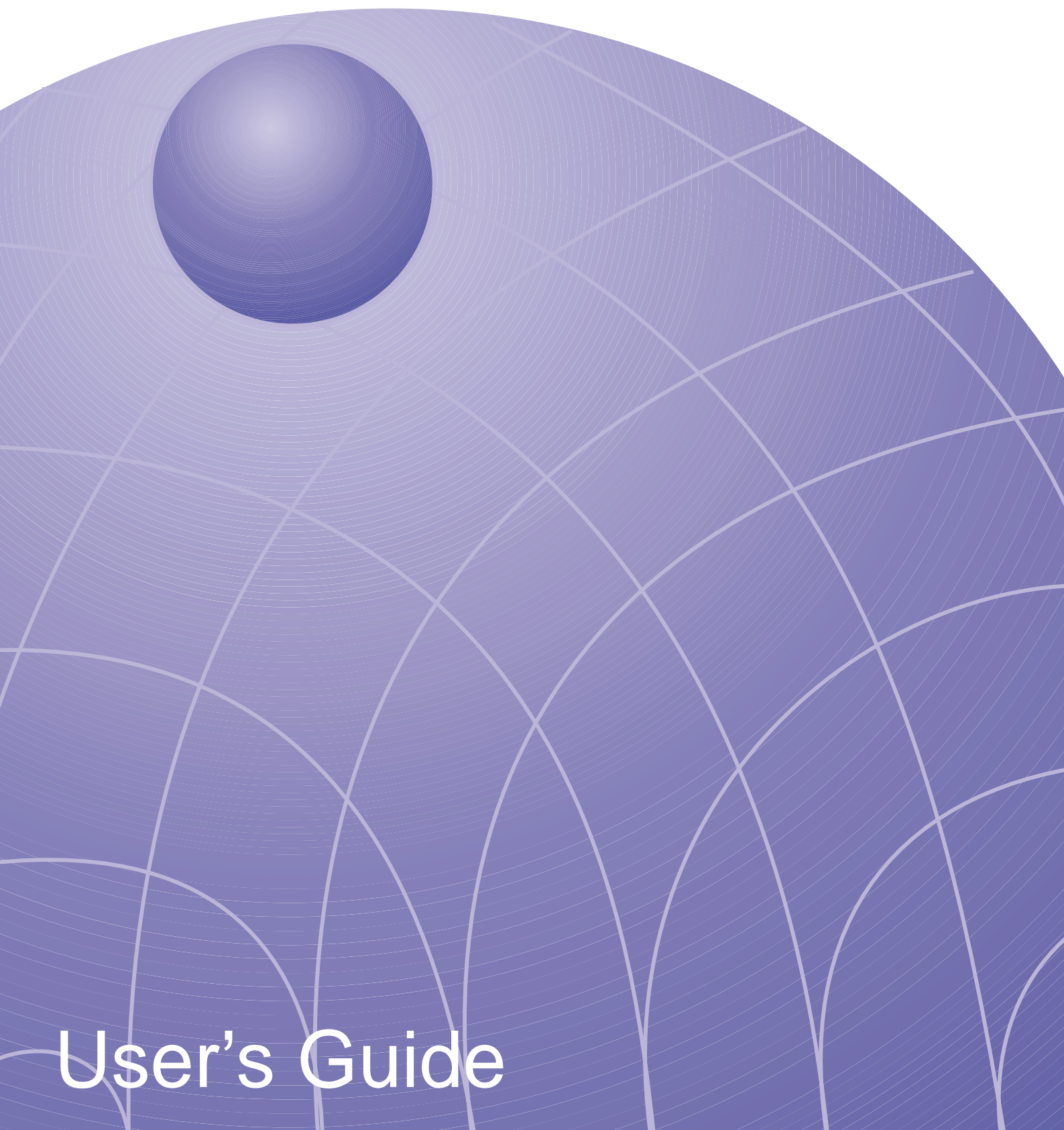


MultiPVC

# ADSL Modem/Router



User's Guide

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Product Name: **ADSL Modem/Router**

Manual Revision: **1.01 E770**

Release Date: **June 2001**

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# 1. Introduction

---

## 1.1 Overview

Thank you for purchasing this ADSL Modem/Router. This ADSL Modem/Router delivers the highest performance in Asymmetric Digital Subscriber Line technology, allowing you to simultaneously enjoy telephone and Internet service using existing copper phone lines. Ideal for home and small business users, this easy-to-use ADSL Modem/Router offers reliable connectivity and remarkable data transfer rates—up to 8Mbps downstream and 640Kbps upstream. Once the ADSL Modem/Router is online, you can enjoy real-time 3D animation, video conferencing, or perform other data intensive operations.

## 1.2 Features

### Standards Compliance

- ANSI T1.413 Issue 2 compliant
- ITU-T G.992.1 (G.dmt) compliant: up to 8Mbps downstream and 640Kbps upstream data rate
- ITU-T G.992.2 (G.lite) compliant: supports splitter-less implementation and up to 1.5Mbps downstream and 512Kbps upstream data rate
- ITU-T G.994.1 (G.hs), G.996.1 (G.test), and G.997.1 (G.ploam) support through software upgrade as standards approved by ITU-T

### Hardware Features

- Interoperable with Alcatel, Cisco, Lucent, and other DSLAMs
- Supports 8 bits of VPI and 16 bits of VCI address range
- Capable of transmitting data up to 5790 m (19,000 feet)

### Software Features

- Supports RFC 2364 protocol (PPP over ATM), RFC 1483 encapsulation, RFC 2516 protocol (PPP over Ethernet), and RFC 1577 protocol (classical IP over ATM)
- Firmware upgrade and configuration restoration over TFTP

# 1. Introduction

---

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# 2. Installation

## 2.1 System Requirements

Before connecting the ADSL modem to your PC, make sure an Ethernet controller is installed in your system and that it supports the TCP/IP protocol.

## 2.2 Installing a Network Card

If your system does not have an embedded Ethernet controller, you must install a network interface card (the following instructions assume that you are using a fast Ethernet card under Windows 98):


1. Install a fast Ethernet card on your motherboard.

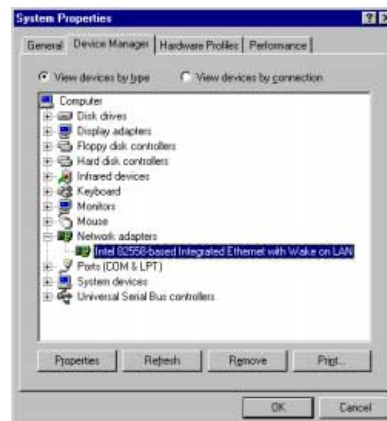
**IMPORTANT!** Make sure to follow installation precautions such as unplugging your computer's power supply when adding or removing expansion cards. Check your card and motherboard's documentation for safety and installation procedures.

2. Start Windows.
3. When Windows detects your network card, the **Add New Hardware Wizard** dialog box appears. Follow the on-screen instructions to complete setup.
4. When Setup has finished installing all the necessary files, it will prompt you to restart the computer. Click **Yes** to restart your computer and to complete Setup.



To check if the network card is installed properly


1. Click , point to **Settings**, click **Control Panel**, then double-click **System**, and then click the **Device Manager** tab.
2. Click the plus sign next to **Network adapters**. Your network card's name should be displayed. To view information about it, double-click the icon for your network card.

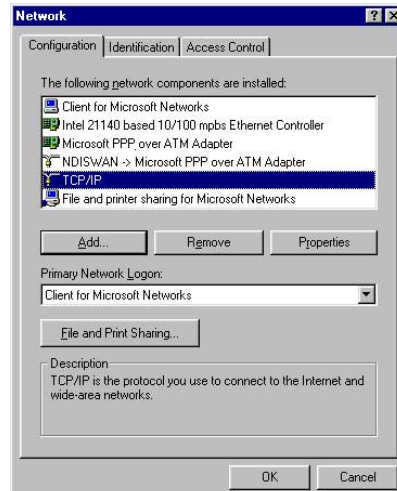


## 2. Installation


### 2.3 Installing the TCP/IP Network Protocol

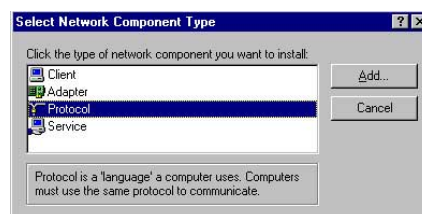
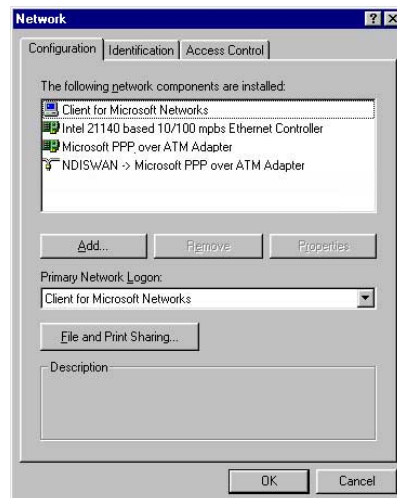
To check if TCP/IP is already installed

1. Click , point to **Settings**, click **Control Panel**, and then double-click **Network**.
2. In the network component list, check if the TCP/IP network protocol is installed. If TCP/IP is not installed, follow the directions in **To install a TCP/IP network protocol**.



To install a TCP/IP network protocol

1. Click , point to **Settings**, click **Control Panel**, and then double-click **Network**.
2. Click **Add**.
3. Click **Protocol**, and then click **Add**.
4. Follow the on-screen instructions.



### 2.4 Changing TCP/IP Settings

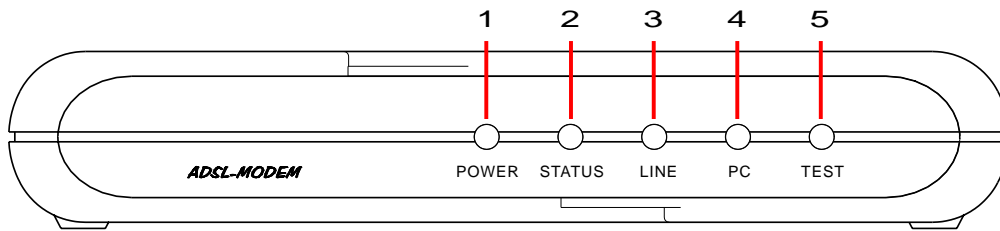
After the TCP/IP network protocol is installed, restart your computer and consult the installation guide provided by your service provider to complete TCP/IP configurations.



# 2. Installation

## 2.5 Installing the ADSL Modem/Router

### 2.5.1 Front Panel

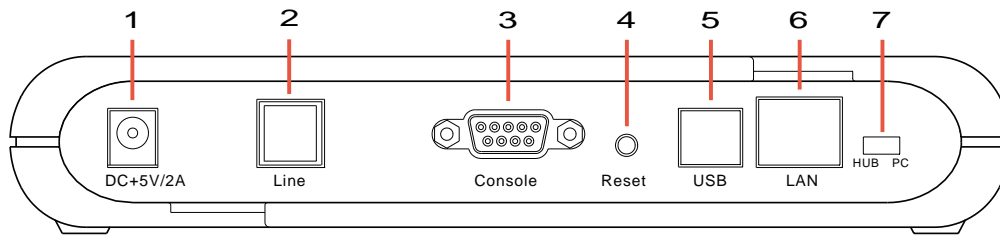


LED Indicator	State	Description
<b>1. Power LED</b>	ON	Modem is powered ON
	OFF	Modem is powered OFF
<b>2. Status LED</b> (ADSL Line Status)	ON	“Showtime”—successful connection between ADSL modem and telephone company’s network
	Flashing	“Handshaking”—modem is trying to establish a connection to telco’s network
	OFF	“Down”—ADSL line is inactivated
<b>3. Line LED</b> (WAN Traffic LED)	Flashing	Data transmitting between modem and telco’s network
<b>4. PC Link LED</b> (LAN Traffic LED)	ON	Successful connection between LAN and PC
	Flashing	Data transmitting between LAN and PC
	OFF	No connection between LAN and PC*
<b>5. Test</b>	ON	Error (Resetting the ADSL modem may help; otherwise, contact your ADSL Modem/Router service center)
	OFF	Normal operation

\* Check if the Ethernet cable is properly connected and the HUB-PC switch is in the correct position.

## 2. Installation

### 2.5.2 Rear Panel



#### 1. DC +5V/2A Power Input Jack

The provided power adapter converts AC power to DC power for use with this jack. Power supplied through this jack will supply power to the ADSL Modem/Router.

#### 2. Line Connector

The RJ-11 connector allows data communication between the modem and the ADSL network through a twisted-pair phone wire.

#### 3. Console Port

The 9-pin D-sub serial port supports the RS-232 terminal interface for advanced ADSL modem management.

#### 4. Reset Switch

The reset button, when pressed, resets the modem without the need to unplug the power cord.

#### 5. USB Port (optional)

The optional USB port allows the modem to be connected to your computer through the USB interface.

#### 6. LAN Port

The RJ-45 Ethernet port supports 10Base-T networks. This port allows your PC or Ethernet hub to be connected to the ADSL Modem/Router through a Category 5 Ethernet cable.

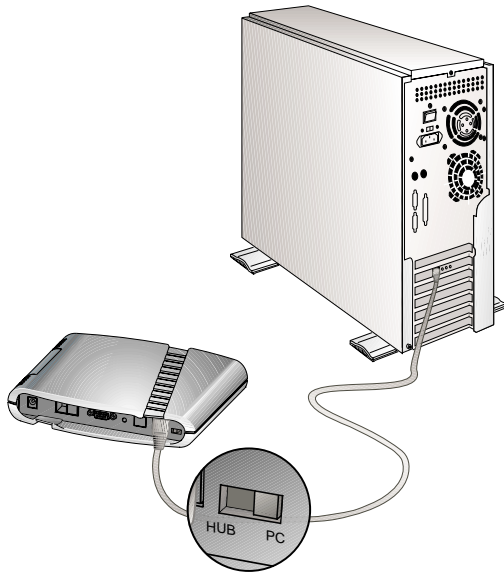
#### 7. HUB-PC Switch

The HUB-PC switch controls the crossover function. Modem-to-PC connection must contain crossovers. When connecting the modem to a PC, leaving the switch on the default position **PC** allows you to implement crossover cabling without using a crossover cable. When connecting the modem to an Ethernet hub's RJ-45 downlink port, use a pen or screwdriver to slide the switch to **HUB** and implement straight-through cabling. If you run out of the hub's downlink ports and connect the modem to the uplink port, you must slide the switch to the position of **PC**. For connection examples, see opposite page.

## 2. Installation

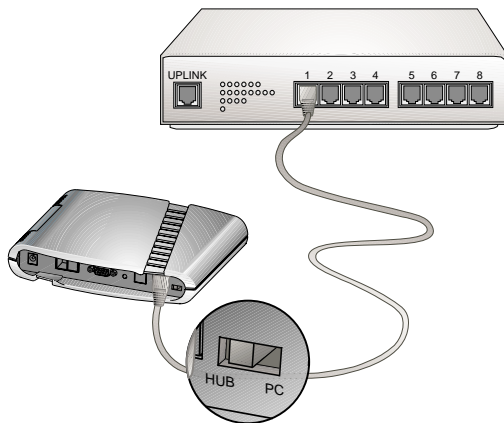
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### Example 1. Modem to PC



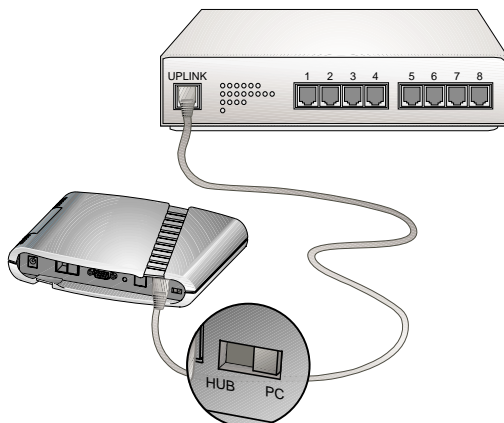
To use the modem with a PC, move the HUB-PC switch to the right (**PC** position).

### Example 2. Modem to Hub (Downlink)



To use the modem with an Ethernet hub's downlink port, move the HUB-PC switch to the left (**HUB** position).

### Example 3. Modem to Hub (Uplink)



To use the modem with an Ethernet hub's uplink port, move the HUB-PC switch to the right (**PC** position).

## 2. Installation

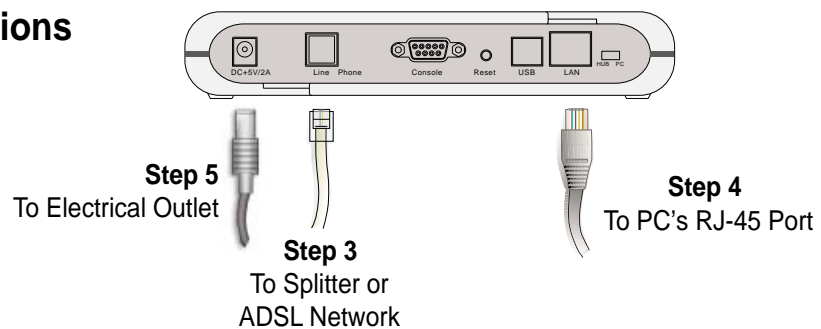
### 2.6 Connecting the ADSL Modem/Router

Take the following steps to accomplish the installation procedure:

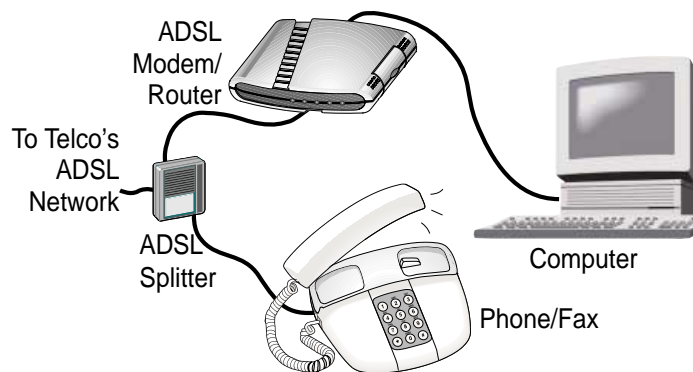
1. Connect the ADSL cable to the line connector of an ADSL POTS splitter.
2. Connect a telephone cable from the phone connector of the splitter to your telephone.
3. Use another telephone cable to connect the modem connector of the splitter and the **Line** connector on the rear panel of the ADSL modem.
4. Connect the Ethernet cable from the RJ-45 port on your computer to the Ethernet port on the ADSL Modem/Router. Make sure the HUB-PC switch is in the correct position.
5. Connect the AC power adapter to the DC +5V/2A input jack on the ADSL Modem/Router. Plug in the AC power adapter to an electrical outlet.

**NOTE:** If you are not using a telephone or fax machine on the ADSL line, skip steps 1 to 3 and connect the ADSL cable directly to the **Line** connector on the rear panel of the ADSL Modem/Router.

