GWAR3550
User Manual

Contents

1 Introduction

The ADSL Router supports multiple line modes. It provides four 10/100 base-T Ethernet interfaces at the user end. The device provides high-speed ADSL broadband connection to the Internet or Intranet for high-end users, such as net bars and office users. The device provides high performance access to the Internet, downlink up to 24 Mbps and uplink up to 1 Mbps.

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

1.1 Package List

- 1 x ADSL Router
- 1 x external splitter
- 1 x power adapter
- 2 x telephone cables (RJ11)
- 1 x Ethernet cable (RJ45)
- 1 x CD
- 1 x Quick Installation Guide

1.2 Safety Cautions

Follow the following instructions to prevent the device from risks and damage caused by fire or electric power:

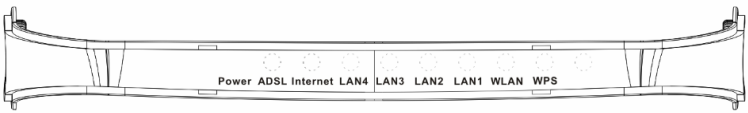
- Use volume labels to mark the type of power.
- Use the power adapter packed within the device package.
- Pay attention to the power load of the outlet or prolonged lines. An overburden power outlet or damaged lines and plugs may cause electric shock or fire accident. Check the power cords regularly. If you find any damage, replace it at once.
- Proper space left for heat dissipation is necessary to avoid damage caused by overheating to the device. The long and thin holes on the device are

designed for heat dissipation to ensure that the device works normally. Do not cover these heat dissipation 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 it is over damp or watery. Do not spill any fluid on this device.
- Do not connect this device to any PCs or electronic products, unless our customer engineer or your broadband provider instructs you to do this, because any wrong connection may cause power or fire risk.
- Do not place this device on an unstable surface or support.

1.3 LEDs and Interfaces

Front Panel

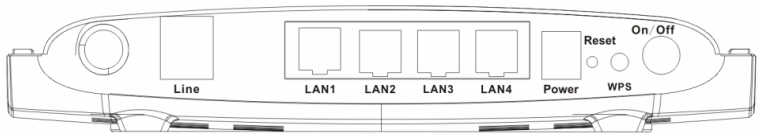


The following table describes the LEDs of the device:

LEDs	Color	Status	Description
Power	Green	On	The device is powered on.
		Off	The device is powered off.
	Red	On	The device is self-testing or self-testing is failed, or the software is upgrading.
ADSL	Green	On	The device has established connection with the office physical layer.
		Blinks (fast)	The device is handshaking with the office physical layer.
		Blinks (slow)	The device does not detect the signals.
Internet	Green	On	The device has a successful Internet connection in the routing mode, and no data is being transmitted.

LEDs	Color	Status	Description
		Blinks	Data is being transmitted on the Internet in the routing mode.
		Off	The device is in bridge mode.
	Red	On	After the successful synchronous in the routing mode, the Internet connection is failed.
LAN1/LAN2/ LAN3/LAN4	Green	On	The device has successful LAN connection.
		Blinks	Data is being transmitted on LAN or data is being transmitted on the Internet in the bridge mode.
		Off	The LAN connection is failed.
WLAN	Green	On	The device has successful WLAN connection.
		Blinks	Data is being transmitted on WLAN.
		Off	The WLAN connection is failed.
WPS	Green	Off	WPS is disabled.
		Blinks	WPS is enabled, and is waiting for client to negotiate.

Rear Panel



The following table describes the interfaces of the device:

Interface	Description
	Wireless antenna.
Line	RJ-11 interface, for connecting to the ADSL interface or a splitter through the telephone cable.

Interface	Description
LAN1/LAN2/ LAN3/LAN4	RJ-45 interface, for connecting to the Ethernet interface of the PC or the Ethenet devices with the cable.
Power	Power interface, for connecting to the power adapter of 12 V DC, 800 mA.
Reset	Reset to the factory defaults. To restore factory defaults, keep the device powered on and push a paper clip into the hole. Press down the button over 3 seconds and then release.
WPS	Press the button and hold for more than 3 seconds, to initialize WPS negotiation.
On/Off	Power switch, power on or power off the router.

1.4 System Requirements

Recommended system requirements are as follows:

- A 10/100 base-T Ethernet card is installed on your PC
- A hub or Switch. (attached to several PCs through one of Ethernet interfaces on the device)
- Operating system: Windows 98SE, Windows 2000, Windows ME, Windows XP or Windows Vista
- Internet Explorer V5.0 or higher, Netscape V4.0 or higher, or firefox 1.5 or higher

1.5 Features

The device supports the following features:

- Various line modes (line auto-negotiation)
- External PPPoE dial-up access
- Internal PPPoE/PPPoA dial-up access
- Zero installation PPP bridge mode (ZIPB)
- 1483B/1483R/MER access
- Multiple PVCs (eight at most)
- A single PVC with multiple sessions
- Multiple PVCs with multiple sessions
- DHCP server

- NAT/NAPT
- Static route
- Firmware upgrading through Web, TFTP, or FTP
- Rsetting to the factory defaults through Reset button or Web
- DNS relay
- Virtual server
- Web interface
- Telnet CLI
- System status display
- PPP session PAP/CHAP
- IP/Port, MAC, URL filter
- Remote access control
- Line connection status test
- Remote access control
- Backup and restoration of configuration file
- IP quality of service (QoS)
- Universal plug and play (UPnP)
- WLAN with high-speed data transmission rate, up to 54 Mbps, compatible with IEEE 802.11b/g, 2.4 GHz compliant equipment

1.6 Supported Protocols

The device supports the following protocols:

- ITU G.992.1 (G.DMT) Annex A
- ITU G.992.2 (G.LITE)
- ANSI T1.413 Issue 2
- ITU G.992.3 (ADSL2)
- ITU G.992.5 (ADSL2+)
- Annex L
- Annex M

2 Hardware Installation

Step 1 Connect the **Line** interface of the device and the **Modem** interface of the splitter through a telephone cable. Connect the phone to the **Phone** interface of the splitter through a cable. Connect the incoming line to the **Line** interface of the splitter.

The splitter has three interfaces:

- **Line**: Connect to a wall phone jack (RJ-11 jack)
- **Modem**: Connect to the ADSL jack of the device
- **Phone**: Connect to a telephone set.

Step 2 Connect the LAN interface of the device to the network card of the PC through an Ethernet cable (MDI/MDIX).

Note:

Use twisted-pair cables to connect with the hub or switch.

Step 3 Plug one end of the power adapter to the wall outlet and connect the other end to the **Power** interface of the device.

Connection 1

The following figure displays the application diagram for the connection of the router, PC, splitter and the telephone sets, when no telephone set is placed before the splitter.

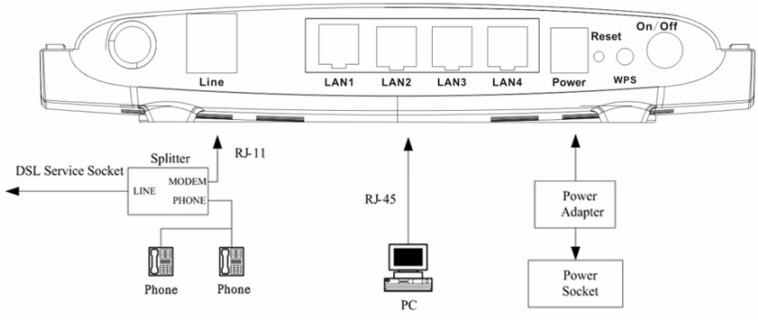


Figure 1 Connection diagram (Without connecting telephone sets before the splitter)

Connection 2

Figure 2 shows the connection when the splitter is installed close to the router.

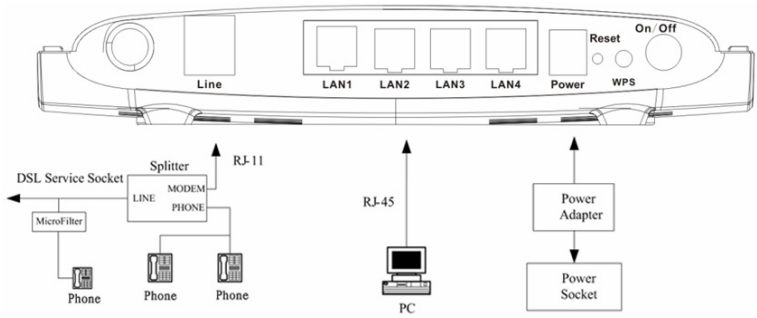


Figure 2 Connection diagram (Connecting a telephone set before the splitter)

Note:

When connection 2 is used, the filter must be installed close to the telephone cable. See Figure2. Do not use the splitter to replace the filter.

Installing a telephone directly before the splitter may lead to failure of connection between the device and the central office, or failure of Internet access, or slow connection speed. If you really need to add a telephone set before the splitter,

you must add a microfilter before a telephone set. Do not connect several telephones before the splitter or connect several telephones with the microfilter.

3 About the Web Configuration

This chapter describes how to configure the router by using the Web-based configuration utility.

3.1 How to Access the Router

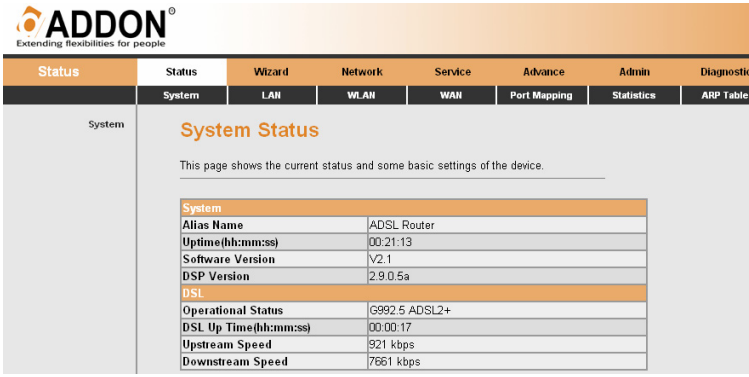
The following is the detailed description of accesing the router for the first time.

Step 1 Open the Internet Explorer (IE) browser and enter **http://192.168.1.1**.

Step 2 In the **LOGIN** page that is displayed, enter the username and password.

- The username and password of the super user are **admin** and **admin** respectively.
- The user name and password of the common user are **user** and **user** respectively.

If you log in as the super user, the page shown in the following figure appears. You can check, configure and modify all the settings.



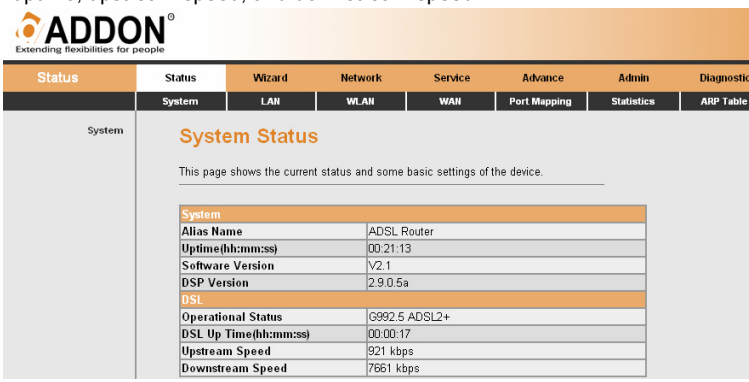
If you log in as a common user, you can check the status of the router, but can not configure the most of the settings.

3.2 Status

In the navigation bar, choose **Status**. In the **Status** page that is displayed contains: **System**, **LAN**, **WLAN**, **WAN**, **Port Mapping, Statistic**, and **ARP Table**.

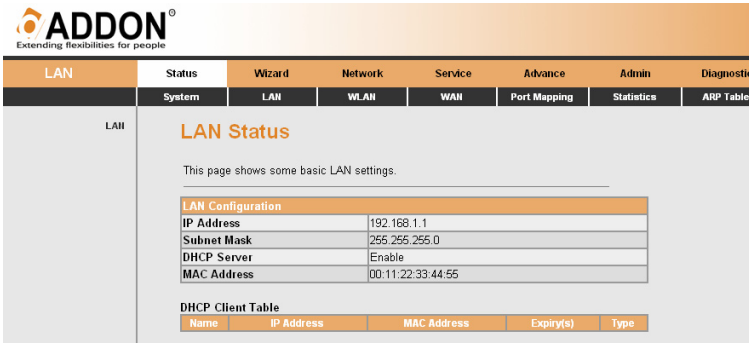
3.2.1 System

Choose **Status** > **System**. The page that is displayed shows the current status and some basic settings of the router, such as software version, DSP version, uptime, upstream speed, and downstream speed.



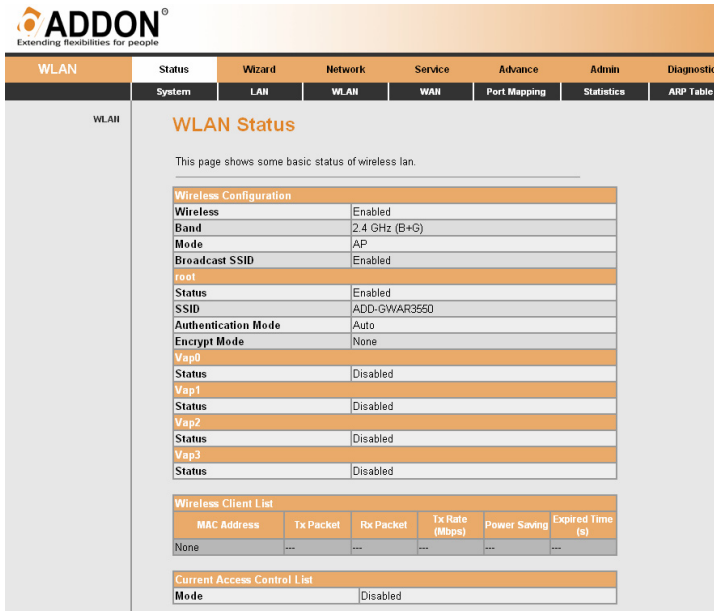
3.2.2 LAN

Choose **Status** > **LAN**. The page that is displayed shows some basic LAN settings of the router. In this page, you can view the LAN IP address, DHCP server status, MAC address, and DHCP client table. If you want to configure the LAN network, refer to chapter 3.4.1.1 LAN IP.



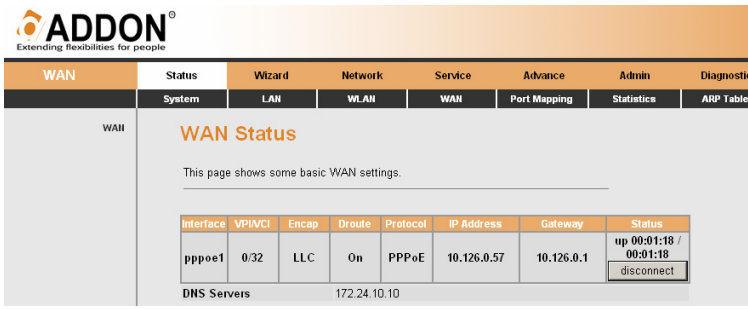
3.2.3 WLAN

Choose **Status** > **WLAN**. The page that is displayed shows some basic WLAN settings of the router. In this page, you can view basic status of WAN and DNS server. If you want to configure the WAN network, refer to chapter 3.4.3 .



