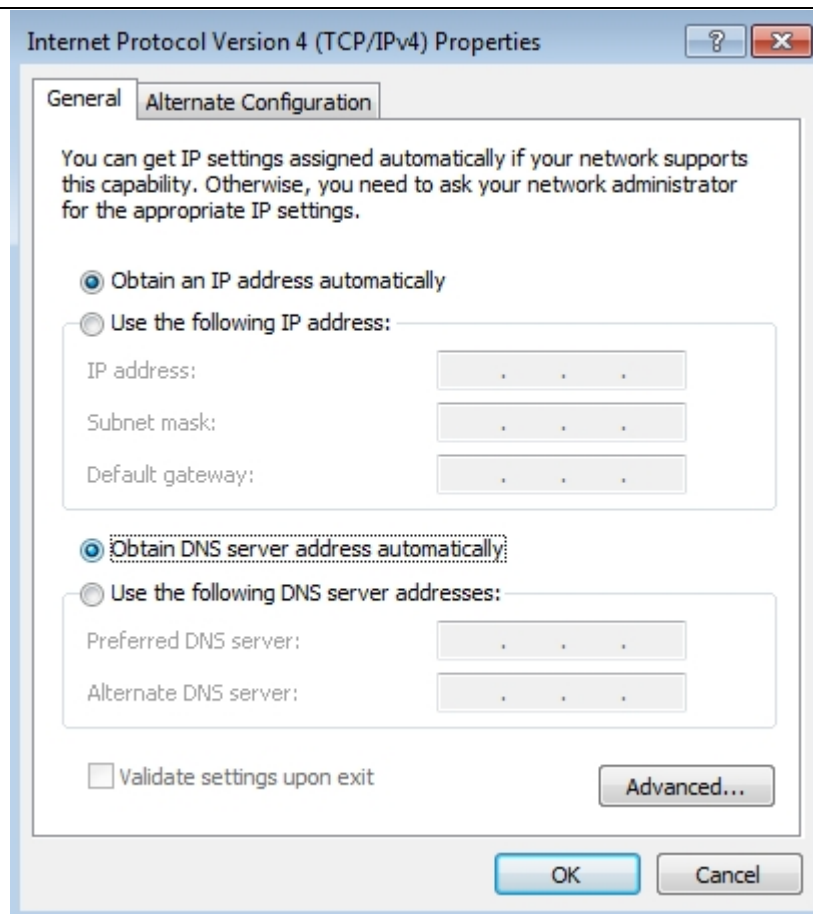
1. Right click Local Area Connection, choose Property .



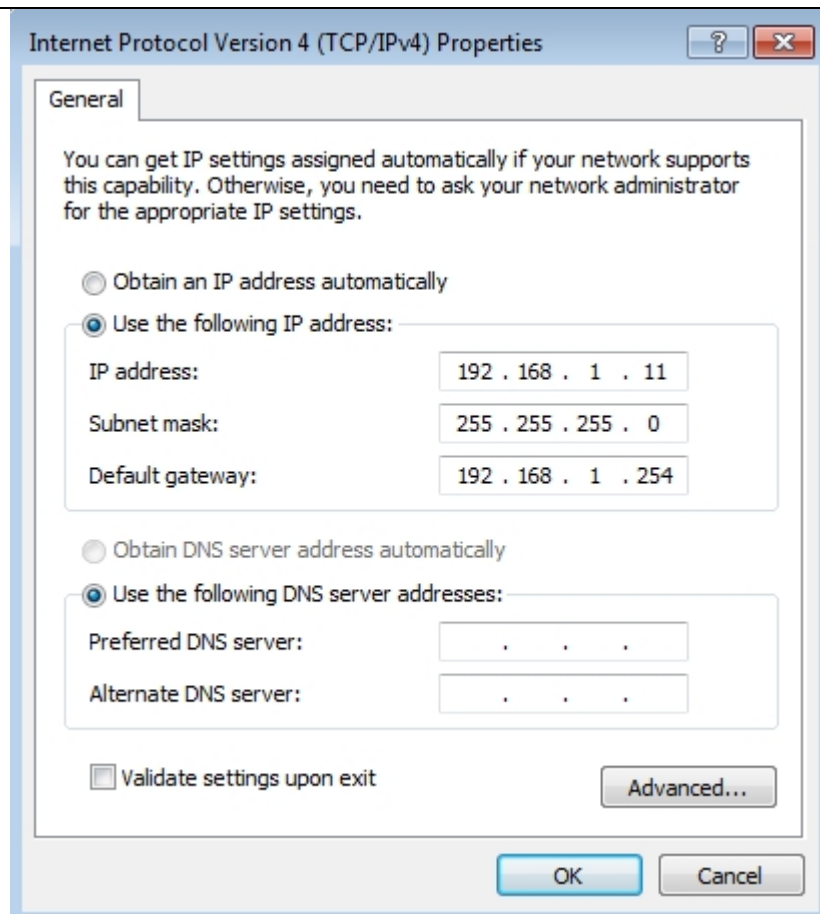
2. Double click **Internet Protocol Version 4 (TCP / IPv4)** .



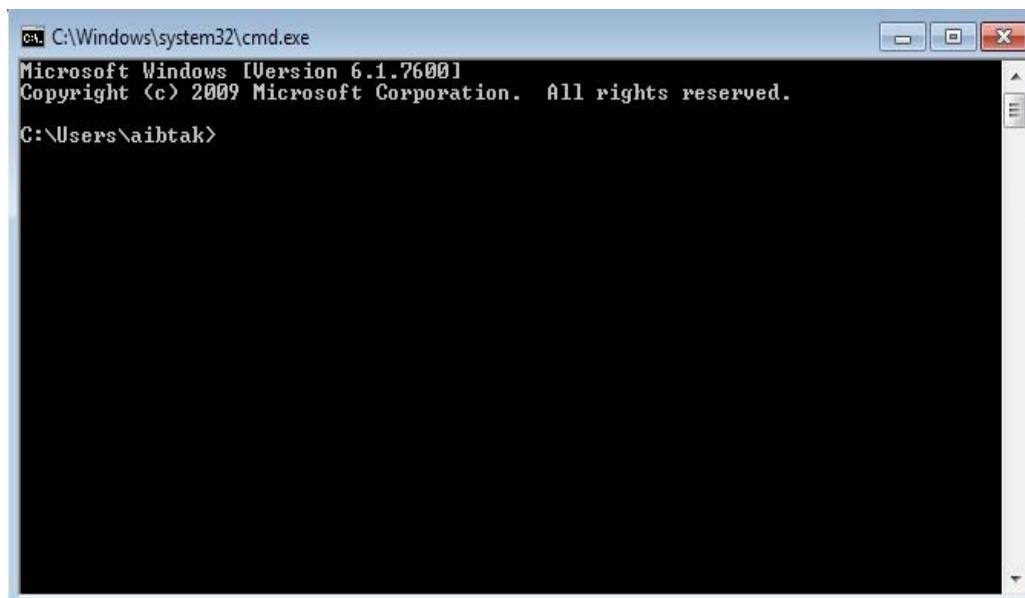
3. In WIFI router mode, please choose Obtain an IP address automatically and Obtain DNS server address automatically, click OK, then return the last interface, click OK, please see the following picture:



4. In WIFI Bridge mode, because VAR11N DHCP server is closed and can't assign IP address for computer, then you should configure the IP address for Local Area connection manually to login the webpage of VAR11N. The IP address of computer should be configured to 192.168.1.X ($2 \leq X \leq 253$), the subnet mask to 255.255.255.0. Please see the following picture, click confirm. Return to the last interface, click confirm, please see the following picture:



5. Check if the computer and VAR11N is connected by Ping command. In Windows 7, click Start, then enter "cmd" command in "Search programs and files", then Enter to go to the interface shown below:



6. Input command 192.168.1.254, then Enter

If the screen shows the following:

```

C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\aihtak>ping 192.168.1.254

Pinging 192.168.1.254 with 32 bytes of data:
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\aihtak>_

```

It means computer and VAR11N have build connection successfully.

If the screen shows the following:

```

C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\aihtak>ping 192.168.1.254

Pinging 192.168.1.254 with 32 bytes of data:
General failure.
General failure.
General failure.
General failure.

Ping statistics for 192.168.1.254:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\aihtak>

```

It means VAR1N hasn't been installed successfully, please check the orders accordance with the following order:

1) Whether the hardware connection is correct?

The USB port pilot light of VAR11N and network card of computer should be blink.

2) Whether the configuration of computer TCP/IP is correct?

If the IP address is configured manually, please make sure if VAR11N IP address is 192.168.1.254, computer IP address must be automatic obtained or 192.168.1.X (X is any integer number from 2 to 253), subnet mask is 255.255.255.0.

4.2 Connect to WIFI network

If you need login Webpage of VAR11N, first please make sure computer or mobile phone must connect to VAR11N wireless network or LAN port.

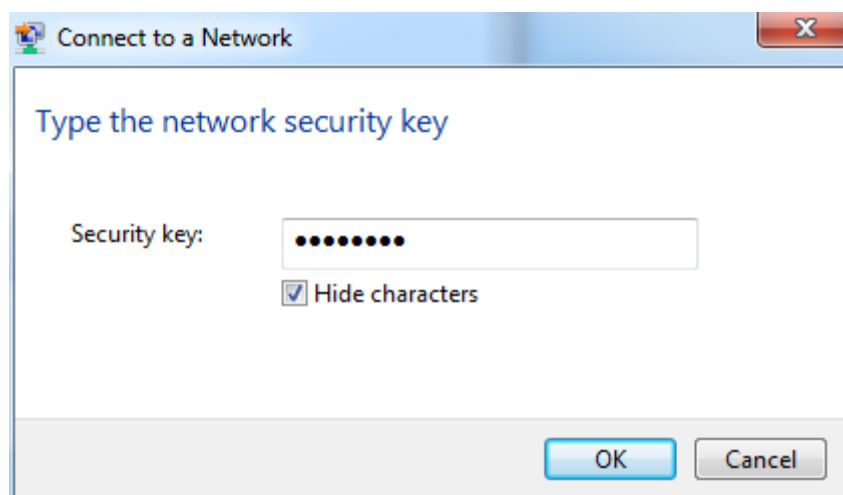
4.2.1 Windows 7 WIFI connect

Here take Windows 7 for example.

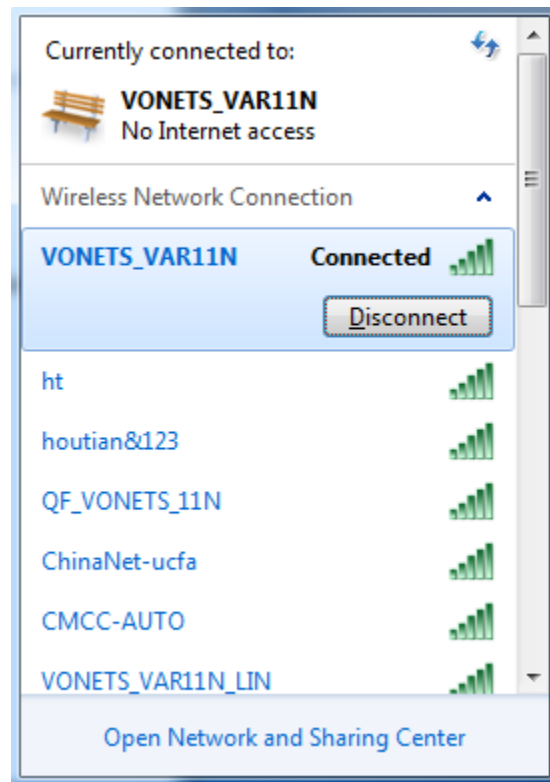
- 1) Click  in the right bottom, in the following lists, choose VAR11N_VAR11N, then click Connect.



- 2) If router has been configured wireless encryption, the following page will be appeared, then input the pre-set password, click OK.



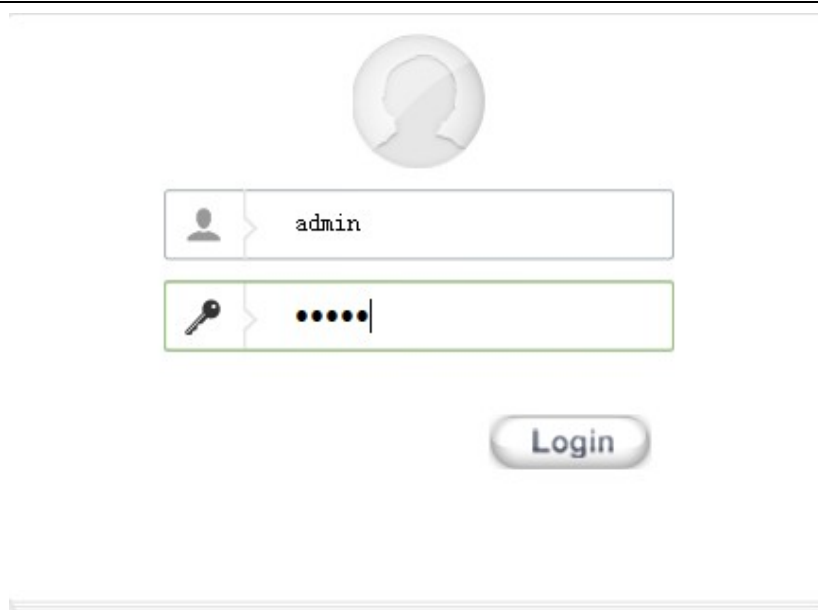
- 3) When the page displays Connected, it means network card has been connected VAR11N WIFI router.



