ADSL2+ Modem

DC-227

Full manual

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1. Introduction

The ADSL2+ Modem user manual contains the guidance to install and configure the DC-227 ADSL2+ Modem using the Web GUI.

Intended Audience

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

General Description

The DC-227 modem is a high-speed ADSL2+ modem 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. The ADSL2+ modem is compatible with the latest ADSL standards, including ADSL2 and ADSL2+, and supports up to 24 Mbps downstream and 1.5 Mbps upstream to deliver true broadband speed and throughput.

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.

Specifications

ADSL Standard

- ITU-T G.992.1(G.dmt)
- ANSI T1.413 Issue 2
- G.992.2 (G.lite)
- G.994.1 (G.hs)
- Auto-negotiating rate adaptation
- ADSL2 G.dmt.bis (G.992.3)
- ADSL2 G.lite.bis (G.992.4)
- ADSL2+ (G.992.5)

Software Features

- RFC-1483/2684 LLC/VC-Mux bridged/routed mode
- RFC-1577 Classical IP over ATM
- RFC-2516 PPPoE
- RFC-2364 PPPoA
- ITU-T 1.610 F4/F5 OAM send and receive loop-back
- 802.1d Spanning-Tree Protocol
- DHCP Client/Server/Relay
- NAT
- RIP v1/v2
- DNS Relay Agent
- DMZ support
- IGMP Proxy/Snooping
- Stateful Packet Inspection
- Protection against Denial of Service attacks
- IP Packet Filtering
- QoS
- Dynamic DNS
- UPnP support

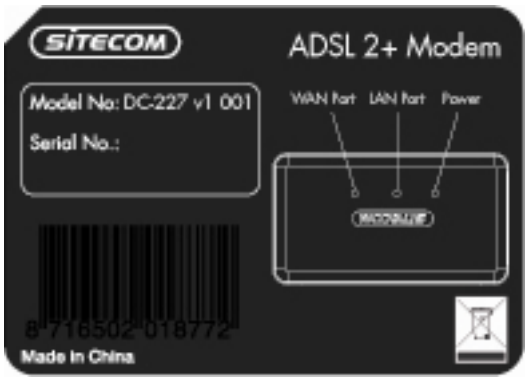
Management

- Web-based Configuration
- Menu-driven Command-line Interpreter
- Telnet Remote Management
- SNMP v1/v2/Trap
- Firmware upgrade through FTP, TFTP and HTTP
- Configuration backup/restore

2. Hardware Installation

2.1 Panel Layout

2.1.1 Backlabel



LED	Function	Color	Status	Description
POWER	Power indication	Green	On	Power is connected.
WAN	Link Status	Green	On	ADSL line was detected.
			Blinking	The modem couldn't detect the ADSL signal, or is attempting to get line sync.
LAN	Data Rate	Green	Blinking	The LAN port is sending or receiving data.
			On	The LAN port is connected.

2.1.2 Rear Panel

Port	Description
WAN	The port to connect with your ADSL line.
Ethernet	The ports where you can connect your computer or other device.
Reset	To reset the system settings to factory defaults, press the reset button for at least 10 seconds.
POWER	The power inlet.

2.2 Procedure for Hardware Installation

2.2.1 Hardware Requirements

- ADSL/ADSL2/ADSL2+ Internet subscription
- 9V AC power adapter
- RJ-45 Ethernet cable
- RJ-11 ADSL line

2.2.2 Decide where to place your ADSL2+ Modem

You can place your ADSL2+ Modem on a desk or other flat surface, or you can mount it on a wall. This location must be close to a power connection and your ADSL/Telephone connection.

2.2.3 Setup LAN connection

Connect an Ethernet cable to one of your computers.

2.2.4 Hardware Setup Procedures

1. Connect the RJ-11 cable from the DC-227 to your ADSL line.
2. Connect the RJ-45 line from your PC to an Ethernet port on the DC-227.
3. Plug the power supply into a wall outlet.

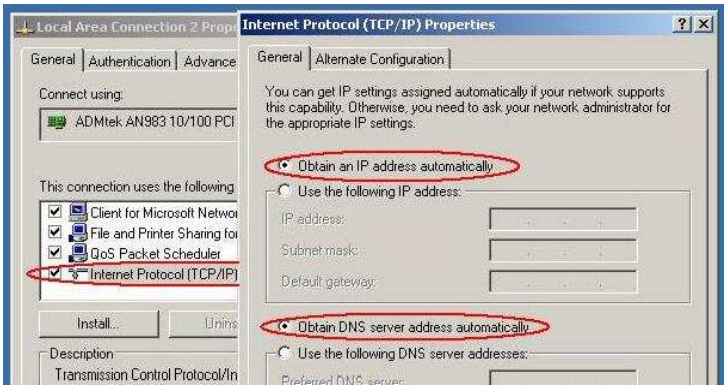
2.2.5 Power on

Connect the power-adapter to the power inlet port and connect it to a wall outlet, this product will automatically enter the self-test phase. When it is in the self-test phase, the Power LED will not be lighted for about 15 seconds, and then Power will flash 9 times to indicate that the self-test operation has finished. Finally, power will be lit continuously to indicate that this product is in normal operation.

3 Network Settings and Software Installation

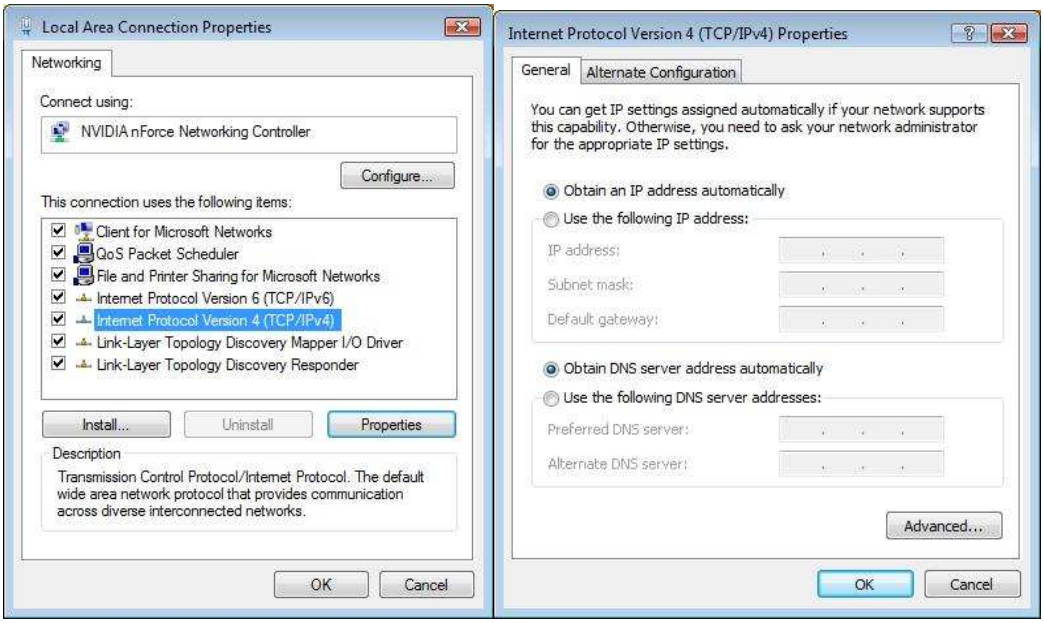
3.1 Windows 2000/XP

1. Go to START > Configuration screen > (Network and Internet connections >) Network connections.
2. Click on your network connection with the right hand mouse button and select 'Properties'.
3. Click on 'Internetprotocol (TCP/IP)', and click on the button 'Properties'.
4. Select 'Obtain an IP address automatically'.
5. Click on OK, then on Close, and restart your PC.



3.2 Windows Vista

1. Click the Windows (Start) button.
2. Right-click with the mouse on 'Network', and select 'Properties'.
3. Click 'status' of your network connection, and select 'Properties' in the new window.
4. In User Account Control click 'continue'.
5. Click 'Internet Protocol Version 4 (TCP/IPv4)', then click 'Properties'.
6. Select 'Obtain an IP address automatically'.
7. Click OK, then close all windows and restart your PC.



4 Configuring the ADSL2+ Modem

This ADSL2+ Modem uses a easy-setup web-interface which can be opened through your webbrowser, such as Netscape Communicator or Internet Explorer. This approach can be adopted in any MS Windows, Macintosh or UNIX based platforms.

The default configurations for the system are listed below.

- LAN IP address: **10.0.0.1** Subnet Mask: **255.255.255.0**
- VPI/VCI: **8/35**, Encapsulation: **1483 Bridged IP LLC**

[Administrator Login]

- Username: **admin**, Password: **admin**

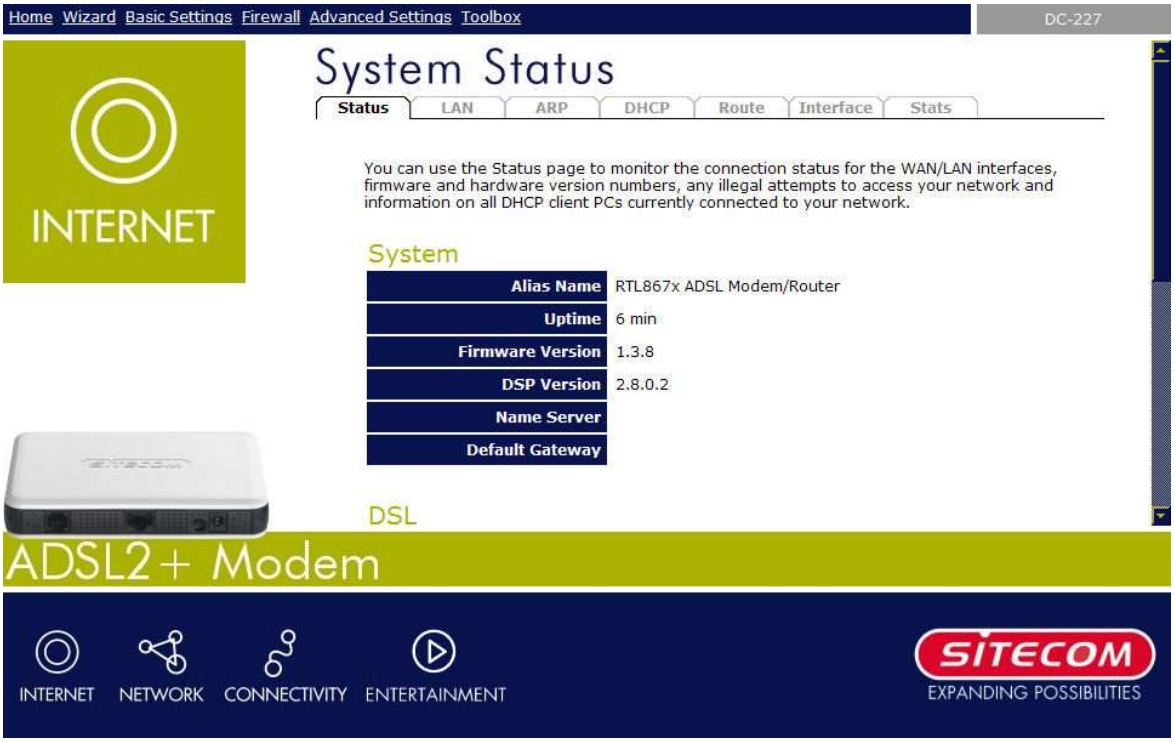
[User Login]

- Username: **user**, Password: **user**

4.1 Start-up and Log in

1. Start your web browser (e.g. Internet Explorer).
2. Type in de address bar: http://10.0.0.1, and press [Enter].

3. Enter your username as: ***admin***, and for your password: ***admin***, and click OK.
4. You will now see the start page for your modem.



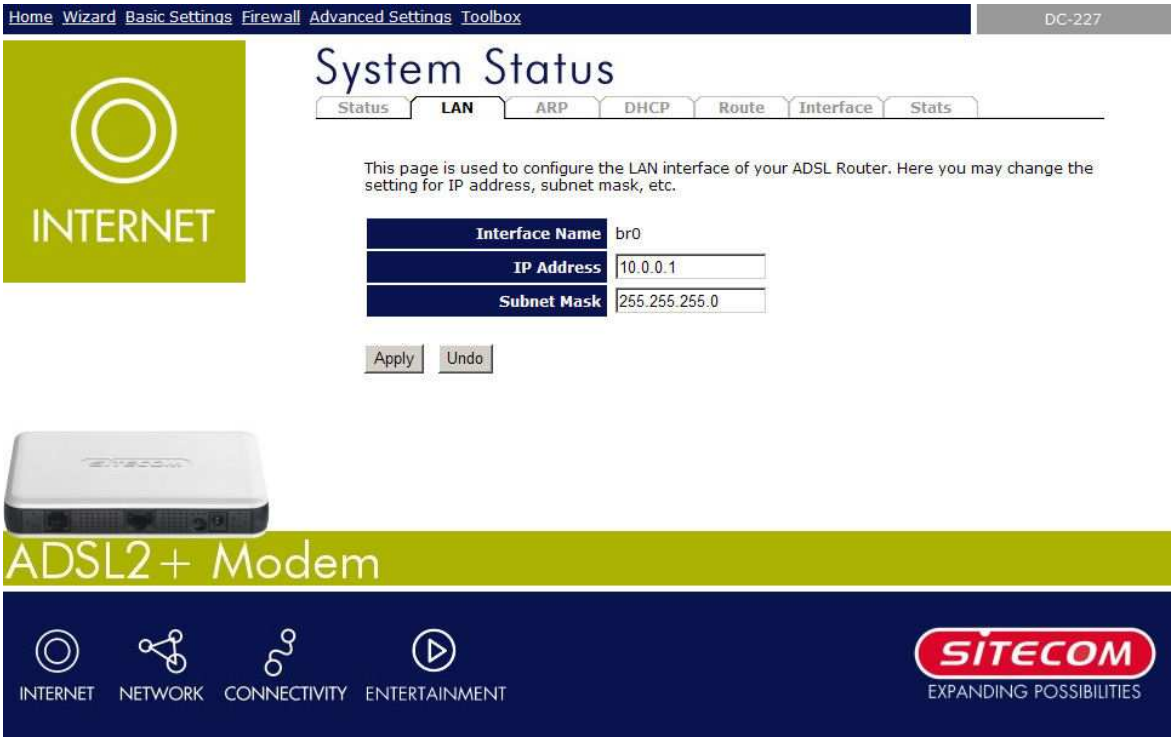
The Status section allows you to monitor the current status of your modem. You can use the Status page to monitor; the connection status of the ADSL modem's WAN/LAN interfaces, the current firmware and hardware version numbers, and information on all DHCP client PCs currently connected to your network.