#### Rear Panel Connections



#### ADSL Service Connections



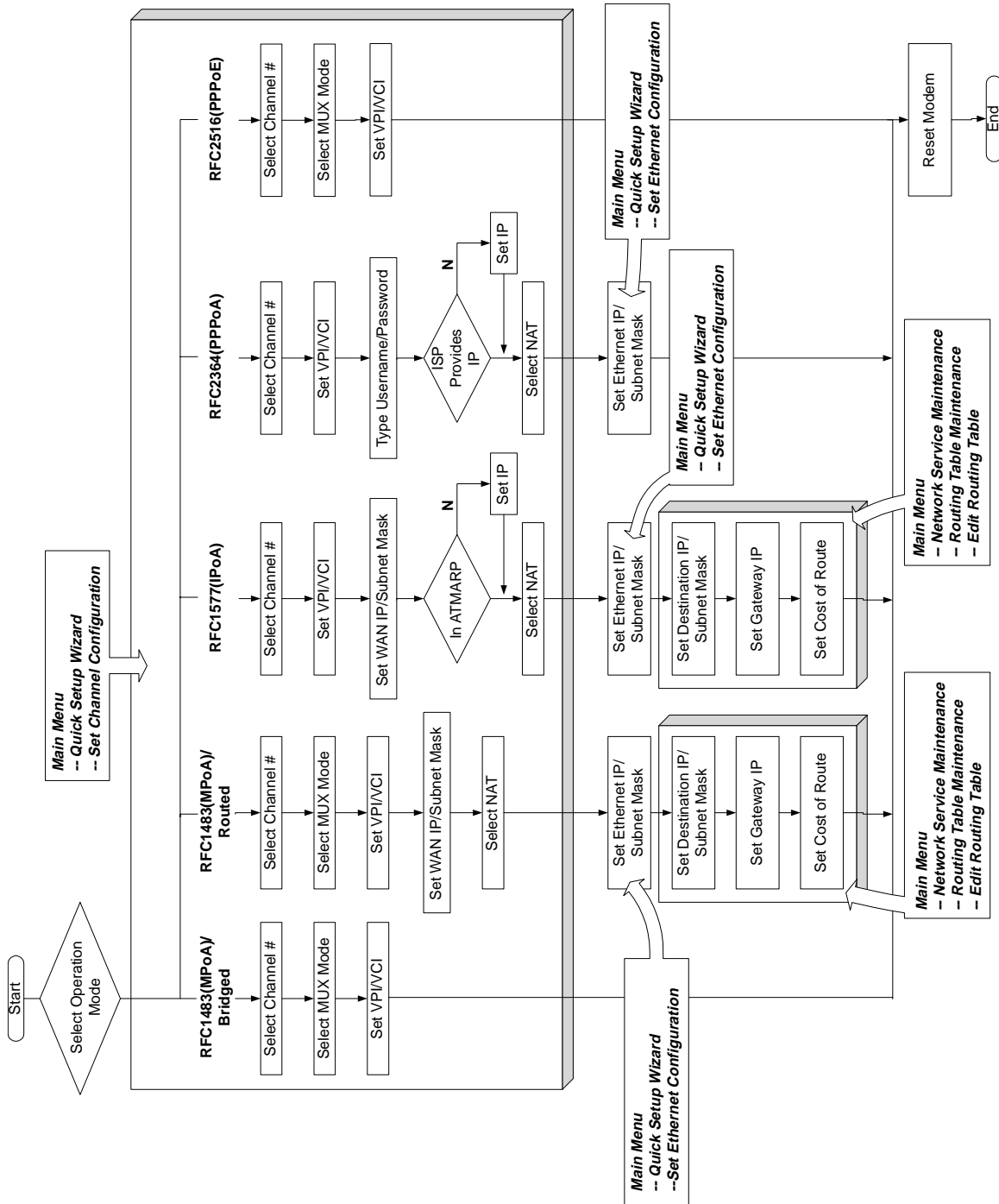
### 2.7 Powering Up

When all connections have been properly made and the power is ON, the ADSL modem will automatically start the self-test and log on to your phone company's ADSL network. For new modems, go through the configuration as detailed in the following section, and then you are all set and ready to enjoy Internet services at high speeds!

# 2. Installation

## 2.8 Operation Mode Configuration

Users can set up their modem through either the User Mode or the Web Console. The following is a setup flowchart for these modes:



## 2. Installation

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# 3. ADSL User Mode Console

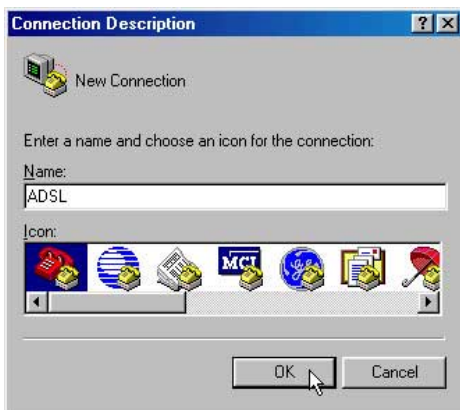
This section describes how to set up the different operation modes or monitor the performance of your ADSL Modem/Router using the User Mode Console.

## 3.1 COM Port Configuration

For advanced modem management, use a serial cable to connect the Console port on the ADSL modem to your PC's empty COM port. (For an illustration, see **2.6 Connecting the ADSL Modem/Router.**) Open a VT100 terminal emulation program such as Windows' HyperTerminal to configure the COM port. (The setup under HyperTerminal is given as an example below.)

In Windows, click **Start, Programs, Accessories, Communications**, and then select **HyperTerminal**. When the HyperTerminal window appears, double click the HyperTerminal icon to run it. If you cannot find it, add the program using **Add/Remove Programs** in Control Panel.

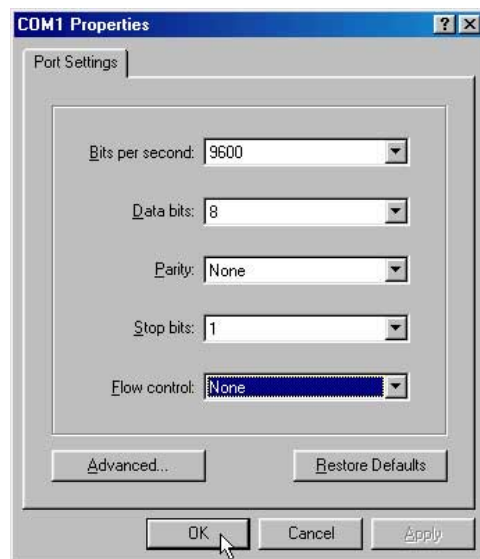
1. When HyperTerminal is started, you will be prompted to establish a new connection. Follow the on-screen instruction.



2. For ADSL connections, you do not have to enter dial-up information. Simply choose the COM port that you are using and then click OK.



3. Configure the COM port as shown below. You are now ready to configure the operation mode.



### Recommended COM Port Settings:

- Bit Rate: 9600 bps
- Data Bits: 8
- Parity Check: None
- Stop Bit: 1
- Flow Control: None

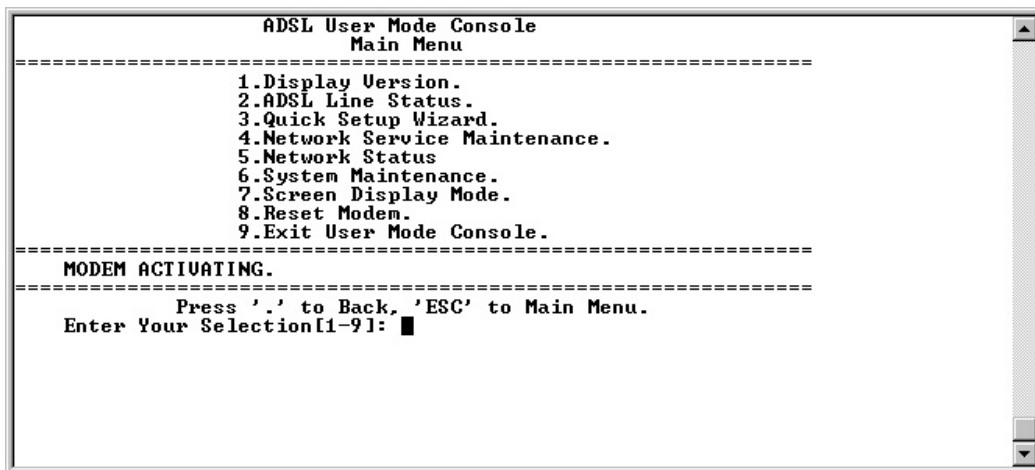
# 3. ADSL User Mode Console

---

## 3.2 User Mode Configuration

**NOTE:** Because the software for this ADSL Modem/Router is constantly being updated, the following console screens and descriptions are for reference purposes only and may not reflect your console screens exactly.

Once an ADSL connection has been established (see *3.1 COM Port Configuration*), open the Main Menu of the ADSL User Mode Console by pressing <Enter> (make sure that your terminal emulator is the foreground program). The Main Menu of the Console appears as follows:



```
ADSL User Mode Console
Main Menu
-----
1. Display Version.
2. ADSL Line Status.
3. Quick Setup Wizard.
4. Network Service Maintenance.
5. Network Status
6. System Maintenance.
7. Screen Display Mode.
8. Reset Modem.
9. Exit User Mode Console.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-9]: █
```

**Troubleshooting:** If the Main Menu does not show up after pressing <Enter>, reset the modem and then try again. For the location of the reset switch, see *4. Reset Switch* in **2.5.2 Rear Panel**.

To set the User Mode, see **3.5 Quick Setup Wizard**.



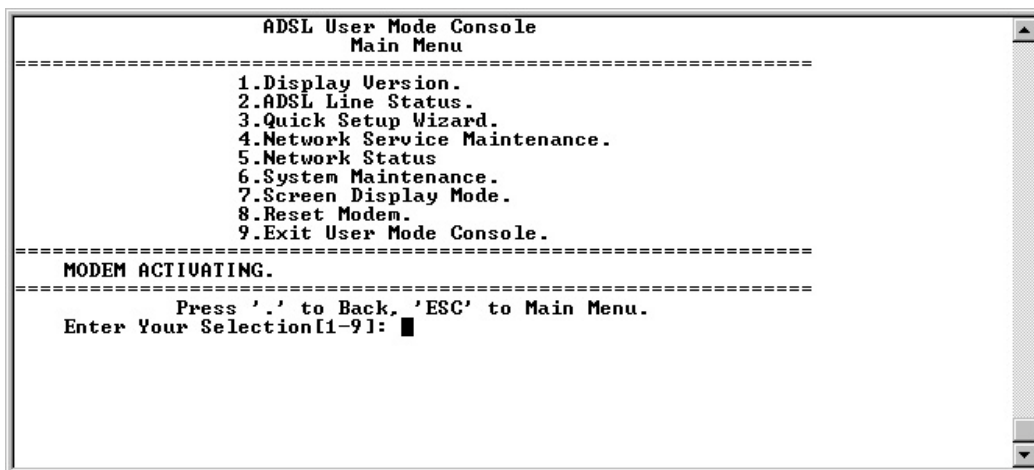
# 3. ADSL User Mode Console

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Your ADSL modem/router can support the following operation modes:

1. MPoA/Bridged (IETF RFC-1483 Bridged Mode)
2. MPoA/Routed (IETF RFC-1483 Routed Mode)
3. IPoA (IETF RFC-1577)
4. PPPoA/Routed (IETF RFC-2364 Routed Mode)
5. PPPoE Relay (IETF RFC-2516)

The Main Menu of the ADSL User Mode Console contains 9 fields:



1. **Display Version:** Displays the software version.
2. **ADSL Line Status:** Displays and allows changing ADSL line status.
3. **Quick Setup Wizard:** Guides you through network configuration process.
4. **Network Service Maintenance:** Provides network service maintenance options.
5. **Network Status:** Provides network monitoring.
6. **System Maintenance:** Allows system update.
7. **Screen Display Mode:** Controls screen display mode (clear/scrolling).
8. **Reset Modem:** Restarts the ADSL Modem/Router.
9. **Exit User Mode Console:** Enters operator mode console.

## 3. ADSL User Mode Console

### 3.3 Display Version

**Display Version** shows the system software version.

You may refer to this version number for future firmware update.

```
ADSL User Mode Console
Main Menu
-----
1.Display Version.
2.ADSL Line Status.
3.Quick Setup Wizard.
4.Network Service Maintenance.
5.Network Status
6.System Maintenance.
7.Screen Display Mode.
8.Reset Modem.
9.Exit User Mode Console.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-9]: 1
ADSL MODEM version Ver63111
Machine Name:
MAC address: 0:20:2b:0:47:20
Press Any Key to Continue...
```

### 3.4 ADSL Line Status

The ADSL Line Status Menu contains 6 fields:

1. **Power up Time:** Displays modem power up time.
2. **Protocol:** Displays the ADSL protocol linked to the ADSL Modem/Router after a successful connection.
3. **ADSL Line sync/no connection:** Displays ADSL link status.
4. **Downstream/Upstream Data Rate:** Displays ADSL downstream and upstream data rates.
5. **Disable ADSL Line.**
6. **Enable ADSL Line.**

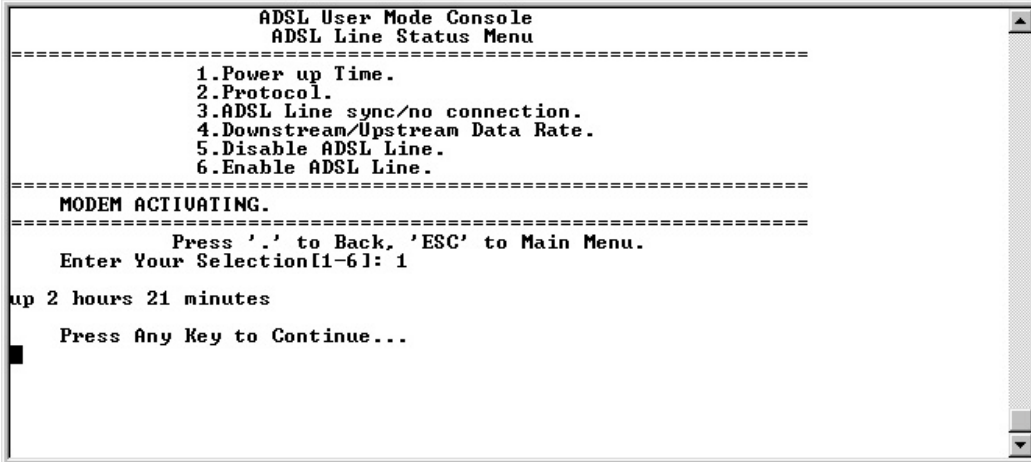
```
ADSL User Mode Console
ADSL Line Status Menu
-----
1.Power up Time.
2.Protocol.
3.ADSL Line sync/no connection.
4.Downstream/Upstream Data Rate.
5.Disable ADSL Line.
6.Enable ADSL Line.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: █
```

## 3. ADSL User Mode Console

---

### 3.4.1 Power up Time

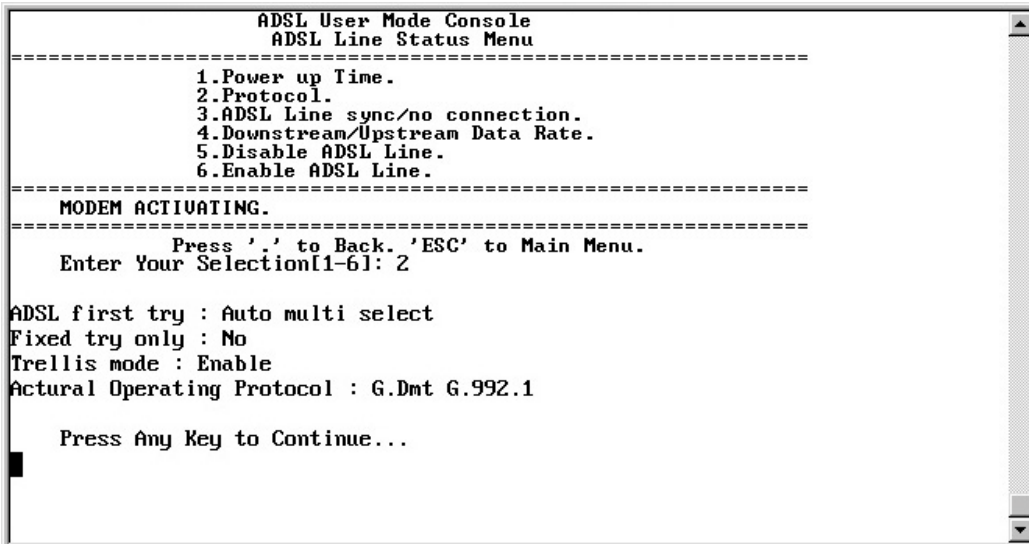
**Power up Time** displays the time the modem has been up.



```
ADSL User Mode Console
ADSL Line Status Menu
=====
1.Power up Time.
2.Protocol.
3.ADSL Line sync/no connection.
4.Downstream/Upstream Data Rate.
5.Disable ADSL Line.
6.Enable ADSL Line.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 1
up 2 hours 21 minutes
Press Any Key to Continue...
```

### 3.4.2 Protocol

The ADSL protocol linked to your ADSL modem/router can be displayed by selecting **Protocol**. The ADSL modem/router automatically links to one of the ADSL protocols your service provider may support.



```
ADSL User Mode Console
ADSL Line Status Menu
=====
1.Power up Time.
2.Protocol.
3.ADSL Line sync/no connection.
4.Downstream/Upstream Data Rate.
5.Disable ADSL Line.
6.Enable ADSL Line.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 2
ADSL first try : Auto multi select
Fixed try only : No
Trellis mode : Enable
Actural Operating Protocol : G.Dmt G.992.1
Press Any Key to Continue...
```

## 3. ADSL User Mode Console

### 3.4.3 ADSL Line Sync/No Connection

From disconnection to successful connection, the ADSL line will go through 5 stages: idle, activating, handshaking, initializing, and showtime. While the first 4 stages indicate disconnection, the final stage—showtime—indicates successful connection, as shown in the following.

```
ADSL User Mode Console
ADSL Line Status Menu
-----
1.Power up Time.
2.Protocol.
3.ADSL Line sync/no connection.
4.Downstream/Upstream Data Rate.
5.Disable ADSL Line.
6.Enable ADSL Line.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 3
MODEM ACTIUATING.
Press Any Key to Continue...
```

### 3.4.4 Downstream/Upstream Data Rate

The downstream and upstream data rates can be displayed as shown in the following.

```
ADSL User Mode Console
ADSL Line Status Menu
-----
1.Power up Time.
2.Protocol.
3.ADSL Line sync/no connection.
4.Downstream/Upstream Data Rate.
5.Disable ADSL Line.
6.Enable ADSL Line.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 4
Actual Bit Rate (NEAR END FAST CHANNEL): 8000 Kbps
Actual Bit Rate (FAR END FAST CHANNEL): 864 Kbps
Actual Bit Rate (NEAR END INTERLEAVED CHANNEL): 0 Kbps
Actual Bit Rate (FAR END INTERLEAVED CHANNEL): 0 Kbps

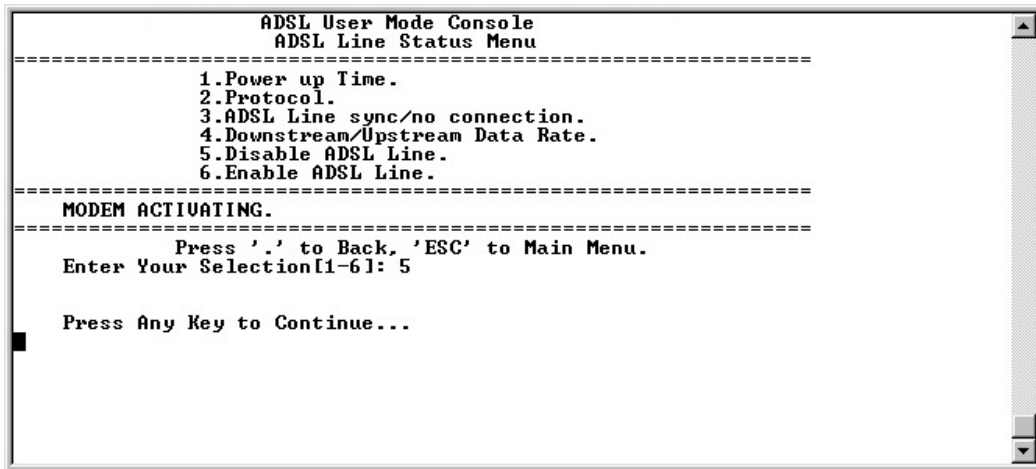
Press Any Key to Continue...
```

# 3. ADSL User Mode Console

---

## 3.4.5 Disable ADSL Line

You may disable the ADSL line as shown in the following.

