PROLiNK®
Challenge The Limit

USER'S MANUAL

Hurricane 5004N

Wireless-N (2T2R) 4-Port ADSL2+

Modem/Router

Version 1.0 (Jan'10)

TABLE OF CONTENTS

Chapter 1 Introduction

The Wireless-N (2T2R) 4-Port ADSL2+ Modem/Router user manual contains the guidance to install and configure PROLiNK Hurricane 5004N Wireless-N (2T2R) 4-Port ADSL2+ Modem/Router using the Web GUI.

1.1 Intended Audience

This manual is intended for end users to access ADSL broadband service.

1.2 Definitions of Terms Used In This Document

None.

1.3 Acronyms Used Throughout This Document

None.

1.4 Usage Instructions

None.

1.5 Questions or Comments on this Document

Please contact us and visit our website at *http://www.prolink2u.com* should you have any questions or comments on this document.

Chapter 2 System Overview

2.1 General Description

Hurricane 5004N wireless router is a high-speed Wireless-N (2T2R) 4-Port ADSL2+ Modem/Router that is specifically designed to connect to the Internet and to directly connect to your local area network (LAN) via high-speed 10/100 Mbps Ethernet, or wireless LAN (WLAN). The ADSL2+ modem is compatible with the latest ADSL standards, including ADSL2 and ADSL2+, and supports up to 26 Mbps downstream and 3 Mbps upstream to deliver true broadband speed and throughput. The DSL router supports wireless 802.11b/g/n and the following security protocols: WEP, WPA, WPA2, and 802.1x.

To ensure fully compatibility, the DSL device was tested with all major DSLAMs, and support standard 10/100 Mbps Base-T Ethernet interface Auto MDI/MDIx 10/100 Switch function allowing user easily to link to PC or other Switches/Hubs. The DSL device is an idea solution for multi-users utilizing build-in channel mode (PPPoE/A, IPoA, IPoE), IP routing, NAT functionalities sharing the ADSL link. The DSL device is also a perfect solution for the residential users, it supports the users with bridge mode in host based PPPoE Client.

2.2 Specifications

2.2.1 ADSL compliance

- ANSI T1.413 Issue2
- ITU-T G.992.1 (G.dmt)
- ITU-T G.992.2 (G.lite)
- ITU-T G.994.1 (G.hs)
- ITU-T G.992.3 ADSL2 G.dmt.bit
- ITU-T G.992.4 ADSL2 G.lite.bis
- ITU-T G.992.5 ADSL+
- Auto-negotiating rate adaptation
- Annex A(ADSL over POTS) , Annex L(ReADSL) and Annex M
- Maximum downstream rate of 26 Mbps
- Maximum upstream rate of 3Mbps
- Supports Dying Gasp (Optional)

2.2.2 WLAN features

- Complies with IEEE 802.11b/g/n standards
- Backward compatible with 802.11b/g devices while operating at 802.11n data rate
- 2x2 MIMO technology for extended reception robustness and exceptional throughput

- 802.11b/g Data rates : 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54Mbps, 802.11n maximum Data rates :150Mbps receive/transmit PHY rate using 20MHz bandwidth, 300Mbps receive/transmit PHY rate using 40MHz bandwidth
- Burst-mode support for dramatically enhanced throughput
- DSSS with DBPSK and DQPSK, CCK modulations and demodulations supported with rate compatible punctured convolution coding with coding rate of 1/2, 2/3, 3/4 and 5/6
- OFDM with BPSK, QPSK, 16QAM and 64QAM modulations and demodulations supported with long and short preamble
- Complies with WMM, 802.11e, and CCX specifications
- Complies with 802.11h, 802.11i, 802.11j specifications
- Hardware-based IEEE 802.11i encryption/decryption engine, including 64-bit/128-bit WEP, TKIP, and AES
- Supports Wi-Fi alliance WPA and WPA2 security

2.2.3 Software features

- RFC-1483/2684 LLC/VC-Mux bridged/routed mode
- RFC-1577 Classical IP over ATM
- RFC-2516 PPPoE
- RFC-2364 PPPoA
- RFC-1661 PPP
- Bridge/Routing
    - DHCP Client/Sever/Relay
    - IP routing : RIP v1/v2
    - Static route
    - DNS Relay Agent
    - Dynamic DNS
    - IGMP Proxy
    - 802.1d Spanning-Tree Protocol
    - NAT (Network Address Translation)
    - NAPT port forwarding
    - DMZ support
- Security
    - User authentication for PPP
    - PAP (Password Authentication Protocol)
    - CHAP (Challenge Authentication Protocol)

- Firewall
    - IP/Port filtering
    - MAC filtering
- ATM
    - ITU-T 1.610 F4/F5 OAM send and receiver loop-back
    - ATM QoS : CBR, rt-VBR, nrt-VBR and UBR
    - Multiple PVC : support 8 PVCs

2.2.4 Management

- Web-based configuration
- Telnet remote management
- SNMP v1/v2/Trap
- Diagnostic tool
- Firmware upgrade through FTP, TFTP and HTTP
- UPnP support
- ACL (Access Control List)

Chapter 3 Hardware Installation

3.1 Hardware Requirements

3.1.1 10V Power Adapter

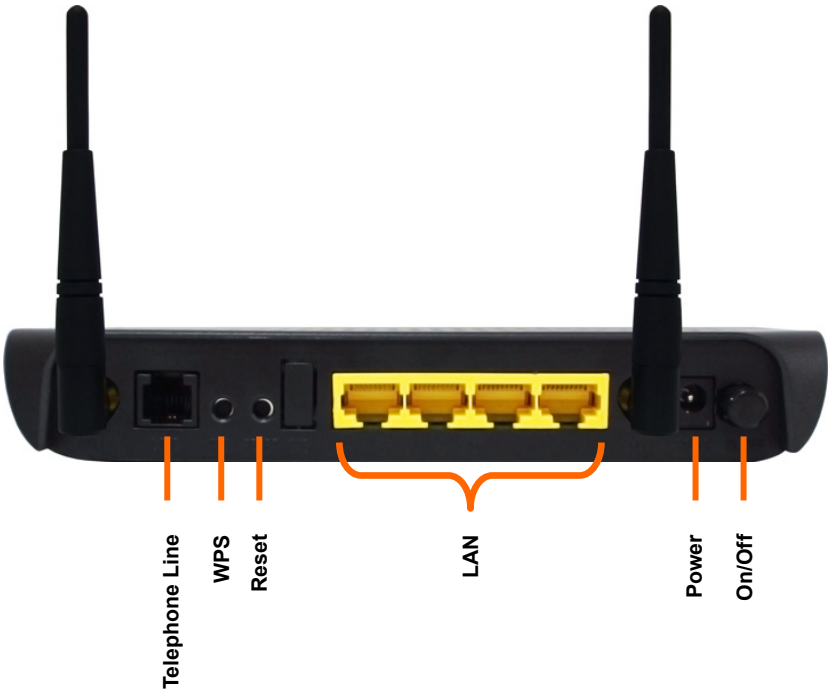
3.1.2 RJ-45 Ethernet cable

3.1.3 RJ-11 ADSL line

3.2 LED Status Description

3.2.1 Front Panel

3.2.2 Rear Panel



3.3 Hardware Setup Procedures

3.3.1 Connect RJ-11 line from Hurricane 5004N to the wall phone socket

3.3.2 Connect RJ-45 line from your PC LAN Port to Hurricane 5004N Ethernet port

3.3.3 Connect the 10V power adapter

Chapter 4 Software Configuration

The DSL device is an ADSL2+ wireless router. When you power on the device, the system will boot up and connect to ADSL automatically. The system provides a PVC for bridge test by default. The default configurations for the system are listed below.

- LAN IP address: **192.168.1.1**, Netmask: **255.255.255.0**
- UART setting: 115200bps, 8 bits, no parity, 1 stop bit, no flow control.
- VPI/VCI for ATM: **0/35**
- ADSL Line mode: Auto-detect.

User can change settings via WEB browser. The following sections describe the set up procedures.

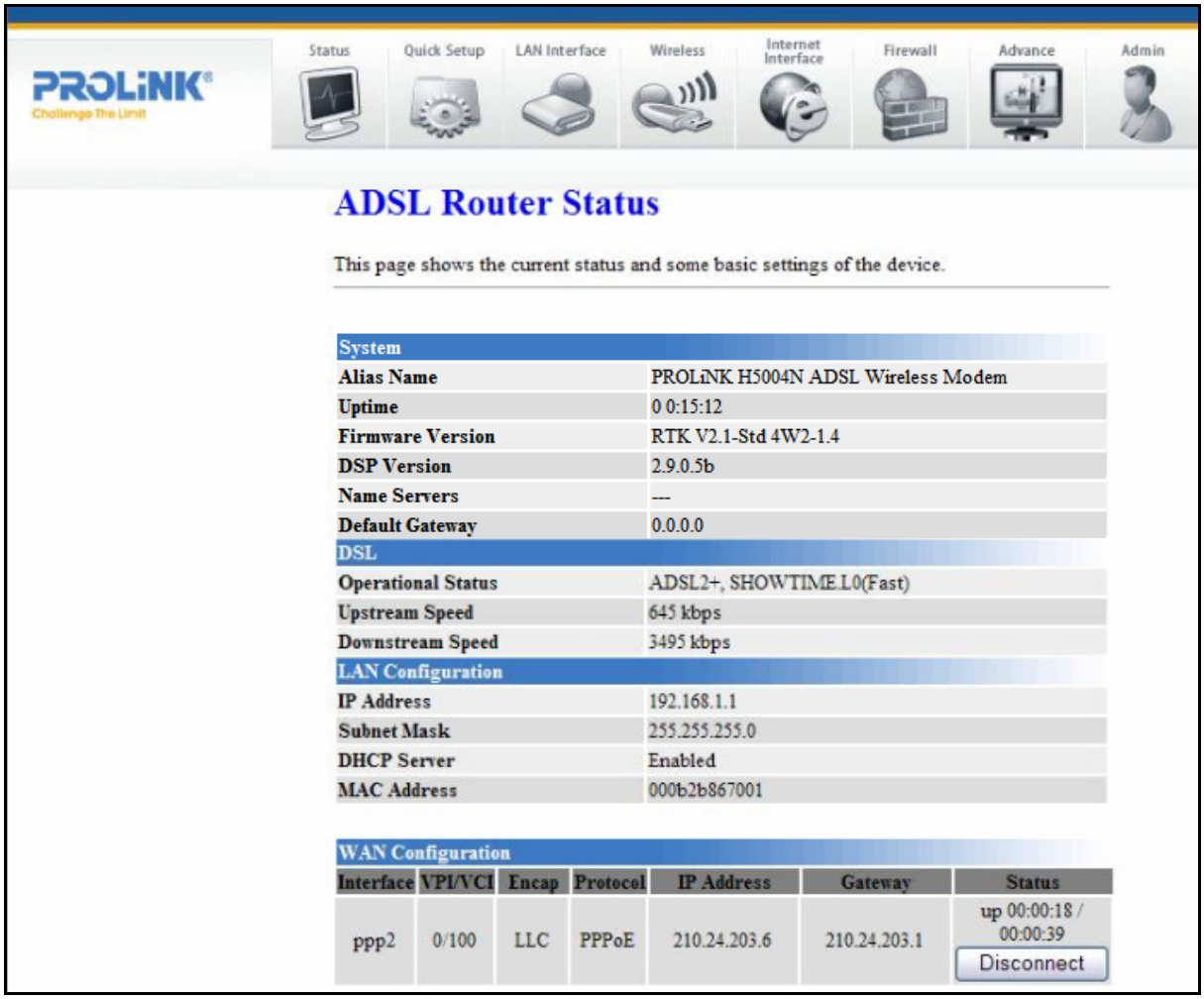
Please set your PC's Ethernet port as follow:

- IP address: **192.168.1.XXX** ***(e.g. 192.168.1.10)***
- Netmask: **255.255.255.0**

Access the Web Console:

- Start your web browser.
- Type the Ethernet IP address of the modem/router on the address bar of the browser. Default IP address is 192.168.1.1.
- The Enter Network Password dialog box appears. Default Username: **admin** Password: **password**

Once you have connected to ADSL2+ router. You will see the status page.



This page displays the ADSL modem/router's current status and settings. This information is read-only except for the PPPoE/PPPoA channel for which user can connect/disconnect the channel on demand. Click the "Refresh" button to update the status

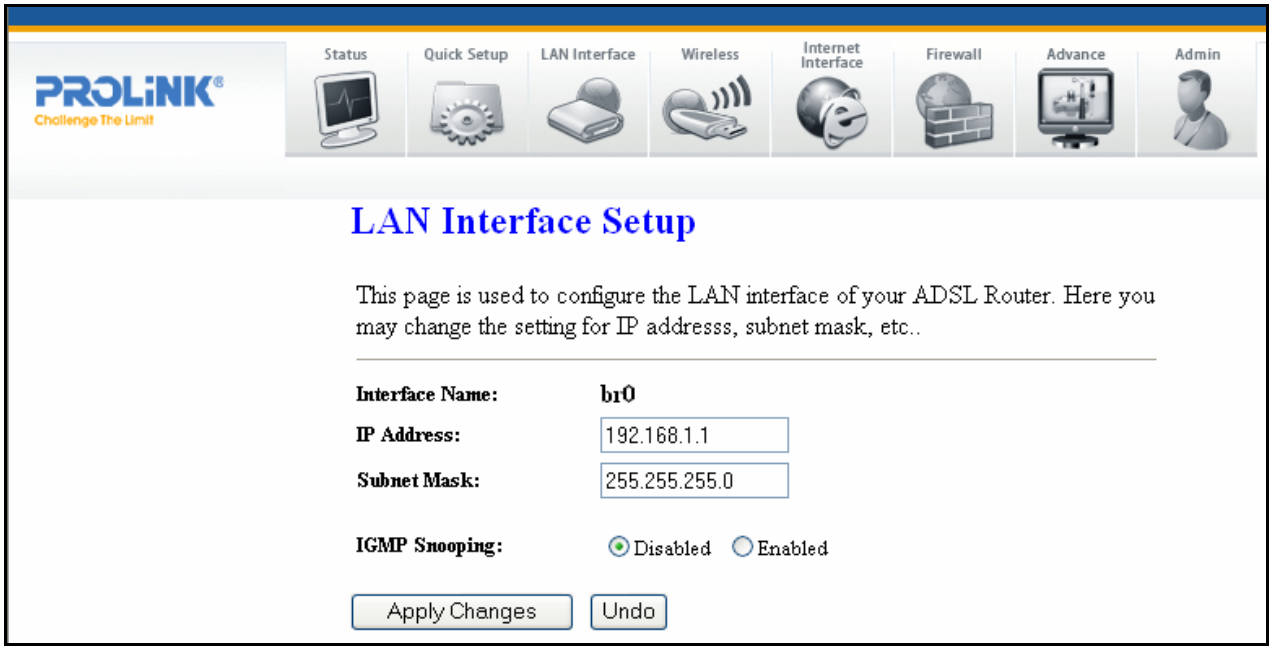
Function buttons in this page:

Connect / Disonnect

The two buttons take effect only when PVC is configured as PPPoE/PPPoA mode. Click Connect/Disconnect button to connect/disconnect the PPP dial up link.

4.1 LAN Configuration

This page shows the current setting of LAN interface. You can set IP address, subnet mask, and IGMP Snooping for LAN interface in this page.



Fields in this page:

Field	Description
IP Address	The IP address your LAN hosts use to identify the device's LAN port.
Subnet Mask	LAN subnet mask.
IGMP Snooping	Enable/disable the IGMP snooping function for the multiple bridged LAN ports.

Function buttons in this page:

Apply Changes

Click to save the setting to the configuration. New parameters will take effect after save into flash memory and reboot the system. See section "Admin" for save details.

Undo

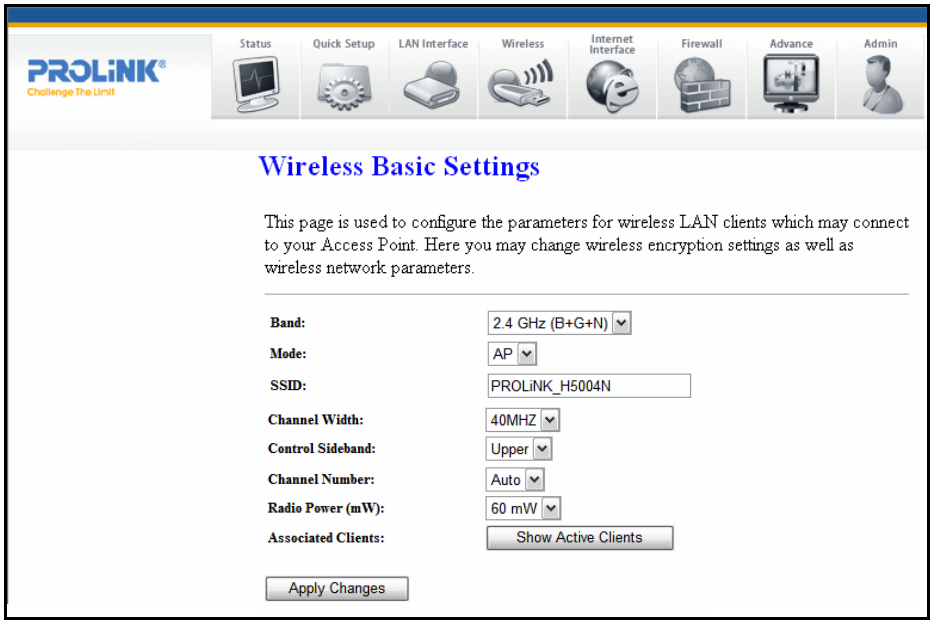
Discard your changes.

4.2 Wireless Configuration

This section provides the wireless network settings for your WLAN interface. The wireless interface enables the wireless AP function for ADSL modem.

4.2.1 Basic Setting

This page contains all of the wireless basic settings. Most users will be able to configure the wireless portion and get it working properly using the setting on this screen.



Fields in this page:

Field	Description
Disable Wireless LAN Interface	Check it to disable the wireless function for ADSL modem.
Band	Select the appropriate band from the list provided to correspond with your network setting.
Mode	The selections are: AP
SSID	The Service Set Identifier (SSID) or network name. It is case sensitive and must not exceed 32 characters, which may be any keyboard character. The mobile wireless stations shall select the same SSID to be able to communicate with your ADSL modem (or AP).
Channel Number	Select the appropriate channel from the list provided to correspond with your network settings. You shall assign a different channel for each AP to avoid signal interference.
Radio Power (mW)	The maximum output power: 15mW, 30mW or 60mW.

Function buttons in this page:

Associated Clients

Click it will show the clients currently associated with the ADSL modem.

Apply Changes

Change the settings. New parameters will take effect after save into flash memory and reboot the system. See section “Admin” for save details.

Reset

Discard your changes and reload all settings from flash memory.

4.2.2 Advanced Settings

This page allows advanced users who have sufficient knowledge of wireless LAN. These setting shall not be changed unless you know exactly what will happen for the changes you made on your DSL device.

Fields in this page:

Field	Description
Authentication Type	• **Open System:** Open System authentication is not required to be successful while a client may decline to authenticate with any particular other client. • **Shared Key:** Shared Key is only available if the WEP option is implemented. Shared Key authentication supports authentication of clients as either a member of those who know a shared secret key or a member of those who do not. IEEE 802.11 Shared Key authentication accomplishes this without the need to transmit the secret key in clear. Requiring the use of the WEP privacy mechanism. • **Auto:** Auto is the default authentication algorithm. It will change its authentication type automatically to fulfill client's requirement.
Fragment Threshold	This value should remain at its default setting of 2346. It specifies the maximum size for a packet before data is fragmented into multiple packets. If you experience a high packet error rate, you may slightly increases the "Fragment Threshold" value within the value range of 256 to 2346. Setting this value too low may result in poor network performance. Only minor modifications of this value are recommended.
RTS Threshold	This value should remain at its default setting of 2347. Should you encounter inconsistent data flow, only minor modifications are recommended. If a network packet is smaller than the preset "RTS threshold" size, the RTS/CTS mechanism will not be enabled. The ADSL modem (or AP) sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission.
Beacon Interval	The Beacon Interval value indicates the frequency interval of the beacon. Enter a value between 20 and 1024. A beacon is a packet broadcast by the ADSL modem (or AP) to synchronize the wireless network. The default is 100.
Data Rate	The rate of data transmission should be set depending on the speed of your wireless network. You should select from a range of transmission speeds, or you can select Auto to have the ADSL modem (or AP) automatically use the fastest possible data rate and enable the Auto-Fallback feature. Auto-Fallback will negotiate the best possible connection speed between the AP and a wireless client. The default setting is Auto.
Preamble Type	The Preamble Type defines the length of the CRC (Cyclic Redundancy Check) block for communication between the AP and mobile wireless stations. Make sure to select the appropriate preamble type. Note that high network traffic areas should use the short preamble type. CRC is a common technique for detecting data transmission errors.
Broadcast SSID	If this option is enabled, the device will automatically transmit their network name (SSID) into open air at regular interval. This feature is intended to allow clients to dynamically discover and roam between WLANs; if this option is disabled, the device will hide its SSID. When this is done, the station cannot directly discover its WLAN and MUST be configure with the SSID. Note that in a home Wi-Fi network, roaming is largely unnecessary and the SSID broadcast feature serves no useful purpose. You should disable this feature to improve the security of your WLAN.
Relay Blocking	When Relay Blocking is enabled, wireless clients will not be able to directly access other wireless clients.
Ethernet to Wireless Blocking	When enabled, traffic between Ethernet and wireless interfaces are not allowed.