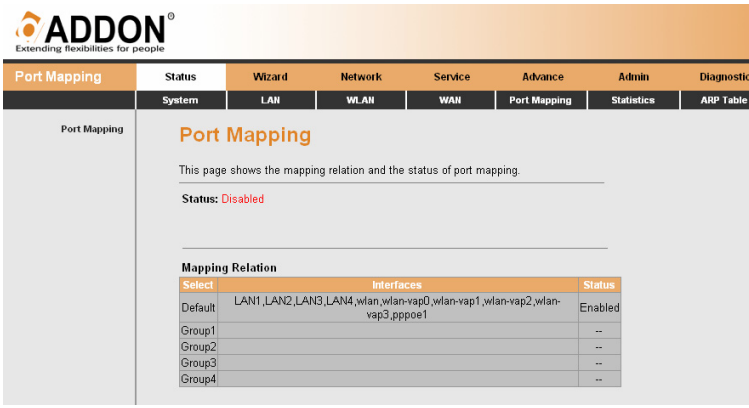
3.2.4 WAN

Choose **Status** > **WAN**. The page that is displayed shows some basic WAN settings of the router. In this page, you can view basic status of WAN and DNS server. If you want to configure the WAN network, refer to chapter 3.4.2.1 WAN.



3.2.5 Port Mapping

Choose **Status** > **Port Mapping**. In this page, you can view the mapping relation and the status of port mapping.

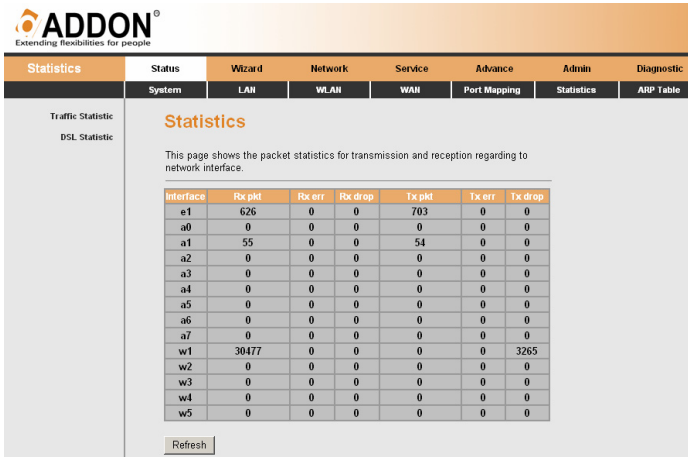


3.2.6 Statistics

Choose **Status** > **Statistics.** The **Statistics** page that is displayed contains **Traffic Statistic** and **DSL Statistic**.

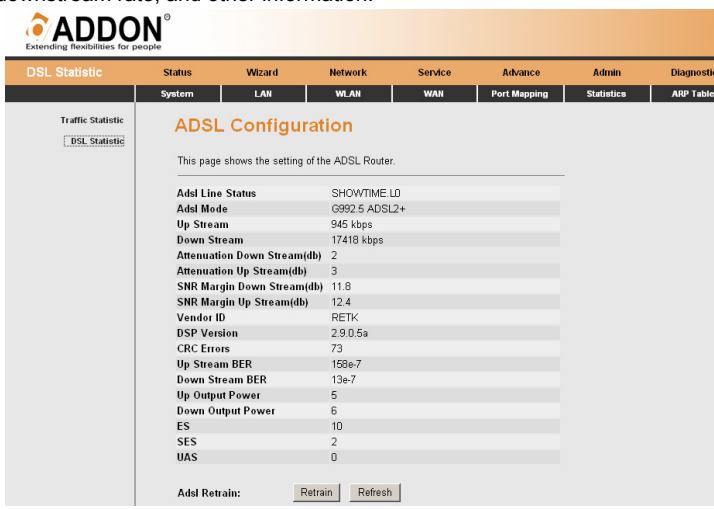
3.2.6.1 Traffic Statistic

Click **Traffic Statistic** in the left pane. The page shown in the following figure appears. In this page, you can view the statistics of each network port.



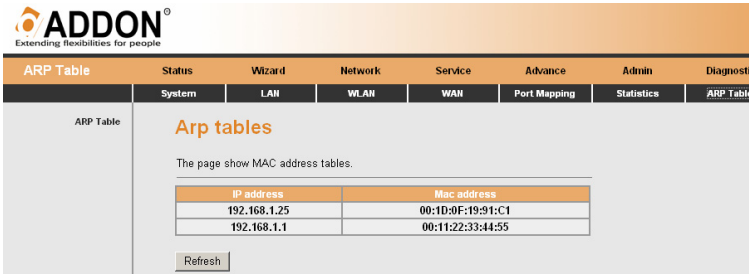
3.2.6.2 DSL Statistic

Click **DSL Statistic** in the left pane. The page shown in the following figure appears. In this page, you can view the ADSL line status, upstream rate, downstream rate, and other information.



3.2.7 ARP Table

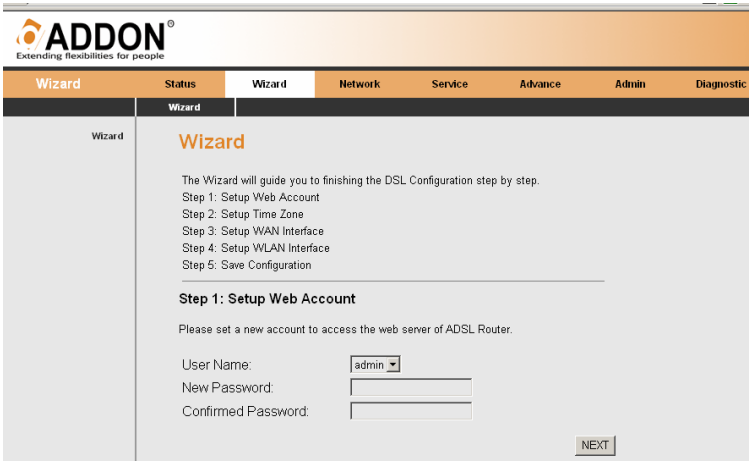
Choose **Status** > **ARP Table.** In the **ARP Table** page, you can view the table that shows a list of learned MAC addresses.



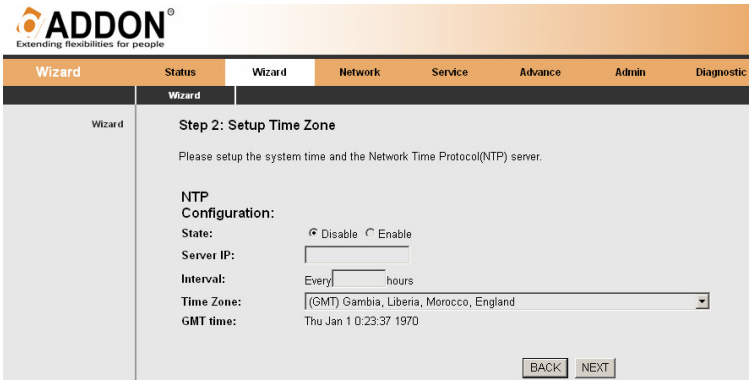
3.3 Wizard

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 PPP, ADSL, or both. The technical information about the properties of your Internet connection is 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, and the protocol that you use to communicate on the Internet.

In the navigation bar, choose **Wizard**. The page shown in the following figure appears. The **Wizard** page guides fast and accurate configuration of the 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.



Enter the correct password and then click **NEXT**. The page shown in the following figure appears. In this page, you can set the system time and Network Time Protocol (NTP) server.

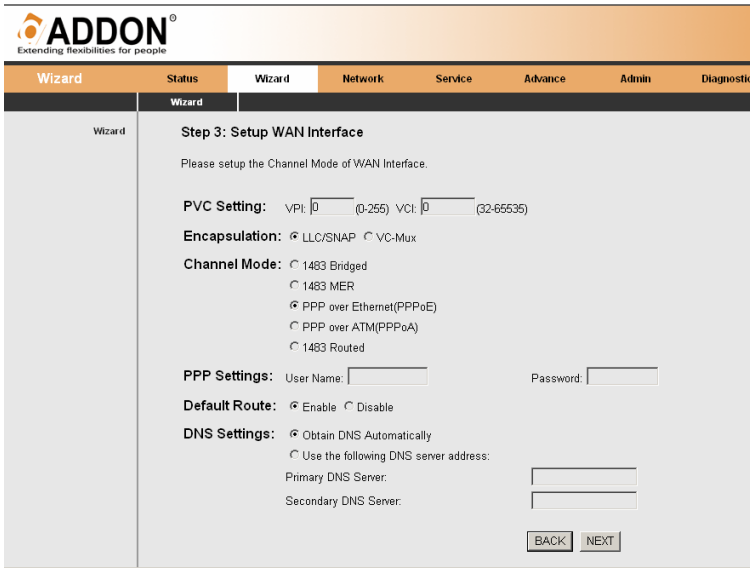


The following table describes the parameters of this page:

Field	Description
State	You can disable or enable NTP function. You have to enable it if you want to configure the parameters in this page.

Field	Description
Server IP	Enter the IP address of the specified time server manually.
Interval	Set the interval that the router obtains the time from the time server. That is, the interval that the router verifies the time with the server.
Time Zone	Choose the time zone of your country.
GMT time	It displays the Greenwich mean time.

After finishing the configuration, click **NEXT**. The page shown in the following figure appears.

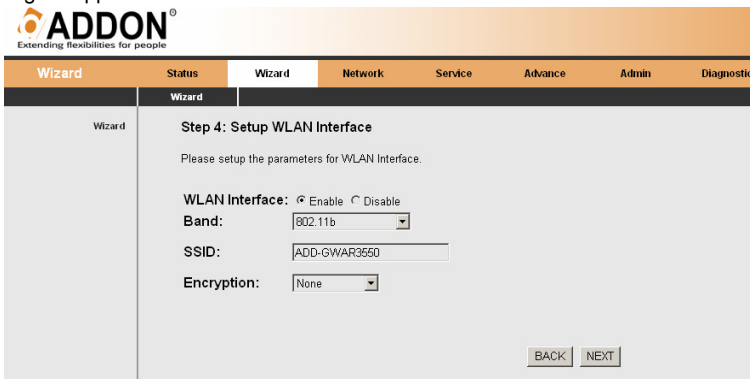


The following table describes the parameters of this page:

Field	Description
PVC Settings	● The virtual path between two points in an ATM network, and its valid value is from 0 to 255. ● The virtual channel between two points in an ATM network, ranging from 32 to 65535 (0 to 31 is

Field	Description
	reserved for local management of ATM traffic).
Encapsulation	Select the method of encapsulation provided by your ISP. You can select **LLC/SNAP** or **VC-Mux**.
Channel Mode	Select the WAN connection type. You can select **1483 Bridged**, **1483 MER**, **PPP over Ethernet (PPPoE)**, **PPP over ATM (PPPoA)**, or **1483 Routed**.
PPP Settings	The username and password apply to PPPoE and PPPoA encapsulation only. Ensure that you enter the correct username and password.
Default Route	You can select **Enable** or **Disable**.
DNS Settings	● **Obtain DNS Automatically**: Obtain the DNS server assigned by the uplink equipment, such as BAS. ● **Use the following DNS server address**: If you want to enter the DNS server address by yourself, select it and enter the related data.

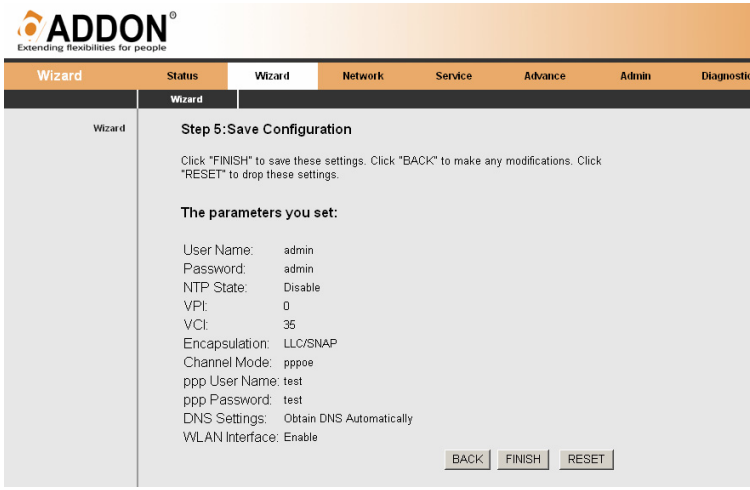
After finishing the configuration, click **NEXT**. The page shown in the following figure appears.



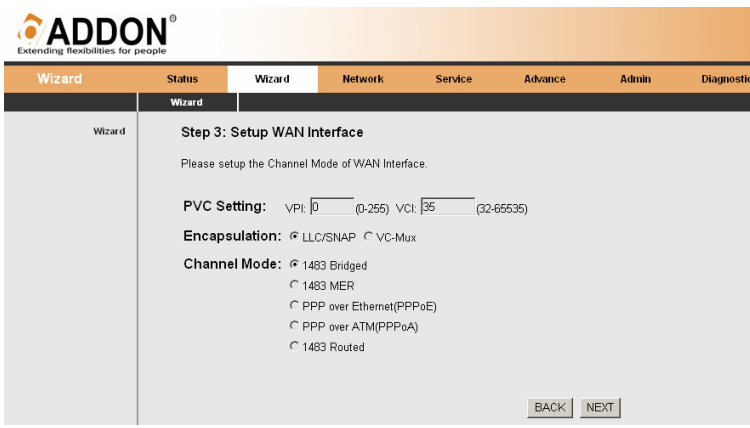
The following table describes the parameters of this page:

Field	Description
WLAN Interface	You can choose **Enable** or **Disable**. By default, WAN interface is enabled. You need to enable WAN interface, and then you can set the parameters in this page.
Band	Choose the working mode of the router. You can choose **2.4 GHz (B)**, **2.4 GHz (G)**, or **2.4 GHz (B + G)**. By defaut, the band is **2.4 GHz (B + G)**.
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN. Wireless stations associating to the router must have the same SSID. Enter a descriptive name that is used when the wireless client connecting to the router.
Encryption	Configure the wireless encryption mode. You can choose **None**, **WEP**, **WPA (TKIP)**, **WPA (AES)**, **WPA2 (AES)**, **WPA2 (TKIP)**, or **WPA2 Mixed**. ● Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network. ● Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft. ● **WPA2 Mixed** is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the router through WPA or WPA2. Key differences between WPA and WEP are user authentication and improved data encryption.

After finishing the configuration, click **NEXT**. The page shown in the following figure appears.