Chapter 5 Router Settings

Our product supplies setup tool based on WEB browser. In order to connect to Internet by VAR11N successfully, please configure WEB browser first.

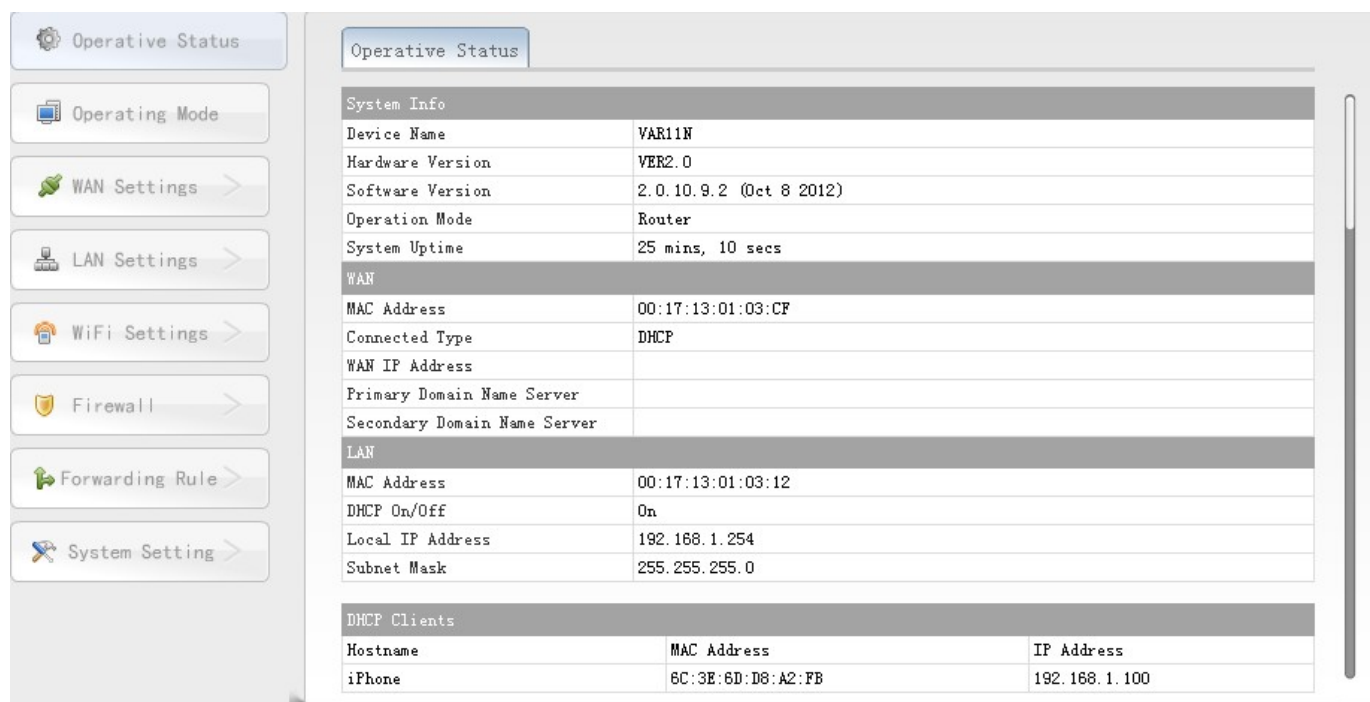
Open WEB browser, input IP address 192.168.1.254 of VAR11N WIFI router in browser address field, the picture 5-1 will show login webpage, then input username and password (the default username and password is **admin**), click Login button.



Picture 5-1 Login webpage

5.1 Operative Status

Picture 5-2 Operative Status page will display in browser after login, the default display is English page, user can click the upper right button to switch, user can see the every function operative status in this page, please see the following picture:



Picture 5-2 Operative Status page

System Info: Here display the hardware and software version and operative mode and system uptime. You can go to System setting----Firmware Upgrade to upgrade software version.

WAN Port Status: Here display the current WAN port MAC address, Connected Type, IP address and DNS server. You can go to WAN settings page to do some configuration.

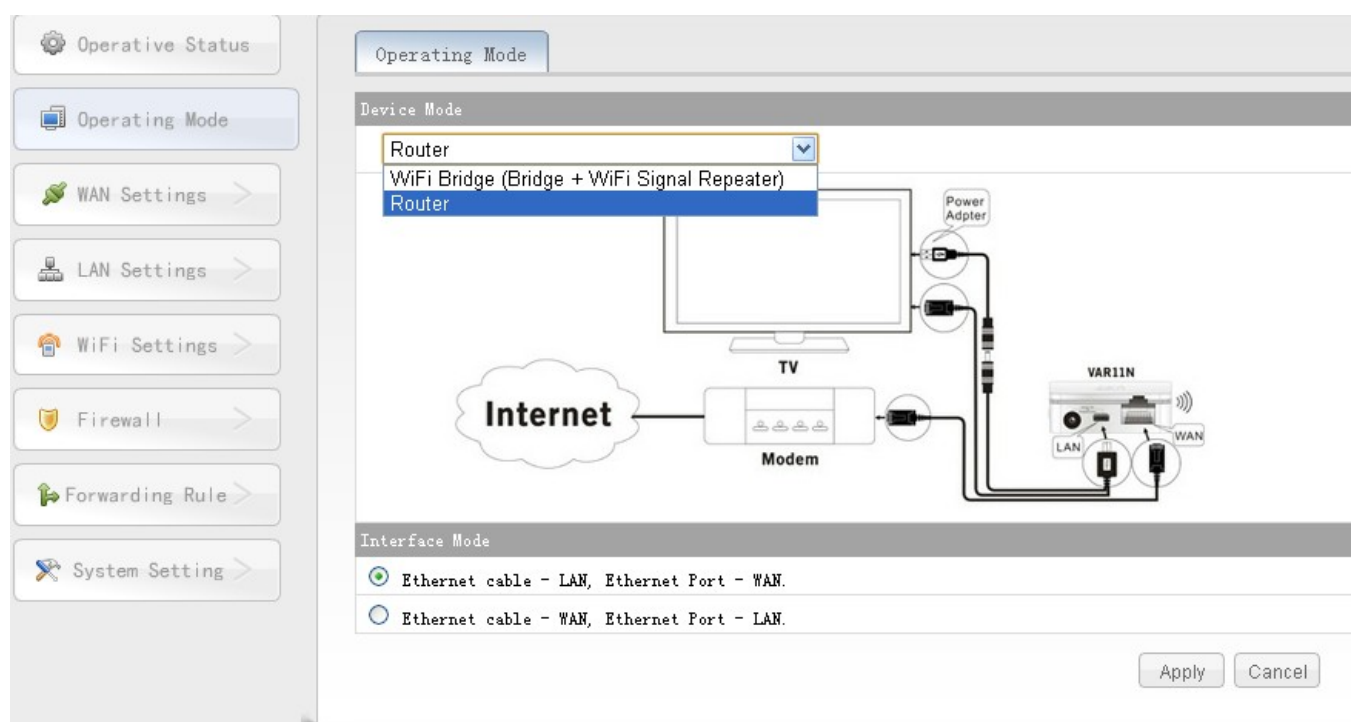
LAN Port Status: Here display the current LAN port MAC address, DHCP On/Off, Local IP address and Subnet Mask. You can go to LAN Settings page to do some configuration.

