



**W3100**  
**Single-port ADSL 2+ Wireless Router**  
**User Manual**

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# 1. Introduction

The W3100 access device supports multiple line modes. It provides one 10/100Base-T Ethernet interface at the user end. Utilizing the high-speed ADSL connection, the device provides users with broadband connectivity to the Internet or the Intranet for high-end users as net bars, office users, etc. can provide a downlink speed up to 24 Mbit/s and uplink speed up to 1 Mbit/s.

The device supports WLAN access, as WLAN AP or WLAN router, to internet. It is compliance with IEEE 802.11, 802.11b/g specifications, and complies with WEP, WPA and WPA2 security specifications.

## 1.1 Safety Cautions

Follow these announcements below to protect the device from risks and damage caused by fire or electric power.

- ▶ Use volume labels to mark the type of power.
- ▶ Use the power adapter packed within the device package.
- ▶ Pay attention to the power load of the outlet or prolonged lines. An overburden power outlet or damaged lines and plugs may cause electric shock or fire accident. Check the power cords regularly. If you find any damage, replace it at once.
- ▶ Proper space left for heat radiation is necessary to avoid any damage caused by overheating to the device. The long and thin holes on the Access Point are designed for heat radiation to make sure the device works normally. Don't cover these heat radiant holes.
- ▶ Do not put this device close to a place where a heat source exists or high temperature occurs. Avoid the device from direct sunshine.
- ▶ Do not put this device close to a place where is over damp or watery. Do not spill any fluid on this device.
- ▶ Do not connect this device to any PC or electronic product, unless our customer engineer or your broadband provider instructs you to do this, because any wrong connection may cause any power or fire risk.
- ▶ Do not place this device on an unstable surface or support.

## 1.3 Descriptions of LEDs and Interfaces

### Front panel

LED	Color	Status	Descriptions
POWER	Green/Red	OFF	No power
		GREEN	Device init OK
		RED	Device init
		RED BLINK	Fireware upgrade
ADSL	Green	OFF	Initial self-test failed
		BLINK	Device is detecting itself

LED	Color	Status	Descriptions
		ON	Initial self-test of the unit is OK and ready
PPP	Green	OFF	Internet connection failed
		BLINK	Internet data transiting
		ON	Internet connection OK
Ethernet	Green	OFF	No LAN link
		BLINK	LAN data transiting
		ON	LAN link established and active
WIFI	Green	OFF	Inactive
		BLINK	WLAN data transiting
		ON	Active

### Rear panel

Items	Usage
DSL	Line RJ-11 port
Reset	Resets to factory defaults. To restore factory defaults, keep the device powered on and push a paper clip in to the hole. Press down the button over 5 seconds and then release.
Ethernet	Ethernet RJ-45 port
	Power On/Off.
PWR	Power connector. DC 12 Voltage/1000mA, female pole is positive.

## 1.4 System Requirements

Make sure first that you have prepared these following items to guarantee the ROUTER can work normally.

- ▶ Services subscriptions
- ▶ An 10BaseT/100BaseT Ethernet card installed on your PC
- ▶ HUB or Switch. (Attached to several PCs through one of Ethernet interfaces on the device)
- ▶ Operation system: Windows 98SE, Windows 2000, Windows ME, or Windows XP
- ▶ Internet Explorer V5.0 or higher, or Netscape V4.0 or higher, or firefox 1.5 or higher.

## 1.5 Feature

- ▶ Supports various line modes
- ▶ Supports external PPPoE dial-up access
- ▶ Supports internal PPPoE/PPPoA dial-up access
- ▶ Supports leased line mode
- ▶ Supports ZIPB (Zero Installation PPP Bridge Mode)
- ▶ Supports 1483B/1483R/MER access
- ▶ Supports multiple PVCs(eight at most) and these PVCs can be isolated from each other
- ▶ Support a single PVC with multiple sessions
- ▶ Support multiple PVCs with multiple sessions

- ▶ Supports the binding of the ports and the PVCs
- ▶ Supports the 802.1Q and 802.1P protocol
- ▶ Supports DHCP server
- ▶ Supports NAT/NAPT
- ▶ Supports static route
- ▶ Supports firmware upgrade: WEB/tftp/ftp
- ▶ Supports reset to factory default:reset, WEB
- ▶ Supports DNS relay
- ▶ Supports Virtual server
- ▶ Supports DMZ functions
- ▶ Supports two-level passwords and usernames
- ▶ Supports WEB interface
- ▶ Supports telnet CLI
- ▶ Supports System status display
- ▶ Supports PPP session PAP/CHAP
- ▶ Supports IP filter function
- ▶ Supports IP QoS function
- ▶ Supports remote access control
- ▶ Supports line connection status test
- ▶ Supports remote management (Telnet; HTTP)
- ▶ Supports configuration file backup and restoration function
- ▶ Ethernet supported such as Crossover Detection & Auto-Correction and polarity correction
- ▶ Supports UPnP

## 2. Hardware Installation

1、 Refer to the figure below: Connect the DSL port of the device and the ROUTER port of the splitter with a telephone cable; connect the phone to the Phone port of the splitter through a cable; connect the incoming line to the Line port of the splitter.

The splitter has three ports:

LINE: Connects to a wall phone jack (RJ-11 jack)

ROUTER: Connects to the DSL jack of the device

PHONE: Connects to a telephone set

2、 Connect the LAN port of the device to the network card of the PC via an Ethernet line (MDI/MDIX).

**Note:** Use twisted-pair cables to connect with the HUB/Switch.

3、 Plug the power adapter to the wall outlet and then connect the other end of it to the PWR port of the device.

Connection: Fig. 2-1 displays the application diagram for the connection of the Router, PC, splitter and telephone set.

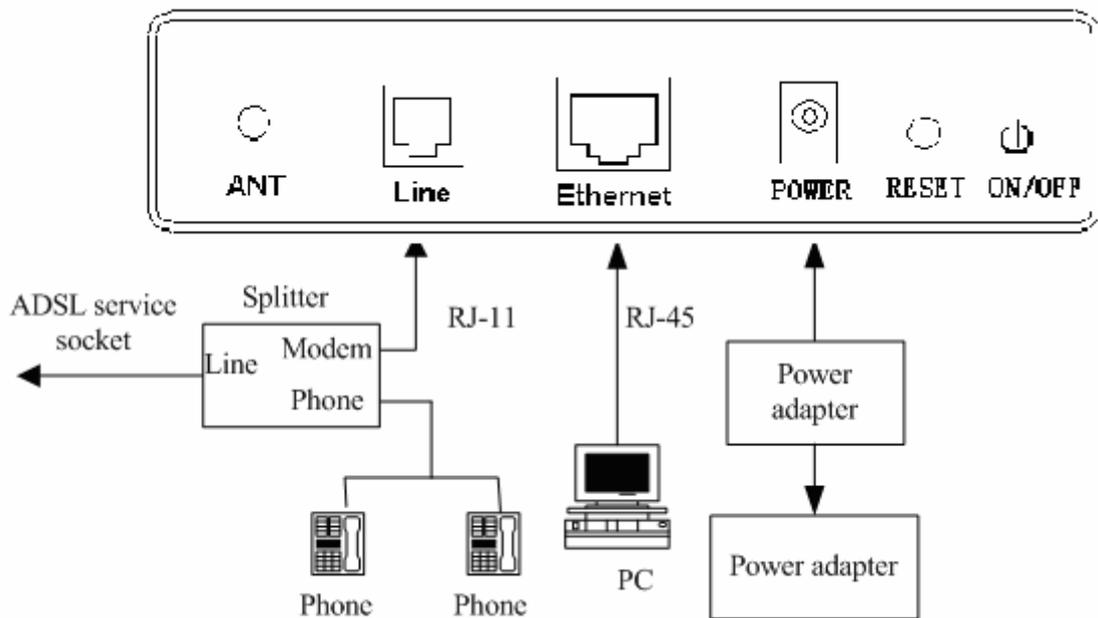


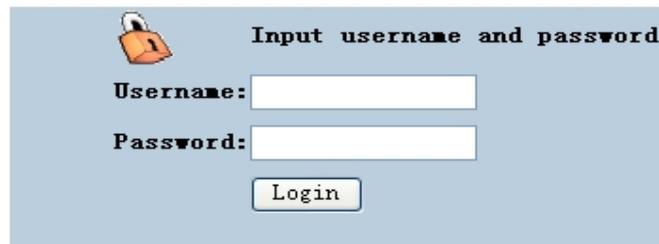
Fig 2-1 Connection Diagram (Without connecting telephone sets before the splitter)

# 3. Introducing the Web Configurator

## 3.1 How to access ROUTER

The following introductions are prepared for the first time users, it is a detail “How-To” user guide.

- 1、 Open IE browser, then enter <http://192.168.1.1> in address bar.
  - 2、 You are required to enter user name and password. See the Fig 3.2-1.
- The super user name and password is admin/admin



Input username and password

Username:

Password:

Login

Fig 3.1-1

- 3、 If you enter as super user, the below screen will be displayed when you enter successfully.



Fig 3.1-2

After you enter router as super user, you can check, config and modify all the options. You can use the system diagnostic function also.

If you enter as common user, you can check the status of ROUTER, but can't change the most of options.

## 3.2 Status

Click **Status** in the menu to open the sub-menu which contains 7 items: **System, LAN, WLAN, WAN, Port Mapping, Statistic** and **ARP Table**.



### 3.2.1 System

Click **System** in the sub-menu to open the screen of Fig 3.2.1. In this page, you can view the current status and some basic settings of this router, for example, Software Version, DSL mode, Upstream Speed, Downstream Speed, Uptime and so on.



Fig 3.2.1

### 3.2.2 LAN

Click **LAN** in the sub-menu to open the screen of Fig 3.2.2. In this page, you can view the LAN IP, DHCP Server status, MAC Address and DHCP Client Table. If you want to config the LAN network, refer to chapter 3.4.1 “LAN Settings”.



Fig 3.2.2

### 3.2.3 WLAN

Click **LAN** in the sub-menu to open the screen of Fig 3.2.3. In this page, you can view the parameters of the WLAN.