Function buttons in this page:

Apply Changes

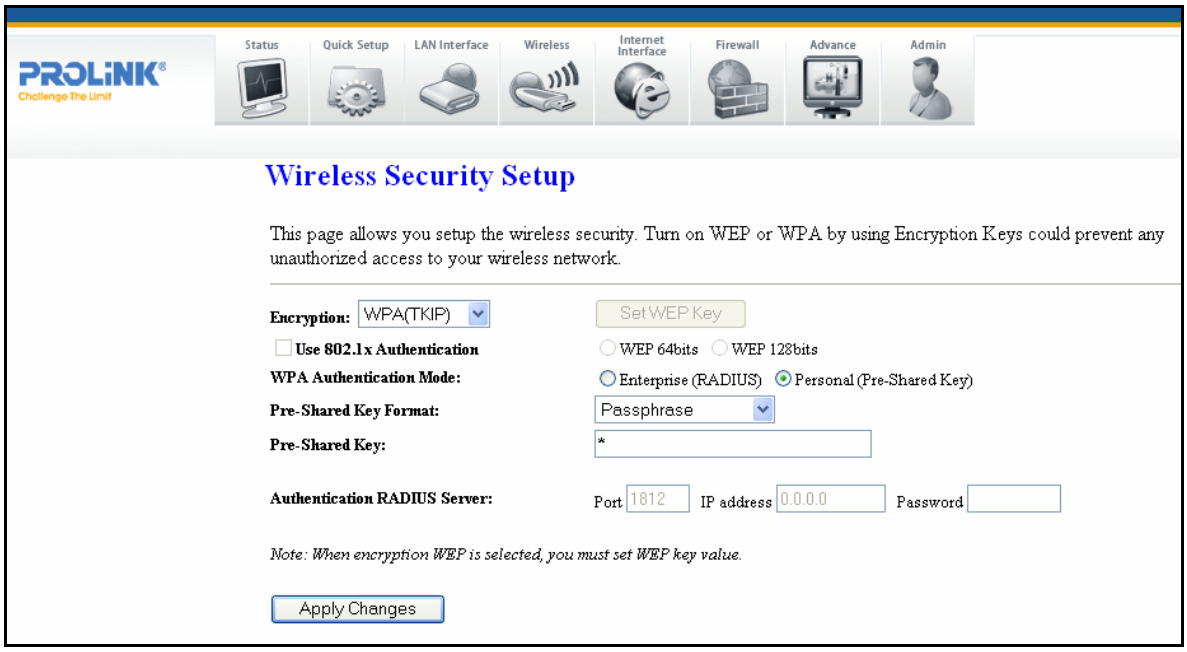
Change the settings. New parameters will take effect after save into flash memory and reboot the system. See section “Admin” for save details.

Reset

Discard your changes and reload all settings from flash memory.

4.2.3 Security

This screen allows you to setup the wireless security. Turn on WEP or WPA by using encryption keys could prevent any unauthorized access to your WLAN.



Fields in this page:

Field	Description
Encryption	There are 4 types of security to be selected. To secure your WLAN, it’s strongly recommended to enable this feature. • **WEP:** Make sure that all wireless devices on your network are using the same encryption level and key. Click Set WEP Key button to set the encryption key. • **WPA (TKIP):** WPA uses Temporal Key Integrity Protocol (TKIP) for data encryption. TKIP utilized a stronger encryption method and incorporates Message Integrity Code (MIC) to provide protection against hackers. • **WPA2 (AES):** WPA2, also known as 802.11i, uses Advanced Encryption Standard (AES) for data encryption. AES utilized a symmetric 128-bit block data encryption. • **WAP2 Mixed:** The AP supports WPA (TKIP) and WPA2 (AES) for data encryption. The actual selection of the encryption methods will depend on the clients.

Use 802.1x Authentication	Check it to enable 802.1x authentication. This option is selectable only when the "Encryption" is choose to either None or WEP. If the "Encryption" is WEP, you need to further select the WEP key length to be either WEP 64bits or WEP 128bits.
WPA Authentication Mode	There are 2 types of authentication mode for WPA. • **WPA-RADIUS:** WPA RADIUS uses an external RADIUS server to perform user authentication. To use WPA RADIUS, enter the IP address of the RADIUS server, the RADIUS port (default is 1812) and the shared secret from the RADIUS server. Please refer to "Authentication RADIUS Server" setting below for RADIUS setting. The WPA algorithm is selected between TKIP and AES, please refer to "WPA cipher Suite" below. • **Pre-Shared Key:** Pre-Shared Key authentication is based on a shared secret that is known only by the parties involved. To use WPA Pre-Shared Key, select key format and enter a password in the "Pre-Shared Key Format" and "Pre-Shared Key" setting respectively. Please refer to "Pre-Shared Key Format" and "Pre-Shared Key" setting below.
Pre-Shared Key Format	• **PassPhrase:** Select this to enter the Pre-Shared Key secret as user-friendly textual secret. • **Hex (64 characters):** Select this to enter the Pre-Shared Key secret as hexadecimal secret.
Pre-Shared Key	Specify the shared secret used by this Pre-Shared Key. If the "Pre-Shared Key Format" is specified as PassPhrase, then it indicates a passphrase of 8 to 63 bytes long; or if the "Pre-Shared Key Format" is specified as PassPhrase, then it indicates a 64-hexadecimal number.
Authentication RADIUS Server	If the WPA-RADIUS is selected at "WPA Authentication Mode", the port (default is 1812), IP address and password of external RADIUS server are specified here.

Function buttons in this page:

Apply Changes

Change the settings. New parameters will take effect after save into flash memory and reboot the system. See section "Admin" for save details.

4.2.4 Access Control

This page allows administrator to have access control by enter MAC address of client stations. When Enable this function, MAC address can be added into access control list and only those clients whose wireless MAC address are in the access control list will be able to connect to your DSL device (or AP).

Fields in this page:

Field	Description
Wireless Access Control Mode	The Selections are: • **Disable:** Disable the wireless ACL feature. • **Allow Listed:** When this option is selected, no wireless clients except those whose MAC addresses are in the current access control list will be able to connect (to this device). • **Deny Listed:** When this option is selected, all wireless clients except those whose MAC addresses are in the current access control list will be able to connect (to this device).
MAC Address	Enter client MAC address and press “Apply Changes” button to add client MAC address into current access control list.

Function buttons for the setting block:

Apply Changes

Click to add this entry into the Current Access Control List.

The Current Access Control List lists the client MAC addresses. Any wireless client with its MAC address listed in this access control list will be able to connect to the device. You can select the entries at the Select column and apply to the following function buttons.

Function buttons for the Current Access Control List:

Delete Selected

Delete the selected entries from the list.

Delete All

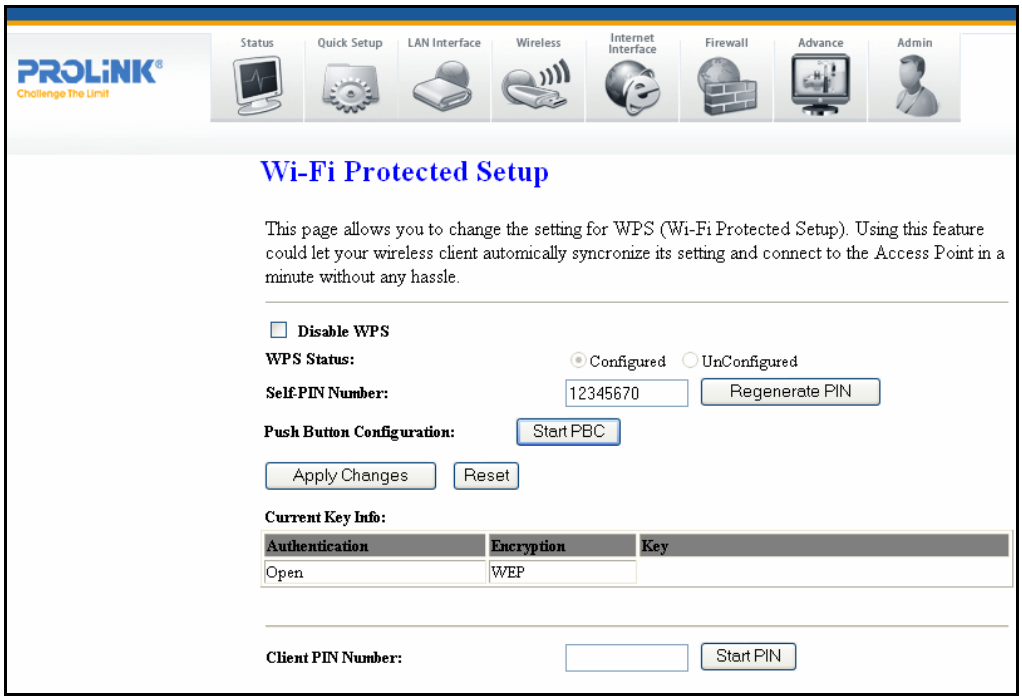
Flush the list.

4.2.5 WPS

Although home Wi-Fi networks have become more and more popular, users still have trouble with the initial set up of network. This obstacle forces users to use the open security and increases the risk of eavesdropping. Therefore, The Wi-Fi Protected Setup (WPS) is designed to ease set up of security-enabled Wi-Fi networks and subsequently network management.

The largest difference between WPS-enabled devices and legacy devices is that users do not need the knowledge about SSID, channel and security settings, but they could still surf in a security-enabled Wi-Fi network.

This device supports Push Button method and PIN method for WPS. The following sub-paragraphs will describe the function of each item. The webpage is as below.



Fields in this page:

Field	Description
Disable WPS	Check to disable the Wi-Fi protected Setup.
WPS Status	When AP's settings are factory default (out of box), it is set to open security and un-configured state. "WPS Status" will display it as "UnConfigured". If it already shows "Configured", some registrars such as Vista WCN will not configure AP. Users will need to go to the "Backup/Restore" page and click "Reset" to reload factory default settings.
Self-PIN Number	"Self-PIN Number" is AP's PIN. Whenever users want to change AP's PIN, they could click "Regenerate PIN" and then click " Apply Changes". Moreover, if users want to make their own PIN, they could enter four-digit PIN without checksum and then click " Apply Changes". However, this would not be recommended since the registrar side needs to be supported with four-digit PIN.
Push Button Configuration	Clicking this button will invoke the PBC method of WPS. It is only used when AP acts as a registrar.
Client PIN Number	It is only used when users want their station to join AP's network. The length of PIN is limited to four or eight numeric digits. If users enter eight-digit PIN with checksum error, there will be a warning message popping up. If users insist on this PIN, AP will take it.

Function buttons in this page:

Regenerate PIN

Click to regenerate the Self-PIN Number.

Start PBC

Click to start the Push Button method of WPS.

Apply Changes

Click to commit changes.

Reset

It restores the original values.

Start PIN

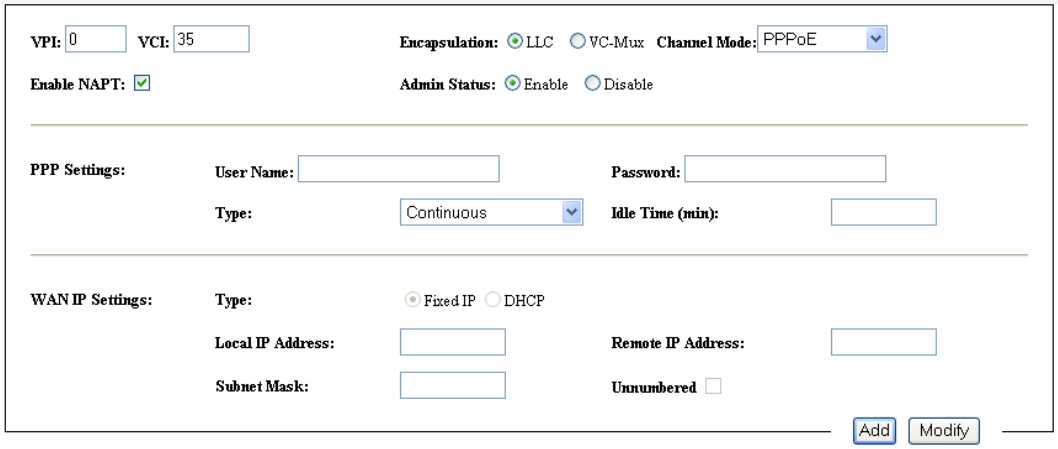
Click to start the PIN method of WPS.

4.3 WAN Configuration

There are three sub-menu for WAN configuration: [Channel Config], [ATM Settings], and [ADSL Settings].

4.3.1 Channel Config

ADSL modem/router comes with 8 ATM Permanent Virtual Channels (PVCs) at the most. There are mainly three operations for each of the PVC channels: add, delete and modify. And there are several channel modes to be selected for each PVC channel. For each of the channel modes, the setting is quite different accordingly. Please reference to the section – Channel Mode Configuration for details.



Function buttons in this page:

Add

Click Add to complete the channel setup and add this PVC channel into configuration.

Modify

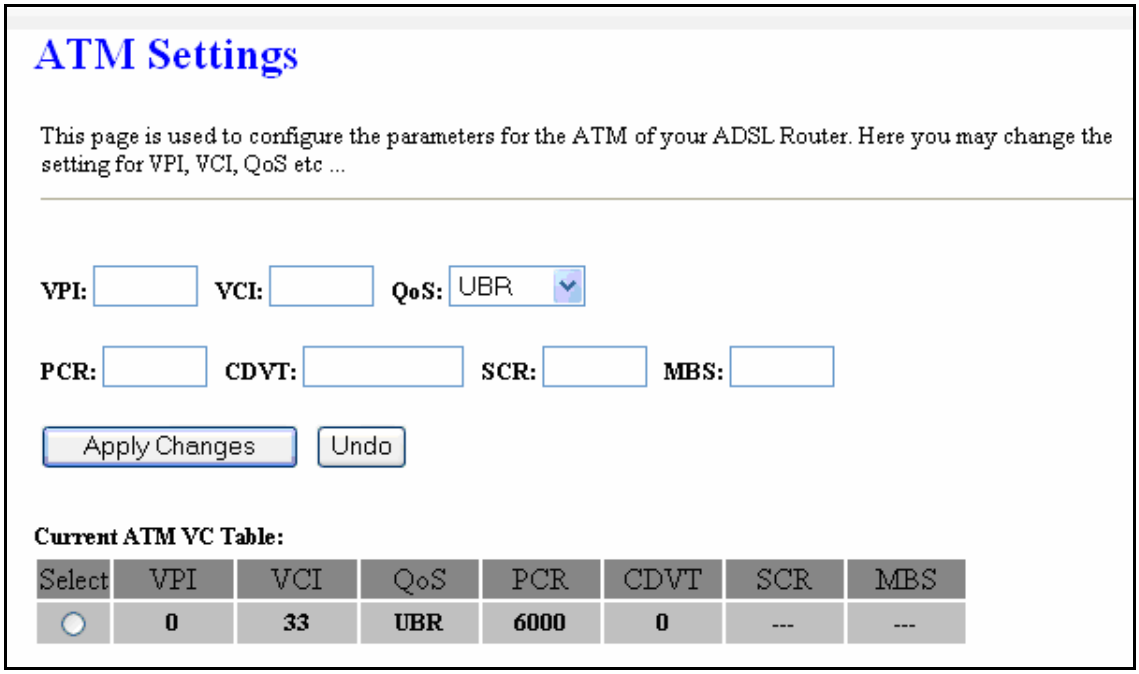
Select an existing PVC channel by clicking the radio button at the Select column of the Current ATM VC Table before we can modify the PVC channel. After selecting an PVC channel, we can modify the channel configuration at this page. Click Modify to complete the channel modification and apply to the configuration.

Delete

Select an existing PVC channel to be deleted by clicking the radio button at the Select column of the Current ATM VC Table. Click Delete to delete this PVC channel from configuration.

4.3.2 ATM Settings

The page is for ATM PVC QoS parameters setting. The DSL device support 4 QoS mode —CBR/rt-VBR/nrt-VBR/UBR.



Fields in this page:

Field	Description
VPI	Virtual Path Identifier. This is read-only field and is selected on the Select column in the Current ATM VC Table.
VCI	Virtual Channel Identifier. This is read-only field and is selected on the Select column in the Current ATM VC Table. The VCI, together with VPI, is used to identify the next destination of a cell as it passes through to the ATM switch.
QoS	Quality of Server, a characteristic of data transmission that measures how accurately and how quickly a message or data is transferred from a source host to a destination host over a network. The four QoS options are: UBR (Unspecified Bit Rate): When UBR is selected, the SCR and MBS fields are disabled. CBR (Constant Bit Rate): When CBR is selected, the SCR and MBS fields are disabled. nrt-VBR (non-real-time Variable Bit Rate): When nrt-VBR is selected, the SCR and MBS fields are enabled. rt-VBR (real-time Variable Bit Rate): When rt-VBR is selected, the SCR and MBS fields are enabled.
PCR	Peak Cell Rate, measured in cells/sec., is the cell rate which the source may never exceed.
SCR	Sustained Cell Rate, measured in cells/sec., is the average cell rate over the duration of the connection.
MBS	Maximum Burst Size, a traffic parameter that specifies the maximum number of cells that can be transmitted at the peak cell rate.

Function buttons in this page:

Apply Changes

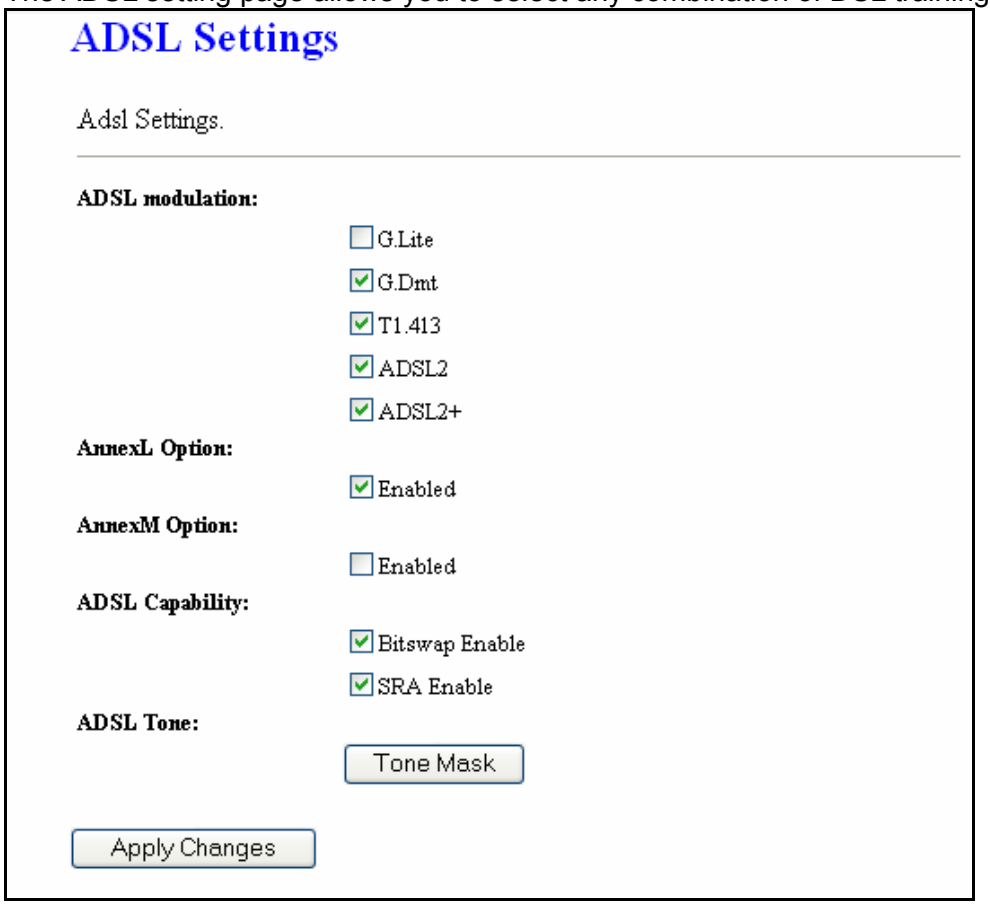
Set new PVC OoS mode for the selected PVC. New parameters will take effect after save into flash memory and reboot the system. See section “Admin” for save details.