DHCP Clients: Here display the current all clients information that connected to VAR11N, include Hostname, MAC address and IP address.

Wireless Network: Here display all clients information connected to VAR11N by wireless.

5.2 Operating Mode

Click operating mode button, can switch operating mode, such as Router mode and WIFI Bridge(Bridge + WIFI Signal Repeater) mode, see the following picture:



Picture 5 -3 Operating Mode Picture

Remark:

- 1) Device Mode: can switch Router mode and WIFI Bridge (Bridge + WIFI Signal Repeater) mode.
- 2) Interface Mode: the default is ethernet cable (Micro USB) is LAN, ethernet port (RJ45 port) is WAN port, user can change ethernet cable (Micro USB) to WAN port and ethernet port (RJ45 port) to LAN port.

5.3 WAN settings

5.3.1 Basic Settings

Click WAN settings button, can set up the commonly used several access of network, the default is DHCP (Auto Config), user can choose the correct access of network provided by ISP.

➤ Static (Fixed IP)

If your access of network is Static IP, ISP will provide you IP address parameter, you need to input the parameters provided by ISP, if any questions, please contact you ISP.

➤ DHCP (Auto Config)

If your access of network is Dynamic IP, you can get IP address from your ISP, no need any configuration.

➤ PPPOE (ADSL)

If your access of network is PPPOE, namely ADSL virtual dial mode, ISP will supply username and password, then you input ADSL username and password provided by ISP (it is general way in domestic internet)

➤ L2TP

If ISP provides L2TP method, ISP will provide username and password. If any questions, please contact ISP.

➤ PPTP

If ISP provides PPTP method, ISP will provide username and password. If any questions, please contact ISP.

➤ Remote Management

Remote management can allow user to configure VAR11N by wide area networks and allow you to perform administrative tasks from a remote host.

➤ MAC Clone

The default is MAC address of VAR11N WAN port. If ISP provides a MAC address and require to bind WAN port MAC address, just input it to “MAC address” column. Unless ISP has special requests, or don’t suggest to change MAC address.

Get PC MAC address: Click this button, can clone the MAC address of present administrative PC to “MAC address” column. If when ISP provides service, they demand MAC clone, then should carry out this operation, otherwise no need clone the MAC address.

5.3.2 DDNS

DDNS just becomes effective in WIFI signal multiplication mode and WIFI router mode.

DDNS (Dynamatic Domain Name Server) is the abbreviation of Dynamatic DNS.

DDNS is mapping user’s dynamatic IP address to a fixed domain resolved server, everytime when users connect to network, client program will send a dynamatic IP address of host server located on the service provider host, the server program is responsible for providing the DNS service and dynamatic DNS.

DDNS Settings	
Dynamic DNS Provider	None
Account	
Password	
DDNS	

The main function is as below:

1. Most broadband provider just provide dynamatic IP address, DDNS can capture the user everytime variable IP address, then corresponding to domain name, so other users can communicate with each other by domain name.
 2. . DDNS can help build a virtual host in your own company or home.
- Dynamic DNS Provider: Choose the DDNS provider that you use.
 - Account: Please input the account name that is registered in DDNS provider.
 - Password: Please input the password that is registered in DDNS providers.
 - DDNS: Please input the effective registration of domain name.

5.4 LAN Settings

In LAN Settings, you can set up the router local area network IP address and Subnet mask, the user of local area network can manage this VAR11N WIFI router by this IP address. For ordinary families sharing the internet, no need change the IP address of LAN port, keep the default value is ok.

5.4.1 Basic Settings

Choose LAN Settings-----Basic Settings, you can see the following diagram and configure the network parameters of LAN port.

LAN Setup	
IP Address	192.168.1.254
Subnet Mask	255.255.255.0
MAC Address	00:17:13:01:03:12
DHCP Server	
DHCP Server	Enable
Start IP Address	192.168.1.100
End IP Address	192.168.1.200
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.254
Primary DNS Server	
Secondary DNS Server	

IP Address: Input the IP address of VAR11N WIFI router to local area network. In local area network, all IP Address should be the same segment as this address and the default gateway should be IP address. The default of factory is 192.168.1.254, it is C type IP address, is suitable for small network less than 200 computers, you can change it based on networking needs.

Subnet Mask: Choose the subnet mask of VAR11N WIFI router to local area network. The corresponding subnet mask of C type is 255.255.255.0., to ensure network access normal, please don't change subnet mask. You can choose different subnet mask according to real type of local area network and IP address.

MAC Address: The MAC address of this VAR11N WIFI router, it used to identify local area network.

DHCP Server: If DHCP server is enable and configure the method of obtaining IP

address to “IP address Auto config”, when you open computer, DHCP server assigns IP address to computer automatically from address pool, no need configure manually. The default is enable.

Start IP Address/End IP Address: Input the starting address and the ending IP address. After the configuration, DHCP server assigns to the intranet. The host IP address is between these two addresses.

Subnet Mask: Choose the subnet mask of VAR11N WIFI router to local area network.

Default Gateway: Should input LAN Port IP address of VAR11N WIFI router, it should be 192.168.1.254.

The Primary/Secondary DNS Server: You can input the DNS server provided by ISP or don't fill, if any questions, please feel free to contact ISP.

Remark: Finishing modification, click Apply button to reboot VAR11N WIFI router to effect the configuration.

