SMC® Networks

# USER GUIDE

## ADSL2 BARRICADE ™
## 4-Ports Annex A ADSL/ADSL2+ Modem Router

## SMC7904BRA3

# Fast Ethernet Router with built-in ADSL2/2+ Modem

From SMC’s line of award-winning connectivity solutions

February 2009

R.01 f/w 1.0

# Copyright



**Trademarks:**

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# Warranty and Product Registration

To register SMC product and to review the detailed warranty statement, please refer to the Support Section of the SMC website at http://www.smc.com

SMC Networks, Inc.

20 Mason

Irvine, CA 92618

# COMPLIANCES

## 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 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 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.

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.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

# FCC - Part 68

This equipment complies with Part 68 of the FCC rules. This equipment comes with a label attached to it that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

This equipment uses the following jacks: RJ-11.

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

# COMPLIANCES

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact our company at the numbers shown on back of this manual for repair and warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved.

No repairs may be done by the customer.

This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

When programing and/or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in off-peak hours such as early morning or late evenings.

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone facsimile machine unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or such business, other entity, or individual.

In order to program this information into your facsimile, refer to your communications software user manual.

## EC Conformance Declaration

SMC contact for these products in Europe is:

SMC Networks Europe,

Edificio Conata II,

Calle Fructuós Gelabert 6-8, 2o, 4a,

08970 - Sant Joan Despí,

Barcelona, Spain.

# COMPLIANCES

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

•EN 55022

•EN 55024•EN 61000-3-2

•EN 61000-3-3

•EN 60950-1

## CSA Statement

This unit is to be used with an external power adaptor of a Class 2 or level 3 type and Approved type suitable for use in the North America of equipment installation, having an output voltage rating of 12 V dc, and output current rating of 1.0A or equivalent. The external AC adapter must be complied with the requirements of LPS (Limited Power Sources).

# COMPLIANCES

## Safety Compliance

## Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlu ßsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von authorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
    a. Netzkabel oder Netzstecker sind beschädigt.
    b. Flüssigkeit ist in das Gerät eingedrungen.
    c. Das Gerät war Feuchtigkeit ausgesetzt.
    d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
    e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
    f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6 A und einem Gerätegewicht größer 3 kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0.75 mm2 einzusetzen.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70 dB(A) oder weniger.

# Contents

# 1 Introduction

The ADSL access device supports multiple line modes. It provides four 10/100Base-T Ethernet interface at the user end. Utilizing the high-speed ADSL connection, the device provide 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 Mbps and uplink speed up to 1 Mbps.

## 1.1 Package List

- One ADSL device (ADSL four port router)
- One external splitter
- One power adapter
- Two pieces of telephone lines (RJ11)
- One piece of Ethernet cable (RJ45)
- One copy of QIG (Quick Installation Guide)
- One User Manual CD

## 1.2 Safety Precautions

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. Do not cover these heat radiant holes.
- Do not put this device close to a place where a heat source exits 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 Description of LEDs and Interfaces

**Front panel**

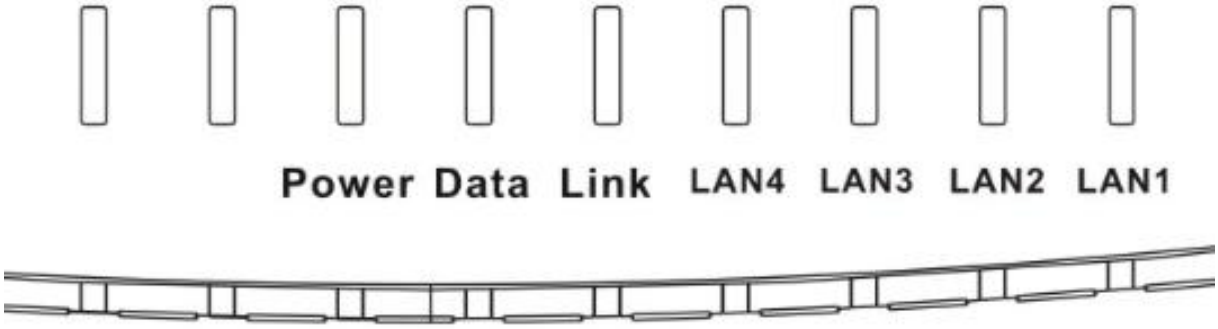


Fig 1.3-1 Front panel

| LED | Color | Status | Description |
|---|---|---|---|
| Power | Green/Red | OFF | No power |
| | | GREEN | Device init OK |
| | | RED | Device init |
| | | RED BLINK | Firmware upgrade |
| Data | Green | OFF | No WAN link |
| | | BLINK | WAN data transiting |
| | | ON | WAN link established and active |
| Link | Green | OFF | Initial self-test failed |
| | | BLINK | Device is detecting itself |
| | | ON | Initial self-test of the unit is OK and ready |
| LAN4/3/2/1 | Green | OFF | No LAN link |
| | | BLINK | LAN data transiting |
| | | ON | LAN link established and active |

**Rear panel**

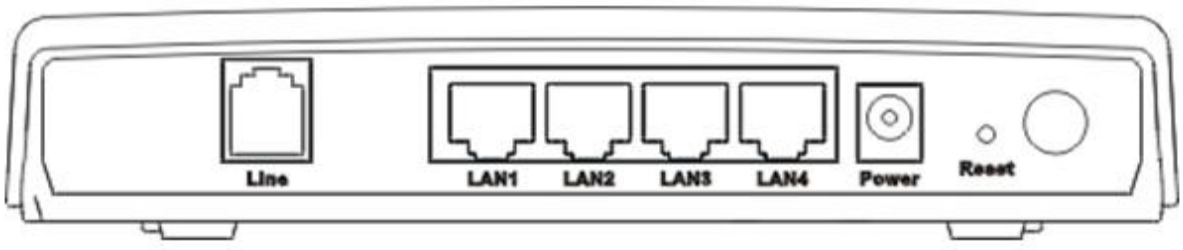


Fig 1.3-2 Rear panel

| Item | Usage |
|---|---|
| Line | 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. |
| LAN1/2/3/4 | Ethernet RJ-45 port |

| Item | Usage |
|---|---|
| ⏻ | Power On/Off. |
| Power | 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 Features

- 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 [note 1]/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

**note 1:**

When upgrading firmware by TFTP, you can not access the Web GUI temporarily until the upgrading procedure has been finished and the device is rebooted.

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

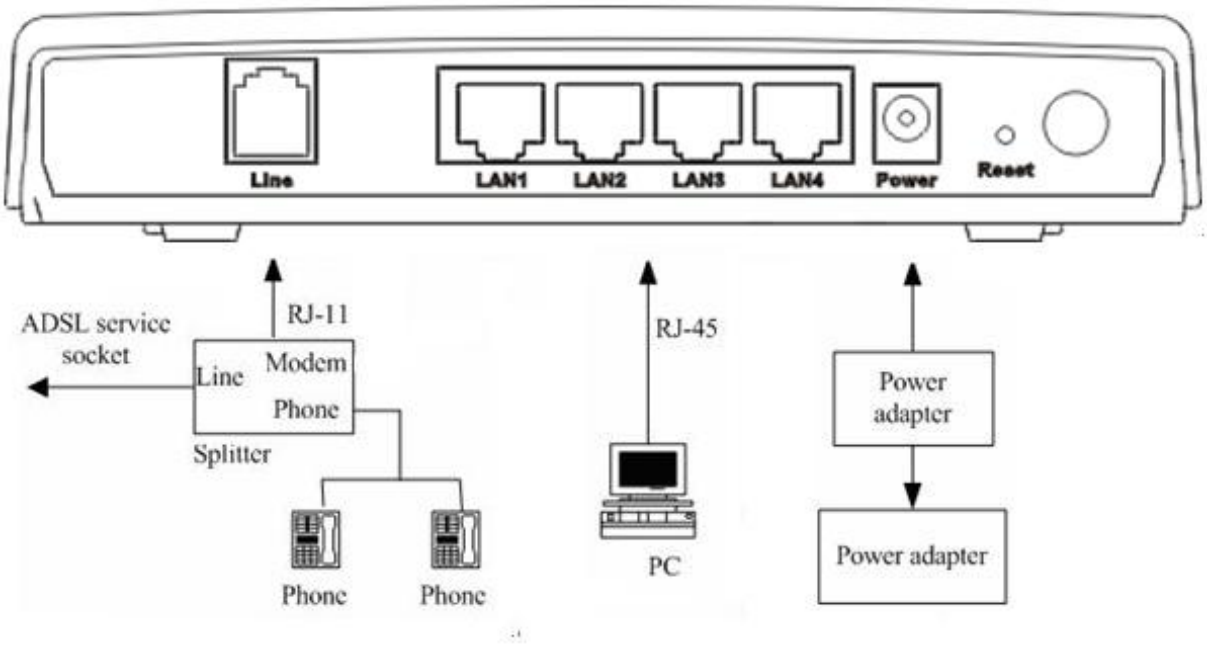


Fig 2-1 Connection Diagram (Without connecting telephone sets before the splitter)

Connection 2: As illustrated in the following figure, the splitter is installed close to the device.

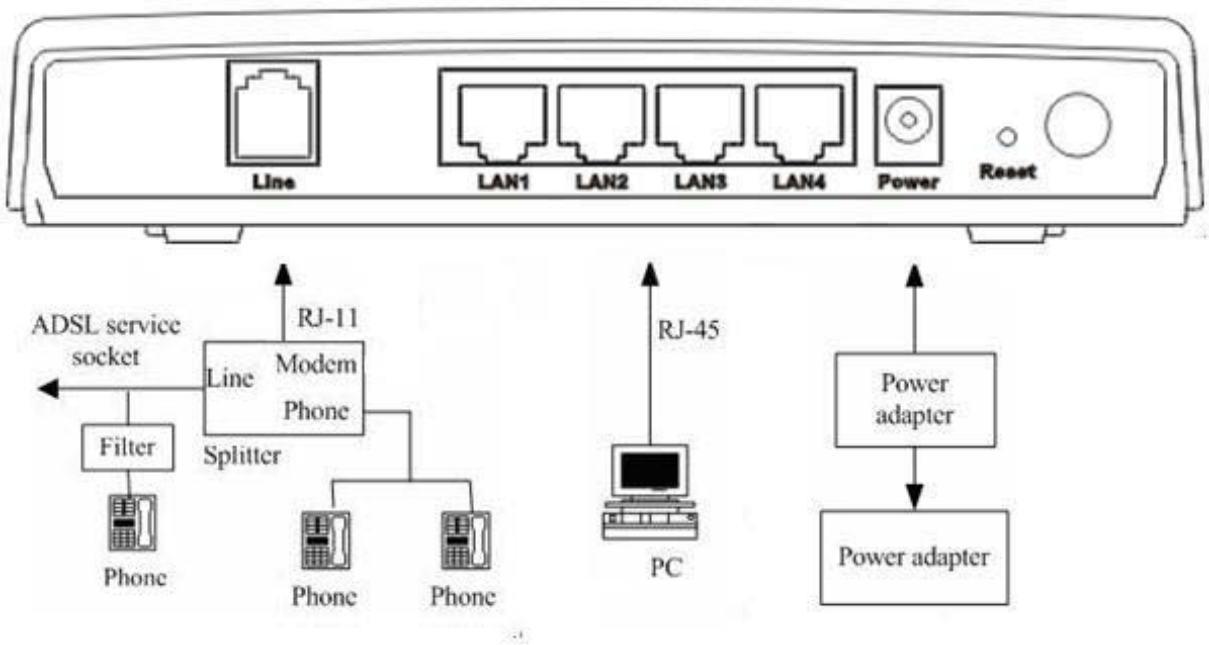


Fig 2-2 Connection Diagram (Connecting a telephone set before the splitter)

It is **recommended** to follow the Connection 1 in an actual connection!

**Note**: When Connection 2 is used, the filter must be installed close to the telephone lines. (See Fig. 2-2. Do not use the splitter instead of the filter).

Installing a telephone directly before the splitter may lead to a failure of connection between the device and the device of LAN side, or cannot access into the Internet, or slow the connection speed if you really need to add a telephone set before the splitter, you have to add a MicroFilter before connecting to a telephone set. Do not connect several telephones before the splitter. Moreover, do not connect several telephones with MicroFilters.

# 3 Introducing the Web Configurator

## 3.1 How to Access the Router

The following is a detail “How-To” user guide for the first time users.

1. Open IE browser and enter http://192.168.2.1 in address bar.
2. You are required to enter user name and password. See the Fig 3.1-1.

- The super user name and password is admin/smcadmin
- The common user name and password is user/user

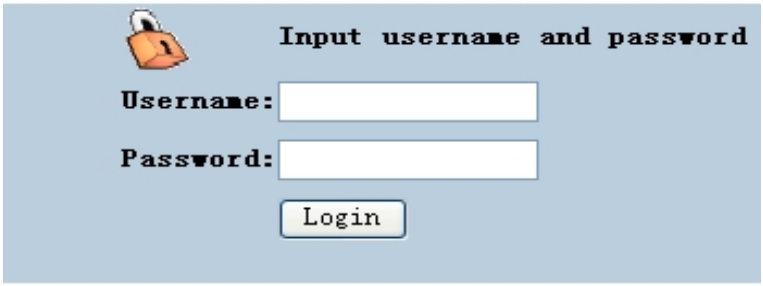


Fig 3.1-1

3. If you enter as super user, the below screen is displayed when you enter successfully.

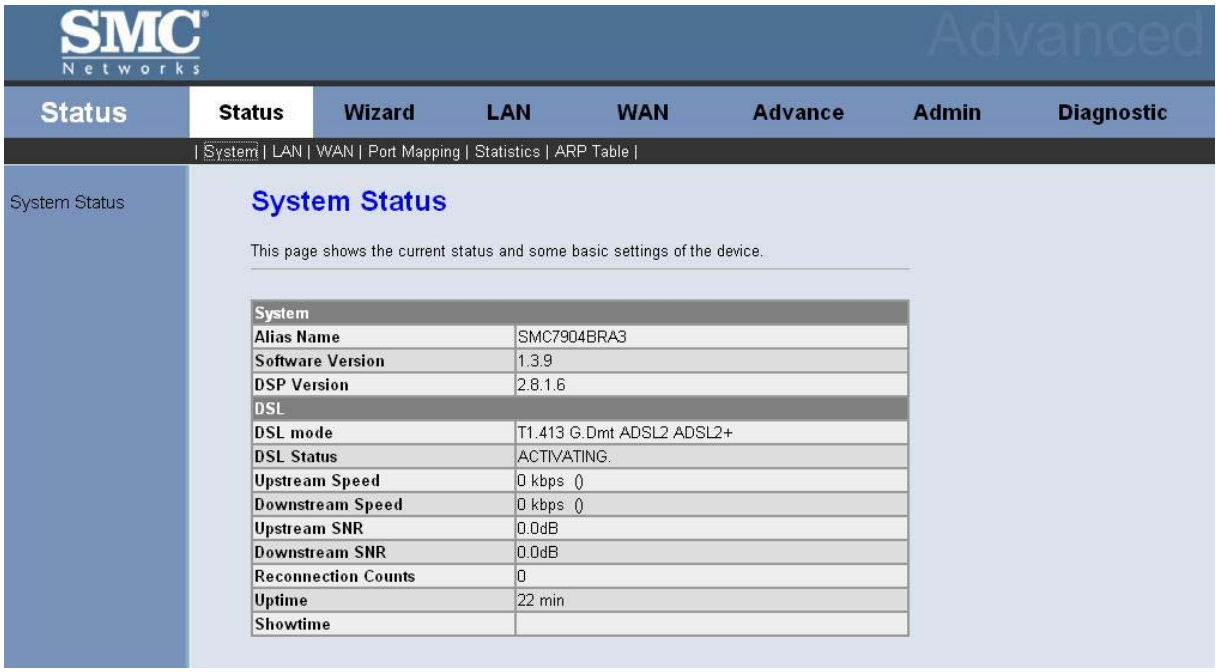


Fig 3.1-2

After you enter router as super user, you can check, configure, 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 cannot change the most of options.

# 3.2 Status

Click **Status** in the menu to open the sub-menu which contains 6 items: **System**, **LAN**, **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.

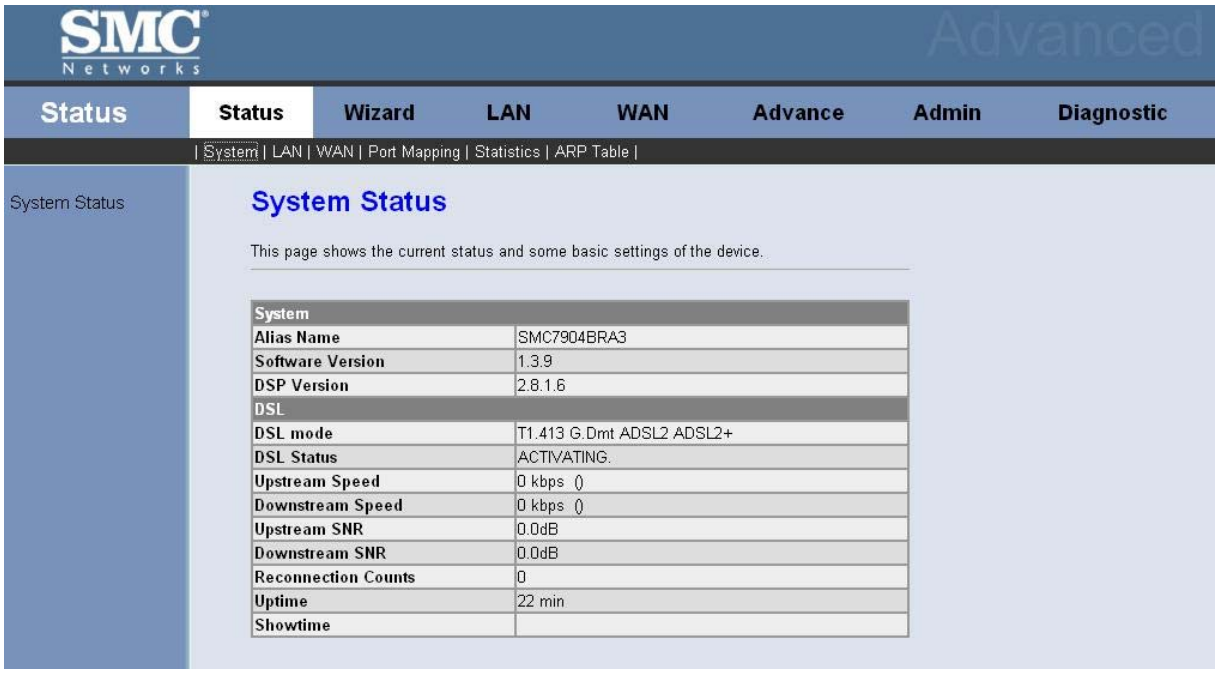


Fig 3.2.1

## 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 configure the LAN network, refer to section 3.4.1 “LAN Settings”.