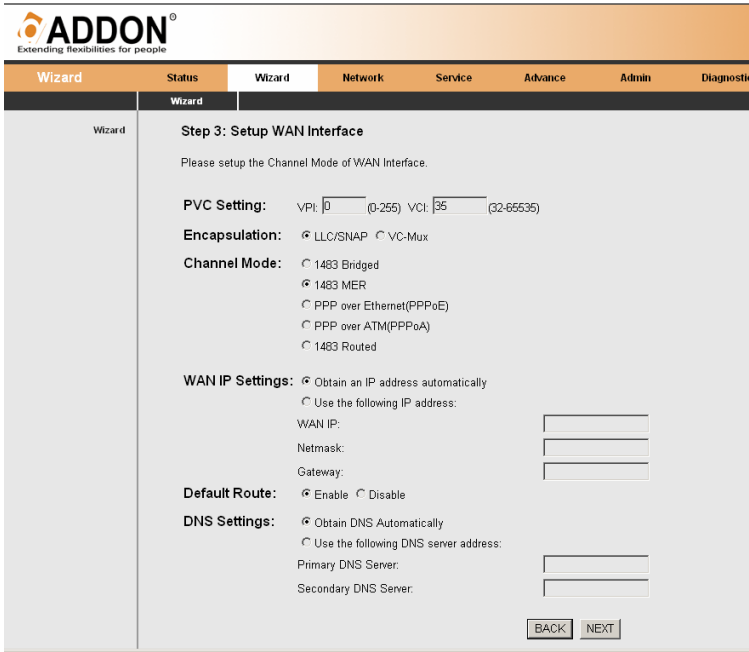


1483 Bridged



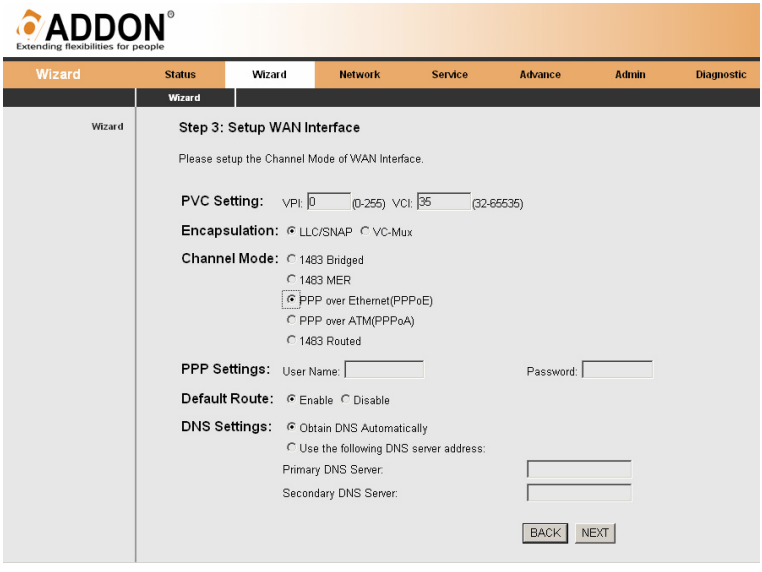
In the **Setup WAN Interface** page, set the channel mode to **1483 Bridged**

1483 MER



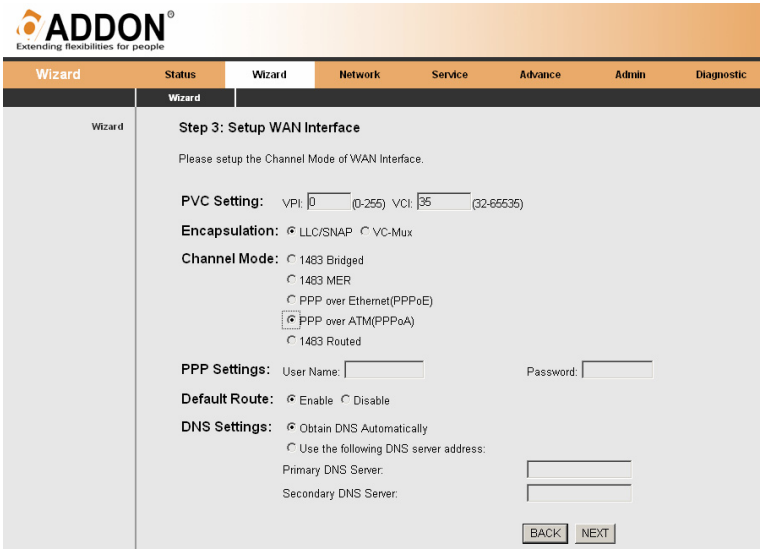
In the **Setup WAN Interface** page, set the channel mode to **1483 MER**

PPPoE



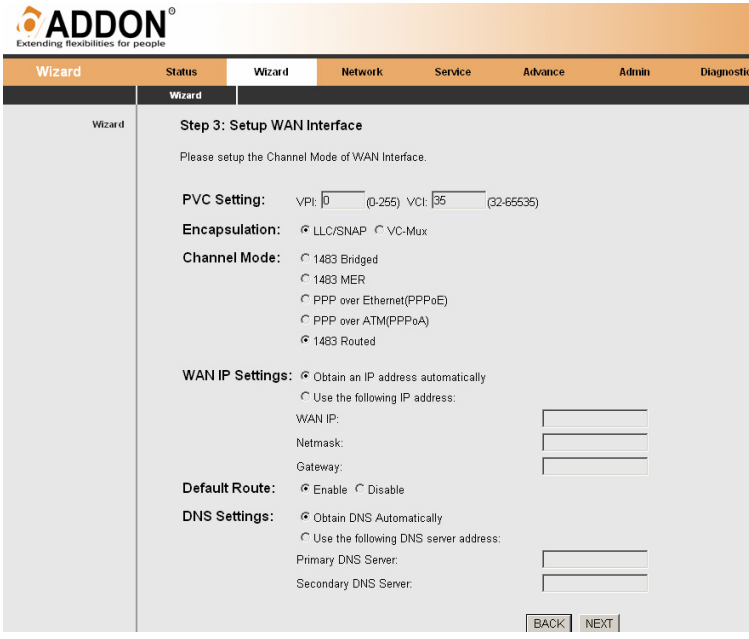
In the **Setup WAN Interface** page, set the channel mode to **PPPoE**

PPPoA



In the **Setup WAN Interface** page, set the channel mode to **PPPoA**

1483 Routed



In the **Setup WAN Interface** page, set the channel mode to **1483 Routed**

3.4 Network

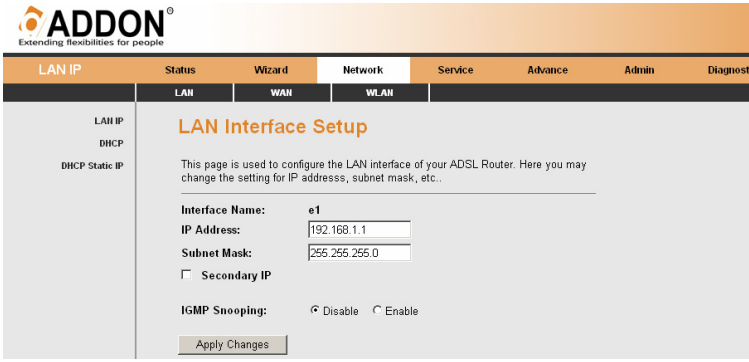
In the navigation bar, choose **Network**. The **Network** page that is displayed contains **LAN**, **WAN**, and **WLAN**.

3.4.1 LAN

Choose **Network** > **LAN**. The **LAN** page that is displayed contains **LAN IP**, **DHCP**, and **DHCP Static IP**.

3.4.1.1 LAN IP

Click **LAN IP** in the left pane. The page shown in the following figure appears. In this page, you can change IP address of the router. The default IP address is 192.168.1.1. This is the private IP address of the router. This is the address under which the router can be reached in the local network. It can be freely assigned from the block of available addresses.



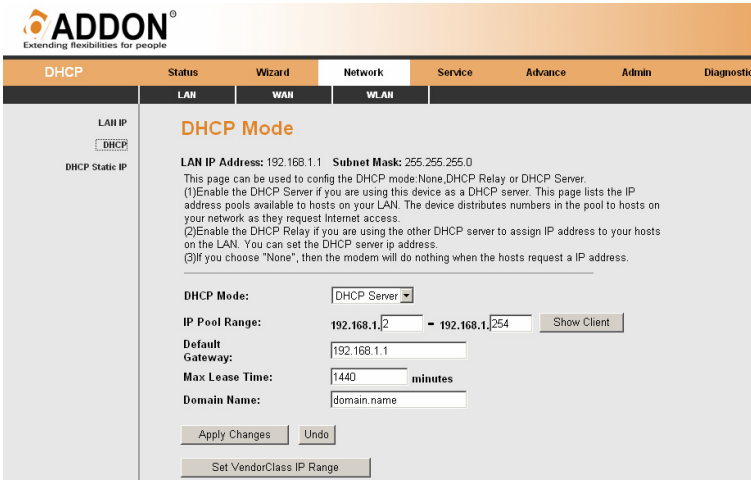
The following table describes the parameters and button of this page:

Field	Description
IP Address	Enter the IP of LAN interface. It is recommended to use an address from a block that is reserved for private use. This address block is 192.168.1.1-192.168.255.254.
Subnet Mask	Enter the subnet mask of LAN interface. The range of subnet mask is from 255.255.0.0-255.255.255.254.
Secondary IP	Select it to enable the secondary LAN IP. The two LAN IP addresses must be in the different network.
IGMP Snooping	You can disable or enable IGMP Snooping.
Apply Changes	Click it to save the settings of this page.

3.4.1.2 DHCP

Dynamic Host Configuration Protocol (DHCP) allows the individual PC to obain the TCP/IP configuration from the centralized DHCP server. You can configure this router as a DHCP server or disable it. The DHCP server can assign IP address, 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. You can enable or disable DHCP server or DHCP proxy.

Click **DHCP** in the left pane. The page shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
DHCP Mode	If set to **DHCP Server**, the router can assign IP addresses, IP default gateway and DNS Servers to Windows95, Windows NT and other systems that support the DHCP client.
IP Pool Range	It specifies the first and the last of contiguous IP address of the IP address pool.
Show Client	Click it, the **Active DHCP Client Table** page appears. It shows the assigned IP address of the clients.

Field	Description
Default Gateway	Enter the IP default gateway of the IP address pool.
Max Lease Time	The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.
Domain Name	Enter the domain name if you know. If you leave this blank, the domain name obtained by DHCP from the ISP is used. You must enter host name (system name) on each individual PC. The domain name can be assigned from the router through the DHCP server.
Set VendorClass IP Range	Click it, the **Device IP Range Table** page appears. You can configure the IP address range based on device type.

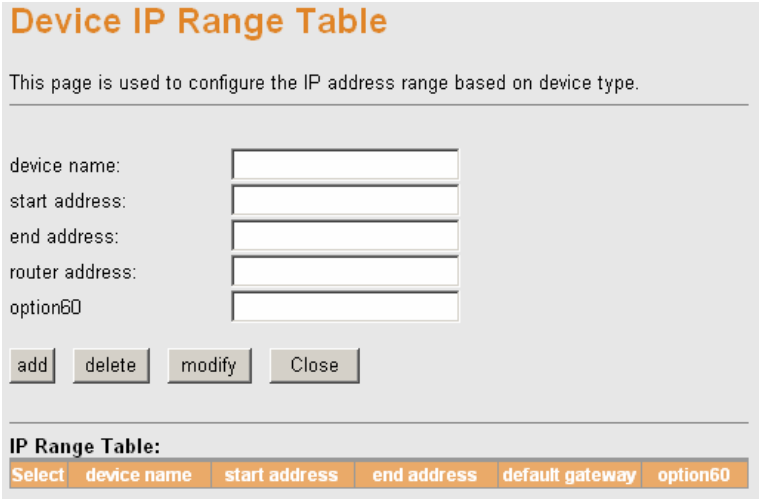
Click **Show Client** in the **DHCP Settings** page. The page shown in the following figure appears. You can view the IP address assigned to each DHCP client.

The following table describes the parameters and buttons in this page:

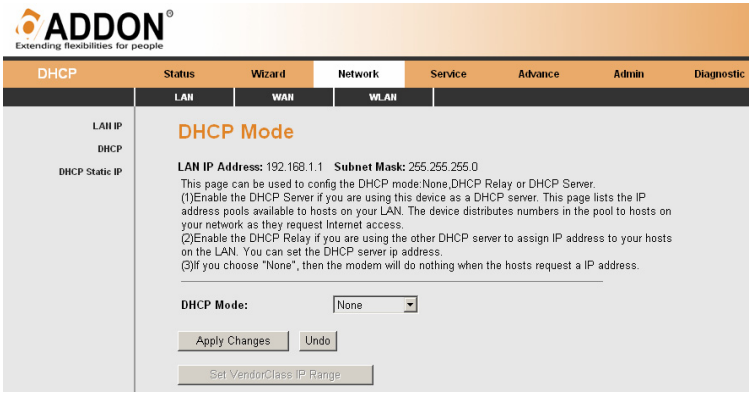
Field	Description
IP Address	It displays the IP address relative to the MAC address.
MAC Address	It displays the MAC address of the PC. Each Ethernet device has a unique MAC address. The MAC address is assigned at the factory and it consists of six pairs of hexadecimal character, for example, 00-A0-C5-00-02-12.

Field	Description
Expired (s)	It displays the lease time. The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.
Refresh	Click it to refresh this page.
Close	Click it to close this page.

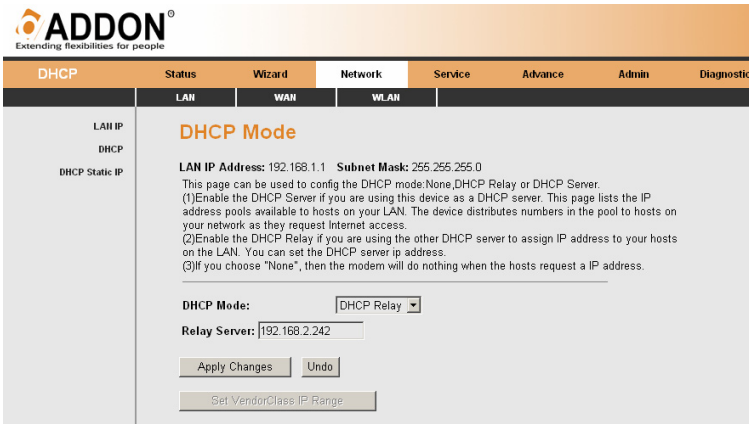
Click **Set VendorClass IP Range** in the **DHCP Settings** page. The page shown in the following figure appears. You can configure the IP address range based on device type.



Choose **None** in the **DHCP Settings** page. The page shown in the following figure appears.



Choose **DHCP Relay** in the **DHCP Mode** page. The page shown in the following figure appears.

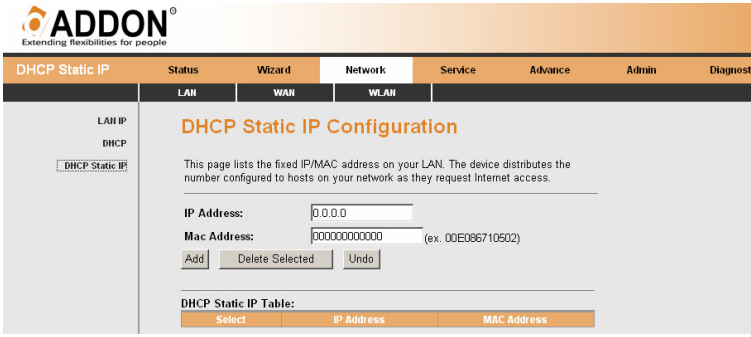


The following table describes the parameters of this page:

Field	Description
DHCP Mode	If set to **DHCP Relay**, the router acts a surrogate DHCP Server and relays the DHCP requests and reponses between the remote server and the client.
Relay Server	Enter the DHCP server address provided by your ISP.