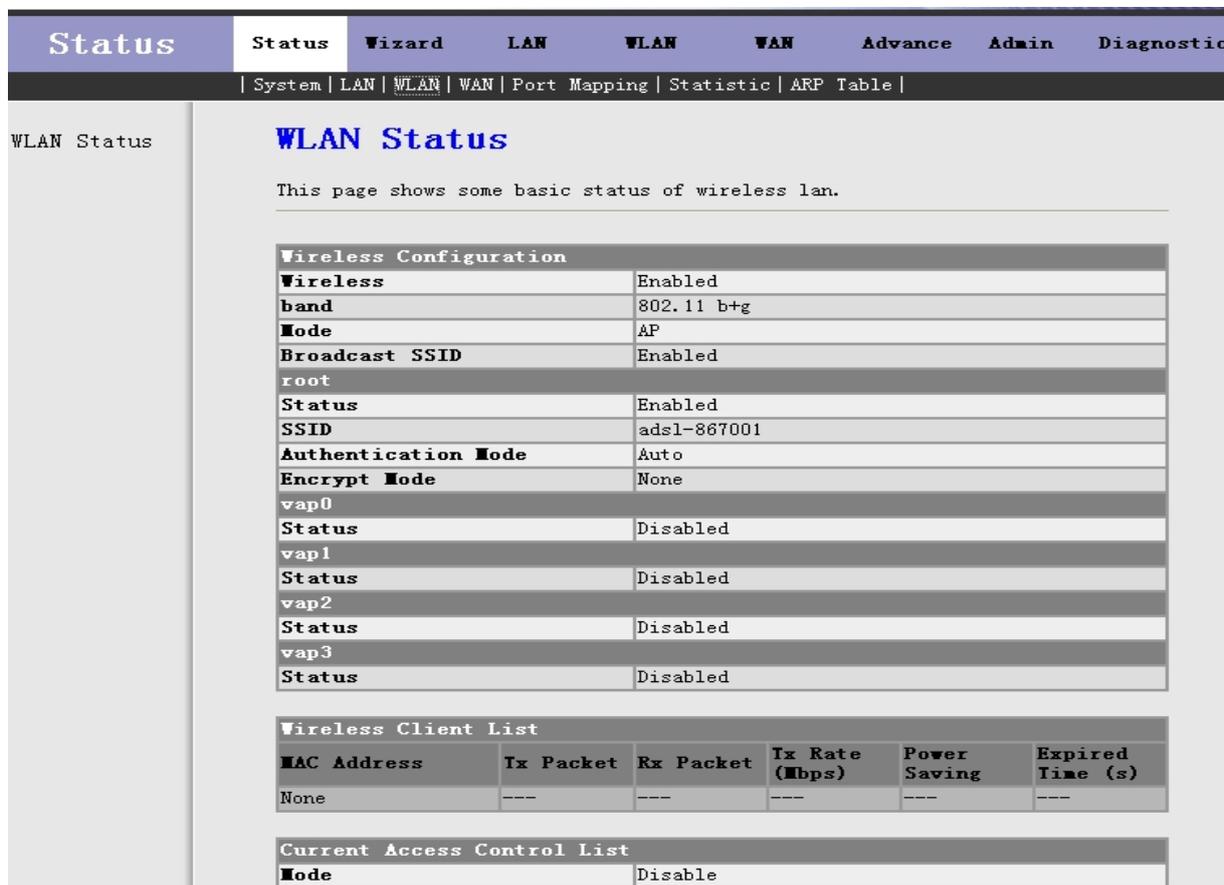


Fig 3.2.3

### 3.2.4 WAN

Click **WAN** in the sub-menu to open the screen of Fig 3.2.4. In this page, you can view basic status of WAN, Default Gateway, DNS Server, etc. If you want to config the WAN network, refer to chapter 3.6.1 “WAN Interface”.



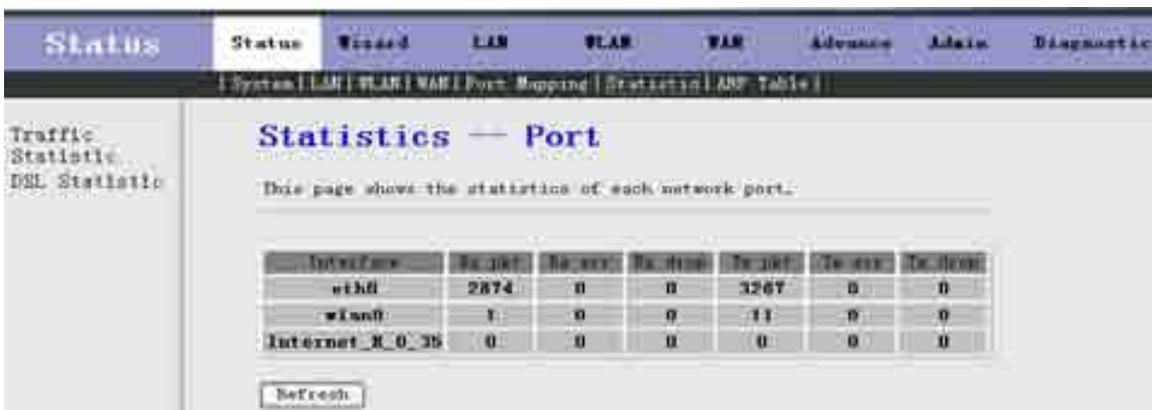
Fig 3.2.4

### 3.2.5 Statistic

Click **Statistic** in the sub-menu to open the menu in the left bar, which contains two items: **Traffic Statistic** and **DSL Statistic**.

#### 3.2.5.1 Traffic Statistic

Click **Traffic Statistic** in the left bar to open the screen of Fig 3.2.5.1. In this page, you can view the statistics of each network port.



The screenshot shows a web interface with a navigation bar at the top containing 'Status', 'Status', 'Wizard', 'LAN', 'WAN', 'WAN', 'Advanced', 'Admin', and 'Diagnostic'. Below the navigation bar is a breadcrumb trail: 'System | LAN | WAN | Port Mapping | Statistics | ARP Table'. The main content area is titled 'Statistics - Port' and includes the text 'This page shows the statistics of each network port.' Below this is a table with the following data:

Interface	Rx pkt	Rx err	Rx disc	Tx pkt	Tx err	Tx disc
eth0	2874	0	0	3267	0	0
wlan0	1	0	0	11	0	0
Internet_R_0_35	0	0	0	0	0	0

At the bottom of the table is a 'Refresh' button.

Fig 3.2.5.1

#### 3.2.5.2 DSL Statistic

Click **DSL Statistic** in the left bar to open the screen of Fig 3.2.5.2. In this page, you can view the ADSL line statistics, downstream rate, upstream rate, etc.

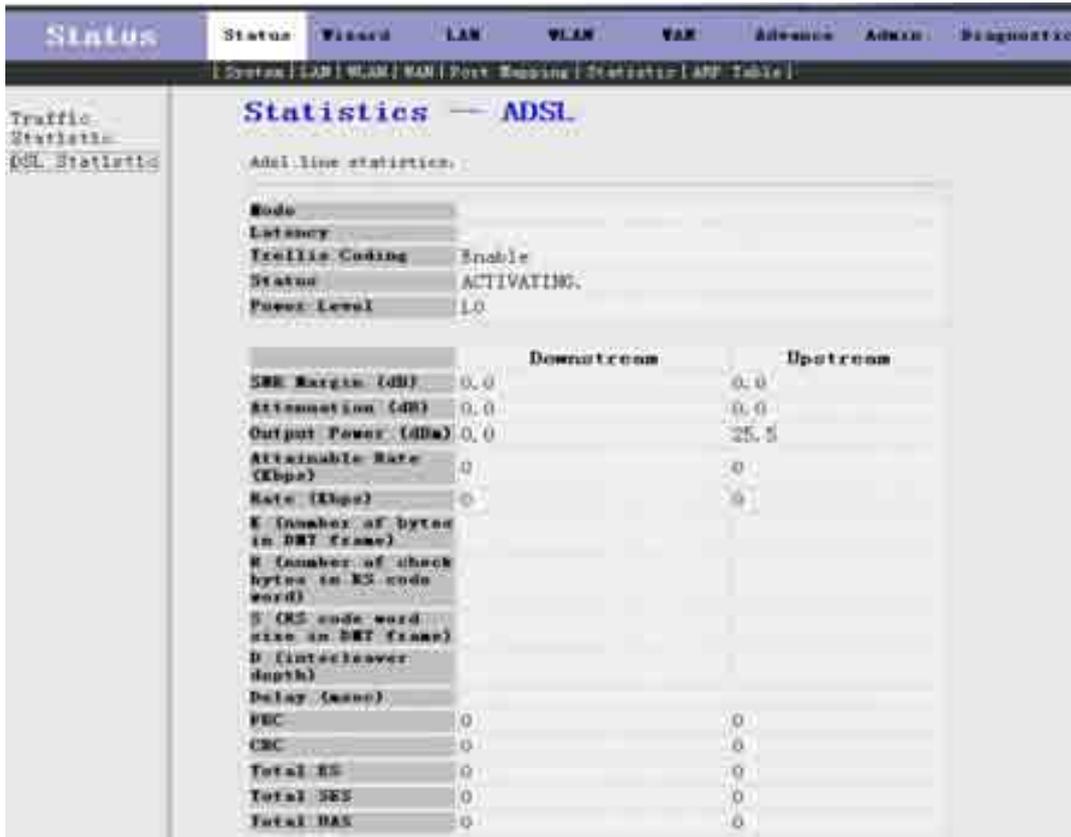


Fig 3.2.5.2

### 3.2.6 ARP Table

Click **ARP Table** in the sub-menu to open the screen of Fig 3.2.6. In this page, you can view the table which shows a list of learned MAC addresses.

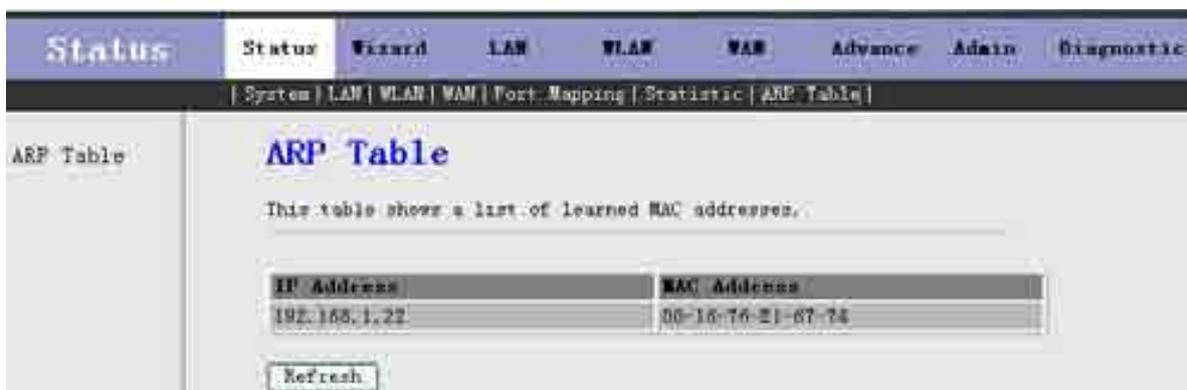


Fig 3.2.6

### 3.3 Wizard

Click **Wizard** in the menu to open the sub-menu which contains one item: **Wizard**.

### 3.3.1 Wizard

**Wizard** enables speedy and accurate configuration of your Internet connection and other important parameters. The following sections describe these various configuration parameters. Whether you configure these parameters or use the default ones, click 'Next' to enable your Internet connection.

When subscribing to a broadband service, you should be aware of the method by which you are connected to the Internet. Your physical WAN device can be either Ethernet, DSL, or both. Technical information regarding the properties of your Internet connection should be provided by your Internet Service Provider (ISP). For example, your ISP should inform you whether you are connected to the Internet using a static or dynamic IP address, or what protocols, such as PPPOA or PPPoE, you will be using to communicate over the Internet.

Click **Wizard** in the sub-menu to open the screen of Fig 3.3.1-1. In this page, you can config the VPI/VCI number.

Wizard

Status **Wizard** LAN WLAN WAN Advance Admin Diagnostic

| Wizard |

Wizard

## Wizard

This Wizard will guide you through the steps necessary to configure your DSL Router.

Note: This PVC will instead of the first original PVC.

### ATM PVC Configuration

The Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VPI and VCI numbers unless your ISP instructs you otherwise.

VPI:  (0-255)

VCI:  (32-65535)

Next >

Fig 3.3.1-1

Be sure to use the correct Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) numbers assigned to you. The valid range for VPI is 0 to 255 and for VCI is 32 to 65535 (0 to 31 is reserved for local management of ATM traffic).

Then press **Next**, the Fig 3.3.1-2 screen will appear. In this page, you can select the WAN Connect Type and the encapsulation method.