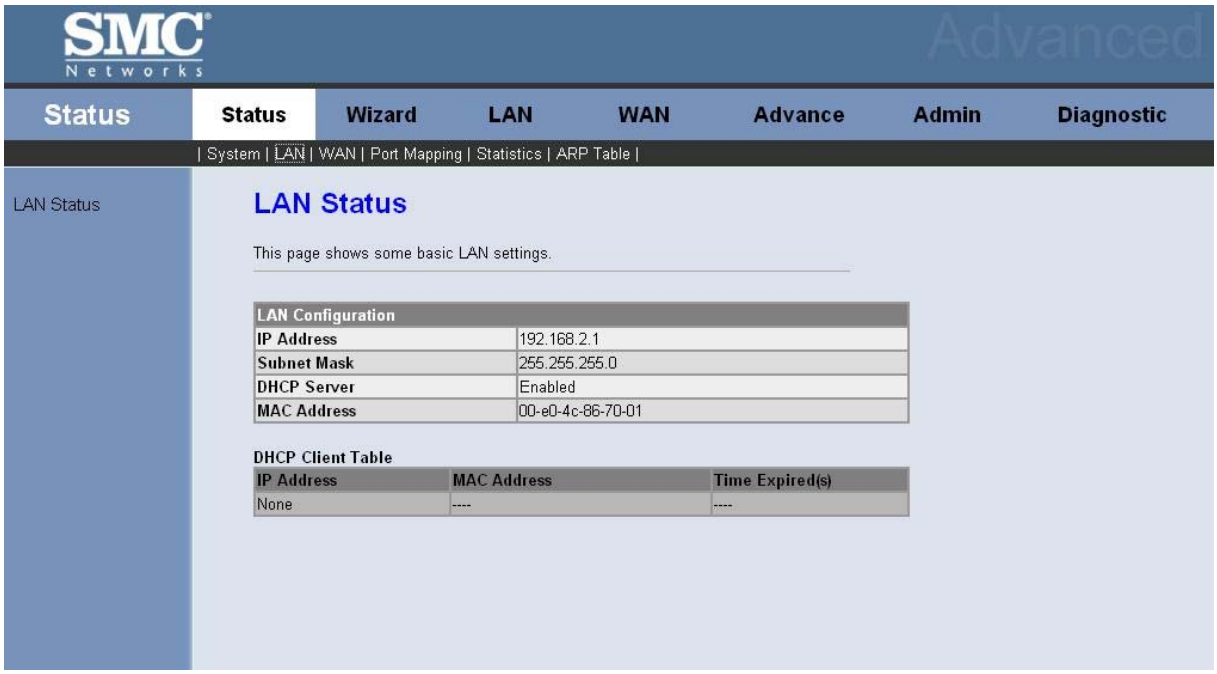


Fig 3.2.2

## 3.2.3 WAN

Click **WAN** in the sub-menu to open the screen of Fig 3.2.3. In this page, you can view basic status of WAN, Default Gateway, and DNS Server. If you want to configure the WAN network, refer to section 3.5.1 “WAN Interface”.

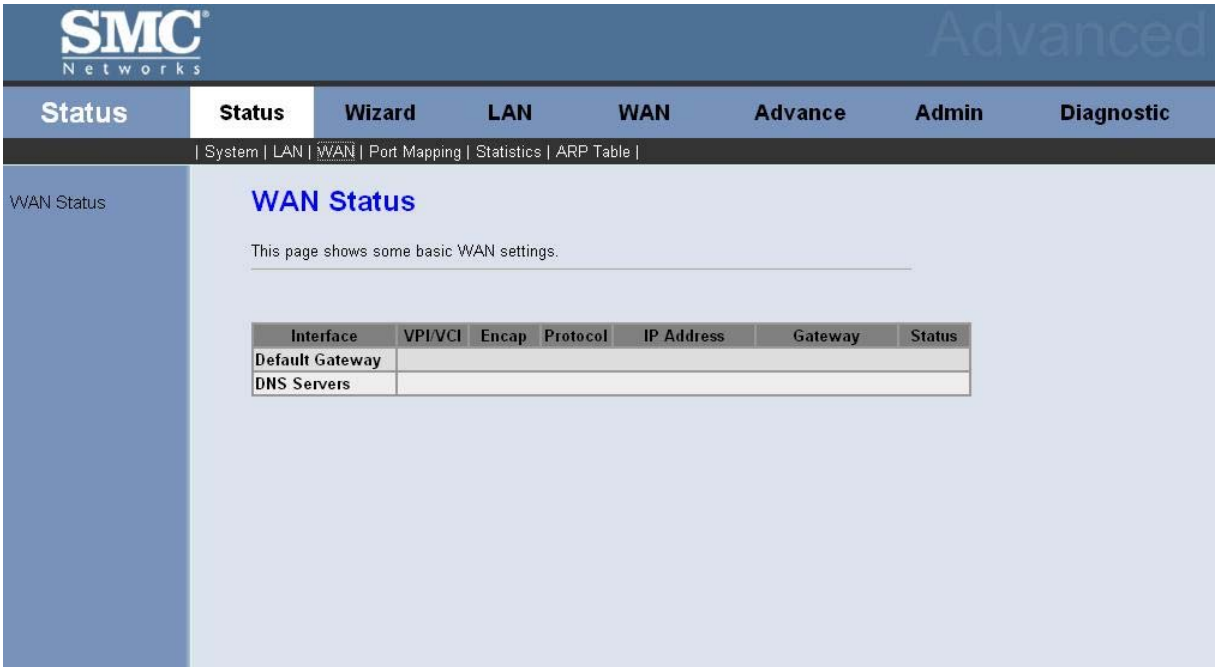


Fig 3.2.3

## 3.2.4 Port Mapping

Click **Port Mapping** in the sub-menu to open the screen of Fig 3.2.4. In this page, you can view the mapping relation and the status of port mapping.

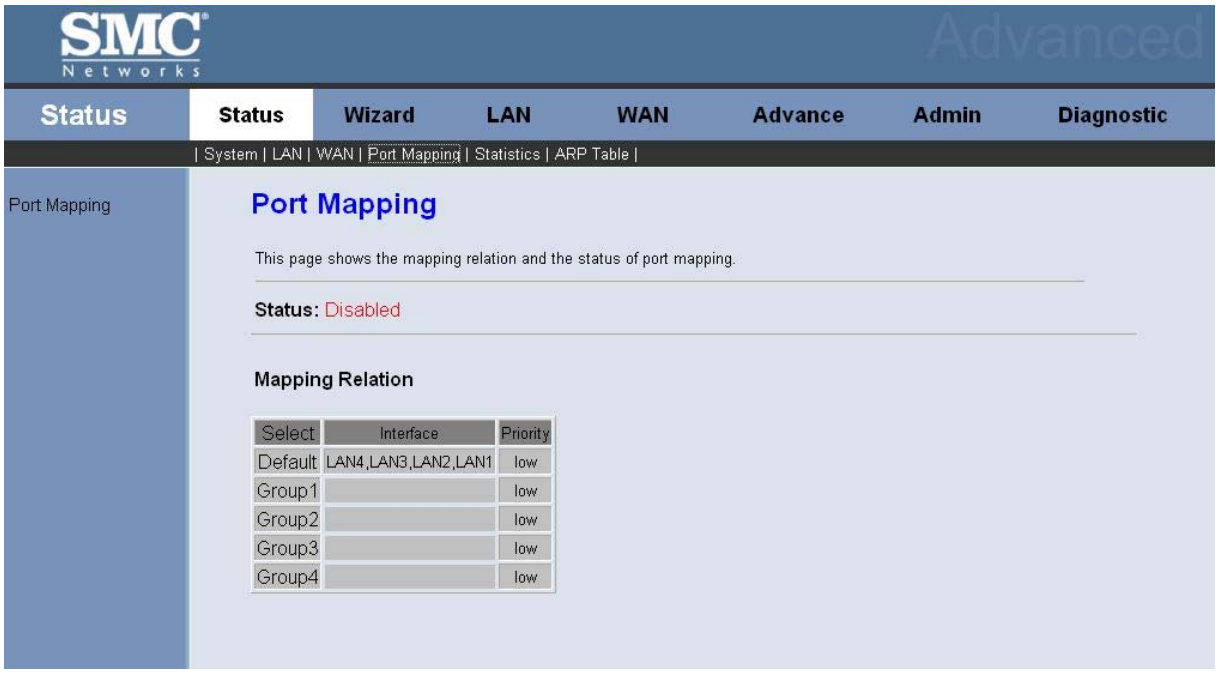


Fig 3.2.4

## 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.

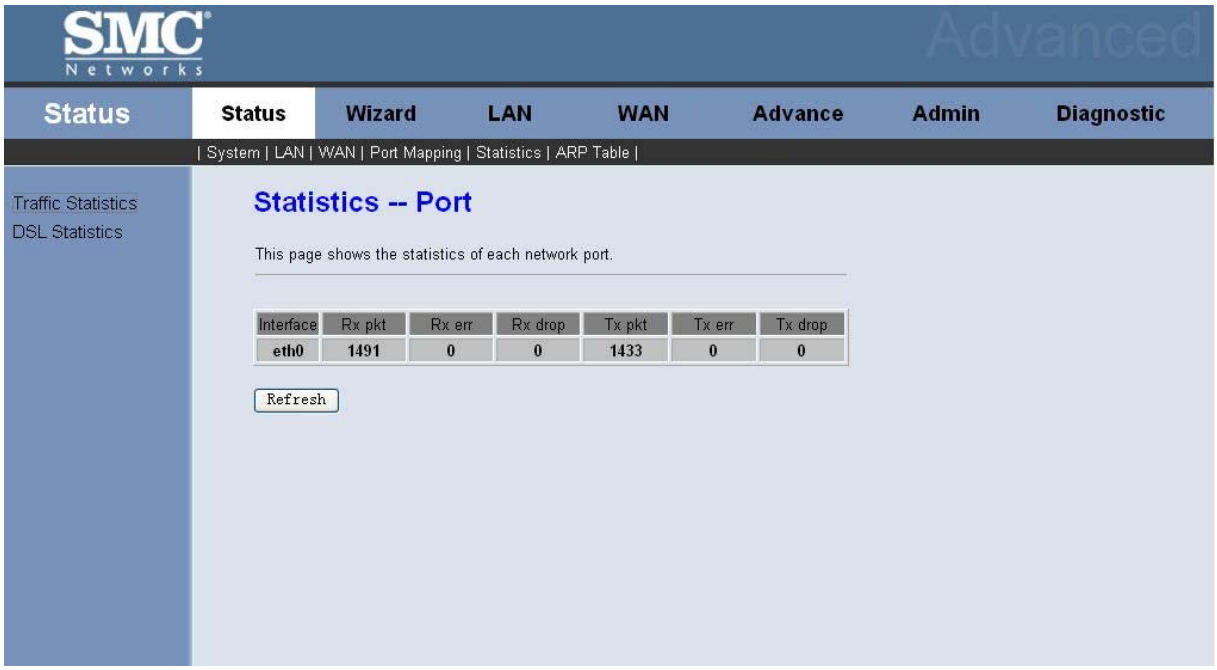


Fig 3.2.5.1

### 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, and upstream rate.

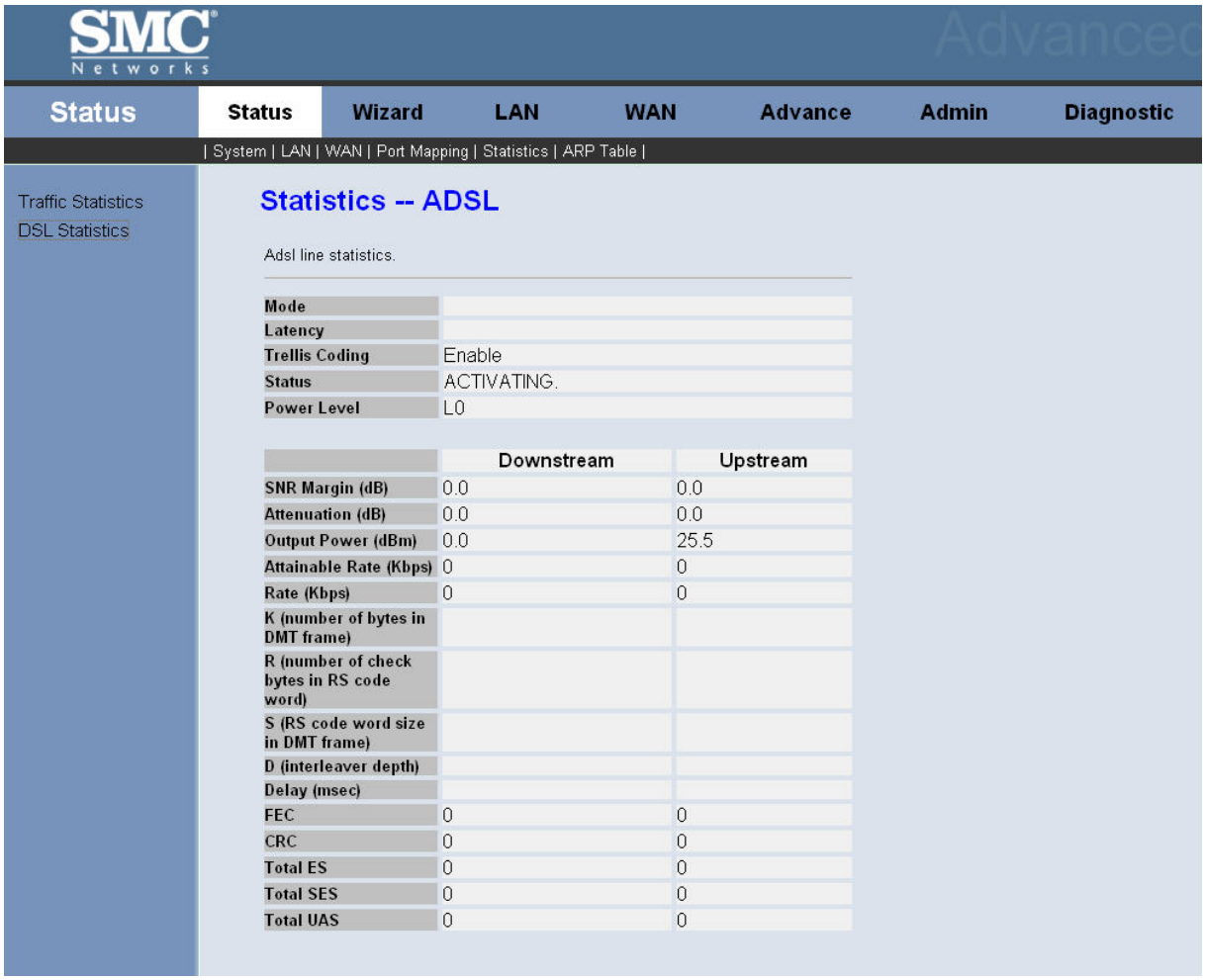


Fig 3.2.5.2

## 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 that shows a list of learned MAC addresses.

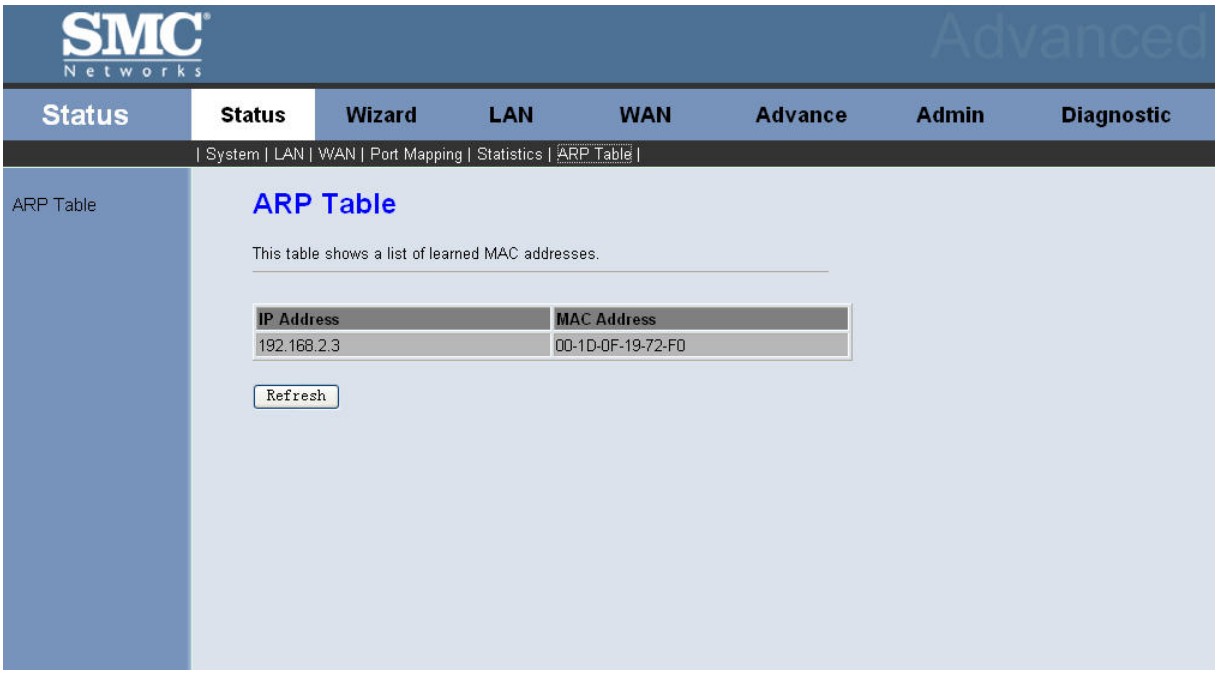


Fig 3.2.6

## 3.3 Wizard

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

**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 use 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 configure the VPI/VCI number.