3.4.1.3 DHCP Static IP

Click **DHCP Static IP** in the left pane. The page shown in the following figure appears. You can assign the IP addresses on the LAN to the specific individual PCs based on their MAC address.



The following table describes the parameters and buttons of this page:

Field	Description
IP Address	It specifies the IP address of the IP address pool.
Mac Address	Enter the MAC address of a PC on the LAN.
Add	After entering the IP address and MAC address, click it. A row will be added in the **DHCP Static IP Table**.
Delete Selected	Select a row in the **DHCP Static IP Table**, then click it, this row is deleted.
Undo	Click it to refresh this page.
DHCP Static IP Table	It shows the assigned IP address based on the MAC address.

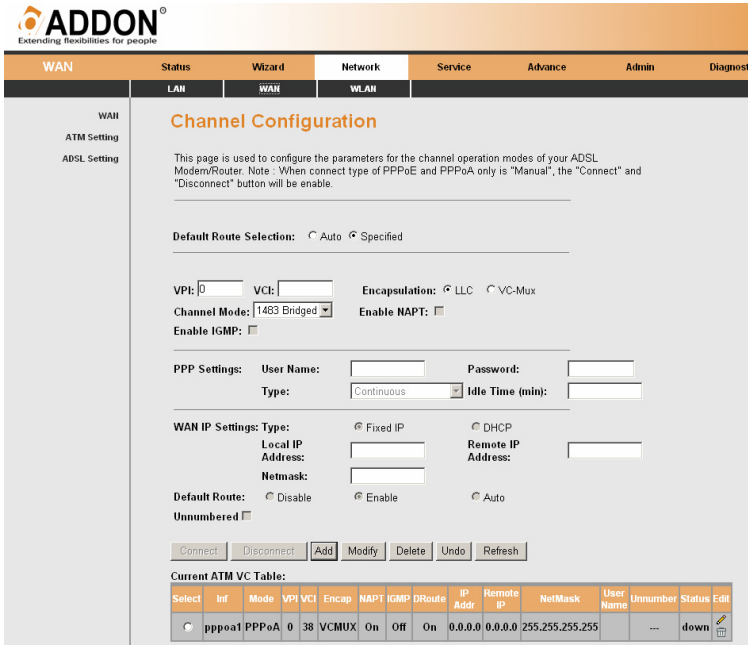
3.4.2 WAN

Choose **Network** > **WAN**. The **WAN** page that is displayed contains **WAN**, **ATM Setting**, and **ADSL Setting**.

3.4.2.1 WAN

Click **WAN** in the left pane. The page shown in the following figure appears.

In this page, you can configure WAN interface of your router.



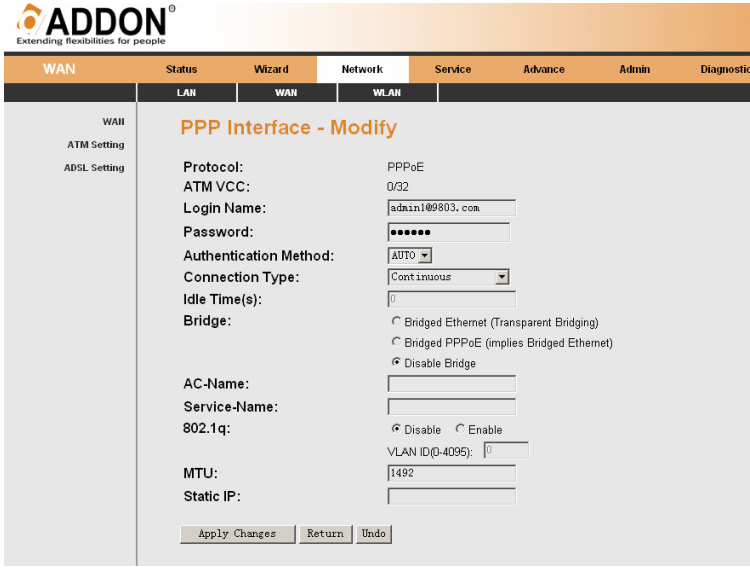
The following table describes the parameters of this page:

Field	Description
Default Route Selection	You can choose **Auto** or **Specified**.
VPI	The virtual path between two points in an ATM network, ranging 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	You can choose **LLC** and **VC-Mux**.
Channel Mode	You can choose **1483 Bridged**, **1483 MER**, **PPPoE**, **PPPoA**, or **1483 Routed**.
Enable NAPT	Select it to enable the NAPT function of the router. If you do not select it and you want to

Field	Description
	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.
Enabel IGMP	You can enable or disable IGMP function.
PPP Settings	
User Name	The correct user name that your ISP has provided to you.
Password	The correct password that your ISP has provided to you.
Type	You can choose **Continuous**, **Connect on Demand**, or **Manual**.
Idle Time (min)	If select connect on demand, you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, the router automatically disconnects the PPPoE connection.
WAN IP Settings	
Type	You can choose **Fixed IP** or **DHCP**. If select fixed IP, you should enter the local IP address, remote IP address and subnet mask. If set to use DHCP, the router is a DHCP client, the WAN IP address is assigned by the remote DHCP server.
Local IP Address	It is the IP address of WAN interface that is provided by your ISP.
Remote IP Address	This is the gateway IP address that is provided by your ISP.
Netmask	It is the subnet mask of the local IP address.
Unnumbered	Select this checkbox to enable IP Unnumbered function.
Add	After configuring the parameters of this page, click it to add a new PVC into the current ATM

Field	Description
	VC table.
Modify	Select a PVC in the current ATM VC table, then modify the parameters of this PVC. After finishing, click it to apply the change of this PVC.
Current ATM VC Table	This table shows the existed PVCs. It shows the Interface name, channel mode, VPI/VCI, encapsulation mode, local IP address, remote IP address and other information. The maximum item of this table is eight.
	Click it, the **PPP Interface-Modify** page appears. You can modify the PVCs' parameters.

Click  in the **PPPoE** mode. The page shown in the following figure appears. In this page, you can configure parameters of this PPPoE PVC.



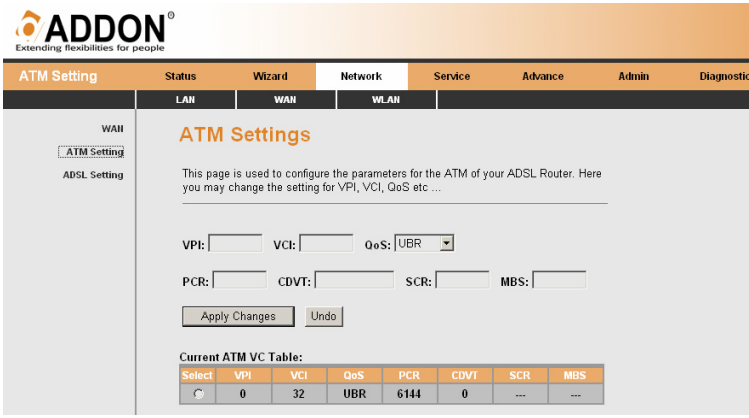
The following table describes the parameters and buttons of this page:

Field	Description
Protocol	The protocol type used for this WAN connection.
ATM VCC	The ATM virtual circuit connection assigned for this PPP interface (VPI/VCI).
Login Name	The login name provided by your ISP.
Password	The password provided by your ISP.
Authentication Method	You can choose **AUTO**, **CHAP**, or **PAP**.
Connection Type	You can choose **Continuous**, **Connect on Demand**, or **Manual**.
Idle Time (s)	If choose **Connect on Demand**, you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, the router automatically disconnects the PPPoE connection.
Bridge	You can choose **Bridged Ethernet**, **Bridged PPPoE**, or **Disable Bridge**.
AC-Name	The accessed equipment type.
Service-Name	The service name.
Apply Changes	Click it to save the settings of this page.
Return	Click it to return to the **WAN Interface** page.
Undo	Click it to refresh this page.

3.4.2.2 ATM Setting

Click **ATM Setting** in the left pane. The page shown in the following figure appears.

In this page, you can configure the parameters of the ATM, including QoS, PCR, CDVT, SCR, and MBS



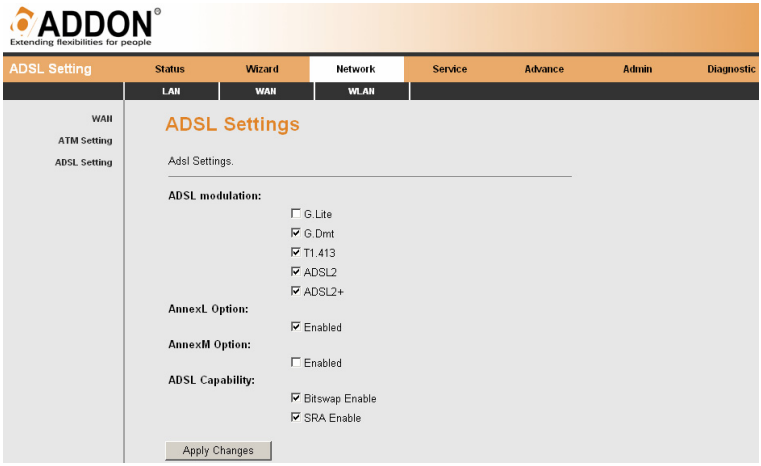
The following table describes the parameters and buttons of this page:

Field	Description
VPI	The virtual path identifier of the ATM PVC.
VCI	The virtual channel identifier of the ATM PVC.
QoS	The QoS category of the PVC. You can choose **UBR**, **CBR**, **rt-VBR**, or **nrt-VBR**.
PCR	The maximum rate at which cells can be transported along a connection in the ATM network.
CDVT	The amount of delay permitted between ATM cells (expressed in microseconds).
SCR	The maximum rate that traffic can pass over a PVC without the risk of cell loss.
MBS	The maximum number of cells that can be transmitted at the PCR.
Apply Changes	Click it to save the settings of this page.
Undo	Click it to refresh this page.

3.4.2.3 ADSL Setting

Click **ADSL Setting** in the left pane. The page shown in the following figure appears.

In this pae, you can select the DSL modulation. Mostly, you need to remain this factory default settings. The router supports these modulations: **G.lite**, **G.Dmt**, **T1.413**, **ADSL2**, **ADSL2+**, **AnnexL**, and **AnnexM**. The router negotiates the modulation modes with the DSLAM.

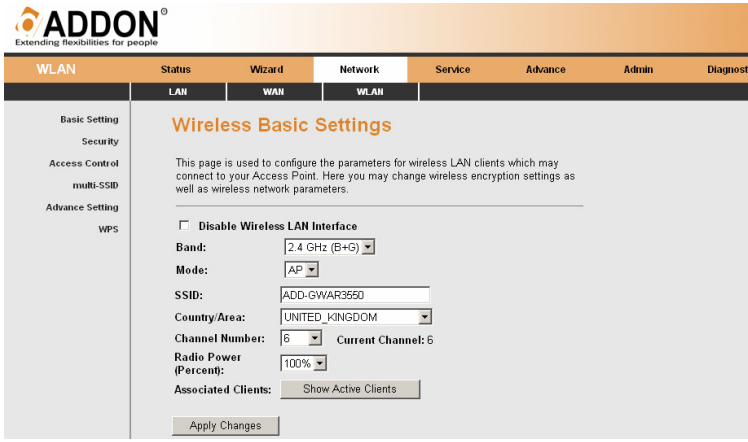


3.4.3 WLAN

Choose **Network** > **WLAN**. In the **WLAN** page that is displayed contains **Basic Setting**, **Security**, **Access Control**, **multi-SSID**, **Advance Setting**, and **WPS**.

3.4.3.1 Basic Setting

Click **Basic Setting** in the left pane. The page shown in the following figure appears. In this page, you can configure the parameters for wireless LAN clients that may connect to the router.



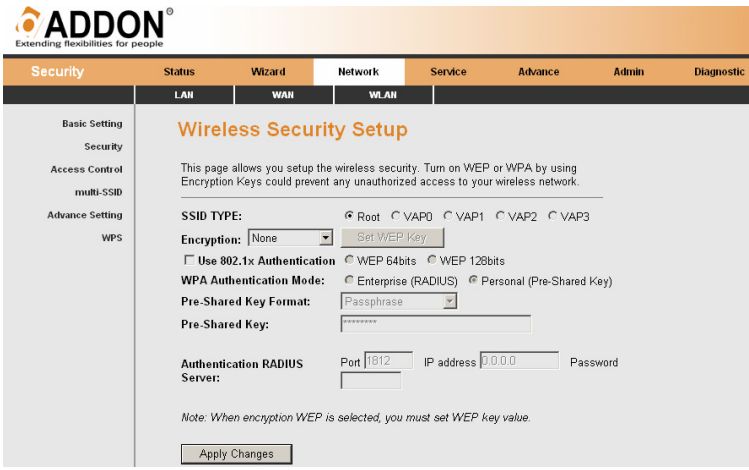
The following table describes the parameters and buttons of this page:

Field	Description
Band	Choose the working mode of the router. You can choose **2.4 GHz (B)**, **2.4 GHz (G)**, or **2.4 GHz (B + G)**. By defaut, the band is **2.4 GHz (B + G)**.
Mode	Choose the network modle of the router, which is varied according to the software. By defaut, the network model of the router is **AP**.
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN. Wireless stations associating to the router must have the same SSID. Enter a descriptive name that is used when the wireless client connecting to the router.
Channel Number	A channel is the radio frequency used by 802.11b/g wireless devices. There are 13 channels (from 1 to 13) available depending on the geographical area. You may have a choice of channels (for your region) and you should use a different channel from an adjacent AP to reduce

Field	Description
	the interference. Interference and degrading performance occurs when radio signal from different APs overlap. Choose a channel from the drop-down list box.
Radio Power (Percent)	You can choose the transmission power of the radio signal. It is recommended to choose the default value **100%**.
Show Active Clients	Click it to view the information of the wireless clients that are connected to the router.
Apply Changes	Click it to save the settings of this page.

3.4.3.2 Security

Click **Security** in the left pane. The page shown in the following figure appears.

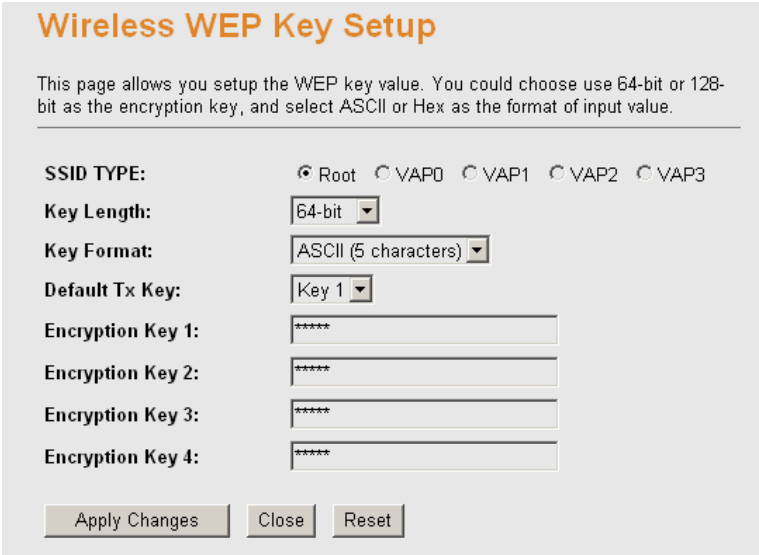


The following table describes the parameters of this page:

Field	Description
Encryption	Configure the wireless encryption mode. You can choose **None**, **WEP**, **WPA (TKIP)**, **WPA (AES)**,

Field	Description
	WPA2 (AES), **WPA2 (TKIP)**, or **WPA2 Mixed**. ● Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network. ● Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft. ● WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the router through WPA or WPA2. Key differences between WPA and WEP are user authentication and improved data encryption.
Set WEP Key	It is available when you set the encryption mode to **WEP**. Click it, the **Wireless WEP Key Setup** page appears.
WPA Authentication Mode	● Select **Personal (Pre-Shared Key)**, enter the pre-shared key in the **Pre-Shared Key** field. ● Select **Enterprise (RADIUS)**, enter the port, IP address, and password of the Radius server. You need to enter the username and password provided by the Radius server when the wireless client connects the router. If the encrypton is set to **WEP**, the router uses 802.1 X authentication, which is Radius authentication.