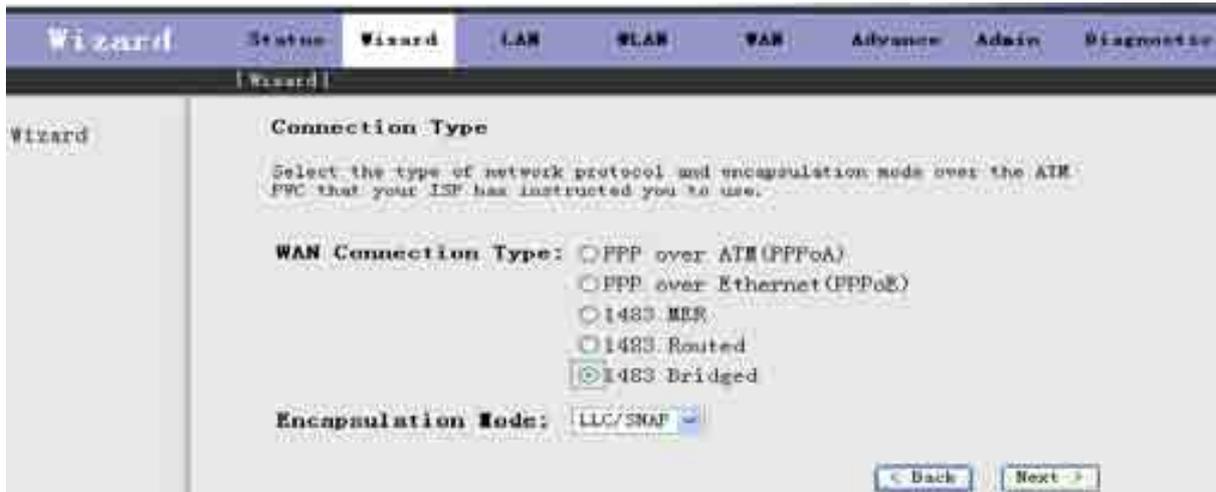


Fig 3.3.1-2

The following table describes the fields in this screen.

Label	Description
WAN Connection Type	Select the WAN Connection Type here, you can select <b>PPPoA</b> , <b>PPPoE</b> , <b>1483 MER</b> , <b>1483 Routed</b> or <b>1483 Bridged</b> .
Encapsulation Mode	Select the method of encapsulation used by your ISP from the drop-down list box. Choices are <b>LLC/SNAP</b> or <b>VC-Mux</b> .
< Back	Click < <b>Back</b> to return to the previous screen
Next >	Click <b>Next</b> > to go to the next screen

If you select PPPoA or PPPoE in WAN Connection Type, click **Next**, the screen of Fig 3.3.1-3 appears as shown next.



Fig 3.3.1-3

The following table describes the fields of this screen.

Label	Description
Obtain an IP address	The dynamic IP is not fixed; your ISP assigns you the different one each

automatically	time.
Use the following IP address	A static IP is a fixed IP that your ISP gives you.
WAN IP Address	Input the IP address of the WAN interface provided by your ISP
Enable NAT	Select it to enable the NAT functions of the MODEM. If you are not to enable NAT and intend the user of the MODEM to access the Internet normally, you must add a route on the uplink equipment; otherwise the access to the Internet will fail. Normally, it is required to enable NAT.
< Back	Click < <b>Back</b> to return to the previous screen
Next >	Click <b>Next</b> > to go to the next screen

Then click **Next**, the screen of Fig3.3.1-4 appears as shown next.

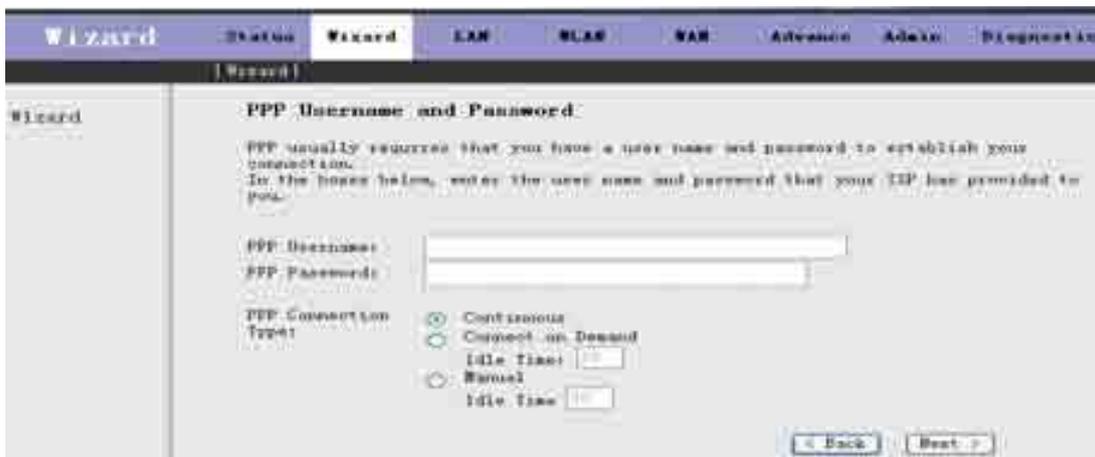


Fig 3.3.1-4

The following table describes the fields of this screen.

Label	Description
PPP Username	The username and password apply to PPPoE and PPPoA encapsulation only. Make sure that you have entered the correct username and password.
PPP Password	
PPP Connection Type	Choices are <b>Continuous</b> , <b>Connect on Demand</b> and <b>Manual</b> .
< Back	Click < <b>Back</b> to return to the previous screen
Next >	Click <b>Next</b> > to go to the next screen

Then click Next, the screen of Fig3.3.1-5 appears as shown next.

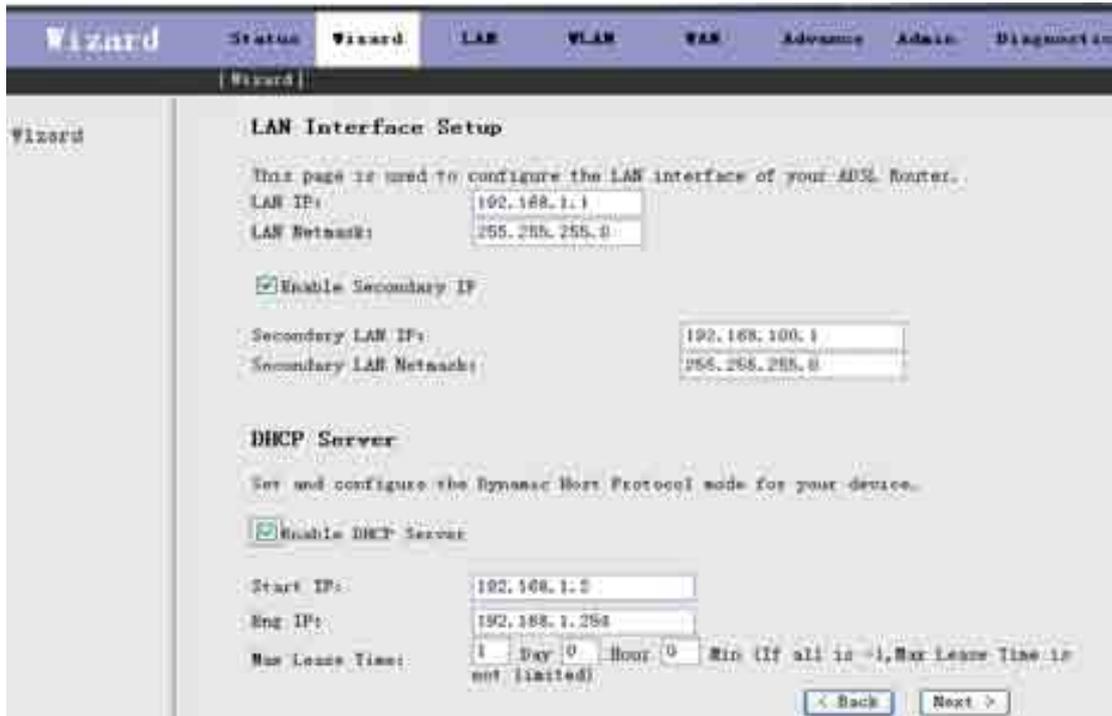


Fig 3.3.1-5

The following table describes the fields of this screen.

Label	Description
LAN IP	Enter the IP address of your ROUTER in dotted decimal notation, for example, 192.168.1.1(factory default)
LAN Netmask	Type the subnet mask of LAN IP.
Enable Secondary IP	Select this check box to enable the secondary LAN IP
Secondary LAN IP	Enter the secondary IP address of your ROUTER in dotted decimal notation, for example, 192.168.100.1(factory default)
Secondary LAN Netmask	Type the subnet mask of the secondary LAN IP
Enable DHCP Server	Select this check box to enable the DHCP Server
Start IP	This field specifies the first of the contiguous addresses in the IP address pool.
End IP	This field specifies the last of the contiguous addresses in the IP address pool.
< Back	Click < <b>Back</b> to return to the previous screen
Next >	Click <b>Next</b> > to go to the next screen

If you finish the settings of this page, click **Next**, the screen appears as shown next.



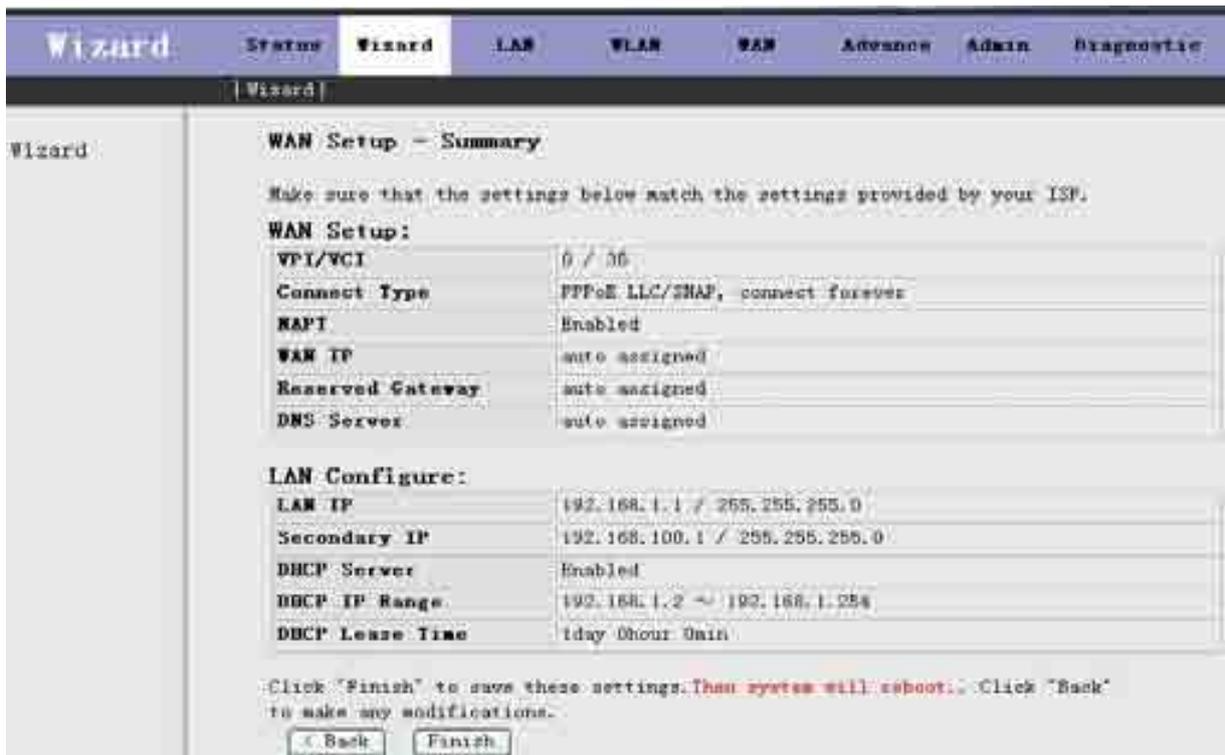


Fig 3.3.1-7

If you select 1483 MER in Fig 3.3.1-2, the screen appears as shown next.