Undo

Discard your settings.

4.3.3 ADSL Settings

The ADSL setting page allows you to select any combination of DSL training modes.



Fields in this page:

Field	Description
ADSL modulation	Choose prefered xdsl standard protocols. • **G.lite :** G.992.2 Annex A • **G.dmt :** G.992.1 Annex A • **T1.413 :** T1.413 issue #2 • **ADSL2 :** G.992.3 Annex A • **ADSL2+ :** G.992.5 Annex A
AnnexL Option	Enable/Disable ADSL2/ADSL2+ Annex L capability.
AnnexM Option	Enable/Disable ADSL2/ADSL2+ Annex M capability.
ADSL Capability	• **"Bitswap Enable" :** Enable/Disable bitswap capability. • **"SRA Enable" :** Enable/Disable SRA (seamless rate adaptation) capability.

Function buttons in this page:

Tone Mask

Choose tones to be masked. Mased tones will not carry any data.

Apply Changes

Click to save the setting to the configuration and the modem will be retrained.

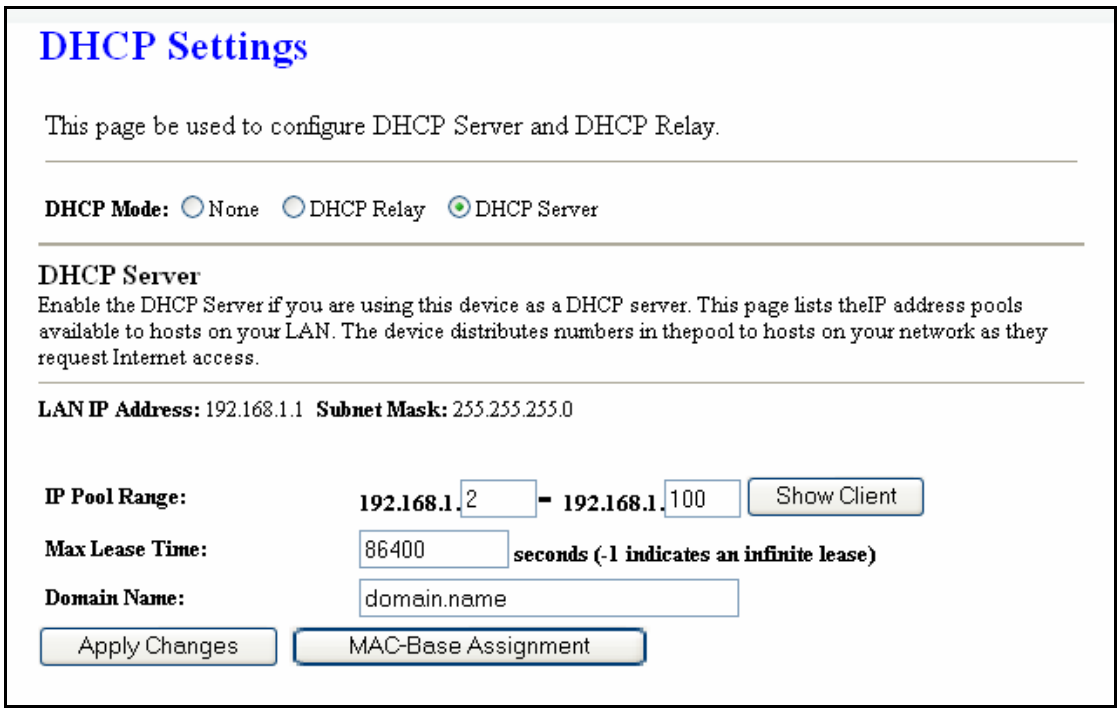
4.4 Services Configuration

4.4.1 DHCP Mode

You can configure your network and DSL device to use the Dynamic Host Configuration Protocol (DHCP). This page provides DHCP instructions for implementing it on your network by selecting the role of DHCP protocol that this device wants to play. There are two different DHCP roles that this device can act as: DHCP Serve and DHCP Relay. When acting as DHCP server, you can setup the server parameters at the DHCP Server page; while acting as DHCP Relay, you can setup the relay at the DHCP Relay page.

4.4.2 DHCP Server Configuration

By default, the device is configured as a DHCP server, with a predefined IP address pool of 192.168.1.64 through 192.168.1.253 (subnet mask 255.255.255.0).



Fields in this page:

Field	Description
IP Pool Range	Specify the lowest and highest addresses in the pool.
Max Lease Time	The Lease Time is the amount of time that a network user is allowed to maintain a network connection to the device using the current dynamic IP address. At the end of the Lease Time, the lease is either renewed or a new IP is issued by the DHCP server. The amount of time is in units of seconds. The default value is 86400 seconds (1 day). The value –1 stands for the infinite lease.
Domain Name	A user-friendly name that refers to the group of hosts (subnet) that will be assigned addresses from this pool.

Function buttons in this page:

Apply Changes

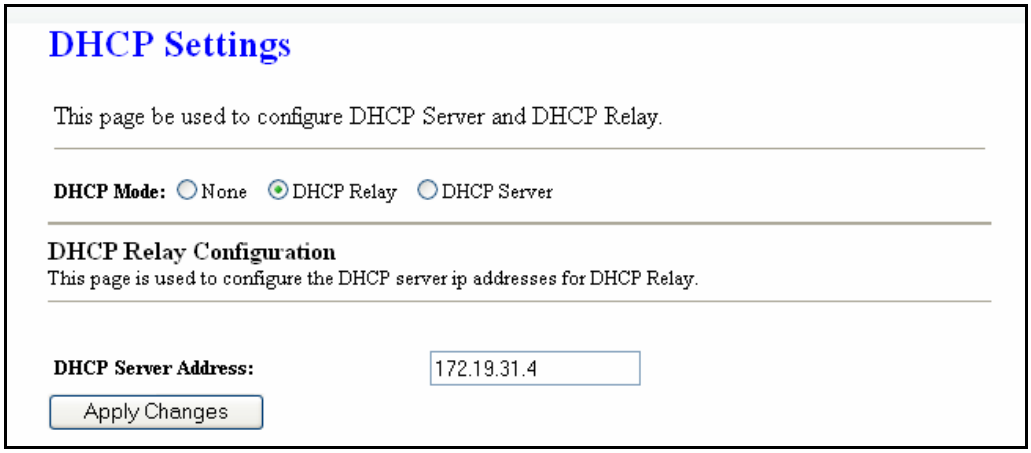
Set new DHCP server configuration. New parameters will take effect after save into flash memory and reboot the system. See section “Admin” for save details.

Undo

Discard your changes.

4.4.3 DHCP Relay Configuration

Some ISPs perform the DHCP server function for their customers’ home/small office network. In this case, you can configure this device to act as a DHCP relay agent. When a host on your network requests Internet access, the device contacts your ISP to obtain the IP configuration, and then forward that information to the host. You should set the DHCP mode after you configure the DHCP relay.



Fields in this page:

Field	Description
DHCP Server Address	Specify the IP address of your ISP’s DHCP server. Requests for IP information from your LAN will be passed to the default gateway, which should route the request appropriately.

Function button in this page

Apply Changes

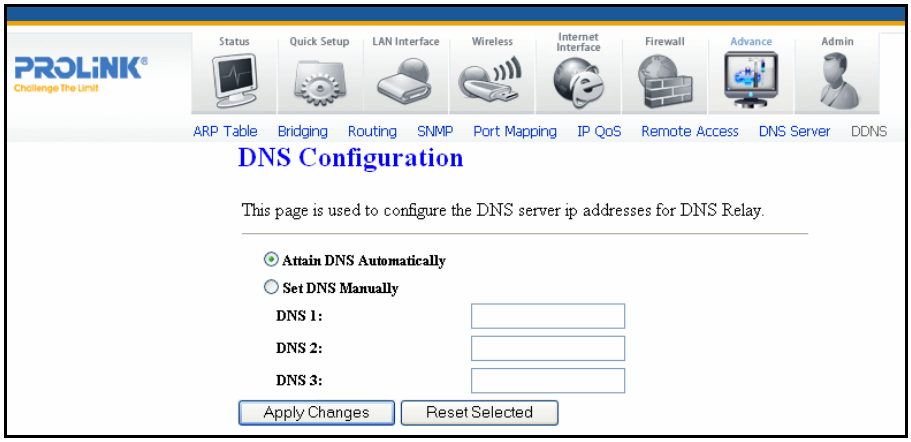
Click to save the setting to the configuration.

4.4.4 DNS Configuration

There are two submenus for the DNS Configuration: [DNS Server] and [Dynamic DNS]

4.4.4.1 DNS Server

This page is used to select the way to obtain the IP addresses of the DNS servers.



Fields in this page:

Field	Description
Attain DNS Automatically	Select this item if you want to use the DNS servers obtained by the WAN interface via the auto-configuration mechanism.
Set DNS Manually	Select this item to configure up to three DNS IP addresses.

Function buttons in this page:

Apply Changes

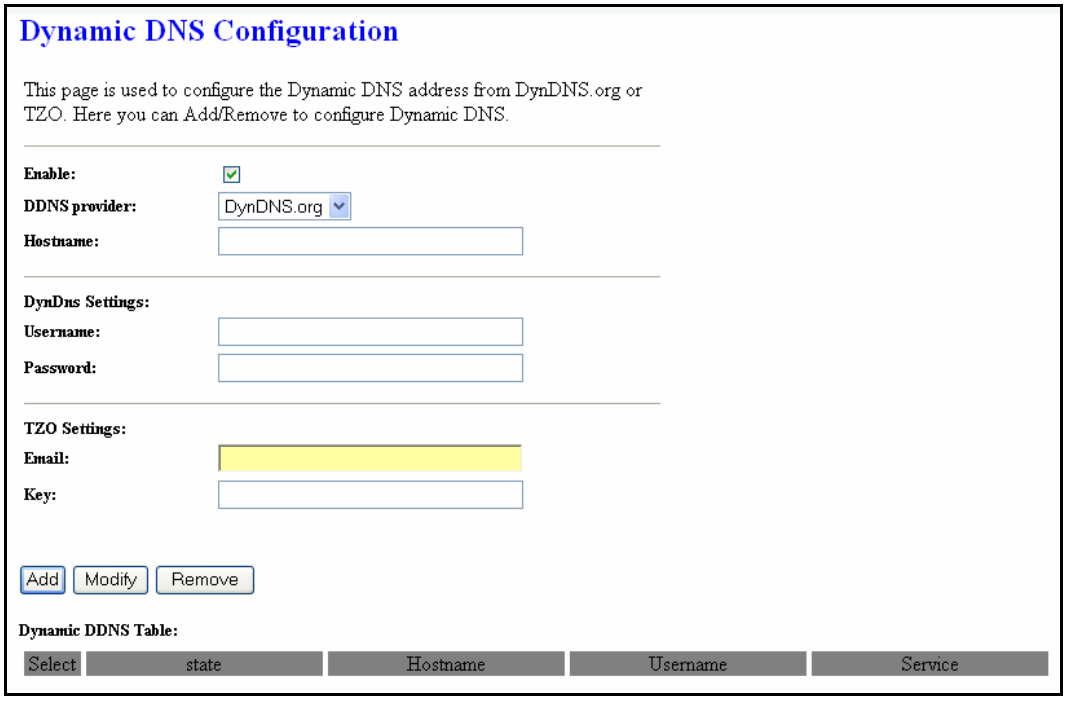
Set new DNS relay configuration. New parameters will take effect after save into flash memory and reboot the system. See section “Admin” for save details.

Undo

Discard your changes.

4.4.4.2 Dynamic DNS

Each time your device connects to the Internet, your ISP assigns a different IP address to your device. In order for you or other users to access your device from the WAN-side, you need to manually track the IP that is currently used. The Dynamic DNS feature allows you to register your device with a DNS server and access your device each time using the same host name. The Dynamic DNS page allows you to enable/disable the Dynamic DNS feature.



On the Dynamic DNS page, configure the following fields:

Field	Description
Enable	Check this item to enable this registration account for the DNS server.
DDNS provider	There are two DDNS providers to be selected in order to register your device with: **DynDNS** and **TZO**. A charge may occur depends on the service you select.
Hostname	Domain name to be registered with the DDNS server.
Interface	This field defaults to your device's WAN interface over which your device will be accessed.
Username	User-name assigned by the DDNS service provider.
Password	Password assigned by the DDNS service provider.

Function buttons in this page:

Add

Click Add to add this registration into the configuration.

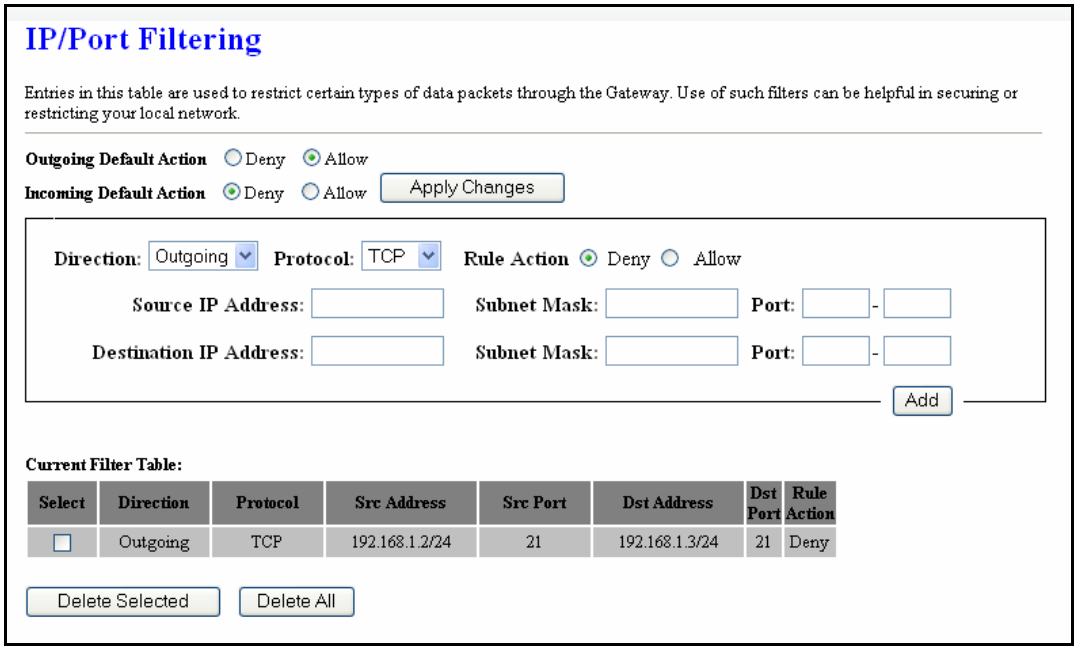
Remove

Select an existing DDNS registration by clicking the radio button at the Select column of the Dynamic DNS Table. Click Remove button to remove the selected registration from the configuration.

4.4.5 Firewall Configuration

Firewall contains several features that are used to deny or allow traffic from passing through the device.

4.4.5.1 IP/Port Filtering



The IP/Port filtering feature allows you to deny/allow specific services or applications in the forwarding path.

Fields on the first setting block:

Field	Description
Outgoing Default Action	Specify the default action on the LAN to WAN forwarding path.
Incoming Default Action	Specify the default action on the WAN to LAN forwarding path.

Function button for this first setting block:

Apply Changes

Click to save the setting of default actions to the configuration.

Fields on the second setting block:

Field	Description
Rule Action	Deny or allow traffic when matching this rule.
Direction	Traffic forwarding direction.
Protocol	There are 3 options available: TCP, UDP and ICMP.
Src IP Address	The source IP address assigned to the traffic on which filtering is applied.
Src Subnet Mask	Subnet-mask of the source IP.
Src Port	Starting and ending source port numbers.
Dst IP Address	The destination IP address assigned to the traffic on which filtering is applied.
Dst Subnet Mask	Subnet-mask of the destination IP.
Dst Port	Starting and ending destination port numbers.

Function buttons for this second setting block:

Apply Changes

Click to save the rule entry to the configuration.

Function buttons for the Current Filter Table:

Delete Selected

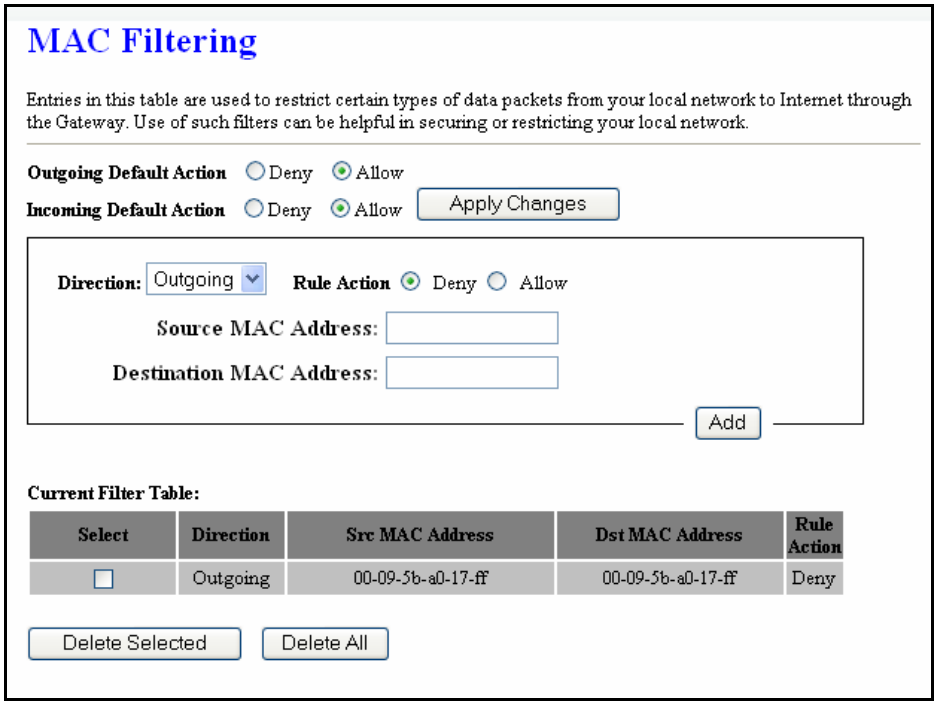
Delete selected filtering rules from the filter table. You can click the checkbox at the Select column to select the filtering rule.

Delete All

Delete all filtering rules from the filter table.

4.4.5.2 MAC Filtering

The MAC filtering feature allows you to define rules to allow or deny frames through the device based on source MAC address, destination MAC address, and traffic direction.



Fields on the first setting block:

Field	Description
Outgoing Default Action	Specify the default action on the LAN to WAN bridging/forwarding path.
Incoming Default Action	Specify the default action on the WAN to LAN bridging/forwarding path.

Function button for this first setting block:

Apply Changes

Click to save the setting of default actions to the configuration.

Fields on the second setting block:

Field	Description
Rule Action	Deny or allow traffic when matching this rule.
Direction	Traffic bridging/forwarding direction.
Src MAC Address	The source MAC address. It must be xxxxxxxxxxxx format. Blanks can be used in the MAC address space and are considered as don't care.
Dst MAC Address	The destination MAC address. It must be xxxxxxxxxxxx format. Blanks can be used in the MAC address space and are considered as don't care.

Function buttons for this second setting block:

Apply Changes

Click to save the rule entry to the configuration.