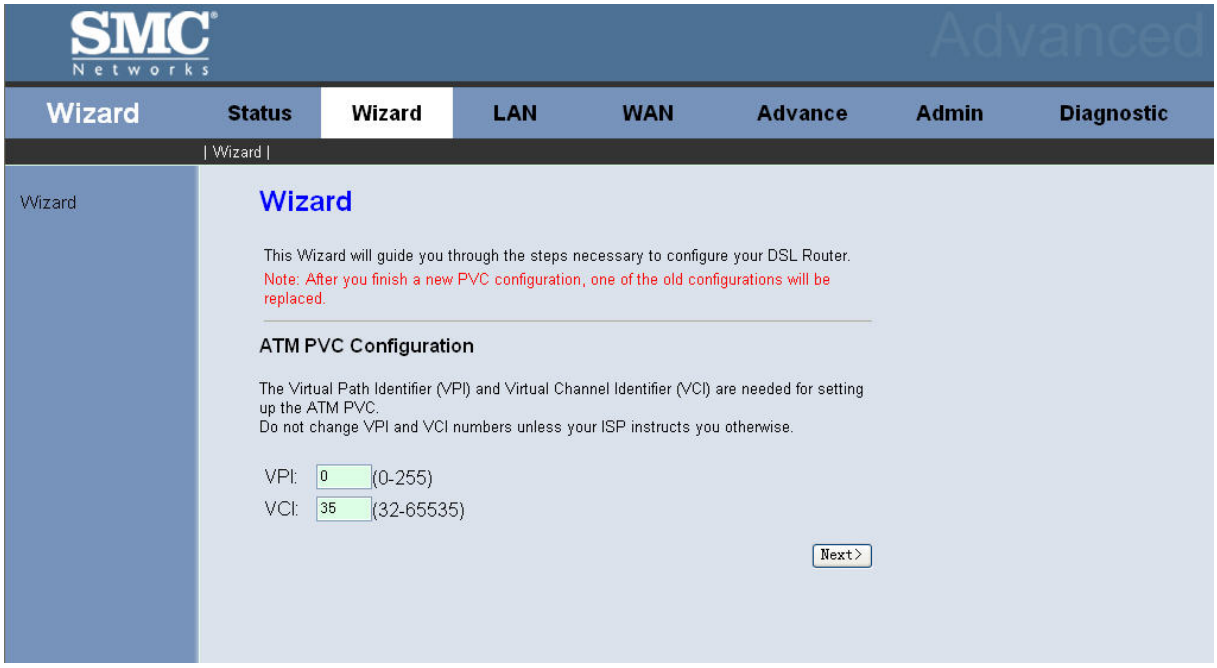


Fig 3.3.1-1

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 appears. In this page, you can select the WAN Connect Type and the encapsulation method.

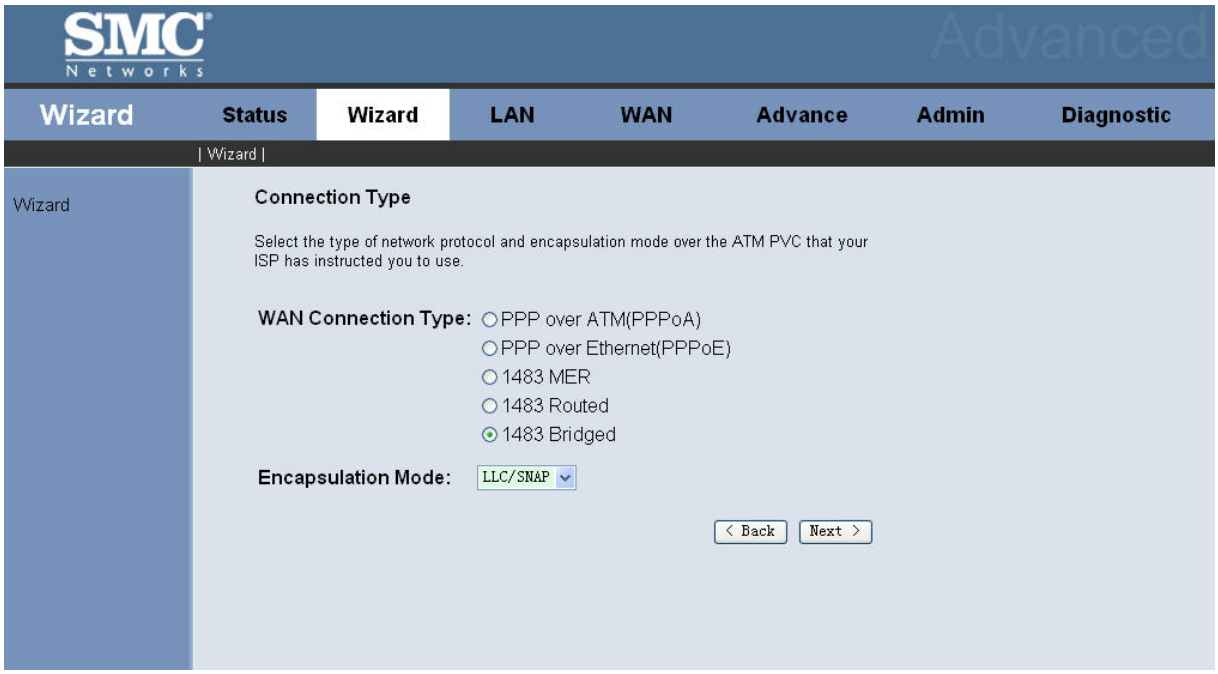


Fig 3.3.1-2

The following table describes the fields in this screen.

| Label | Description |
|---|---|

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

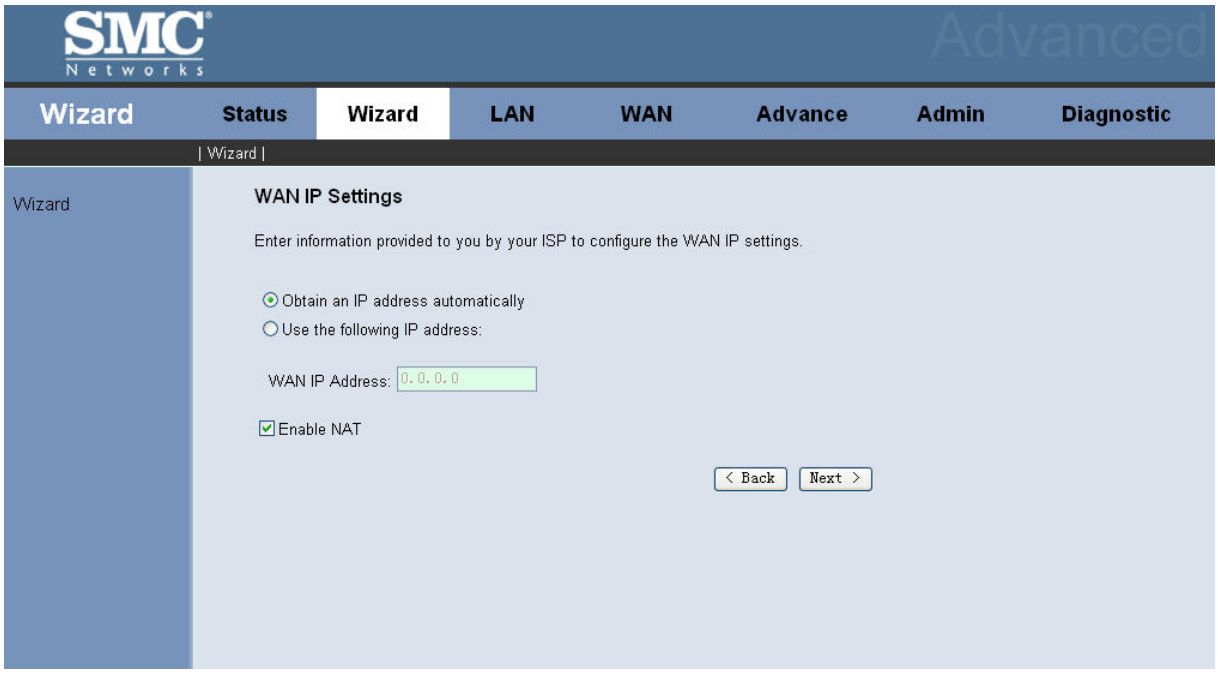


Fig 3.3.1-3

The following table describes the fields of this screen.

| Label | Description |
|---|---|
| Obtain an IP address 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 |
| 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 fails. Normally, it is required to enable NAT. |
| < Back | Click **< Back** to return to the previous screen |
| Next > | Click **Next >** to go to the next screen |

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

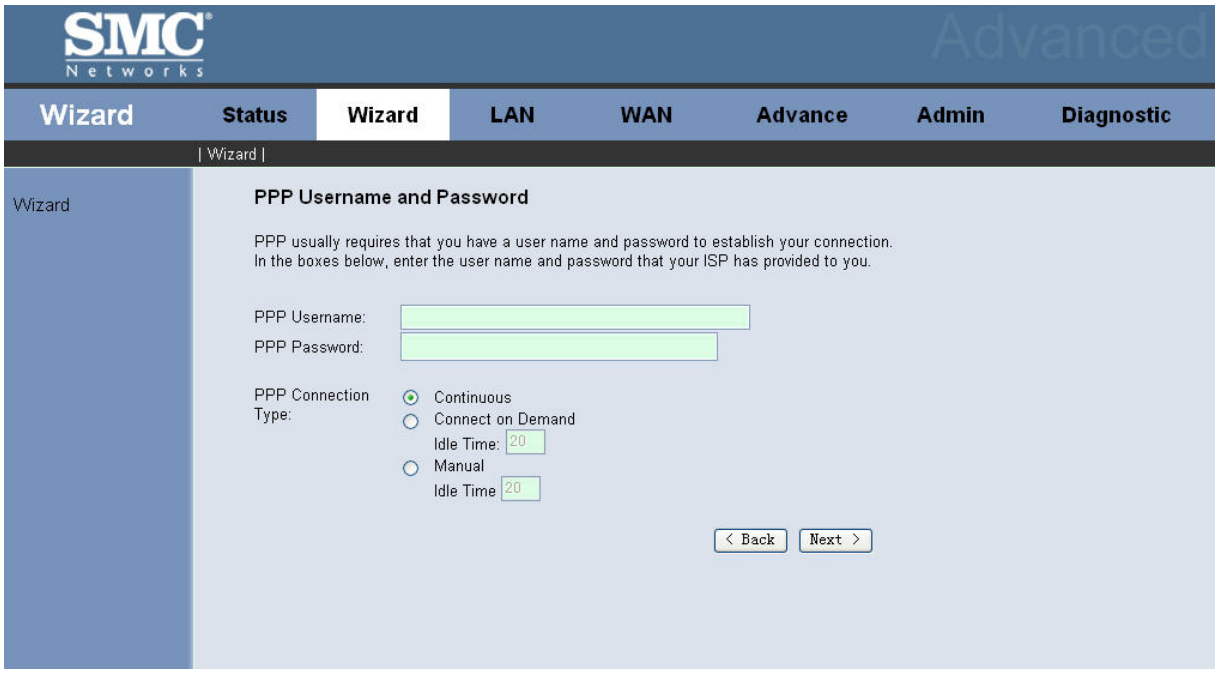


Fig 3.3.1-4

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 **Continuous**, **Connect on Demand** and **Manual**. |
| < Back | Click **< Back** to return to the previous screen |
| Next > | Click **Next >** to go to the next screen |

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

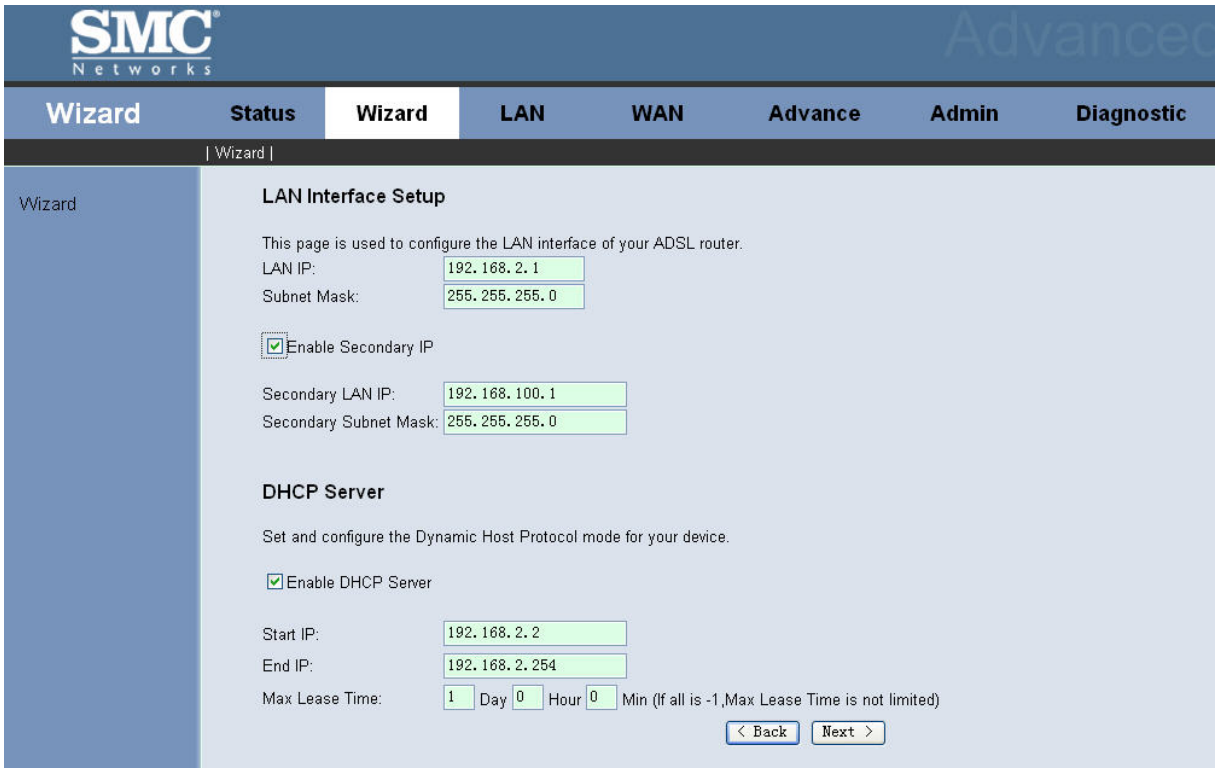


Fig 3.3.1-5

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, 192.168.2.1 (factory default) |
| LAN Netmask | Enter 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 | Enter 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 **< Back** to return to the previous screen |
| Next > | Click **Next >** to go to the next screen |

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

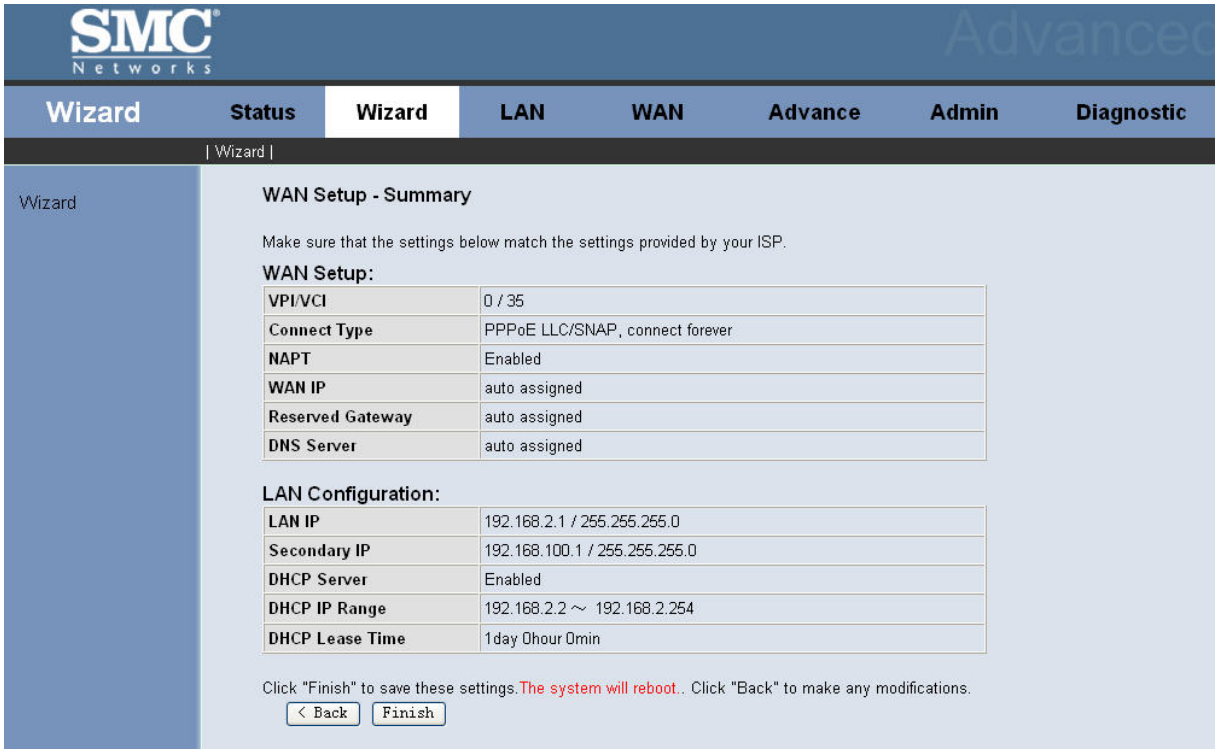


Fig 3.3.1-7

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

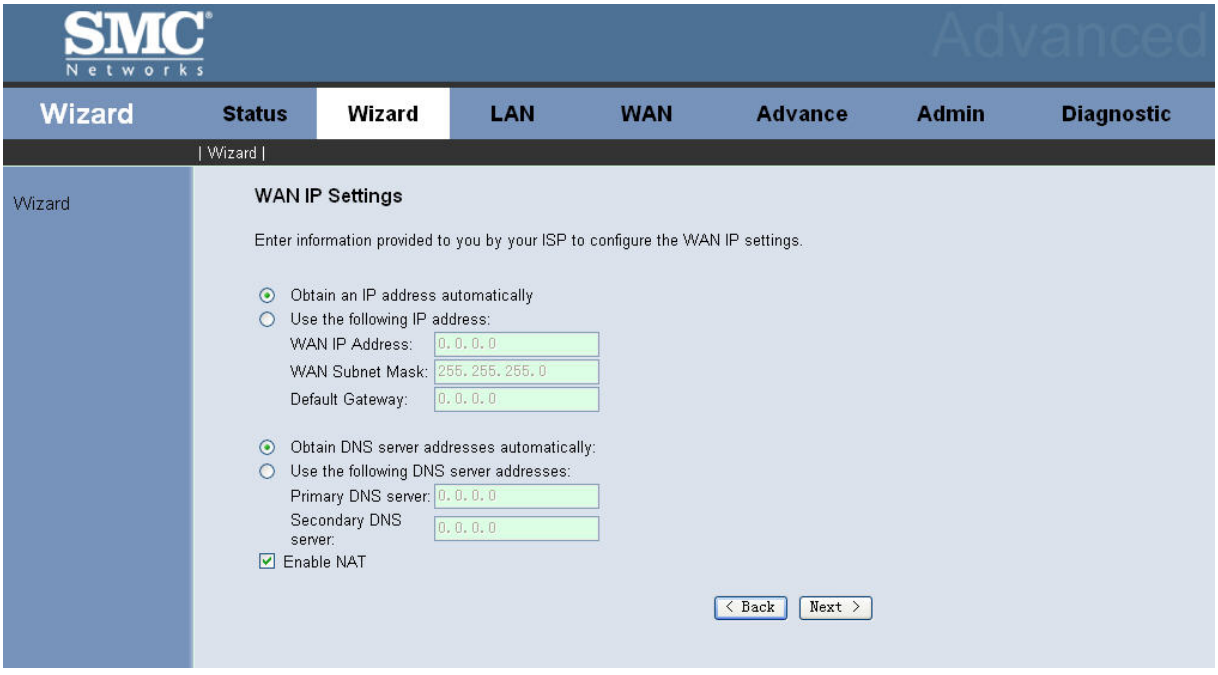


Fig 3.3.1-8

The following table describes the fields of this screen.

| Label | Description |
|---|---|
| Obtain an IP address automatically | The MODEM obtains a WAN IP address automatically and at this time it enables 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. |

| Label | Description |
|---|---|
| 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 fails. Normally, it is required to enable NAT. |
| < Back | Click **< Back** to return to the previous screen |
| Next > | Click **Next >** 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. For 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.