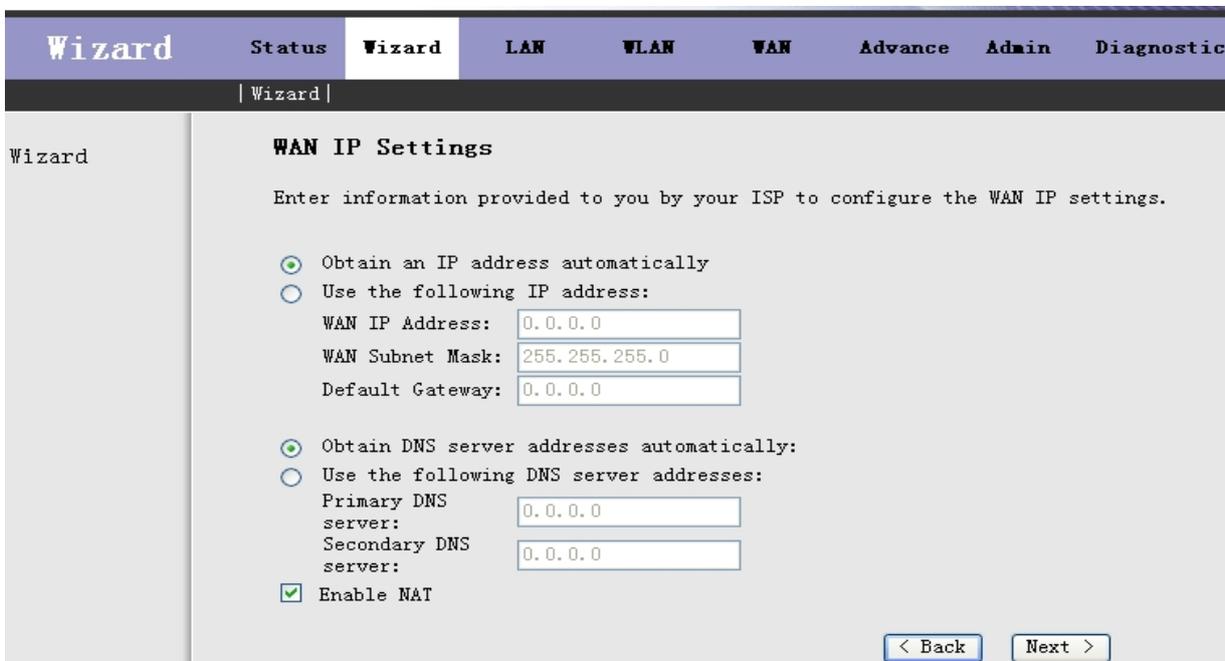


Fig 3.3.1-8

The following table describes the fields of this screen.

Label	Description
Obtain an IP address automatically	The MODEM will obtain a (WAN) IP address automatically and at this time it will enable DHCP Client functions. The WAN IP address is obtained from the uplink equipment like BAS and the uplink equipment is required to enable the DHCP Server functions.
Use the following IP address	If you want to input the WAN ip address by yourself. Check this entry and then input related data in the field.
WAN IP Address	Input the IP address of the WAN interface provided by your ISP
WAN Subnet Mask	Input the subnet mask concerned to the IP address of the WAN interface provided by your ISP.
Default Gateway	You can input the IP address of the default gateway by yourself, click this entry and then input related data in the fields.
Obtain DNS server addresses automatically	To obtain the IP address of the DNS server assigned by the uplink equipment such as BAS.
Use the following DNS server addresses	If you want to input the IP address of the DNS server by yourself, click this entry and then input related data in the fields.
Primary DNS server	Input the IP address of the primary DNS server here.
Secondary DNS server	Input the IP address of the secondary DNS server provided by your ISP here.
Enable NAT	Select it to enable the NAT functions of the MODEM. If you are not to enable NAT and intend the user of the MODEM to access the Internet normally, you must add a route on the uplink equipment; otherwise the access to the Internet will fail. Normally, it is required to enable NAT.
< Back	Click < <b>Back</b> to return to the previous screen
Next >	Click <b>Next</b> > to go to the next screen

If you finish the settings of this page, click Next, the screen of Fig 3.3.1-6 appears. The settings of this screen see above paragraphs.

If you select 1483 Routed in Fig 3.3.1-2, the screen of Fig 3.3.1-9 appears as shown next.

The screenshot shows a web-based configuration wizard for WAN IP settings. The interface includes a top navigation bar with tabs for Wizard, Status, LAN, WLAN, WAN, Advance, Admin, and Diagnostic. The current page is titled 'WAN IP Settings' and contains the following configuration options:

- None
- Obtain an IP address automatically
- Use the following IP address:
  - WAN IP Address:
  - WAN Subnet Mask:
- Obtain DNS server addresses automatically
- Use the following DNS server addresses:
  - Primary DNS server:
  - Secondary DNS server:
- Enable NAT

At the bottom right, there are two buttons: '< Back' and 'Next >'.

Fig 3.3.1-9

The following table describes the fields of this screen.

Label	Description
None	
Obtain an IP address automatically	The dynamic IP is not fixed; your ISP assigns you the different one each time.
Use the following IP address	A static IP is a fixed IP that your ISP gives you.
WAN IP Address	Input the IP address of the WAN interface provided by your ISP
WAN Subnet Mask	Input the subnet mask concerned to the IP address of the WAN interface provided by your ISP.
Obtain DNS server addresses automatically	To obtain the IP address of the DNS server assigned by the uplink equipment such as BAS.
Use the following DNS server addresses	If you want to input the IP address of the DNS server by yourself, click this entry and then input related data in the fields.
Primary DNS server	Input the IP address of the primary DNS server here.
Secondary DNS server	Input the IP address of the secondary DNS server provided by your ISP here.
Enable NAT	Select it to enable the NAT functions of the MODEM. If you are not to enable NAT and intend the user of the MODEM to access the Internet normally, you must add a route on the uplink equipment; otherwise the access to the Internet will fail. Normally, it is required to enable NAT.
< Back	Click < <b>Back</b> to return to the previous screen
Next >	Click <b>Next</b> > to go to the next screen

## 3.4 LAN

Click **LAN** in the menu to open the sub-menu which contains 2 items: **LAN Settings** and **DHCP Settings**. You can use the LAN configuration to define an IP address for the DSL Router and configure the DHCP server.

### 3.4.1 LAN Settings

On this screen you can change the device's IP address. The preset IP address is 192.168.1.1. This is the Private IP address of the DSL Router. This is the address under which the device can be reached in the local network. It can be freely assigned from the block of available addresses.

Click **LAN Settings** in the sub-menu to open the screen of Fig 3.4.1. In this page you can config the LAN network.



Fig 3.4.1

The following table describes the fields of this screen.

Label	Description
IP Address	Input the IP of Local area network interface here.
Subnet Mask	We recommend that you use an address from a block that is reserved for private use. This address block is 192.168.1.1- 192.168.255.254
Secondary IP	Select this checkbox to enable the secondary LAN IP. The two LAN IP must be in the different network.
Apply Changes	Click this button to save the settings of this page.

### 3.4.2 DHCP Settings

DHCP (Dynamic Host Configuration Protocol) allows the individual client (computers) to obtain the TCP/IP configuration at start-up from the centralize DHCP server. You can configure this router as a DHCP server or disable it. DHCP server can assign IP address, an IP default gateway and DNS server to DHCP clients. This router can also act as a surrogate DHCP server (DHCP Proxy) where it relays IP address assignment from an actual real DHCP server to clients.

If the DHCP was disabled, the screen of Fig 3.4.2-1 appears. You can enable/disable DHCP Server or DHCP Proxy.



Fig 3.4.2-1

If you set to DHCP Proxy, the screen of Fig 3.4.2-2 appears.



Fig 3.4.2-2

The following table describes the fields of this screen.

Label	Description
DHCP Proxy	If set to DHCP Proxy, your ROUTER acts a surrogate DHCP Server and relays the DHCP requests and reponses between the remote server and the client.
DHCP Server Address	Enter the IP address of the actual, remote DHCP server in this field.
Apply Changes	Click this button to save the changes of this page.

If you set to DHCP Server, the screen of Fig3.4.2-3 appears as shown next.



Fig 3.4.2-3

The following table describes the fields in this screen.

Label	Description
DHCP Server	If set to DHCP Server, your ROUTER can assign IP addresses, an IP default gateway and DNS Servers to Windows95, Windows NT and other systems that support the DHCP client.
IP Pool Range	This field specifies the first and the last of contiguous IP address of the IP address pool.
Show Client	Click this button, the screen of Fig 3.5.2-4 appears, which shows the assigned IP address of the clients.
Max Lease Time	The Lease time determines the period for which the PCs retain the IP addresses assigned to them without changing them.
Domain Name	Input the domain name here if you know. If you leave this blank, the domain name obtained by DHCP from the ISP is used. While you must enter host name(System Name) on each individual computer, the domain name can be assigned from this router via DHCP server.
Gateway Address	Enter the IP default gateway of the IP address pool.
MAC-Base Assignment	Click this button, the screen of Fig3.5.2-5 appears. This function allows you assign IP addresses on the LAN to specific individual computers based on their MAC address.
Apply Changes	Click this button to save the changes of this page.

Click **Show Client**, the following window appears. In this window, you can view the IP address assigned to each DHCP client.



Fig 3.4.2-4

The following table describes the fields in this screen.

Label	Description
IP Address	This field displays the IP address relative to the MAC address.
MAC Address	This field displays the MAC(Media Access Control) address of the computer. Every Ethernet device has a unique MAC address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal character, for example, 00-A0-C5-00-02-12.
Time Expired(s)	Here shows the lease time. The Lease time determines the period for which the PCs retain the IP addresses assigned to them without changing them.
Refresh	Click this button to refresh the Active DHCP Client Table.
Close	Click this button to close this window.

Click **MAC-Base Assignment** button, the below window appears. In this page, you can assign IP addresses on the LAN to specific individual computers based on their MAC address.