Function buttons for the Current Filter Table:

Delete Selected

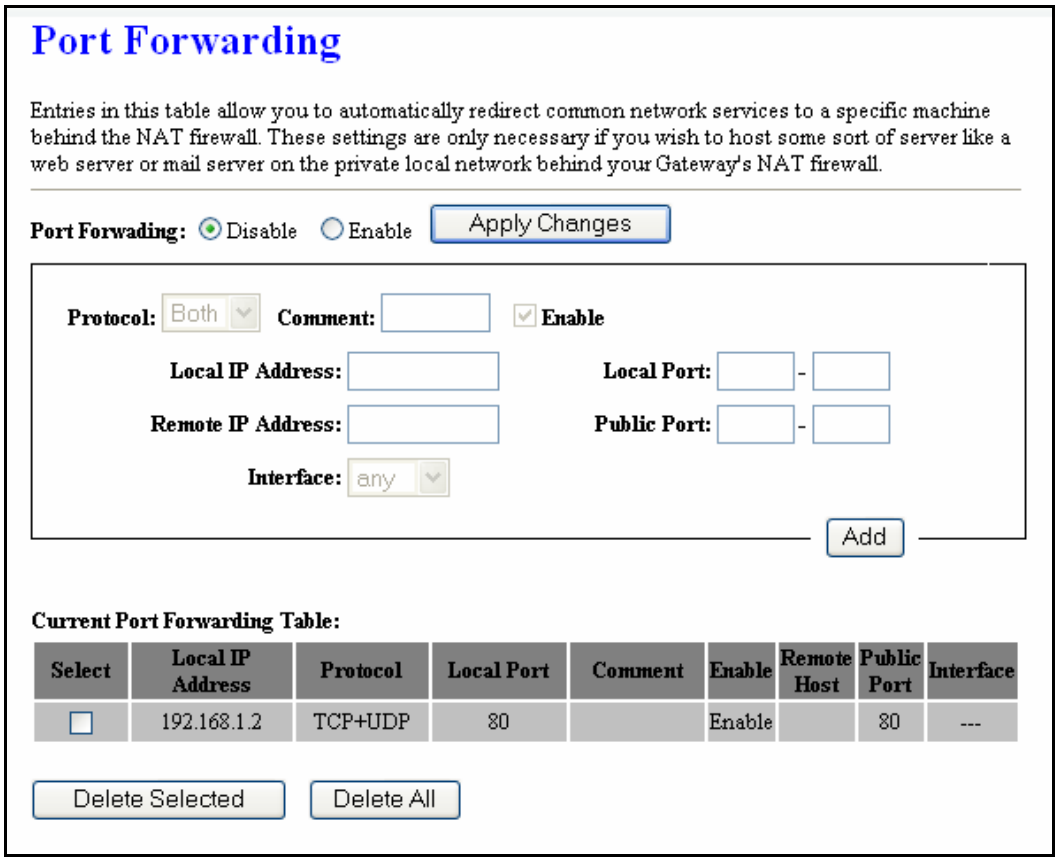
Delete selected filtering rules from the filter table. You can click the checkbox at the Select column to select the filtering rule.

Delete All

Delete all filtering rules from the filter table.

4.4.5.3 Port Forwarding

Firewall keeps unwanted traffic from the Internet away from your LAN computers. Add a Port Forwarding entry will create a tunnel through your firewall so that the computers on the Internet can communicate to one of the computers on your LAN on a single port.



Fields in this page:

Field	Description
Enable Port Forwarding	Check this item to enable the port-forwarding feature.
Protocol	There are 3 options available: TCP, UDP and Both.
Enable	Check this item to enable this entry.
Local IP Address	IP address of your local server that will be accessed by Internet.
Port	The destination port number that is made open for this application on the LAN-side.
Remote IP Address	The source IP address from which the incoming traffic is allowed. Leave blank for all.
External Port	The destination port number that is made open for this application on the WAN-side
Interface	Select the WAN interface on which the port-forwarding rule is to be applied.

Function buttons for the setting block:

Apply Changes

Click to save the rule entry to the configuration.

Function buttons for the Current Port Forwarding Table:

Delete Selected

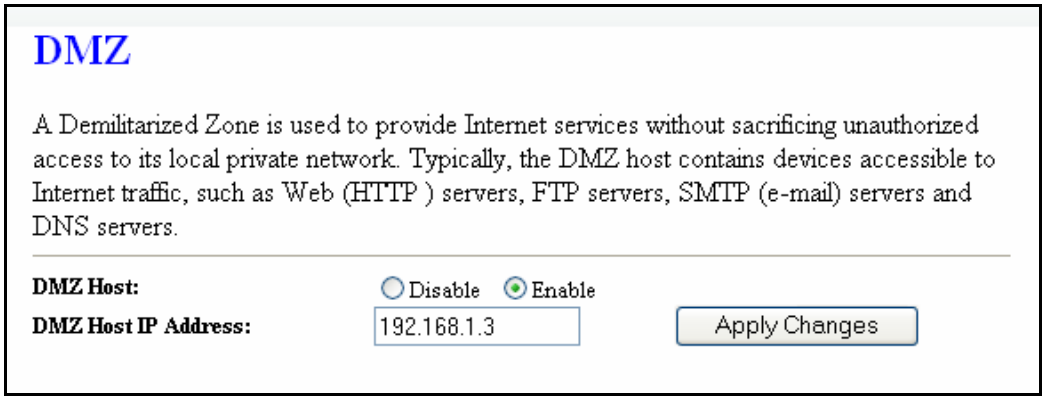
Delete the selected port forwarding rules from the forwarding table. You can click the checkbox at the Select column to select the forwarding rule.

Delete All

Delete all forwarding rules from the forwarding table.

4.4.5.4 DMZ

A DMZ (Demilitarized Zone) allows a single computer on your LAN to expose ALL of its ports to the Internet. Enter the IP address of that computer as a DMZ (Demilitarized Zone) host with unrestricted Internet access. When doing this, the DMZ host is no longer behind the firewall.



Fields in this page:

Field	Description
Enable DMZ	Check this item to enable the DMZ feature.
DMZ Host IP Address	IP address of the local host. This feature sets a local host to be exposed to the Internet.

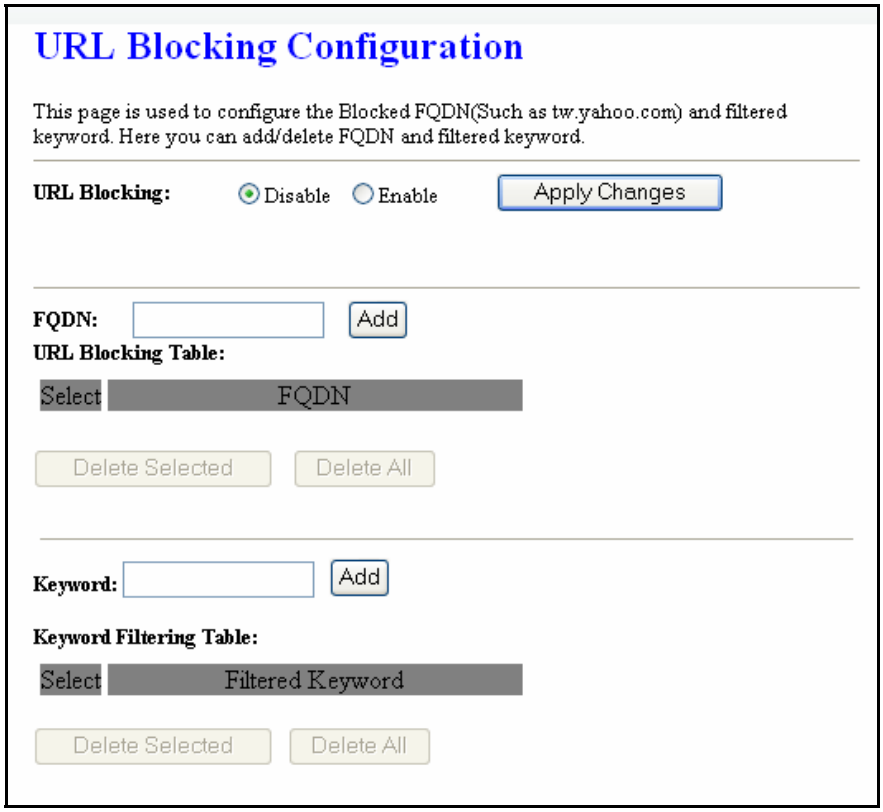
Function buttons in this page:

Apply Changes

Click to save the setting to the configuration.

4.4.5.5 URL Blocking

The URL Blocking is the web filtering solution. The firewall includes the ability to block access to specific web URLs based on string matches. This can allow large numbers of URLs to be blocked by specifying only a FQDN (such as tw.yahoo.com). The URL Blocking enforce a Web usage policy to control content downloaded from, and uploaded to, the Web.



Fields in this page:

Field	Description
URL Blocking capability	Check this item to enable the URL Blocking feature.
FQDN	A fully qualified domain name (or FQDN) is an unambiguous domain name that specifies the node's position in the DNS tree hierarchy absolutely, such as tw.yahoo.com. The FQDN will be blocked to access.
Keyword	The filtered keyword such as yahoo. If the URL includes this keyword, the URL will be blocked to access.

Function buttons in this page:

Apply Changes

Click to disable/enable the URL Blocking capability

Add FQDN

Add FQDN into URL Blocking table.

Delete Selected FQDN

Delete the selected FQDN from the URL Blocking table. You can click the checkbox at the Select column to select the Blocked FQDN.

Add Filtered Keyword

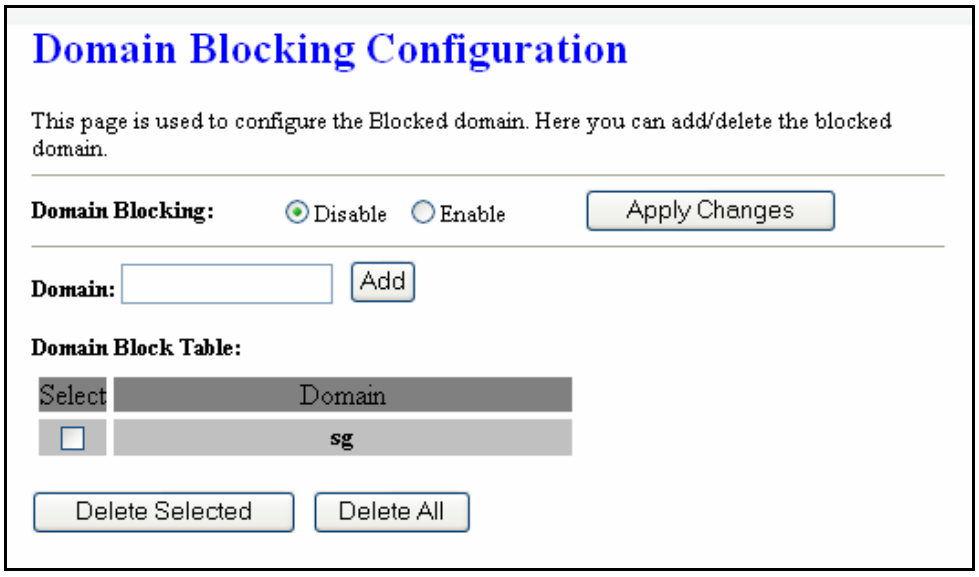
Add filtered keyword into Keyword Filtering table.

Delete Selected Keyword

Delete the selected keyword from the keyword Filtering table. You can click the checkbox at the Select column to select the filtered keyword.

4.4.5.6 Domain blocking

The firewall includes the ability to block access to specific domain based on string matches. For example, if the URL of Taiwan Yahoo web site is “tw.yahoo.com” and you enter “yahoo.com”, the firewall will block all the DNS queries with “yahoo.com” string. So the Host will be blocked to access all the URLs belong to “yahoo.com” domain. That means you can protect your computer, your house, your office and anything else that uses DNS from being able to service domains that you don’t want to load.



Fields in this page:

Field	Description
Domain Blocking capability	Check this item to enable the Domain Blocking feature.
Domain	The blocked domain. If the URL of Taiwan Yahoo web site is tw.yahoo.com, the domain can be yahoo.com.

Function buttons in this page:

Apply Changes

Click to disable/enable the Domain Block capability

Add Domain

Add domain into Domain Block table.

Delete Selected Domain

Delete the selected domain from the Domain Block table. You can click the checkbox at the Select column to select the Blocked domain.

4.4.6 IGMP Proxy Configuration

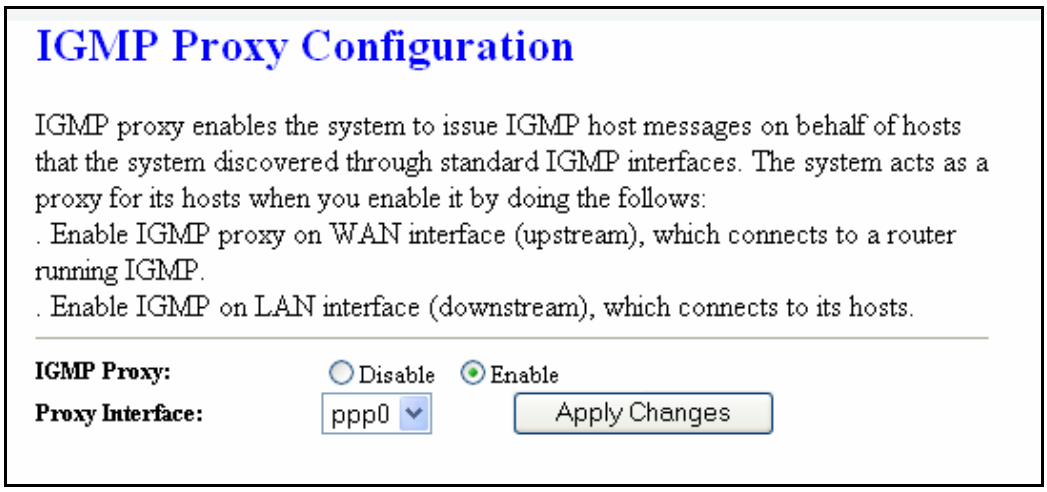
Multicasting is useful when the same data needs to be sent to more than one hosts. Using multicasting as opposed to sending the same data to the individual hosts uses less network bandwidth. The multicast feature also enables you to receive multicast video stream from multicast servers.

IP hosts use Internet Group Management Protocol (IGMP) to report their multicast group memberships to neighboring routers. Similarly, multicast routers use IGMP to discover which of their hosts belong to multicast groups. This device supports IGMP proxy that handles IGMP messages. When enabled, this device acts as a proxy for a LAN host making requests to join and leave multicast groups, or a multicast router sending multicast packets to multicast group on the WAN side.

When a host wishes to join a multicast group, it sends IGMP REPORT message to the device's IGMP downstream interface. The proxy sets up a multicast route for the interface and host requesting the video content. It then forwards the Join to the upstream multicast router. The multicast IP traffic will then be forwarded to the requesting host. On a leave, the proxy removes the route and then forwards the leave to the upstream multicast router.

The IGMP Proxy page allows you to enable multicast on WAN and LAN interfaces. The LAN interface is always served as downstream IGMP proxy, and you can configure one of the available WAN interfaces as the upstream IGMP proxy.

Upstream: The interfaces that IGMP requests from hosts are sent to the multicast router.
Downstream: The interface data from the multicast router are sent to hosts in the multicast group database.



Fields in this page:

Field	Description
IGMP Proxy	Enable/disable IGMP proxy feature
Proxy Interface	The upstream WAN interface is selected here.

Function buttons in this page:

Apply Changes

Click to save the setting to the configuration.

Undo

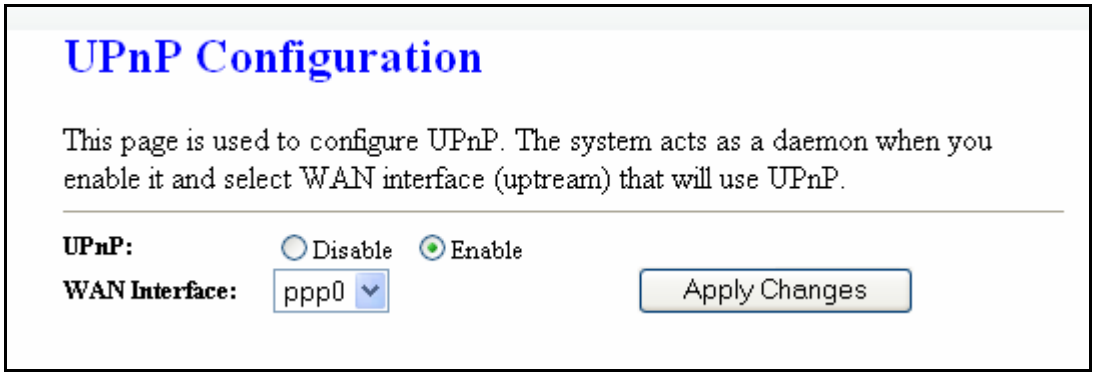
Discard your settings.

4.4.7 UPnP Configuration

The DSL device supports a control point for Universal Plug and Play (UPnP) version 1.0, and supports two key features: NAT Traversal and Device Identification. This feature requires one active WAN interface. In addition, the host should support this feature. In the presence of multiple WAN interfaces, select an interface on which the incoming traffic is present.

With NAT Traversal, when an UPnP command is received to open ports in NAT, the application translates the request into system commands to open the ports in NAT and the firewall. The interface to open the ports on is given to UPnP when it starts up and is part of the configuration of the application.

For Device Identification, the application will send a description of the DSL device as a control point back to the host making the request.



Fields in this page:

Field	Description
UPnP Daemon	Enable/disable UPnP feature.
Binded WAN Interface	Select WAN interface that will use UPnP from the drop-down lists.

Function buttons in this page:

Apply Changes

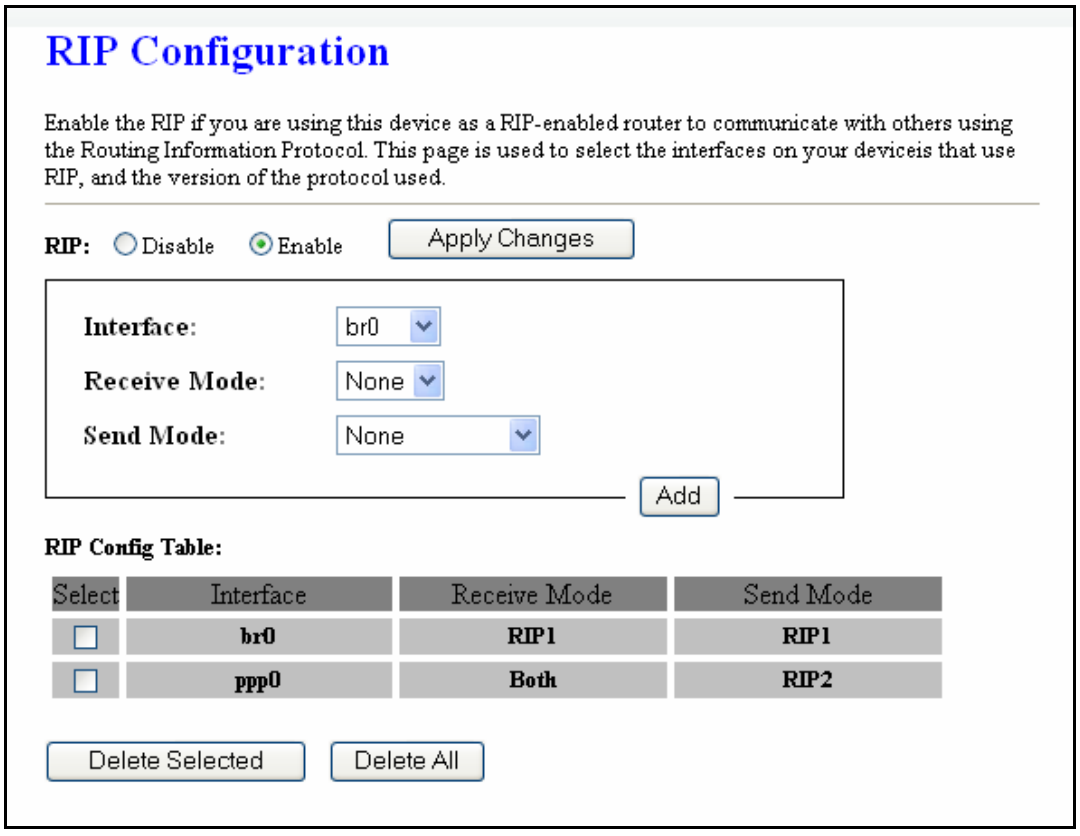
Click to save the setting to the system configuration.