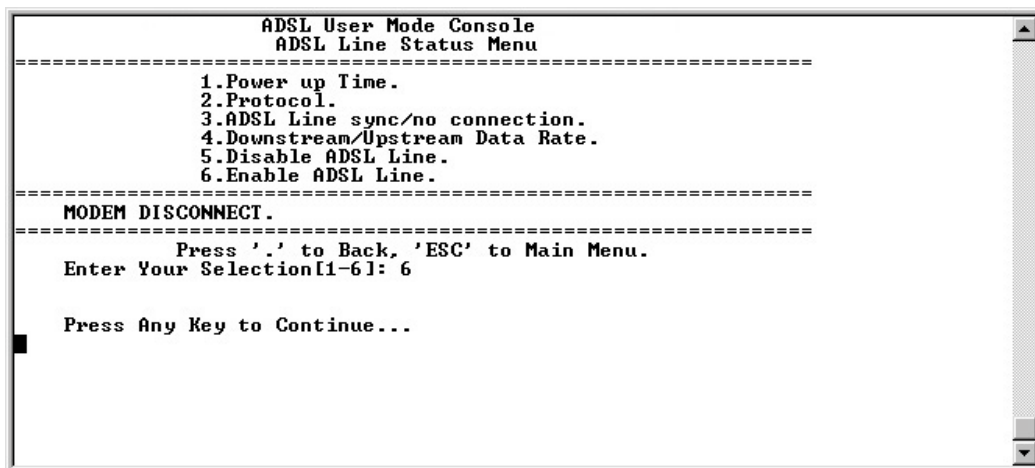


```
ADSL User Mode Console
ADSL Line Status Menu
=====
1.Power up Time.
2.Protocol.
3.ADSL Line sync/no connection.
4.Downstream/Upstream Data Rate.
5.Disable ADSL Line.
6.Enable ADSL Line.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 5

Press Any Key to Continue...
```

## 3.4.6 Enable ADSL Line

You may enable the ADSL line as shown in the following.



```
ADSL User Mode Console
ADSL Line Status Menu
=====
1.Power up Time.
2.Protocol.
3.ADSL Line sync/no connection.
4.Downstream/Upstream Data Rate.
5.Disable ADSL Line.
6.Enable ADSL Line.
=====
MODEM DISCONNECT.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 6

Press Any Key to Continue...
```

## 3. ADSL User Mode Console

---

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## 3. ADSL User Mode Console

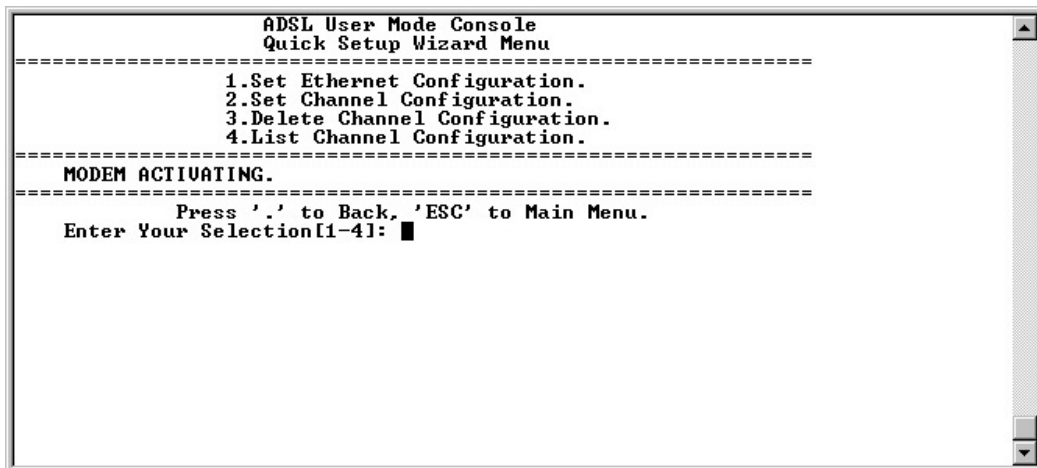
---

### 3.5 Quick Setup Wizard

The Quick Setup Wizard helps you set up your modem/router easily and quickly.

In this menu, there are four items:

1. Set Ethernet Configuration
2. Set Channel Configuration
3. Delete Channel Configuration
4. List Channel Configuration

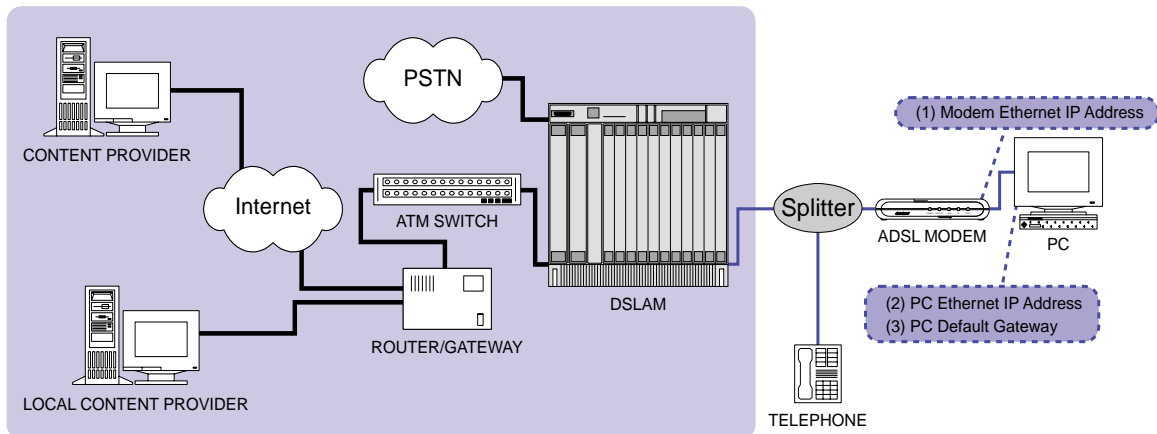


```
ADSL User Mode Console
Quick Setup Wizard Menu
-----
1.Set Ethernet Configuration.
2.Set Channel Configuration.
3.Delete Channel Configuration.
4.List Channel Configuration.
-----
MODEM ACTIVATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: █
```

# 3. ADSL User Mode Console

## 3.5.1 Set Ethernet Configuration

The Ethernet interface setting and the user's LAN can be illustrated as follows:



Ethernet Setup	Example	Your Configuration
(1) Modem Ethernet IP Address	192.168.31.228	
(2) PC Ethernet IP Address	192.168.31.223	
(3) PC Default Gateway	192.168.31.228	

Set Ethernet Configuration lets you set the following:

```
ADSL User Mode Console
Quick Setup Wizard Menu
-----
1.Set Ethernet Configuration.
2.Set Channel Configuration.
3.Delete Channel Configuration.
4.List Channel Configuration.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 1

Ethernet IP Address   : 192.168.31.228
Subnet Mask Address  : ff:ff:ff:00

Enter Ethernet IP Address<Example 192.168.1.1, ESC:Cancel.>: 192.168.31.228
Enter Subnet Mask <Example ff:ff:ff:00, ESC:Cancel.>: ff:ff:ff:00

Changes will not work correctly until restart ADSL Modem!

Do you want to Save Configuration<y/n, Default:y, ESC:Cancel.>? y

Save Configuration Information...
Updating flash filing system ...
.i0000 131072:100
done

Press Any Key to Continue...
```

**NOTE:** The Ethernet IP address is 192.168.1.1 using the Web Console interface when either RFC1483/Bridged or RFC2516/Relay Modes is used.

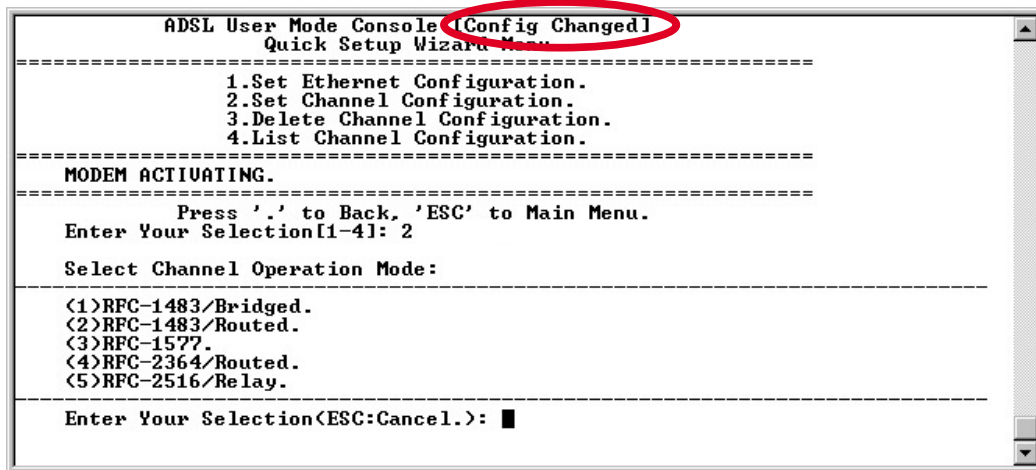


## 3. ADSL User Mode Console

---

### 3.5.2 Set Channel Configuration

Your ADSL modem/router provides five channel operation modes: **RFC-1483/Bridged**, **RFC-1483/Routed**, **RFC-1577**, **RFC-2364/Routed**, and **RFC-2516/Relay**.



**NOTE:** “[Config Changed]” as encircled in the preceding figure indicates that the configuration has been modified but not yet implemented. Any configuration changes made will be available only after the modem has been restarted. This applies to all configuration changes made with the ADSL User Mode Console.

This modem provides 16 Permanent Virtual Channels (PVCs). You may select either **Bridged** or **routed** mode.

#### *Bridged Mode*

In **Bridged** mode, your ADSL modem/router acts as a connection or “bridge” between WAN (ADSL network) and LAN and forwards packets between them.

#### *Routed Mode*

In **Routed** mode, your ADSL modem/router is responsible for making decisions about the best routes or which of several paths network (or Internet) traffic will follow. You may assign the best route using **3.6.2 Routing Table Maintenance**.

## 3. ADSL User Mode Console

---

*See* Sections 3.5.2.1–3.5.2.5 for details on the different channel operation mode configurations.

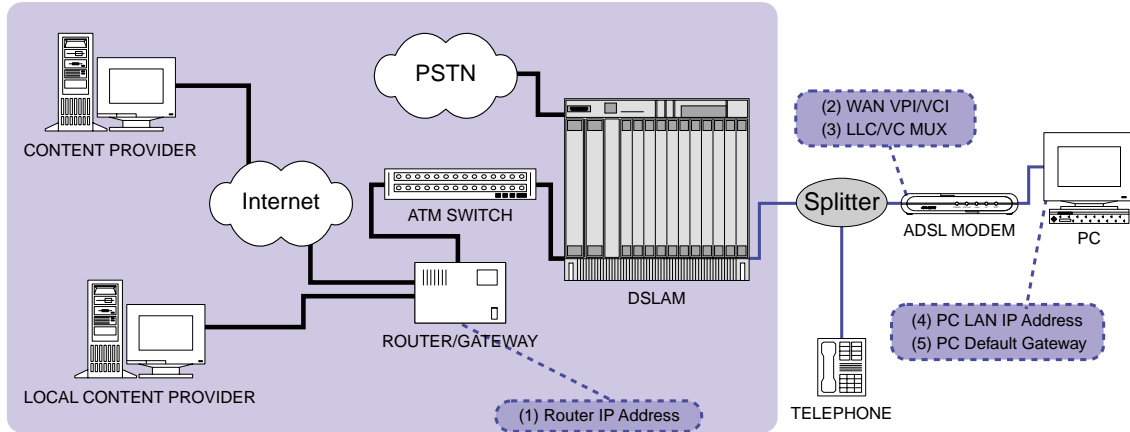
1. RFC-1483/Bridged (Section 3.5.2.1)
2. RFC-1483/Routed (Section 3.5.2.2)
3. RFC-1577 (Section 3.5.2.3)
4. RFC-2364/Routed (Section 3.5.2.4)
5. RFC-2516/Relay (Section 3.5.2.5)

# 3. ADSL User Mode Console

## 3.5.2.1 RFC-1483/Bridged

### Setup Wizard

The network configuration for RFC-1483/Bridged mode can be illustrated as follows.



RFC-1483/Bridged (MPoA) Setup	Example	Your Configuration
(1) Router IP Address	192.168.3.1	(For Service Provider Use)
(2) WAN VPI/VCI	14/32	(Provided by ISP)
(3) LLC/VC MUX	1 (LLC)	(Provided by ISP)
(4) PC LAN IP Address	192.168.3.223	
(5) PC Default Gateway	192.168.3.1	

**NOTE:** Writing down your network configuration (information supplied by your ISP or Internet Service Provider) in the preceding table would help you gain a clearer view of your network.

## 3. ADSL User Mode Console

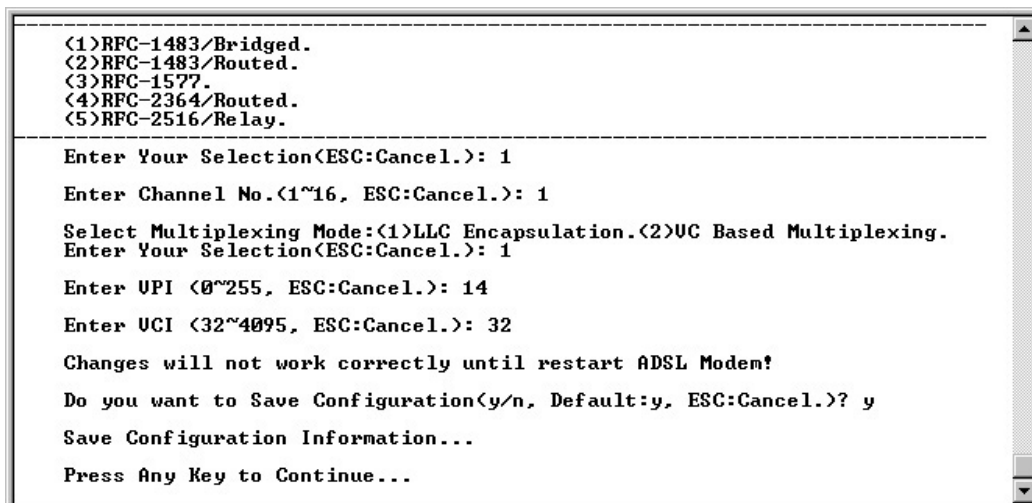
---

To set up the ADSL Modem/Router for RFC-1483/Bridged mode, do the following steps:

1. Select **RFC-1483/Bridged**.
2. Enter the Channel.
3. Select Multiplexing Mode
4. Enter VPI\*.
5. Enter VCI\*.
6. Save configuration.
7. Restart modem.

\*When VPI=0, VCI=32–65535; when VPI≠0. VCI=0–65535

**NOTE:** New configuration will take effect only after the modem restarts. Further changes may still be made on other configurations before you restart the modem.



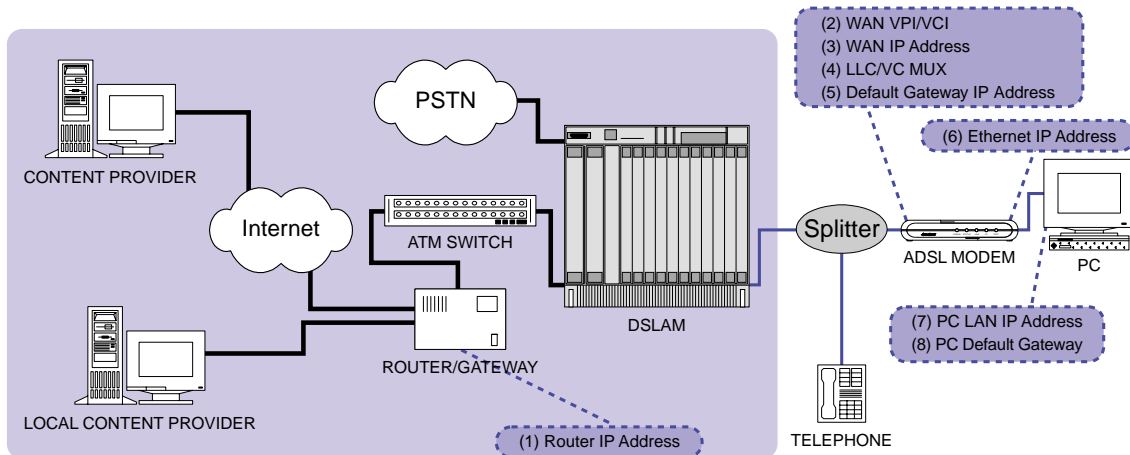
```
<1>RFC-1483/Bridged.
<2>RFC-1483/Routed.
<3>RFC-1577.
<4>RFC-2364/Routed.
<5>RFC-2516/Relay.
-----
Enter Your Selection(ESC:Cancel.): 1
Enter Channel No.(1~16, ESC:Cancel.): 1
Select Multiplexing Mode:<1>LLC Encapsulation.<2>UC Based Multiplexing.
Enter Your Selection(ESC:Cancel.): 1
Enter UPI (0~255, ESC:Cancel.): 14
Enter UCI (32~4095, ESC:Cancel.): 32
Changes will not work correctly until restart ADSL Modem!
Do you want to Save Configuration(y/n, Default:y, ESC:Cancel.)? y
Save Configuration Information...
Press Any Key to Continue...
```

# 3. ADSL User Mode Console

## 3.5.2.2 RFC-1483/Routed

### Setup Wizard

The network configuration for RFC-1483/Routed mode can be illustrated as follows.



RFC-1483/Routed Setup	Example	Your Configuration
(1) Router IP Address	192.168.3.1	(For Service Provider Use)
(2) WAN VPI/VCI	14/32	
(3) WAN IP Address	192.168.3.223	
(4) LLC/VC MUX	1 (LLC)	
(5) Default Gateway IP Address	192.168.3.1	
(6) Ethernet IP Address	192.168.31.228	
(7) PC LAN IP Address	192.168.31.223	
(8) PC Default Gateway	192.168.31.228	

**NOTE:** Writing down your network configuration (information supplied by your service provider) in this table would help you gain a clearer view of your network.

## 3. ADSL User Mode Console

---

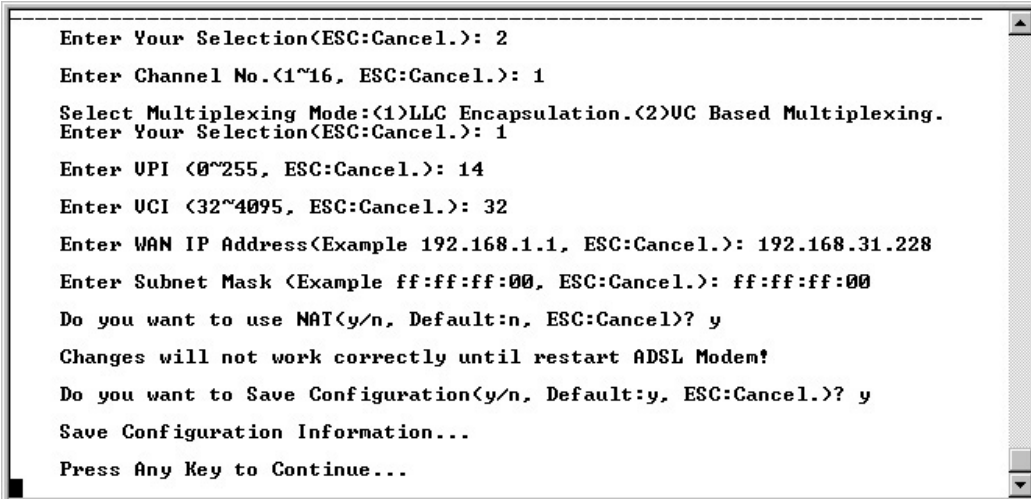
To set up the your ADSL modem/router for RFC-1483/Routed mode, do the following steps.

1. Select **RFC-1483/Routed**.
2. Enter Channel.
3. Enter Multiplexing Mode.
4. Enter VPI\*.
5. Enter VCI\*.
6. Enter WAN IP address.
7. Enter WAN subnet address.
8. Decide whether to use NAT or not.
9. Save configuration.
10. Restart the modem.

\*When VPI=0, VCI=32–65535; when VPI≠0. VCI=0–65535

### NOTES:

- (1) Set up Ethernet Configuration first (*see 3.5.1 Set Ethernet Configuration*).
- (2) Set up Default Gateway in **Edit Routing Table** (*see 3.6.2 Routing Table Maintenance*).
- (3) New configuration will take effect only after the modem restarts. Further changes may still be made on other configurations before you restart the modem.