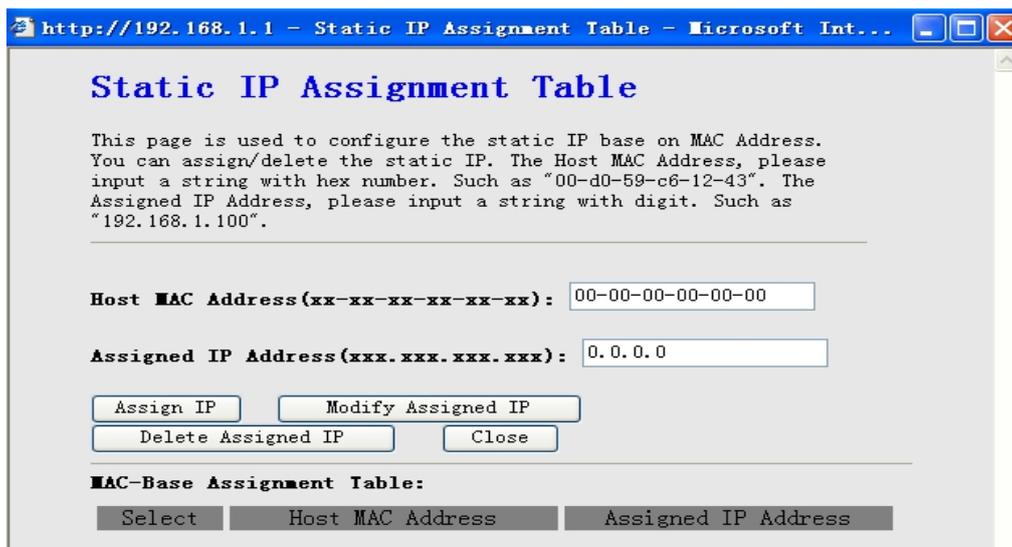


Fig 3.4.2-5

The following table describes the fields of this screen.

Label	Description
Host MAC Address	Type the MAC address of a computer on your LAN
Assigned IP Address	This field specifies the IP of the IP address pool.
Assign IP	Click this button after entered <b>Host MAC Address</b> and <b>Assigned IP Address</b> , a row will be added in <b>MAC-Base Assignment Table</b> .
Modify Assigned IP	Select a row in <b>MAC-Base Assignment Table</b> , the MAC address and IP address will appears <b>Host MAC Address</b> and <b>Assigned IP Address</b> . After modified the MAC Address and IP Address, click this button to save the changes.
Delete Assigned IP	Select a row in <b>MAC-Base Assignment Table</b> , then click this button, this row will be deleted.
Close	Click this button to close this window.
MAC-Base Assignment Table	This table shows the assigned IP address based on the MAC address.

## 3.5 WLAN

Click **WLAN** in the menu to open the sub-menu which contains 5 items: **Basic Settings**, **Security**, **Advance Settings**, **Access Control** and **WDS Settings**.

This session introduces the wireless LAN and some basic configurations. Wireless LANs can be as simple as tow computers with wireless LAN cards communicating in a pear-to-pear network or as complex as a number of computers with wireless LAN cards communicating through Access Points which bridge network traffic to wired LAN.

### 3.5.1 Basic Settings

Click **Basic Settings** in the sub-menu to open the screen of Fig 3.5.1-1. This page is used to configure the parameters for wireless LAN clients who may connect to your Access Point.





Fig 3.5.1-1

The following table describes the fields of this screen.

Label	Description
Disable Wireless LAN Interface	The wireless LAN is turned on by default. Select the check box to disable the wireless LAN.
(Root)SSID	The SSID(Service Set Identification) is a unique name to identify the ROUTER in the wireless LAN. Wireless stations associating to ROUTER must have the same SSID. Enter a descriptive name.
Virtual SSID Set VSSID	You can enable 4 SSID at most. Click <b>Set VSSID</b> , the screen of Fig3.6.1-2 appears.
SSID	You can enable or disable this SSID.
Country/Area	Select the region where you are.
Channel Number	A channel is the radio frequency(ies) used by 802.11b/g wireless device. Channels available depend on your geographical area. You may have a choice of channels(for your region) so you should use a different channel than an adjacent AP(Access Point) to reduce interference. Interference occurs when radio signal from diffirent access point overlap causing interference and degrading performance. Select a channel from the drop-down list box.
Apply Changes	Click this button to save the changes of this page.

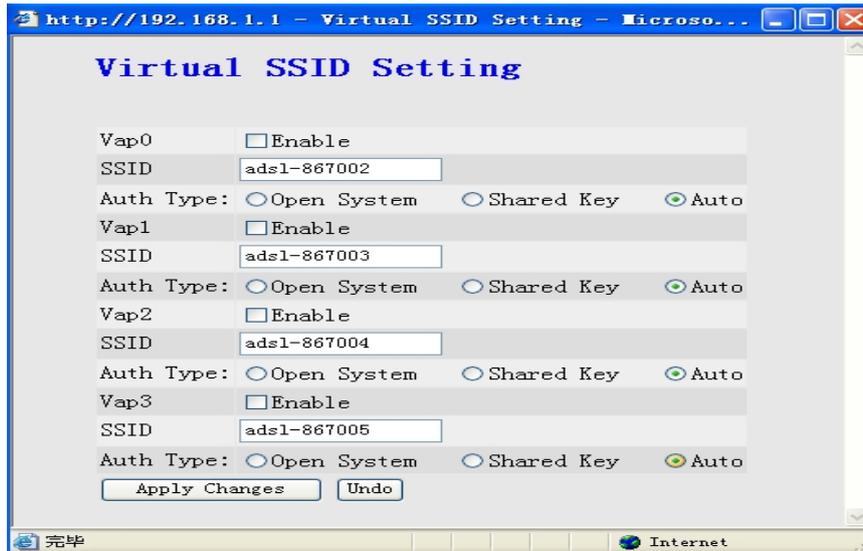


Fig 3.5.1-2

The following table describes the fields of this screen.

Label	Description
SSID	The SSID(Service Set Identification) is a unique name to identify the ROUTER in the wireless LAN
Apply Changes	Click this button to save the changes of this page.
Undo	Click this button to begin configuring this screen afresh.

### 3.5.2 Security

Click **Security** in the sub-menu to open the screen of Fig 3.5.2-1. Wireless security is vital to your network to protect wireless communication between wireless stations, access points and wired network.



Fig 3.5.2-1

The following table describes the fields of this screen.

Label	Description
SSID Type	Select the SSID here.
Encryption	Choices are <b>None</b> , <b>WEP</b> , <b>WPA(TKIP)</b> , <b>WPA2(AES)</b> and <b>WPA2 Mixed</b> . WEP(Wired Equivalent Privacy) encrypts data frames before transmitting over the wireless network. WPA(Wi-Fi Protected Access) is a subset of the IEEE802.11i security specification draft. Key differences between WPA and WEP are user authentication and improved data encryption.
Set WEP Key	This button is available when you set to <b>WEP</b> . Click this button, the screen of Fig3.6.2-2 appears.
Authentication RADIUS Server	RADIUS is based on a client-server model that supports authentication, authorization and accounting. The access point is client and the server is RADIUS server. RADIUS is a simple package exchange in which your ROUTER acts as a message relay between wireless station and the network RADIUS server.
Port	The default port of the RADIUS server for authentication is 1812. You need not change this value unless your network administrator instructs you to do so with additional information.
IP Address	Enter the IP address of the RADIUS server.
Password	Enter a password as the key to be shared between the external authentication server and the access point. The key is not send over the network. This key must be the same on the external authentication server and your ROUTER.
Apply Changes	Click this button to save the the changes of this page.

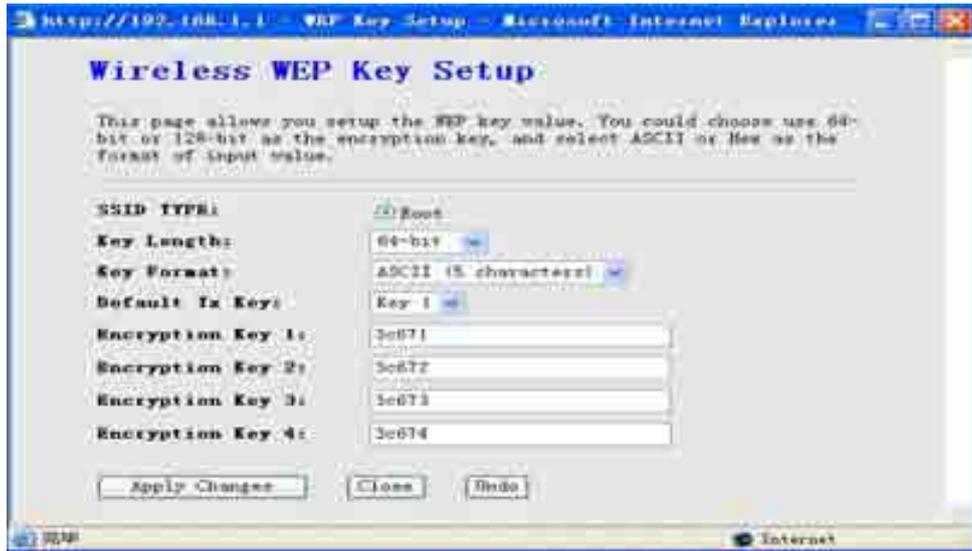


Fig 3.5.2-2

The following table describes the fields of this screen.

Label	Description
SSID Type	Select the SSID here.
Key Length	Select 64-bit or 128-bit to use data encryption.
Key Format	If you chose <b>64-bit</b> , you can choose ASCII(5 characters) or Hex(10 characters). If you chose <b>128-bit</b> , you can choose ASCII(13 characters) or Hex(26 characters).
Default Tx Key	Select the default Encryption Key here.
Encryption Key 1 to 4	The Encryption keys are used to encrypt data. Both ROUTER and wireless stations must use the same <b>Encryption Key</b> for data transmission. If you chose <b>64-bit</b> and <b>ASCII(5 characters)</b> , then enter any 5 ASCII characters. If you chose <b>64-bit</b> and <b>Hex(10 characters)</b> , then enter any 10 hexadecimal characters. If you chose <b>128-bit</b> and <b>ASCII(13 characters)</b> , then enter any 13 ASCII characters. If you chose <b>128-bit</b> and <b>Hex(26 characters)</b> , then enter any 26 hexadecimal characters.
Apply Changes	Click this button to save the changes of this page.
Close	Click this button to close this window.
Undo	Click this button to begin configuring this screen afresh.

### 3.5.3 Advance Settings

Click **Advance Settings** in the sub-menu to open the screen of Fig 3.5.3. These settings are only for more technically advanced users who have a sufficient knowledge about wireless LAN. These settings should not be changed unless you know what effect the changes will have on your Access Point.



Fig 3.5.3

The following table describes the fields of this screen.

Label	Description
Fragment Threshold	This is the maximum data fragment size(between 256 and 2346bytes) that can be sent in the wireless network before the ROUTER will fragment the packet into smaller data frames.
RTS Threshold	RTS(Request To Send) is designed to prevent collisions due to hidden node. A RTS defines the biggest size data frame you can send before a RTS(Request To Send) handshake invoked. The <b>RTS Threshold</b> value is between 0 and 2347. If the <b>RTS Threshold</b> value is greater than <b>Fragment Threshold</b> value, then the RTS hankshake will never occur as the data frames will be fragmented before they reach RTS size.
Apply Changes	Click this button to save the changes of this page.

### 3.5.4 Access Control

Click **Access Control** in the sub-menu to open the screen of Fig 3.5.4. In this page, you can configure the Wireless Access Control.



Fig 3.5.4

The following table describes the fields of this screen.

Label	Description
Select Access Control Mode	Choises are <b>Disable</b> , <b>Allow Listed</b> and <b>Deny Listed</b> . Select <b>Allow Listed</b> to block access to the router, MAC addresses not listed will be allowed to access your router. Select <b>Deny Listed</b> to permit access to the router, MAC addresses not listed will be denied to access your router.
Apply Changes	Click this button to save the change of <b>Select Access Control Mode</b> .
MAC Addr	Enter the MAC address(in XX-XX-XX-XX-XX-XX format) of the wireless station that are allowed or denied access to your router in this address field.
Apply Changes	Click this button, the <b>MAC Addr</b> will be added to <b>Current Access Control List</b> .
Reset	Click this button to begin configuring the <b>MAC Addr</b> afresh.
Current Access Control List	The MAC address in this table will be allowed or denied access to the router.
Delete	Click this button to delete the row you select in the <b>Current Access Control List</b> .
Delete All	Click this button to delete all rows in the <b>Current Access Control List</b> .
Reset	Click this button to begin configuring the <b>Current Access Control List</b> afresh.