4.4.8 RIP Configuration

RIP is an Internet protocol you can set up to share routing table information with other routing devices on your LAN, at your ISP's location, or on remote networks connected to your network via the ADSL line.

Most small home or office networks do not need to use RIP; they have only one router, such as the ADSL Router, and one path to an ISP. In these cases, there is no need to share routes, because all Internet data from the network is sent to the same ISP gateway. You may want to configure RIP if any of the following circumstances apply to your network:

- Your home network setup includes an additional router or RIP-enabled PC (other than the ADSL Router). The ADSL Router and the router will need to communicate via RIP to share their routing tables.
- Your network connects via the ADSL line to a remote network, such as a corporate network. In order for your LAN to learn the routes used within your corporate network, they should both be configured with RIP.
- Your ISP requests that you run RIP for communication with devices on their network.



Fields on the first setting block:

Field	Description
RIP	Enable/disable RIP feature.

Function buttons for the second setting block in this page:

Apply Changes

Click to save the setting of this setting block to the system configuration

Fields on the second setting block:

Field	Description
Interface	The name of the interface on which you want to enable RIP.
Receive Mode	Indicate the RIP version in which information must be passed to the DSL device in order for it to be accepted into its routing table.
Send Mode	Indicate the RIP version this interface will use when it sends its route information to other devices.

Function buttons for the second setting block in this page:

Add

Add a RIP entry and the new RIP entry will be display in the table

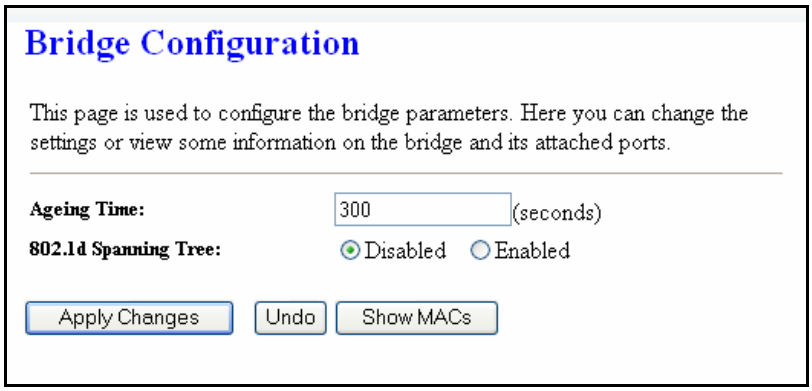
Delete Selected Entry

Delete a selected RIP entry. The RIP entry can be selected on the Select column of the RIP Config Table.

4.5 Advance Configuration

4.5.1 Bridging

You can enable/disable Spanning Tree Protocol and set MAC address aging time in this page.



Fields in this page:

Field	Description
Ageing Time	Set the Ethernet address ageing time, in seconds. After [Ageing Time] seconds of not having seen a frame coming from a certain address, the bridge will time out (delete) that address from Forwarding DataBase (fdb).
802.1d Spanning Tree	Enable/disable the spanning tree protocol

Function buttons in this page:

Apply Changes

Save this bridge configuration. New configuration will take effect after saving into flash memory and rebooting the system. See section “Admin” for details.

Show MACs

List MAC address in forwarding table.

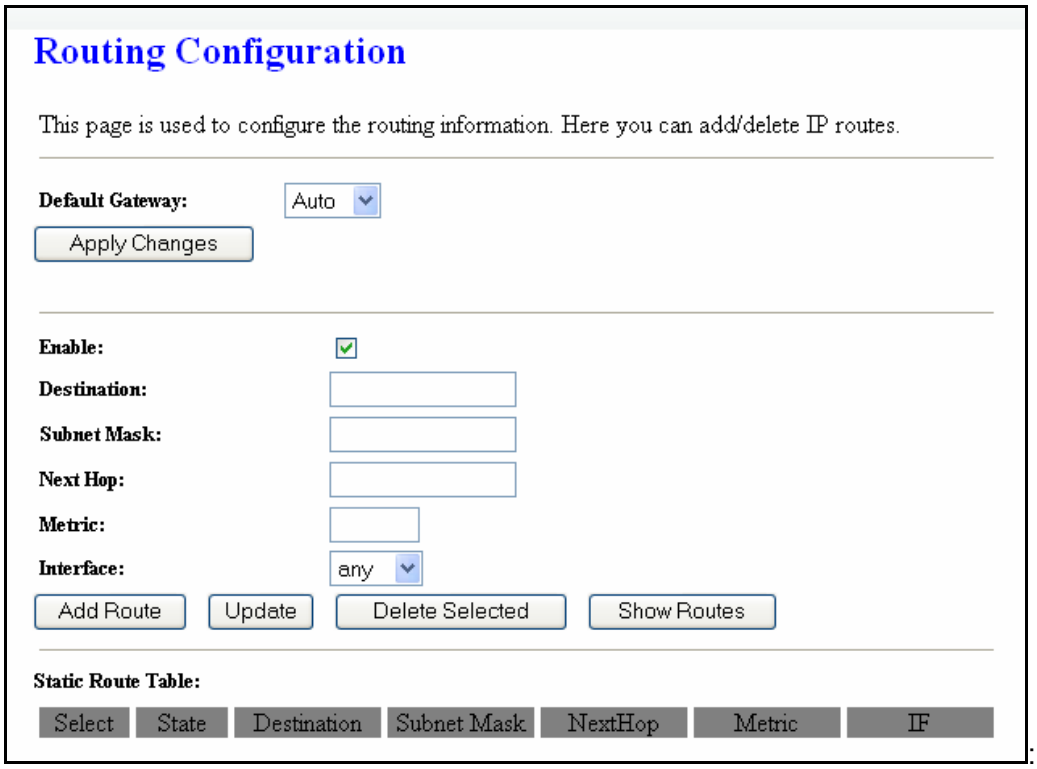
4.5.2 Routing

The Routing page enables you to define specific route for your Internet and network data. Most users do not need to define routes. On a typical small home or office LAN, the existing routes that set up the default gateways for your LAN hosts and for the DSL device provide the most appropriate path for all your Internet traffic.

On your LAN hosts, a default gateway directs all Internet traffic to the LAN port(s) on the DSL device. Your LAN hosts know their default gateway either because you assigned it to them when you modified your TCP/IP properties, or because you configured them to receive the information dynamically from a server whenever they access the Internet.

On the DSL device itself, a default gateway is defined to direct all outbound Internet traffic to a route at your ISP. The default gateway is assigned either automatically by your ISP whenever the device negotiates an Internet access, or manually by user to setup through the configuration.

You may need to define routes if your home setup includes two or more networks or subnets, if you connect to two or more ISP services, or if you connect to a remote corporate LAN.



Fields in this page:

Field	Description
Enable	Check to enable the selected route or route to be added.
Destination	The network IP address of the subnet. The destination can be specified as the IP address of a subnet or a specific host in the subnet. It can also be specified as all zeros to indicate that this route should be used for all destinations for which no other route is defined (this is the route that creates the default gateway).
Subnet Mask	The network mask of the destination subnet. The default gateway uses a mask of 0.0.0.0.
Next Hop	The IP address of the next hop through which traffic will flow towards the destination subnet.
Metric	Defines the number of hops between network nodes that data packets travel. The default value is 0, which means that the subnet is directly one hop away on the local LAN network.
Interface	The WAN interface to which a static routing subnet is to be applied.

Function buttons in this page:

Add Route

Add a user-defined destination route.

Update

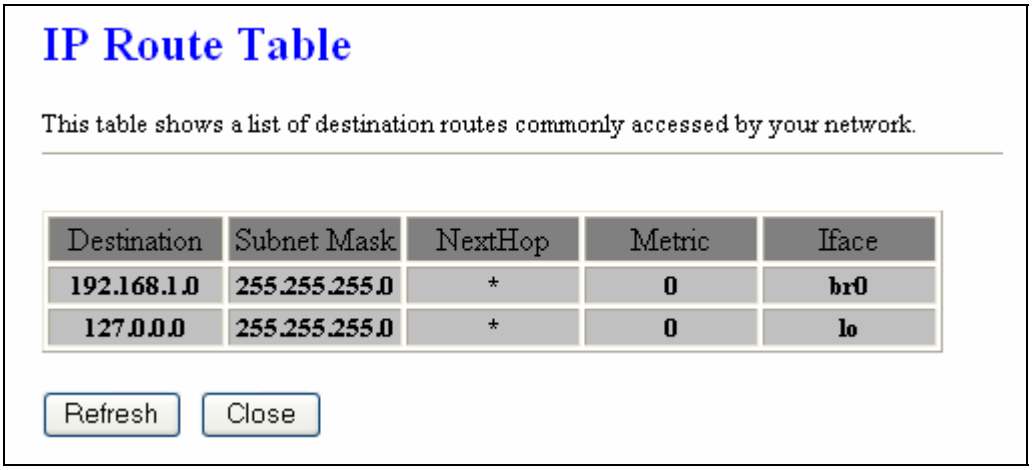
Update the selected destination route on the Static Route Table.

Delete Selected

Delete a selected destination route on the Static Route Table.

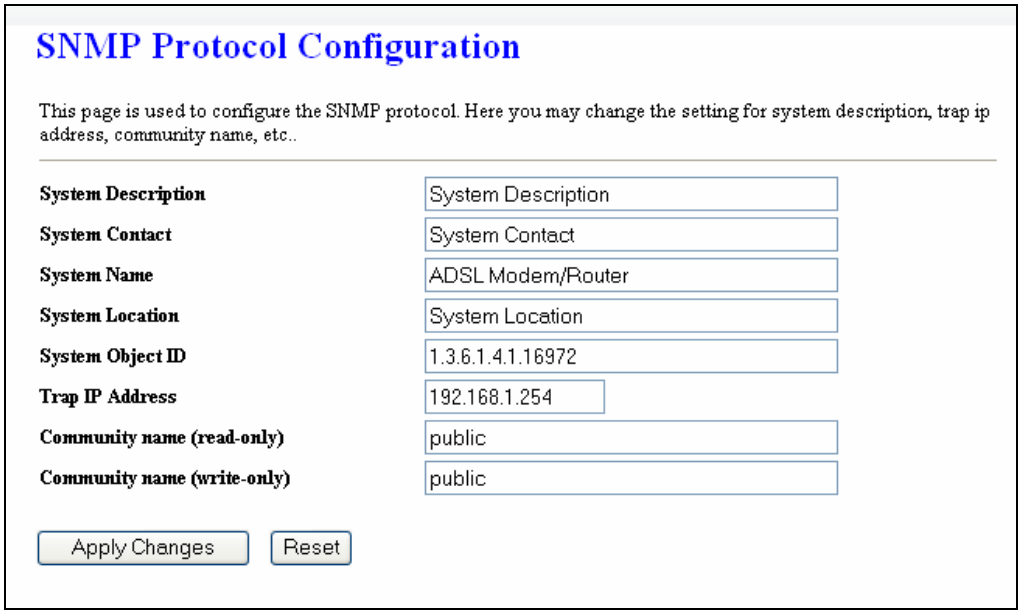
Show Routes

Click this button to view the DSL device's routing table. The IP Route Table displays, as shown in Figure.



4.5.3 SNMP Configuration

Simple Network Management Protocol (SNMP) is a troubleshooting and management protocol that uses the UDP protocol on port 161 to communicate between clients and servers. The DSL device can be managed locally or remotely by SNMP protocol.



Fields in this page:

Field	Description
System Description	System description of the DSL device.
System Contact	Contact person and/or contact information for the DSL device.
System Name	An administratively assigned name for the DSL device.
System Location	The physical location of the DSL device.
System Object ID	Vendor objects identifier. The vendor's authoritative identification of the network management subsystem contained in the entity.
Trap IP Address	Destination IP address of the SNMP trap.
Community name (read-only)	Name of the read-only community. This read-only community allows read operation to all objects in the MIB.
Community name (write-only)	Name of the write-only community. This write-only community allows write operation to the objects defines as read-writable in the MIB.

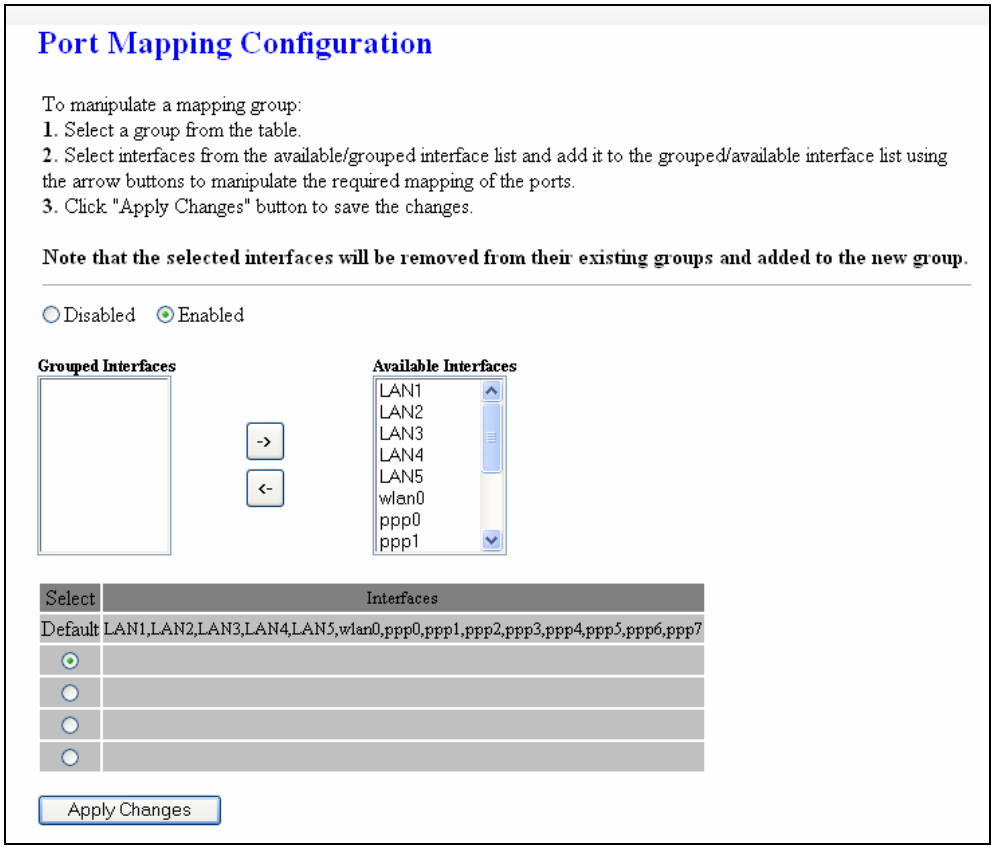
Function buttons in this page:

Apply Changes

Save SNMP configuration. New configuration will take effect after saving into flash memory and rebooting the system. See section "Admin" for details.

4.5.4 Port Mapping

The DSL device provides multiple interface groups. Up to five interface groups are supported including one default group. The LAN and WAN interfaces could be included. Traffic coming from one interface of a group can only be flowed to the interfaces in the same interface group. Thus, the DSL device can isolate traffic from group to group for some application. By default, all the interfaces (LAN and WAN) belong to the default group, and the other four groups are all empty. It is possible to assign any interface to any group but only one group.



Fields in this page:

Field	Description
Enabled/Disabled	Radio buttons to enable/disable the interface group feature. If disabled, all interfaces belong to the default group.
“Interface groups	To manipulate a mapping group: • Select a group from the table. • Select interfaces from the available/grouped interface list and add it to the grouped/available interface list using the arrow buttons to manipulate the required mapping of the ports. • Click “Apply Changes” button to save the changes.

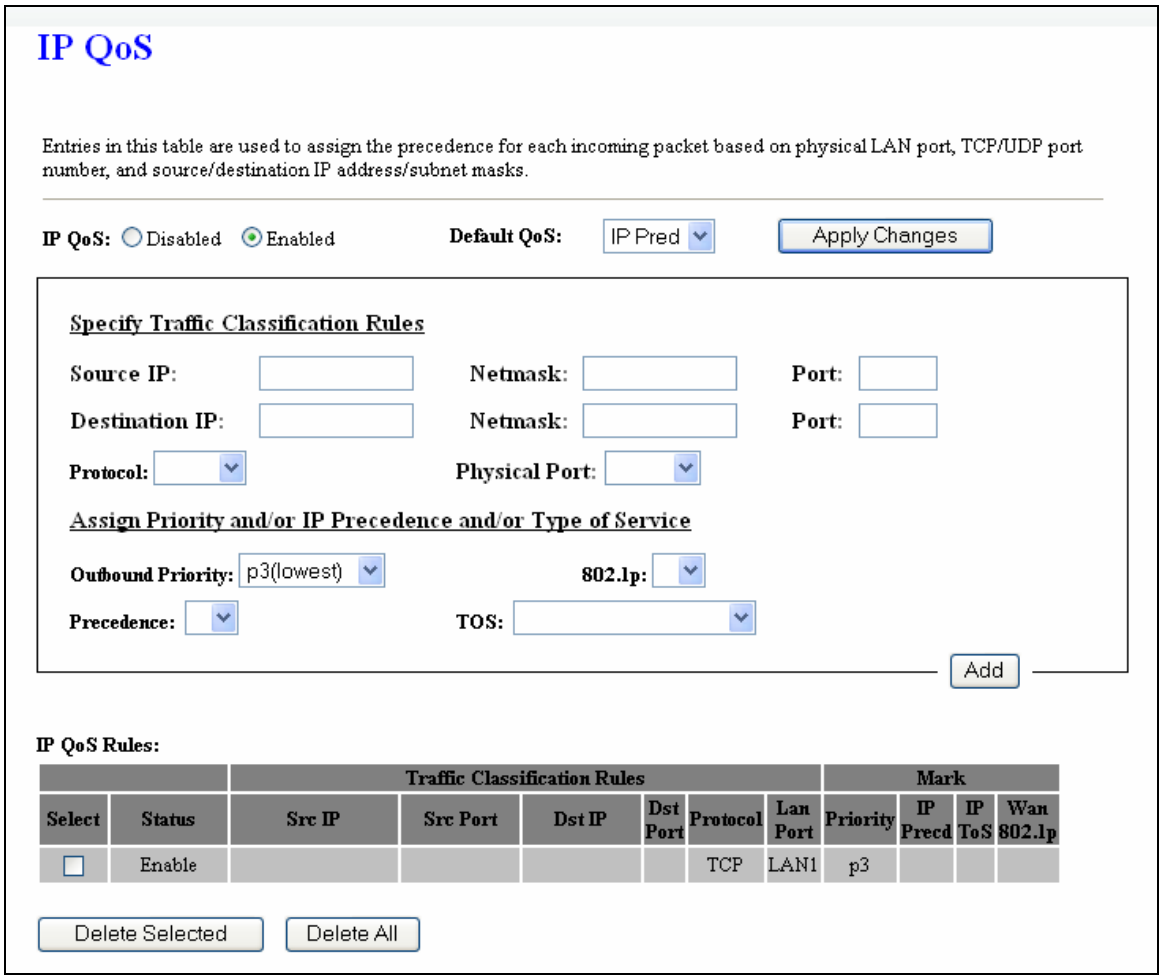
Function buttons in this page:

Apply Changes

Save configuration to system. New configuration will take effect after saving into flash memory and rebooting the system. See section “Admin” for details.

4.5.5 IP QoS

The DSL device provides a control mechanism that can provide different priority to different users or data flows. The QoS is enforced by the QoS rules in the QoS table. A QoS rule contains two configuration blocks: Traffic Classification and Action. The Traffic Classification enables you to classify packets on the basis of various fields in the packet and perhaps the physical ingress port. The Action enables you to assign the strictly priority level for and mark some fields in the packet that matches the Traffic Classification rule. You can configure any or all field as needed in these two QoS blocks for a QoS rule.