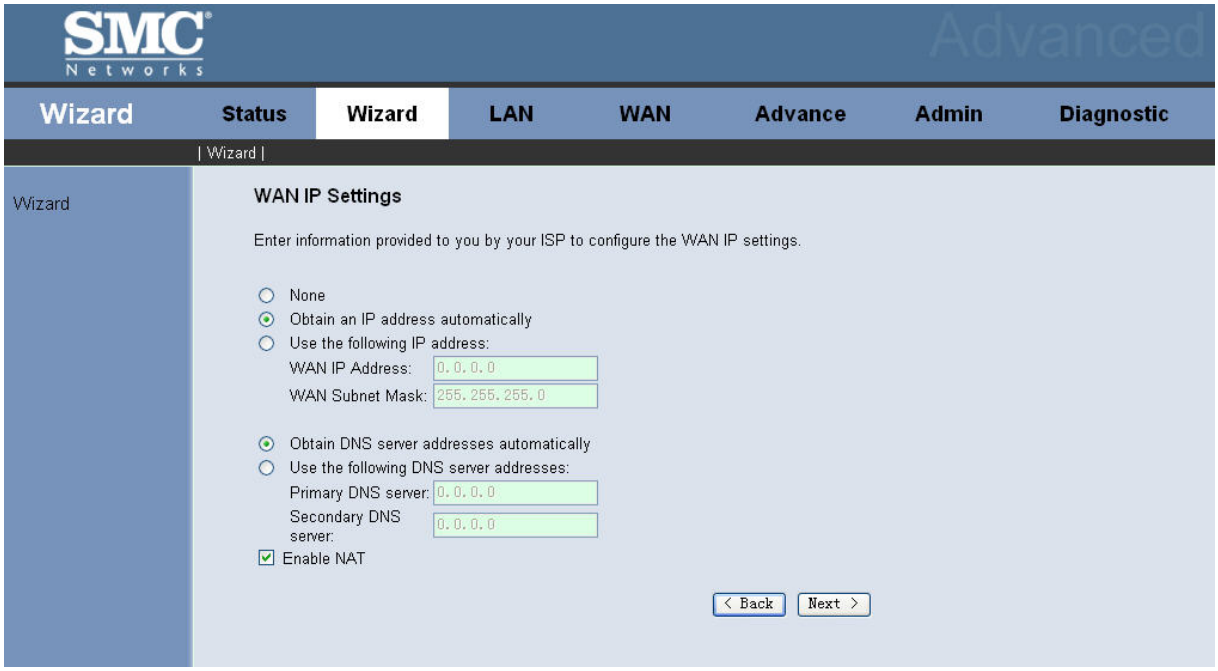


Fig 3.3.1-9

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. |

| Label | Description |
|---|---|
| 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 fails. Normally, it is required to enable NAT. |
| < Back | Click **< Back** to return to the previous screen |
| Next > | Click **Next >** 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 IP address of the device. The preset IP address is 192.168.2.1. 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 configure the LAN network.

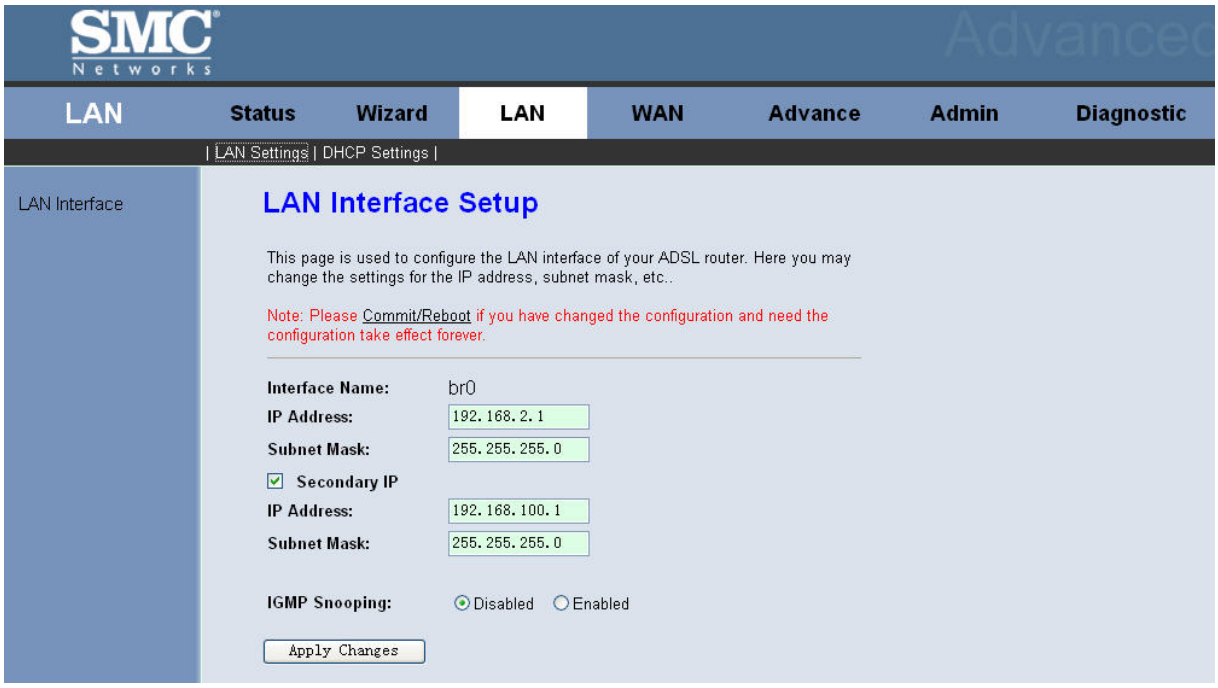


Fig 3.4.1

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 192.168.2.1- 192.168.255.254 |
| Secondary IP | Select this checkbox to enable the secondary LAN IP. The two LAN IP addresses 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.

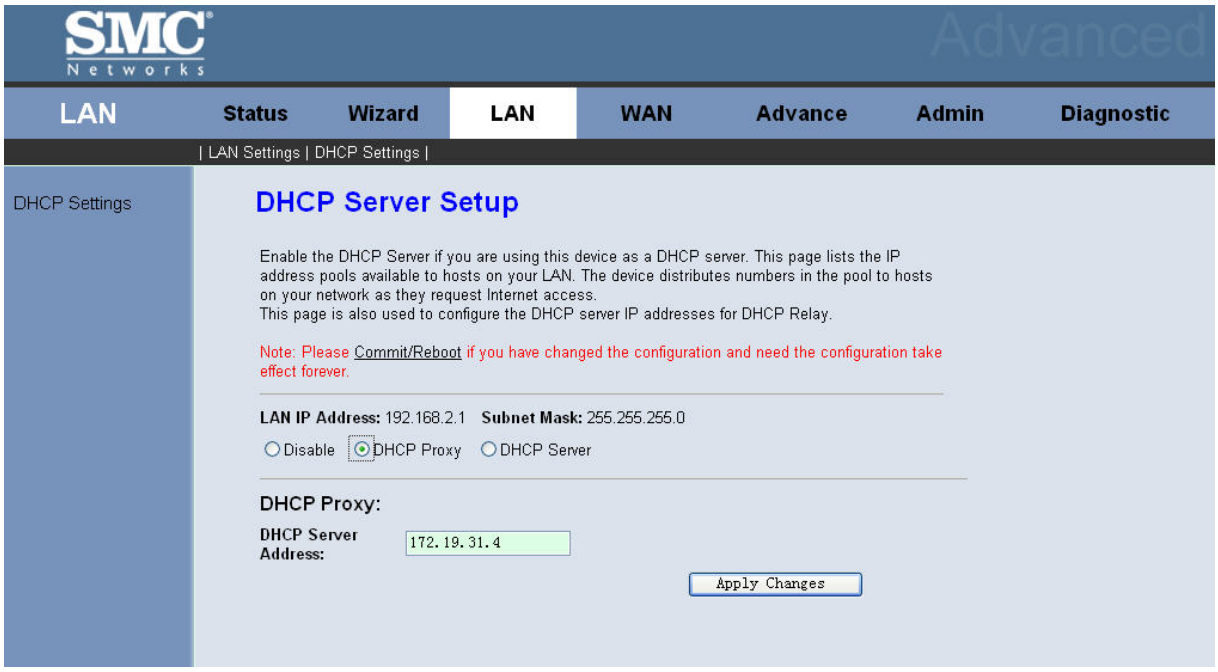


Fig 3.4.2-2

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 responses 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.<br>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.

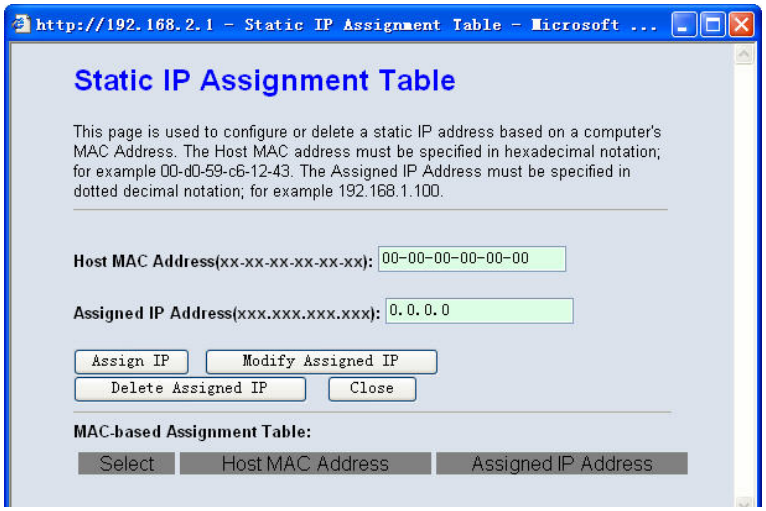


Fig 3.4.2-5

The following table describes the fields of this screen.

| Label | Description |
|---|---|
| Host MAC Address | Enter the MAC address of a computer on your LAN |
| Assigned IP Address | Display the IP of the IP address pool. |

| Label | Description |
|---|---|
| Assign IP | Click this button after entered **Host MAC Address** and **Assigned IP Address**, a row is added in **MAC-Base Assignment Table**. |
| Modify Assigned IP | Select a row in **MAC-Base Assignment Table**, the MAC address and IP address display **Host MAC Address** and **Assigned IP Address.** After modified the MAC Address and IP Address, click this button to save the changes. |
| Delete Assigned IP | Select a row in **MAC-Base Assignment Table** and click this button, this row is deleted. |
| Close | Click this button to close this window. |
| MAC-Base Assignment Table | Show the assigned IP address based on the MAC address. |

# 3.5 WAN

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

## 3.5.1 WAN Interface

Click **WAN Interface** in the sub-menu to open the screen of Fig 3.5.1-1. In this page, you can configure WAN Interface of your router.

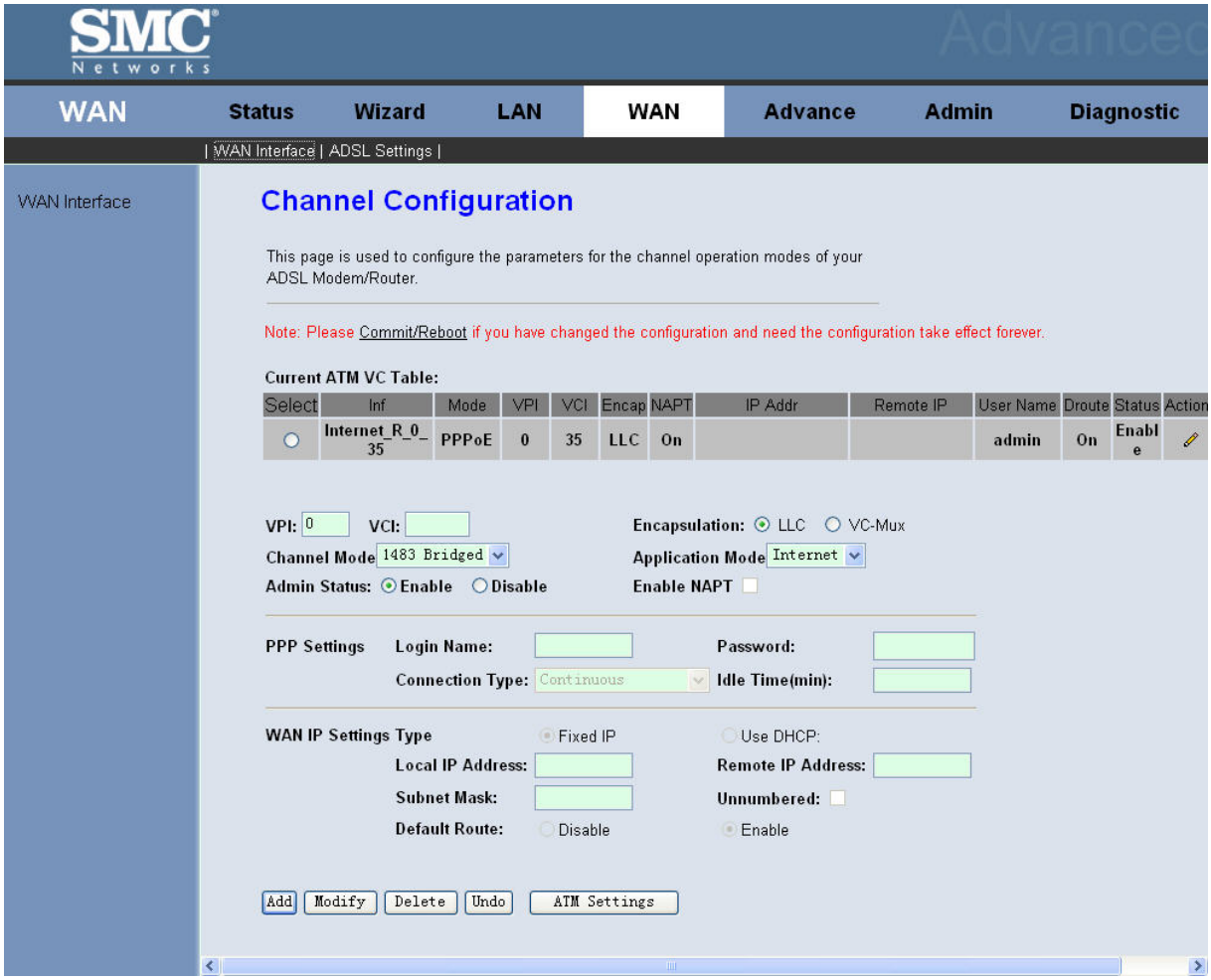


Fig 3.5.1-1

| 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 is unavailable. |
| 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 fails. 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 **Continuous**, **Connect on Demand** and **Manual**. |
| Idle Time (min) | If select **Connect on Demand**, you need to input the idle timeout time. Within the preset minutes, if the Modem does not detect the flow of the user continuously, the Modem automatically disconnects the PPPOE connection. |

| Label | Description |
|---|---|
| WAN IP Settings | |
| Type | The choices are **Fixed IP** and **Use DHCP**. If set **Fixed IP**, you should enter the **Local IP Address**, **Remote IP Address** and **Subnet Mask**. If set **Use DHCP**, your Modem is a DHCP client, the WAN IP is 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 **Local IP Address**. |
| 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 is added into **Current ATM VC Table**. |
| Modify | Select a PVC in the **Current ATM VC Table**, and 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 **Current ATM VC Table**, and 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 3.5.1-3 appears. In this page, you can configure the QoS mode of ATM PVCs. For details, see the following pages. |
|  | Click this button, the following screens appears. In the page, you can modify the parameters of PVCs. |

If the PVC uses PPPoE mode, click  , the Fig 3.5.1-2 appears. In this page, you can configure the parameters of this PPPoE PVC.


Fig 3.5.1-2

ATM Setting: Click **ATM Setting** button in Fig3.5.1-1, the screen of Fig 3.5.1-3 appears. In this page, you can configure the parameters of the ATM for your ADSL router, including QoS type, PCR, CDVT, SCR and MBS.