### 3.5.5 WDS Settings

Click **WDS Settings** in the sub-menu to open the screen of Fig 3.5.5. Wireless Distribution System is commonly used in areas requiring multiple APs, where wiring is not possible or costly and for providing back-up paths between APs.

Notice: You must select the “AP+WDS” option in chapter 3.6.1 before you configure this page.



Fig 3.5.5

The following table describes the fields of this screen.

Label	Description
Enable WDS	Select this check box to enable the WDS function, or you can't configure this page.
MAC Addr	Enter the MAC address(in XX-XX-XX-XX-XX-XX format) of the AP.
Comment	Enter the comment to describe the AP of the <b>MAC Addr</b> .
Apply Change	Click this button to add the <b>MAC Addr</b> with the <b>Comment</b> to <b>Current WDS AP List</b> .
Reset	Click this button to begin configuring the <b>MAC Addr</b> and <b>Comment</b> afresh.
Current WDS AP List	This table shows all APs of the WDS.
Delete	Click this button to delete the row of the <b>Current WDS AP List</b> .
Delete All	Click this button to delete all rows of the <b>Current WDS AP List</b> .

## 3.6 WAN

Click **WAN Interface** in the menu to open the sub-menu which contains 2 items: **WAN Interface** and **ADSL Settings**.

### 3.6.1 WAN Interface

Click **WAN Interface** in the sub-menu to open the screen of Fig 3.6.1-1. In this page, you can configure WAN Interface of your router.

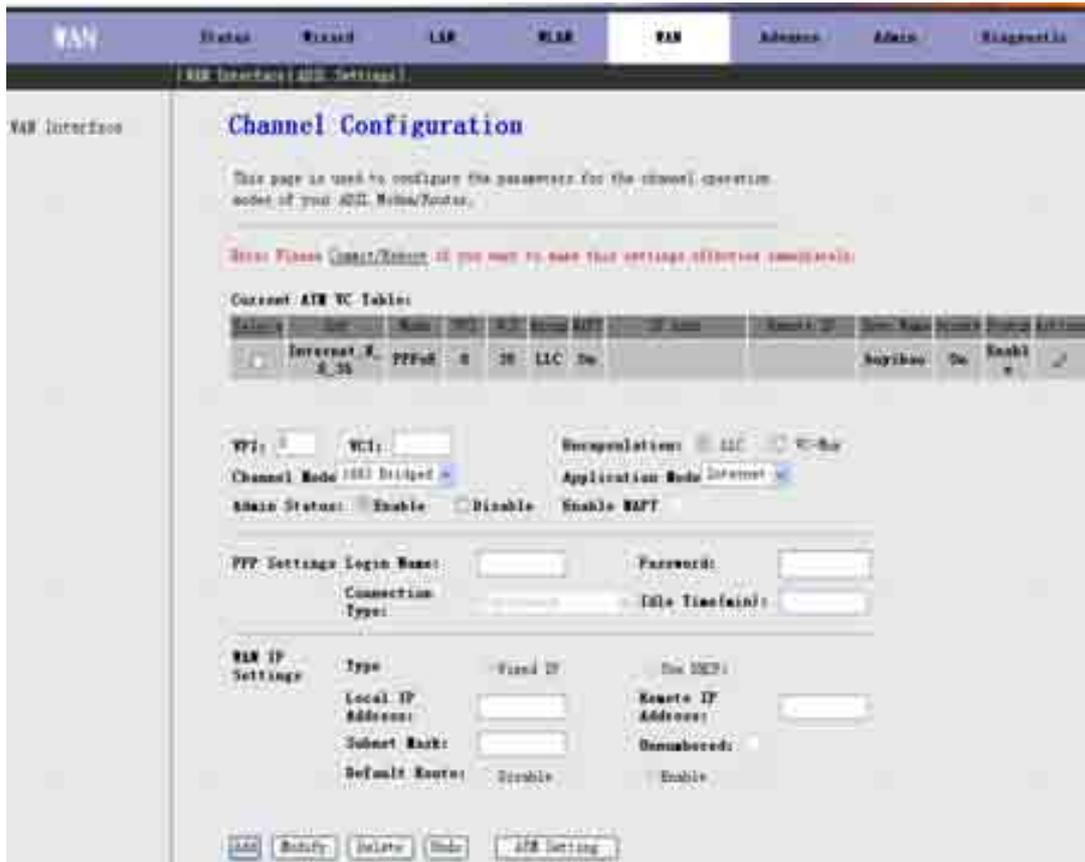


Fig 3.6.1-1

Label	Description
Current ATM VC Table	This table shows the PVCs already existed. It shows the Interface name, Channel Mode, VPI/VCI, Encapsulation mode, local IP Address, Remote IP address, etc. The maximum item of this table is eight.
VPI	(Virtual Path Identifier) The virtual path between two points in an ATM network, and its valid value is from 0 to 255
VCI	The virtual channel between two points in an ATM network, ranging from 32 to 65535 (1 to 31 are reserved for known protocols)
Encapsulation	Choices are LLC and VC-Mux.
Channel Mode	There are five choices: 1483 Bridged, 1483 MER, PPPoE, PPPoA and 1483 Routed.
Admin Status	If select Disable, this PVC will be unusable.
Enable NAPT	Select it to enable the NAPT functions of the MODEM. If you are not to enable NAPT and intend the user of the MODEM to access the Internet normally, you must add a route on the uplink equipment; otherwise the access to the Internet will fail. Normally, it is required to enable NAPT.
PPP Settings	
Login Name	The correct user name that your ISP has provided to you.
Password	The correct password that your ISP has provided to you
Connection Type	The choices are <b>Continuous</b> , <b>Connect on Demand</b> and <b>Manual</b> .
Idle Time(min)	If select <b>Connect on Demand</b> , you need to input the idle timeout time. Within the preset minutes, if the MODEM doesn't detect the flow of the user continuously, the MODEM will automatically disconnect the PPPOE connection.
WAN IP Settings	
Type	The choices are <b>Fixed IP</b> and <b>Use DHCP</b> . If set <b>Fixed IP</b> , you should



	enter the <b>Local IP Address</b> , <b>Remote IP Address</b> and <b>Subnet Mask</b> . If set <b>Use DHCP</b> , your MODEM will be a DHCP client, the WAN IP will be assigned by the remote DHCP server.
Local IP Address	This is the IP of WAN interface which is provided by your ISP.
Remote IP Address	This is the gateway IP which is provided by your ISP.
Subnet Mask	This is the Subnet Mask of the <b>Local IP Address</b> .
Unnumbered	Select this checkbox to enable IP Unnumbered function.
Default Route	
Add	After configuring the parameters of this page, click this button then a new PVC will be added into <b>Current ATM VC Table</b> .
Modify	Select a PVC in the <b>Current ATM VC Table</b> , then modify the parameters of this PVC. When you finish, click this button to apply the change of this PVC.
Delete	Select a PVC in the <b>Current ATM VC Table</b> , then click this button to delete this PVC.
Undo	Click this button to begin configuring this screen afresh.
ATM Setting	Click this button, the Fig 3.6.1-3 will appear. In this page, you can configure ATM PVCs' QoS mode. The details, please see the following pages.
	Click this button, the following screens will appear. In these pages, you can modify the PVCs' parameters.

If the PVC uses PPPoE mode, click  , the Fig 3.6.1-2 will appear. In this page, you can configure this PPPoE PVC's parameters.



Fig 3.6.1-2

ATM Setting : Click **ATM Setting** button in Fig3.6.1-1, the screen of Fig 3.6.1-3 will appear. In this page, you can configure the parameters of the ATM for your ADSL router, include QoS type, PCR, CDVT, SCR and MBS.

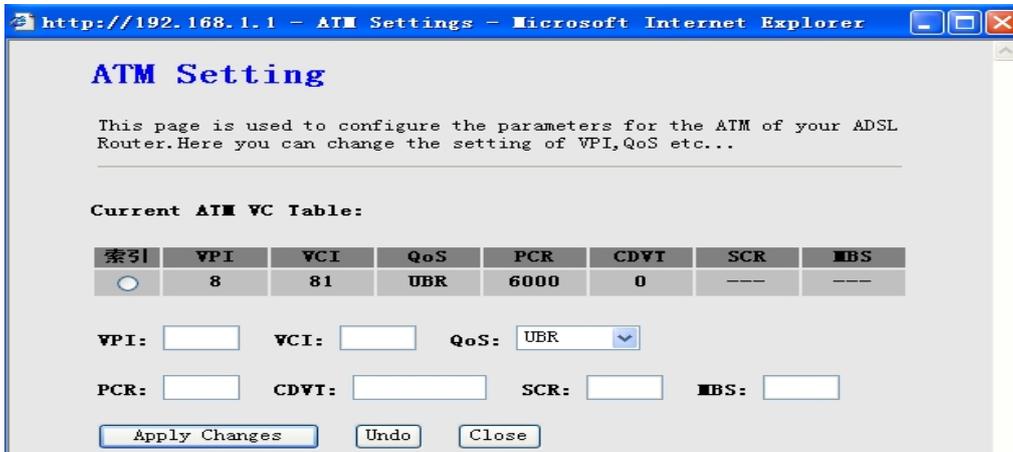


Fig 3.6.1-3

### 3.6.2 ADSL Settings

Click **ADSL Interface** in the sub-menu to open the screen of Fig 3.6.2. In this page, you can select the DSL modulation. Mostly, the user just need to remain this factory default setting. Our modem support these modulations: G.Dmt, G.lite, T1.413, ADSL2, ADSL2+, AnnexL and AnnexM. The router will negotiate the modulation mode with the DSLAM.



Fig 3.6.2

## 3.7 Advance

Click **Advance** in the menu to open the sub-menu which contains 8 items: **DNS, Firewall, Virtual Server, Routing, IP QOS, Anti-dos, Port Mapping** and **Others**.

### 3.7.1 DNS

Short for Domain Name System (or Service or Server), an Internet service that translates domain names into IP addresses. Because domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses. Every time you use a domain name, therefore, a DNS service must translate the name into the corresponding IP address. For example, the domain name `www.example.com` might translate to `198.105.232.4`.

The DNS system is, in fact, its own network. If one DNS server doesn't know how to translate a particular domain name, it asks another one, and so on, until the correct IP address is returned.

Click **DNS** in the sub-menu to open the screen of Fig 3.7.1.



Fig 3.7.1

Label	Description
Attain DNS Automatically	When this checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER enabled PVC(s) during the connection establishment.
Set DNS Manually	When this checkbox is selected, please enter the primary and optional secondary DNS server IP addresses.
Apply Changes	Click this button to save the settings of this page.
Reset Selected	Click this button to begin configuring this screen afresh.

### 3.7.2 Firewall

Click **Firewall** in the sub-menu to open the menu in the left bar, which contains three items: **IP\Port Filter, MAC Filter** and **URL Blocking**.

### 3.7.2.1 IP\Port Filter

Click **IP\Port Filter** in the left bar to open the screen of Fig 3.7.2.1. Entries in this table are used to restrict certain types of data packets through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Click the button **Apply Changes** to save the settings of this page.

Click the button **Add Rule** to add a new rule of the IP\Port Filter.