Connect / Disconnect

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.

4.1.1 LAN Settings

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 on this page:

Field	Description
IP Address	The IP address your LAN hosts uses 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.

Apply Changes

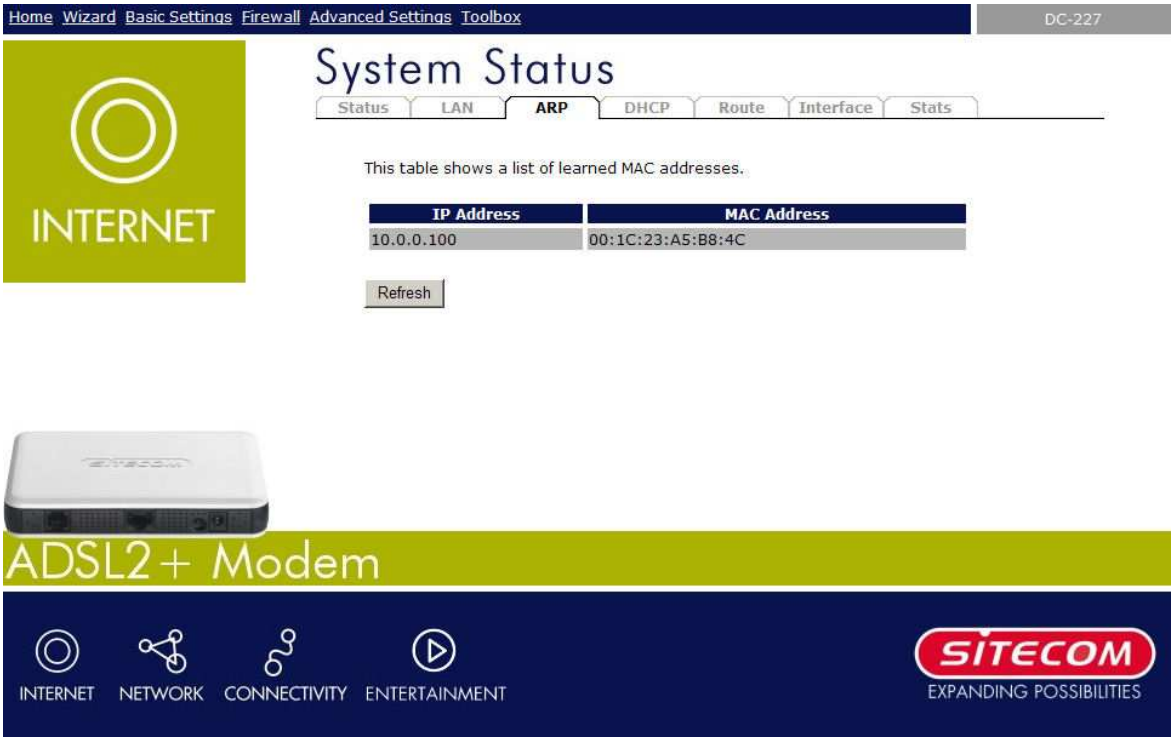
Click to save the setting to the configuration. New parameters will take effect after save into flash memory and reboot the system.

Undo

Discard your changes.

4.1.2 ARP Settings

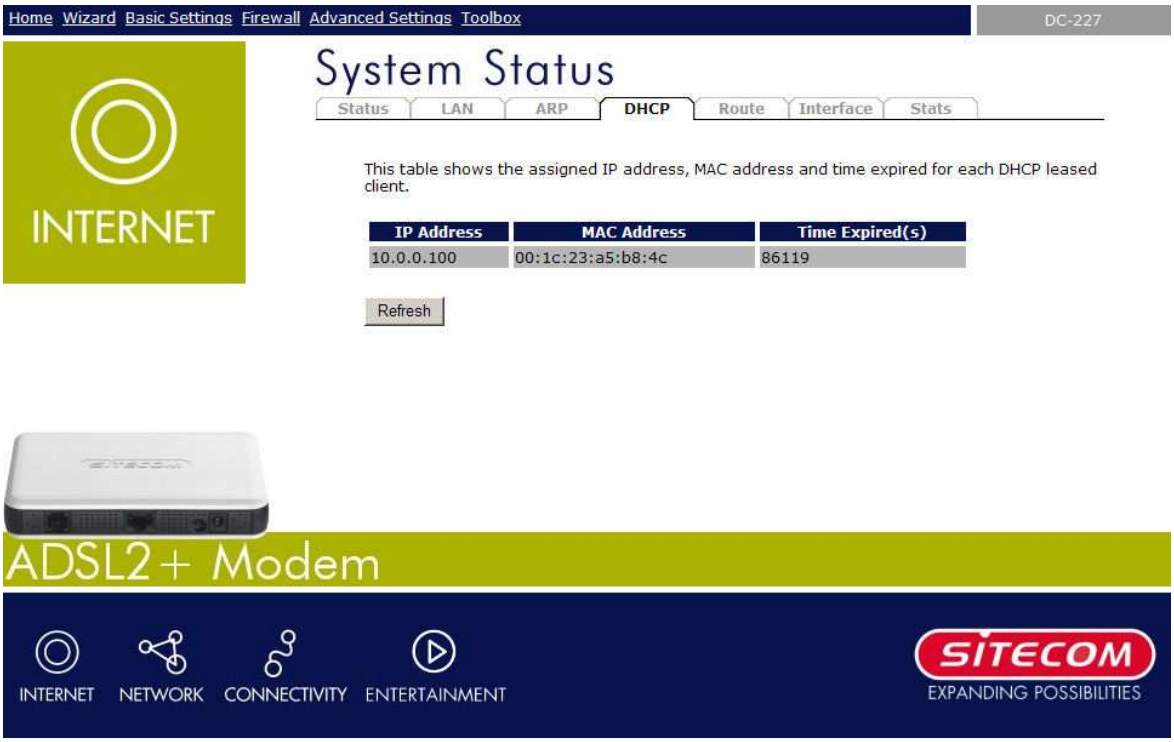
This page shows a list of MAC addresses and IP addresses for devices that are/were connected to the ADSL modem.



Click "Refresh" to update the list.

4.1.3 DHCP

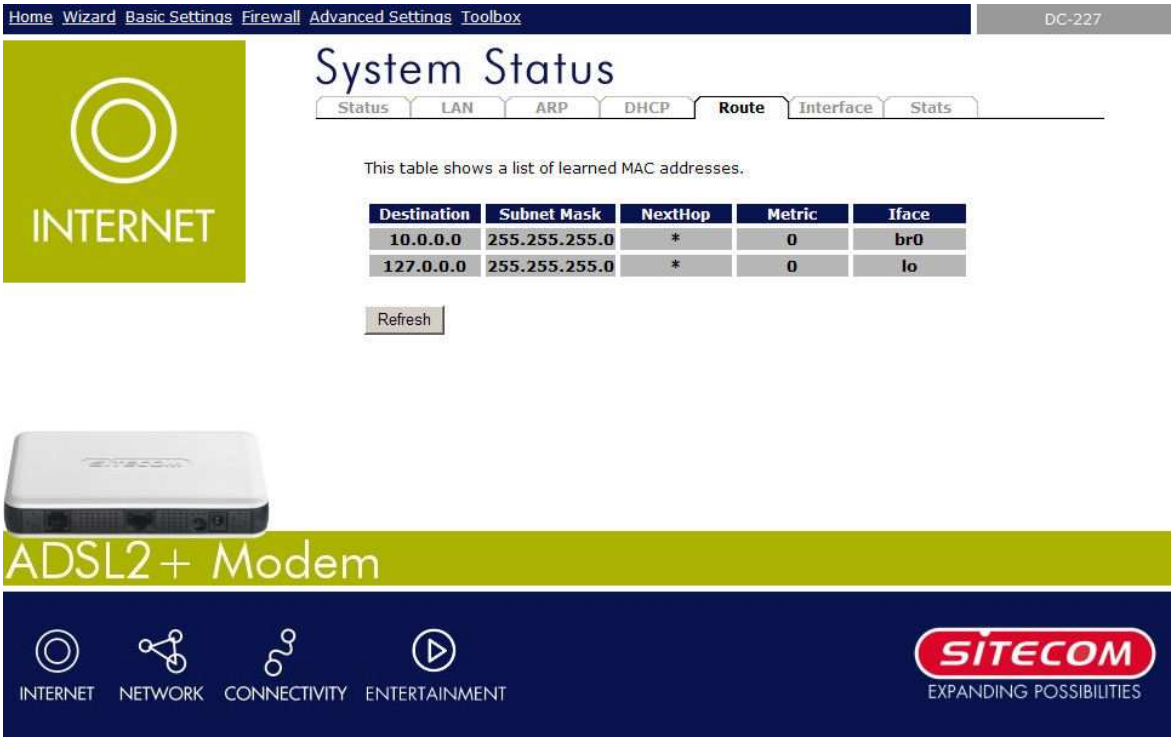
This page shows a list of assigned IP addresses and MAC addresses for each DHCP leased client.



Click "Refresh" to update the list.

4.1.4 Route

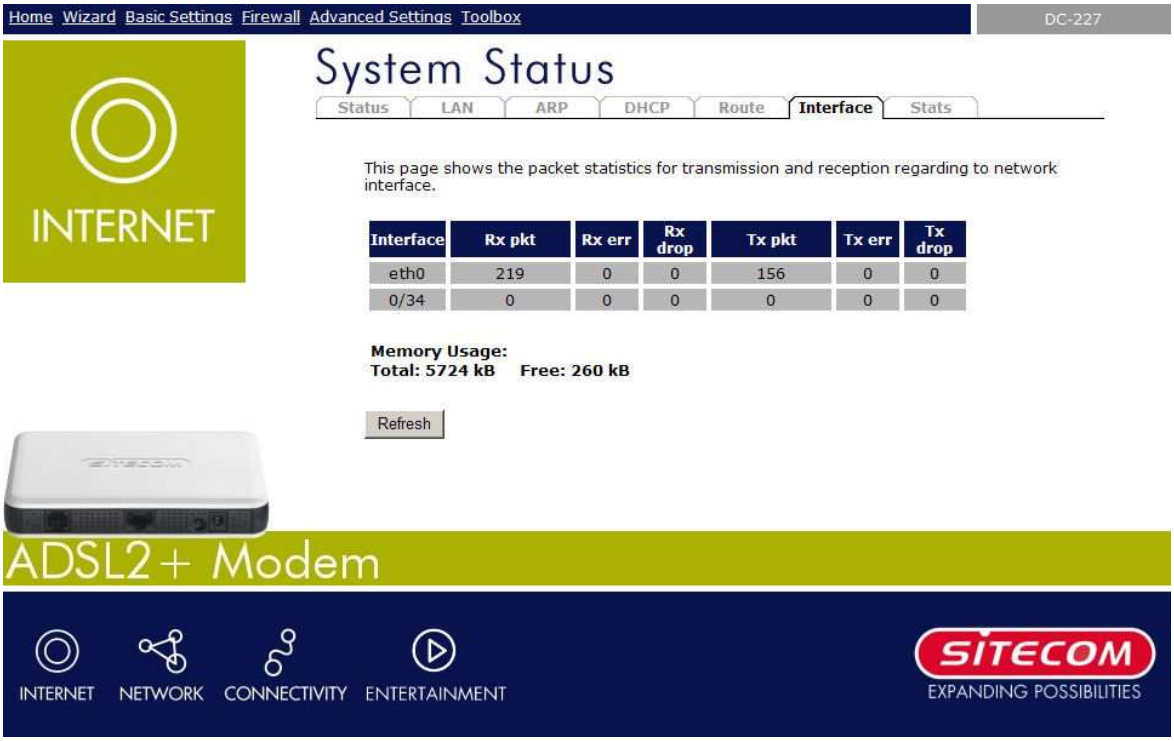
This page shows a list of learned routes.



Click "Refresh" to update the list.