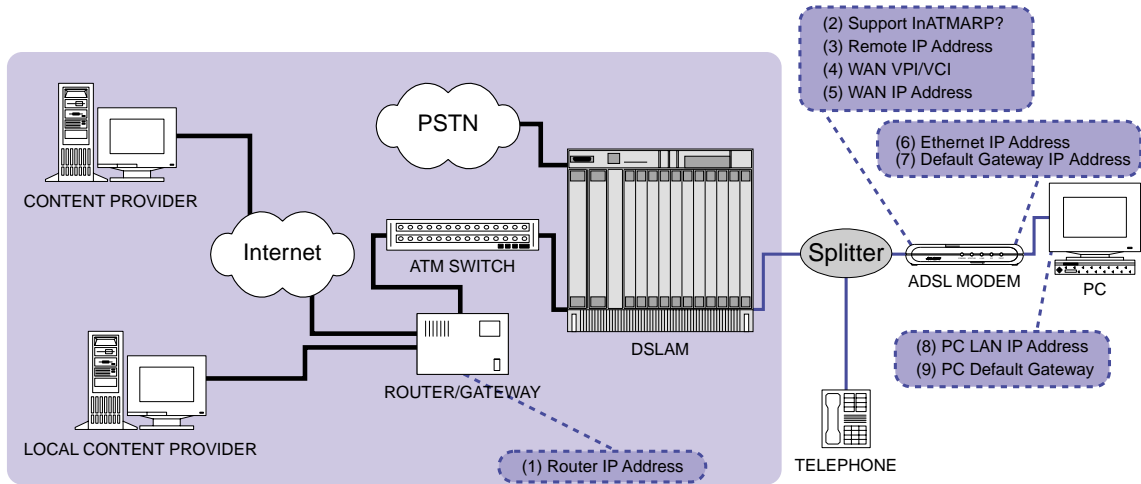
```
Enter Your Selection(ESC:Cancel.): 2
Enter Channel No.<1~16, ESC:Cancel.): 1
Select Multiplexing Mode:<1>LLC Encapsulation.<2>UC Based Multiplexing.
Enter Your Selection(ESC:Cancel.): 1
Enter UPI <0~255, ESC:Cancel.): 14
Enter UCI <32~4095, ESC:Cancel.): 32
Enter WAN IP Address<Example 192.168.1.1, ESC:Cancel.): 192.168.31.228
Enter Subnet Mask <Example ff:ff:ff:00, ESC:Cancel.): ff:ff:ff:00
Do you want to use NAT<y/n, Default:n, ESC:Cancel)? y
Changes will not work correctly until restart ADSL Modem!
Do you want to Save Configuration<y/n, Default:y, ESC:Cancel.)? y
Save Configuration Information...
Press Any Key to Continue...
```

# 3. ADSL User Mode Console

## 3.5.2.3 RFC-1577

### Setup Wizard

The network configuration for RFC-1577 mode can be illustrated as follows.



RFC-1577 Setup	Example 1	Example 2	Your Configuration
(1) Router IP Address	192.168.3.1	192.168.3.1	(for Service Provider Use)
(2) Support InATMARP?	Yes	No	
(3) Remote IP Address	N/A	192.168.3.2	
(4) WAN VPI/CI	14/32	14/32	
(5) WAN IP Address	192.168.3.223	192.168.3.223	
(6) Ethernet IP Address	192.168.31.228	192.168.31.228	
(7) Default Gateway IP Address	192.168.3.1	192.168.3.1	
(8) PC LAN IP Address	192.168.31.223	192.168.31.223	
(9) PC Default Gateway	192.168.31.228	192.168.31.228	

**NOTE:** Writing down your network configuration (information supplied by your service provider) in this table would help you gain a clearer view of your network.

## 3. ADSL User Mode Console

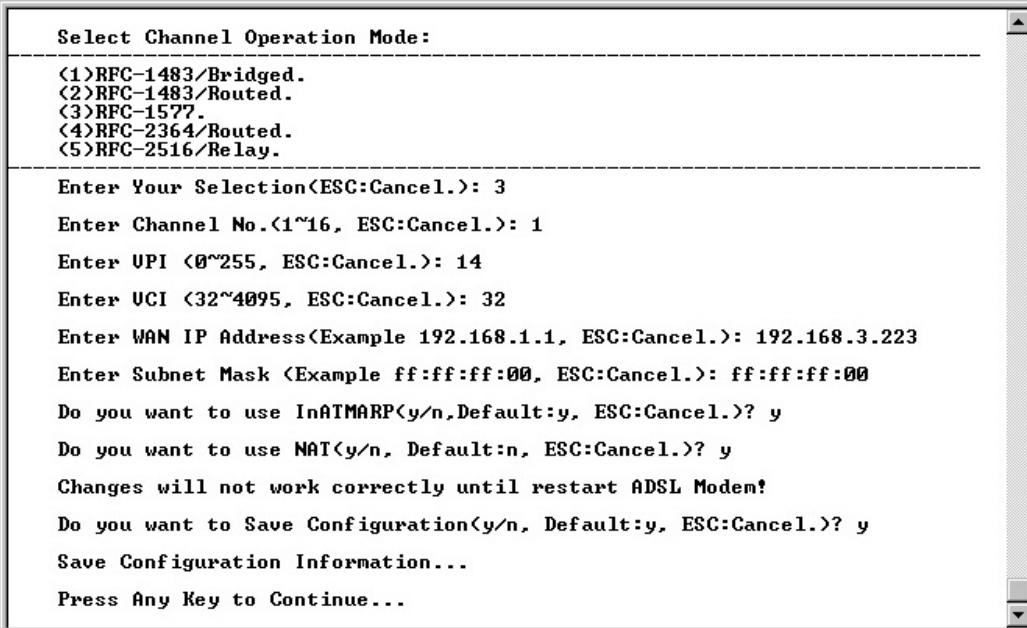
To set up your ADSL modem/router for RFC-1577 mode, do the following steps:

1. Select **RFC-1577**.
2. Enter Channel.
3. Enter VPI\*.
4. Enter VCI\*.
5. Enter WAN IP address.
6. Enter WAN subnet address.
7. Check if your service provider's IPoA supports InATMARF server. If not, press "n" to use ARP and enter the remote IP address. If yes, press "y" to go to the next step directly.
8. Decide whether to use NAT or not.
9. Save configuration.
10. Restart the modem.

\*When VPI=0, VCI=32–65535; when VPI≠0, VCI=0–65535

### NOTES:

- (1) Set up Ethernet Configuration first (see **3.5.1 Set Ethernet Configuration**).
- (2) Set up Default Gateway in **Edit Routing Table** (see **3.6.2 Routing Table Maintenance**).
- (3) New configuration will take effect only after the modem restarts. Further changes may still be made on other configurations before you restart the modem.



```
Select Channel Operation Mode:
-----
<1>RFC-1483/Bridged.
<2>RFC-1483/Routed.
<3>RFC-1577.
<4>RFC-2364/Routed.
<5>RFC-2516/Relay.
-----
Enter Your Selection<ESC:Cancel.>: 3
Enter Channel No.<1~16, ESC:Cancel.>: 1
Enter VPI <0~255, ESC:Cancel.>: 14
Enter VCI <32~4095, ESC:Cancel.>: 32
Enter WAN IP Address<Example 192.168.1.1, ESC:Cancel.>: 192.168.3.223
Enter Subnet Mask <Example ff:ff:ff:00, ESC:Cancel.>: ff:ff:ff:00
Do you want to use InATMARF<y/n,Default:y, ESC:Cancel.>? y
Do you want to use NAT<y/n, Default:n, ESC:Cancel.>? y
Changes will not work correctly until restart ADSL Modem!
Do you want to Save Configuration<y/n, Default:y, ESC:Cancel.>? y
Save Configuration Information...
Press Any Key to Continue...
```

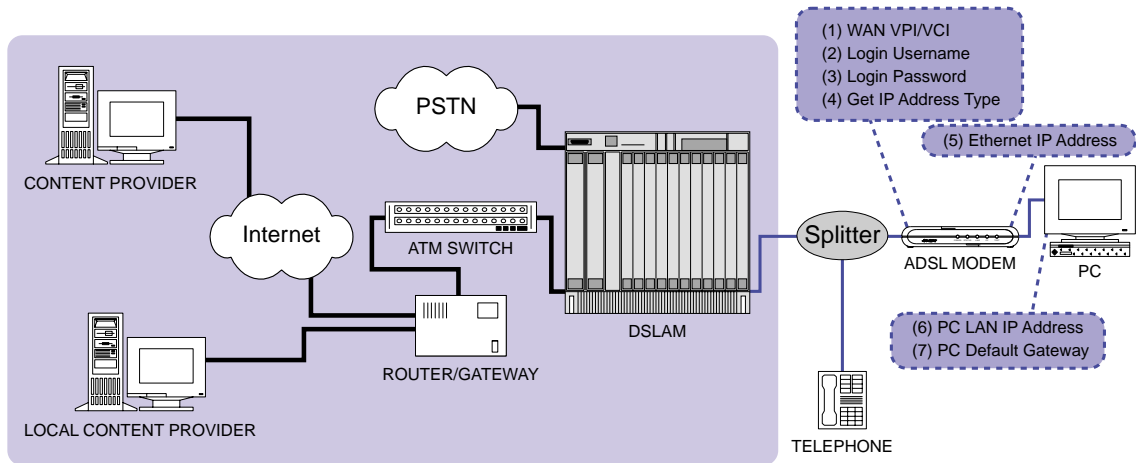


# 3. ADSL User Mode Console

## 3.5.2.4 RFC-2364/Routed

### Setup Wizard

The network configuration for RFC-2364/Routed mode can be illustrated as follows.



RFC-2364/Routed Setup	Example	Your Configuration
(1) WAN VPI/VC1	14/32	(For Service Provider Use)
(2) Login User Name	adsl	
(3) Login Password	adsl	
(4) Get IP Address Type	1 (Service Provider)	
(5) Ethernet IP Address	192.168.31.228	
(6) PC's LAN IP Address	192.168.31.223	
(7) PC's Default Gateway	192.168.31.228	

**NOTE:** Writing down your network configuration (information supplied by your service provider) in this table would help you gain a clearer view of your network.

## 3. ADSL User Mode Console

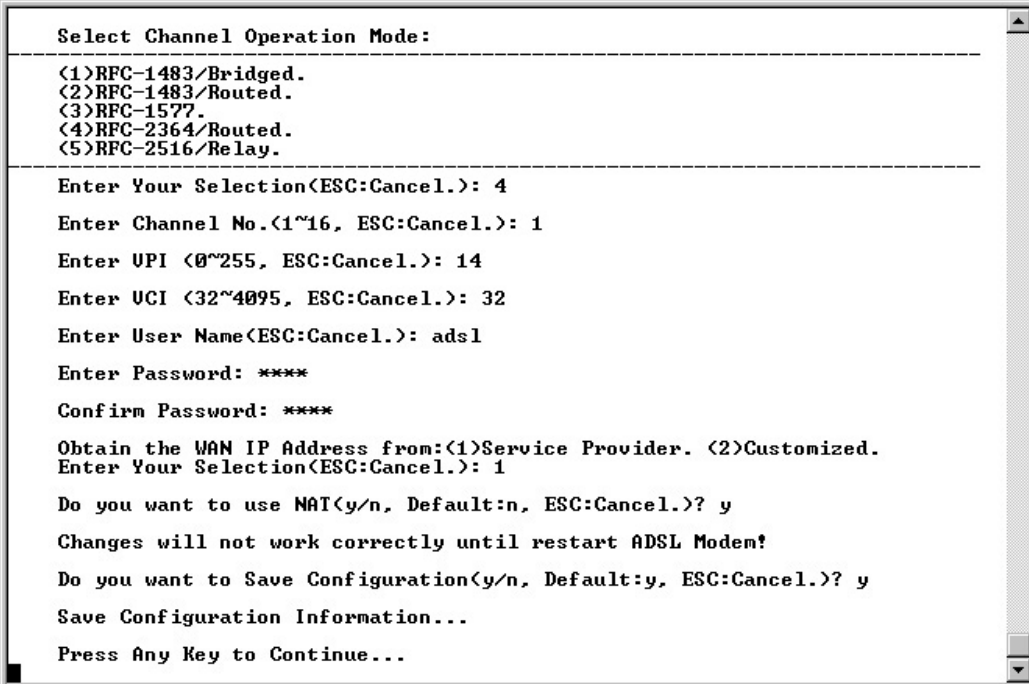
To set up the your ADSL modem/router for RFC-2364/Routed mode, do the following steps.

1. Select **RFC-2364/Routed**.
2. Enter Channel.
3. Enter VPI\*.
4. Enter VCI\*.
5. Enter login user name.
6. Enter login password and then confirm.
7. Select authentication (get IP address type). If you select “customize”, you must enter WAN IP and WAN subnet.
8. Decide whether to use NAT or not.
9. Save configuration.
10. Restart the modem.

\*When VPI=0, VCI=32–65535; when VPI≠0. VCI=0–65535

### NOTES:

- (1) Set up Ethernet Configuration first (*see 3.5.1 Set Ethernet Configuration*).
- (2) New configuration will take effect only after the modem restarts. Further changes may still be made on other configurations before you restart the modem.



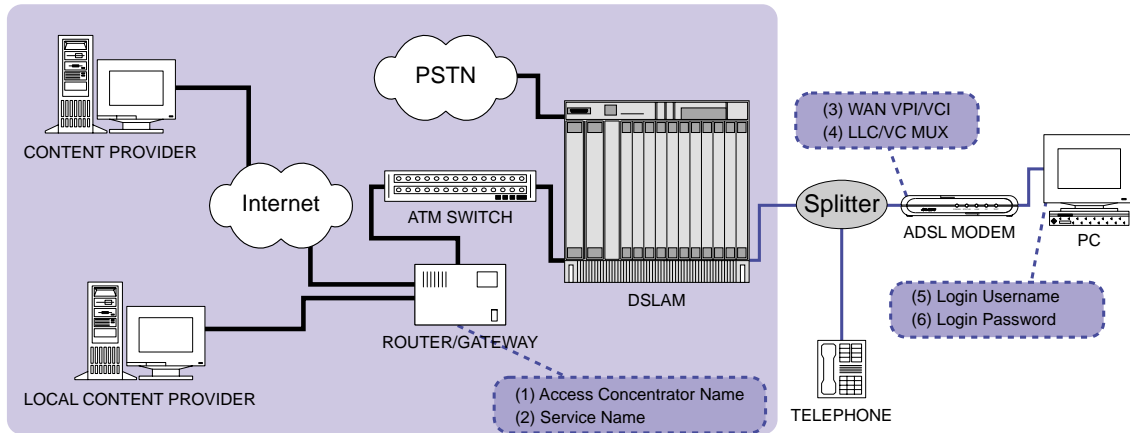
```
Select Channel Operation Mode:
-----
<1>RFC-1483/Bridged.
<2>RFC-1483/Routed.
<3>RFC-1577.
<4>RFC-2364/Routed.
<5>RFC-2516/Relay.
-----
Enter Your Selection(ESC:Cancel.): 4
Enter Channel No.<1~16, ESC:Cancel.): 1
Enter UPI <0~255, ESC:Cancel.): 14
Enter UCI <32~4095, ESC:Cancel.): 32
Enter User Name(ESC:Cancel.): adsl
Enter Password: ****
Confirm Password: ****
Obtain the WAN IP Address from:<1>Service Provider. <2>Customized.
Enter Your Selection(ESC:Cancel.): 1
Do you want to use NAT<y/n, Default:n, ESC:Cancel.?)? y
Changes will not work correctly until restart ADSL Modem!
Do you want to Save Configuration<y/n, Default:y, ESC:Cancel.?)? y
Save Configuration Information...
Press Any Key to Continue...
```

# 3. ADSL User Mode Console

## 3.5.2.5 RFC-2516/Relay

### Setup Wizard

The network configuration for RFC-2516/Relay mode can be illustrated as follows.



RFC-2516/Relay Setup	Example	Your Configuration
(1) Access Concentrator Name	ADSL_TEST_SVR	
(2) Service Name	Test	
(3) WAN VPI/VCI	14/32	
(4) LLC/VC MUX	1 (LLC)	
(5) Login Username	Test	
(6) Login Password	Test	

**NOTE:** Writing down your network configuration (information supplied by your service provider) in this table would help you gain a clearer view of your network.

## 3. ADSL User Mode Console

---

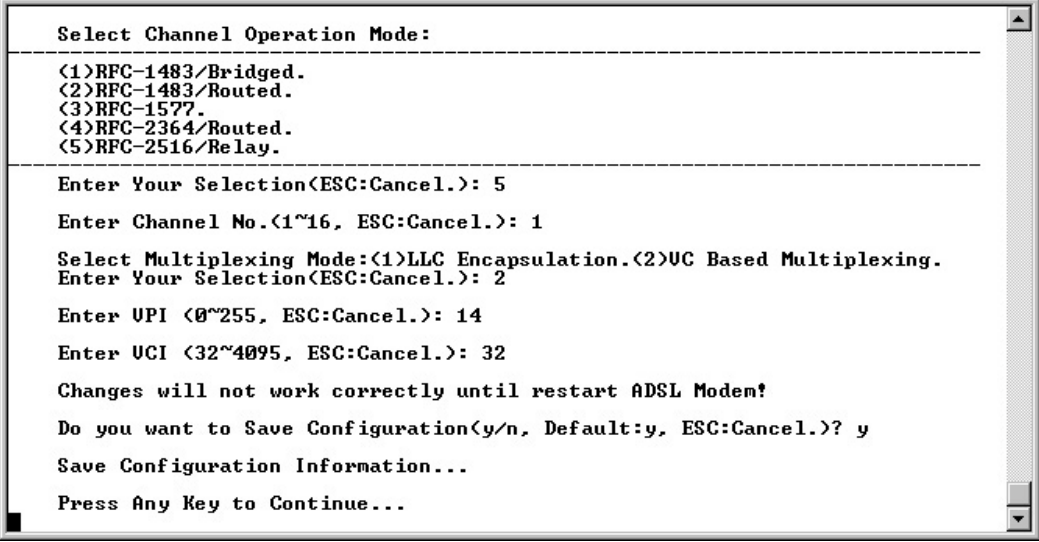
To set up your ADSL modem/router for RFC-2516/Relay mode, do the following steps.

1. Select **RFC-2516/Relay**.
2. Enter the Channel.
3. Select Multiplexing Mode
4. Enter VPI\*.
5. Enter VCI\*.
6. Save configuration.
7. Restart the modem.

\*When VPI=0, VCI=32–65535; when VPI≠0, VCI=0–65535

**NOTE:** New configuration will take effect only after the modem restarts. Further changes may still be made on other configurations before you restart the modem.