Click **Set WEP Key**, and the following page appears.



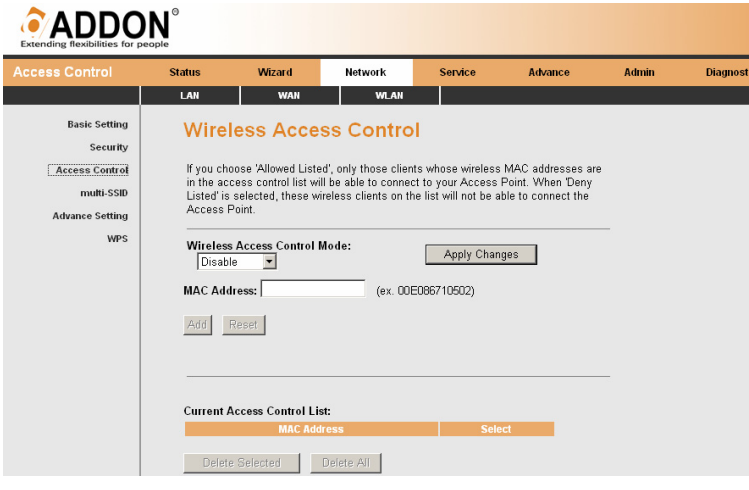
The following describes the parameters and button of this page:

Field	Description
Key Length	Choose the WEP key lenth. You can Choose **64-bit** or **128-bit**.
Key Format	● If you choose **64-bit**, you can choose ASCII (5 characters) or Hex (10 characters). ● If you choose **128-bit**, you can choose ASCII (13 characters) or Hex (26 characters).
Default Tx Key	Choose the index of WEP Key. You can choose **Key 1**, **Key 2**, **Key 3**, or **Key 4**.
Encryption Key 1 to 4	The Encryption keys are used to encrypt the data. Both the router and wireless stations must use the same encryption key for data transmission. ● If you choose **64-bit** and **ASCII (5 characters)**, enter any 5 ASCII characters. ● If you choose **64-bit** and **Hex (10 characters)**, enter any 10 hexadecimal characters.

Field	Description
	● If you choose **128-bit** and **ASCII (13 characters)**, enter any 13 ASCII characters. ● If you choose **128-bit** and **Hex (26 characters)**, enter any 26 hexadecimal characters.
Apply Changes	Click it to save the settings of this page.

3.4.3.3 Access Control

Click **Advanced Setting** in the left pane. The page shown in the following figure appears. In this page, you can configure the access control of the wireless clients.

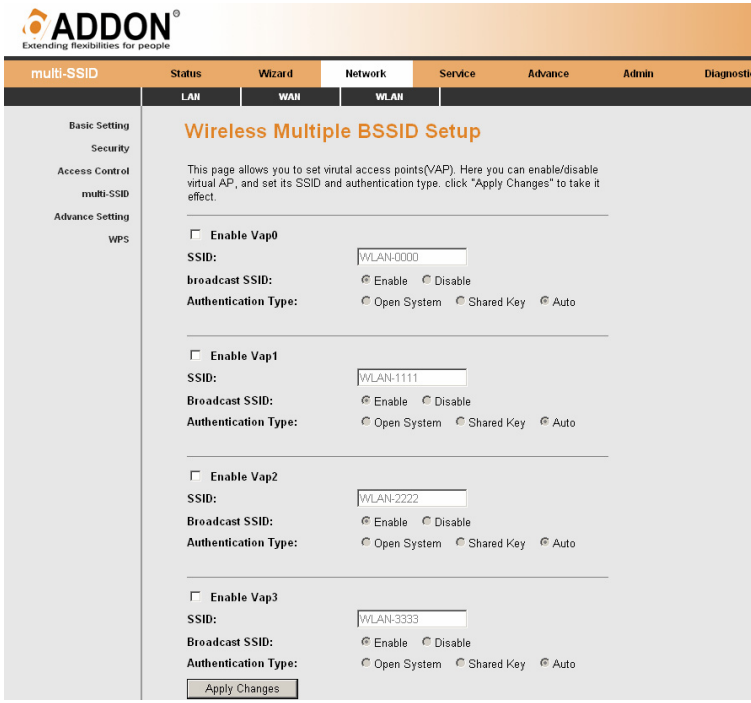


Choose **Allow Listed** in the **Wireless Access Control Mode** field to enable white list function. Only the devices whose MAC addresses are listed in the **Current Access Control List** can access the router.

Choose **Deny Listed** in the **Wireless Access Control Mode** field to enable black list function. The devices whose MAC addresses are listed in the **Current Access Control List** are denied to access the router.

3.4.3.4 multi-SSID

Click **multi-SSID** in the left pane. The page shown in the following figure appears.



The following table describes parameterand button of this page:

Field	Description
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN.
Apply Changes	Click it to save the settings of this page.

3.4.3.5 Advance Setting

Click **Advance Setting** in the left pane. The page shown in the following figure appears. In this page, you can configure the wireless advanced parameters. It is recommended to use the default parameters.

Note:

The parameters in the **Wireless Advanced Settings** page are modified by the professional personnel, it is recommended to keep the default values.

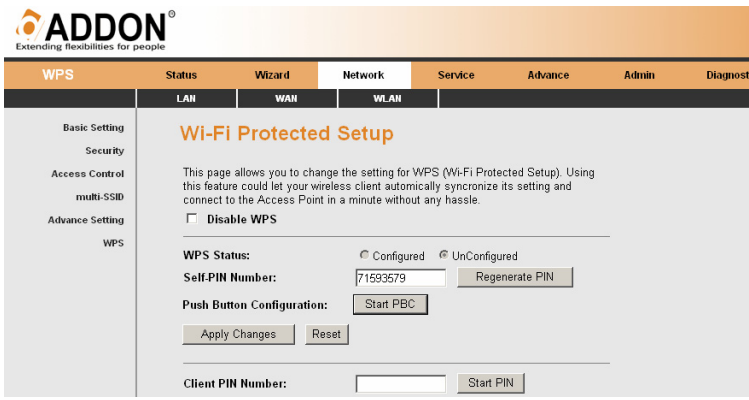
The following table describes the parameters and button of this page:

Field	Description
Authentication	Select the router operating in the open system or encryption authentication. You can choose **Open System**, **Shared Key**, or **Auto**. ● In the open system, the wireless client can directly connect to the device ● In the encryption authentication, the wireless

Field	Description
	client connects to the router through the shared key.
Data Rate	Choose the transmission rate of the wireless data. You can choose **Auto**, **1 M**, **2 M**, **5.5 M**, **11 M**, **6 M**, **9 M**, **12 M**, **18 M**, **24 M**, **36 M**, **48 M**, or **54 M**.
Broadcast SSID	Select whether the router broadcasts SSID or not. You can select **Enable** or **Disable**. ● Select **Enable**, the wireless client searchs the router through broadcasting SSID. ● Select **Disable** to hide SSID, the wireless clients can not search the SSID.
Relay Blocking	Wireless isolation. Select **Enable**, the wireless clients that are connected to the router can not intercommunication.
Ethernet to Wireless Blocking	Whetеher the wireless network can communicate with the Ethernent network or not.
Apply Changes	Click it to save the settings of this page.

3.4.3.6 WPS

Click **WPS** in the left pane. The page shown in the following figure appears.



WPS Authentication: The WPS service is enabled by default.

There are there methods used in the Wi-Fi Protected Setup. In order to use wps authentication, you can select one method from the following there methods.

- Press the WPS button on the rear panel for more than 3 seconds.
- The router generates PIN, see the above figure. Click **Regenerate PIN** to generate a new PIN, then click **Start PCB**, press WPS button on the wireless client simultaneously. The wireless client automatically establishes the connection with the router through the encryption mode, and you need not to enter the key.
- The wireless client generates PIN. In the above figure, enter PIN of the wireless client in the **Client PIN Number** field, then click **Start PIN** to establish the connection.

Note:

The wireless client establishes the connection with the router through WPS negotiation.The wireless client must support WPS.

3.5 Service

In the navigation bar, choose **Service**. The **Service** page that is displayed contains **DNS**, **Firewall**, **UPNP**, **IGMP Proxy**, **TR069**, and **ACL**.

3.5.1 DNS

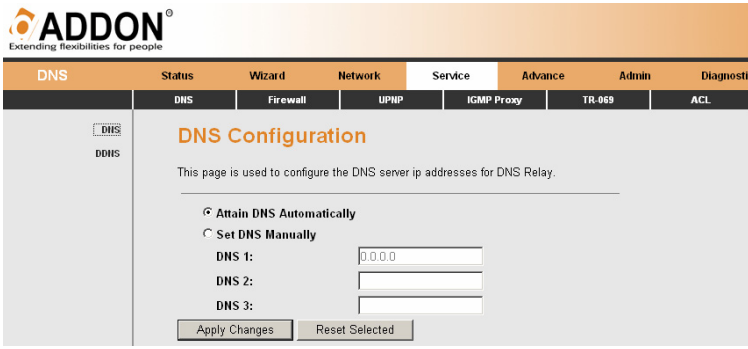
Choose **Service** > **DNS**. The **DNS** page that is displayed contains **DNS** and **DDNS**.

3.5.1.1 DNS

Click **DNS** in the left pane. The page shown in the following figure appears.

Domain name system (DNS) is an Internet service that translates the domain name into IP address. Because the domain name is alphabetic, it is easier to remember. The Internet, however, is based on IP addresses. Every time you use a domain name, a DNS service translates 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 has 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.

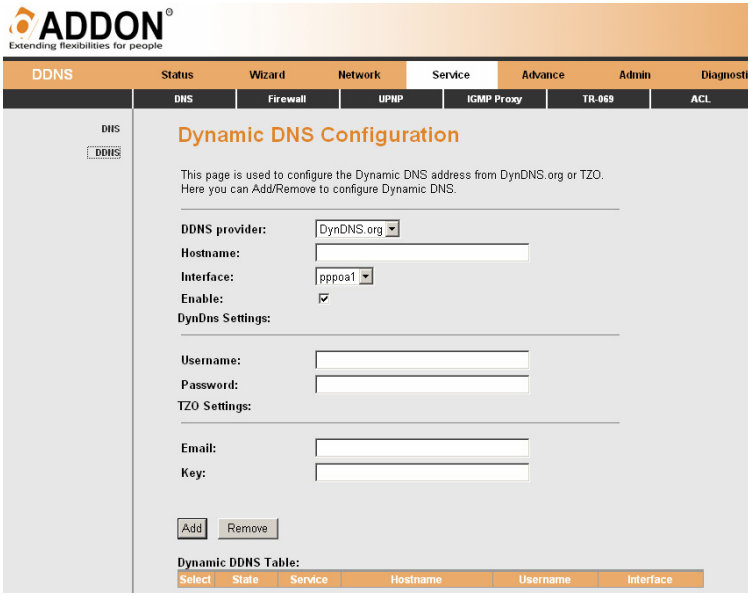


The following table describes the parameters and buttons of this page:

Field	Description
Attain DNS Automatically	Select it, the 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	Select it, enter the primary and optional secondary DNS server IP addresses.
Apply Changes	Click it to save the settings of this page.
Reset Selected	Click it to refresh this page.

3.5.1.2 DDNS

Click **DDNS** in the left pane. The page shown in the following figure appears.



The following table describes the parameters of this page:

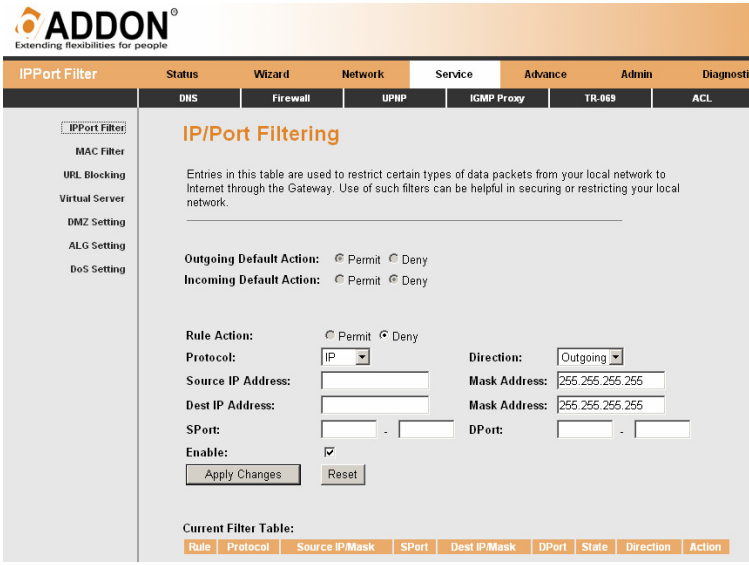
Field	Description
DDNS provider	Choose the DDNS provider name.
Hostname	The DDNS identifier.
Interface	The WAN interface of the router.
Enable	Enable or disable DDNS function.
Username	The name provided by DDNS provider.
Password	The password provided by DDNS provider.
Email	The email provided by DDNS provider.
Key	The key provided by DDNS provider.

3.5.2 Firewall

Choose **Service > Firewall**. The **Firewall** page that is displayed contains **IPPort Fileter**, **MAC Filter**, **URL Blocking**, **Virtual Server**, **DMZ Setting**, **ALG Setting**, and **DoS Setting**.

3.5.2.1 IPPort Filter

Click **IPPort Filter** in the left pane. The page shown in the following figure appears. Entries in this table are used to restrict certain types of data packets through the gateway. These filters are helpful in securing or restricting your local network.

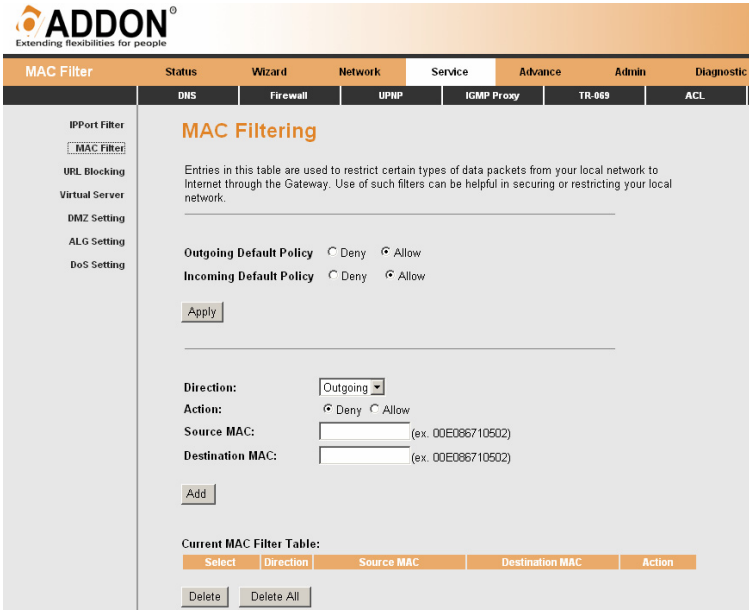


Click **Apply Changes** to save the settings of this page.
Click **Add** to add a new rule of the IP/Port filter.