1. If the local IP address is changed, you must use the new IP address to log in to the WEB management of VAR11N WIFI router and the default gateway for all computers in the LAN must be set to the IP address to the normal Internet.
2. All computers in the LAN subnet mask must be set the same as here subnet mask.

5.4.2 DHCP Client

The client list displays all the current information of the client host to obtain an IP address by the DHCP server, include Hostname, MAC Address and IP Address, please see the following diagram:

Basic Settings DHCP Client MAC Binding IP		
DHCP Clients		
Hostname	MAC Address	IP Address
iPhone	6C:3E:6D:D8:A2:FB	192.168.1.100
www-ff71d390f28	48:5B:39:5C:07:7A	192.168.1.101

Hostname: Display the client computer name that obtaining IP address.

MAC Address: Display the client computer MAC address that obtaining IP address.

IP Address: Display DHCP server assigned to the IP address of the client host.

5.4.3 MAC Binding IP

IP binding with MAC, can prevent ARP attack effectively and keep the network security of the local area network users.

Choose LAN Settings----MAC Binding IP

MAC Binding IP

Device Name: aibtak-pl

IP Address: 192.168.1.22

MAC Address: 48:5B:39:5C:07:7A

Reset Delete

MAC Binding IP List

	Device Name	IP Address	MAC Address
1	aibtak-pl	192.168.1.22	48:5B:39:5C:07:7A

Device Name: Input the host name of the binded host

MAC address: Input the MAC address of the binded host

IP Address: Input IP address of the binded host.

Add: Click the Add button will add an entry to the address reserved table.

Remark: Choose the address reserved table entries to delete and modify.

5.5 WIFI Settings

The function of WIFI settings can enable the wireless function of VAR11N WIFI router to access the network safely and conveniently.

5.5.1 Basic Settings

Choose WIFI Settings----Basic settings, you can see the following picture:

Operative Status

Operating Mode

WAN Settings

LAN Settings

WiFi Settings

Firewall

Forwarding Rule

System Setting

Basic Settings WiFi Security WiFi Client

Wireless Network

WiFi Network: ☒ Enable ☐ Disable

Network Name (SSID): VONETS_VAR11N ☐ Hidden

Network Mode: 11b/g/n

Channel: 2432MHz (Channel 5)

MAC Address: 00:17:13:01:03:12

Apply Cancel

Basic settings can enable and use the wireless network function and formation the internal wireless network. Formation of networks within the network hosts need a wireless card to connect to a wireless network, but the wireless network is not secure, it is recommended that after the completion of the basic settings for the wireless security settings.

- **WIFI Network:** This function can enable and disable WIFI Network, the default is Enable
- **Network Name(SSID):** Namely Service Set Identification, used for identify the wireless network name. You can input what you like, it will display the WIFI network lists searched by Wireless card.
- **Hidden:** This function doesn't allow the VAR11N WIFI router SSID to display in the WIFI network lists searched by Wireless card.
- **Network Mode:** Select a mode based on wireless client mode
 - 11b mode: If your wireless network just exists 11b mode client, choose this mode.
 - 11g mode: If your wireless network just exists 11g mode client, choose this mode
 - 11n mode: If your wireless network just exists 11n mode client, choose this mode
 - 11b/g mixture mode: If your wireless network exists 11g or 11g mode client, choose this mode.
 - 11b/g/n mixture mode: If your wireless network exists 11b, 11g, 11n mode client, choose this mode.
- **Channel:** The channels used by the device currently, effective working channel can be selected from the drop-down list, the option is from 1-14.
- **MAC address:** The MAC address of this WIFI router, used to identify wireless network.

5.5.2 WIFI Security

Through the page to set up a wireless security, this device supports OPEN-WEP, SHARED-WEP, WPA-PSK, WPA2-PSK, WPAPSK, WPA2PSK. In order to prevent rub network, we strongly recommend you to choose WPA-PSK AES encryption method, here introduce you the most usual encryption methods.

Basic Settings WiFi Security WiFi Client

VONETS_VAR11N

Security Mode: WPA-PSK

WPA

WPA Algorithms: WPA-PSK (selected), WPA2-PSK, WPAPSK-WPA2PSK

TKIP-AES

Pass Phrase: (8-63 characters or 64 hex numbers)

Apply Cancel

WPA-PSK

WPA is a standards-based, interoperable the WLAN security enhancement solutions, can greatly enhance the level of data protection and access control for existing and future wireless LAN systems. The WPA derived from the IEEE802.11i Standard and maintain forward compatible. WPA can gurantee the data of WLAN user and the users who get permission can visit WLAN network. WPA adopts stronger encryption algorithm than WEP.

- Encryption algorithm: can choose AES (advanced encryption standard) mode, TKIP (Temporal Key Integrity Protocol) mode, TIKIP & AES mixture mode.
- Pass Phrase: Please input the encrypted character string you want to use, the encryption key is 8-63 characters of 64 hex numbers.

WPA2-PSK

WPA2(Wi-Fi Protected Access version 2) can supply better security than Wireless Equivalent Privacy (WEP) or WIFI Protected Access(WPA). It adopts except TKIP encryption, also provides such new encryption method AES.

- Encryption algorithm: can choose AES (advanced encryption standard) mode, TKIP (Temporal Key Integrity Protocol) mode, TIKIP & AES mixture mode.
- Pass Phrase: Please input the encrypted character string you want to use, the encryption key is 8-63 characters of 64 hex numbers.

WEP(OPEN, SHARED)

Wired Equivalent Privacy (WEP) protocol is in the wireless transmission of data between the two devices is encrypted to prevent unauthorized users from eavesdropping or invasive wireless network. The WEP security technology is based on the RC4 data encryption technology. Provide data confidentiality, integrity and authentication function for wireless network communications.

- Security mode: can select the corresponding security encryption method from the list, this device supports OPEN-WEP, SHARED-WEP and other encryption method. Here we select SHARED-WEP.
- WEP Key: You can set ASCII code and HEX(hexadecimal) two formats WEP key.
- Key note: You can select ASCII code (5 or 13 ASCII, prohibit input / " ` and other illegal characters) or hexadecimal number of valid characters (10 or 26 hexadecimal)
- Default key: You can select from a pre-set group as a valid key.

5.6 Firewall

5.6.1 ACL Setting

(Access Control List, ACL) is a list of instructions of a router and switch interfaces, used for controlling the data packets in and out ports. ACL applies to all routing protocols, such as IP, ipx, appletalk, and others. In this table contains a matching relationship, conditions, and the query statement, the table is just a framework structure, its purpose is to control certain access.