Fig 3.7.2.1

### 3.7.2.2 MAC Filter

Click **MAC Filter** in the left bar to open the screen of Fig 3.7.2.2. Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Click the button **Apply Changes** to save the settings of this page.

Click the button **Add Rule** to add a new rule of the MAC Filter.



Fig 3.7.2.2

### 3.7.2.3 URL Blocking

Click **URL Blocking** in the left bar to open the screen of Fig 3.7.2.3. This page is used to configure the Blocked FQDN(Such as tw.yahoo.com) and filtered keyword. Here you can add/delete FQDN and filtered keyword.

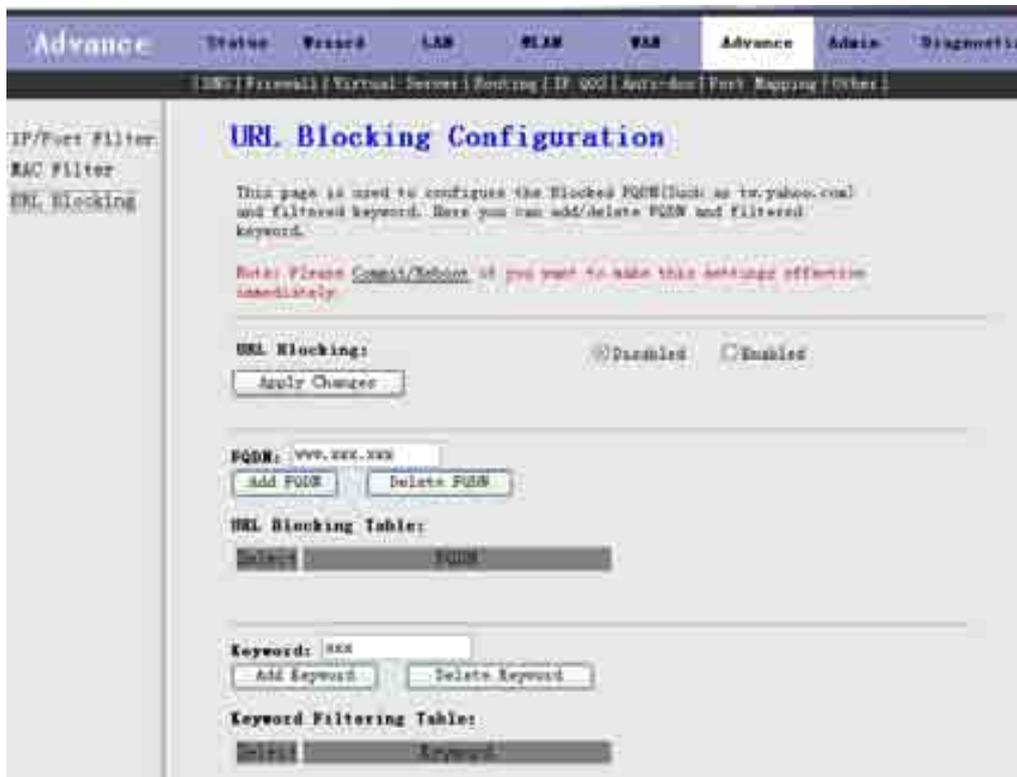


Fig 3.7.2.3

### 3.7.3 Virtual Server

Click **Virtual Server** in the sub-menu to open the menu in the left bar, which contains two items: **Services** and **DMZ Settings**.

#### 3.7.3.1 Services

Click **Services** in the left bar to open the screen of Fig 3.7.3.1. This page is used to enable the servers in the local network.

Click the button **Add** to add a virtual server.



Fig 3.7.3.1

#### 3.7.3.2 DMZ Settings

Click **DMZ Settings** in the left bar to open the screen of Fig 3.7.3.2. A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

Select the checkbox **Enable DMZ** to enable this function. Then input a IP Address of the DMZ host.

Click the button **Apply Changes** to save the settings of this page.



Fig 3.7.3.2

## 3.7.4 Routing

Click **Routing** in the sub-menu to open the menu in the left bar, which contains two items: **RIP** and **Static Route**.

### 3.7.4.1 RIP

Click **RIP** in the left bar to open the screen of Fig 3.7.4.1. Enable the RIP if you are using this device as a RIP-enabled router to communicate with others using the Routing Information Protocol. This page is used to select the interfaces on your devices that use RIP, and the version of the protocol used.



Fig 3.7.4.1

### 3.7.4.2 Static Route

Click **Static Route** in the left bar to open the screen of Fig 3.7.4.2-1. This page is used to configure the routing information. Here you can add/delete IP routes.



Fig 3.7.4.2-1

Click the button Show Routes, the below window will appear. The table shows a list of destination routes commonly accessed by your network.



Fig 3.7.4.2-2

### 3.7.5 IP QoS

Click **Anti-dos** in the sub-menu to open the screen of Fig 3.7.5. Entries in this table are used to assign the precedence for each incoming packet based on physical LAN port, TCP/UDP port number, and source/destination IP address/subnet masks.





Fig 3.7.5

### 3.7.6 Anti-dos

Click **Anti-dos** in the sub-menu to open the screen of Fig 3.7.6. "denial-of-service attack"(DoS Attack) a type of attack on a network that is designed to bring the network to its knees by flooding it with useless traffic. In this page, you can configure to prevent DOS attacks.

Click the button **Apply Changes** to save the settings of this page.



Fig 3.7.6

## 3.7.7 Other

Click **Others** in the sub-menu to open the menu in the left bar, which contains four items: **IGMP Proxy**, **UPNP**, **Bridge** and **IP PassThrough**.

### 3.7.7.1 IGMP Proxy

Click **IGMP Proxy** in the left bar to open the screen of Fig 3.7.7.1. IGMP proxy enables the system to issue IGMP host messages on behalf of hosts that the system discovered through standard IGMP interfaces. The system acts as a proxy for its hosts after you enable it.

Click **Apply Changes** to save the settings of this page.



Fig 3.7.7.1

### 3.7.7.2 UPNP

Click **UPNP** in the left bar to open the screen of Fig 3.7.7.2. This page is used to configure UPnP. The system acts as a daemon after you enable it.

Click **Apply Changes** to save the settings of this page.



Fig 3.7.7.2

### 3.7.7.3 Bridge

Click **Bridge** in the left bar to open the screen of Fig 3.7.7.3-1. This page is used to configure the bridge parameters. Here you can change the settings or view some information on the bridge and its attached ports.



Fig 3.7.8.3-1

Click **Show MACs** button in Fig 3.7.7.3-1, the below window will appear. This table shows a list of learned MAC addresses for this bridge.



Fig 3.7.7.3-2

### 3.7.7.4 IP PassThrough

Click **IP PassThrough** in the left bar to open the screen of Fig 3.7.7.4. The IP PassThrough has the other name ZIPB or IP Extension. In this page, you can enable and configure IP PassThrough function.



Fig 3.7.7.4

## 3.8 Admin

Click **Admin** in the menu to open the sub-menu which contains 11 items: **Remote Access**, **Commit/Reboot**, **Password**, **Backup/Restore**, **Upgrade Firmware**, **Time Zone**, **System Log**, **SNMP**, **TR069**, **ACL** and **Logout**.

### 3.8.1 Remote Access

Click **Remote Access** in the sub-menu to open the screen of Fig 3.8.1. In this page, you can enable or disable the services which will be used by remote host. For example, if TELNET service is enabled and port is 23, the remote host can access this router by telnet through port 23.



Fig 3.8.1

### 3.8.2 Commit/Reboot

Click **Commit/Reboot** in the sub-menu to open the screen of Fig 3.8.2. In this page, you can set the router reboot to default settings or set the router save the current settings then reboot.



Fig 3.8.2

Label	Description
Reset to default settings	Select this checkbox to reset router to default settings.
Commit current settings	Select this checkbox to save the current settings and reboot router.
Reboot	Click this button to reboot the router according to the above option.

### 3.8.3 Password

Click **Login Password** in the sub-menu to open the screen of Fig 3.8.3. In this page, you can change the password of the user, include admin and user. The super user name and password are admin/admin as default, and the The common user name and password are user/user.



Fig 3.8.3

Label	Description
User Name	Select the user name in the drop-down list box. The choices are <b>admin</b> and <b>user</b> .
Old Password	After selected the user name, input the old password of the user here.
New Password	Input the new password what you want to set of the user.
Confirmed Password	Input the new password again.
Apply Changes	Click this button to save the settings of this page.
Reset	Click this button to begin configuring the password afresh.

### 3.8.4 Backup/Restore

Click **Backup/Restore** in the sub-menu to open the screen of Fig 3.8.4. In this page, you can backup the current settings to a file and restore the settings from the file which was saved previously.

**IMPORTANT!** Do not turn off your router or press the Reset button while these procedures are in progress.



Fig 3.8.4

Label	Description
Save Settings to File	Click the <b>Save</b> button, then select the path and save the configuration file of your router.
Load Settings from File	Click the <b>Browse</b> button to select the configuration file.
Upload	Selected the configuration file of router, click Upload button to begin restore the router configuration.

### 3.8.5 Upgrade Firmware

Click **Upgrade Firmware** in the sub-menu to open the screen of Fig 3.8.5. In this page, you can upgrade the firmware of this router.

**IMPORTANT!** Do not turn off your router or press the Reset button while this procedure is in progress.



Fig 3.8.5

Label	Description
Select File	Click the <b>Browse</b> button to select the Firmware file.
Upload	Selected the Firmware file, click <b>Upload</b> button to begin upgrading the Firmware.
Reset	Click this button to begin selecting the Firmware file afresh.

### 3.8.6 Time Zone

Click **Time Zone** in the sub-menu to open the screen of Fig 3.8.6. In this page, you can set the system time manually or get the system time from the time server.