Fields on the first setting block of this page:

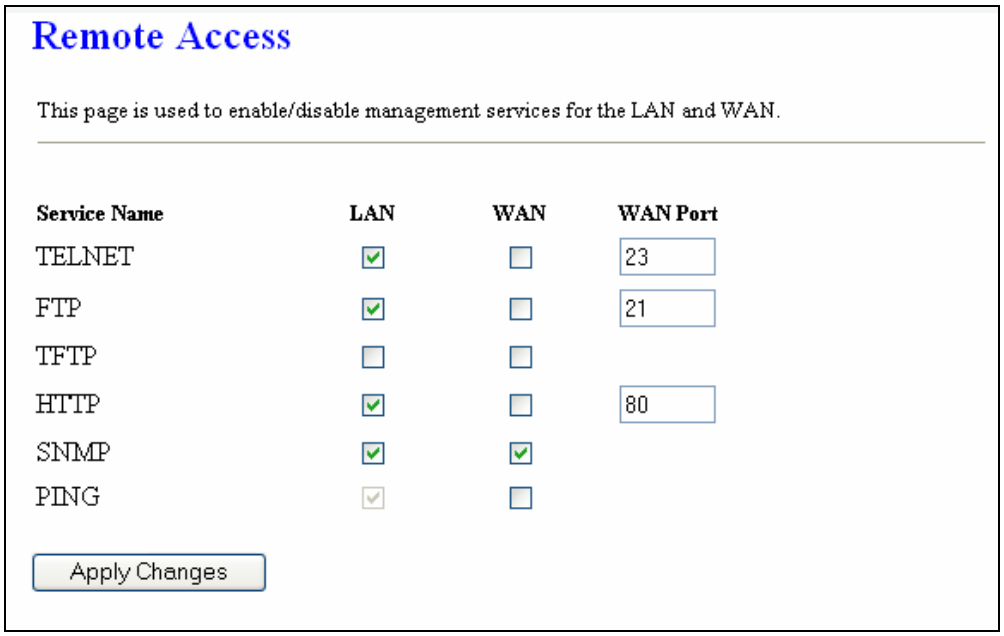
Field	Description
IP QoS	Enable/disable the IP QoS function.
Source IP	The IP address of the traffic source.
Source Netmask	The source IP Netmask. This field is required if the source IP has been entered.
Destination IP	The IP address of the traffic destination.
Destination Netmask	The destination IP Netmask. This field is required if the destination IP has been entered.
Protocol	The selections are TCP, UDP, ICMP and the blank for none. This field is required if the source port or destination port has been entered.
Source Port	The source port of the selected protocol. You cannot configure this field without entering the protocol first.
Destination Port	The destination port of the selected protocol. You cannot configure this field without entering the protocol first.
Physical Port	The incoming ports. The selections include LAN ports, wireless port, and the blank for not applicable.

Fields on the second setting block of this page:

Field	Description
Outbound Priority	The priority level for the traffic that matches this classification rule. The possible selections are (in the descending priority): p0, p1, p2, p3.
IP Precedence	Select this field to mark the IP precedence bits in the packet that match this classification rule.
IP Type of Service	Select this field to mark the IP TOS bits in the packet that match this classification rule.
802.1p	Select this field to mark the 3-bit user-priority field in the 802.1p header of the packet that matches this classification rule. Note that this 802.1p marking is workable on a given PVC channel only if the VLAN tag is enabled in this PVC channel.

4.5.6 Remote Access **(Moved to ACL Config – please refer to page 57)**

The Remote Access function can secure remote host access to your DSL device from LAN and WLAN interfaces for some services provided by the DSL device.



Fields in this page:

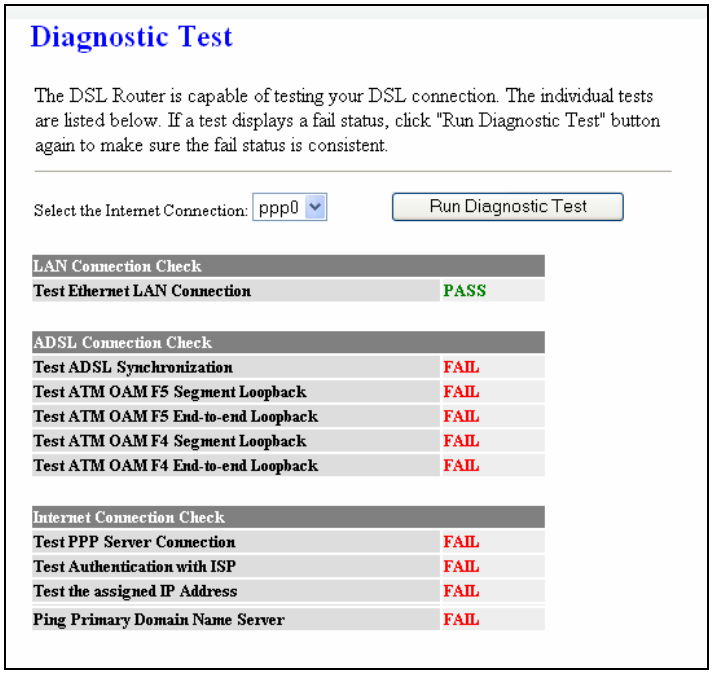
Field	Description
LAN	Check/un-check the services on the LAN column to allow/un-allow the services access from LAN side; and “WAN”:
WAN	Check/un-check the services on the WAN column to allow/un-allow the services access from WAN side.
WAN Port	This field allows the user to specify the port of the corresponding service. Take the HTTP service for example; when it is changed to 8080, the HTTP server address for the WAN side is http://dsl_addr:8080, where the dsl_addr is the WAN side IP address of the DSL device.

4.6 Diagnostic

The DSL device supports some useful diagnostic tools.

4.6.1 Diagnostic Test

The Diagnostic Test page shows the test results for the connectivity of the physical layer and protocol layer for both LAN and WAN sides.

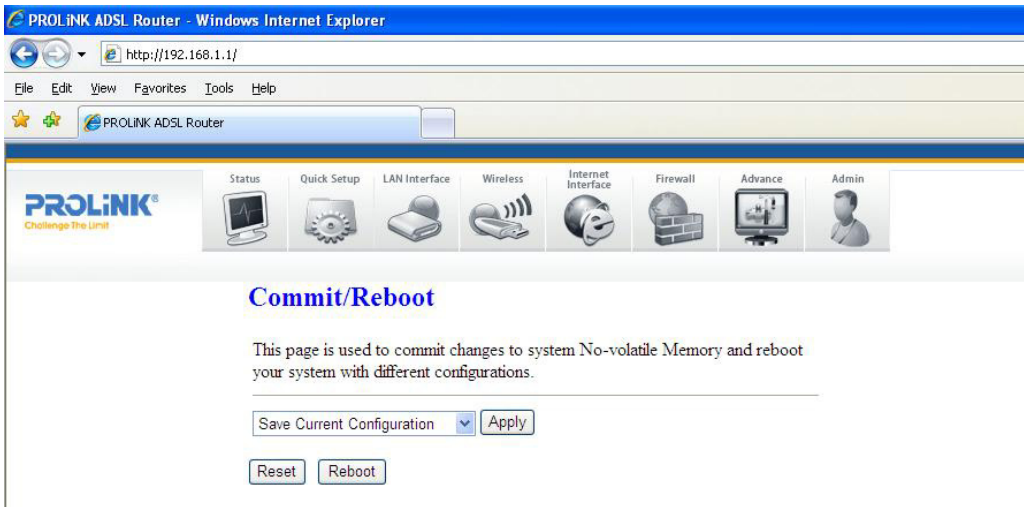


Fields in this page:

Field	Description
Select the Internet Connection	The available WAN side interfaces are listed. You have to select one for the WAN side diagnostic.

4.7 Admin

4.7.1 Save & Reboot

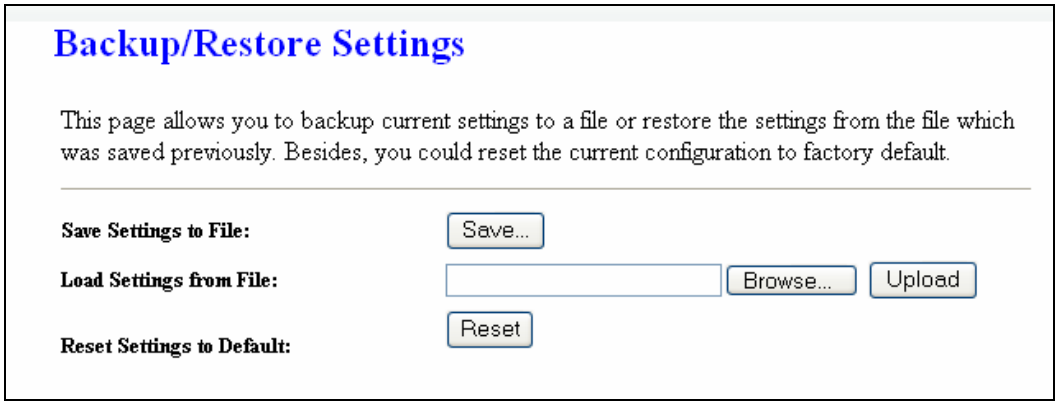


Function buttons in this page:

1. Save Current Configuration >> Apply
2. Factory Default Configuration >> Apply
3. Reboot >> restart the modem

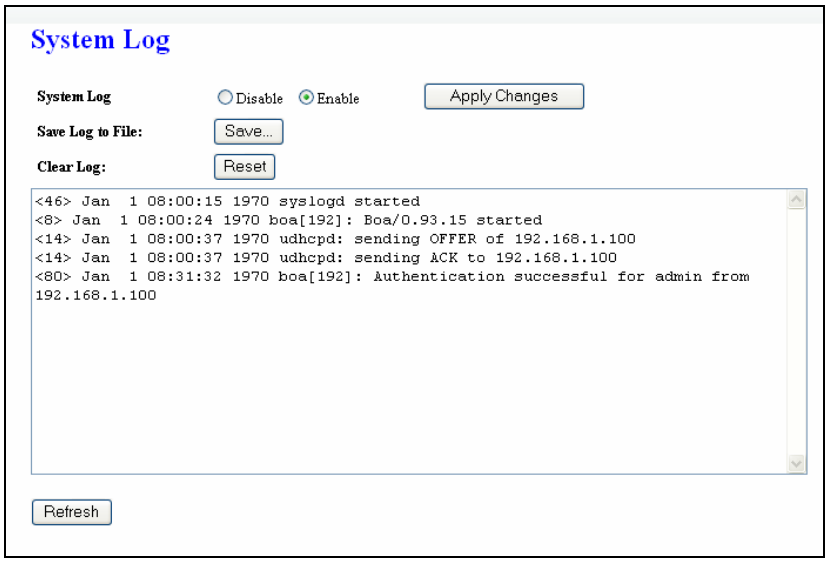
4.7.2 Backup/Restore

This page allows you to backup and restore your configuration into and from file in your host.



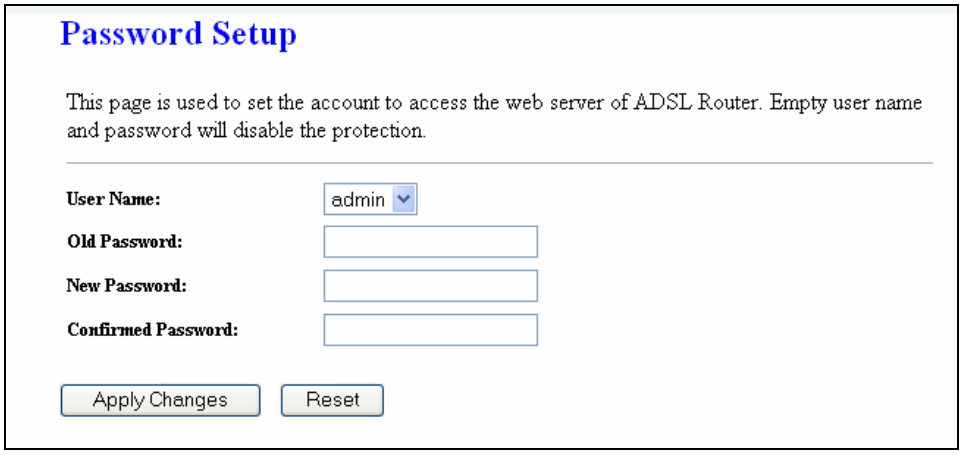
4.7.3 System Log

This page shows the system log.



4.7.4 Password

The first time you log into the system, you use the default password. There are two-level logins: admin and user. The admin and user password configuration allows you to change the password for administrator and user.



Fields in this page:

Field	Description
User Name	Selection of user levels are: admin and user.
Old Password	Enter the old password for this selected login.
New Password	Enter the new password here.
Confirmed Password	Enter the new password here again to confirm.

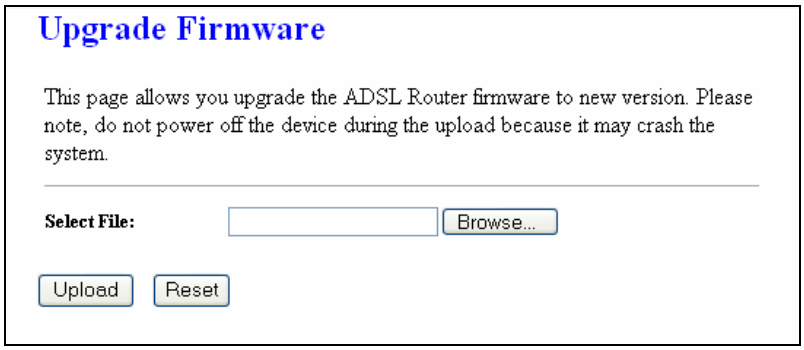
4.7.5 Upgrade Firmware

To upgrade the firmware for the DSL device:

- Click the Browse button to select the firmware file.
- Confirm your selection.
- Click the Upload button to start upgrading.

IMPORTANT!

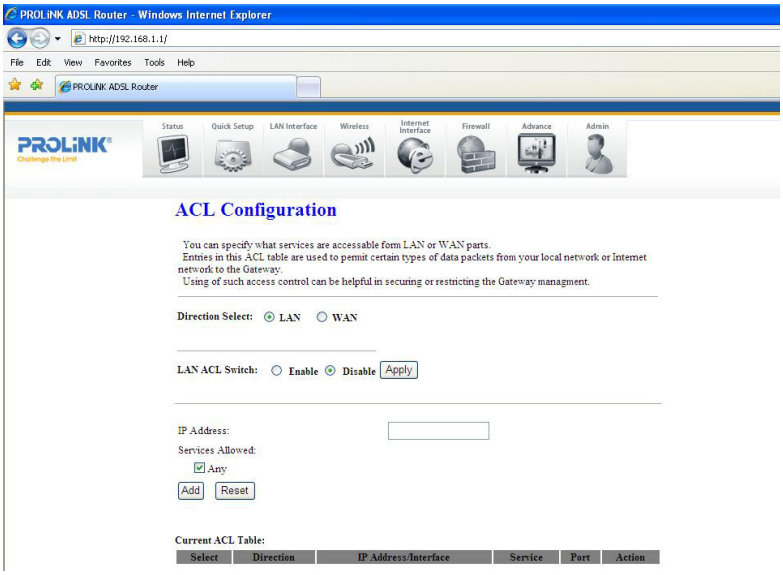
Do not turn off your DSL device or press the Reset button while this procedure is in progress.



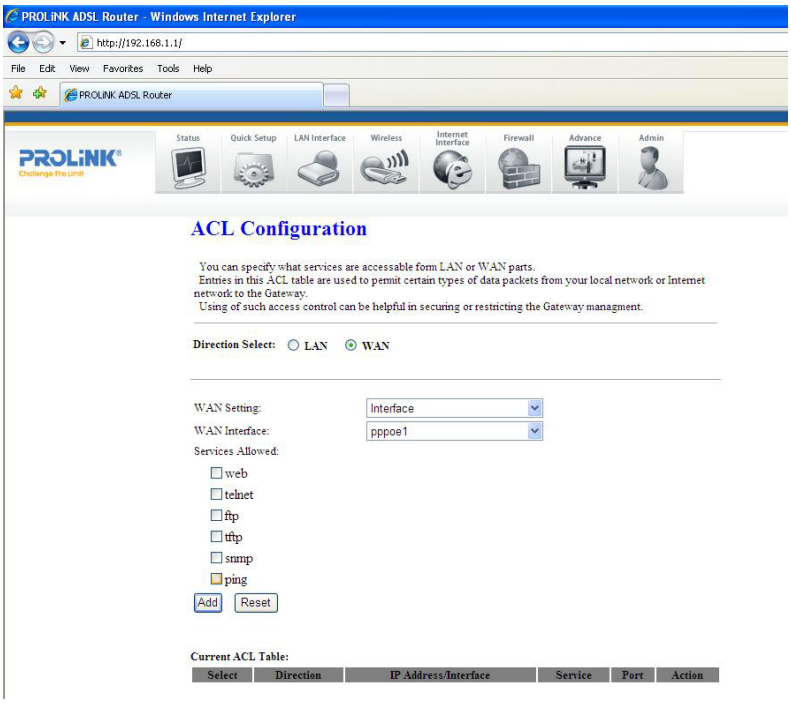
4.7.6 ACL

The Access Control List (ACL) is a list of permissions attached to the DSL device. The list specifies who is allowed to access this device. If ACL is enabled, all hosts cannot access this device except for the hosts with IP address in the ACL table.

1. LAN – You can enable LAN ACS Switch to allow/block the PC to access the Modem

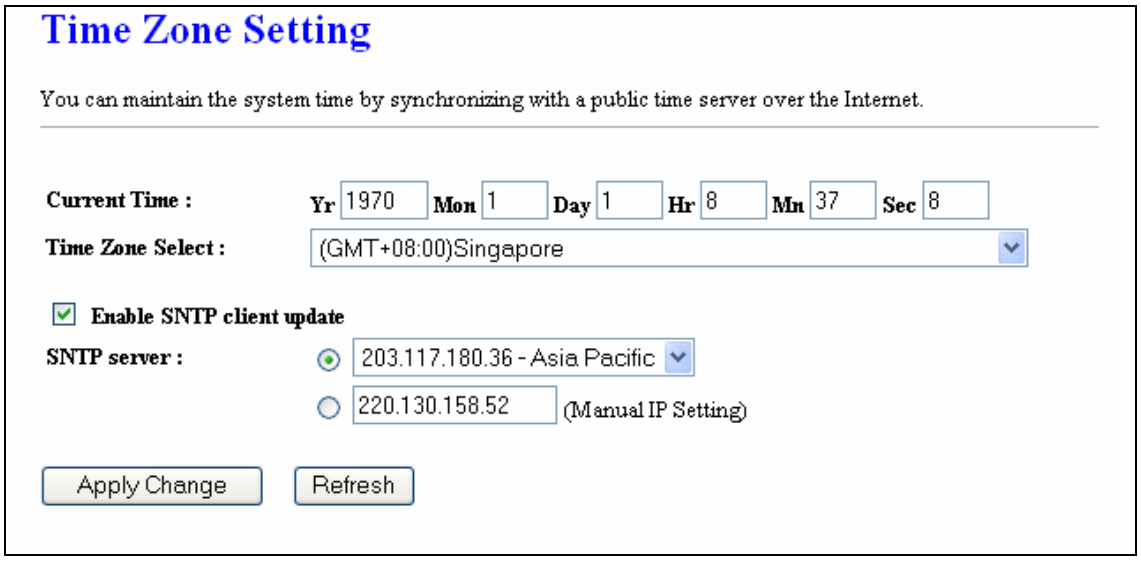


2. WAN – you can enable web(http)/telenet/ftp/tftp/snmp/ping for WAN access



4.7.7 Time Zone

Simple Network Timing Protocol (SNTP) is a protocol used to synchronize the system time to the public SNTP servers. The DSL device supports SNTP client functionality in compliance with IETF RFC2030. SNTP client functioning in daemon mode which issues sending client requests to the configured SNTP server addresses periodically can configure the system clock in the DSL device