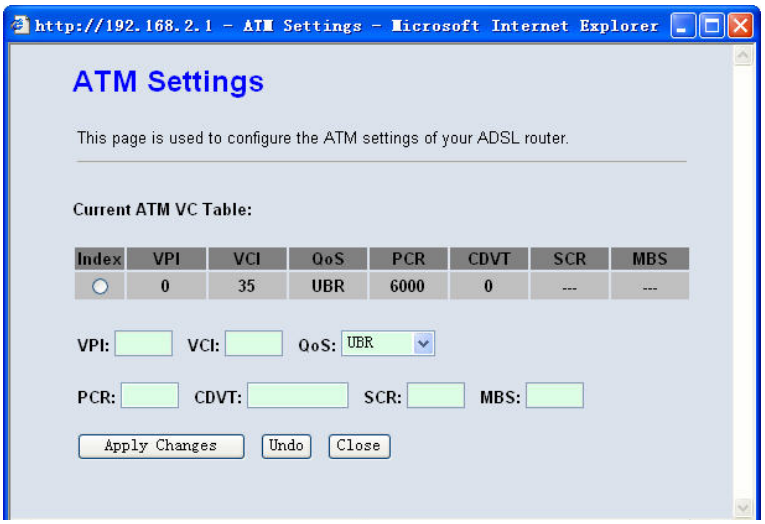


Fig 3.5.1-3

## 3.5.2 ADSL Settings

Click **ADSL Interface** in the sub-menu to open the screen of Fig 3.5.2. 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 negotiates the modulation mode with the DSLAM.

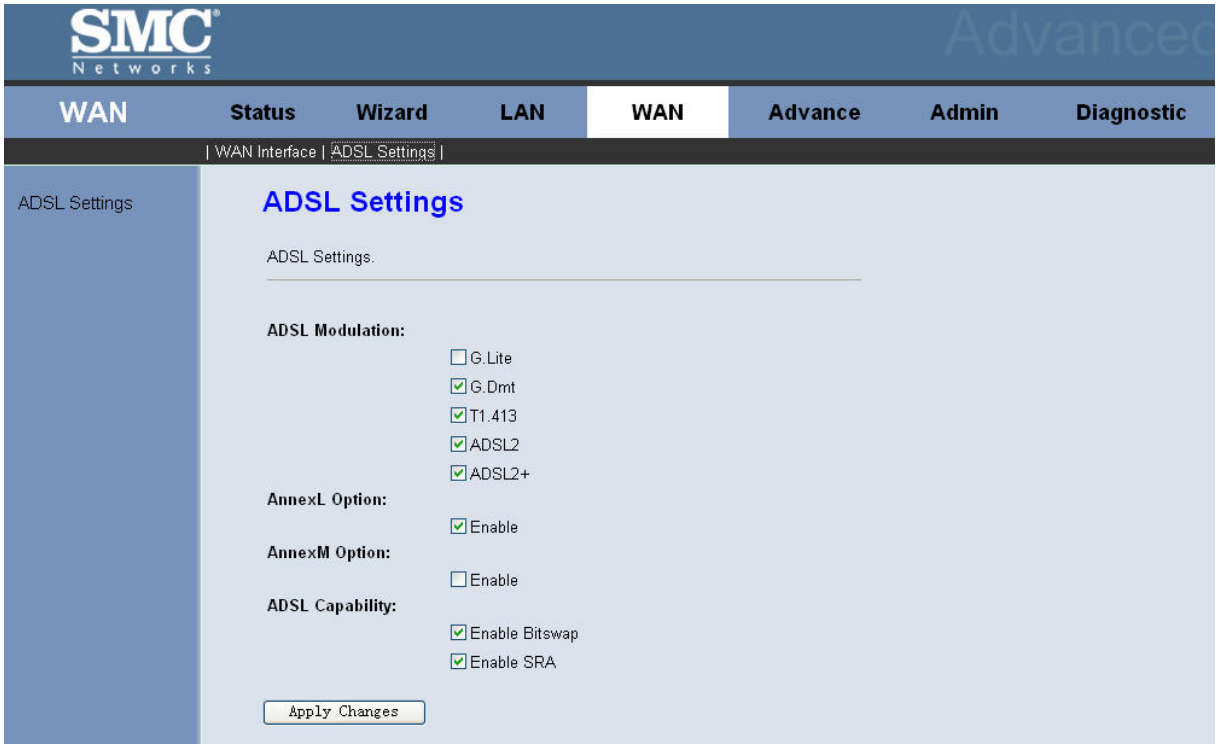


Fig 3.5.2

# 3.6 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**.

## 3.6.1 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 are 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 does not 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 3.6.1.

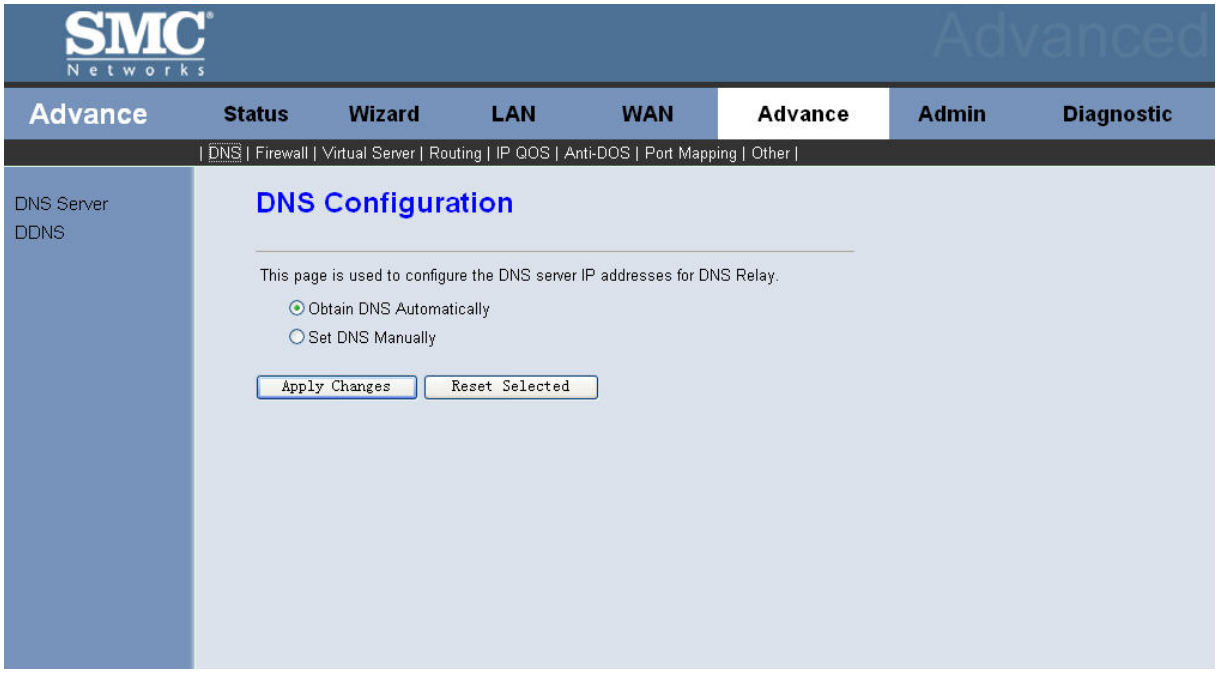


Fig 3.6.1

| Label | Description |
|---|---|
| Obtain DNS Automatically | When this checkbox is selected, this router accepts 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. |

## 3.6.2 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**.

### 3.6.2.1. IP/Port Filter

Click **IP/Port Filter** in the left bar to open the screen of Fig 3.6.2.1. 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.

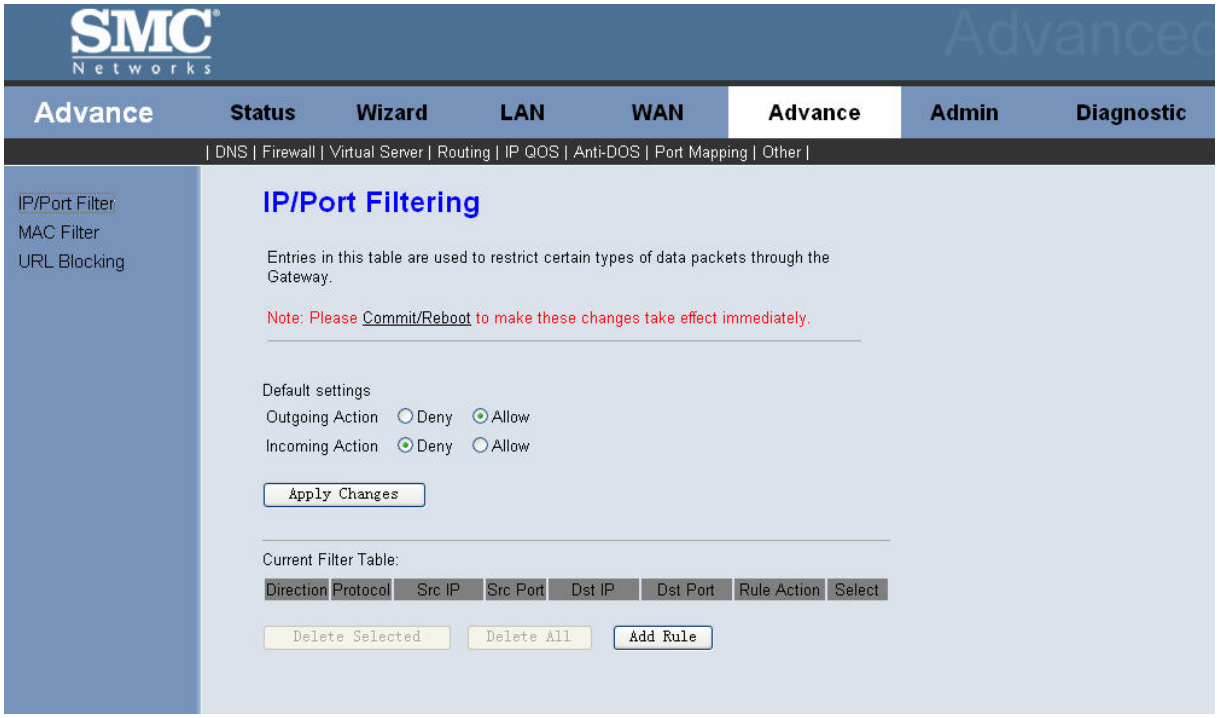


Fig 3.6.2.1

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

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

### 3.6.2.2. MAC Filter

Click **MAC Filter** in the left bar to open the screen of Fig 3.6.2.2. 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.

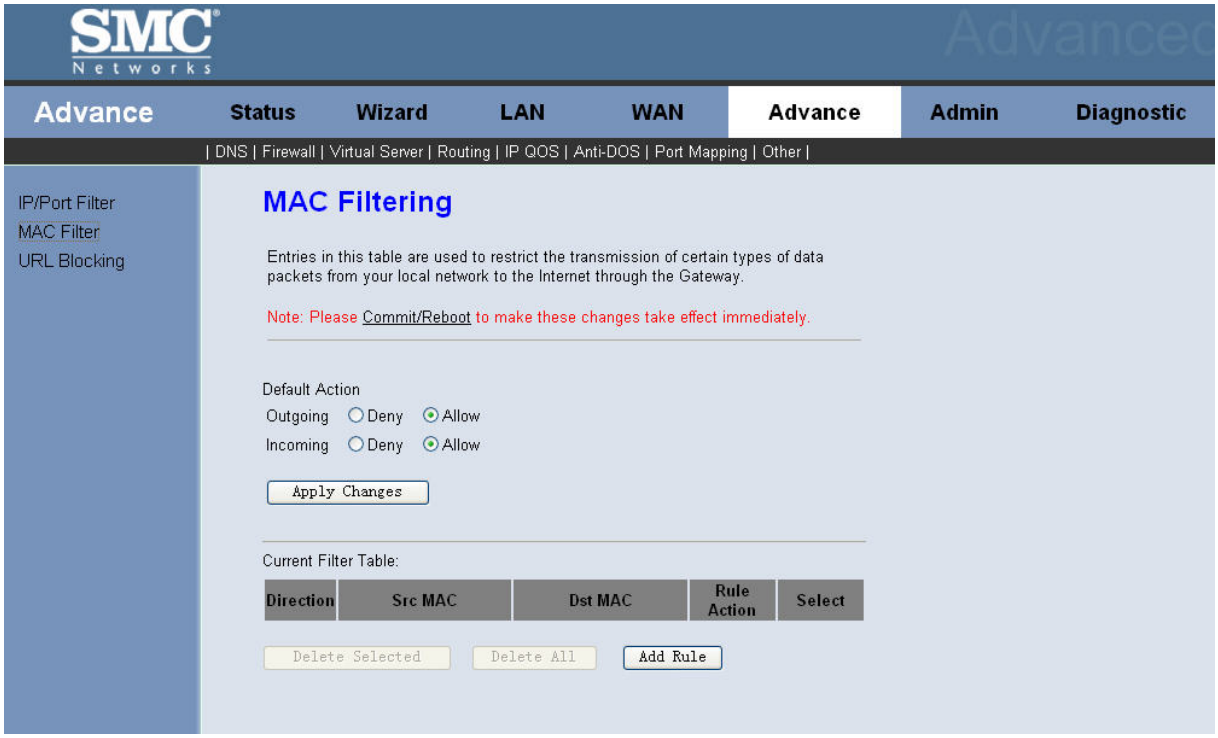


Fig 3.6.2.2

### 3.6.2.3. URL Blocking

Click **URL Blocking** in the left bar to open the screen of Fig 3.6.2.3. 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.

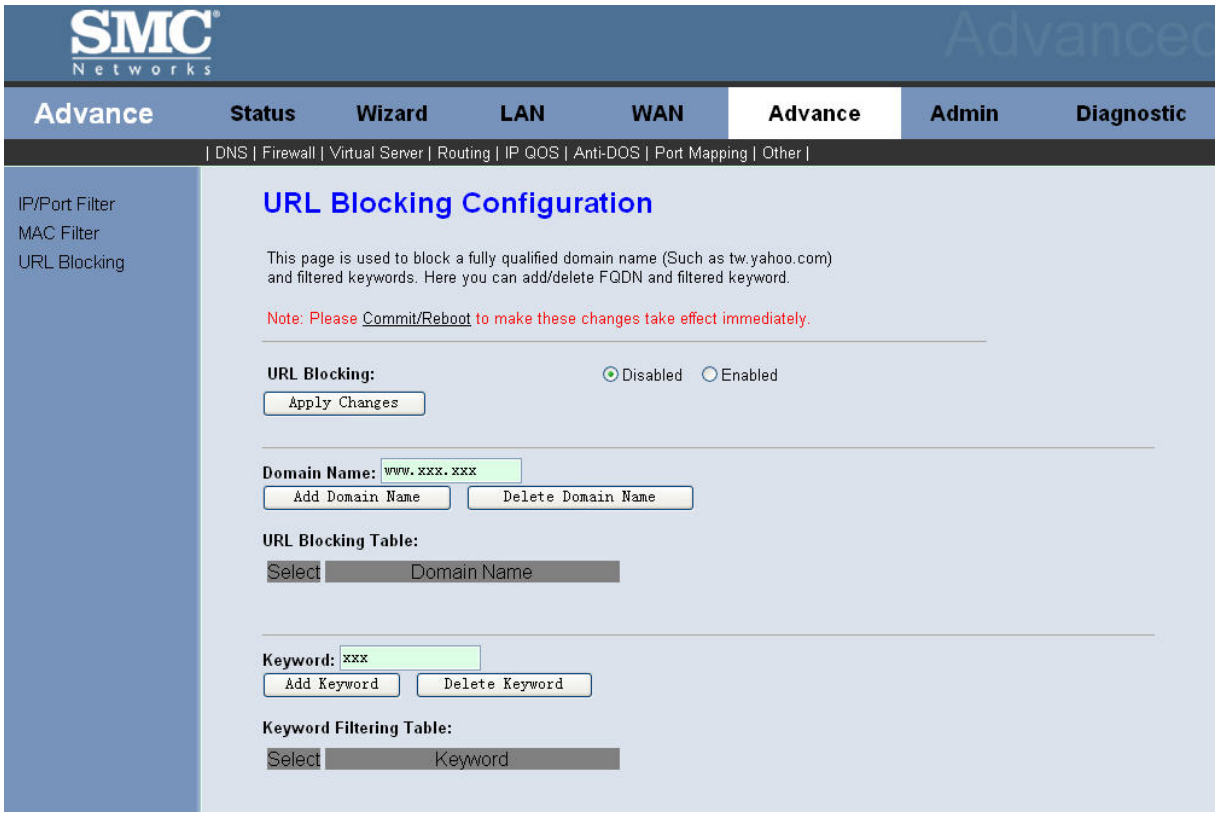

Fig 3.6.2.3

## 3.6.3 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**.

### 3.6.3.1. Services

Click **Services** in the left bar to open the screen of Fig 3.6.3.1. This page is used to enable the servers in the local network.

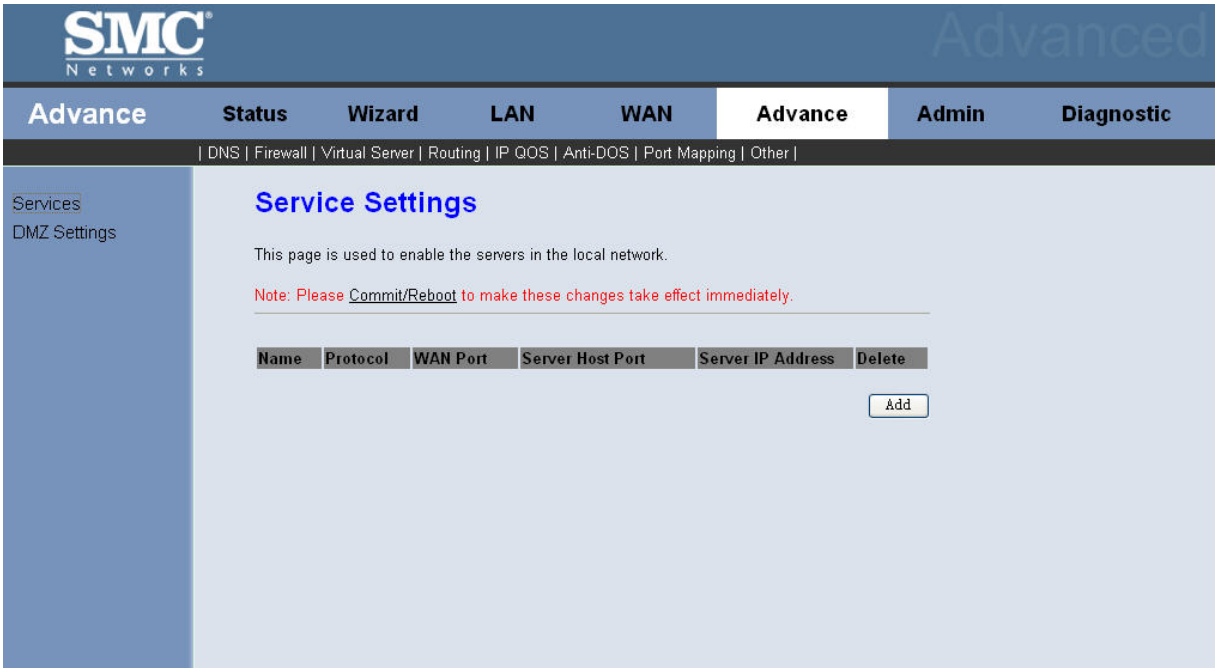


Fig 3.6.3.1

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

### 3.6.3.2. DMZ Settings

Click **DMZ Settings** in the left bar to open the screen of Fig 3.6.3.2. 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.