The screenshot shows the ACL Settings page. The sidebar on the left contains navigation links: Operative Status, Operating Mode, WAN Settings, LAN Settings, WiFi Settings, Firewall (highlighted with a double arrow), Forwarding Rule, and System Setting. The main panel has three tabs: ACL Settings (active), Connection, and System Security. Under the ACL Settings tab, there are two sections. The 'Basic Settings' section contains two rows: 'MAC/IP/Port Filtering' with radio buttons for 'Disable' (selected) and 'Enable', and 'Default Policy' with radio buttons for 'Accepted' and 'Dropped' (selected). Below these are 'Apply' and 'Reset' buttons. The 'MAC/IP Port Filter Settings' section contains several input fields: 'Source MAC address', 'Dest IP Address', 'Source IP Address', 'Protocol' (a dropdown menu currently showing 'None'), 'Dest Port Range' (two input boxes separated by a hyphen), 'Source Port Range' (two input boxes separated by a hyphen), 'Action' (a dropdown menu currently showing 'Accept'), and a 'Comment' field.

- MAC/IP Port Filtering: Disable or Enable this function.
- Default Policy: Accepted or Dropped the pre-set rules.
- Source MAC address: Sending the MAC address of packet servers.
- Dest IP address: Accept the IP address of the packet.
- Source IP address: Sending the IP address of packet servers.
- Protocol: Include TCP, UDP, ICMP and other protocols.
- Dest Port Range: Port range is 1-65535.
- Source Port Range: Port range is 1-65535.
- Action: Perform functions have two modes, accept and discard.
 - Accept: Allowing data packets through the router, the other is not limited to the packet matches the rule, is determined by the set of default rules
 - Drop: Prohibiting data packets through the router, the other is not limited to the packet matches the rule, is determined by the set of default rules
- Comment: That is a brief description of this configuration.

5.6.2 Connection filter

ACL Settings		Connection		System Security	
Webs Content Filter					
Filters:		☐ Proxy	☐ Java	☐ ActiveX	
				Apply	Reset
Add a URL filter:					
URL:					Add
Current Webs URL Filters:					
No	URL				
				Delete	Reset
				Apply	
Add a Host(keyword) Filter:					
Keyword					Add
Current Website Host Filters:					
No	Host (Keyword)				

- Filter rules: Select the filtering service, include Proxy, Java, Activext.
- URL: Fill in the need to filter the domain name or domain name, such as www.baidu.com, baidu.com
- keyword: fill in the web filtering keywords, such as: Baidu, Google..

5.6.3 System Security

ACL Settings		Connection		System Security	
Ping form WAN Filter					
Ping form WAN Filter		☒ Disable	☐ Enable		
Block Port Scan					
Block port scan		☒ Disable	☐ Enable		
Block SYN Flood					
Block SYN Flood		☒ Disable	☐ Enable		
Stateful Packet Inspection (SPI)					
SPI Firewall		☒ Disable	☐ Enable		
				Apply	Reset

- Ping form WAN Filter: If this function is enabled, WAN computer will not be able to ping through router.
- Block Port scan: Prevent the WAN computer to port scan.
- Block SYN Flood: For prevent SYN Flood (ie flooding attack), please open this function.
- SPI Firewall: SPI firewall to reject all requests from outside the network when turned. SPI turns on by default. If you need to be exposed to all the hosts in the internal network to the external network, so you can turn it off.

5.7 Forwarding Rule

5.7.1 Port forwarding

Operative Status

Operating Mode

WAN Settings >

LAN Settings >

WiFi Settings >

Firewall >

Forwarding Rule >>

System Setting >

Port Forwarding Virtual Server DMZ

Port Forwarding

Port Forwarding

IP Address

Port Range -

Protocol

Comment

(The maximum rule count is 32.)

Current Port Forwarding in system:

No.	IP Address	Port Range	Protocol	Comment
-----	------------	------------	----------	---------

- Port forwarding: Disable or Enable this function.
- IP Address: LAN as the IP address of the server computer.
- Port Range: The service ports paragraph port forwarding within the network host.
- Protocol: Include TCP, UDP and TCP&UDP. When you are not sure of the protocol used, can select TCP&UDP.
- Comment: That is a brief description of this configuration.

5.7.2 Virtual Server

Configure the router as a virtual server, remote users can access within the LAN server, such as Web, FTP, mail server and so on.

To ensure the security of LAN, by default, the router will be hidden the IP address of the LAN host, make the internet computer can't take the initiative to establish a connection with the LAN computer. To make Internet users can access the LAN

server, you need to set up a virtual server entry.

“Virtual Server” defines the correspondence relationship between the router of the Internet service port and the LAN server IP address. Internet all this port service request will be forwarded to the LAN server specified by IP address, this will not only ensure the success of Internet users access the LAN server, without affecting the internal LAN network security.

Port Forwarding		Virtual Server	DMZ
Virtual Server			
Virtual Server	Disable ▼		
IP Address			
Public Port			
Private Port			
Protocol	TCP&UDP ▼		
Comment			

- Virtual Server: Disable or Enable this function.
- IP Address: Input the static IP address of LAN server. Through this IP address, the router will request access to the service port to go to a LAN server.
- Public Port: Virtual Server with service 80.
- Private Port: Set up the router service port open to the Internet, Internet users by sending a request to the port to get the service.
- Protocol: Include TCP, UDP and TCP&UDP. When you are not sure of the protocol used, can select TCP&UDP
- Comment: That is a brief description of this configuration.

5.7.3 DMZ

In some special cases, we need to let a computer in the LAN completely exposed to the wide area network, to achieve two-way communication, and this time the computer is set to the DMZ host

Port Forwarding		Virtual Server	DMZ
DMZ Settings			
DMZ Settings	Disable ▼		
DMZ IP Address			
			☐ Except TCP port 80
			Apply Reset

- DMZ Setting: Disable and enable this function.
- DMZ IP Address: Enter the DMZ Host IP Address column is set to the DMZ host LAN computer's IP address.

5.8 System Setting

5.8.1 Device Reboot

The screenshot shows the 'System Setting' page with the 'Equipment To' tab selected. The 'Restart Device' section contains a 'Restart Button' and a 'Restart' button.

Restart equipment will set in after the change to take effect. After the restart, the device will automatically cut off the WAN port connection.

5.8.2 Recovery Factory

The screenshot shows the 'Recovery Factory' page with the 'Recovery Factory Button' and a 'Reset' button.

Click the "reset" button will make all the settings of the device back to factory default state

5.8.3 Login Setting

The screenshot shows the 'Login Settings' page with the 'Administrator Settings' section. The 'Account' field contains 'admin' and the 'Password' field is masked with dots. There are 'Apply' and 'Cancel' buttons at the bottom right.