3.5.2.2 MAC Filter

Click **MAC Filter** in the left pane. The page shown in the following figure appears. Entries in this table are used to restrict certain types of data packets from your

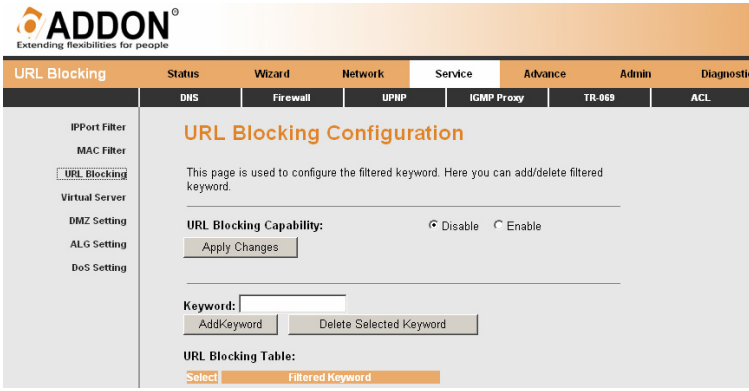
local network to Internet through the gateway. These filters are helpful in securing or restricting your local network.



Click **Apply Changes** to save the settings of this page.
Click **Add** to add a new rule of the MAC filter.

3.5.2.3 URL Blocking

Click **URL Blocking** in the left pane. The page shown in the following figure appears. This page is used to block a fully qualified domain name (FQDN), such as tw.yahoo.comand and filtered keyword. You can add or delete FQDN and filtered keyword.

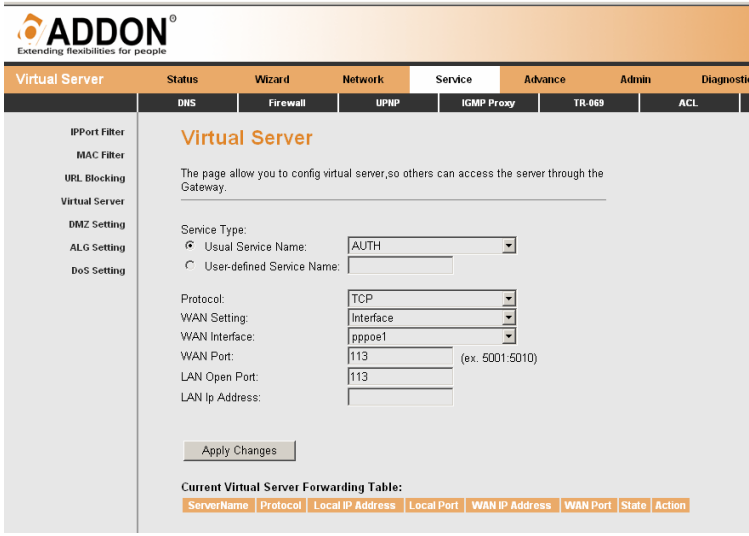


The following table describes the parameters and buttons of this page:

Field	Description
URL Blocking Capability	You can choose **Disable** or **Enable**. ● Choose **Disabled** to turn off URL blocking and keyword filtering. ● Choose **Enable** to block access to the URLs and keywords specified in the **URL Blocking Table** and **Keyword Filtering Table**.
Apply Changes	Click it to save the settings of this page.
Keyword	The keyword to block.
Add Keyword	Click it to add the keyword to the keyword filtering table.
Delete Selected Keyword	Select a row in the Keyword Filtering Table and click it to delete the row.
URL Blocking Table	A list of the URL (s) to which access is blocked.

3.5.2.4 Virtual Server

Click **Virtual Server** in the left pane. The page shown in the following figure appears.



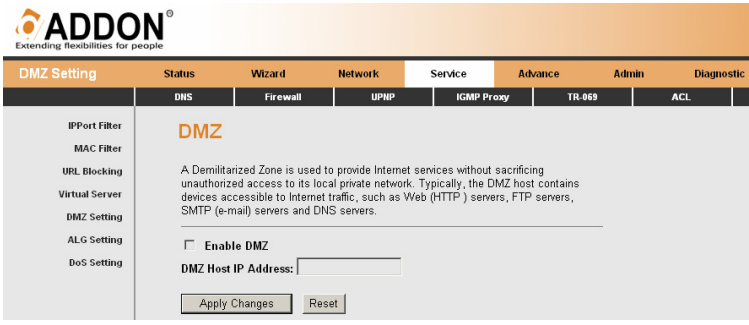
The following table describes the parameters of this page:

Field	Description
Service Type	You can choose the common service type, such as **AUTH**, **DNS**, or **FTP**. You can also define a service name. ● If you choose the common service type, the corresponding WAN communication port/service host communication port has the default settings. ● If you define service type, you need to enter the corresponding port.
Protocol	Choose the transport layer protocol that the service type uses. You can choose **TCP** or **UDP**.
WAN Setting	You can choose **Interface** or **Ip Address**.
WAN Interface	Choose the router port that uses virtual server.
WAN Port	Enter the access port on the WAN.
LAN Open Port	Enter the port number of the specified service type.
LAN Ip Address	Enter the IP address of the virtual server. It is in the

Field	Description
	same network segment with LAN IP address of the router.

3.5.2.5 DMZ Setting

Click **DMZ Setting** in the left pane. The page shown in the following figure appears. A demilitarized zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains services accessible to Internet traffic, such as web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.



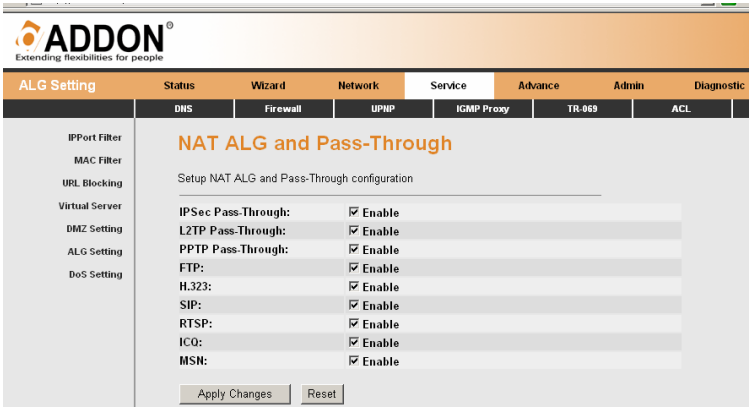
Step 1 Select **Enable DMZ** to enable this function.

Step 2 Enter an IP address of the DMZ host.

Step 3 Click **Apply Changes** to save the settings of this page.

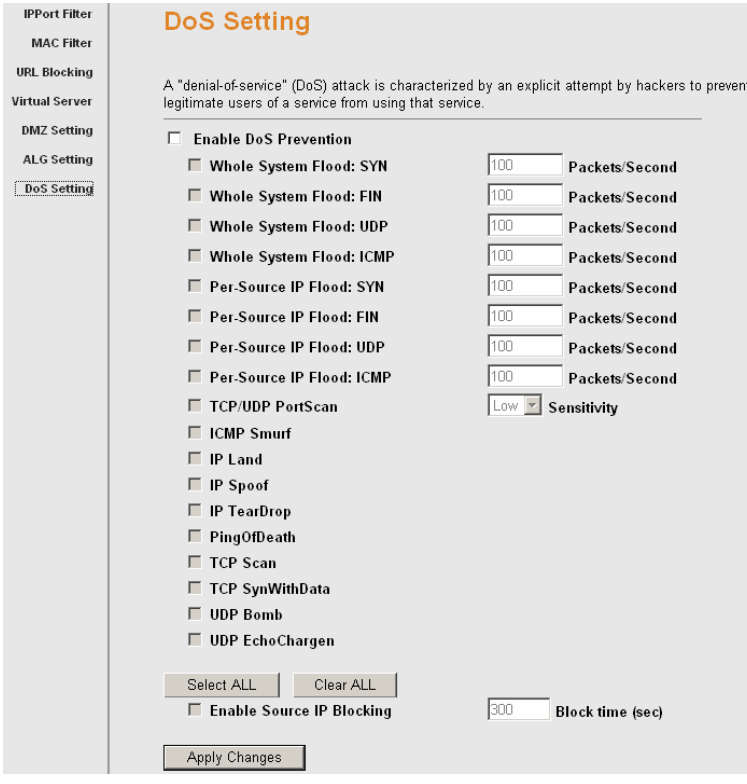
3.5.2.6 ALG Setting

Click **ALG Setting** in the left pane. The page shown in the following figure appears.



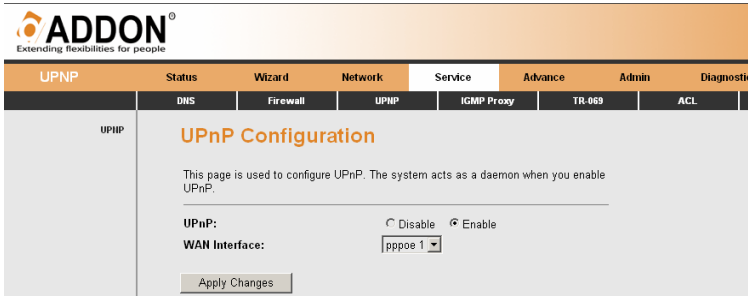
3.5.2.7 DoS Setting

Click **DoS Setting** in the left pane. The page shown in the following figure appears. Denial-of-service attack (DoS 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 prevent DoS attacks.



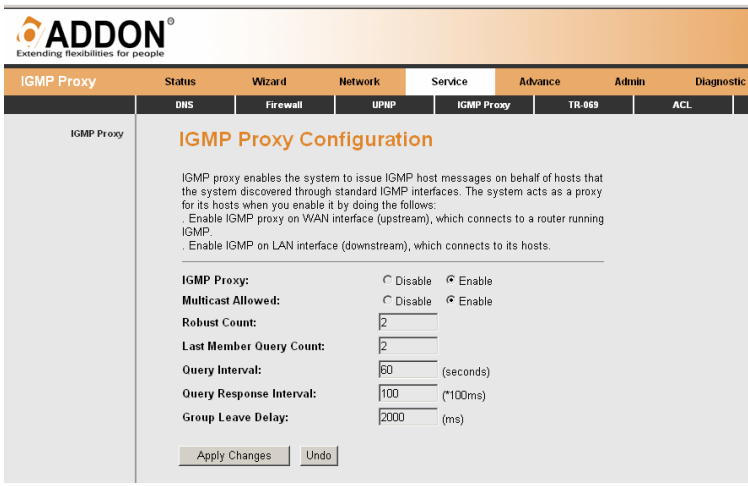
3.5.3 UPNP

Choose **Service > UPNP**. The page shown in the following figure appears. This page is used to configure UPnP. The system acts as a daemon after you enable it.



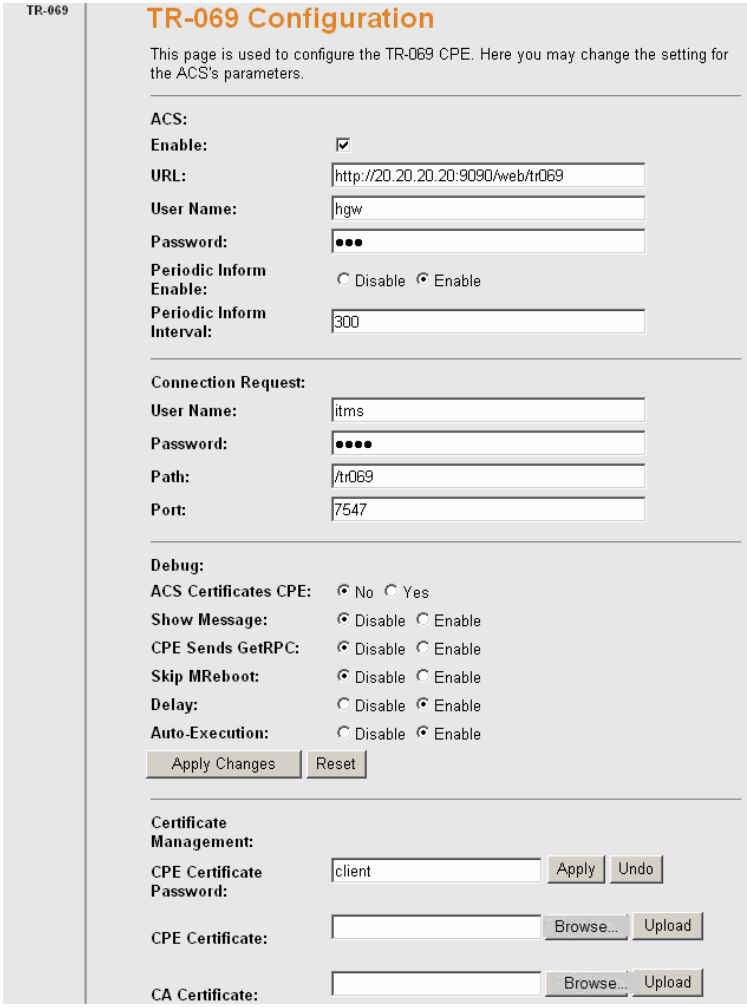
3.5.4 IGMP Proxy

Choose **Service > IGMP Proxy** in the left pane. The page shown in the following figure appears. 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.



3.5.5 TR069

Choose **Service > TR069**. The page shown in the following page appears. In this page, you can configure the TR-069 of the router.



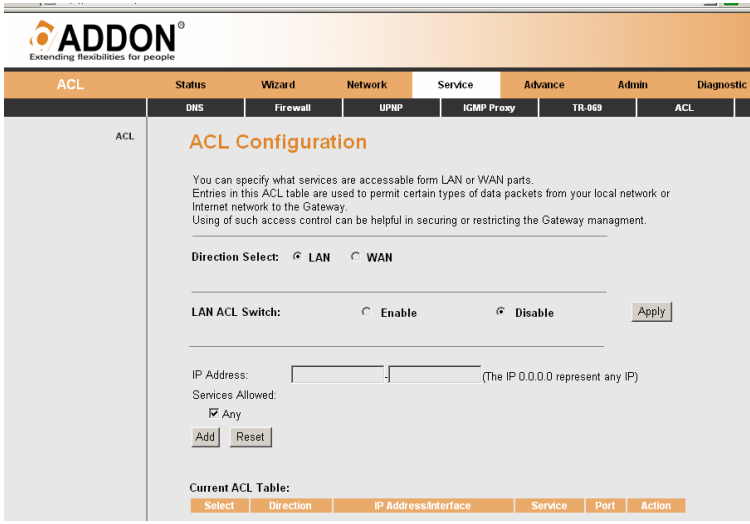
The following table describes the parameters and buttons of this page.