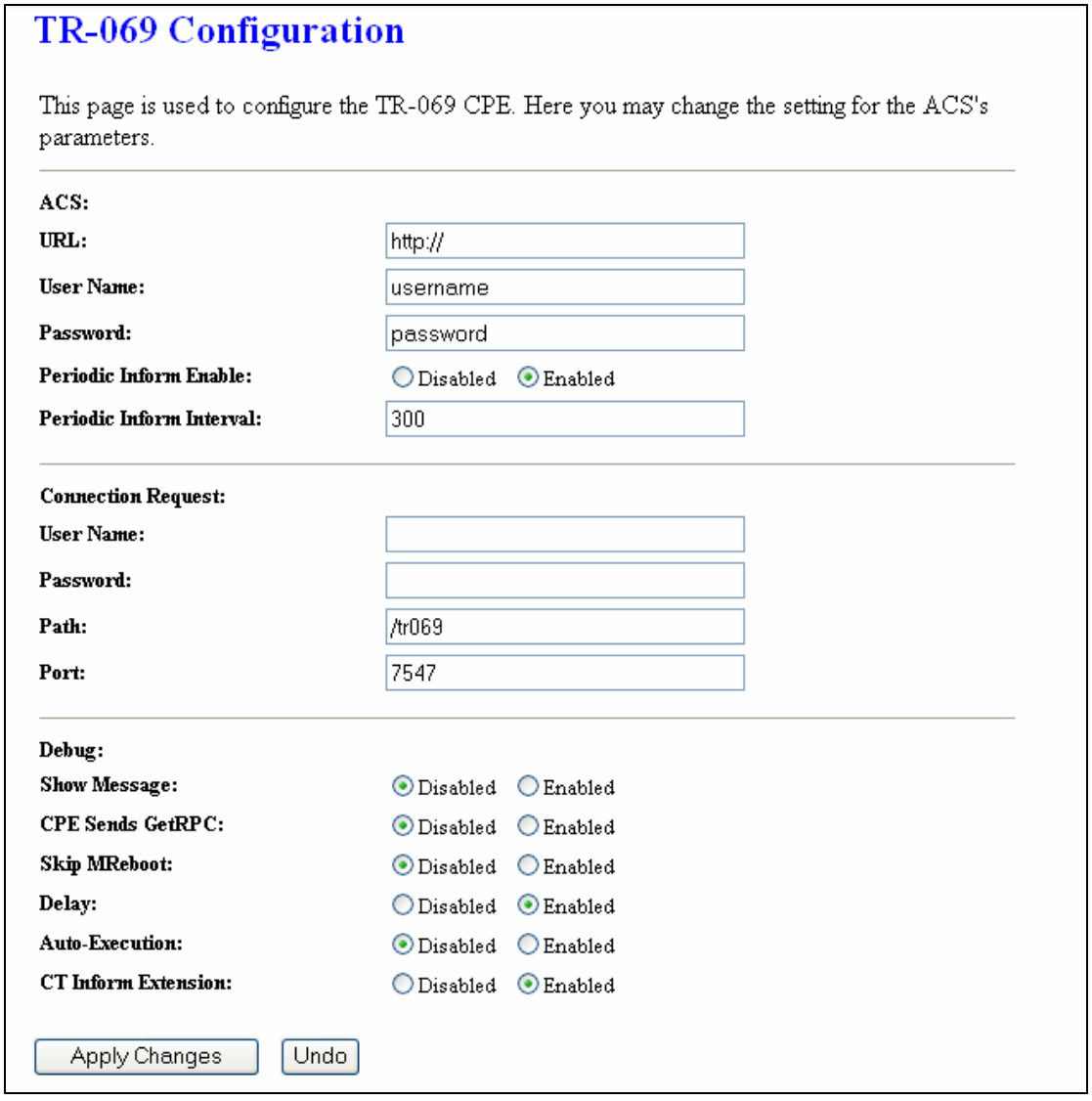


Fields in this page:

Field	Description
Current Time	The current time of the specified time zone. You can set the current time by yourself or configured by SNTP.
Time Zone Select	The time zone in which the DSL device resides.
Enable SNTP client update	Enable the SNTP client to update the system clock.
SNTP server	The IP address or the host name of the SNTP server. You can select from the list or set it manually.

4.7.8 TR-069 Config (Optional)

TR-069 is a protocol for communication between a CPE and Auto-Configuration Server (ACS). The CPE TR-069 configuration should be well defined to be able to communicate with the remote ACS.



Fields in this page:

ACS Field	Description
URL	ACS URL. For example, http://10.0.0.1:80 https://10.0.0.1:443
User Name	The username the DSL device should use when connecting to the ACS.
Password	The password the DSL device should use when connecting to the ACS.
Periodic Inform Enable	When this field is enabled, the DSL device will send an Inform RPC to the ACS server at the system startup, and will continue to send it periodically at an interval defined in Periodic Inform Interval field; When this field is disabled, the DSL device will only send Inform RPC to the ACS server once at the system startup.
Periodic Inform Interval	Time interval in second to send Inform RPC.

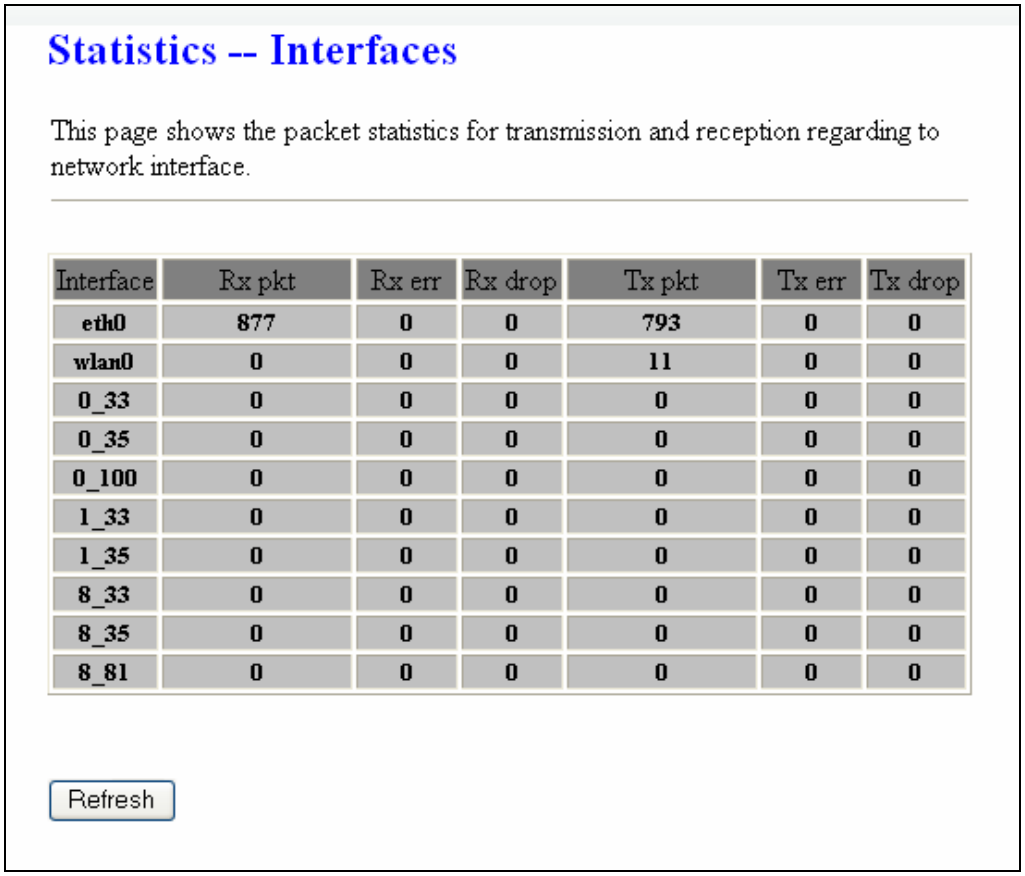
Connection Request Field	Description
User Name	The username the remote ACS should use when connecting to this device.
Password	The password the remote ACS should use when connecting to this device.
Path	The path of the device ConnectionRequestURL. The device ConnectionRequestURL should be configured based on the Device_IP, Path and Port as follows: http://Device_IP:Port/Path
Port	The port of the device ConnectionRequestURL.

4.8 Statistics

The DSL device shows the different layer of network statistics information.

4.8.1 Interfaces

You can view statistics on the processing of IP packets on the networking interfaces. You will not typically need to view this data, but you may find it helpful when working with your ISP to diagnose network and Internet data transmission problems.



Statistics -- Interfaces

This page shows the packet statistics for transmission and reception regarding to network interface.

Interface	Rx pkt	Rx err	Rx drop	Tx pkt	Tx err	Tx drop
eth0	877	0	0	793	0	0
wlan0	0	0	0	11	0	0
0_33	0	0	0	0	0	0
0_35	0	0	0	0	0	0
0_100	0	0	0	0	0	0
1_33	0	0	0	0	0	0
1_35	0	0	0	0	0	0
8_33	0	0	0	0	0	0
8_35	0	0	0	0	0	0
8_81	0	0	0	0	0	0

Refresh

To display updated statistics showing any new data since you opened this page, click Refresh.

4.8.2 ADSL

This page shows the ADSL line statistic information.

Statistics -- ADSL Line

Mode	
Latency	
Trellis Coding	Enable
Status	ACTIVATING.
Power Level	L0

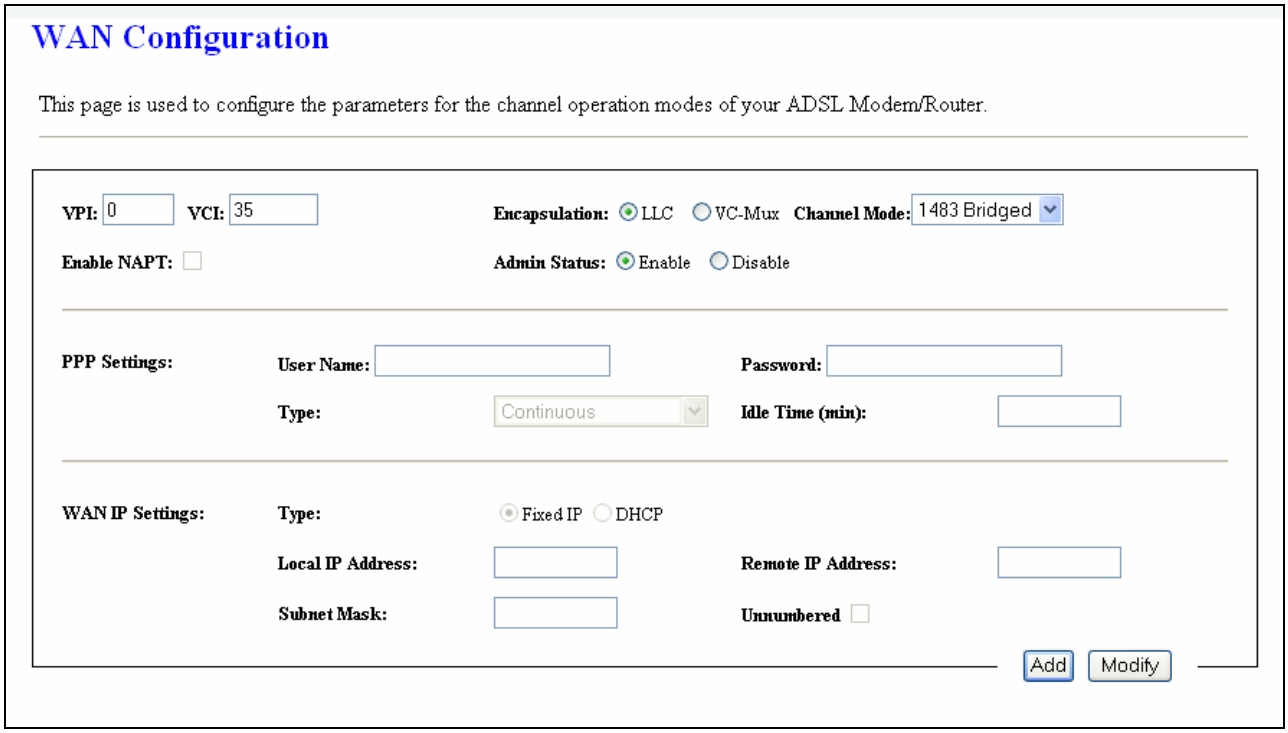
	Downstream	Upstream
SNR Margin (dB)	0.0	0.0
Attenuation (dB)	0.0	0.0
Output Power (dBm)	0.0	25.5
Attainable Rate (Kbps)	0	0
Rate (Kbps)	0	0
K (number of bytes in DMT frame)		
R (number of check bytes in RS code word)		
S (RS code word size in DMT frame)		
D (interleaver depth)		
Delay (msec)		
FEC	0	0
CRC	0	0
Total ES	0	0
Total SES	0	0
Total UAS	0	0

Chapter 5 Channel Mode Configuration

ADSL router supports multiple channel operation modes. This section will show procedures to configure the router.

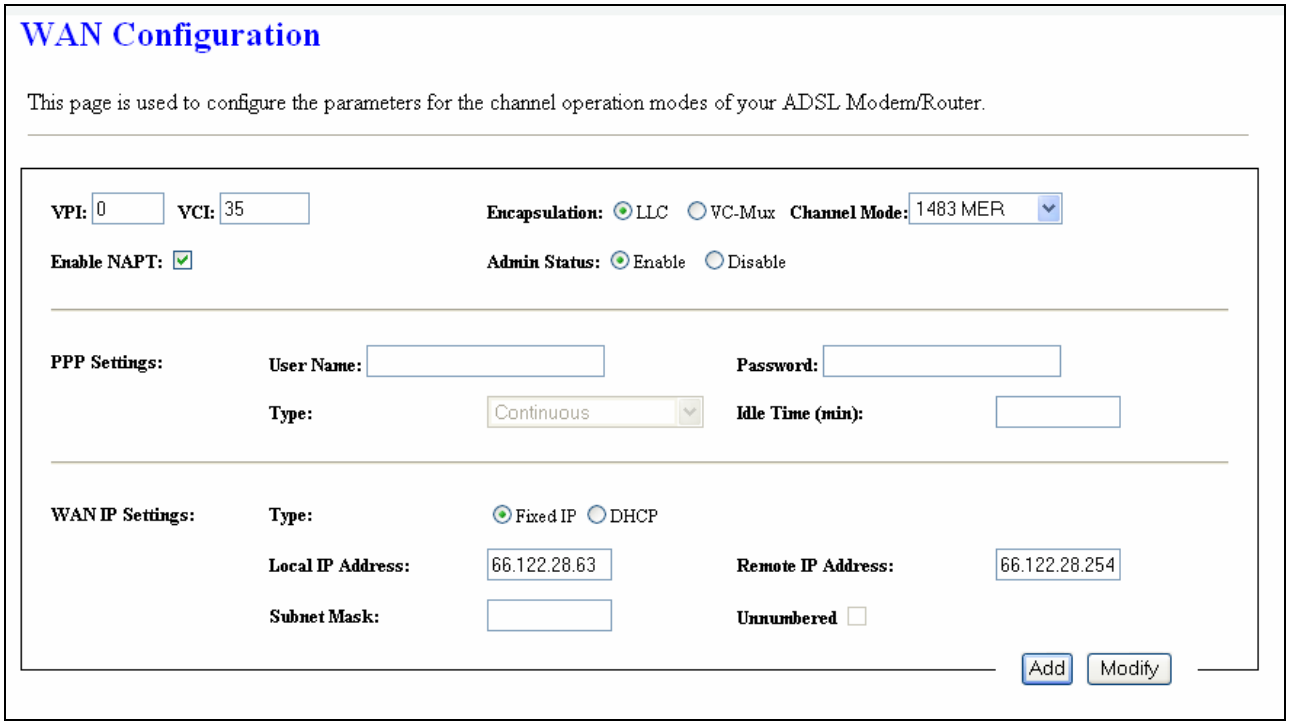
5.1 Bridge Mode

ADSL modem/router can be set to Bridge mode.



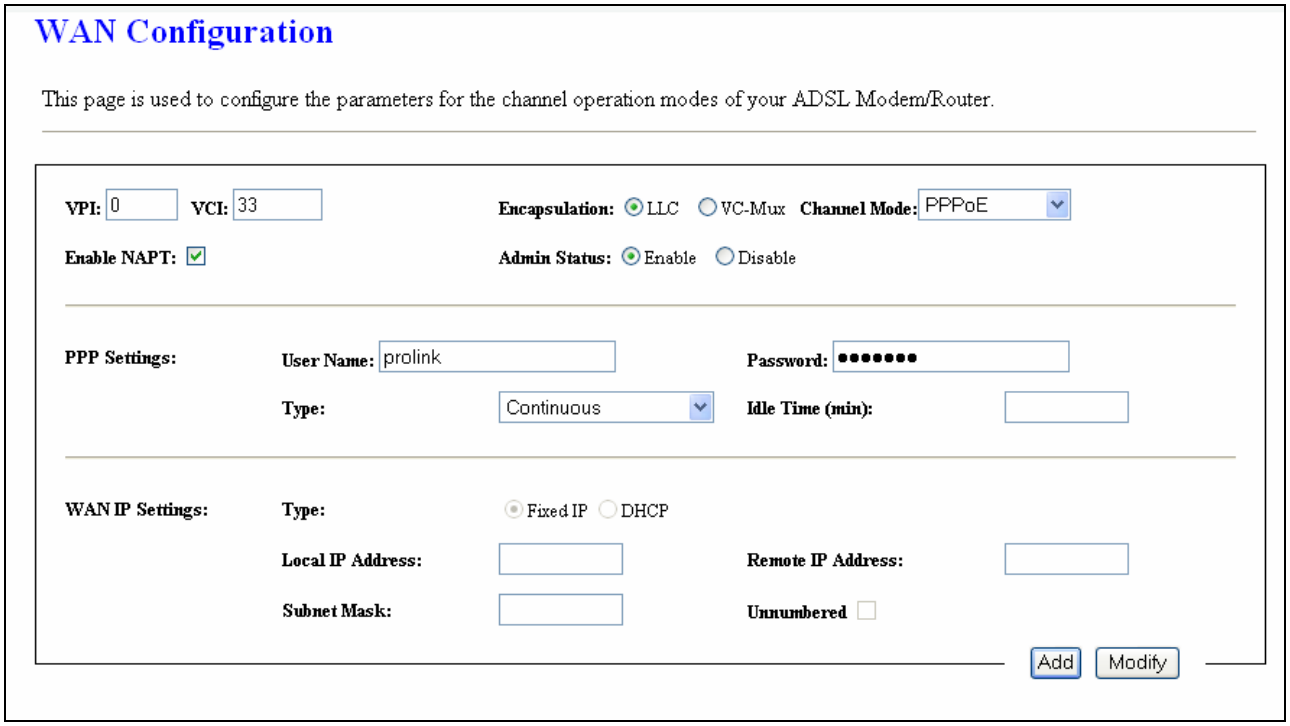
1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select your VPI/VCI under ATM VC table
3. Change the Channel Mode to “1483 Bridged”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM’s setting.
4. Click “Add” button to add this channel into VC table.
5. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
6. The new settings will take effect after reboot the system.

5.2 MER (Mac Encapsulating Routing) Mode



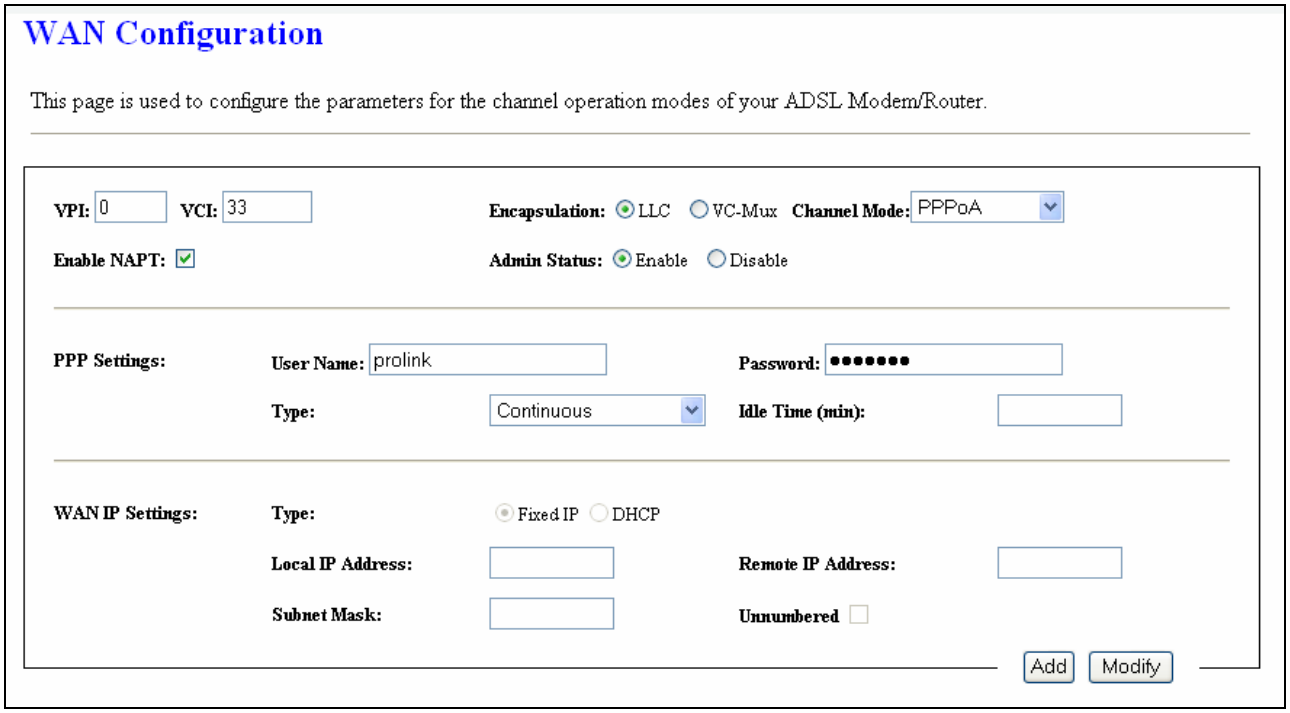
1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select the Channel Mode to “1483 MER”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM’s setting.
3. Set “Local IP Address:” according to the IP that ISP assign for your router. Set “Remote IP Address” to the ISP’s gateway.
4. Click “Add” button to add this channel into VC table.
5. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
6. The new settings will take effect after reboot the system.