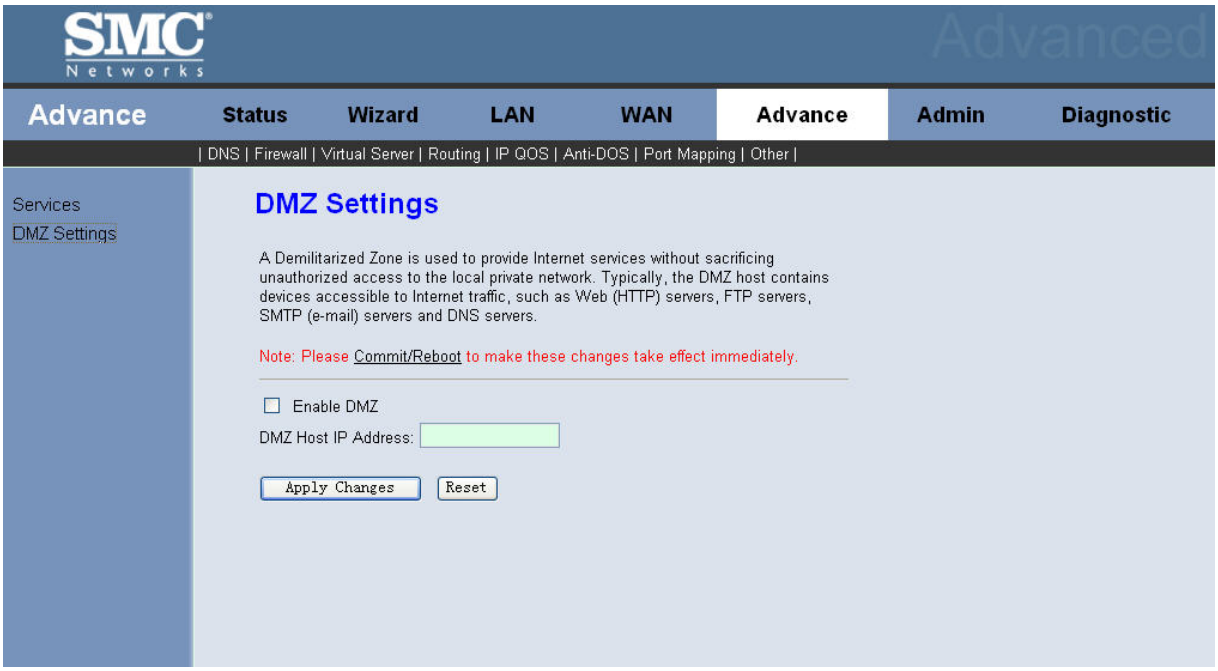


Fig 3.6.3.2

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.

## 3.6.4 Routing

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

### 3.6.4.1. RIP

Click **RIP** in the left bar to open the screen of Fig 3.6.4.1. 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.

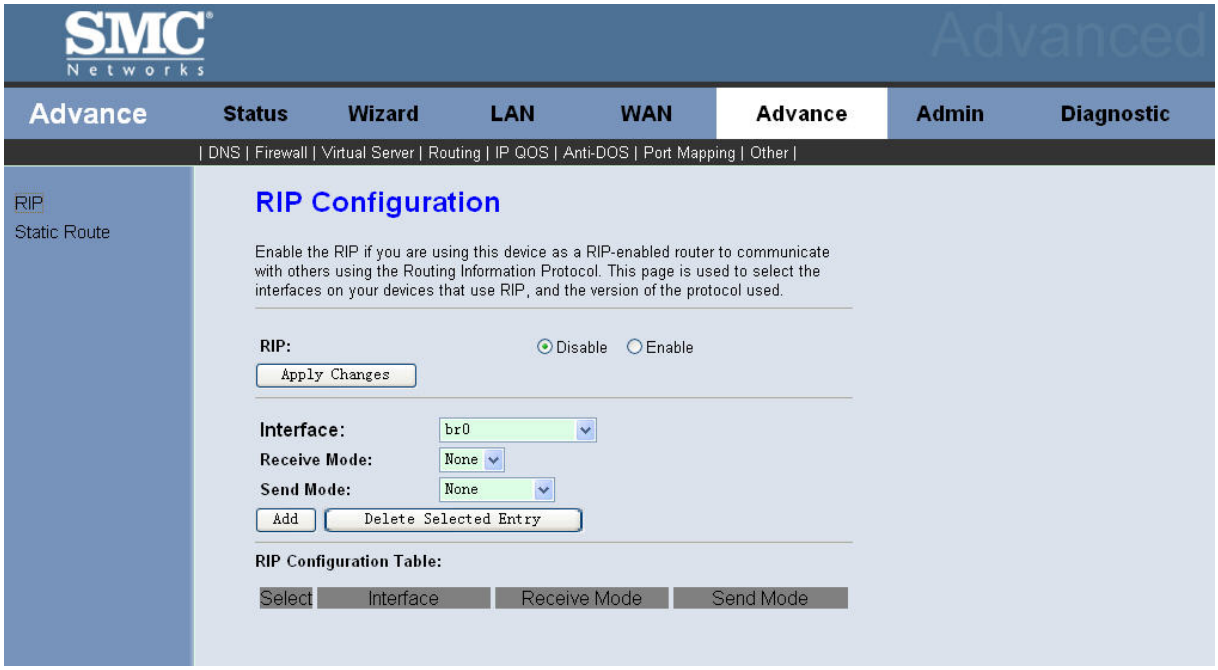


Fig 3.6.4.1

### 3.6.4.2. Static Route

Click **Static Route** in the left bar to open the screen of Fig 3.6.4.2-1. This page is used to configure the routing information. Here you can add/delete IP routes.

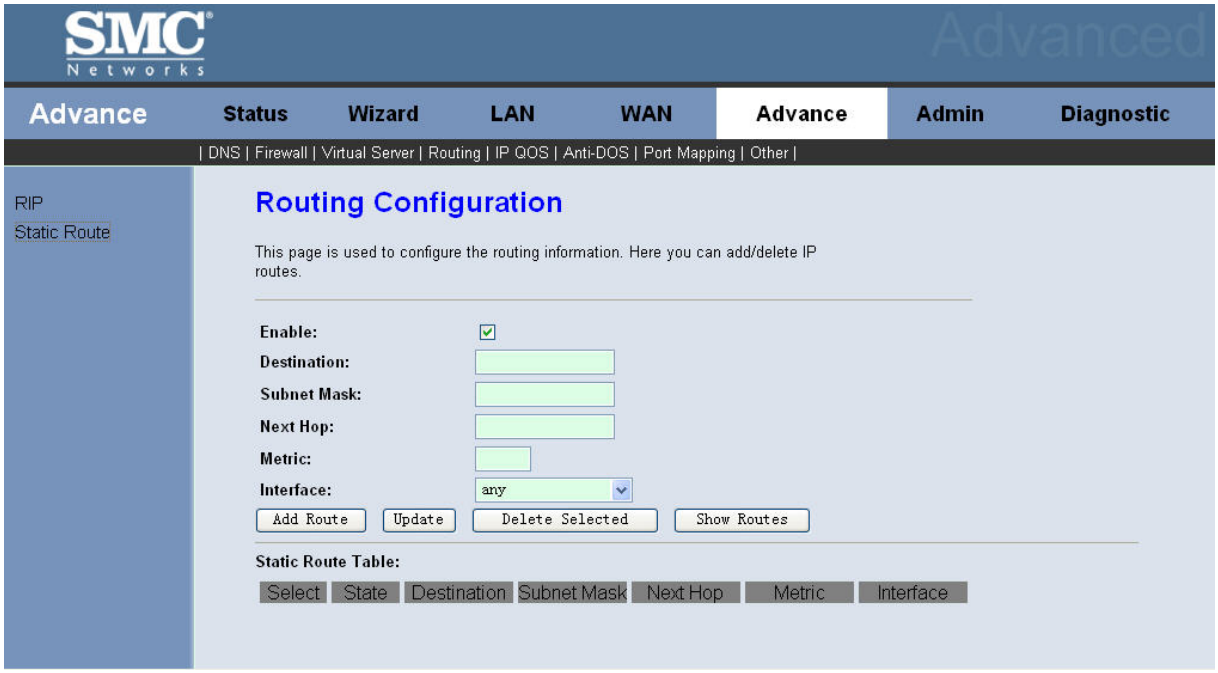


Fig 3.6.4.2-1

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

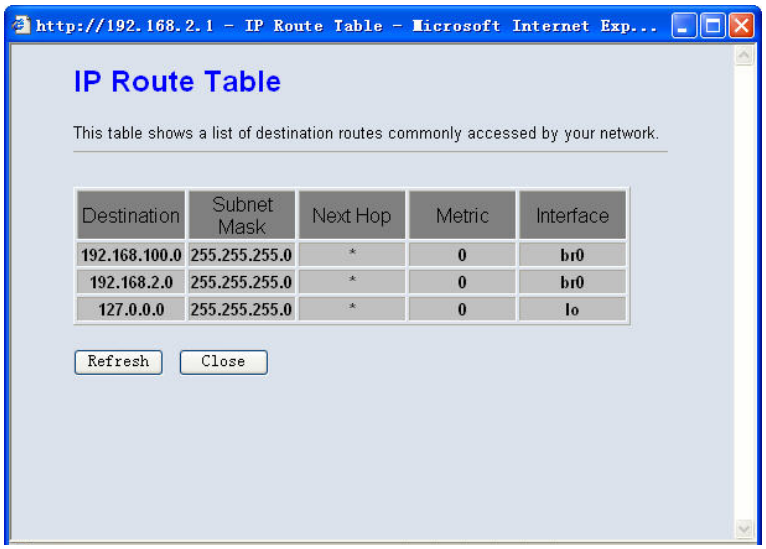


Fig 3.6.4.2-2

## 3.6.5 IP QoS

Click **IP QoS** in the sub-menu to open the screen of Fig 3.6.5. 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 3.6.5

## 3.6.6 Anti-DOS

Click **Anti-DOS** in the sub-menu to open the screen of Fig 3.6.6.

DoS Attack (denial-of-service attack) is 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.


Fig 3.6.6

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

## 3.6.7 Port Mapping

Click **Port Mapping** in the sub-menu to open the screen of Fig 3.6.7. In this page, you can bind the WAN interface and the LAN interface to the same group.

To manipulate a mapping group:

1. Select a group from the table.

2. Select interfaces from the WAN and LAN interface list and add them to the grouped interface list using the arrow buttons to manipulate the required mapping of the ports.

3. Click "Apply Changes" button to save the changes.

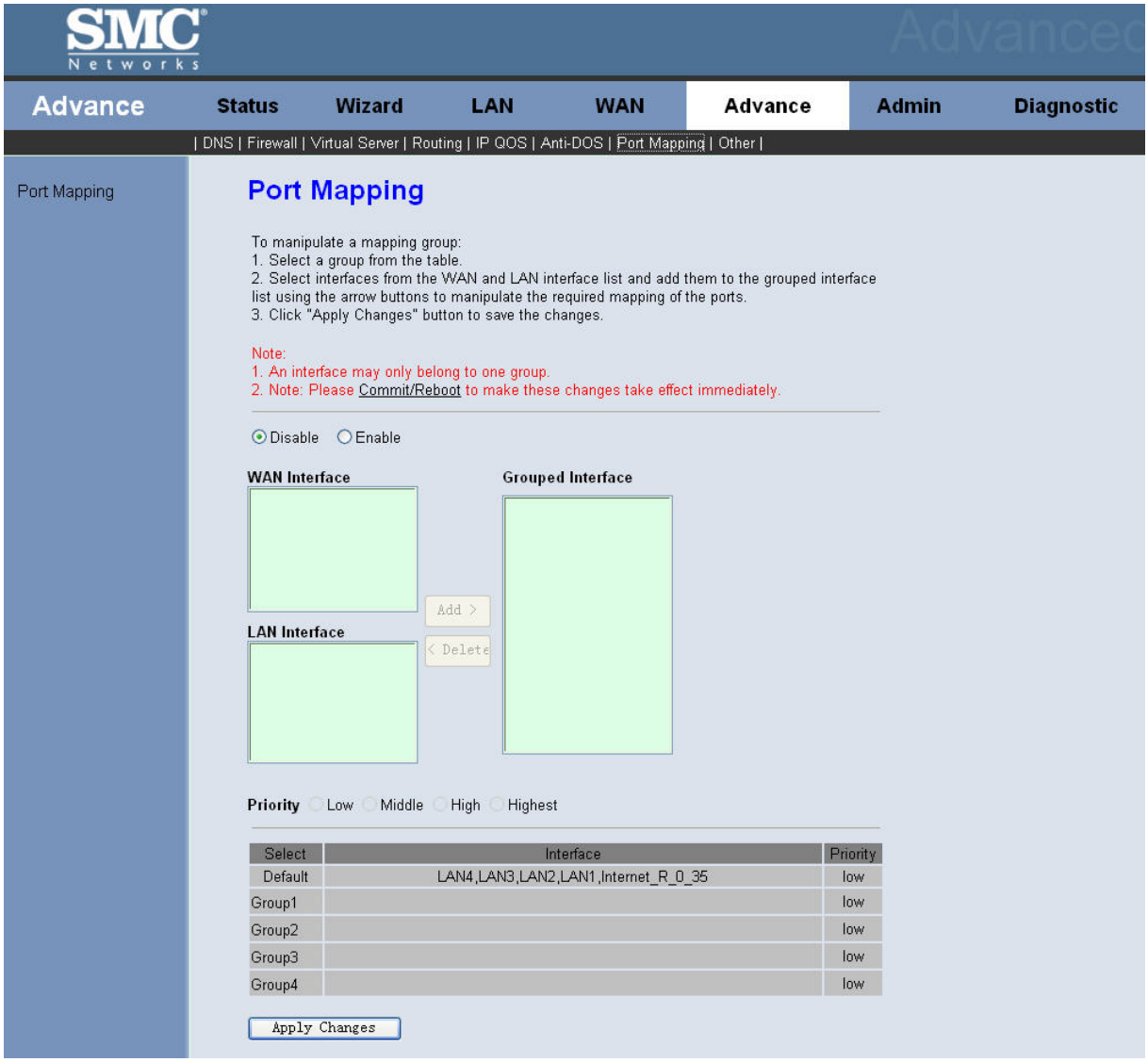


Fig 3.6.7

## 3.6.8 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.**

### 3.6.8.1. IGMP Proxy

Click **IGMP Proxy** in the left bar to open the screen of Fig 3.6.8.1. 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.

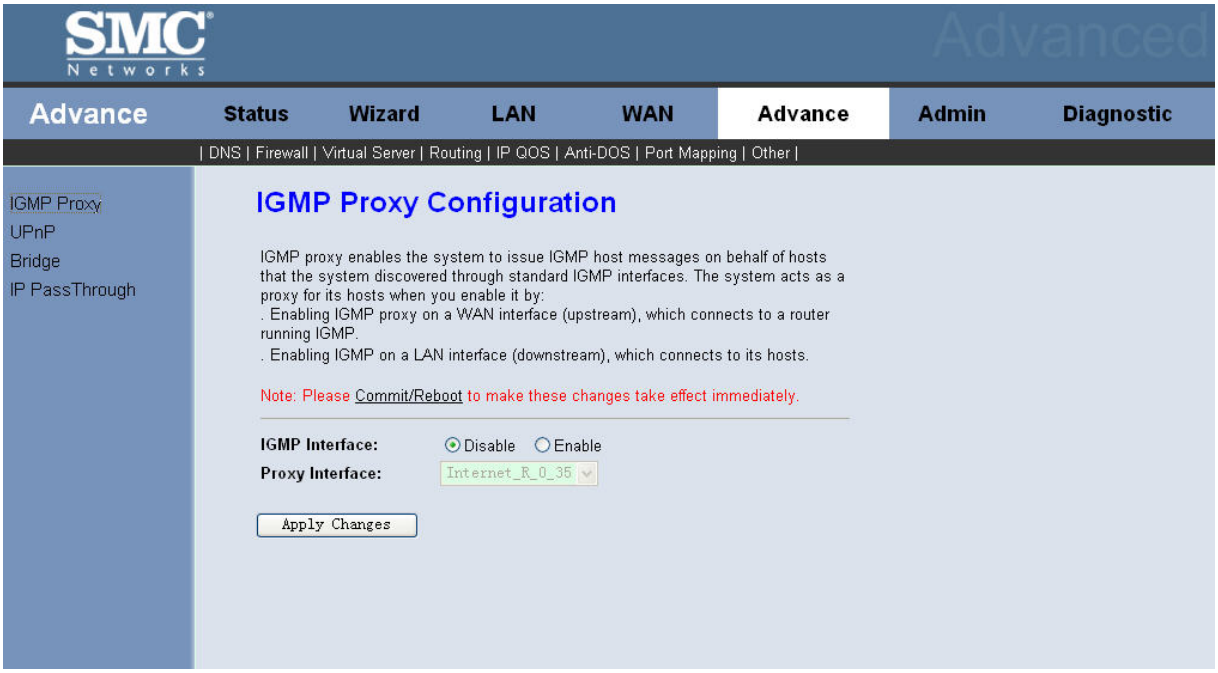


Fig 3.6.8.1

### 3.6.8.2. UPNP

Click **UPNP** in the left bar to open the screen of Fig 3.6.8.2. 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.