4.1.5 Interface

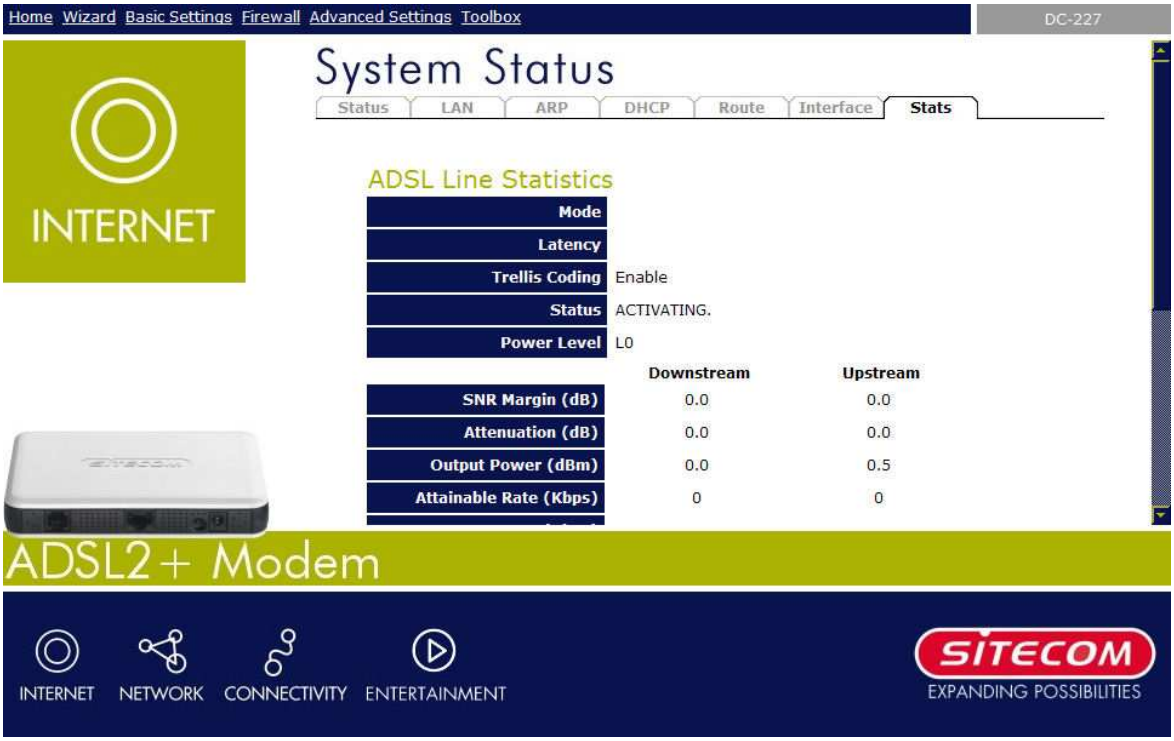
This page shows the packet and memory statistics for the different interfaces.



Click “Refresh” to update the list.

4.1.6 Statistics

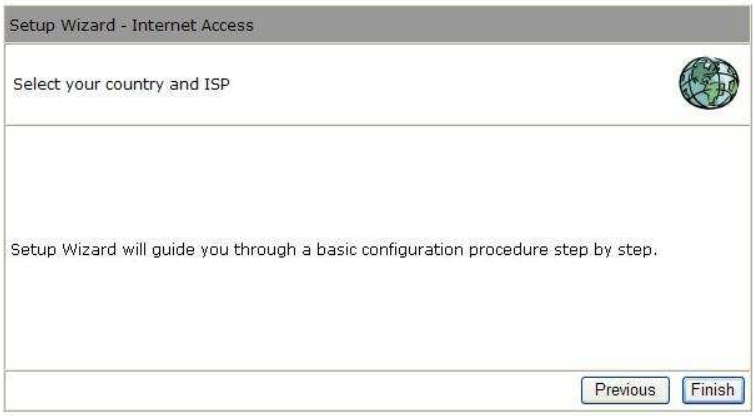
This page shows the statistics for the ADSL line and connection.



Click “Refresh” to update the list.

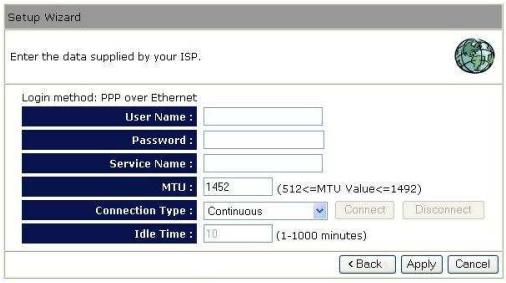
5 Run Setup Wizard

- Click **Wizard** to configure the modem.
- The **Setup wizard** will now be displayed; check that the modem is connected and click **Next**.

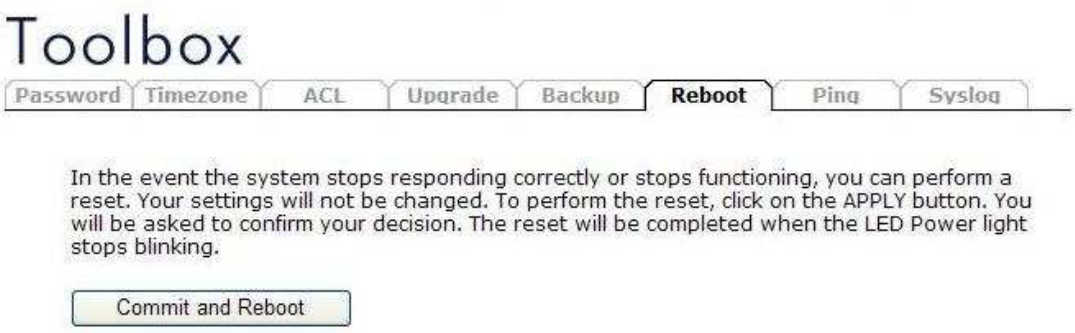


- Select your country from the **Country** list.
- From **Service,** select your internet provider. Click **Next**.

- Depending on the chosen provider, you may need to enter your user name and password, or MAC address in the following window. After you have entered the correct information, click **Next**.



- Click **APPLY** to complete the configuration.

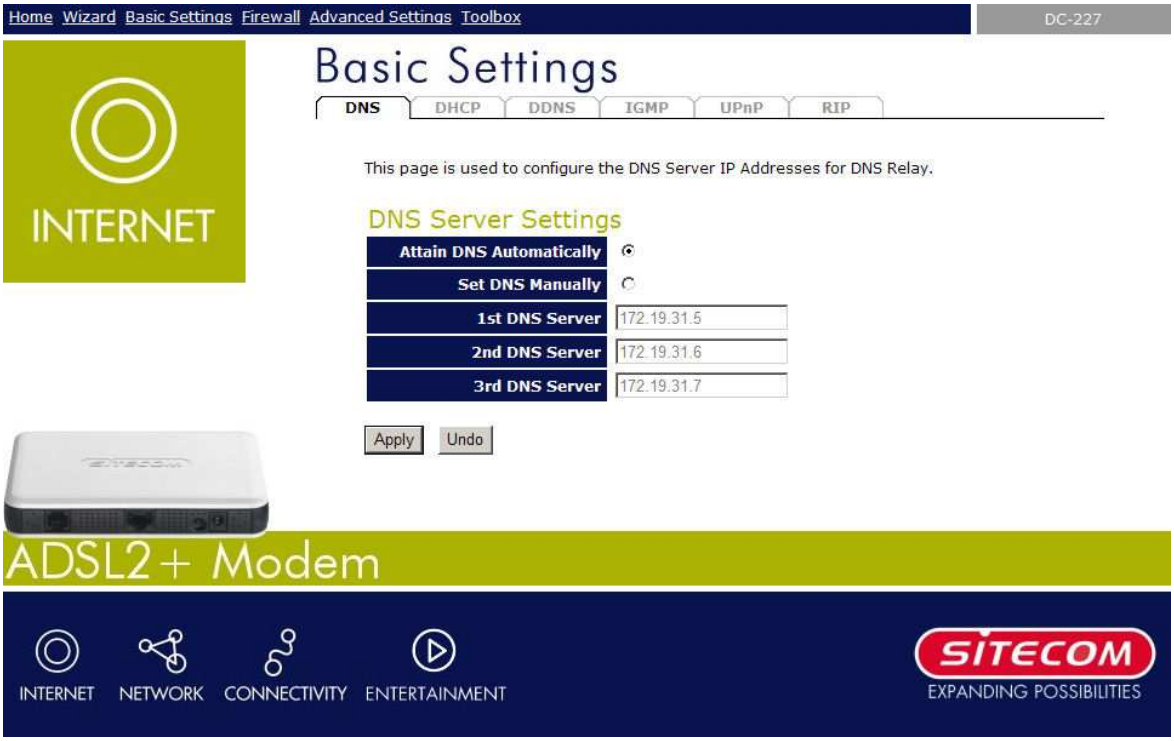


- The modem will now save the settings and restart, please wait 120 seconds and you will be transferred back to the status window. The configuration is complete.
- Wait for about 10 seconds to allow the modem to (re)connect to the Internet.

6 Basic Settings

6.1 DNS Settings

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



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.

Apply Changes

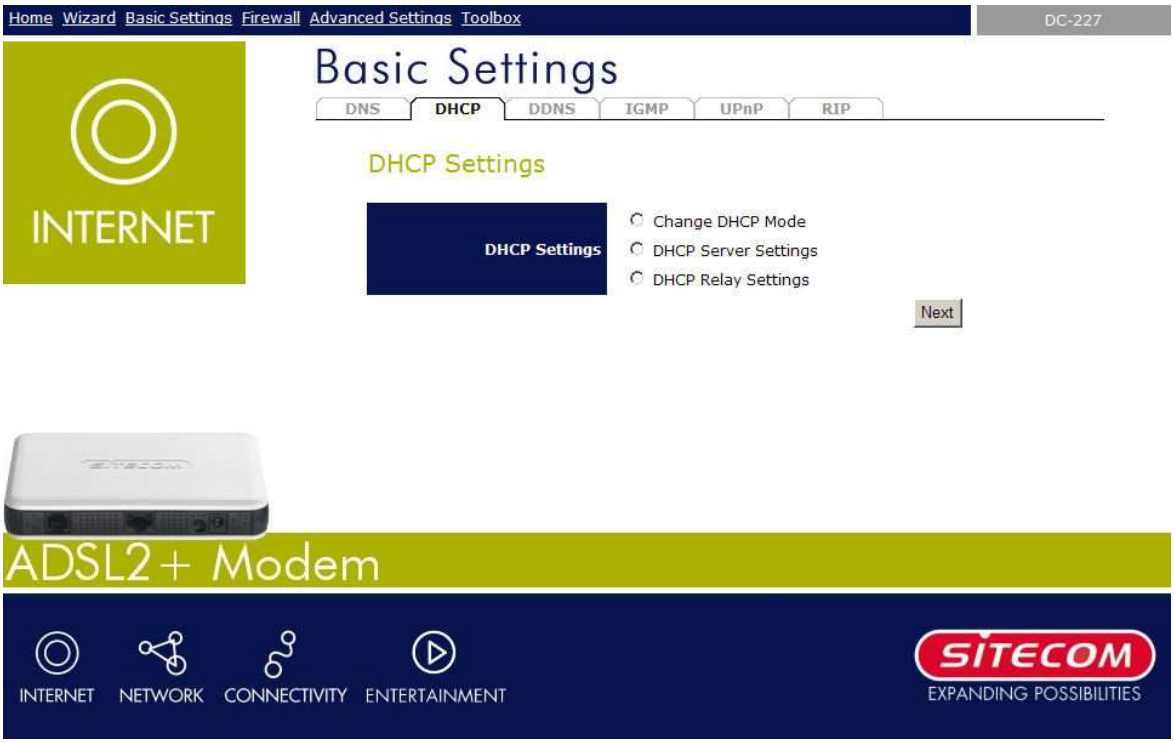
Set new DNS relay configuration. New parameters will take effect after save into flash memory and reboot the system.

Undo

Discard your changes.

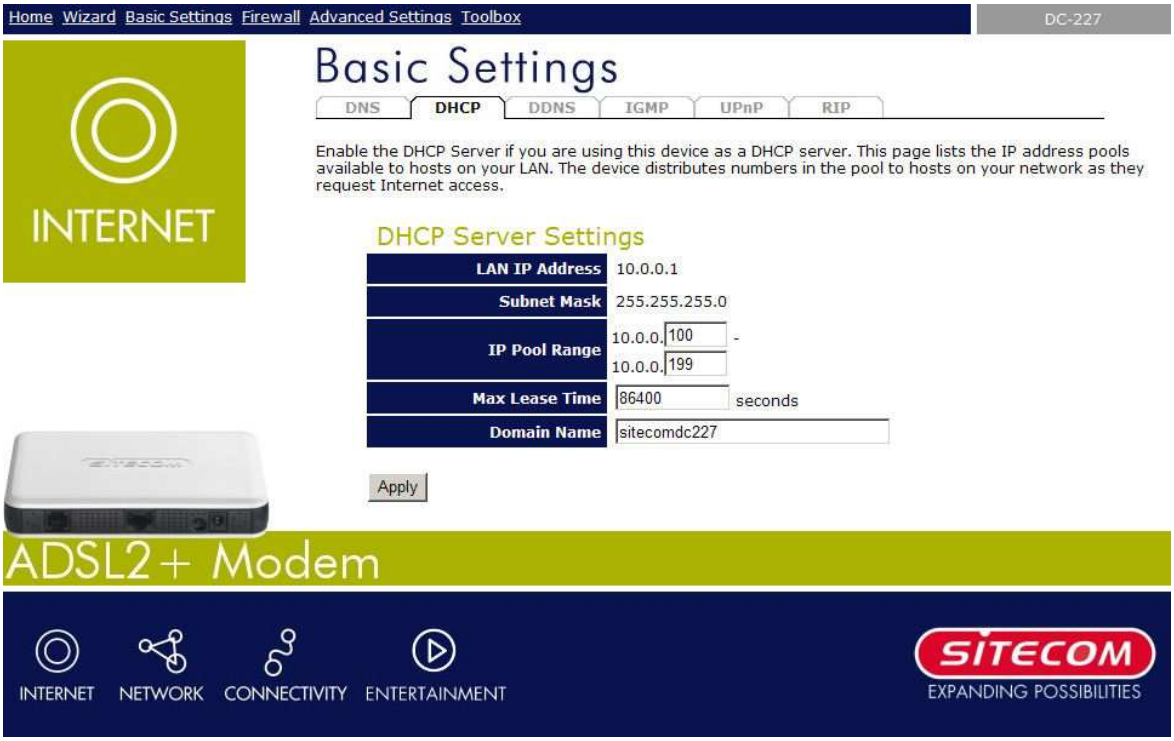
6.2 DHCP Settings

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 Server 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.