Field	Description
ACS	
URL	The URL of the auto-configuration server to connect to.
User Name	The user name for logging in to the ACS.
Password	The password for logging in to the ACS.
Periodic Inform Enable	Select **Enable** to periodically connect to the ACS to check for configuration updates.
Periodic Inform Interval	Specify the amount of time between connections to ACS.
Connection Request	
User Name	The username to connect the router from the ACS.
Password	The password to connect the router from the ACS.
Debug	
ACS Certificates CPE	Specify whether to check the ACS certification of the router.
Show Message	Select **Enable** to display ACS SOAP messages on the serial console.
CPE Sends GetRPC	Select **Enbale**, the CPE contact the ACS to obtain configuration updates.
Skip MReboot	Specify whether to send an MReboot event code in the inform message.
Delay	Specify whether to start the TR-069 program after a short delay.
Auto-Execution	Specify whether to automatically start the TR-069 after the router is powered on.
CT Inform Extension	Specify whether to support China Telecom extension inform type.
Apply Changes	Save the settings in this page.
Undo	Refresh this page.

Field	Description
Certificate Management	
CPE Certificate Password	The certificate password of the router
Apply	Save the settings of this page.
CPE Certificate	Click it to browse and upload the certificate for the router.
CA Certificate	Click it to browse and upload the CA certificate for the router.

3.5.6 ACL

Choose **Service > ACL**. The page shown in the following figure appears.



The following table describes the parameters and buttons of this page:

Field	Description
Direction Select	Select the router interface. You can select **LAN** or **WAN**.
LAN ACL Switch	Enable or disable ACL.
IP Address	Enter the IP address of the specified interface. Only

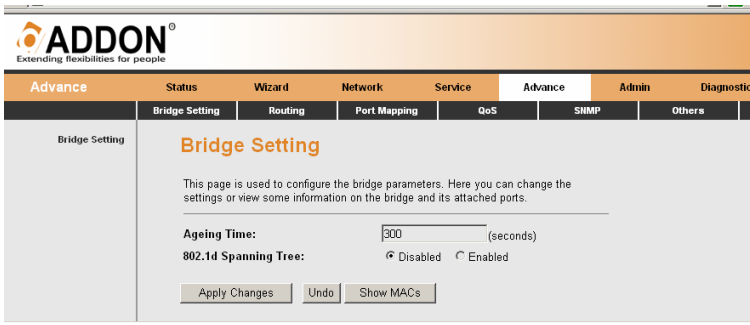
Field	Description
	the IP address that is in the same network segment with the IP address of the specified interface can access the router.
Services Allowed	You can choose the following services from LAN or WAN: **web**, **telnet**, **ftp**, **tftp**, **snmp**, or **ping**. You can also choose all the services.
Add	After setting the parameters, click it to add the **Current ACL Table**.
Reset	Click it to refresh this page.

3.6 Advance

In the navigation bar, choose **Advance**. The **Advance** page that is displayed contains **Bridge Setting**, **Routing**, **Port Mapping**, **QoS**, **SNMP**, and **Others**.

3.6.1 Bridge Setting

Choose **Advance** > **Bridge Setting**. The page shown in the following figure appears. This page is used to configure the bridge parameters. In this page, you can change the settings or view some information in the bridge mode and its attached ports.

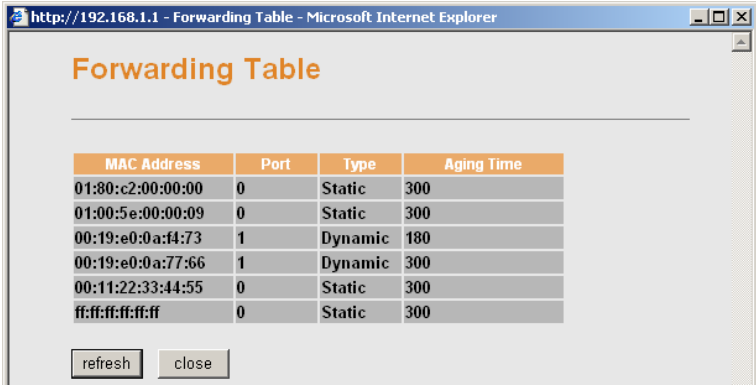


The following table describes the parameters and buttons of this page:

Field	Description
Aging Time	If the host is idle for 300 seconds (default value), its

Field	Description
	entry is deleted from the bridge table.
802.1d Spanning Tree	You can select **Disable** or **Enable**. Select **Enable** to provide path redundancy while preventing undesirable loops in your network.
Apply Changes	Click it to save the settings of this page.
Undo	Click it to refresh this page.
Show MACs	Click it to show a listing of the learned MAC addresses for the bridge.

Click **Show MACs**. The page shown in the following figure appears. This table shows a list of learned MAC addresses for this bridge.

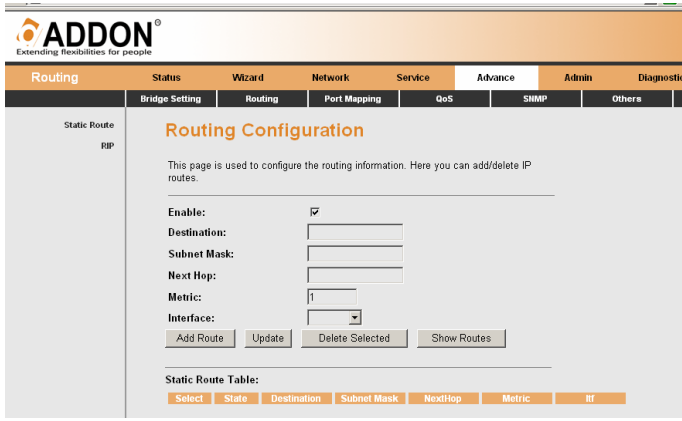


3.6.2 Routing

Choose **Advance** > **Routing**. The **Routing** page that is displayed contains **Static Route** and **RIP**.

3.6.2.1 Static Route

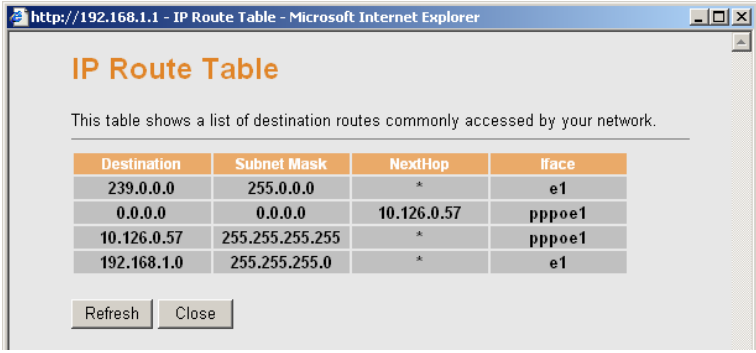
Click **Static Route** in the left pane. The page shown in the following figure appears. In this page, you can configure the routing information. You can add or delete IP routes.



The following table describes the parameters and buttons of this page:

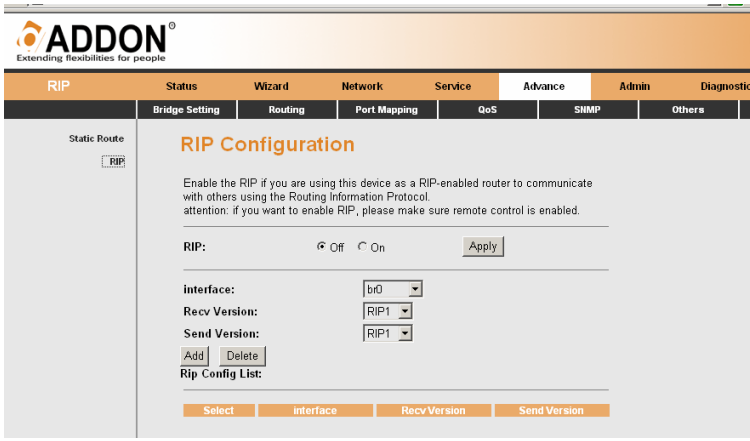
Field	Description
Enable	Select it to use static IP routes.
Destination	Enter the IP address of the destination device.
Subnet Mask	Enter the subnet mask of the destination device.
Next Hop	Enter the IP address of the next hop in the IP route to the destination device.
Metric	The metric cost for the destination.
Interface	The interface for the specified route.
Add Route	Click it to add the new static route to the table.
Update	Select a row in the table to populate the configuration fields with that row's values. Make any necessary changes to those values and click it to save those changes.
Delete Selected	Select a row in the table and click it to delete the row.
Show Routes	Click it, the **IP Route Table** appears. You can view a list of destination routes commonly accessed by your network.
Static Route Table	A list of the previously configured static IP routes.

Click **Show Routes**. The table shown in the following figure appears. The table shows a list of destination routes commonly accessed by your network.



3.6.2.2 RIP

Click **RIP** in the left pane. The page shown in the following figure appears. If you are using this device as a RIP-enabled router to communicate with others who is using the Routing Information Protocol (RIP), enable the RIP. This page is used to select the interfaces on your devices that use RIP, and the version of the protocol used.

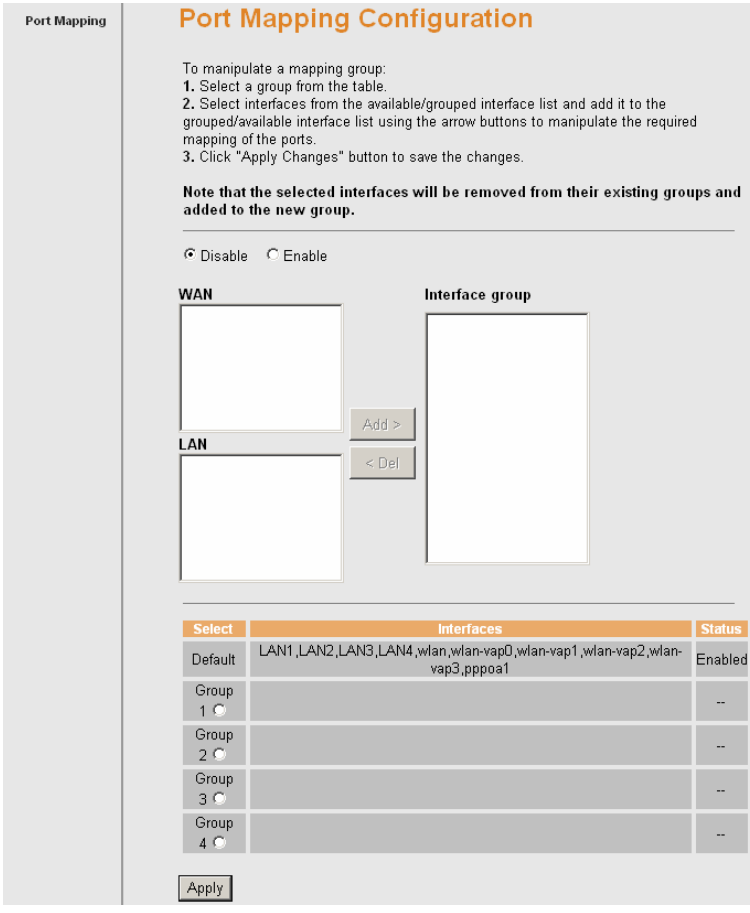


The following table describes the parameters and buttons of this page:

Field	Description
RIP	Select **On**, the router communicates with other RIP-enabled devices.
Apply	Click it to save the settings of this page.
Interface	The router interface that uses RIP.
Recv Version	The interface type to accept RIP messages. You can choose **RIP1**, **RIP2**, or **Both**. ● Choose **RIP1** indicates the router receives RIP v1 messages. ● Choose **RIP2** indicates the router receives RIP v2 messages. ● Choose **Both** indicates the router receives RIP v1 and RIP v2 messages.
Send Version	The working mode for sending RIP messages. You can choose **RIP1** or **RIP2**. ● Choose **RIP1** indicates the router broadcasts RIP1 messages only. ● Choose **RIP2** indicates the router multicasts RIP2 messages only.
Add	Click it to add the RIP interface to the **Rip Config Table**.
Delete	Select a row in the **Rip Config Table** and click it to delete the row.
Rip Config Table	A list of the router interfaces that enble RIP.

3.6.3 Port Mapping

Choose **Advance** > **Port Mapping**. The page shown in the following figure appears. In this page, you can bind the WAN interface and the LAN interface to the same group.



The procedure for manipulating a mapping group is as follows:

Step 1 Select **Enable** to enable this function.

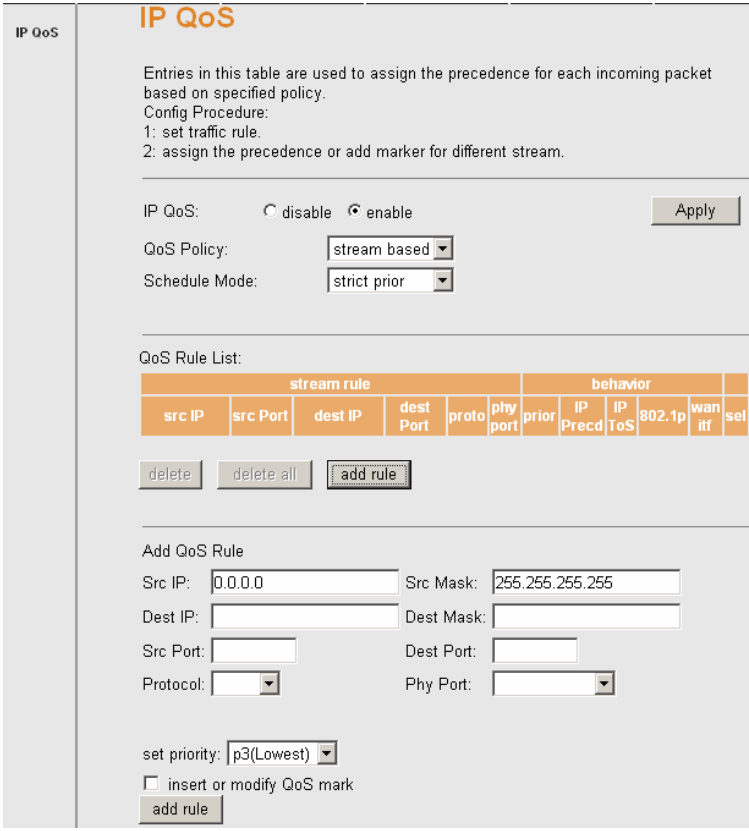
Step 2 Select a group from the table.

Step 3 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.

Step 4 Click **Apply** to save the changes.

3.6.4 QoS

Choose **Advance > QoS**. The page shown in the following figure appears. 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.