**IMPORTANT!** Besides configuring the modem with the Setup Wizard, you also need to install a PPPoE client program. The Login User Name, Login Password, Access Concentrator Name, and Service Name are set in the PPPoE client program. If you are not sure how to do this, please consult your service provider.



```
Select Channel Operation Mode:
-----
<1>RFC-1483/Bridged.
<2>RFC-1483/Routed.
<3>RFC-1577.
<4>RFC-2364/Routed.
<5>RFC-2516/Relay.
-----
Enter Your Selection<ESC:Cancel.>: 5
Enter Channel No.<1~16, ESC:Cancel.>: 1
Select Multiplexing Mode:<1>LLC Encapsulation.<2>UC Based Multiplexing.
Enter Your Selection<ESC:Cancel.>: 2
Enter UPI <0~255, ESC:Cancel.>: 14
Enter UCI <32~4095, ESC:Cancel.>: 32
Changes will not work correctly until restart ADSL Modem!
Do you want to Save Configuration<y/n, Default:y, ESC:Cancel.>? y
Save Configuration Information...
Press Any Key to Continue...
```

# 3. ADSL User Mode Console

## 3.5.3 Delete Channel Configuration

**Delete Channel Configuration** lets you delete your channel configuration.

```
ADSL User Mode Console [Config Changed]
Quick Setup Wizard Menu
-----
1.Set Ethernet Configuration.
2.Set Channel Configuration.
3.Delete Channel Configuration.
4.List Channel Configuration.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 3
-----
Channel=01, Operation Mode= MRFC1577      , UPI= 255 , UCI= 32 .
WAN IP Address: 192.1.2.3..
WAN Subnet Mask: ff:ff:ff:0.
Use InATMARP.
-----
Channel 02, No Configuration Information!
-----
Channel 03, No Configuration Information!
-----
Channel 04, No Configuration Information!
-----
Channel 05, No Configuration Information!
-----
Channel 06, No Configuration Information!
-----
Channel 07, No Configuration Information!
-----
Channel 08, No Configuration Information!
-----
Channel 09, No Configuration Information!
-----
Channel 10, No Configuration Information!
-----
Channel 11, No Configuration Information!
-----
Channel 12, No Configuration Information!
-----
Channel 13, No Configuration Information!
-----
Channel 14, No Configuration Information!
-----
Channel 15, No Configuration Information!
-----
Channel 16, No Configuration Information!
-----
Enter Channel No.<1~16, ESC:Cancel.>: █
```

# 3. ADSL User Mode Console

## 3.5.4 List Channel Configuration

**List Channel Configuration** lets you list existing channel configuration or configurations in your ADSL modem/router.

```
ADSL User Mode Console
Quick Setup Wizard Menu
-----
1.Set Ethernet Configuration.
2.Set Channel Configuration.
3.Delete Channel Configuration.
4.List Channel Configuration.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 4
Do you want to List all Channels<y/n, Default:y, ESC:Cancel.>? y
-----
Channel=01, Operation Mode= MRFC1483/Bridged, UPI= 0 , UCI= 32 .
Multiplexing Mode: LLC Encapsulation.
-----
Channel 02, No Configuration Information!
-----
Channel 03, No Configuration Information!
-----
Channel 04, No Configuration Information!
-----
Channel 05, No Configuration Information!
-----
Channel 06, No Configuration Information!
-----
Channel 07, No Configuration Information!
-----
Channel 08, No Configuration Information!
-----
Channel 09, No Configuration Information!
-----
Channel 10, No Configuration Information!
-----
Channel 11, No Configuration Information!
-----
Channel 12, No Configuration Information!
-----
Channel 13, No Configuration Information!
-----
Channel 14, No Configuration Information!
-----
Channel 15, No Configuration Information!
-----
Channel 16, No Configuration Information!
-----
Press Any Key to Continue...
```

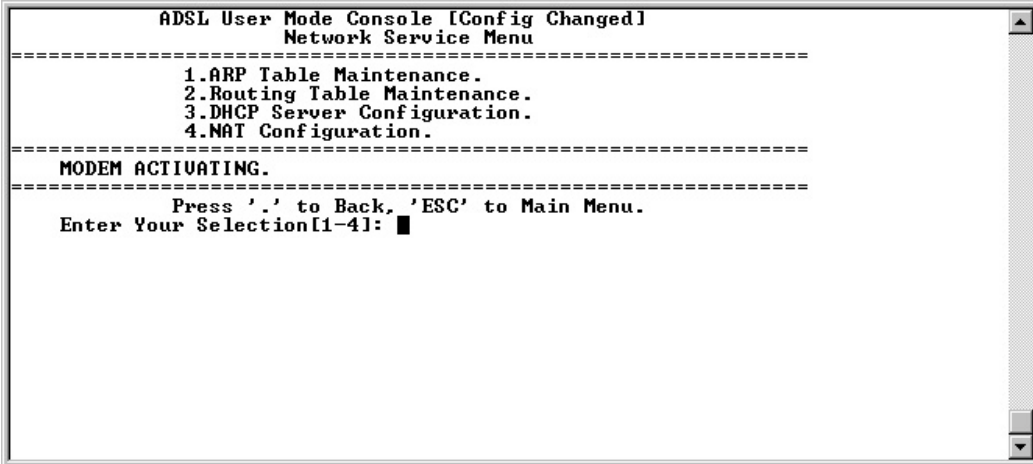
# 3. ADSL User Mode Console

---

## 3.6 Network Service Maintenance

The Network Service Maintenance Menu contains the following fields:

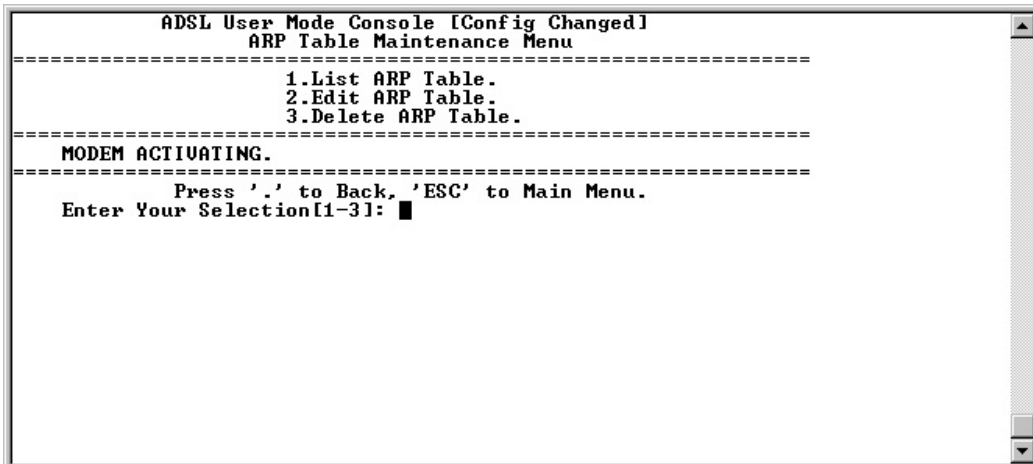
1. ARP Table Maintenance.
2. Routing Table Maintenance.
3. DHCP Server Configuration.
4. NAT Configuration



```
ADSL User Mode Console [Config Changed]
Network Service Menu
-----
1.ARP Table Maintenance.
2.Routing Table Maintenance.
3.DHCP Server Configuration.
4.NAT Configuration.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: █
```

### 3.6.1 ARP Table Maintenance

**ARP Table Maintenance** lets you list, edit, or delete the ARP table.



```
ADSL User Mode Console [Config Changed]
ARP Table Maintenance Menu
-----
1.List ARP Table.
2.Edit ARP Table.
3.Delete ARP Table.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-3]: █
```

## 3. ADSL User Mode Console

### 3.6.1.1 List ARP Table

This option lets you view the ARP (Address Resolution Protocol) information stored in your ADSL modem/router.

```
[ARP Monitor]
-----
arp add ethernet      192.168.1.1  00:20:2b:00:47:20 # forever
-----
Do you want to refresh display(y/n, Default:y, ESC:Cancel.)? █
```

### 3.6.1.2 Edit ARP Table

This option lets you add or edit the ARP information stored in your ADSL modem/router.

```
ADSL User Mode Console
ARP Table Maintenance Menu
-----
1.List ARP Table.
2.Edit ARP Table.
3.Delete ARP Table.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-3]: 2
-----
# ethernet ARP table is empty
-----
Enter Destination Address<Example 192.168.1.1, ESC:Cancel.>: 192.168.1.1
Enter MAC Address <Example 00:20:2b:00:47:00, ESC: Cancel.>: 00:20:2b:00:47:
20
Press Any Key to Continue... █
```

### 3.6.1.3 Delete ARP Table

This option lets you delete the ARP information stored in your ADSL modem/router.

```
ADSL User Mode Console
ARP Table Maintenance Menu
-----
1.List ARP Table.
2.Edit ARP Table.
3.Delete ARP Table.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-3]: 3
-----
arp add ethernet      192.168.1.1  00:20:2b:00:47:20 # forever
-----
Do you want to Delete all ARP Table(y/n, Default:y, ESC:Cancel.)? █
```



# 3. ADSL User Mode Console

## 3.6.2 Routing Table Maintenance

**Routing Table Maintenance** lets you list, edit, or delete the routing information stored in your ADSL modem/router.

```
ADSL User Mode Console [Config Changed]
Routing Table Maintenance Menu
-----
1.List Routing Table.
2.Edit Routing Table.
3.Delete Routing Table.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-3]: █
```

### 3.6.2.1 List Routing Table

This option lets you view the routing information stored in your ADSL modem/router.

```
[Routing Table]
-----
route add . 192.168.31.0 192.168.3.1 ff:ff:ff:00 16 # RIP 1m03s/2m via ppp2
route add . 15.2.22.0 192.168.3.1 ff:ff:ff:00 16 # RIP 1m03s/2m via ppp2
route add . 15.2.21.0 192.168.3.1 ff:ff:ff:00 16 # RIP 1m03s/2m via ppp2
route add . 15.2.18.0 192.168.3.1 ff:ff:ff:00 16 # RIP 1m03s/2m via ppp2
route add . 15.2.17.0 192.168.3.1 ff:ff:ff:00 16 # RIP 1m03s/2m via ppp2
route add . 15.2.16.0 192.168.3.1 ff:ff:ff:00 16 # RIP 1m03s/2m via ppp2
route add . 15.2.15.0 192.168.3.1 ff:ff:ff:00 16 # RIP 1m03s/2m via ppp2
route add . 14.2.4.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.3.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.2.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.1.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.1.22.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
route add . 14.1.21.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
route add . 14.1.18.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
route add . 14.1.17.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
route add . 14.1.15.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
route add . 14.1.14.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
route add . 14.2.13.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.12.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.11.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.10.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.9.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.8.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.7.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.6.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.2.5.0 192.168.3.1 ff:ff:ff:00 2 # RIP 2m33s/3m via ppp_2
route add . 14.1.13.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
route add . 14.1.12.0 192.168.3.1 ff:ff:ff:00 8 # RIP 2m33s/3m via ppp_2
```

## 3. ADSL User Mode Console

### 3.6.2.2 Edit Routing Table

This option lets you edit the routing information stored in your ADSL modem/router.

#### Normal Setup (User Configuration)

```
ADSL User Mode Console [Config Changed]
Routing Table Maintenance Menu
=====
1.List Routing Table.
2.Edit Routing Table.
3.Delete Routing Table.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-3]: 2
=====
Routing table is empty
=====
Enter Name Index for Edit (ESC:Cancel.): adsl
Enter Destination Address(Example 192.168.1.1, ESC:Cancel.): 192.168.1.0
Enter Subnet Mask (Example ff:ff:ff:00, ESC:Cancel.): ff:ff:ff:00
Enter Gateway Address(Example 192.168.2.1, ESC:Cancel.): 192.168.100.1
Do you want to setup the cost of the route (y/n, Default:n, ESC:Cancel.)? n
Do you want to Save Configuration(y/n, Default:y, ESC:Cancel.)?
```

#### Special Case (When setting up the default gateway IP address)

```
ADSL User Mode Console [Config Changed]
Routing Table Maintenance Menu
=====
1.List Routing Table.
2.Edit Routing Table.
3.Delete Routing Table.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-3]: 2
=====
Routing table is empty
=====
Enter Name Index for Edit (ESC:Cancel.): adsl
Enter Destination Address(Example 192.168.1.1, ESC:Cancel.): 0.0.0.0
Enter Subnet Mask (Example ff:ff:ff:00, ESC:Cancel.): 00:00:00:00
Enter Gateway Address(Example 192.168.2.1, ESC:Cancel.): 192.168.3.1
Do you want to setup the cost of the route (y/n, Default:n, ESC:Cancel.)? n
Do you want to Save Configuration(y/n, Default:y, ESC:Cancel.)? y
Save Configuration Information...
Updating flash filing system ...
.1e0000 131072:100
done
Press Any Key to Continue...
```

### 3.6.2.3 Delete Routing Table

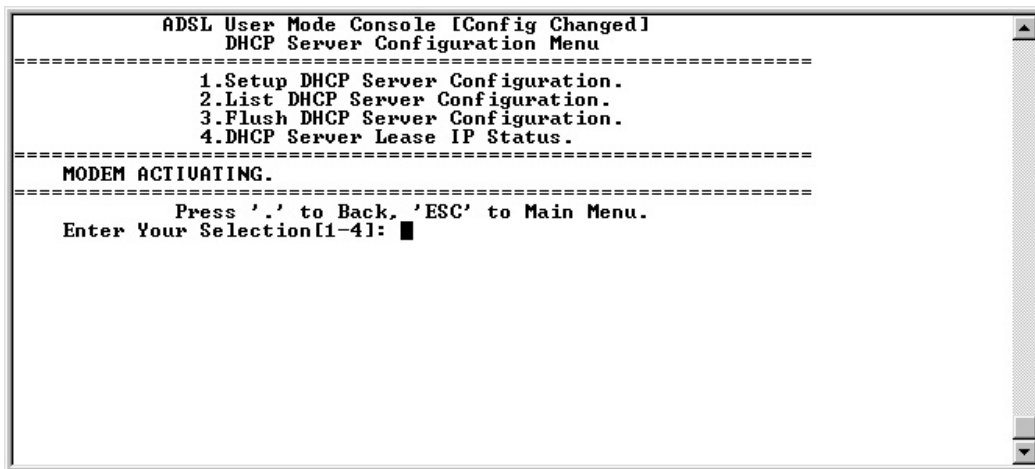
This option lets you delete the routing information stored in your ADSL modem/router and then save your configuration. Follow the on-screen prompts to confirm or cancel deletion of the routing table.

## 3. ADSL User Mode Console

---

### 3.6.3 DHCP Server Configuration

**DHCP Server Configuration** lets you set up, list, and flush DHCP Server Configuration, and list DHCP server lease IP status.



```
ADSL User Mode Console [Config Changed]
DHCP Server Configuration Menu
-----
1.Setup DHCP Server Configuration.
2.List DHCP Server Configuration.
3.Flush DHCP Server Configuration.
4.DHCP Server Lease IP Status.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: █
```

#### **DHCP**

Dynamic Host Configuration Protocol (DHCP) provides a framework for passing configuration information to hosts on a TCP/IP network. DHCP is based on the Bootstrap Protocol (BOOTP), adding capability of automatic allocation of reusable network addresses and additional configuration options.

#### **Scope**

DHCP can involve three different types of entities on a given network — DHCP servers, DHCP clients, and DHCP relays. This user's guide only describes the intended operation and interfaces to a DHCP server of your ADSL modem/router.

# 3. ADSL User Mode Console

## 3.6.3.1 Setup DHCP Server Configuration

```
ADSL User Mode Console [Config Changed]
DHCP Server Configuration Menu
-----
1.Setup DHCP Server Configuration.
2.List DHCP Server Configuration.
3.Flush DHCP Server Configuration.
4.DHCP Server Lease IP Status.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 1
Enter subnet Address<Example 192.168.1.0, ESC:Cancel.>: 192.168.1.0
Enter Netmask Address<Example 255.255.255.0, ESC:Cancel.>: 255.255.255.0
Enter Range Begin Address<Example 192.168.1.10, ESC:Cancel.>: 192.168.1.10
Enter Range End Address<Example 192.168.1.254, ESC:Cancel.>: 192.168.1.25
Leased Time: <1>1 Hour. <2>1 Day. <3>1 Week. <4>1 Month.
Enter Leased Time.<1~4, ESC:Cancel.>: 2
Setup Basic Options:
-----
<0> Exit Basic Options.
<1> Subnet Mask.
<2> Default Route.
<3> DNS Server.
<4> WINS Server.
<5> Domain Name.
<6> Broadcast Address.
-----
Enter Your Selection<ESC:Cancel.>: 1
Enter Subnet Address<Example 255.255.255.0, ESC:Cancel.>: 255.255.255.0
Setup Basic Options:
-----
<0> Exit Basic Options.
<1> Subnet Mask.
<2> Default Route.
<3> DNS Server.
<4> WINS Server.
<5> Domain Name.
<6> Broadcast Address.
-----
Enter Your Selection<ESC:Cancel.>: 2
Enter Router Address<Example 192.168.1.1, ESC:Cancel.>: 192.168.1.1
Setup Basic Options:
-----
<0> Exit Basic Options.
<1> Subnet Mask.
<2> Default Route.
<3> DNS Server.
<4> WINS Server.
<5> Domain Name.
<6> Broadcast Address.
-----
Enter Your Selection<ESC:Cancel.>: █
```

### Setup Basic Options

#### (0) Exit Basic Options

This option lets you exit from the basic option configuration and prompts you for confirmation on the saving of your configuration.

#### (1) Subnet Mask

This option specifies the client's subnet mask as per RFC 950. If no subnet mask option is provided anywhere in scope, DHCP will use the subnet mask from the subnet declaration for the network on which an address is being assigned. However, any subnet-mask option declaration that is in scope for the address being assigned will override the subnet mask specified in the subnet declaration.

## 3. ADSL User Mode Console

---

### (2) Default Route

This option lets you specify a list of IP addresses for routers on the client's subnet. Routers should be listed in the order of preference.

### (3) DNS Server

This option lets you specify a list of Domain Name System (STD 13, RFC1035) name servers available to the client. Servers should be listed in the order of preference.

### (4) WINS Server

This option lets you specify a primary and/or secondary Windows Internet Name Service (WINS) address to use on the client's subnet.

### (5) Domain Name

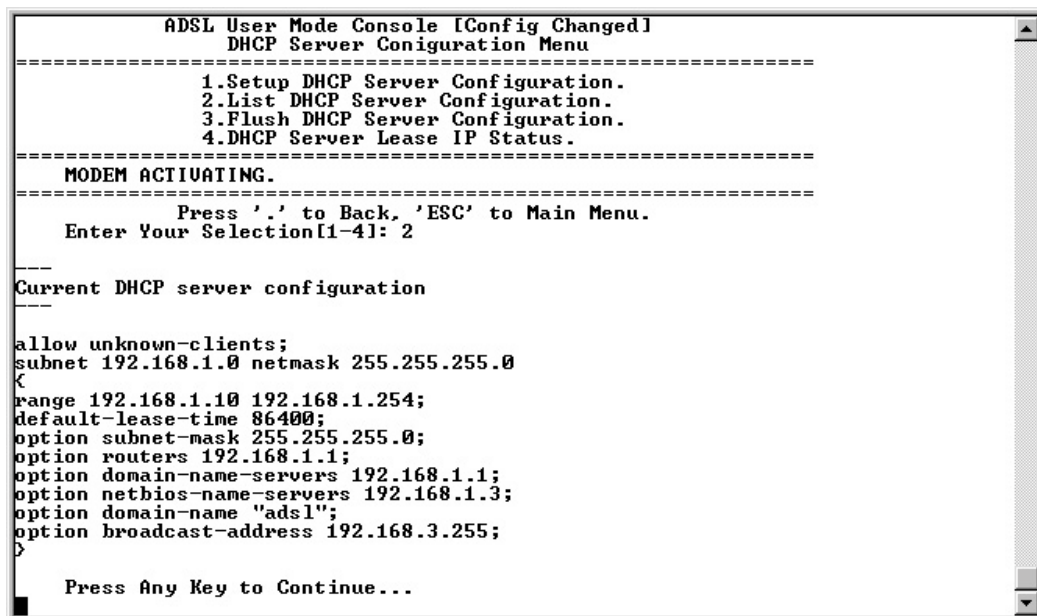
This option lets you specify the domain name the client should use when resolving hostnames through the Domain Name System.

### (6) Broadcast Address

This option lets you specify the broadcast address to use on the client's subnet.

### 3.6.3.2 List DHCP Server Configuration

This option lets you list the current DHCP Server Configuration stored in your ADSL modem/router.



```
ADSL User Mode Console [Config Changed]
DHCP Server Configuration Menu
-----
1.Setup DHCP Server Configuration.
2.List DHCP Server Configuration.
3.Flush DHCP Server Configuration.
4.DHCP Server Lease IP Status.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 2
-----
Current DHCP server configuration
-----
allow unknown-clients;
subnet 192.168.1.0 netmask 255.255.255.0
<
range 192.168.1.10 192.168.1.254;
default-lease-time 86400;
option subnet-mask 255.255.255.0;
option routers 192.168.1.1;
option domain-name-servers 192.168.1.1;
option netbios-name-servers 192.168.1.3;
option domain-name "adsl";
option broadcast-address 192.168.3.255;
}
Press Any Key to Continue...
```

## 3. ADSL User Mode Console

### 3.6.3.3 Flush DHCP Server Configuration

This option lets you flush the current DHCP Server Configuration stored in your ADSL modem/router.

```
ADSL User Mode Console
DHCP Server Configuration Menu
=====
1.Setup DHCP Server Configuration.
2.List DHCP Server Configuration.
3.Flush DHCP Server Configuration.
4.DHCP Server Lease IP Status.
=====
MODEM ACTIVATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 3
Changes will not work correctly until restart ADSL Modem!
Do you want to Save Configuration(y/n, Default:y, ESC:Cancel.)? y
Save Configuration Information...
Press Any Key to Continue...
```

### 3.6.3.4 DHCP Server Lease IP Status

This option lets you list the current DHCP lease IP status stored in your ADSL modem/router.

