

D-Link[®]

DSL-300G
ADSL Modem
User's Guide

(August 2002)

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 - f – Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
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FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning equipment 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.
- Consult the dealer or an experienced radio/TV technician for help.

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About This User's Guide

This user's guide provides instructions on how to install the DSL-300G ADSL Modem and use it to connect a computer or Ethernet LAN to the Internet.

If you are using a computer with a functioning Ethernet port, you can use the Quick Installation Guide to quickly establish your ADSL connection and access the Internet.

Guide Overview

Introduction – Describes the Modem and its key features. Provides an introduction to ADSL. Lists standards to which the Modem complies. Contains a packing list.

Hardware Installation – Discusses how to connect the Modem to an Ethernet LAN.

First Time Set Up – Provides information on how to configure the Modem and establish the ADSL connection using the web-based manager.

Web-based Configuration – Describes how to use the web-based manager to change Modem settings and configure additional virtual connections (PVCs).

Appendix A - Technical Specifications – Lists the technical specifications of the Modem, including standards compliance.

Appendix B - Low Pass Filters – Contains illustrated examples of how to use low pass filters.

Before You Start

Please read and make sure you understand all the prerequisites for proper installation of your new Modem. Have all the necessary information and equipment on hand before beginning the installation.

Installation Overview

The procedure to install the Modem can be described in general terms in the following steps:

1. Gather information and equipment needed to install the device. Before you begin the actual installation make sure you have all the necessary information and equipment.
2. Install the hardware, that is, connect the cables (Ethernet and telephone) to the device and connect the power adapter.
3. Check the IP settings on your computer and change them if necessary so the computer can access the web-based software built into the Modem.
4. Use the web-based management software to configure the device to suit the requirements of your ADSL account.

Requirements

To install and use the Modem you need a computer equipped with an Ethernet port (such as an Ethernet NIC) and a web browser. You may also need to use information given to you by your ISP or ADSL service provider. This information is stored in the Modem's memory and used to establish the ADSL connection and confirm your identity. Read the next page for more details about these requirements.

Low Pass Filters

Since ADSL and telephone services share the same copper wiring to carry their respective signals, a filtering mechanism may be necessary to avoid mutual interference. A low pass filter device can be installed for each telephone that shares the line with the ADSL line. These filters are easy to install passive devices that connect to the ADSL device and/or telephone using standard telephone cable. Ask your service provider for more information about the use of low pass filters with your installation. Appendix B provides illustrated examples of how to install two common styles of low pass filters.

Operating System

The DSL-300G uses an HTML-based web interface for setup and management. The web configuration manager may be accessed using any operating system capable of running web browser software.

Web Browser

Any common web browser can be used to configure the Modem using the web configuration management software. The program is designed to work best with more recently released browsers such as Microsoft Internet Explorer® version 5.0, Netscape Navigator® version 4.7, or later versions. The web browser must have JavaScript enabled. JavaScript is enabled by default on many browsers. Make sure JavaScript has not been disabled by other software (such as virus protection or web user security packages) that may be running on your computer.

Ethernet Port (NIC Adapter)

Any computer that uses the Modem must be able to connect to it through the Ethernet port on the Modem. This connection is an Ethernet connection and therefore requires that your computer be equipped with an Ethernet port as well. Most notebook computers are now sold with an Ethernet port already installed. Likewise, most fully assembled desktop computers come with an Ethernet NIC adapter as standard equipment. If your computer does not have an Ethernet port, you must install an Ethernet NIC adapter before you can use the Modem. If you must install an adapter, follow the installation instructions that come with the Ethernet NIC adapter.

Additional Software

It may be necessary to install software on your computer that enables the computer to access the Internet (through computers operated by your ISP or service provider). Additional software must be installed if you are using what is called a “bridged” connection. For a bridged connection, the information needed to make and maintain the Internet connection is stored on your computer, not in the Modem. This type of connection is similar to the arrangement used for analog dial-up modems, but the connection speed is much faster. Various terms are to describe a bridged ADSL connection including the term “RFC 1483 Bridge” which is used in this guide.

If your ADSL service is delivered through a PPP (Point to Point Protocol) connection, the information needed to establish and maintain the Internet connection is stored in the Modem. In this case, it is not necessary to install software on your computer.