6.2.1 DHCP Server

By default, the device is configured as a DHCP server, with a predefined IP address pool of 192.168.0.100 through 192.168.0.200 (subnet mask 255.255.255.0).



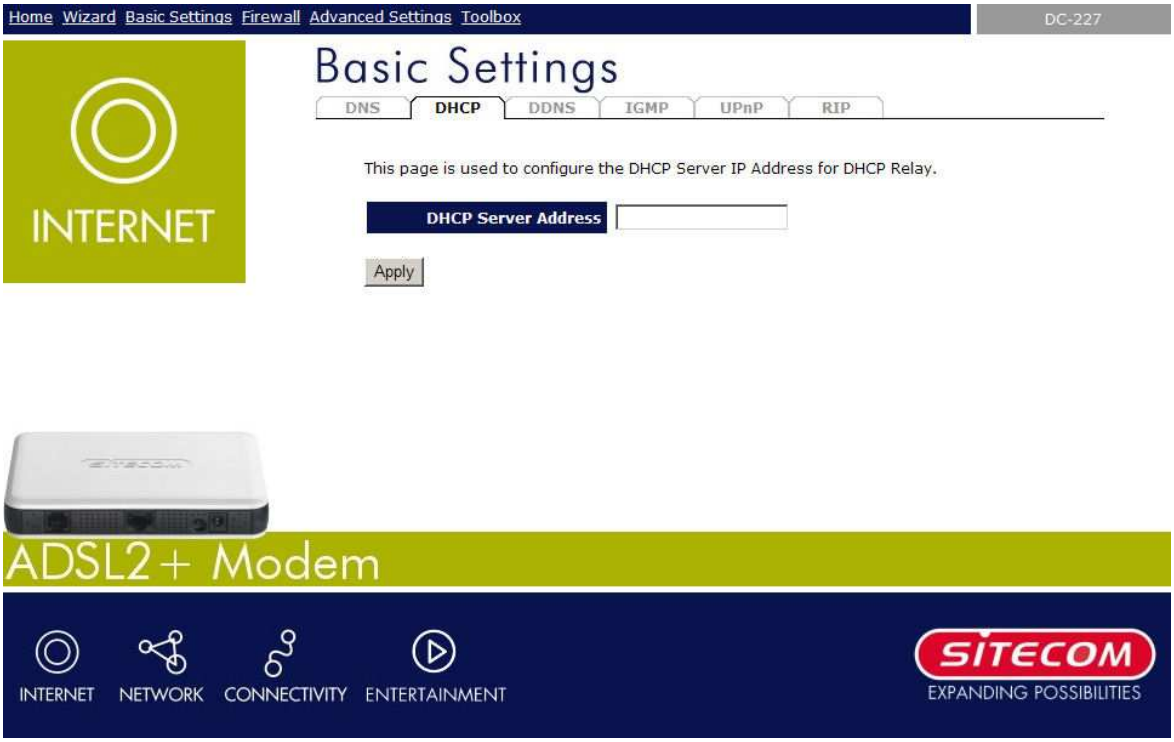
Field	Description
IP Pool Range	Specify the lowest and highest addresses in the pool.
Max Lease Time	The Lease Time is the amount of time that a network user is allowed to maintain a network connection to the device using the current dynamic IP address. At the end of the Lease Time, the lease is either 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.

Apply Changes

Set new DHCP server configuration. New parameters will take effect after saving into flash memory and rebooting the system.

6.2.2 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.



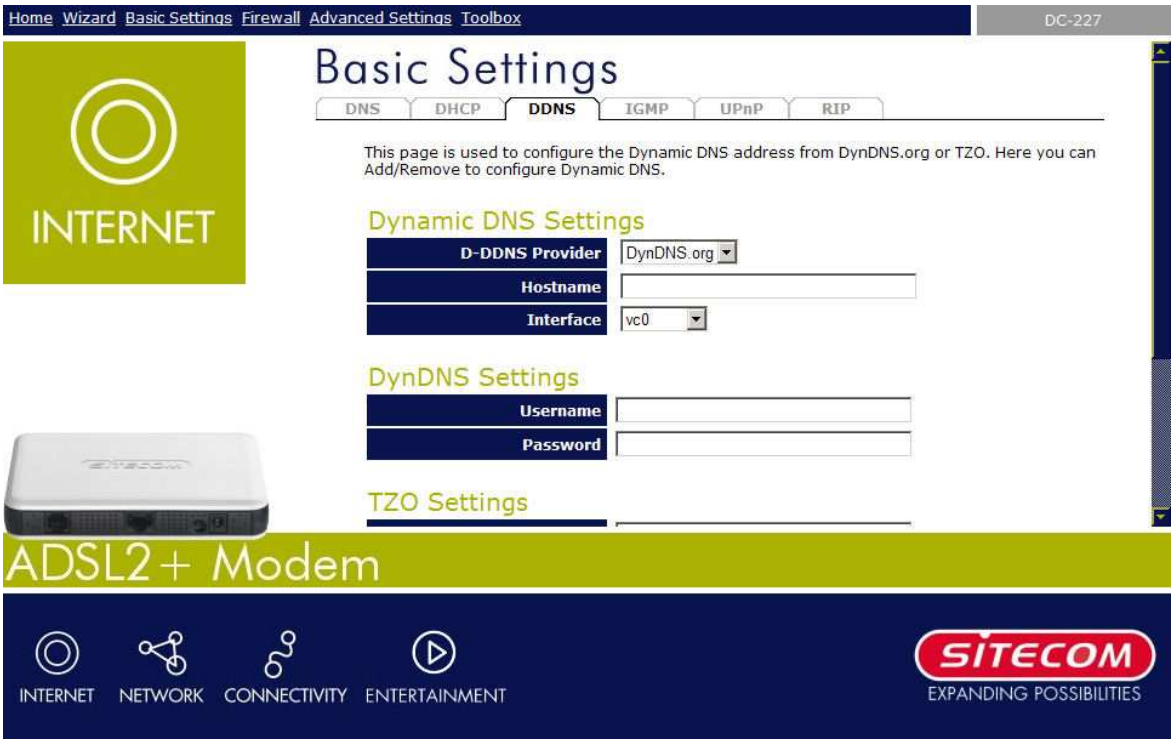
Field	Description
DHCP Server Address	Specify the IP address of your ISP's DHCP server. Requests for IP information from your LAN will be passed to the default gateway, which should route the request appropriately.

Apply Changes

Click to save the setting to the configuration. New parameters will take effect after saving into flash memory and rebooting the system.

6.3 DDNS Settings

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 allow 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.



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 occurs 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.

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.

Apply Changes

Set new DNS relay configuration. New parameters will take effect after save into flash memory and reboot the system.

Undo

Discard your changes.

6.4 IGMP

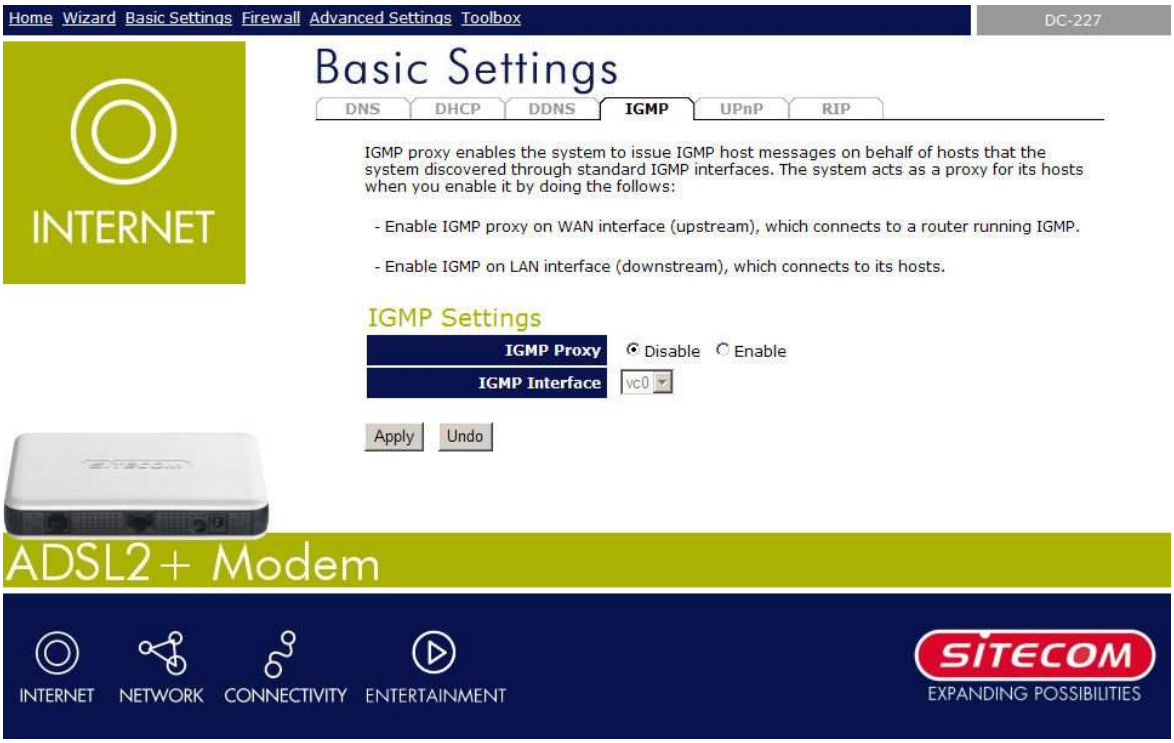
Multicasting is useful when the same data needs to be sent to more than one hosts. Using multicasting as opposed to sending the same data to the individual hosts uses less network bandwidth. The multicast feature also enables you to receive multicast video stream from multicast servers.

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 interface 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.



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

Apply Changes

Click to save the setting to the configuration.

Undo

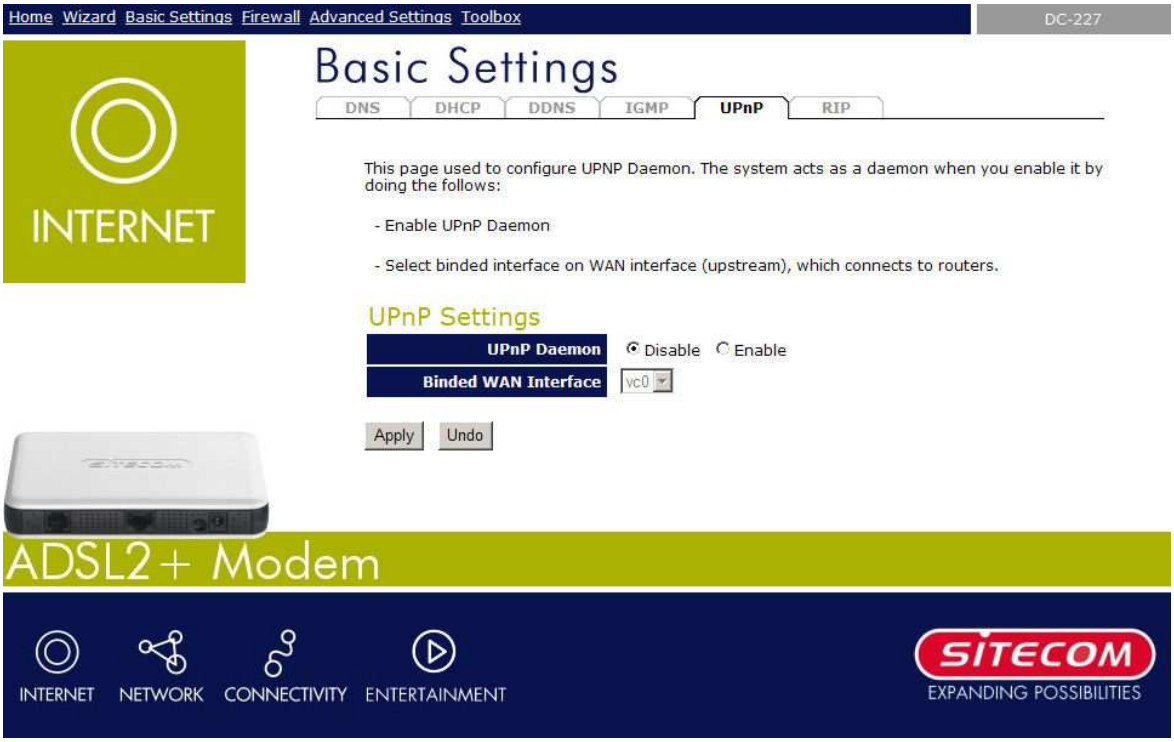
Discard your settings.

6.5 UPnP

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.



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

Apply Changes

Click to save the setting to the system configuration.