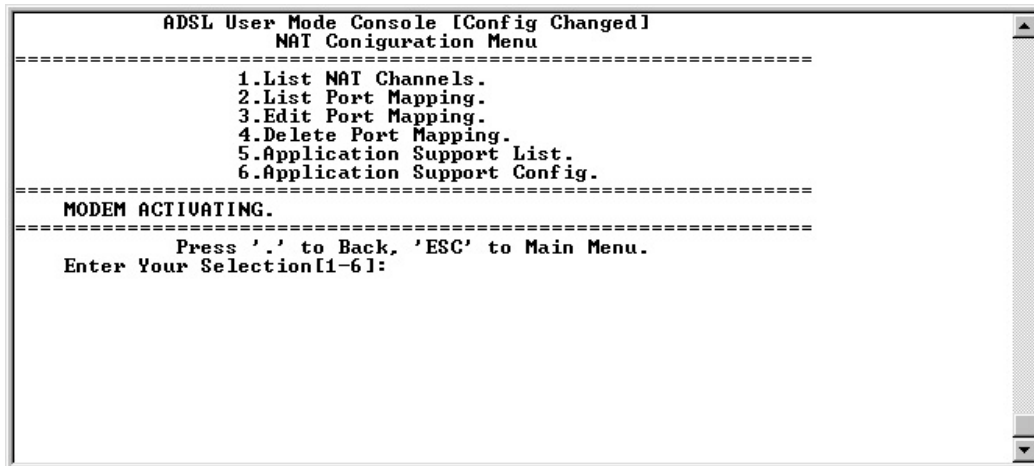
```
ADSL User Mode Console [Config Changed]
DHCP Server Configuration Menu
=====
1.Setup DHCP Server Configuration.
2.List DHCP Server Configuration.
3.Flush DHCP Server Configuration.
4.DHCP Server Lease IP Status.
=====
MODEM ACTIVATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 4
DHCP Server Lease Status
Interface 'ethernet'
IP address      | Client UID/hw addr | Expiry
-----|-----|-----
192.168.1.10   | 01:00:48:54:5d:af:1c| 33 minutes
-----|-----|-----
Press Any Key to Continue...
```

## 3. ADSL User Mode Console

---

### 3.6.4 NAT Configuration

**NAT Configuration** lets you list NAT channels, list/edit/delete port mapping, and list/set up application support. *See 3.5.2.2 RFC-1483/Routed, 3.5.2.3 RFC-1577, or 3.5.2.4 RFC-2364/Routed* to enable/disable NAT.



```
ADSL User Mode Console [Config Changed]
NAT Configuration Menu
-----
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]:
```

#### **NAT**

NAT stands for Network Address Translation and your modem/router implements Network Address Port Translation (NAPT), also known as IP Masquerading.

This involves translating IP addresses in packets passing between a private local area network and a public internet. Many addresses on the local network are mapped to a single externally visible address on the public internet. This reduces the number of addresses that have to be visible on the internet, saving addresses from the ever decreasing global pool, as well as providing a transparent routing solution to end hosts trying to communicate from disparate routing realms.

#### **Scope**

This specification of NAT is targeted at systems which connect a small local area network(for example, a few tens of machines) to an internet, where the internet connection provides only a single IP address. As well as allowing hosts on the private network to originate connections to hosts on the public network, your modem/router's NAT can be optionally configured to allow incoming connections from the public network to specific hosts on the private network. Because some application protocols embed IP addresses in the payloads of packets, your modem/router's NAT also provides a mechanism for adding gateways to handle these protocols.

## 3. ADSL User Mode Console

### 3.6.4.1 List NAT Channels

This option lets you list the current NAT channels stored in your ADSL modem/router.

```
ADSL User Mode Console [Config Changed]
NAT Configuration Menu
=====
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 1
Channel=01, MRFC1483/Routed,14/32, Interface= r1.
Press Any Key to Continue...
```

### 3.6.4.2 List Port Mapping

This option lets you list the current port mappings stored in your ADSL modem/router.

```
ADSL User Mode Console [Config Changed]
NAT Configuration Menu
=====
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 2
No.  Channel Information      Port/proto  New IP Address  Flags
1    Channel=1,14/32.         1/tcp      192.168.1.1
Press Any Key to Continue...
```



## 3. ADSL User Mode Console

### 3.6.4.3 Edit Port Mapping

This option lets you edit the current port mappings stored in your ADSL modem/router.

```
ADSL User Mode Console [Config Changed]
NAT Configuration Menu
-----
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 3
Channel=01, MRFC1483/Routed,14/32, Interface= r1.
-----
Enter Channel No.<1~16, ESC:Cancel.>: 1
Enter Port No.<1~65535, ESC:Cancel.>: 1
Protocol Type: <1>TCP. <2>UDP.
Enter Protocol Type you want to mapping <1~2, ESC:Cancel.>: 1
Enter Mapping IP Address<Example 192.168.1.1, ESC:Cancel.>: 192.168.1.1
Do you want to Save Configuration<y/n, Default:y, ESC:Cancel.>? y
Press Any Key to Continue...
```

### 3.6.4.4 Delete Port Mapping

This option lets you delete the current port mappings stored in your ADSL modem/router.

```
ADSL User Mode Console [Config Changed]
NAT Configuration Menu
-----
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 4
No.  Channel Information          Port/proto  New IP Address  Flags
1    Channel=1,14/32.             1/tcp      192.168.1.1
Enter No.to Delete<ESC:Cancel.>: 1
Do you want to Save Configuration<y/n, Default:y, ESC:Cancel.>? y
Saving configuration...Configuration saved.
Press Any Key to Continue...
```

## 3. ADSL User Mode Console

### 3.6.4.5 Application Support List

This option lets you list the current applications supporting NAT that are installed in your ADSL modem/router.

```
ADSL User Mode Console [Config Changed]
NAT Configuration Menu
-----
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 5

Applications status :
nmt<NetMeeting>           : YES.
rtsp<RealNetworks/QuickTime> : YES.

Press Any Key to Continue...
```

### 3.6.4.6 Application Support Config.

This option lets you set up applications supporting NAT that are stored in your ADSL modem/router. Currently, your modem/router supports Microsoft® NetMeeting, RealNetworks®, and Apple Computer, Inc.'s QuickTime.

```
ADSL User Mode Console [Config Changed]
NAT Configuration Menu
-----
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 6

Select Application:
-----
<1> NetMeeting.
<2> RealNetworks/QuickTime.
-----
Enter Your Selection<ESC:Cancel.>: █
```

# 3. ADSL User Mode Console

## NetMeeting Configuration

```
ADSL User Mode Console [Config Changed]
  NAT Configuration Menu
-----
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 6

Select Application:
-----
<1> NetMeeting.
<2> RealNetworks/QuickTime.
-----
Enter Your Selection<ESC:Cancel.>: 1

Set Application Support: <1>Yes. <2>No. <3>Reset.█
```

## RealNetworks/QuickTime Configuration

```
ADSL User Mode Console [Config Changed]
  NAT Configuration Menu
-----
1.List NAT Channels.
2.List Port Mapping.
3.Edit Port Mapping.
4.Delete Port Mapping.
5.Application Support List.
6.Application Support Config.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-6]: 6

Select Application:
-----
<1> NetMeeting.
<2> RealNetworks/QuickTime.
-----
Enter Your Selection<ESC:Cancel.>: 2

Set Application Support: <1>Yes. <2>No.█
```

# 3. ADSL User Mode Console

---

## 3.6.4.7 NAT Questions-and-Answers

**Q: Why can't I use NetMeeting under NAT when another user is using NetMeeting?**

**A:** Due to the limitations in the protocol (H.323), NAT allows only one NetMeeting user connected to the Internet at the same time. If another user wants to use NetMeeting, he has to wait until the current NetMeeting user hangs up or ends his call. Unlike other shipping products that support NAT, your ADSL modem/router supports user login to ILS (Internet Location Server) under NAT and automatically identifies user connection. A user does not have to configure any mapping when one user hangs up and another user starts to use NetMeeting.

**Q: Sometimes, I can't see/hear the video/audio of the other party when I use NetMeeting under NAT.**

**A:** This occurs because communication or connection on the Internet sometimes times out or gives out packet errors. If this happens, just hangup your NetMeeting call and try to call again.

**Q: I would like to use NetMeeting: there are no other users accessing NetMeeting at the same time, and when I try to use it again, NetMeeting still doesn't work.**

**A:** If this happen, following steps may help you :

1. Use User Mode Console or Web Console.
2. Select **Network Service**.
3. Select **NAT Configuration**.
4. Check **Application Support List**.
5. Make sure **Application status "nmt (NetMeeting)"** is **"Yes"** or **"Enable"**
6. If Application status **"nmt (NetMeeting)"** is **"Yes"** or **"Enable"**, select **"Application Support Config"** and configure NetMeeting support to **"rst"** or **"Reset"**.
7. If Application status **"nmt (NetMeeting)"** is **"No"** or **"Disable"**, select **"Application Support Config"** and config NetMeeting support to **"Yes"** or **"Enable"**.
8. Restart your computer to avoid some Windows applications' issue.

**Q: When I use NetMeeting under NAT, the ADSL modem/router will add some port mapping automatically, but I haven't configured it yet.**

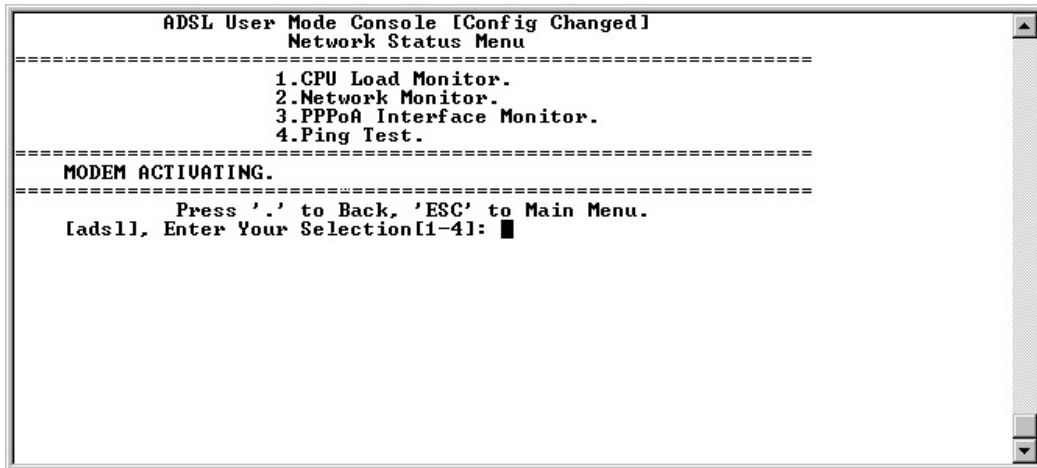
**A:** These automatic addition/deletion of port mappings is used for NetMeeting communication. Your modem/router will show this information to let user know the status of the ports used in the ADSL device. This information is useful to avoid the mapping of the port that had already been set previously.

# 3. ADSL User Mode Console

## 3.7 Network Status

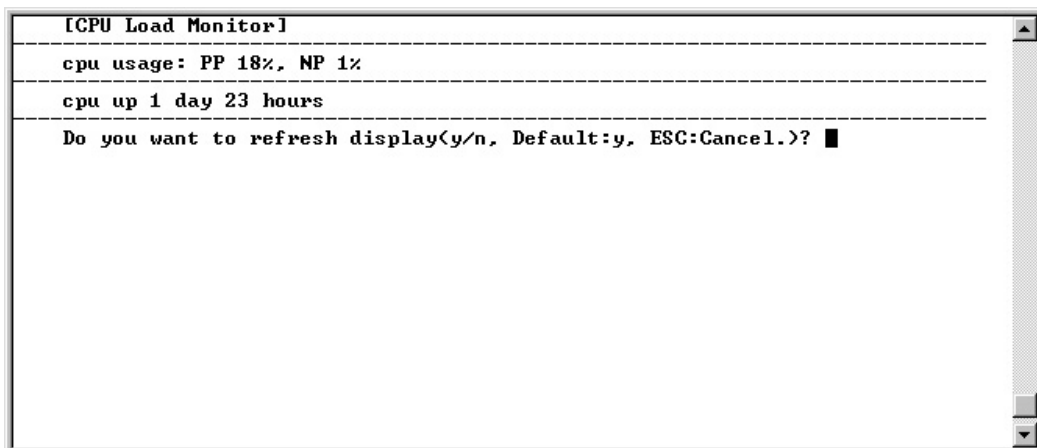
The Network Status Menu contains the following fields:

1. CPU Load Monitor.
2. Network Monitor.
3. PPPoA Interface Monitor.
4. Ping Test



### 3.7.1 CPU Load Monitor

Your ADSL modem/router has 2 processors inside. One is a network processor (NP); the other is a protocol processor (PP). The CPU Load Monitor helps you understand the current CPU loading.

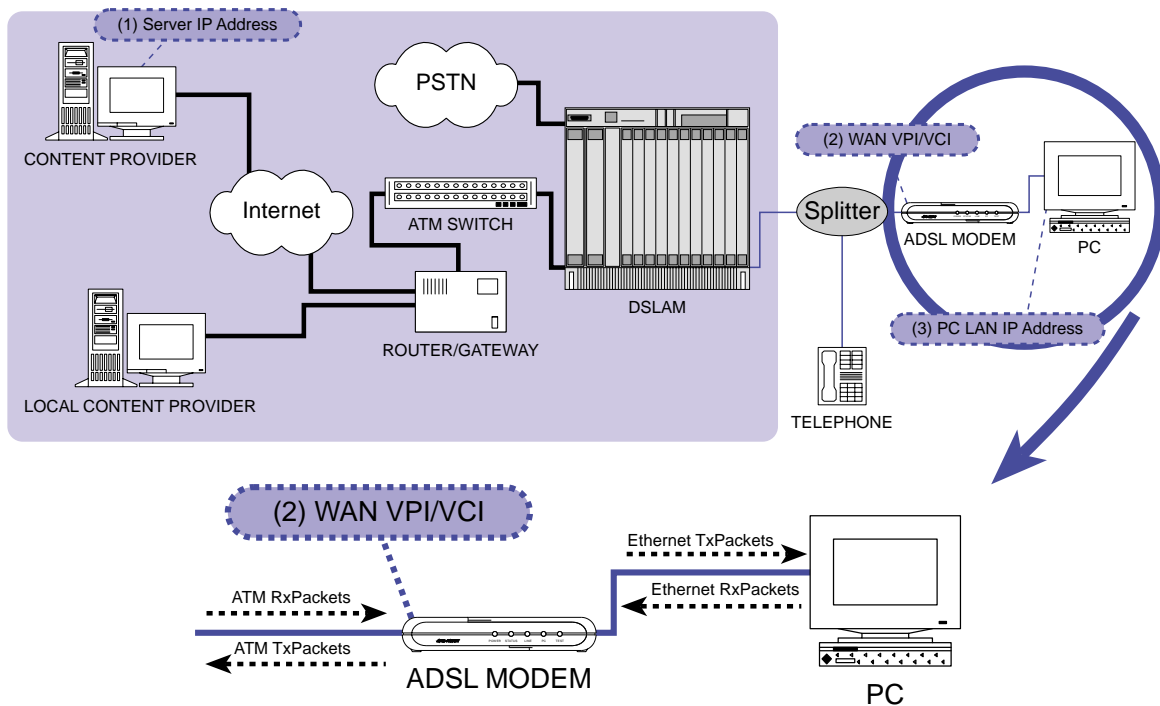


# 3. ADSL User Mode Console

## 3.7.2 Network Monitor

The Network Monitor helps you monitor the packet flow from Ethernet to ATM, or vice versa. It is a handy tool for you to check the following 4 packet flow points:

- 1) **Ethernet TxPackets:** Ethernet Port Transmitting Packets
- 2) **Ethernet RxPackets:** Ethernet Port Receiving Packets
- 3) **ATM TxPackets:** ATM Port Transmitting Packets
- 4) **ATM RxPackets:** ATM Port Receiving Packets



Packet flow changes on all the 4 points, depending on the condition of the data transmission. By checking the 4 packet flow points, we may understand whether packets are transmitted normally from PC via ADSL to Internet or vice versa.

# 3. ADSL User Mode Console

**NOTE:** The TxVPI/VCI and RxVPI/VCI equal the VPI/VCI you set in the **Quick Setup Wizard Menu**. The circled values represent the data traffic at the Ethernet and ATM interfaces. These values will be updated continuously as long as there is data received and transmitted by the modem.

Ethernet TXPackets                      Ethernet RxPackets

```
[Ethernet Port Tx/Rx Status]
-----
Port ethernet:0
0: TxPkts:296                      RxPkts: 1724/0

[ATM Tx/Rx Status]
-----
Port atm:0
0: TxPkts:398                      RxPkts: 0/0                      TxVPI/VCI: 0/16                      RxVPI/VCI: 0/16
1: TxPkts:315                      RxPkts: 314/0                      TxVPI/VCI: 14/32                      RxVPI/VCI: 14/32
2: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/0
3: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/0
4: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/3
5: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/4
6: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/0

Do you want to refresh display(y/n, Default:y, ESC:Cancel.)? █
```

ATM TXPackets                      ATM RXPackets                      ATM VPI/VCI

**Updated:**

```
[Ethernet Port Tx/Rx Status]
-----
Port ethernet:0
0: TxPkts:345                      RxPkts: 2033/0

[ATM Tx/Rx Status]
-----
Port atm:0
0: TxPkts:398                      RxPkts: 0/0                      TxVPI/VCI: 0/16                      RxVPI/VCI: 0/16
1: TxPkts:367                      RxPkts: 363/0                      TxVPI/VCI: 14/32                      RxVPI/VCI: 14/32
2: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/0
3: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/0
4: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/3
5: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/4
6: TxPkts:0                      RxPkts: 0/0                      TxVPI/VCI: 0/0                      RxVPI/VCI: 0/0

Do you want to refresh display(y/n, Default:y, ESC:Cancel.)? █
```

# 3. ADSL User Mode Console

## 3.7.3 PPPoA Interface Monitor

The PPPoA Interface Monitor helps you check the PPPoA Interface Tx/Rx Data.

```
[PPPoA Interface Monitor]
-----
PPP 1: Channel 1      : open for IP, sent 779, received 806
PPP 1: PUC setting   : port 0 vpi 3 vci 32
PPP 1: Our login name : adsl
PPP 2: Channel 2      : disabled
PPP 2: Interface     : <not connected>
PPP 3: Channel 3      : disabled
PPP 3: Interface     : <not connected>
PPP 4: Channel 4      : disabled
PPP 4: Interface     : <not connected>
PPP 5: Channel 5      : disabled
PPP 5: Interface     : <not connected>
PPP 6: Channel 6      : disabled
PPP 6: Interface     : <not connected>
PPP 7: Channel 7      : disabled
PPP 7: Interface     : <not connected>
PPP 8: Channel 8      : disabled
PPP 8: Interface     : <not connected>
-----
Do you want to refresh display(y/n, Default:y, ESC:Cancel.)? █
```

```
[PPPoA Interface Monitor]
-----
PPP 1: Channel 1      : open for IP, sent 936, received 975
PPP 1: PUC setting   : port 0 vpi 3 vci 32
PPP 1: Transport     : IP
PPP 1: Our login protocol : CHAP
PPP 1: Our login name : adsl
PPP 1: Interface     : 1 <02:e0:18:f0:36:33>
PPP 1: MAC address   : 06:e0:18:f0:36:33
PPP 1: Phase         : Network
PPP 1: LCP: state    : Opened
PPP 1: LCP: local options : MRU=1500 magic=0
PPP 1: LCP: remote options : MRU=1514 magic=0 auth=0xc223
PPP 1: PAP: login as user : 'adsl'
PPP 1: CHAP: login as user : 'adsl'
PPP 1: IPCP: state    : Opened
PPP 1: IPCP: local options : addr=192.168.7.19
PPP 1: IPCP: remote options : addr=192.168.3.1
PPP 1: Transmitted     : 54414 bytes 936 packets
PPP 1: Received        : 489217 bytes 975 packets
PPP 1: Idle for        : 19 seconds
-----
Do you want to refresh display(y/n, Default:y, ESC:Cancel.)? █
```

## 3.7.4 Ping Test

The Ping Test helps you verify that a particular IP address exists and receives requests. You need to enter the IP address.

```
ADSL User Mode Console [Config Changed]
Network Status Menu
-----
1.CPU Load Monitor.
2.Network Monitor.
3.PPPoA Interface Monitor.
4.Ping Test.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 4

Enter Ping IP Address(Example 192.168.1.1, ESC:Cancel.): 192.168.31.228
ip: ping - reply received from 192.168.31.228

Press Any Key to Continue...
```



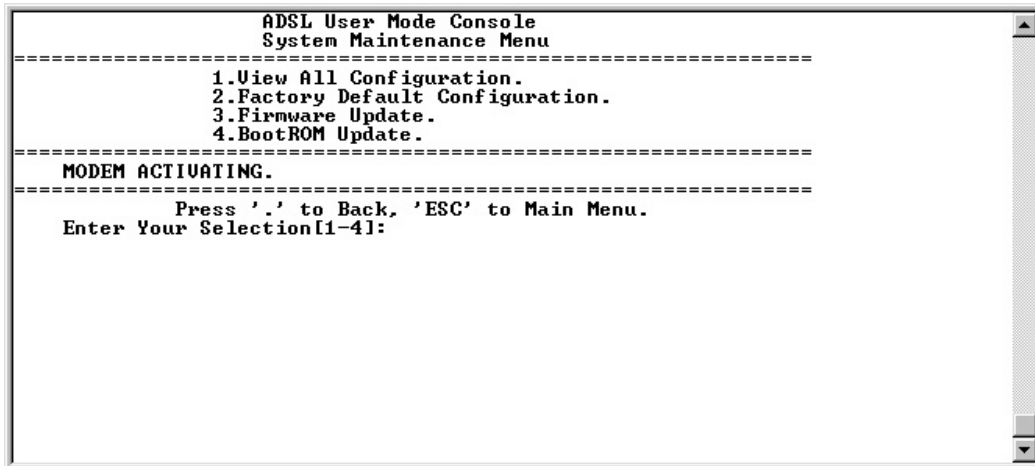
## 3. ADSL User Mode Console

---

### 3.8 System Maintenance

The System Maintenance Menu contains the following fields:

1. View All Configuration.
2. Factory Default Configuration.
3. Firmware Update.
4. BootROM Update.



# 3. ADSL User Mode Console

## 3.8.1 View All Configuration

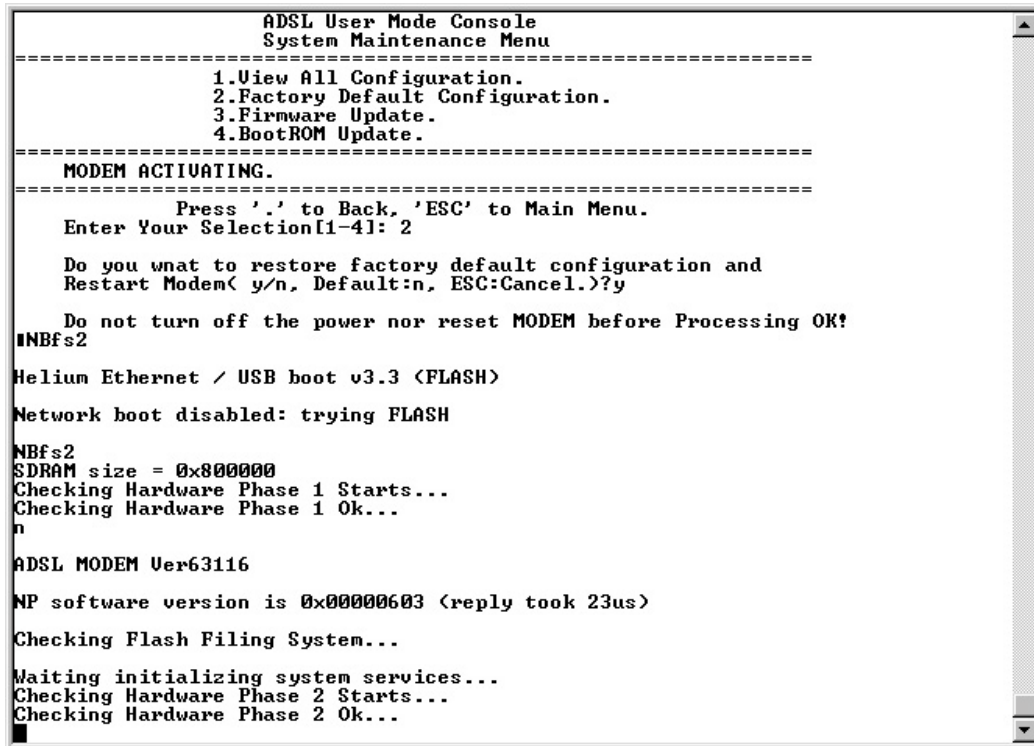
This displays your ADSL modem/router internal configuration information for technical support.

```
ADSL User Mode Console [Config Changed]
System Maintenance Menu
-----
1.View All Configuration.
2.Factory Default Configuration.
3.Firmware Update.
4.BootROM Update.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 1
Module 'portcli':
Module 'r1483':
Active configuration:
pvc none atm
Stored configuration:
pvc none atm
Module 'bridge':
Active configuration:
Port 1: 'edd'
Filter age time: 1080
Stored configuration:
Port 1: 'edd'
# Spanning tree configuration
bridge spanning disable
Module 'nat':
event 2
Module 'bsp':
Active configuration:
gain 4
mode auto
priority g.hs
autostart on
debug off
trellis off
Stored configuration:
gain 4
mode auto
priority g.hs
autostart on
debug off
trellis off
Module 'ppp':
Module 'pptp':
Module 'ip':
device add ethernet ether //bridge mtu 1500 192.168.1.1
device add loop loop //loop mtu 1500 127.0.0.1
subnet add loop.home . 127.0.0.0 ff:00:00:00
subnet add ethernet.home . 192.168.1.0 ff:ff:ff:00
rip send ethernet 1 2
rip send loop none
rip accept ethernet 1 2
rip accept loop 1 2
autoloop on
relay ethernet ethernet
relay loop ethernet forward
ipatm lifetime 60
# IP host table:
# Port table:
l2tp 1701/UDP
router 520/UDP
snmp 161/UDP
tftp 69/UDP
http 80/TCP
telnet 23/TCP
# SNMP configuration:
access read public
access write admin
Module 'Build': 63116geit2
Press Any Key to Continue...
```

# 3. ADSL User Mode Console

## 3.8.2 Factory Default Configuration

This clears the configurations made with the Setup Wizard in **4. Quick Setup Wizard**. After the configurations are cleared and your modem has been reset, you will be reverted back to the Main Menu.



```
ADSL User Mode Console
System Maintenance Menu
=====
1.View All Configuration.
2.Factory Default Configuration.
3.Firmware Update.
4.BootROM Update.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 2

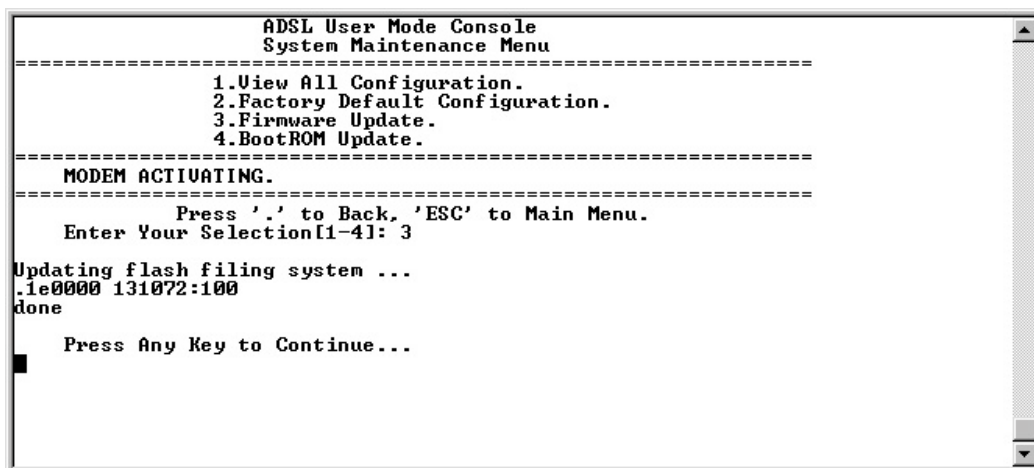
Do you want to restore factory default configuration and
Restart Modem( y/n, Default:n, ESC:Cancel.)?y

Do not turn off the power nor reset MODEM before Processing OK!
#NBfs2
Helium Ethernet / USB boot v3.3 <FLASH>
Network boot disabled: trying FLASH
#NBfs2
SDRAM size = 0x8000000
Checking Hardware Phase 1 Starts...
Checking Hardware Phase 1 Ok...
n
ADSL MODEM Ver63116
NP software version is 0x00000603 (reply took 23us)
Checking Flash Filing System...
Waiting initializing system services...
Checking Hardware Phase 2 Starts...
Checking Hardware Phase 2 Ok...
```

**IMPORTANT!** Do not turn off your computer or modem while this procedure is in progress.

## 3.8.3 Firmware Update

This function must be used when you update your ADSL modem/router software: After you boot the modem from Ethernet, execute this function to update your ADSL modem/router firmware.



```
ADSL User Mode Console
System Maintenance Menu
=====
1.View All Configuration.
2.Factory Default Configuration.
3.Firmware Update.
4.BootROM Update.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 3

Updating flash filing system ...
.1e0000 131072:100
done

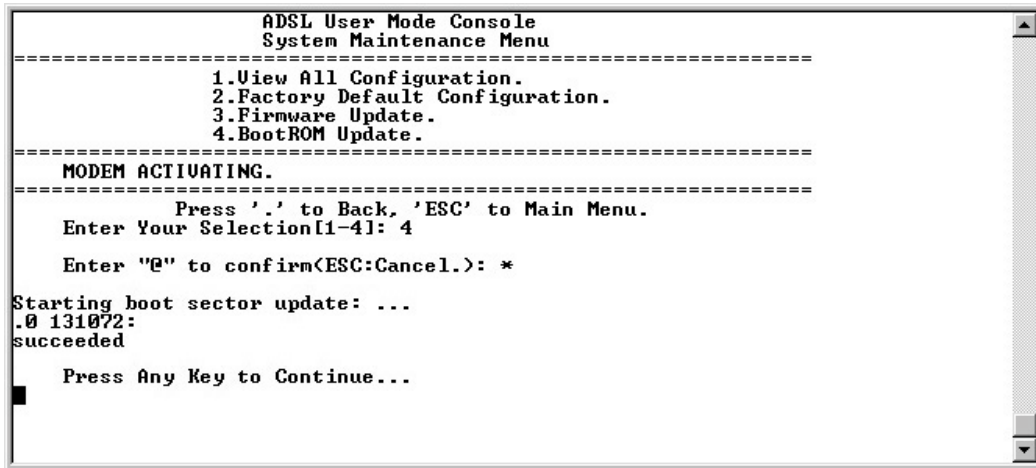
Press Any Key to Continue...
```

# 3. ADSL User Mode Console

---

## 3.8.4 BootROM Update

BootROM update is not required for every software upgrade. Your service provider will notify you when BootROM update is necessary. To use this function, you need to enter the Access Code (provided by your service provider) first.



```
ADSL User Mode Console
System Maintenance Menu
=====
1.View All Configuration.
2.Factory Default Configuration.
3.Firmware Update.
4.BootROM Update.
=====
MODEM ACTIUATING.
=====
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-4]: 4
Enter "@" to confirm<ESC:Cancel.>: *
Starting boot sector update: ...
.0 131072:
succeeded
Press Any Key to Continue...
```

## 3. ADSL User Mode Console

### 3.9 Screen Display Mode

This menu allows you to set up the screen display mode as clear screen or scrolling screen, which affects the screen display after any menu is entered or function executed. The default is set to clear screen. You may select scrolling screen to trace what menu has been accessed or function used.

```
ADSL User Mode Console
Display Mode Menu
-----
1.Clear Screen Before Show Menu. <Default>
2.Scroll Screen Before Show Menu.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-2]: █
```

### 3.10 Reset Modem

This field is used to restart your ADSL modem/router.

```
ADSL User Mode Console
Main Menu
-----
1.Display Version.
2.ADSL Line Status.
3.Quick Setup Wizard.
4.Network Service Maintenance.
5.Network Status
6.System Maintenance.
7.Screen Display Mode.
8.Reset Modem.
9.Exit User Mode Console.
-----
MODEM ACTIUATING.
-----
Press '.' to Back, 'ESC' to Main Menu.
Enter Your Selection[1-9]: 8

Are You Sure to Reset Modem(y/n, Default:n, ESC:Cancel.)?y
NBfs2
Helium Ethernet / USB boot v3.3 <FLASH>
Network boot disabled: trying FLASH
NBfs2
SDRAM size = 0x800000
Checking Hardware Phase 1 Starts...
Checking Hardware Phase 1 Ok...
n
ADSL MODEM Ver63116
NP software version is 0x00000603 <reply took 23us>
Checking Flash Filing System...
Waiting initializing system services...
Checking Hardware Phase 2 Starts...
Checking Hardware Phase 2 Ok...
```

## 3. ADSL User Mode Console

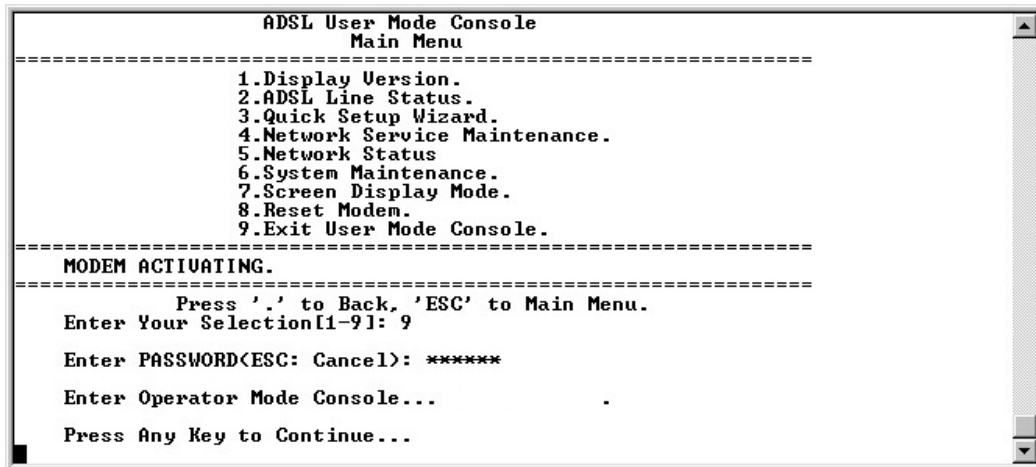
---

### 3.11 Exit User Mode Console

This field is used to enter the operator mode console. The operator mode console is for advanced function setup (optional). Once you enter the operator mode console and want to switch back to the user mode, enter the following commands:

192.168.1.1 >**home** (press <Enter>)

192.168.1.1 >**user** (press <Enter>)



```
ADSL User Mode Console
Main Menu
=====
1.Display Uersion.
2.ADSL Line Status.
3.Quick Setup Wizard.
4.Network Service Maintenance.
5.Network Status
6.System Maintenance.
7.Screen Display Mode.
8.Reset Modem.
9.Exit User Mode Console.
=====
MODEM ACTIUATING.
=====
Press \'.\' to Back, \'.ESC\' to Main Menu.
Enter Your Selection[1-9]: 9
Enter PASSWORD(ESC: Cancel): *****
Enter Operator Mode Console...
Press Any Key to Continue...
```

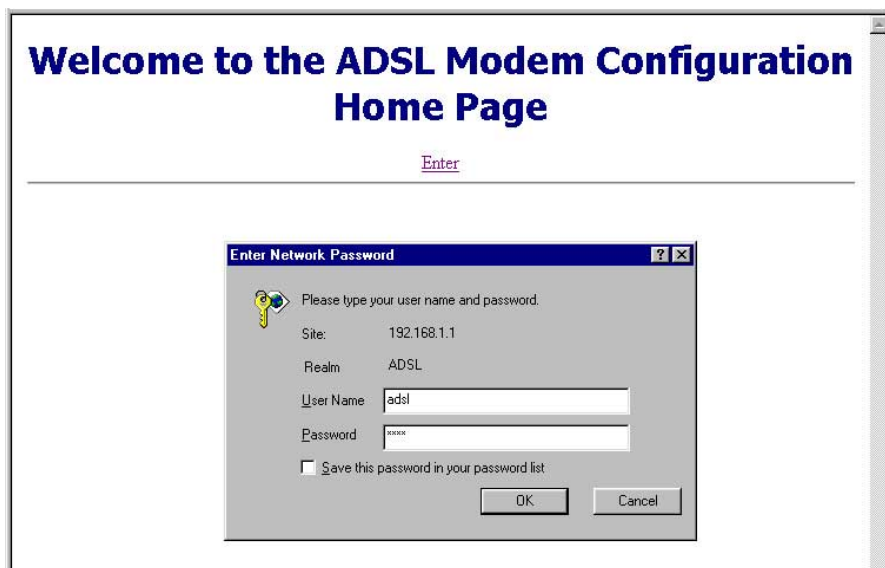
# 4. Web Console

---

Aside from the ADSL User Mode Console, your modem/router provides convenient setup screens for quick configuration and advanced configurations using the web console using the latest Microsoft® Internet Explorer and command line interface through the serial interface.

## 4.1 Accessing the Web Console

1. Start your web browser.
2. Type the Ethernet IP address of the modem/router on the address bar of the browser. Default IP address is 192.168.1.1 when either RFC 1483/Bridged or RFC/Relay nodes is used..
3. The modem/router's welcome page appears. Click **Enter**.



4. Type the user name and password when the **Enter Network Password** dialog box appears and then click OK.

The web interface for the modem/router first displays a page (**S/W Version**) showing the modem/router's **Firmware Version** and **MAC Address**.

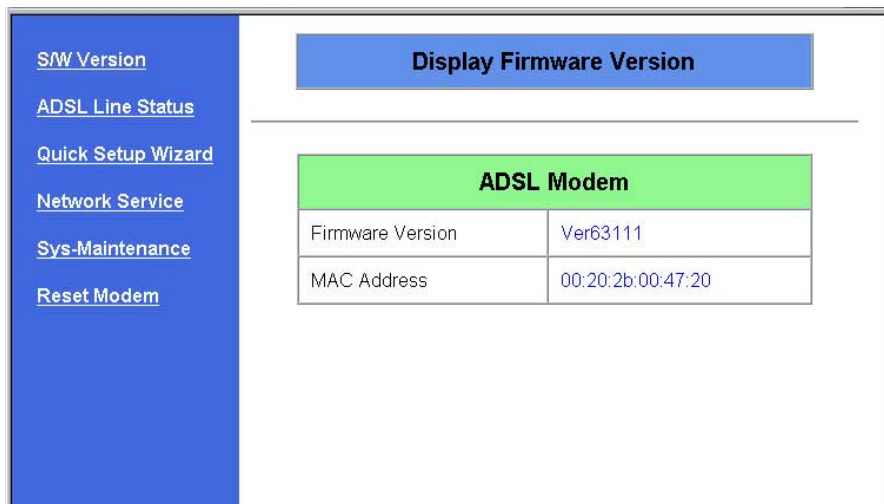
**NOTE:** Your modem/router will now act as a web server sending the pages that you requested or submit forms that you filled.

# 4. Web Console

The first and the rest of the pages also provide links to the following functions:

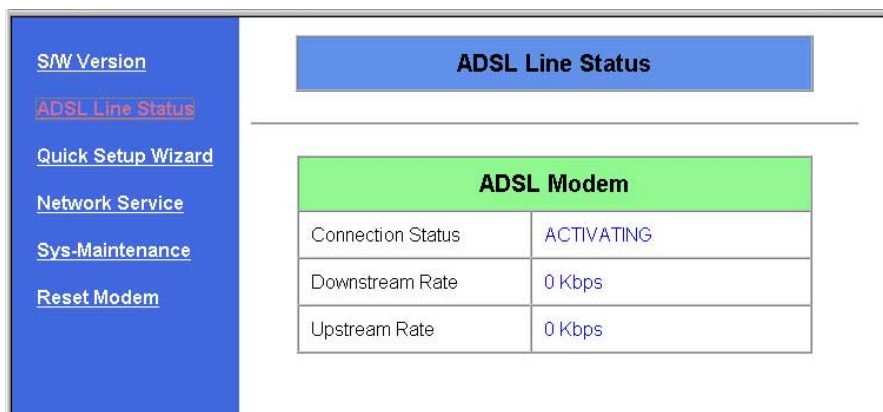
- **S/W Version:** Displays the firmware version and MAC address of your modem/router.
- **ADSL Line Status:** Displays ADSL line status.
- **Quick Setup Wizard:** Guides you through network configuration process (LAN and WAN configuration).
- **Network Service:** Provides network service maintenance options.
- **Sys-Maintenance:** Loads default settings and user management options.
- **Reset Modem:** Restarts the modem/router.