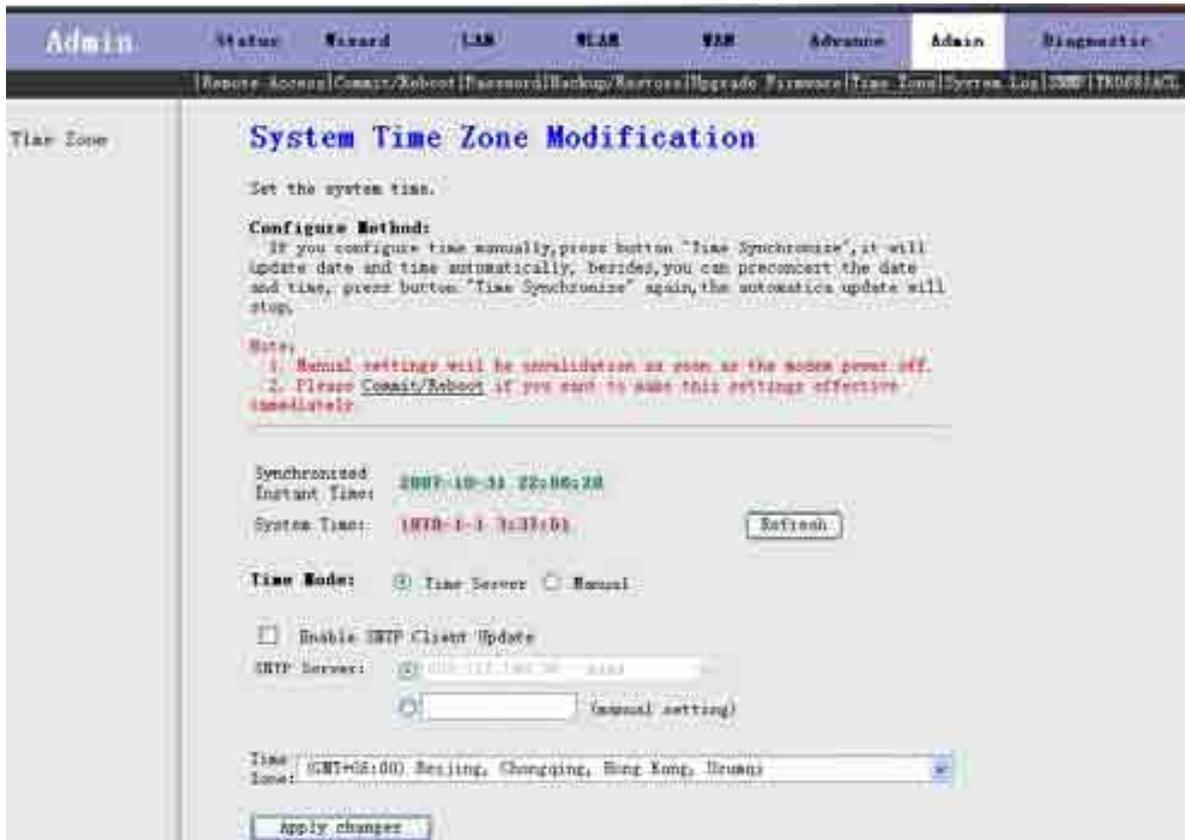


Fig 3.8.6

Label	Description
Refresh	Click this button to refresh the system shown in the page.
Time Mode	If select Time Server, the router will get the system time from the time server. If select Manual, you should configure the system time manually.
Enable SNTP Client Update	If select this checkbox, you can choose the correct SNTP Server which you want.
SNTP Server	Choose the SNTP Server here.
Time Zone	Select the Time Zone of in which area you are.
Apply Changes	Click this button to save the settings of this page.

### 3.8.7 System Log

Click **System Log** in the sub-menu to open the screen of Fig 3.8.7. In this page, you can enable or disabled the System log function, view the system log.





Fig 3.8.7

Label	Description
System Log	You can enable or disable the System Log function.
Apply Changes	Click this button to save the settings of this page.
Refresh	Click this button to refresh the system log shown in the textfield.

### 3.8.8 SNMP

Click **SNMP** in the sub-menu to open the screen of Fig 3.8.8. In this page, you can set the SNMP parameters.



Fig 3.8.8

Label	Description
-------	-------------

Trap IP Address	Input the Trap Host's IP here. The trap information will be sent to this host.
Community name(read-only)	The network administrators must use this password to read the information of this router.
Community name(write-only)	The network administrators must use this password to configure the information of this router.
Apply Changes	Click this button to save the settings of this page.
Reset	Click this button to begin configuring this screen afresh.

### 3.8.9 TR069

Click **ACL** in the sub-menu to open the screen of Fig 3.8.9. In this page, you can configure the TR-069 CPE.

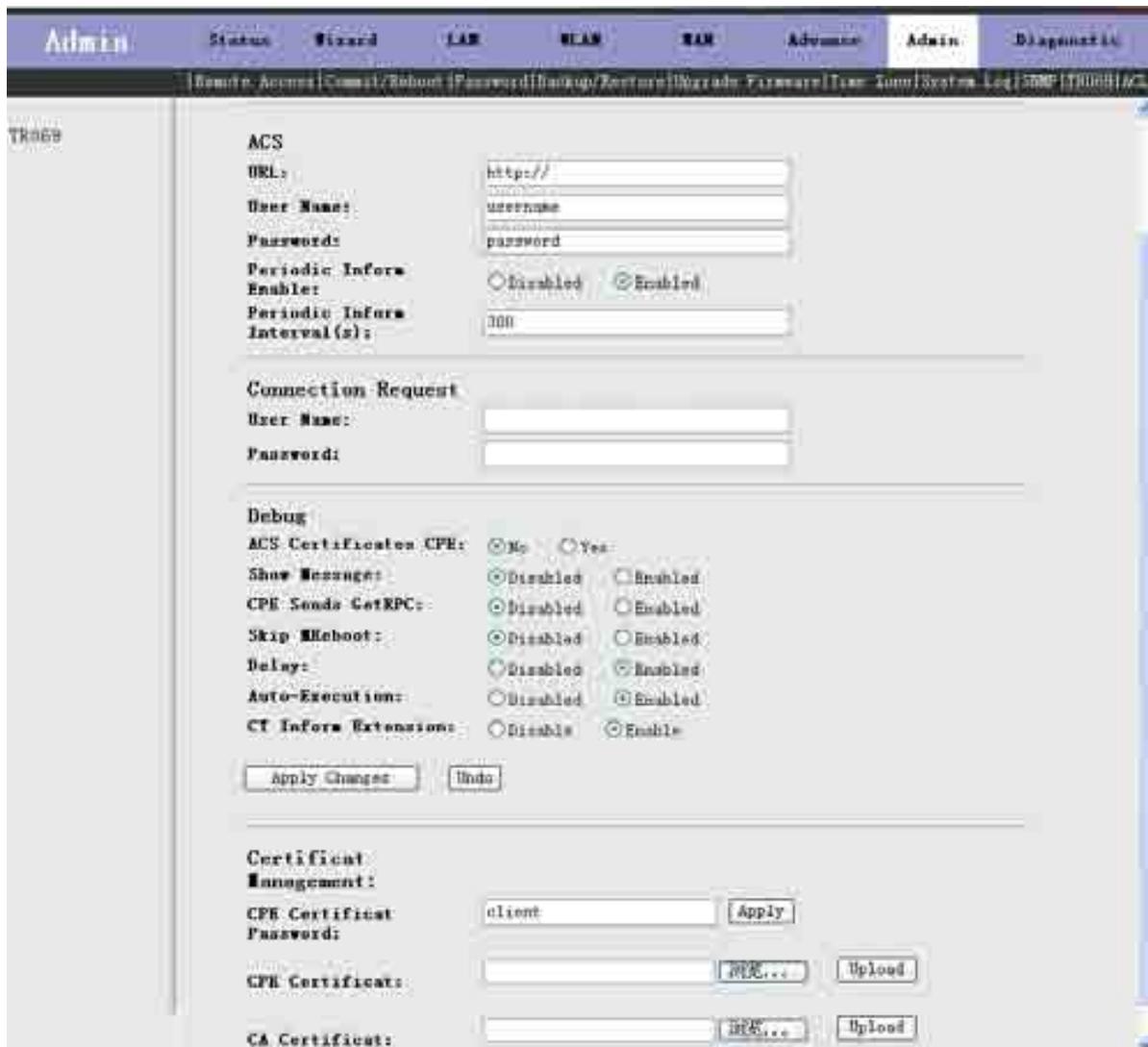


Fig 3.8.9

### 3.8.10 ACL

Click **ACL** in the sub-menu to open the screen of Fig 3.8.10. In this page, you can configure the IP Address for Access Control List. If ACL enabled, only the effective IP in ACL can access ADSL Router.

Step 1: If you want to enable ACL, please choose "Enable" then press "Apply Changes";

Step 2: Config Access Control List;

Step 3: Press "take effect" to effect the configuration.

Note: If you check "Enable" in ACL Capability, please make sure that your host IP is in ACL List before it takes effect

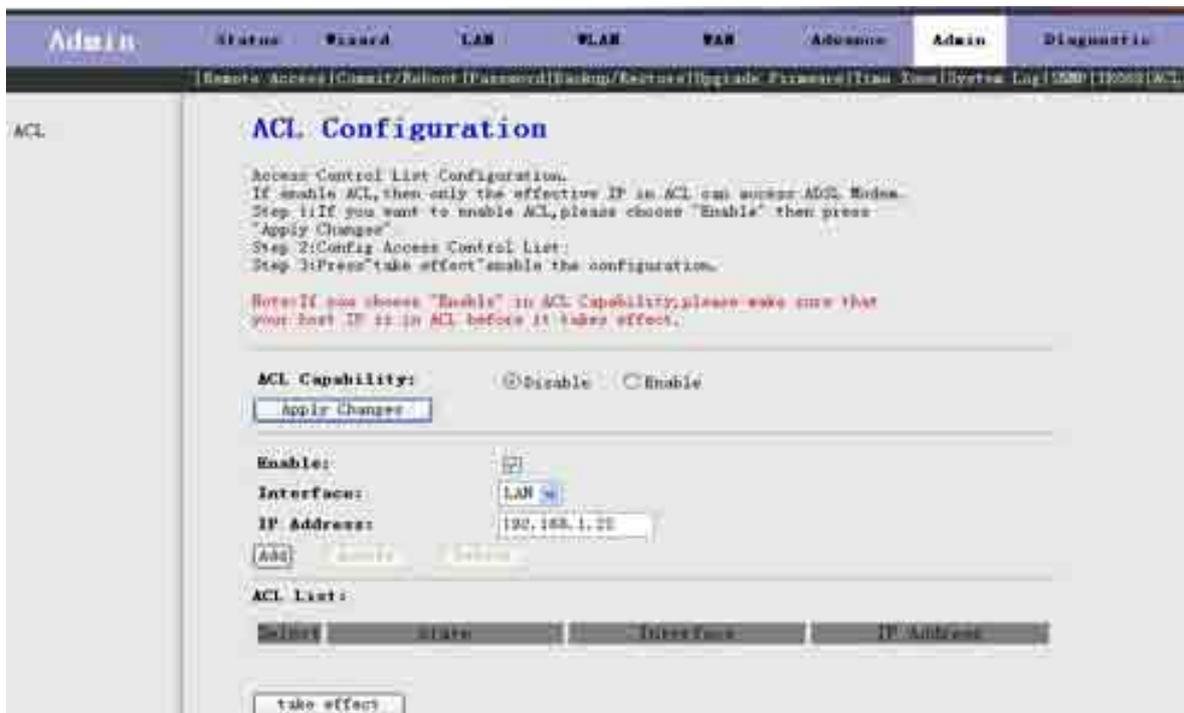


Fig 3.8.10

## 3.9 Diagnostic

Click **Diagnostic** in the menu to open the sub-menu which contains 4 items: **Ping**, **ATM Loopback**, **ADSL** and **Diagnostic**.

### 3.9.1 Ping

Click **Ping** in the sub-menu to open the screen of Fig 3.9.1.



Fig 3.9.1

Label	Description
Host Address	Enter the IP Address here.
Go!	Click this button to begin to Ping the <b>Host Address</b> .

### 3.9.2 ATM Loopback

Click **ATM Loopback** in the sub-menu to open the screen of Fig 3.9.2. In this page, you can use VCC loopback function to check the connectivity of the VCC.



Fig 3.9.2

Go! : Click this button to begin testing.

### 3.9.3 ADSL

Click **ADSL** in the sub-menu to open the screen of Fig 3.9.3. This page is used for ADSL Tone Diagnostics.



Fig 3.9.3

Go! : Click this button to begin ADSL Tone Diagnostics.

### 3.9.4 Diagnostic

Click **Diagnostic** in the sub-menu to open the screen of Fig 3.9.4. This page is used for testing your DSL connection.



Fig 3.9.4

Run Diagnostic Test: Click this button to begin testing.

### **Federal Communication Commission (FCC) Radiation Exposure Statement**

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

### **R&TTE Compliance Statement**

This equipment complies with all the requirements of DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE)

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000.

### **WEEE Regulation**



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

### **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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:

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

### **FCC Caution**

To assure continued compliance (example-use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.