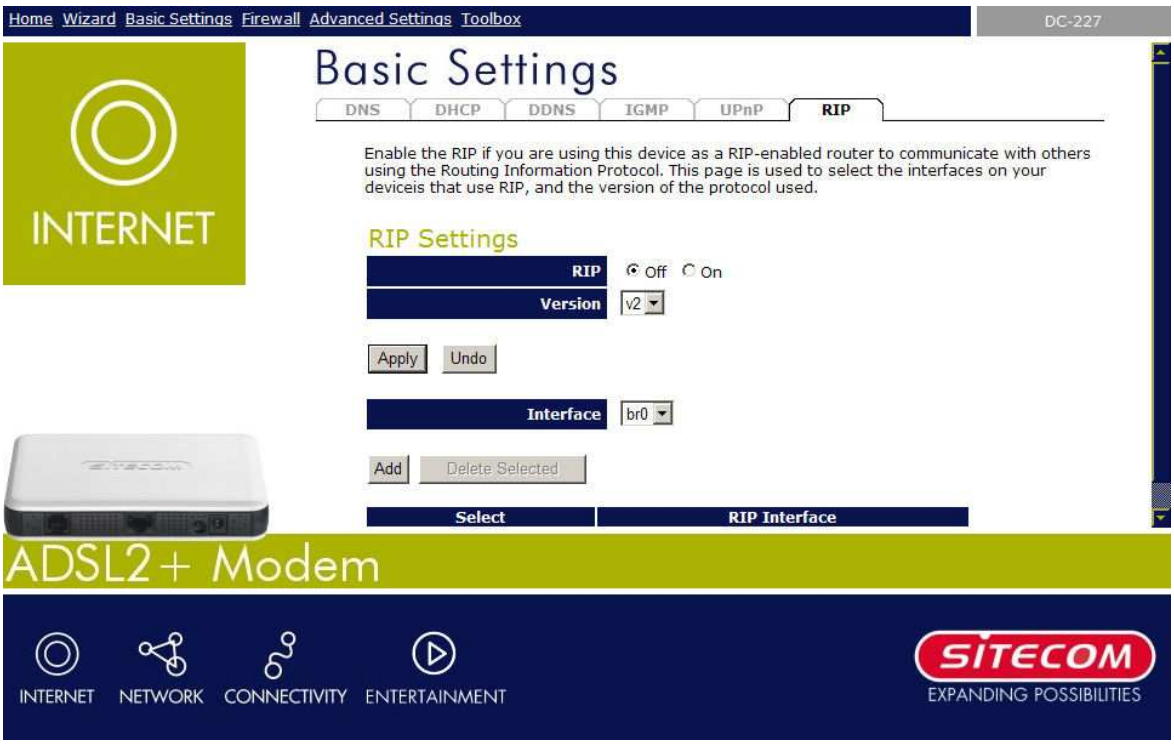
6.6 RIP

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 Modem, 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 Modem). The ADSL Modem 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.



Field	Description
RIP	Enable/disable RIP feature.
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.

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.**

Apply Changes

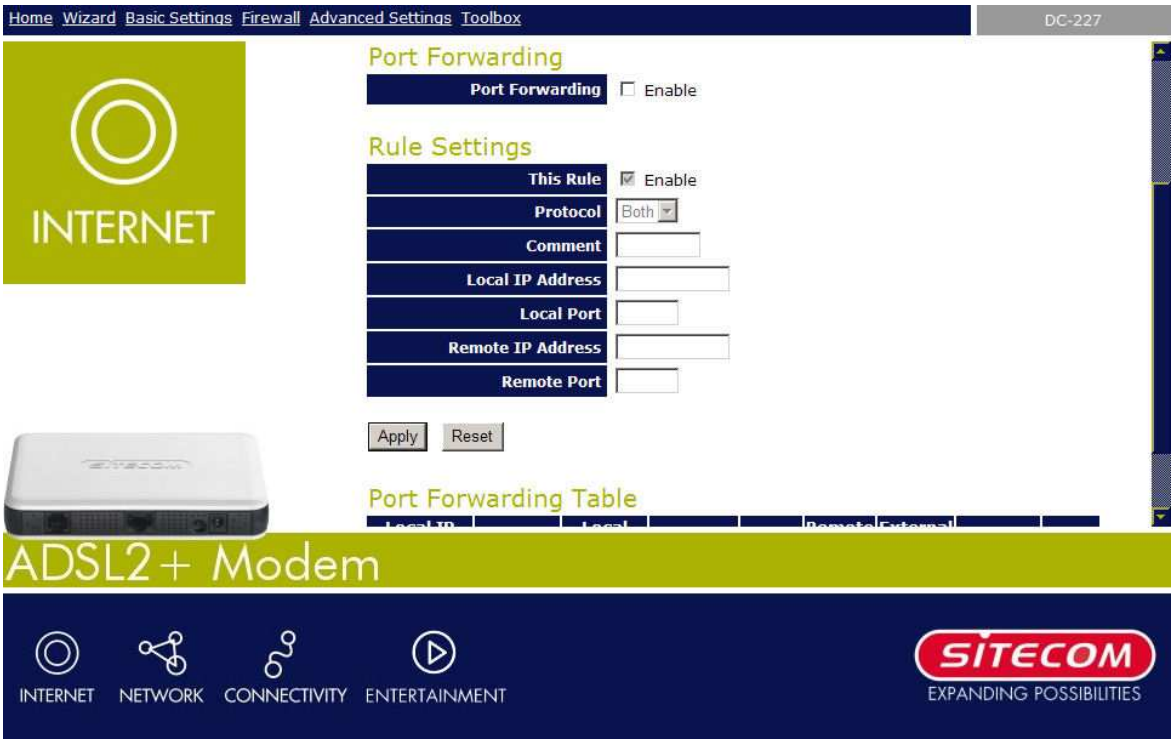
Set new DHCP server configuration. New parameters will take effect after saving into flash memory and rebooting the system.

7 Firewall Settings

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

7.1 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.



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.

Apply Changes

Click to save the rule entry to the configuration.

Delete Selected

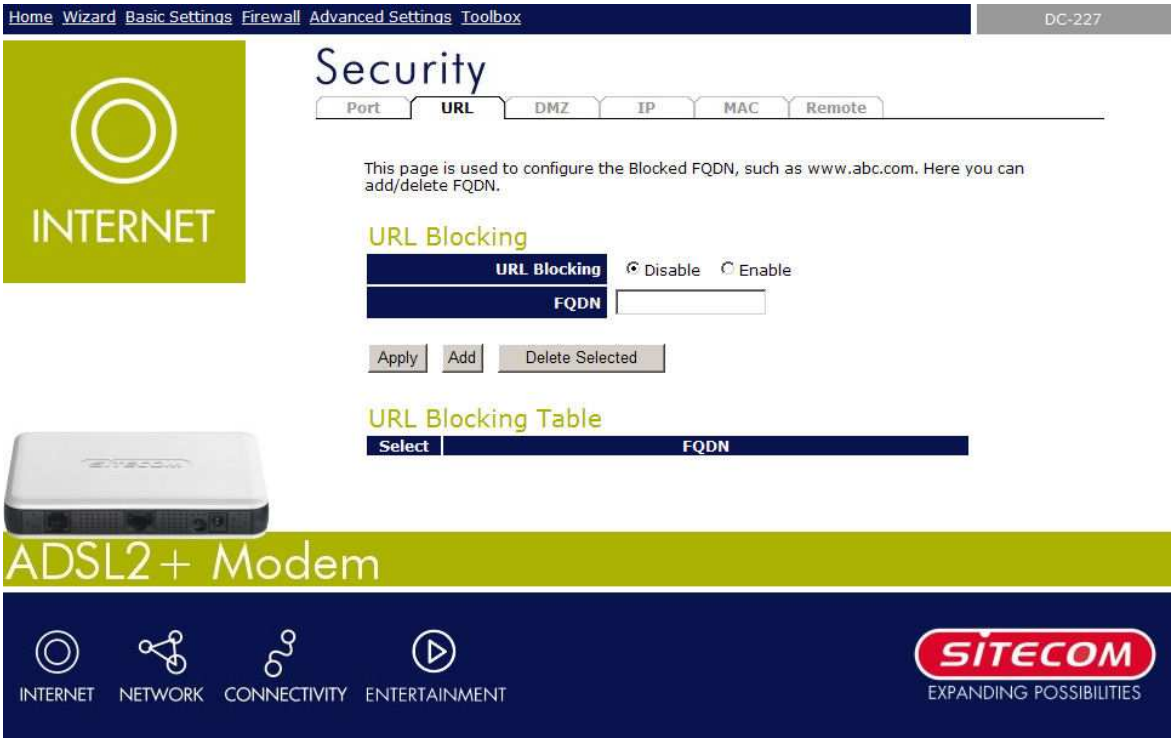
Delete the selected port forwarding rules from the forwarding table. You can click the checkbox at the **Select** column to select the forwarding rule.

Delete All

Delete all forwarding rules from the forwarding table.

7.2 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.



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.

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.

7.3 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.

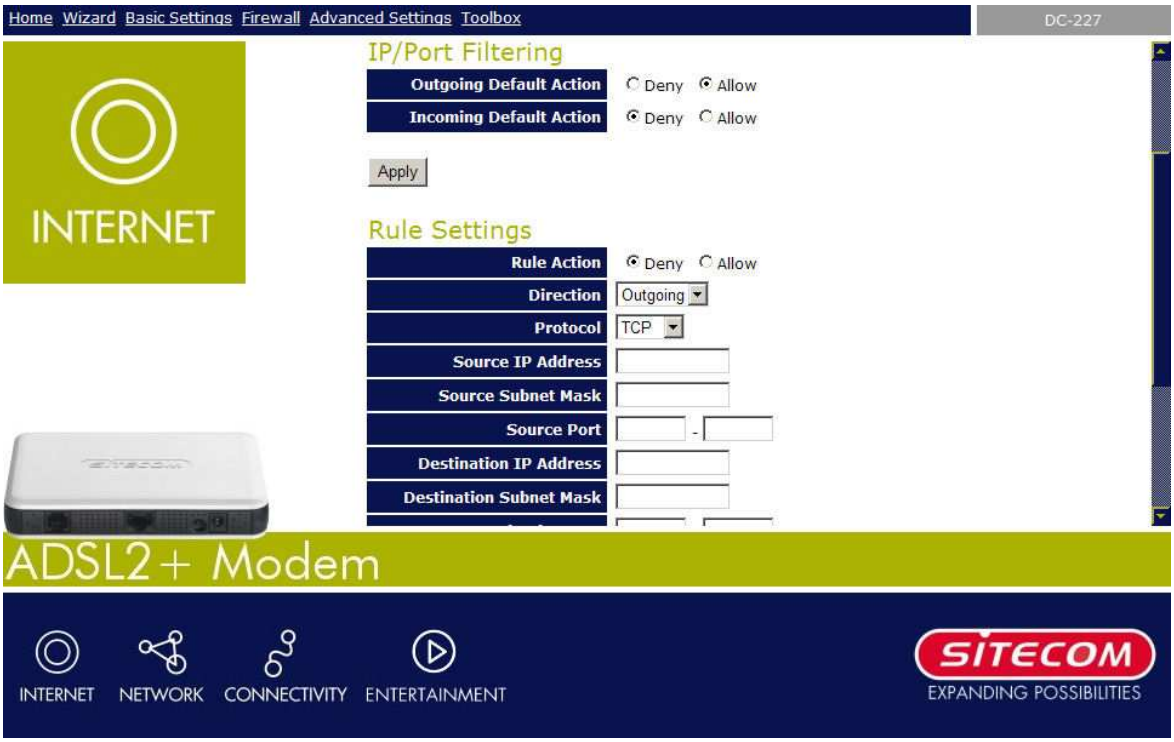
Field	Description
Enable DMZ	Check this item to enable the DMZ feature.
DMZ Host IP Address	IP address of the local host. This feature sets a local host to be exposed to the Internet.

Apply Changes

Click to save the setting to the configuration.

7.4 IP Filtering

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



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.

Apply Changes

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

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.

Apply Changes

Click to save the rule entry to the configuration.

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.

7.5 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.

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.
Rule Action	Deny or allow traffic when matching this rule.
Direction	Traffic bridging/forwarding direction.
Src MAC Address	he 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.

Apply Changes

Click to save the rule entry to the configuration.

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.

7.6 Remote Management

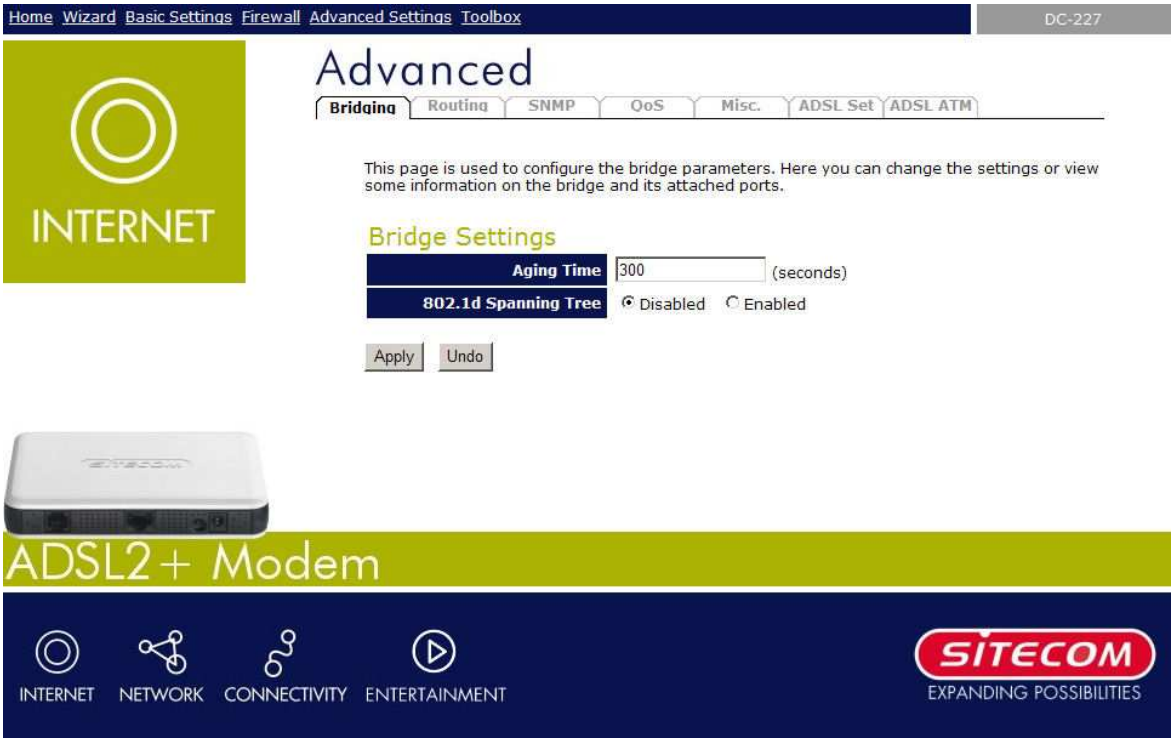
The Remote Access function can secure remote host access to your DSL device from LAN and WLAN interfaces for some services provided by the DSL device.