## 4.1.1 S/W Version



ADSL Modem	
Firmware Version	Ver63111
MAC Address	00:20:2b:00:47:20

## 4.1.2 ADSL Line Status



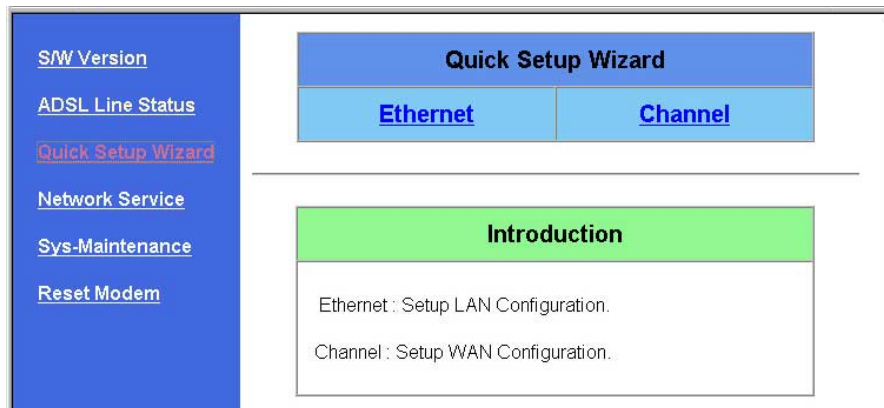
ADSL Modem	
Connection Status	ACTIVATING
Downstream Rate	0 Kbps
Upstream Rate	0 Kbps



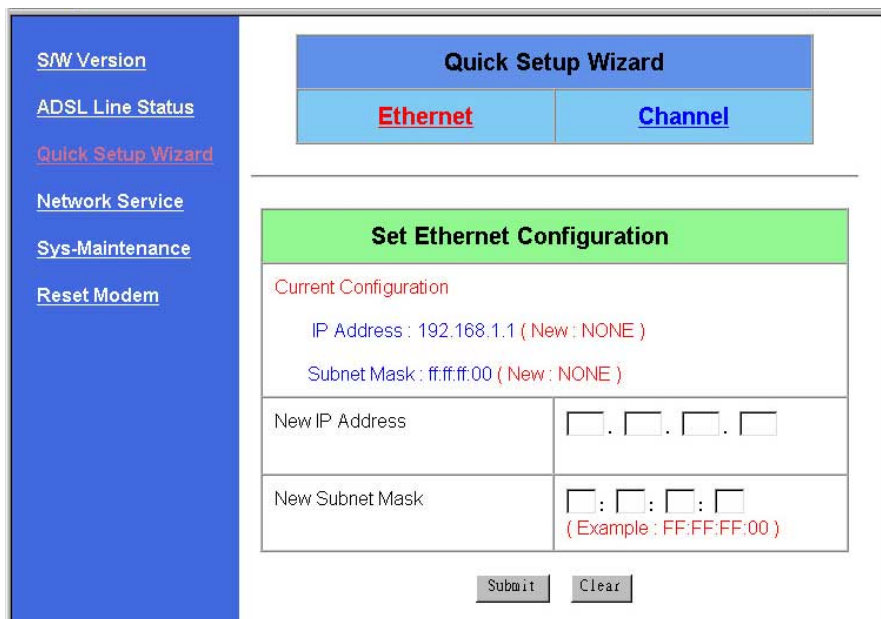
# 4. Web Console

## 4.1.3 Quick Setup Wizard

The Quick Setup Wizard lets you configure Ethernet and Channel easily and quickly your modem/router.



### 4.1.3.1 Set Ethernet Configuration



After setting the IP address and subnet mask, click **Submit**.

**IMPORTANT!** Make sure that you do not click **Reset Modem** or restart the modem while the saving process is underway.

**NOTE:** New configuration will take effect only after the modem restarts. Further changes may still be made on other configurations before you restart the modem (**Reset Modem** link).

# 4. Web Console

## 4.1.3.2 Set Channel Configuration

Your modem/router provides five channel operation modes or **Service Types**: **RFC1483 Bridged**, **RFC2516 Relay**, **RFC 1483 Routed**, **RFC2364 Routed**, and **RFC1577 Routed**.

Refer to Sections 3.3.2.1–3.3.2.5 for details on these **Service Types**.

**Quick Setup Wizard**

**Ethernet**      **Channel**

---

**Set Channel Configuration**

Action Item :

Channel No.

\*VPI ( 0 ~ 255 ) :  ,      \*VCI \*\* ( 0 ~ 65535 ) :

\*Service Type :

\* ADD and MODIFY Only  
\*\* If VPI=0, then VCI Range=32 ~ 65535

---

**All Channels Configuration List**

Channel=01, Operation Mode= MRFC1483/Bridged, VPI= 0, VCI= 32.

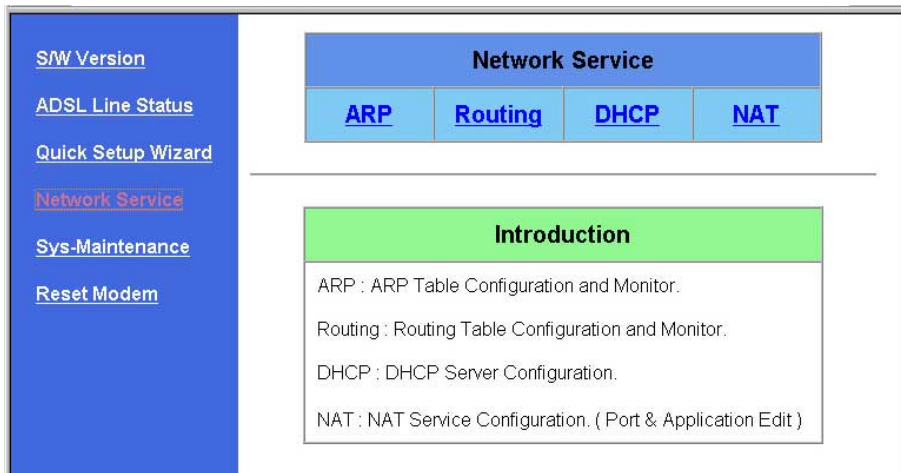
Multiplexing Mode: LLC Encapsulation.

=====

# 4. Web Console

## 4.1.4 Network Service

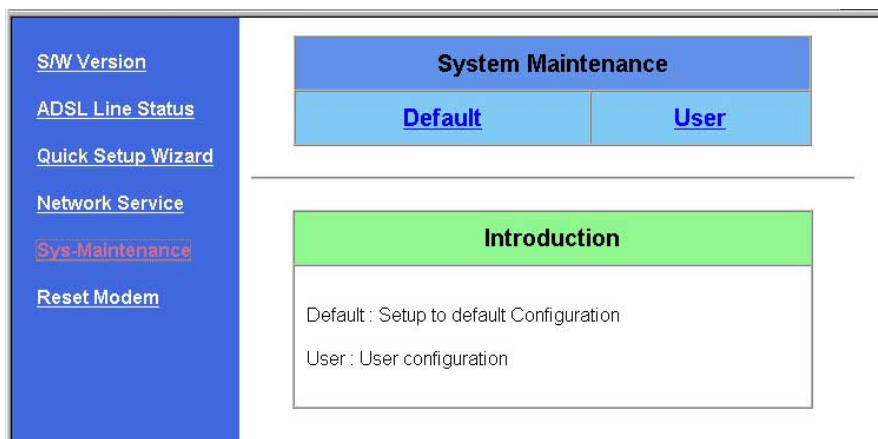
**Network Service** lets you do ARP table maintenance, routing table maintenance, DHCP server configuration, and NAT service configuration.



Refer to Section 3.4 for details on these network services.

## 4.1.5 Sys-Maintenance

**Sys-Maintenance** or **System Maintenance** lets you clear configurations made with the **Quick Setup Wizard** and add, edit, delete, or save user configurations.

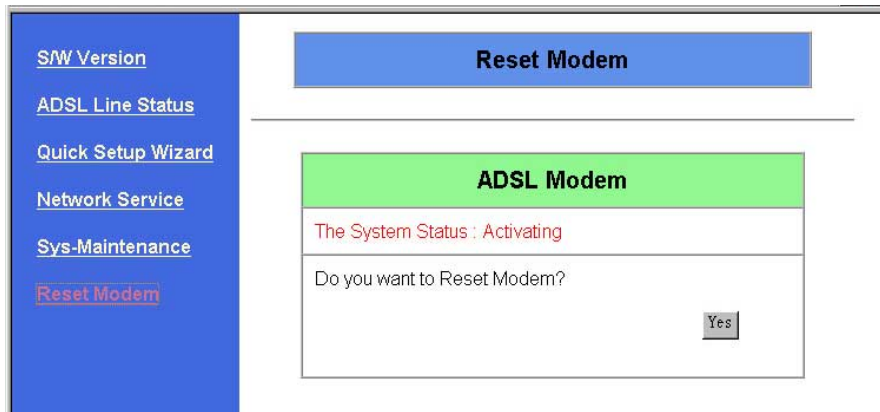


# 4. Web Console

---

## 4.1.6 Reset Modem

**Reset Modem** is used to restart your modem/router.



# 5. Software Upgrade

---

## 5.1 System Update Procedure

1. Download an updated software image file from your Service Provider and save it to your hard drive.
2. Make sure the HUB-PC switch of your ADSL Modem/Router is in the PC position (PC Link LED should be ON).
3. Make sure the modem is connected to your PC through the Ethernet interface and the Console Port on the modem is connected to your PC's COM port.
4. Run a terminal emulation program such as HyperTerminal.
5. Run a BOOTP server program. Configure your BOOTP server. Enter the update filename, the MAC address of your modem and assign an IP address to the modem.
6. Run a TFTP server program. Configure your TFTP server, for example, the root directory.

Most BOOTP and TFTP services can be used. Some software even combine both a BOOTP server and TFTP server. (The following diagram should be regarded as a general reference only. The basic procedures, however, are similar for any BootP server).

### *About BootP and TFTP Servers*

The BootP and TFTP servers are used to transfer the configuration and application information to the Gateway through the Ethernet connection.

The BootP server provides the IP address for the Gateway.

The TFTP server provides the application and configuration for the Gateway.

# 5. Software Upgrade

The screenshot shows the Cabletron TFTP/BootP Services application window. It features a menu bar with 'File' and 'Help', and a toolbar with icons for file operations. The main area contains three input fields: 'MAC Address:' with the value 'AA-BB-CC-DD-EE-FF', 'IP Address:' with '192.168.10.1', and 'File Name:' with 'C:\MYDOCU~1\ABC.BIN'. Below these is a table with three columns: MAC Address, IP Address, and File Name. The first row contains 'AA-BB-CC-DD-EE-FF', '192.168.10.1', and 'C:\MYDOCU~1\ABC.BIN'. The second row contains '11-22-33-44-55-66', '192.168.10.1', and 'C:\MYDOCU~1\ABC.BIN'. The third row contains 'AA-BB-CC-DD-EE-FF', '192.168.10.1', and 'C:\MYDOCU~1\ABC.BIN'. The third row is highlighted in blue. Below the table are buttons for 'Browse...', 'New', 'Update', 'Delete', and 'Set Arp'. The 'Bootp Reply Method' section has two radio buttons: 'Direct Reply to Bootp Requests' and 'Broadcast Reply to Bootp Requests', with the latter selected. At the bottom, there are tabs for 'Start Download', 'TFTP Server', 'BootP Server', 'Statistics', and 'View Log'. The 'BootP Server' tab is selected. The status bar at the bottom shows 'Calling Device - 1.1.1.1', 'Active: 0', and 'Outstanding: 0'. Annotations with red arrows and callouts provide instructions: 'Enter the MAC address labeled on the back of your ADSL modem.' points to the MAC Address field; 'Type the location and name of the updated FLASH file you saved on your computer.' points to the File Name field; 'Assign a new IP to the modem.' points to the IP Address field; 'Click Update when you are done' points to the Update button; 'Make sure to select Broadcast Reply to BootP Requests' points to the selected radio button; and 'Select BootP Server for configuration' points to the BootP Server tab.

Enter the MAC address labeled on the back of your ADSL modem.

Type the location and name of the updated FLASH file you saved on your computer.

Assign a new IP to the modem.

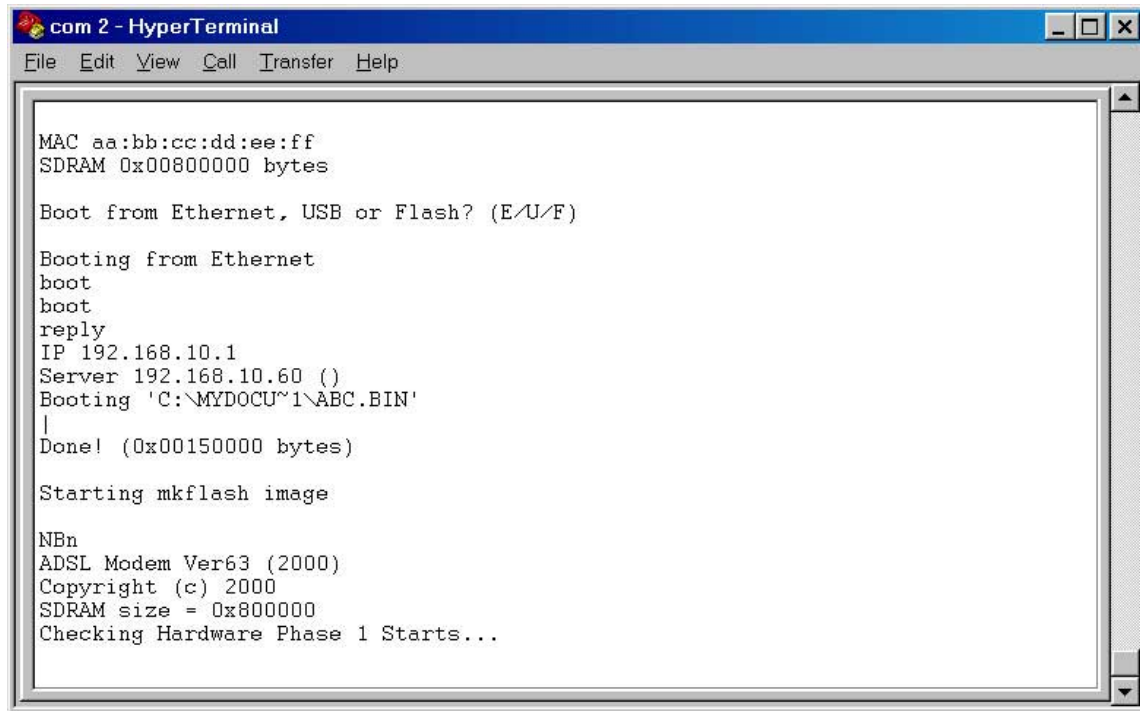
Click **Update** when you are done

Make sure to select **Broadcast Reply to BootP Requests**

Select **BootP Server** for configuration

7. Press the reset button on the modem while pressing the asterisk key <\*> in your terminal emulation program. When you are prompted to "Boot from Ethernet, USB or Flash", type E because the modem is connected to your computer through the Ethernet interface.

## 5. Software Upgrade



```
com 2 - HyperTerminal
File Edit View Call Transfer Help

MAC aa:bb:cc:dd:ee:ff
SDRAM 0x00800000 bytes

Boot from Ethernet, USB or Flash? (E/U/F)

Booting from Ethernet
boot
boot
reply
IP 192.168.10.1
Server 192.168.10.60 ()
Booting 'C:\MYDOCU~1\ABC.BIN'
|
Done! (0x00150000 bytes)

Starting mkflash image

NBN
ADSL Modem Ver63 (2000)
Copyright (c) 2000
SDRAM size = 0x800000
Checking Hardware Phase 1 Starts...
```

8. The modem will then boot from the Ethernet and automatically start downloading the software image file from the computer.
  - . When the file is successfully downloaded, the main menu of the updated console will be launched.
10. In Main Menu, enter **6** for System Maintenance.
11. In System Maintenance Menu, enter **3** for Firmware Update. The software update is now completed.
12. Enter **2** to load the Factory Default Configuration.
13. The modem will restart automatically after the default configuration is saved.
14. The software update is completed when the modem reenters the Main Menu.

# 5. Software Upgrade

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# Appendix

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## Product Compliance



### Federal Communications Commission Statement

This ADSL Modem/Router has been tested and found to comply with the limits for a class B personal computer and peripherals, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this unit does cause harmful interference to radio or television reception, which can be determined by turning the unit off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.



This product meets all safety requirements per UL-1950 Type 3 standard.



This certificate of conformity is based on an evaluation of the ADSL MODEM/ROUTER product that is in compliance with the Low Voltage Directive 73/23/EEC and the Amendment Directive 93/68/EEC.

# Appendix

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## Product Specifications

### ADSL Specifications

- Line Coding** • Discrete Multi-Tone (DMT)
- Standards Compliance** • ANSI T1.413 Issue 2 Full rate ADSL  
• ITU-T G.992.1 (G.dmt) Full rate ADSL  
• ITU-T G.992.2 (G.lite) Splitterless ADSL
- Data Transmission Rate** • **ANSI T1.413 Issue 2 and ITU-T G.992.1 (G.dmt)**  
• Downstream: 32Kbps–8192Kbps  
• Upstream: 32Kbps–640Kbps
- **ITU-T G.992.2 (G.lite)**  
• Downstream: 32Kbps–1536Kbps  
• Upstream: 32Kbps–512Kbps

### ATM Specifications

- ATM Adaptation Layer** • Supports AAL5
- ATM Signaling** • ATM Forum UNI3.0, 3.1, and UNI4.0
- VCs** • Supports multiple Permanent Virtual Circuits (PVCs)
- Service Class** • CBR, UBR
- OAM** • ITU-T I.610 OAM Principles and Functions  
(including F4/F5) loop

### Basic Protocol & RFC

- RFC 1483** Multiple protocol encapsulation over AAL5  
• Supports Logical Link Control (LLC) encapsulation  
• Supports VC-based multiplexing
- RFC 2364** PPP over AAL5  
• Supports LLC encapsulation  
• Supports VC-based multiplexing
- RFC 2516** PPP over Ethernet
- RFC 1577** Classical IP and ARP over ATM
- RFC 1661** PPP Link Control Protocol (LCP)
- RFC 1332** Internet Protocol Control Protocol (IPCP)
- RFC 1334** PPP Authentication Protocol (PAP)
- RFC 1994** PPP Challenge Handshake Authentication Protocol (CHAP)
- RFC 792** Internet Control Message Protocol (ICMP)
- 802.1 d** Spanning-tree bridge

# Appendix

---

## Routing Function

### **RFC 1058, 1723**

Routing Information Protocol (RIP, RIPv2)

- Packet Filtering for the In/Out Packets

### **RFC 1631**

Network Address Translation (NAT)

- Supports FTP, mail, Telnet, HTTP
- Supports Netmeeting

### **RFC 2131**

Dynamic Host Configuration Protocol (DHCP)

- Supports DHCP server and client

## Hardware Specification

### **User Console**

- Menu-driven user interface by means of the RS232 interface

### **Web Console**

- HTTP interface accessed by LAN interface

### **Interface port**

- **LAN:** 10Base-T Ethernet (RJ-45)
- **WAN:** ADSL line (RJ-11)
- USB (optional)
- **Console management:** RS-232

**Dimensions (H x W x D )** • 34.60 x 202.95 x 182.50mm

**Weight** • 470g

**Power Consumption** • 10W (max.)

**DC Input Voltage** • DC +5V/2A

**Temperature** • **Operating:** 0° — 40° C (32° — 104° F)

- **Non-operating:** -20° — 65° C (-4° — 149° F)

# Appendix

---

## ADSL-related Acronyms

<b>ADSL</b>	Asymmetric Digital Subscriber Line
<b>ANSI</b>	American National Standards Institute
<b>ARP</b>	Address Resolution Protocol
<b>ATM</b>	Asynchronous Transfer Mode
<b>BootP</b>	Bootstrap Protocol
<b>CHAP</b>	Challenge-Handshake Authentication Protocol
<b>DHCP</b>	Dynamic Host Configuration Protocol
<b>DMT</b>	Discrete Multi-Tone
<b>DSLAM</b>	Digital Subscriber Line Access Multiplexer
<b>IETF RFC</b>	Internet Engineering Task Force Request for Comments
<b>IPCP</b>	Internet Protocol Control Protocol
<b>IPoA</b>	IP over ATM
<b>ITU</b>	International Telecommunication Union
<b>ITU-T</b>	ITU Telecommunication Standardization Sector
<b>MAC (address)</b>	Media Access Control (address)
<b>MPoA</b>	Multiprotocol Encapsulation over ATM Adaptation Layer 5 (AAL5)
<b>NAT</b>	Network Address Translation
<b>PAP</b>	Password Authentication Protocol
<b>POTS</b>	Plain Old Telephone Service
<b>POP</b>	Point-to-Point Protocol
<b>PPPoA</b>	PPP over ATM Adaptation Layer 5
<b>PPPoE</b>	PPP over Ethernet
<b>PSTN</b>	Public Switched Telephone Network
<b>PVC</b>	Permanent Virtual Connection
<b>Telco</b>	Telephone Company
<b>TCP/IP</b>	Transmission Control Protocol/Internet Protocol
<b>TFTP</b>	Trivial File Transfer Protocol
<b>VCI</b>	Virtual Circuit Identifier
<b>VPI</b>	Virtual Path Identifier
<b>WAN</b>	Wide Area Network