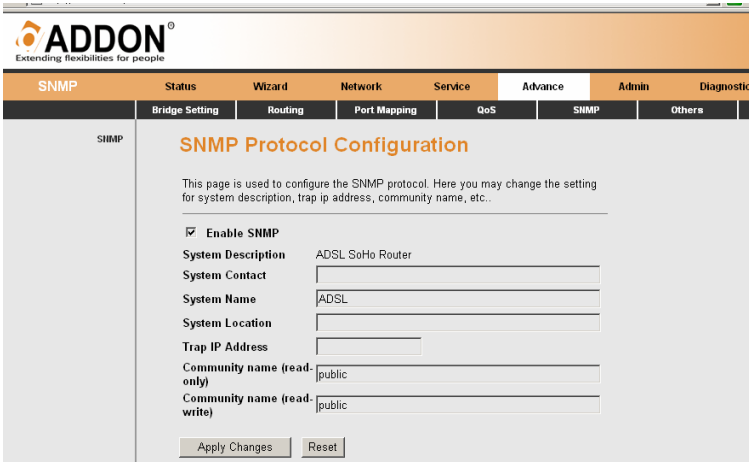


The following table describes the parameters and buttons of this page:

Field	Description
IP QoS	You can choose **disable** or **enable**. By default, IP QoS is disabled. You need to enable IP QoS, and then you can set the parameters in this page.
QoS Policy	You can choose **stream based**, **802.1p based**, or **DSCP based**.
Schedule Mode	You can choose **strict prior** or **WFQ (4:3:2:1)**.
Src IP	The IP address of the source data packet.
Src Mask	The subnet mask of the source IP address.
Src Port	The port of the source data packet.
Dest IP	The IP address of the destination data packet.
Dest Mask	The subnet mask of the destination IP address.
Dest Port	The port of the destination data packet.
Protocol	The protocol responds to the IP QoS rules. You can choose **TCP**, **UDP**, or **ICMP**.
Phy Port	The LAN interface responds to the IP QoS rules, including four LAN interfaces, one AP interface, and four virtual AP interfaces.
Set priority	The priority of the IP QoS rules. P0 is the highest priority and P3 is the lowest.
IP Precedence	You can choose from 0 to 7 define the priority in the ToS of the IP data packet.
IP ToS	The type of IP ToS for classifying the data package You can choose **Normal Service**, **Minimize Cost**, **Maximize Reliability**, **Maximize Throughput**, or **Minimize Delay**.
802.1p	You can choose from 0 to 7.
delete	Select a row in the table and click it to delete the row.
delete all	Select all the rows in the table and click it to delete the rows.

3.6.5 SNMP

Choose **Advance** > **SNMP**. The page shown in the following figure appears.

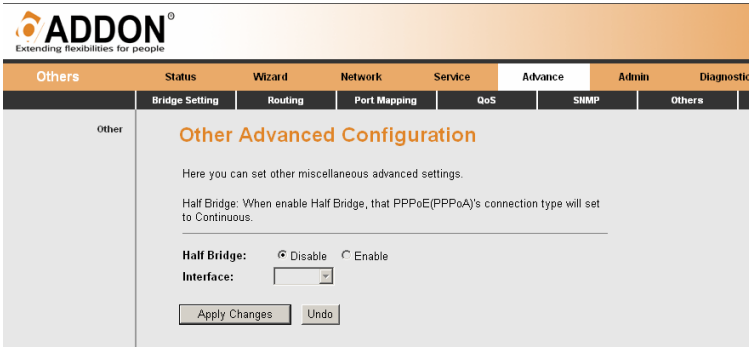


The following table describes the parameters and buttons of this page:

Field	Description
Trap IP Address	Enter the IP address of trap host. The trap information is sent to the host.
Community name (read-only)	The common character string that is used for obtaining the device information. It is like password, through which SNMP application entry obtains the device information directly.
Community name (read-write)	Modify the common character string that is configured by the device. It is like password, through which SNMP application entry modifies the device information directly.

3.6.6 Others

Choose **Advance** > **Others**. The page shown in the following figure appears.

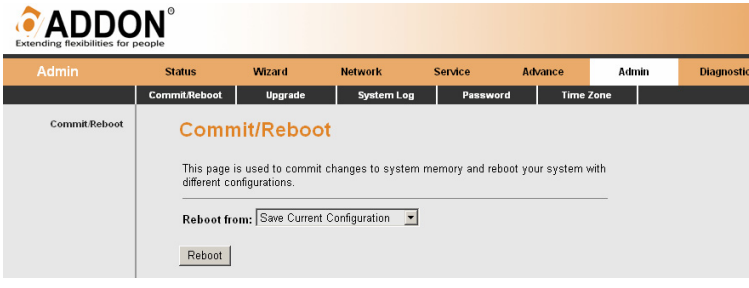


3.7 Admin

In the navigation bar, choose **Admin**. The **Admin** page that is displayed contains **Commit/Reboot**, **Upgrade**, **System Log**, **Password**, and **Time Zone**.

3.7.1 Commit/Reboot

Choose **Admin** > **Commit/Reboot**. The page shown in the following figure appears. In this page, you can set the router reset to the default settings or set the router to commit the current settings.



The following table describes the parameters of this page:

Field	Description
Factory Default Configuration	Select it to reset the router to the default settings.
Save Current Configuration	Select it to save the current settings and reboot the router.
Reboot	Click it to reboot the router.

3.7.2 Upgrade

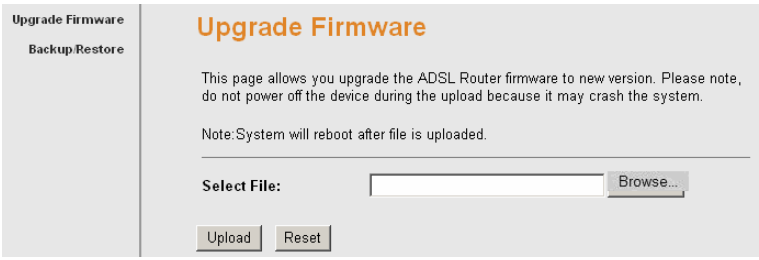
Choose **Admin > Upgrade**. The **Upgrade** page that is displayed contains **Upgrade Firmware** and **Backup/Restore**.

3.7.2.1 Upgrade Firmware

Click **Upgrade Firmware** in the left pane. The page shown in the following figure appears.In this page, you can upgrade the firmware of the router.

Note:

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



The following table describes the parameters and buttons of this page:

Field	Description
Select File	Click **Browse** to select the firmware file.
Upload	Select the firmware file and click **Upload** to begin upgrading the firmware.

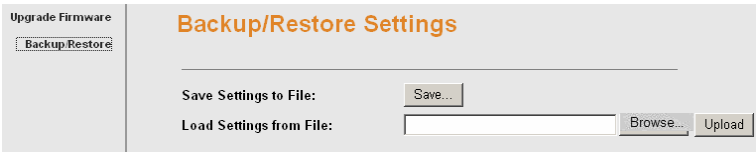
Field	Description
Reset	Click it to begin selecting the firmware file.

3.7.2.2 Backup/Restore

Click **Backup/Restore**. The page shown in the following figure appears. In this page, you can backup the current settings to a file and restore the settings from the file which was saved previously.

Note:

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

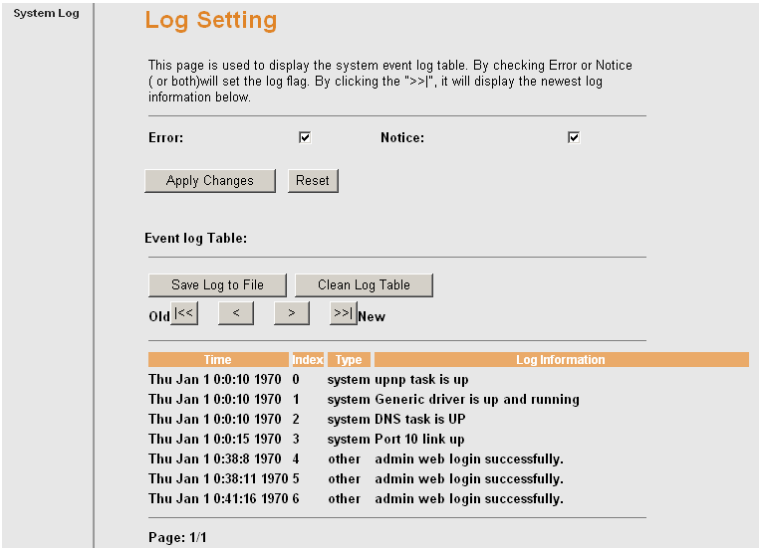


The following table describes the parameters and buttons of this page:

Field	Description
Save Settings to File	Click it and select the path. Then you can save the configuration file of the router.
Load Settings from File	Click **Browse** to select the configuration file.
Upload	Select the configuration file of the router. Click **Upload** to begin restoring the router configuration.

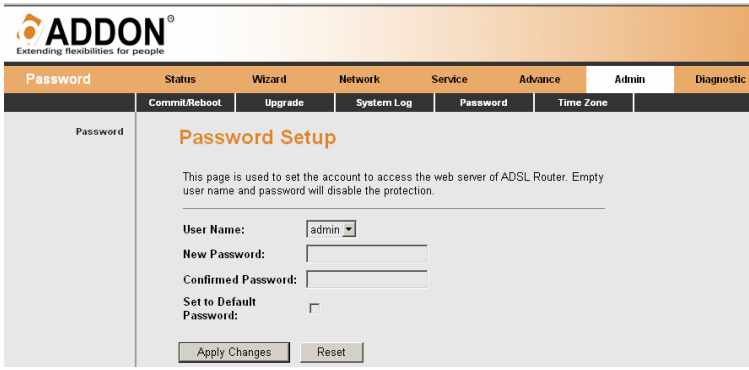
3.7.3 System Log

Choose **Admin > System Log**. The page shown in the following figure appears. In this page, you can view the log information.



3.7.4 Password

Choose **Admin** > **Password**. The page shown in the following figure appears. In this page, you can change the password of the user, including admin and user. By default, the super user name and password are **admin** and **admin**. The common user name and password are **user** and **user**.

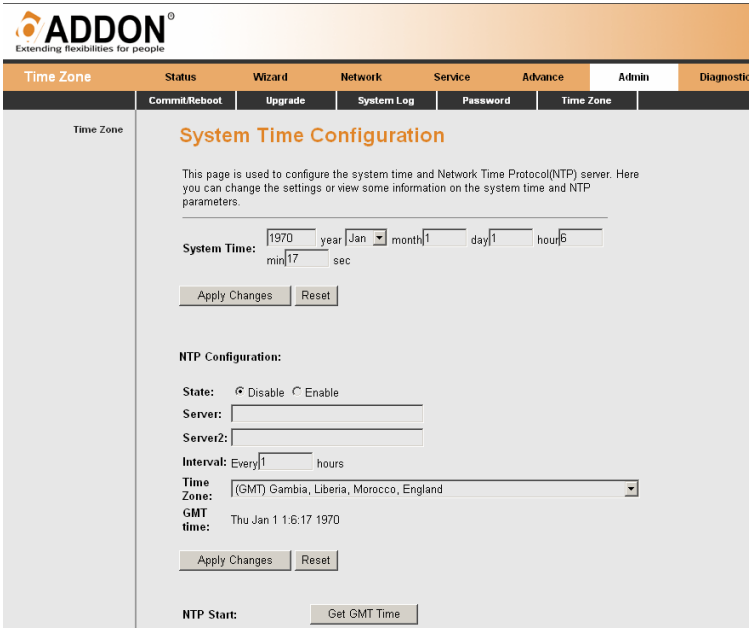


The following table describes the parameters of this page:

Field	Description
User Name	You can choose **admin** or **user**.
New Password	Enter the password to which you want to change the old password.
Confirmed Password	Enter the new password again.
Set to Default Password	After selecting it, the password you set does not take effect. It keeps the default password.

3.7.5 Time Zone

Choose **Admin** > **Time Zone**. The page shown in the following figure appears. In this page, you can set the system time manually or get the system time from the time server.

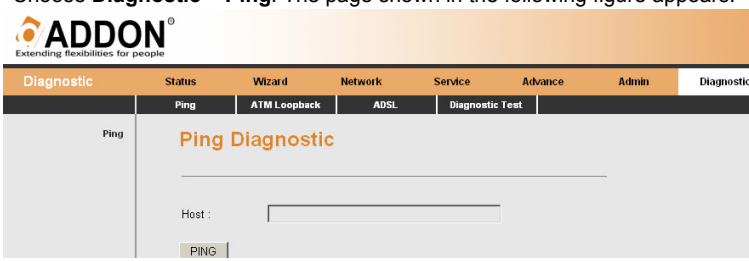


3.8 Diagnostic

In the navigation bar, choose **Diagnostic**. The **Diagnostic** page that is displayed contains **Ping**, **ATM Loopback**, **ADSL** and **Diagnostic**.

3.8.1 Ping

Choose **Diagnostic** > **Ping**. The page shown in the following figure appears.

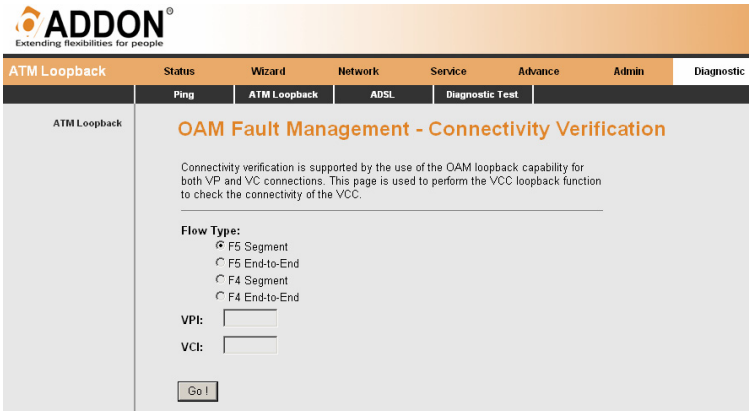


The following table describes the parameters and buttons in this page:

Field	Description
Host	Enter the IP address.
PING	Click it to begin to Ping the host address.

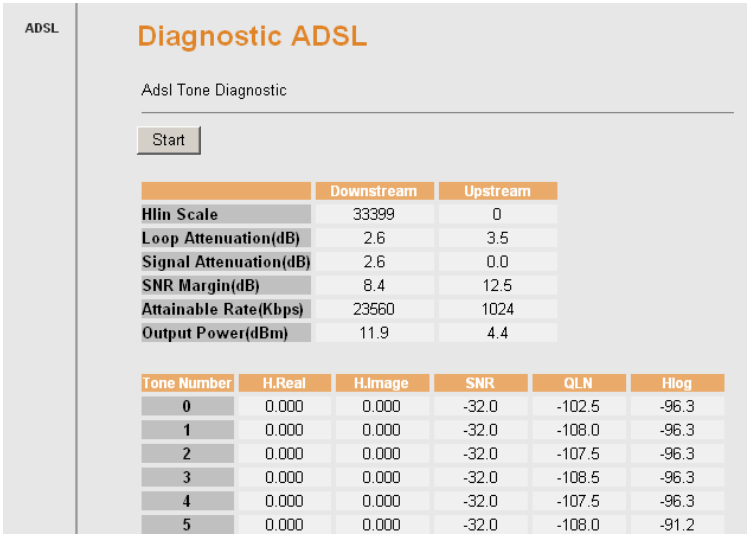
3.8.2 ATM Loopback

Choose **Diagnostic** > **ATM Loopback**. The page shown in the following figure appears. In this page, you can use VCC loopback function to check the connectivity of the VCC.



3.8.3 ADSL

Choose **Diagnostic** > **ADSL**. The page shown in the following figure appears. It is used for ADSL tone diagnostics.



Click **Start** to begin ADSL tone diagnostics.

3.8.4 Diagnostic Test

Choose **Diagnostic > Diagnostic Test**. The page shown in the following figure appears. In this page, you can test the DSL connection.

Click **Run Diagnostic Test** to begin testing.