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.

8 Advanced Settings

8.1 Bridging

You can enable/disable Spanning Tree Protocol and set MAC address aging time 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

Apply Changes

Save this bridge configuration. New configuration will take effect after saving into flash memory and rebooting the system.

Show MACs

List MAC address in forwarding table.

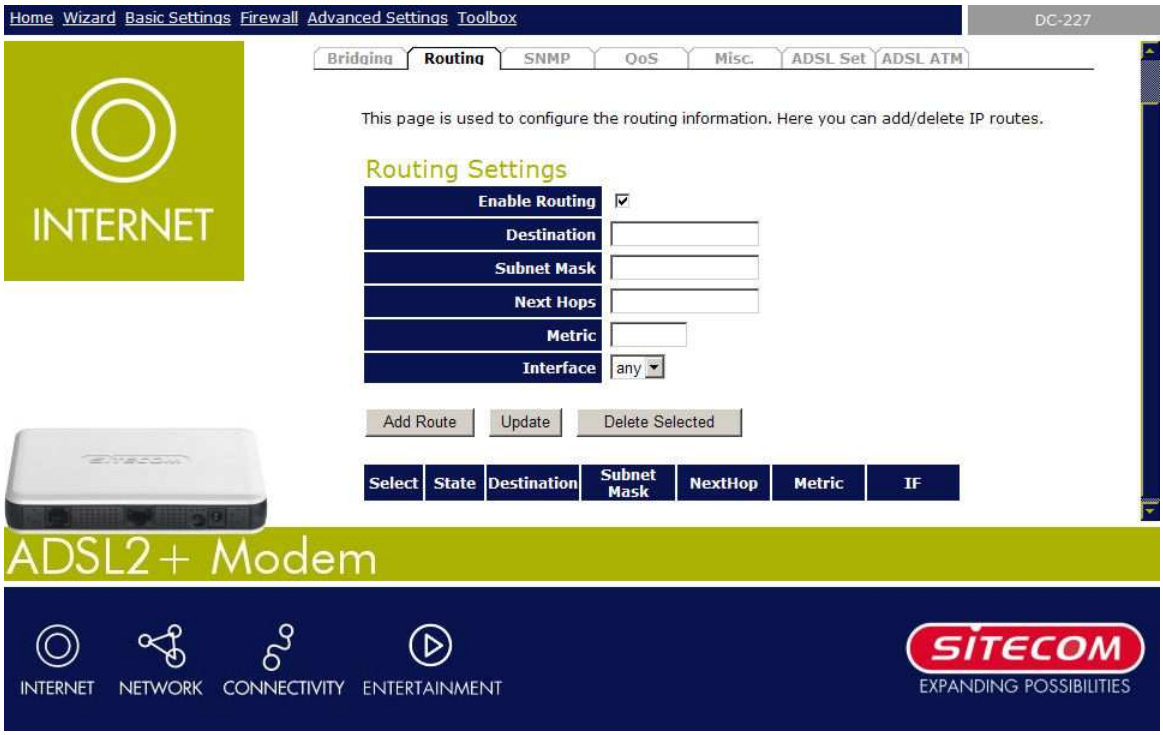
8.2 Routing

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.



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.

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.

8.3 SNMP

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.

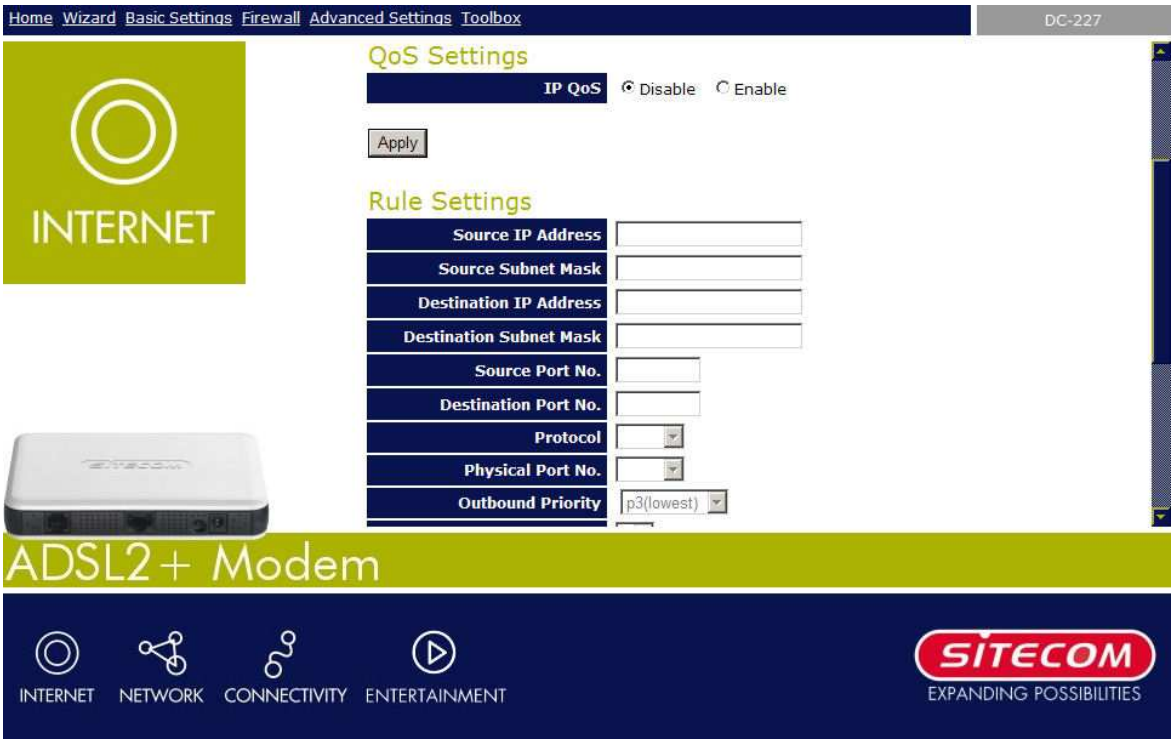
Field	Description
System Description	System description of the DSL device.
System Contact	Contact person and/or contact information for the DSL device.
System Name	An administratively assigned name for the DSL device.
System Location	The physical location of the DSL device.
System Object ID	Vendor object 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.

Apply Changes

Save SNMP configuration. New configuration will take effect after saving into flash memory and rebooting the system.

8.4 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.



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.

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 match 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.

8.5 Misc

On this page, you can change IP passthrough settings.

When the **IP Passthrough** option is enabled, only one PC is able to access the Internet, and the DHCP server will duplicate the WAN IP address from the ISP to the local client PC. Only the PC with the WAN IP address can access the Internet. This option is sometimes also called “PPP Half-Bridge”.

8.6 ADSL Set

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

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.

Tone Mask

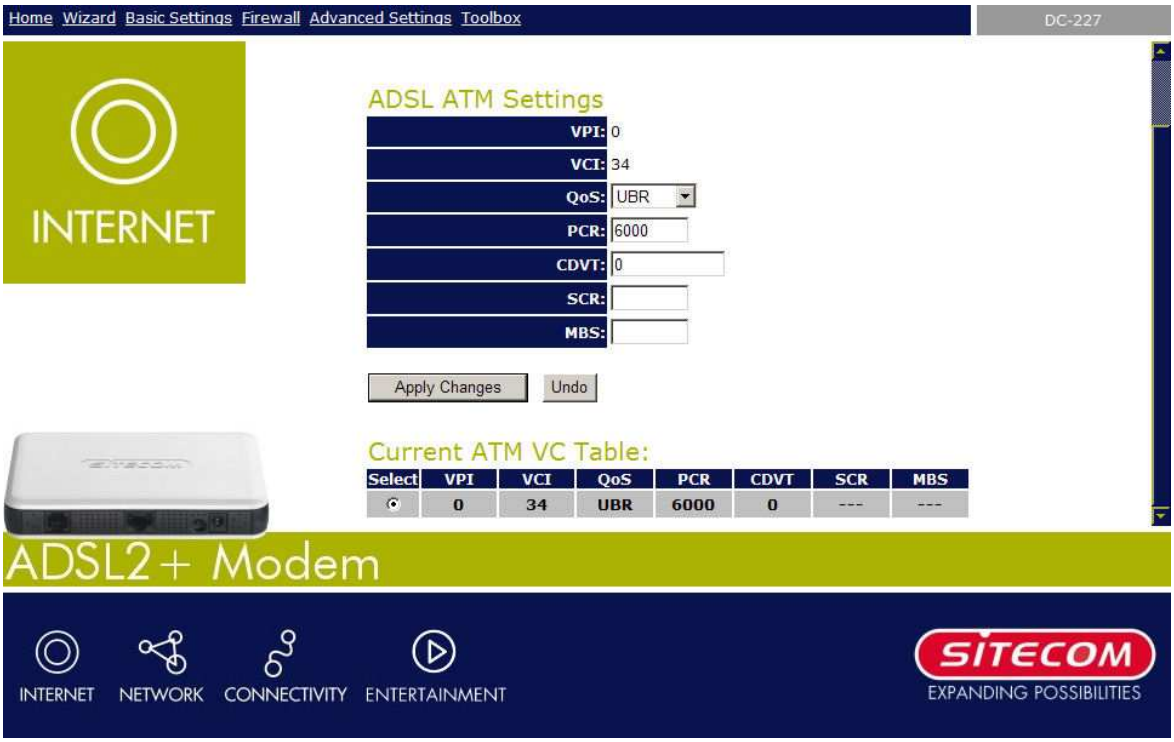
Choose tones to be masked. Mased tones will not carry any data.

Apply Changes

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

8.7 ADSL ATM

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



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.

Apply Changes

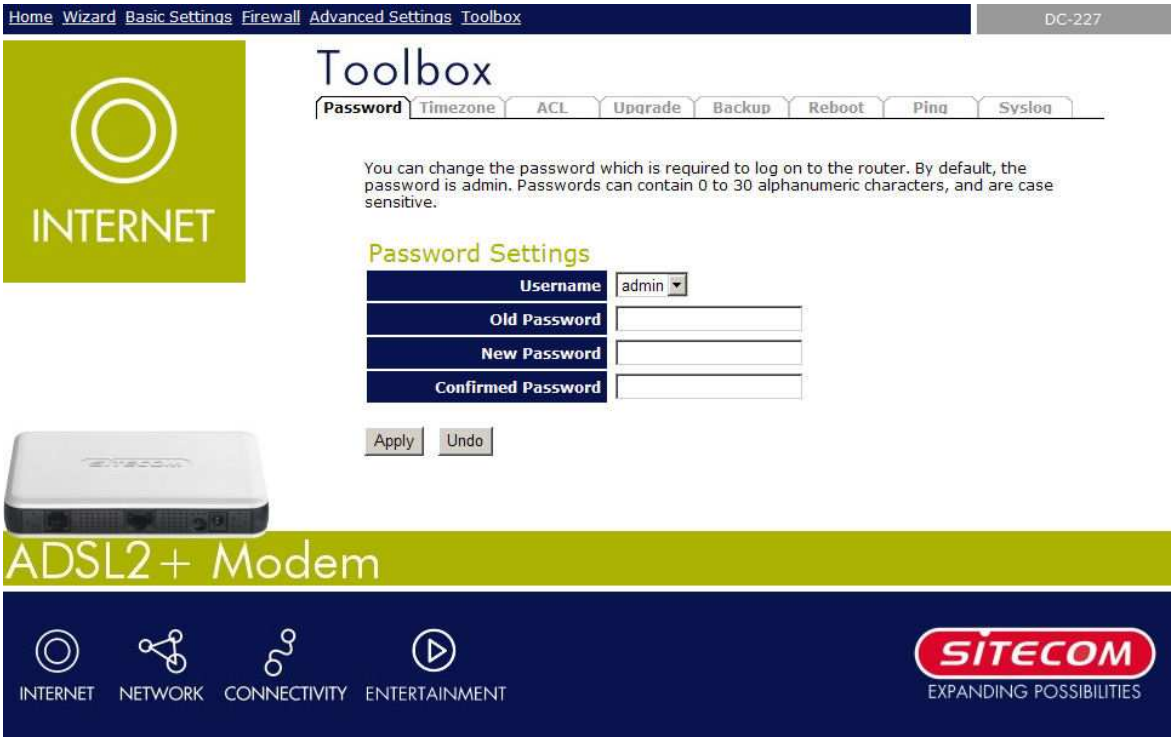
Set new PVC OoS mode for the selected PVC. New parameters will take effect after save into flash memory and reboot the system.