5.3 PPPoE Mode



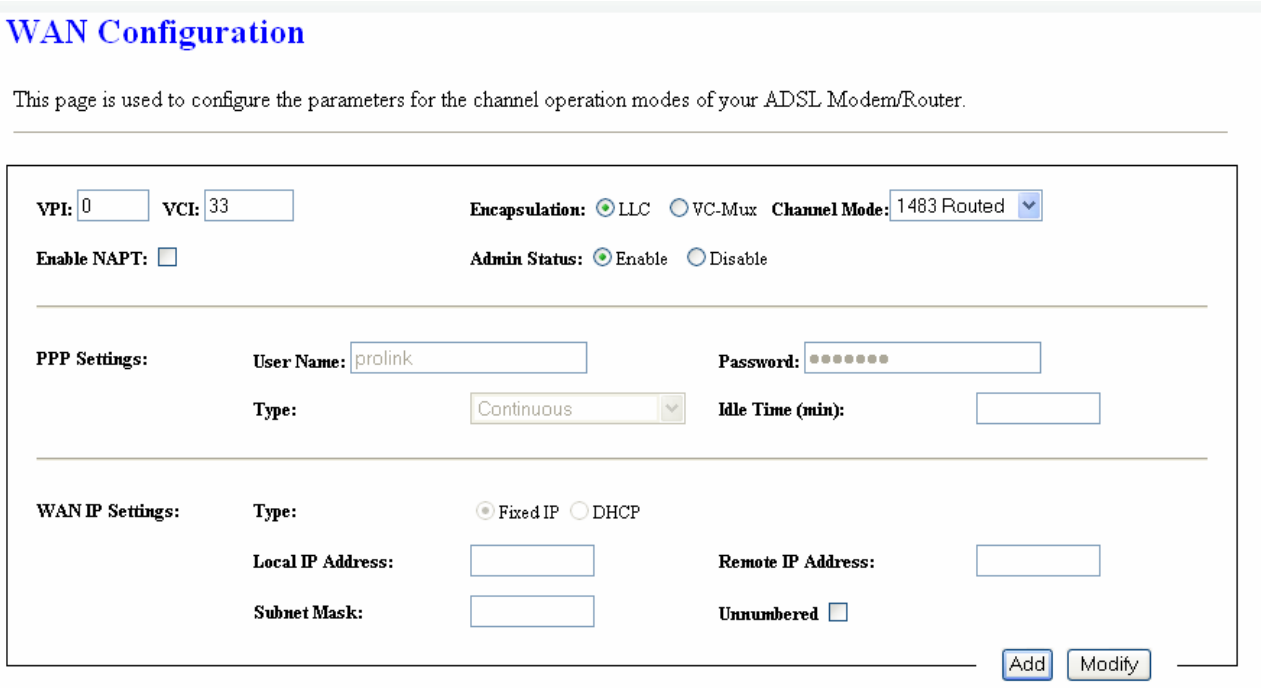
1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select the Channel Mode to “PPPoE”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM’s setting.
3. Enter user/password from your ISP.
4. Click “Add” button to add this channel.
5. Enable DHCP server to allow the local PCs share the PPP connection. Reference to section 4.6.1 DHCP Server Configuration.
6. Set DNS address from your ISP. Reference to section 4.6.2 DNS Configuration.
7. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
8. The new settings will take effect after reboot the system.

5.4 PPPoA Mode



1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select the Channel Mode to “PPPoA”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM’s setting.
3. Enter user/password from your ISP.
4. Click “Add” button to add this channel.
5. Enable DHCP server to allow the local PCs share the PPP connection. Reference to section 4.6.1 DHCP Server Configuration.
6. Set DNS address from your ISP. Reference to section 4.6.2 DNS Configuration.
7. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
8. The new settings will take effect after reboot the system.

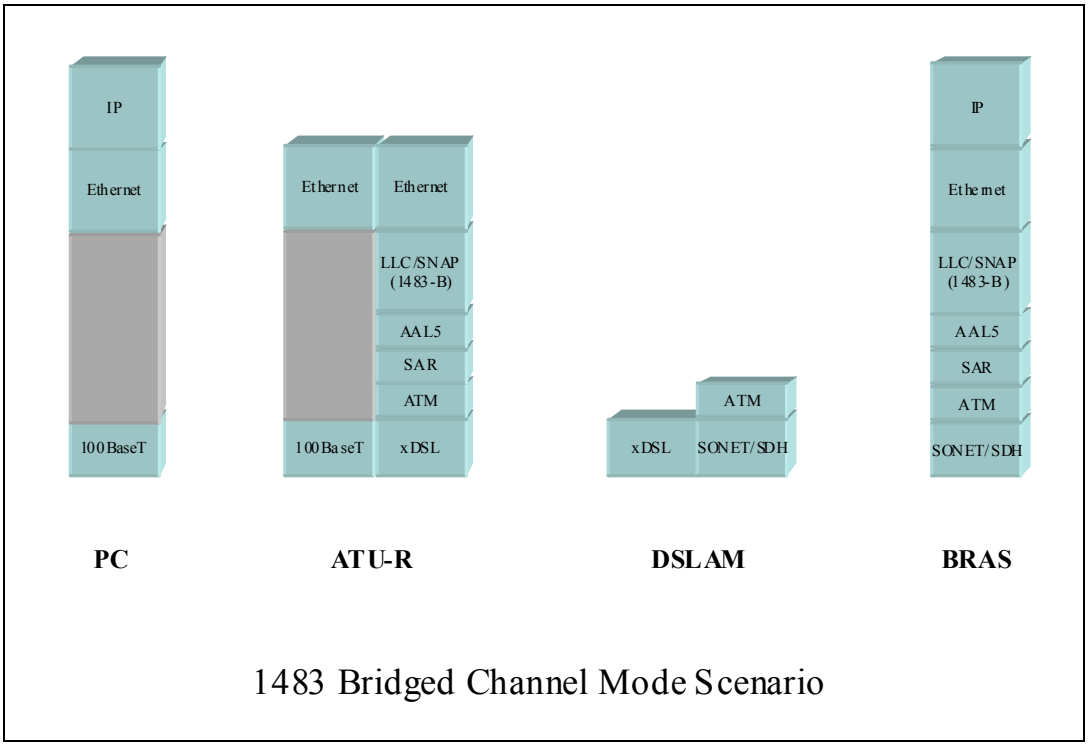
5.5 1483 Routed Mode



1. Open the WEB page at “WAN interface/Channel Configuration”.
2. Select the Channel Mode to “1483 Routed”. Set the parameters VPI/VCI and Encapsulation mode according to the CO DSLAM’s setting.
3. In WAN IP settings, give the local and remote IP address from your ISP or use DHCP to get them automatically if your ISP support it. Local IP is the address of ADSL router. Remote IP is the ISP’s gateway address.
4. Click “Add” button to add this channel.
5. Open the WEB page at “Admin/ Commit/Reboot”. Press “Commit” to save the settings into flash memory.
6. The new settings will take effect after reboot the system.

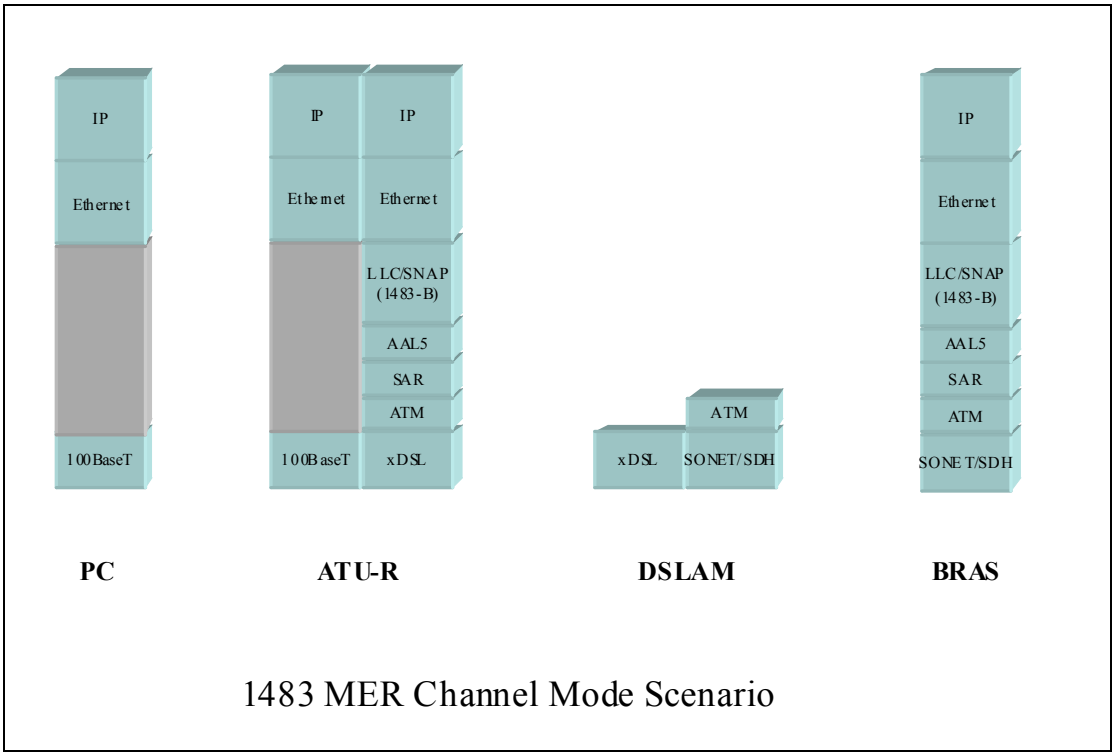
Chapter 6 Protocol Stacks

6.1 1483 Bridged Model



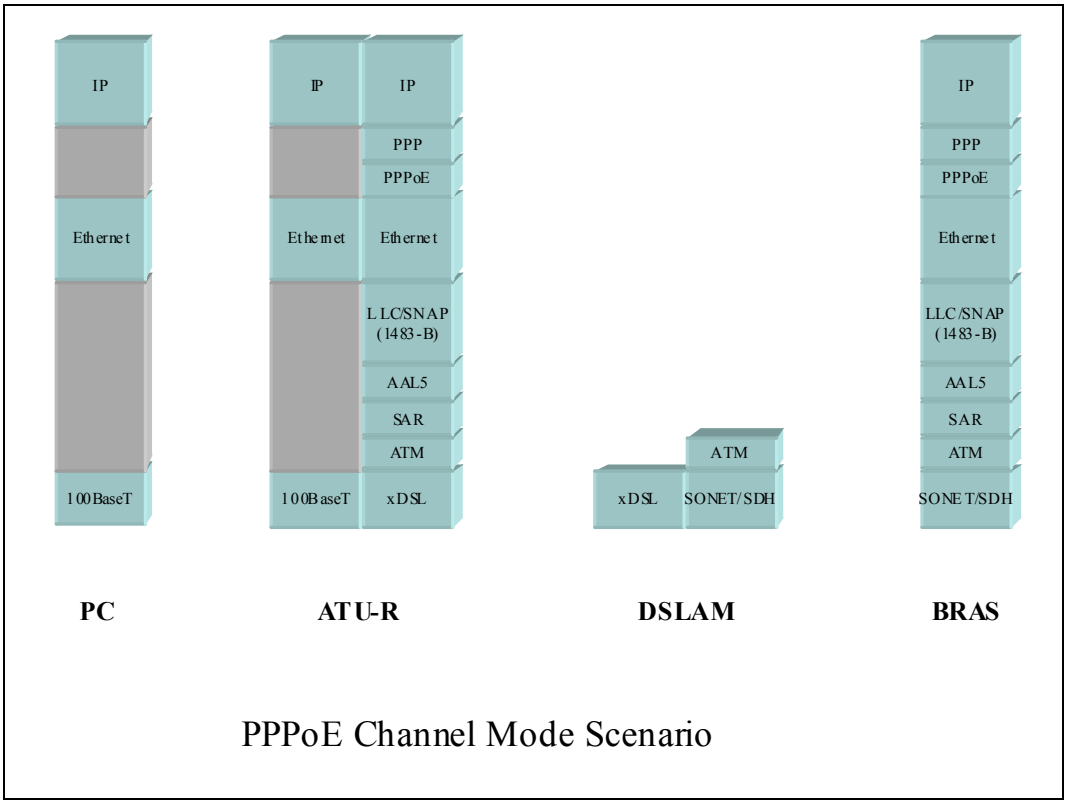
1483 Bridged Channel Mode Scenario

6.2 1483 MER Model

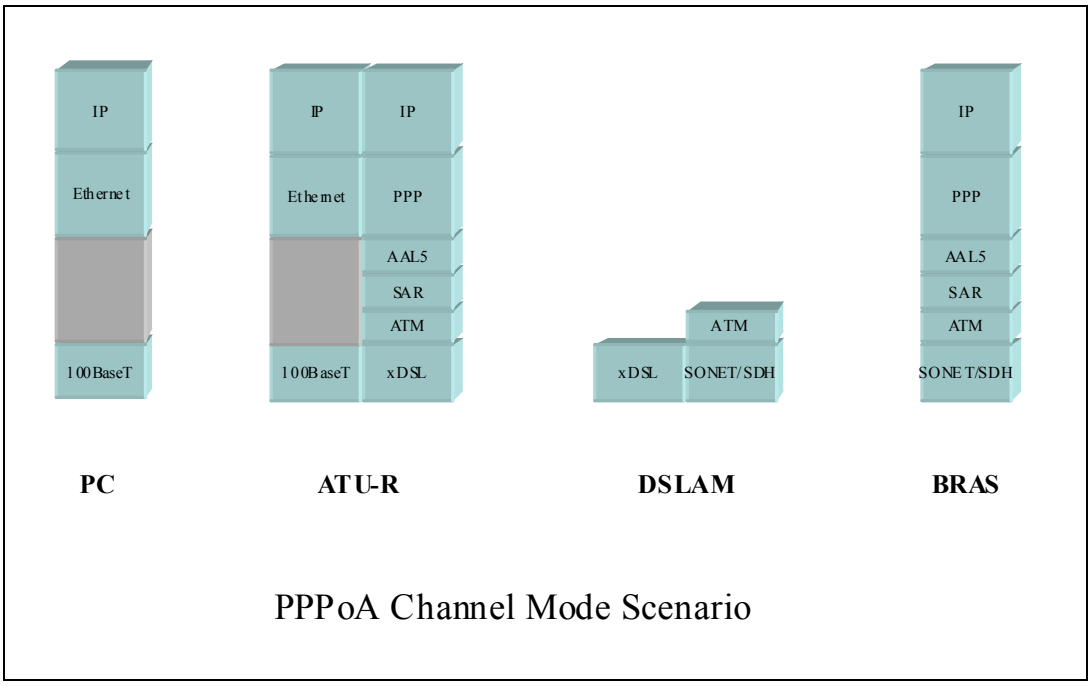


1483 MER Channel Mode Scenario

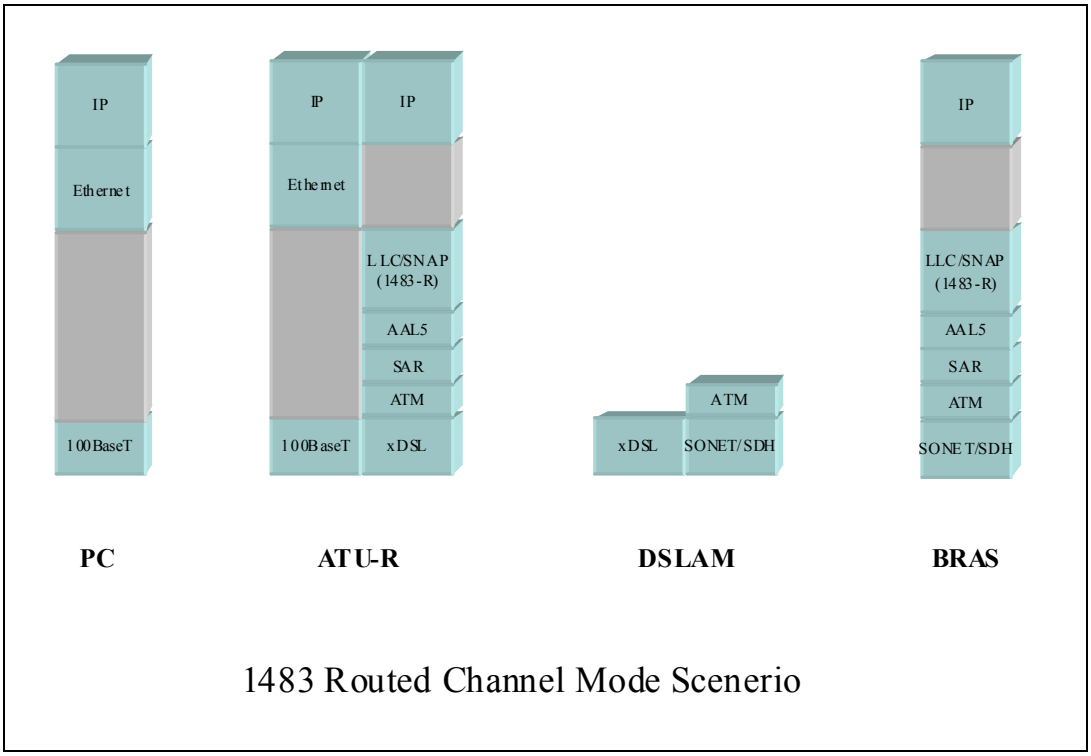
6.3 PPPoE Model



6.4 PPPoA Model



6.5 1483 Routed Model



1483 Routed Channel Mode Scenerio

Chapter 7 Questions & Answers

Q1 Why all LED indicators are off?

A1
- Check the connection between the power adaptor and the power socket.
- Check the power switch is on or not.

Q2 Why LAN LED is not lighting?

A2
- Check the connection between the ADSL modem and your computer, hub, or switch.
- Check the running status of your PC, hub, or switch, and ensure that they are working normally.

Q3 Why ADSL LED is not lighting?

A3 Check the connection between the ADSL “DSL” port and the wall jack.

Q4 Why cannot visit Internet with ADSL LED is on?

A4 Ensure that the following information is correctly entered.
- VPI/VCI
- Username/password.

Q5 Why cannot open the Modem Web configuration page?

A5 Follow below steps to check the communication between the computer and modem.
- Choose **Start ▶ Run** from the desktop, and ping 192.168.1.1 (the IP address of the modem).
- If the modem cannot be reached, please check following configuration:
  - Type of the network cable
  - Connection between the modem and computer
  - TCP/IP configuration of you computer

Q6 How to load the default setting after incorrect configuration?

A6
- To restore the factory default, keep the device powered on and push a needle into the hole. Press down the button about one second and then release.
- The default IP address and subnet mask of the modem are 192.168.1.1 and 255.255.255.0 respectively.
- User/password of super user: admin/admin
- User/password of common user: user/user

Chapter 8 Technical Support

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