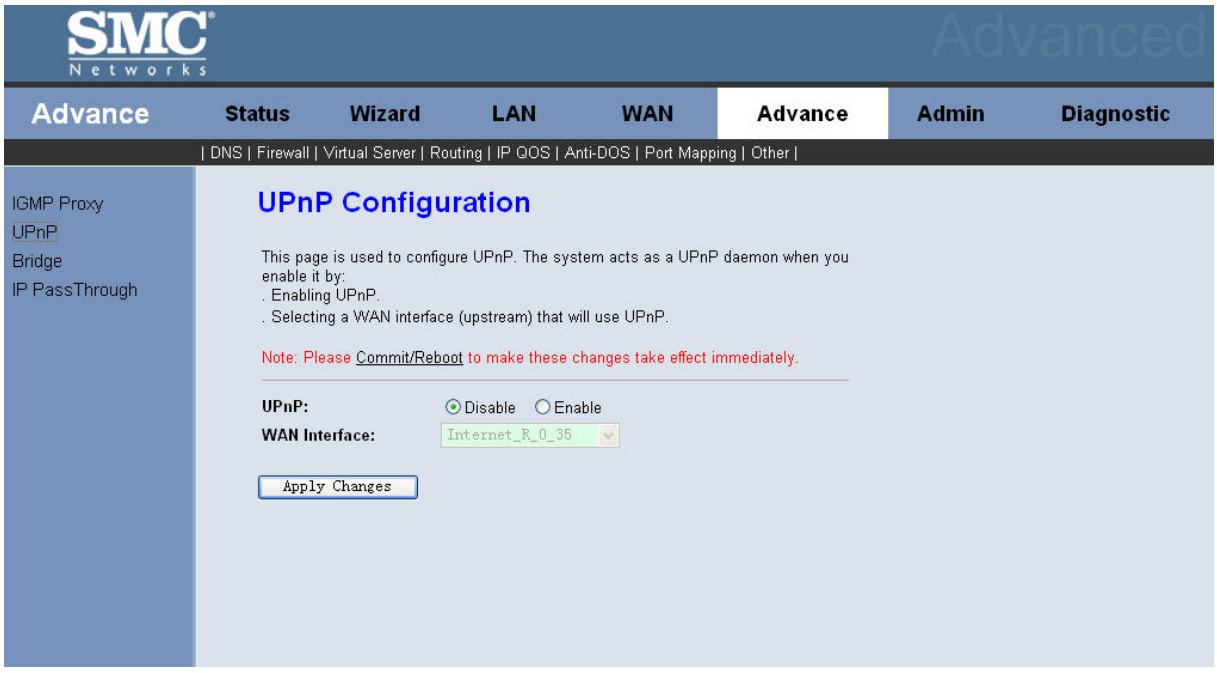


Fig 3.6.8.2

### 3.6.8.3. Bridge

Click **Bridge** in the left bar to open the screen of Fig 3.6.8.3-1. 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.

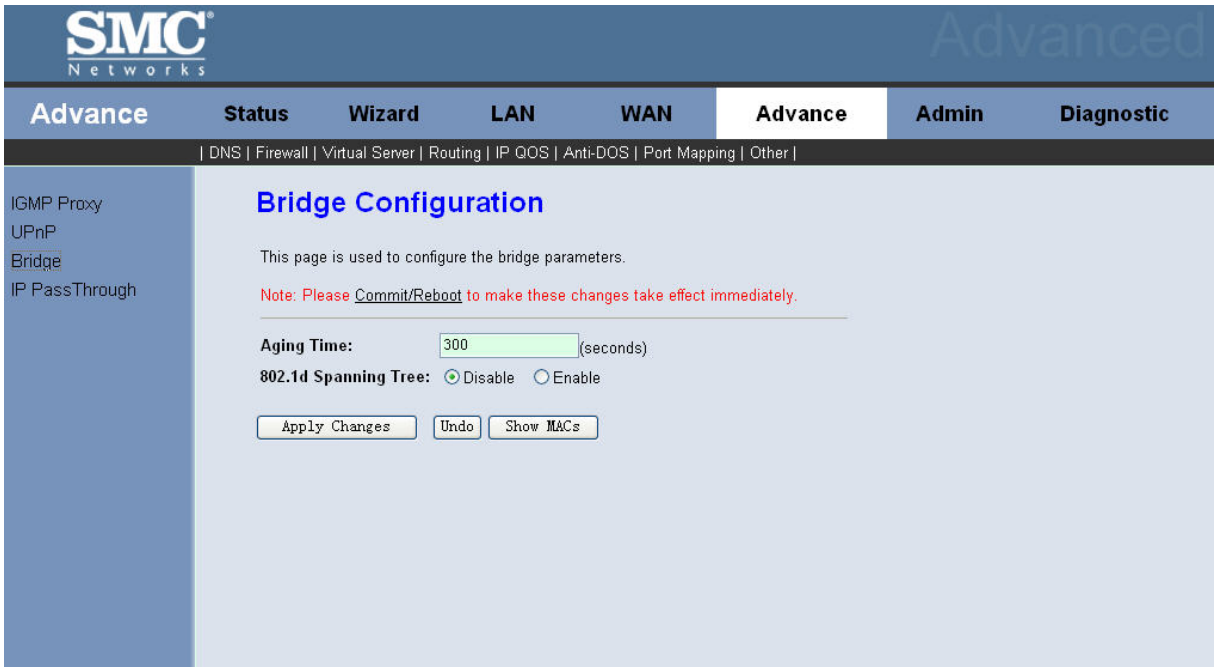


Fig 3.6.8.3-1

Click **Show MACs** button in Fig 3.6.8.3-1, the below window appears. This table shows a list of learned MAC addresses for this bridge.

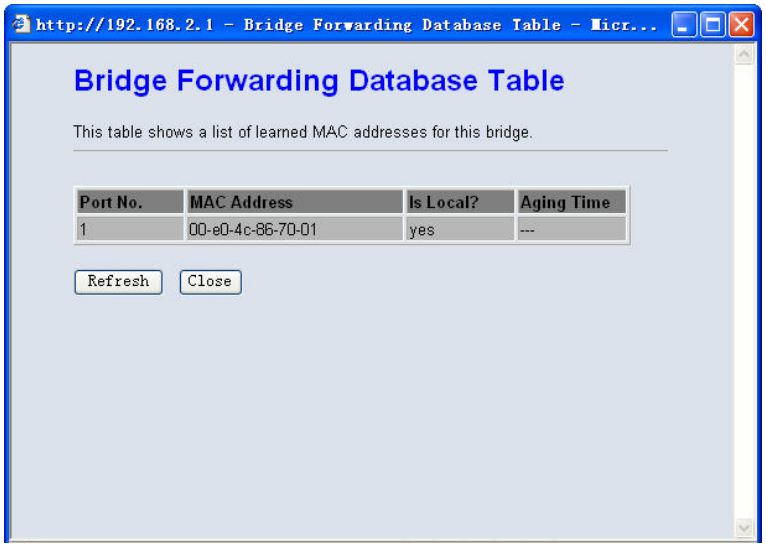


Fig 3.6.8.3-2

### 3.6.8.4. IP PassThrough

Click **IP PassThrough** in the left bar to open the screen of Fig 3.6.8.4. The IP PassThrough has the other name ZIPB or IP Extension. In this page, you can enable and configure IP PassThrough function.

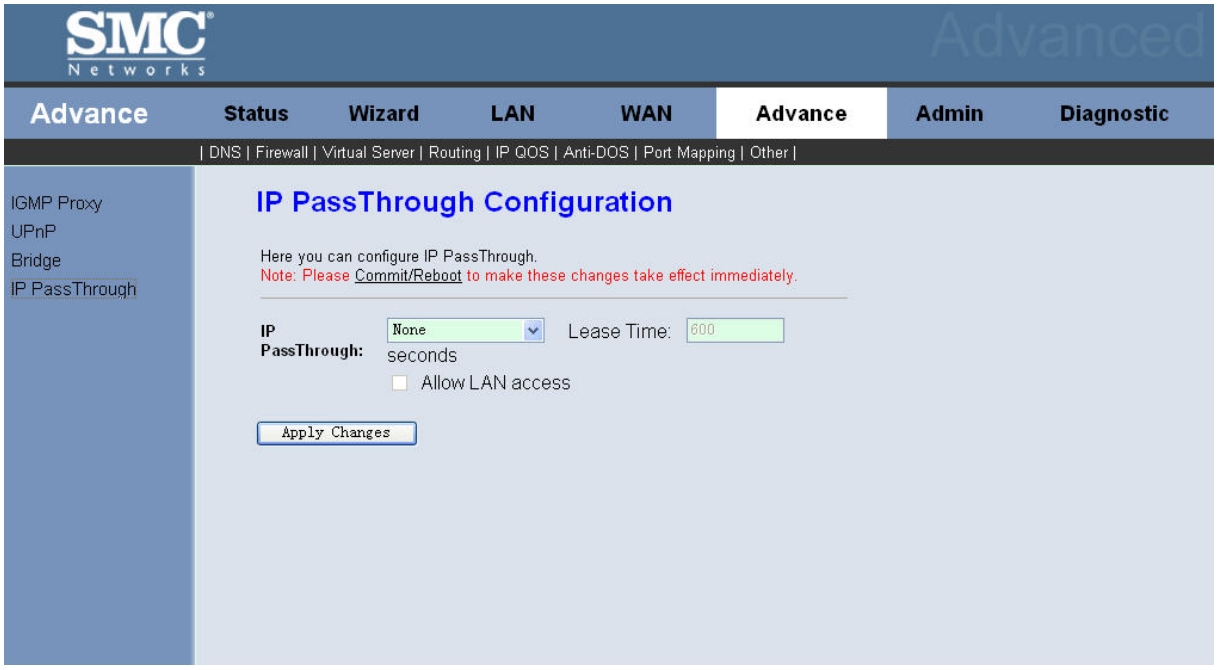


Fig 3.6.8.4

# 3.7 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**.

## 3.7.1 Remote Access

Click **Remote Access** in the sub-menu to open the screen of Fig 3.7.1. In this page, you can enable or disable the services which are used by the 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.

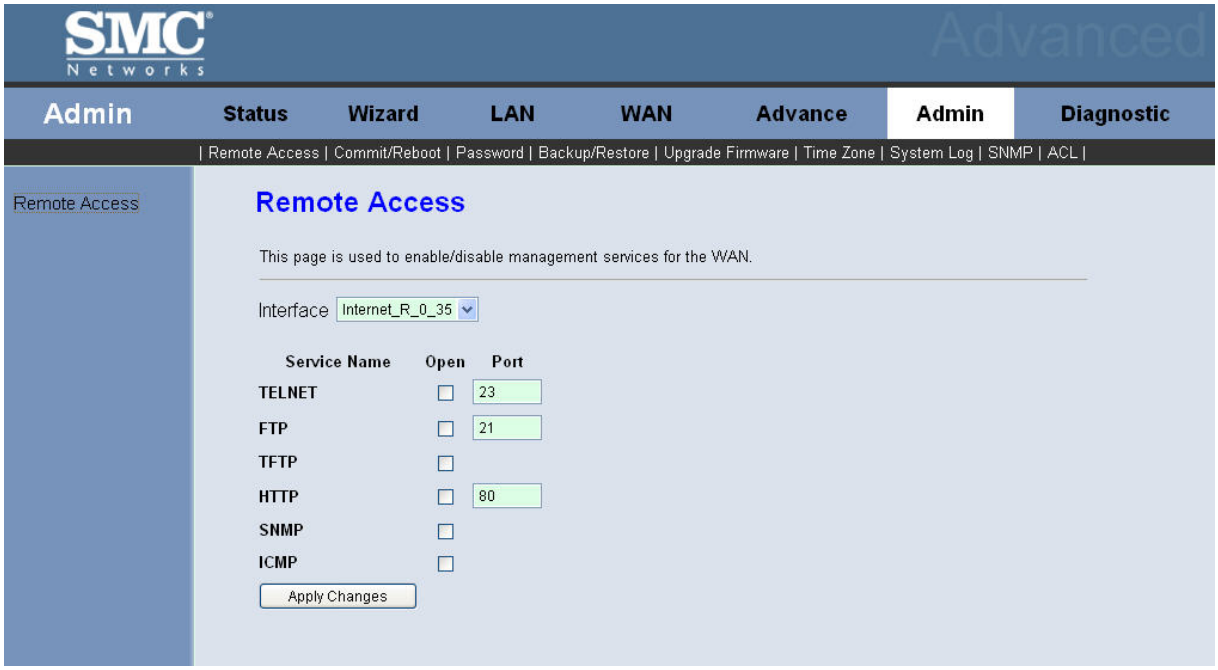


Fig 3.7.1

## 3.7.2 Commit/Reboot

Click **Commit/Reboot** in the sub-menu to open the screen of Fig 3.7.2. In this page, you can set the router reboot to default settings or set the router save the current settings then reboot.

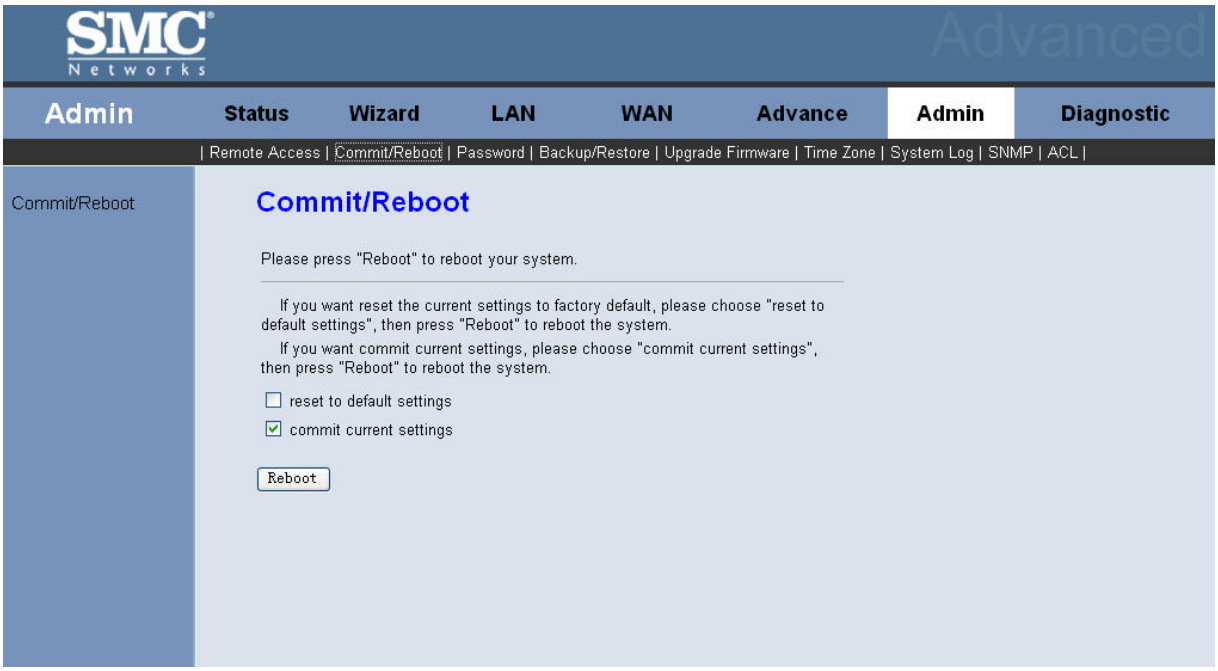


Fig 3.7.2

| 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. |

## 3.7.3 Password

Click **Login Password** in the sub-menu to open the screen of Fig 3.7.3. 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 common user name and password are user/user.


Fig 3.7.3

| Label | Description |
|---|---|
| User Name | Select the user name in the drop-down list box. The choices are **admin** and **user**. |
| 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. |

## 3.7.4 Backup/Restore

Click **Backup/Restore** in the sub-menu to open the screen of Fig 3.7.4. 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.

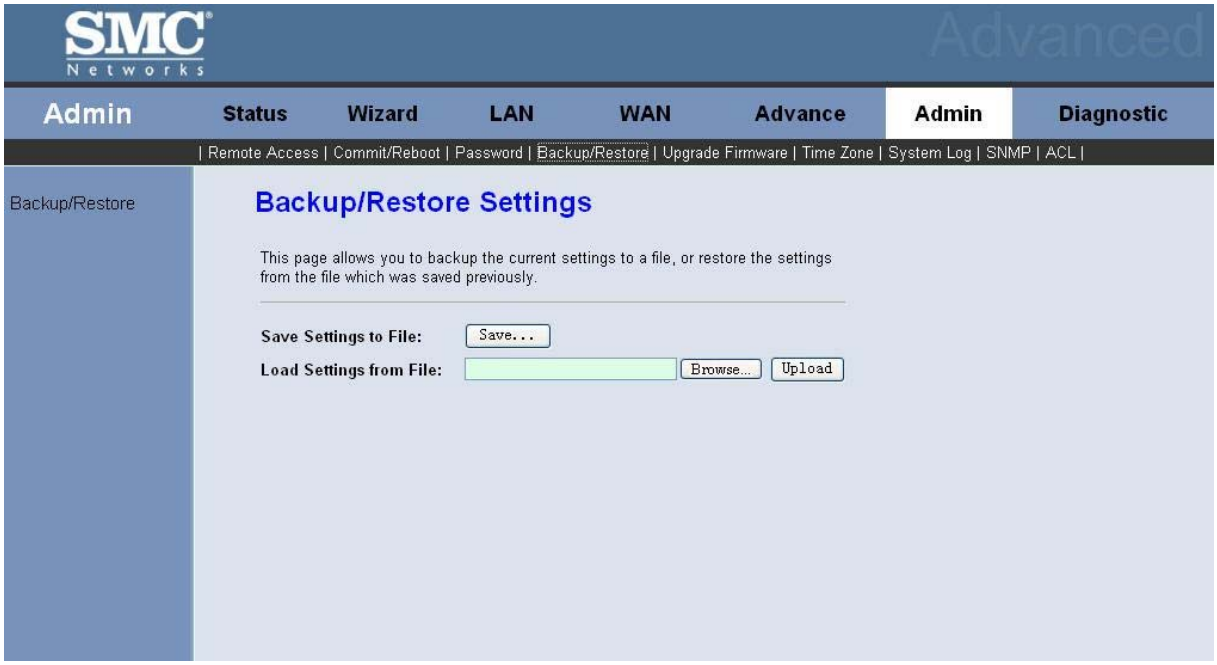


Fig 3.7.4

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

## 3.7.5 Upgrade Firmware

Click **Upgrade Firmware** in the sub-menu to open the screen of Fig 3.7.5. 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 3.7.5

| Label | Description |
|---|---|
| Select File | Click the **Browse** button to select the Firmware file. |
| Upload | Selected the Firmware file, click **Upload** button to begin upgrading the Firmware. |
| Reset | Click this button to begin selecting the Firmware file afresh. |

## 3.7.6 Time Zone

Click **Time Zone** in the sub-menu to open the screen of Fig 3.7.6. In this page, you can set the system time manually or get the system time from the time server.