Undo

Discard your settings.

9 Toolbox

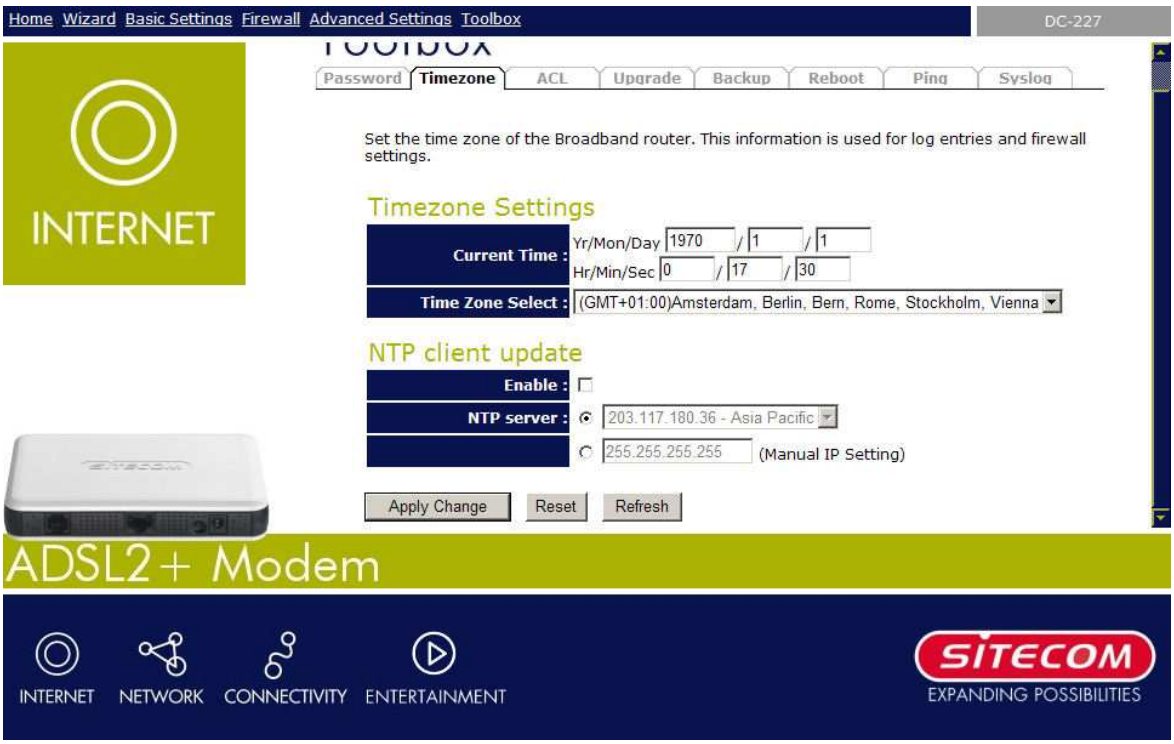
The first time you log into the system, you use the default password. There are two-level logins: **admin** and **user**. The **admin** and **user** password configuration allows you to change the password for administrator and user.



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.

9.1 Timezone

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.



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.

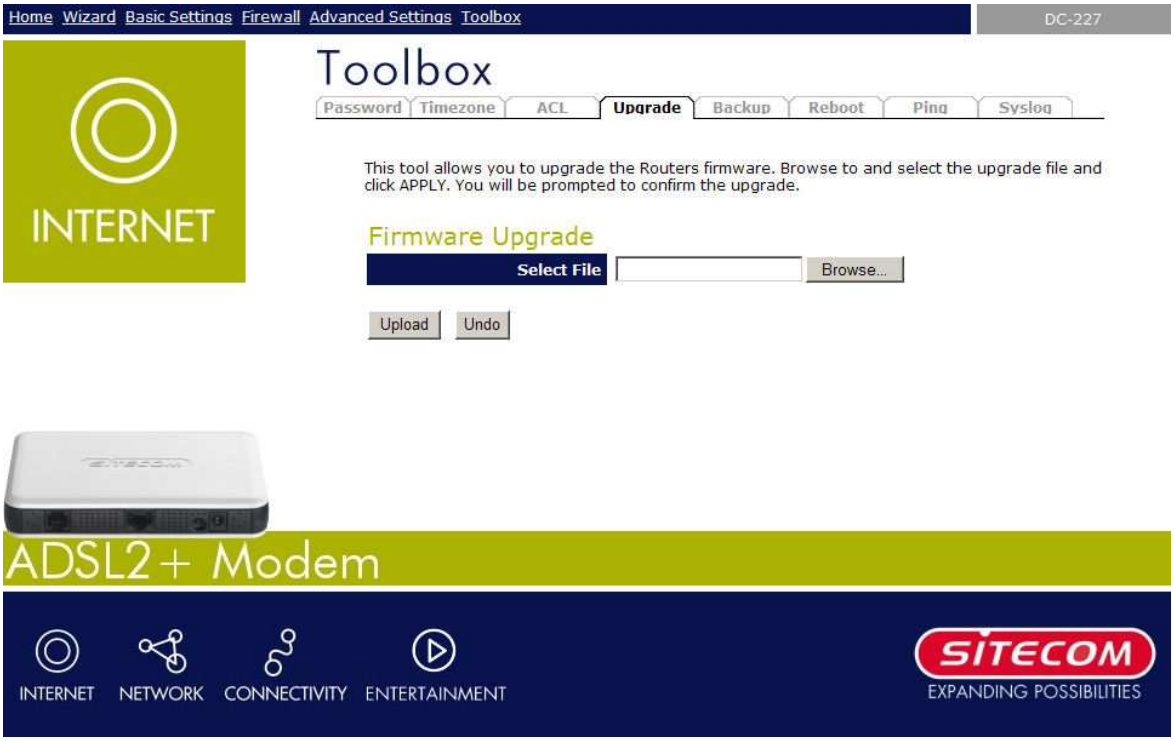
9.2 ACL

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.

Field	Description
ACL Capability	Enable/disable the ACL function
Enable	Check to enable this ACL entry
Interface	Select the interface domain: LAN or WAN
IP Address	Enter the IP address that allow access to this device.

9.3 Firmware Upgrade

This page allows you to upgrade the modem's firmware.



To upgrade the firmware for the DSL device:

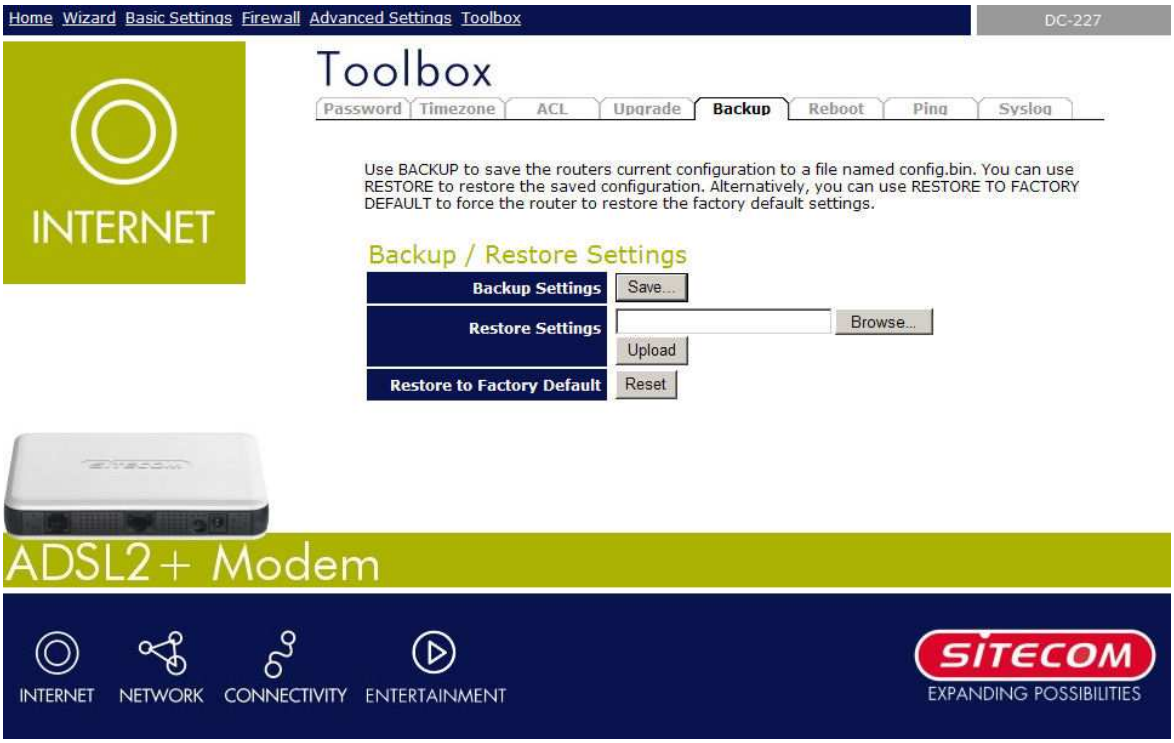
- Click the **Browse** button to select the firmware file.
- Confirm your selection.
- Click the **Upload** button to start upgrading.

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

IMPORTANT! Make sure you use a wired client to upgrade the firmwqare from. Disable your wireless network card to prevent possible damage due to incomplete upgrading.

9.4 Backup Settings

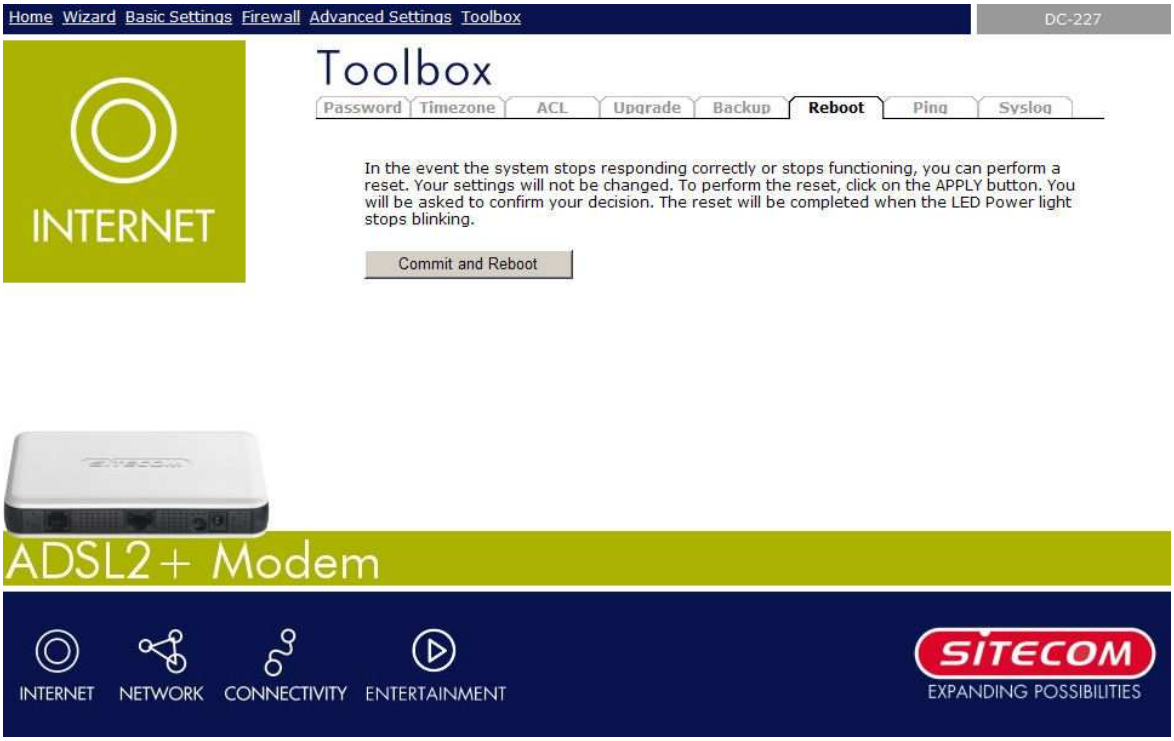
The Backup screen allows you to save (**Backup**) the modem's current configuration settings. When you save the configuration setting (Backup) you can re-load the saved configuration into the modem through the **Restore** selection. If extreme problems occur you can use the **Restore to Factory Defaults** selection, this will set all configurations to its original default settings (e.g. when you first purchased the modem).



Use the "**Backup**" tool to save the Broadband modem current configuration to a file named "config.bin" on your PC. You can then use the "**Restore**" tool to restore the saved configuration to the Broadband modem. Alternatively, you can use the "**Restore to Factory Defaults**" tool to force the Broadband modem to perform a power reset and restore the original factory settings.

9.5 Commit and reboot

Whenever you use the Web configuration to change system settings, the changes are initially placed in temporary storage. These changes will be lost if the device is reset or turn off. To save your change for future use, you can use the commit function.