Revise the administrative account and password.

5.8.4 Firmware Upgrade

The screenshot shows the 'Firmware Upgrade' page with the 'Upgrade Firmware' section containing an 'Upgrade' button.

By upgrading the software of the device, you will get a more stable device version routing capabilities and value-added. You have to connect to the external network, click Upgrade button to start the upgrade, automatic no other operation.

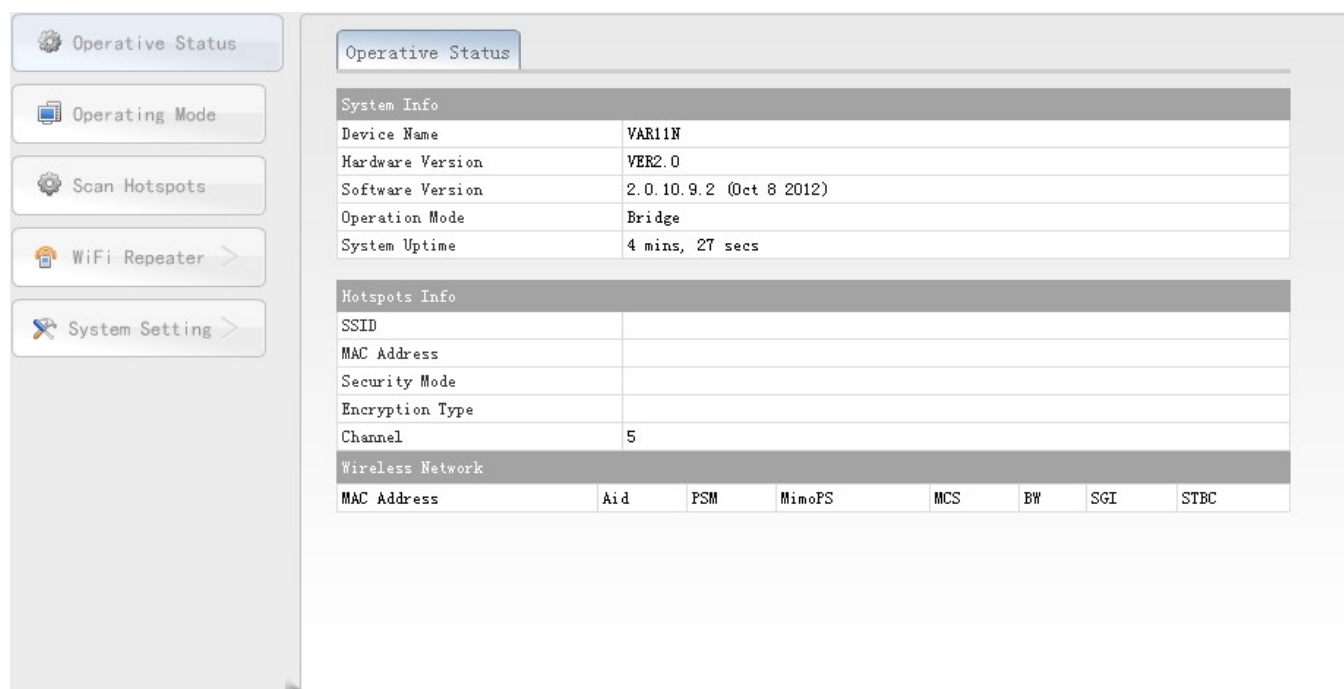
Chapter 6 WIFI bridge mode setting

Presentation:

1. Go to bridge mode, should change in operating mode of the routing mode

6.1 Operative Status

From the operative mode of WIFI router mode to WIFI bridge mode, will display the following page of operative status, please see the following picture:



Picture 6-1 Operative Status page

- **System Info:** Here display the hardware and software version and operative mode and system uptime.
- **Hotspots Info:** Here displays the VAR11N WIFI bridge connected to the hotspots info.
 - SSID: The wireless network name of Hotspots..
 - MAC Address: MAC address of Hotspots.
 - Security Mode: The encryption method of hotspots, such as WPA-PSK, WPA2-PSK, WEP and so on.
 - Encryption Type: The encryption algorithm of hotspots, such as

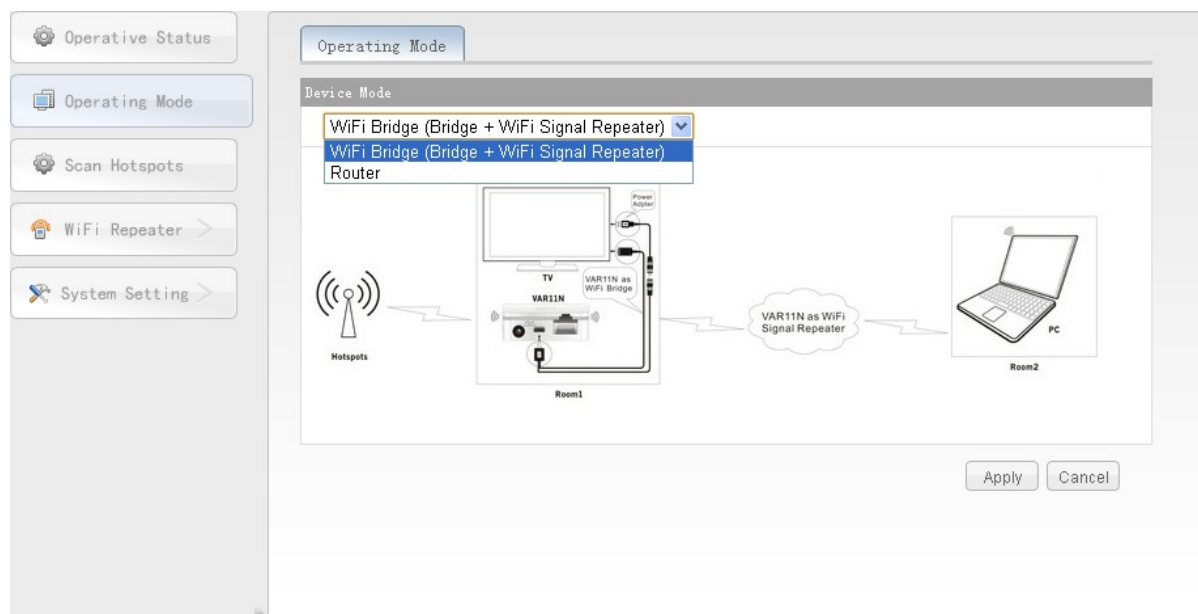
TKIP, AES, TKIP/AES and so on.