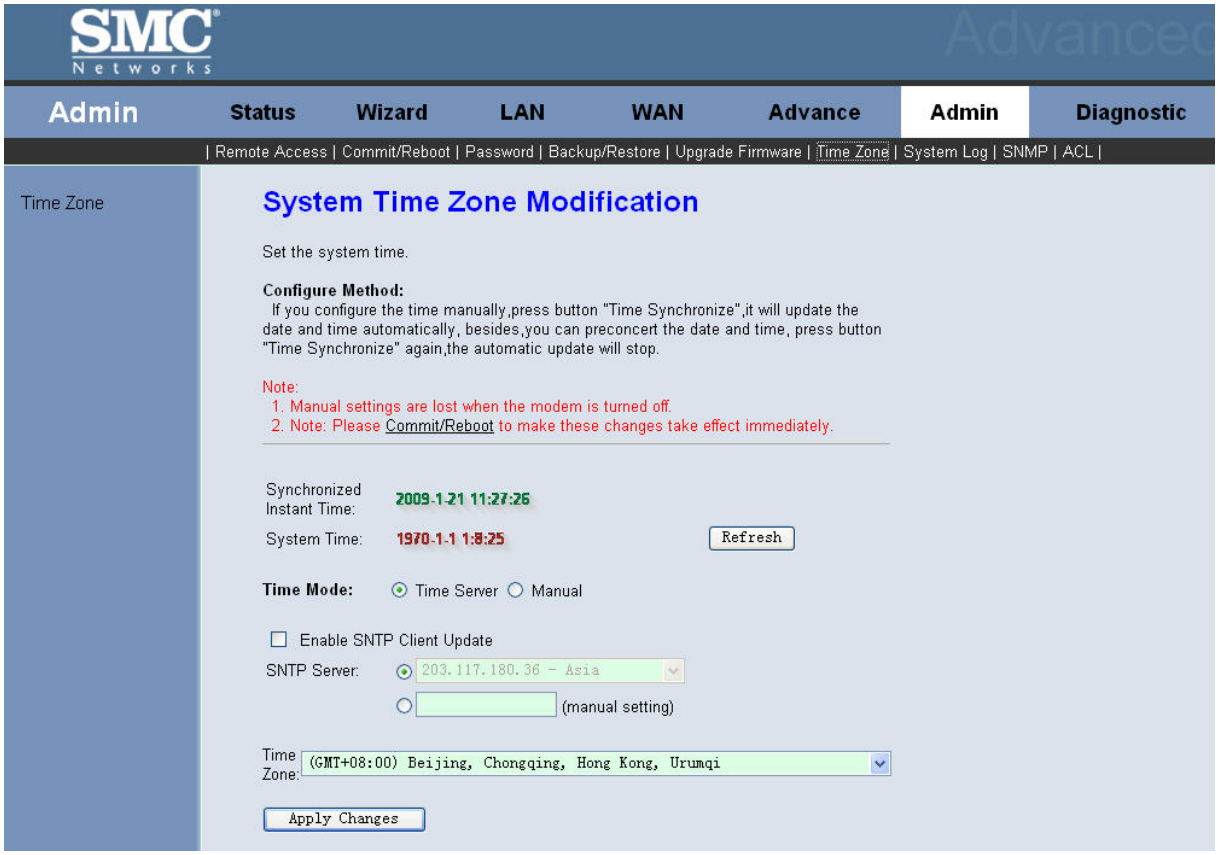


Fig 3.7.6

| Label | Description |
|---|---|
| Refresh | Click this button to refresh the system shown in the page. |
| Time Mode | If select Time Server, the router obtains 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. |

## 3.7.7 System Log

Click **System Log** in the sub-menu to open the screen of Fig 3.7.7. In this page, you can enable or disabled the System log function, view the system log.

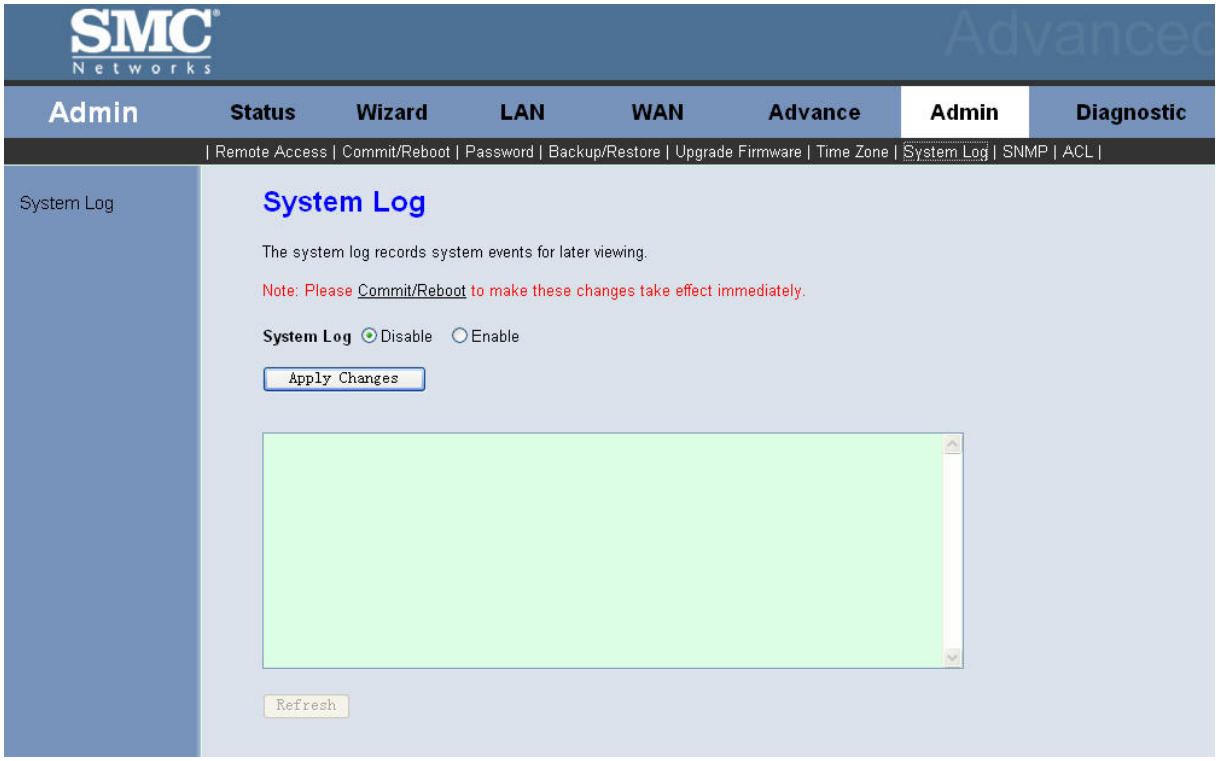


Fig 3.7.7

| 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 text field. |

## 3.7.8 SNMP

Click **SNMP** in the sub-menu to open the screen of Fig 3.7.8. In this page, you can set the SNMP parameters.

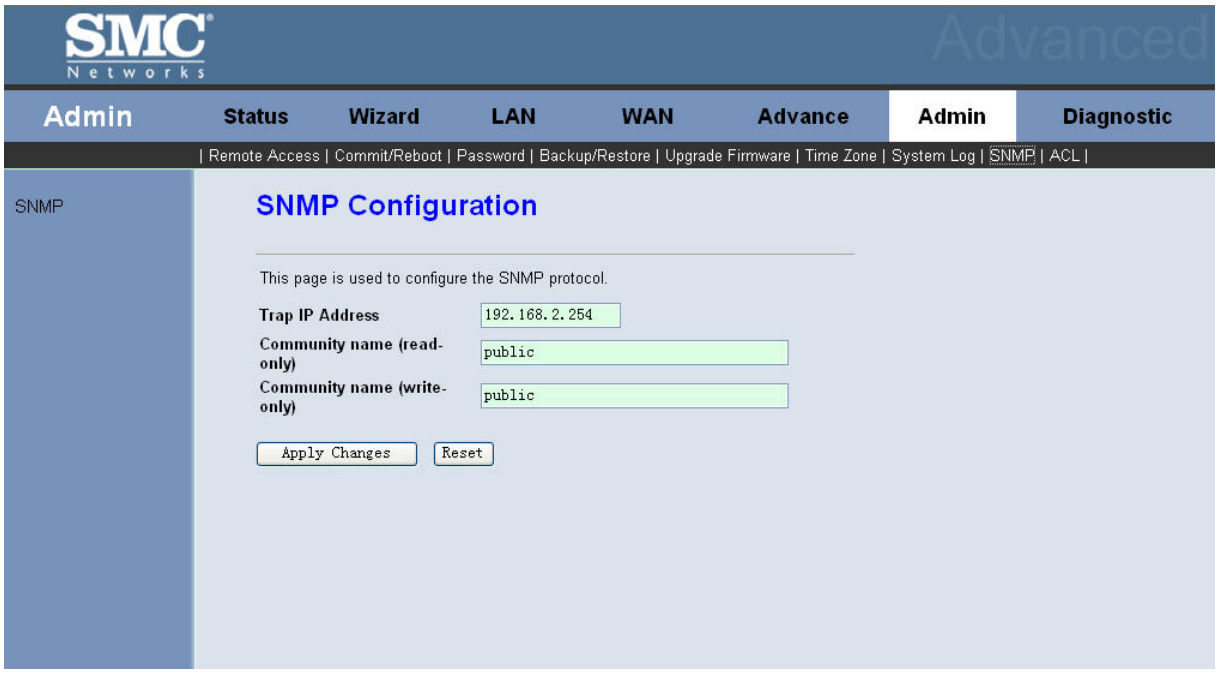


Fig 3.7.8

| Label | Description |
|---|---|
| Trap IP Address | Enter the IP address of the trap host. The trap information is 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. |

## 3.7.9 ACL

Click **ACL** in the sub-menu to open the screen of Fig 3.7.10. 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.


Fig 3.7.10

Step 1: If you want to enable ACL, select "Enable" and click "Apply Changes".

Step 2: Configure Access Control List.

Step 3: Click "Apply Changes" 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

# 3.8 Diagnostic

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

## 3.8.1 Ping

Click **Ping** in the sub-menu to open the screen of Fig 3.8.1.


Fig 3.8.1

| Label | Description |
|---|---|
| Host Address | Enter the IP Address here. |
| Send | Click this button to begin to Ping the **Host Address**. |

## 3.8.2 ATM Loopback

Click **ATM Loopback** in the sub-menu to open the screen of Fig 3.8.2. In this page, you can use VCC loopback function to check the connectivity of the VCC.

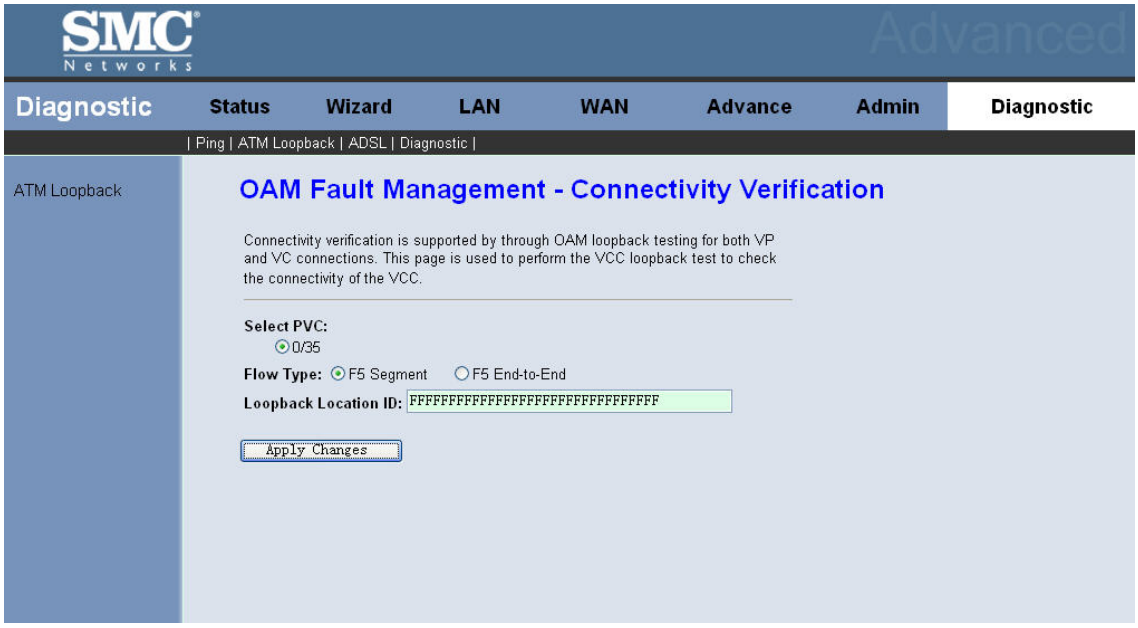


Fig 3.8.2

Apply Changes: Click this button to begin testing.

## 3.8.3 ADSL

Click **ADSL** in the sub-menu to open the screen of Fig 3.8.3. This page is used for ADSL Tone Diagnostics.


Fig 3.8.3

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

## 3.8.4 Diagnostic

Click **Diagnostic** in the sub-menu to open the screen of Fig 3.8.4. This page is used for testing your DSL connection.


Fig 3.8.4

Run Diagnostic Test: Click this button to begin testing.

# Appendix A

## Questions & Answers

This section describes common problems you may encounter and possible solutions to them. The Barricade can be easily monitored through panel indicators to identify problems.

**1. Question: Why all LED indicators are off?**

Answer:

- Check the connection between the power adaptor and the power socket
- Check the power switch is on or not

**2. Question: Why LAN LED is not lighting?**

Answer:

- Check the connection between the ADSL modem and your computer or Hub/Switch
- Check your PC or Hub/Switch running status and make sure them are working normally.

**3. Question: Why ADSL LED is not lighting?**

Answer: Check the connection between the ADSL “line” port and the wall jack.

**4. Question: Why cannot visit Internet with ADSL LED is on?**

Answer: Make sure following information has been input correctly:

VPI/VCI

User/password.

**5. Question: Why cannot open the Modem configuring web page?**

Answer:

Follow below steps to check the communication between the computer and Modem:

Click start -> run (input ping demands)-> Ping 192.168.2.1 (MODEM IP address).

If cannot reach the modem, please check following configuration:

- The type of the network cable
- The connection between the modem and computer
- You computer's TCP/IP configuration

6. **Question: How to load the default setting after incorrect configuration?**

Answer:

Press "reset" button 5s-10s to load the default configuration. The modem's default IP address: 192.168.2.1/255.255.255.0,

Username/password: admin/smcadmin

# Appendix B

# Technical Specifications

## External Connectors

- 1 push power switch
- 1 DC power jack
- 1 factory reset button
- 4 LAN 10/100M Auto MDI/MDIX RJ45 ports
- 1 WAN RJ11 DSL port

## Protocol Feature

### Bridging/Routing

- RFC 1483 Bridge
- IEEE 802.1D transparent bridging
- Bridge Filtering
- RFC 1483 Router
- RIP 1 & 2 supported
- DHCP (RFC1541) Server, Relay
- Network Address Translation (NAT)/ Network Address Port Translation (NAPT)
- DNS relay
- IGMP v1 and v2

### Encapsulation

- RFC 1483 router/bridge
- PPPoA
- PPPoE
- MER

## ADSL Feature

- Support ANSI T1.413 Issue2
- Support ITU G.992.1(G.dmt) Annex A
- Support ITU G.992.2 (G.lite) Annex A
- Support ITU G.992.3 ADSL2(G.dmt.bis) Annexs A, L, M
- Support ITU G.992.4 ADSL2(G.lite.bis)
- Support ITU G.992.5 ADSL2plus

## Ethernet Feature

- Fully compliant with IEEE802.3/802.3u auto-negotiation function
- Support 10base-T, 100base-TX
- Support half duplex, full duplex
- Support back pressure flow control for half duplex, IEEE802.3x flow control for full duplex
- Support MDI/MDIX auto cross

## Management Support

- Support WEB/TFTP mode which use as native and long-distance edition upgrade
- Support test estate of circuitry connect（Diagnostics）
- Support WEB interface setting
- Support Telnet CLI command line
- Support user setting the reset fuction：hardware resert or WEB interface mode
- Support configuration files backup and resume function
- Support LAN port IP address amend function
- Support System LOG function
- Support SNMP V1/V2C native and long-distance control（MIB Ⅱ RFC1213/ADSL line MIB RFC 2662 ATM MIB RFC 2515）
- Support SNTP enactment

## Security Support

- Support firewall function
- Support the passwords of two grades of users and can be revised
- Support and sign electronically the function (prevent the different kind of editions from upgrading each other)
- Support DOS (Denial of service) which detect & protect a number of attacks (such as SYN/FIN/RST Flood, Smurf, WinNuke, Echo Scan, Xmas Tree Scan)
- Packet filter based on IP and port
- Access control based on MAC
- PAP, CHAP authentication

## Environment

- Operating temperature: 0℃ to 40℃(32ºF to104ºF)
- Storage temperature: -20℃ to 70℃(-13ºF to131ºF)
- Operating humidity: 10%~85% Non-Condensing
- Storage humidity: 5%~95% Non-Condensing
- External adapter spec: Input: AC220V, 50Hz. Output:12V DC, 1000 mA(min)
- Dissipation： 7W (max)

# Appendix C

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