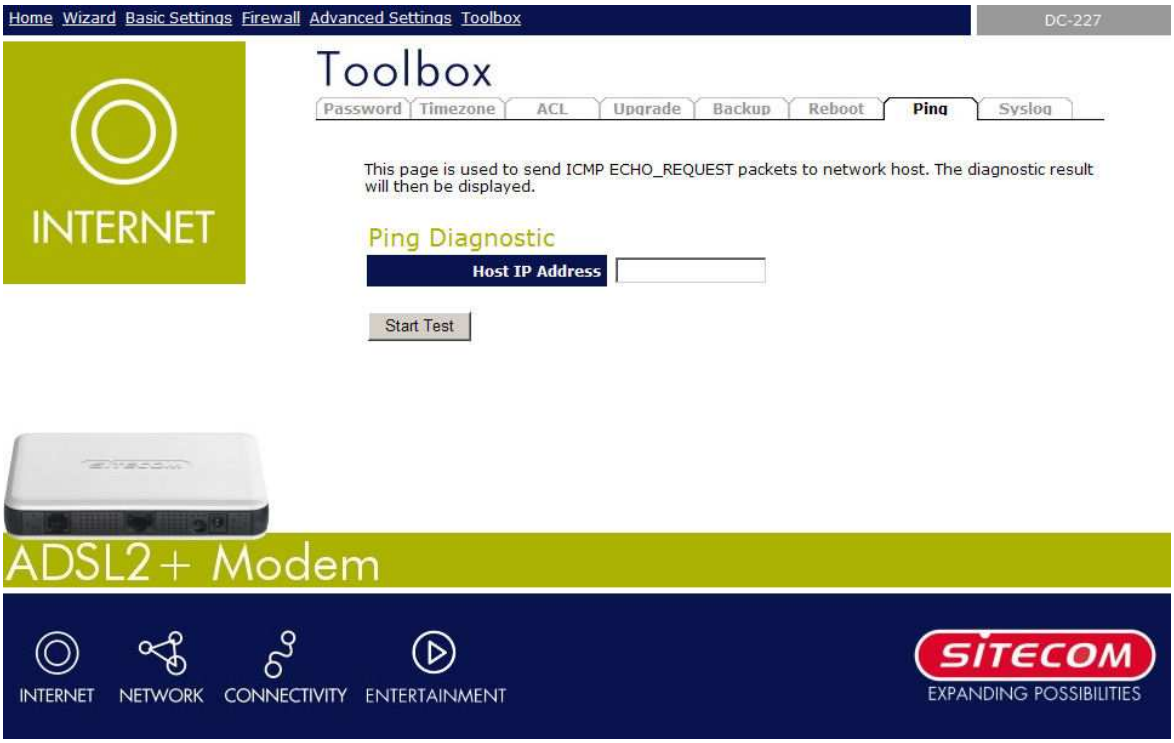
Commit and Reboot

Whenever you use the web console to change system settings, the changes are initially placed in temporary storage. To save your changes for future use, you can use the Commit/Reboot function. This function saves your changes from RAM to flash memory and reboot the system.

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

9.6 Ping

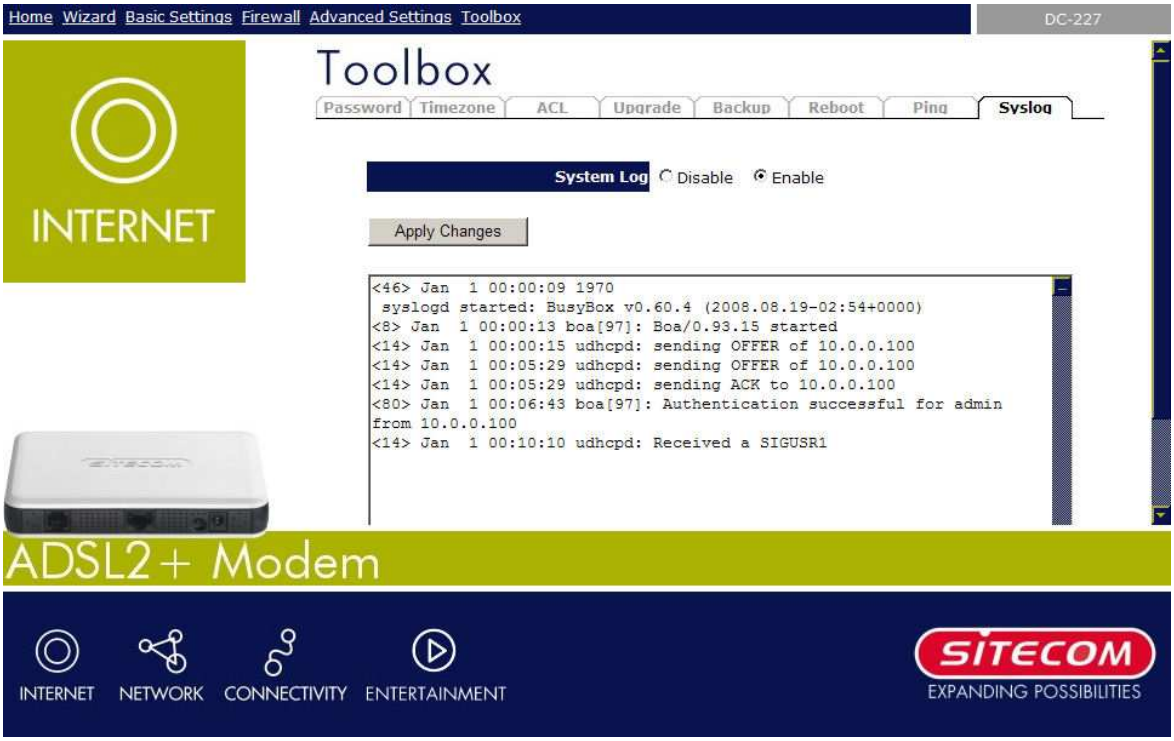
Once you have your DSL device configured, it is a good idea to make sure you can ping the network. A ping command sends a message to the host you specify. If the host receives the message, it sends messages in reply. To use it, you must know the IP address of the host you are trying to communicate with and enter the IP address in the Host Address field. Click Go! To start the ping command, the ping result will then be shown in this page.



Field	Description
Host Address	The IP address you want to ping.

9.7 Syslog

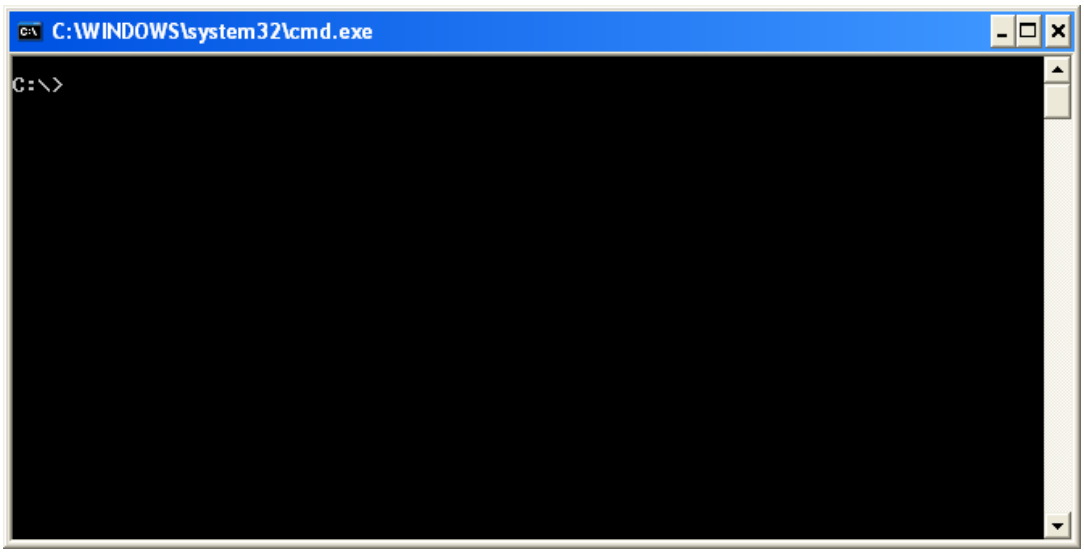
This page allows you to enable or disable the system log.



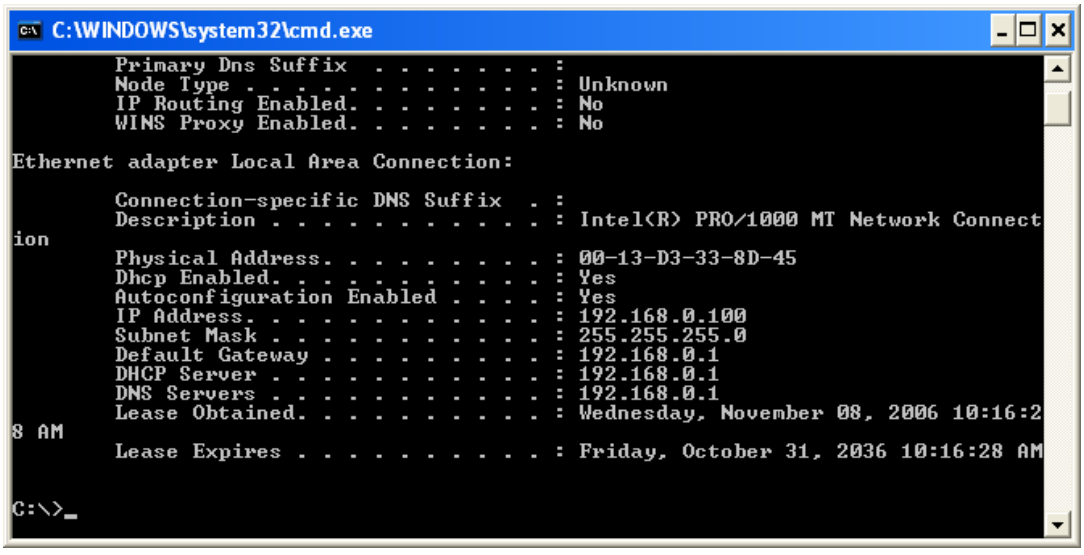
Appendices

Appendix A: How to manually find your PC's IP and MAC address

1) In Window's open the Command Prompt program



2) Type **ipconfig /all** and <enter>



- Your PC's IP address is the one entitled **IP address** *(e.g. 192.168.0.100)*
- The modem's IP address is the one entitled **Default Gateway** *(e.g. 192.168.0.1)*
- Your PC's MAC Address is the one entitled **Physical Address** *(e.g. 00-13-D3-33-8D-45)*

Appendix B: Mapping PVCs to VLANs

RTL867x device supports mapping ATM Permanent Virtual Circuits (PVCs) to VLANs, based on the ATM bridging standards of RFC 2684. This feature allows an ATM PVC to be configured as a bridging interface and used in conjunction with a VLAN. The function is supported only if the device is equipped with a RTL8205SC, which is a 5-port 10/100MBps switch controller.

Figure B.1 illustrates the how the RTL867x device adds a VLAN ID and tag to packets subject to PVC-VLAN mapping. In this example, vc3 is mapped to VLAN 20. The RTL867x device adds VLAN ID 20 and tag 8100 to packets from vc3.

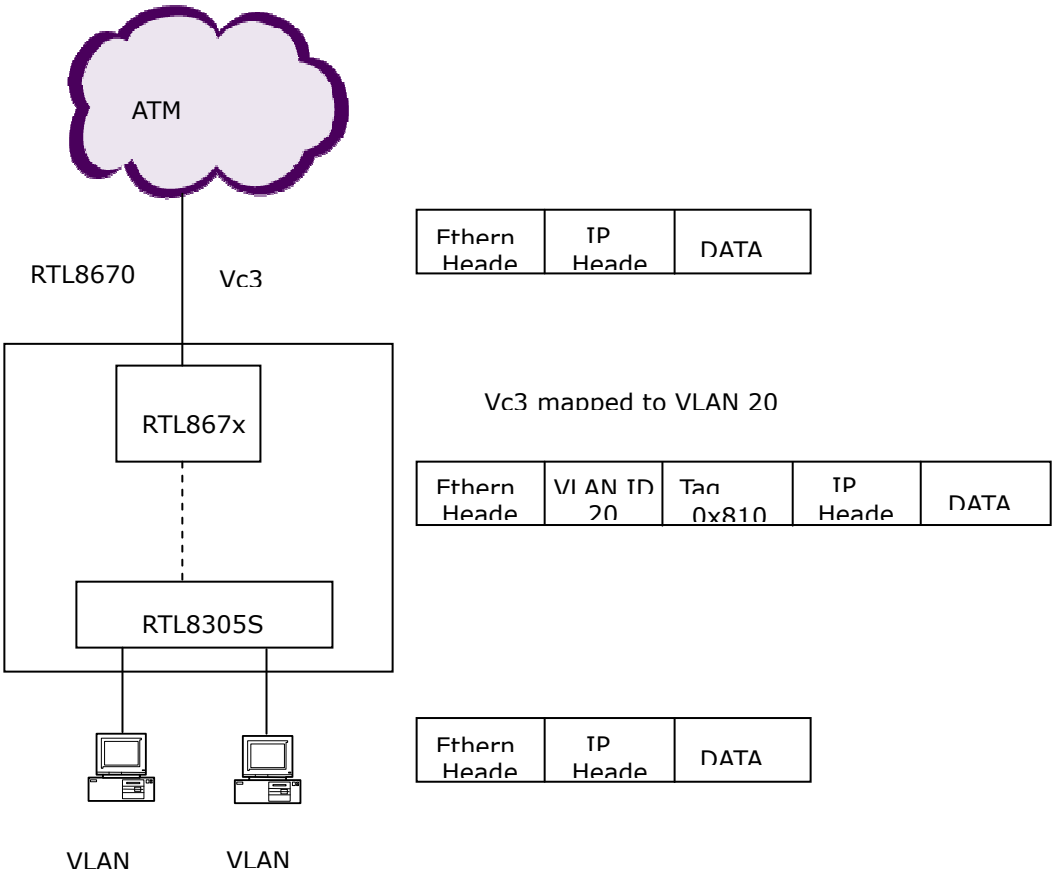


Figure B.1 Adding a VLAN ID and tag to packets