Channel: The present channel of VAR11N.

- **Wireless Network:** Here displays the device MAC address connected to the router via wireless devices

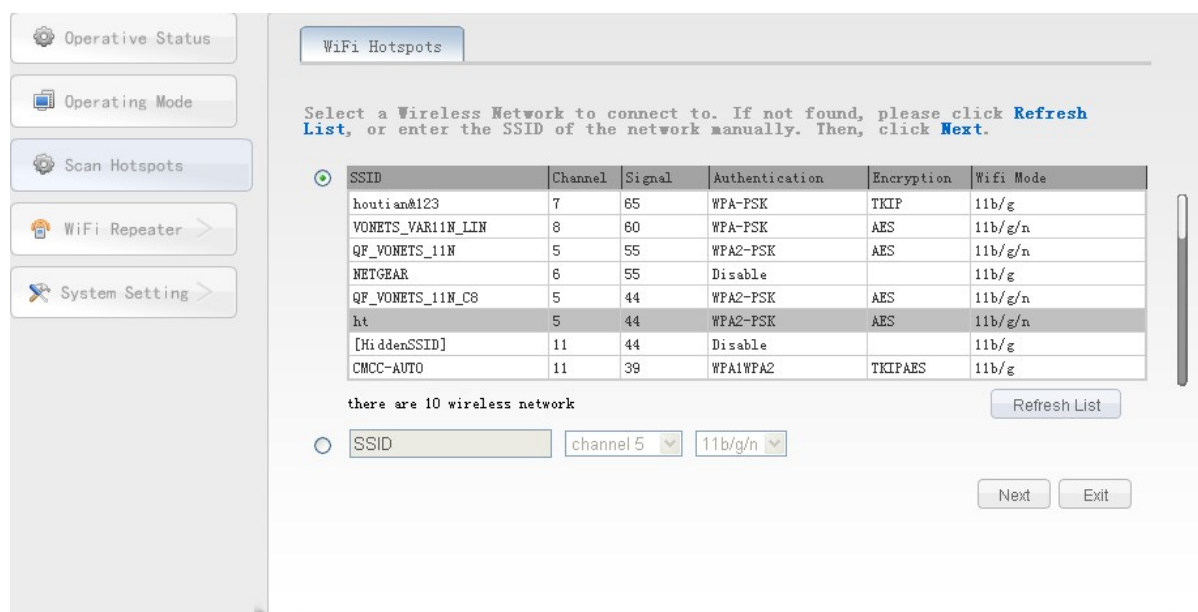
6.2 Operating Mode

Click Operating mode button, can switch from bridge mode to router mode.



6.3 Scan Hotspots

Click Scan Hotspots, can search the WIFI hotspots signal that opened SSID broadcast around, please see the following:



- After the search is completed, the list will show the wireless signal around the hotspot information, including SSID, channel, signal percentage, encryption mode, encryption algorithms, network mode.
- If the list is blank after searching, please click refresh list to scan again.
- If your WIFI router doesn't open SSID broadcast, it is not displayed in the list, you can choose the below input manually to enter your WIFI SSID, Channel and Network mode, click Next button.
- Choose a correct WIFI hotspot, then click next, will appear the following:

The screenshot shows the 'WiFi Hotspots' section of the router's web interface. On the left is a sidebar with navigation buttons: 'Operative Status', 'Operating Mode', 'Scan Hotspots', 'WiFi Repeater', and 'System Setting'. The main area is titled 'WiFi Hotspots' and contains a 'Security Settings' form. The form fields are: 'Security Mode' (set to WPA2-PSK), 'WPA Algorithms' (set to AES), 'Pass Phrase' (set to voipht0526), 'Automatic connect to memory hotspots' (unchecked), 'The repeater parameter and the hotspots synchronization' (checked), and 'WiFi Repeater SSID' (set to ht_CC). At the bottom right of the form are 'Back' and 'Apply' buttons.

- Security Mode: The security mode of hotspot now, the gray state can't be changed.
- Encryption algorithm: The encryption algorithm of hotspot now, the gray state can't be changed.
- Pass Phrase: Input the password of hotspot.
- Automatic connect to memory hotspots: The default is not selected, after selecting it, this device will automatically go after rebooting before searching with wireless hotspots, configure by the signal strength, the user can choose the actual situation.
- The repeater parameter and the hotspots synchronization: The default is selected, after submitting the form, the device's wireless password, encryption mode, encryption algorithms, channel, network mode will be same as hotspots, exempt the user's trouble to set the device again.
- WIFI repeater SSID: Because the same SSID can't be the same in the same network, this device SSID will be the hotspot SSID and automatically add the last two characters of the MAC address of this device, the user can also change the SSID of your favorite
- Back: Click Back button to return the Scan Hotspot page.

- Apply: Click Apply button after confirmation, the device will connect to WIFI hotspot automatically, if the password is correct, the following page will display, it means the connection is successful, please see the following: ,

The screenshot shows the 'WiFi Hotspots' configuration page. On the left is a sidebar with buttons: 'Operative Status', 'Operating Mode', 'Scan Hotspots', 'WiFi Repeater', and 'System Setting'. The main area is titled 'WiFi Hotspots' and contains a 'Security Settings' section. The settings are as follows:

Security Mode	WPA2-PSK
WPA Algorithms	AES
Pass Phrase	voipht0526
☐ Automatic connect to memory hotspots	
☒ The repeater parameter and the hotspots synchronization	
WiFi Repeater SSID	ht_CC

Below the settings, a message reads: 'Connect the hotspots successfully, please restart VAR11N, the computer will disconnect VAR11N. If it is reconfigured by PC, IP of PC and VAR11N should be in the same segment.' At the bottom right are 'Back' and 'Apply' buttons.

If the password input is wrong, the following page will display:

This screenshot shows the same 'WiFi Hotspots' configuration page, but with a failure message. The settings are identical to the previous screenshot:

Security Mode	WPA2-PSK
WPA Algorithms	AES
Pass Phrase	voipht052
☐ Automatic connect to memory hotspots	
☒ The repeater parameter and the hotspots synchronization	
WiFi Repeater SSID	ht_CC

At the bottom, a message reads: 'Connect the hotspot failed, please check the password!' The 'Back' and 'Apply' buttons remain at the bottom right.

6.4 WIFI Repeater

This setting can refer to the system settings in router mode operation.

6.5 System Setting

This setting can refer to the system settings in routing mode operation.

Company: **Shenzhen HouTian Network Communication Technology Co. Ltd**

Name: **WIFI Router**

Model Number: **VAR11N**

FCC ID: OM7-VAR11N



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.

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.

The antenna(s) used for this device must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.