Account Information (User Name and Password)

Most users will need to supply a user name and password used to access the service provider's network (and ultimately, the Internet). This information is stored either in the Modem's memory or on your computer depending on the type of ADSL connection you have.

ACCOUNT INFORMATION (PPP Connections Only)
User Name:
Password:

Additional PVC Settings

If you are using multiple virtual connections it will be necessary to provide additional VPI and VCI values for the device. These numbers define a unique route used on the ATM backbone of the WAN. Chapter 5 contains instruction on how to set up additional PVCs for accounts using more than one virtual connection.

Packing List

Open the shipping carton and carefully remove all items. In addition to this User's Guide, ascertain that you have:

1. One DSL-300G ADSL Ethernet Modem
2. One CD-ROM with this User's Guide and the Quick Installation Guide
3. One twisted-pair telephone cable used for ADSL connection
4. One straight-through Ethernet cable
5. One AC power adapter suitable for your electric service
6. One Quick Installation Guide hardcopy



Introduction

This section provides a brief description of the Modem, its associated technologies and a list of Modem features.

What is ADSL?

Asymmetric Digital Subscriber Line (ADSL) is broadband access technology that provides high-speed digital data transmission and interactive multimedia applications for business and residential customers over ordinary telephone line.

ADSL greatly increases the signal carrying capacity of copper telephone lines without interfering with regular telephone services. For the ADSL user, this means faster downloads and more reliable connectivity. ADSL devices enable high-speed Internet access without any loss of quality or disruption of telephone services.

ADSL provides a dedicated service over a single telephone line operating at speeds of up to 8 Mbps downstream and up to 640 Kbps upstream. A secure point-to-point connection is established between the user and the central office of the service provider.

D-Link ADSL devices incorporate the recommendations of the ADSL Forum regarding framing, data format, and upper layer protocols.

Modem Description and Operation

The DSL-300G ADSL Modem is designed to provide a simple, cost-effective and secure ADSL Internet connection for your small to medium-sized private network. The ADSL connection technology enables many interactive multi-media applications such as video conferencing and collaborative computing.

The Modem is easy to install and use. The DSL-300G connects to an Ethernet LAN or single computer via a standard Ethernet interface. The ADSL connection is made using ordinary twisted-pair telephone line with standard RJ-11 connectors.

Modem Features

The DSL-300G ADSL Ethernet Modem utilizes the latest ADSL enhancements to provide a reliable Internet portal suitable for most small to medium sized offices. DSL-300G advantages include:

- Data rates up to 8 Mbps for downstream and 640 Kbps for upstream
- Friendly web-based graphical user interface for configuration and management
- Supports up to eight simultaneous virtual connections for a single ADSL account
- Supports T1.413 issue 2, G.dmt and G.lite standards
- Auto-handshake and rate adaptation for different ADSL flavors
- Widest range of DSLAM interoperability
- Supports bridged Ethernet over ATM (RFC 2684)
- Built-in MIBs for SNMP management
- Upgradeable firmware through TFTP

Front Panel

Place the Modem in a location where the LED indicators can be easily viewed.

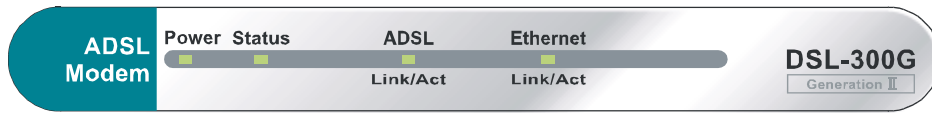


Figure 1. Front Panel Display with LED Indicators

The LED Indicators read as follows:

Power	Steady green light indicates the unit is powered on.
Status	Blinking green indicates normal operation.
ADSL: Link/Act	Steady green light indicates a valid ADSL connection. This will light after the ADSL negotiation process has been settled. Blinking green light indicates an active WAN session.
Ethernet: Link/ Act	Steady green light indicates a valid Ethernet connection. Blinking green indicates an active Ethernet session.

Rear Panel

All cable connections to the Modem are made at the rear panel. The factory-reset button is located here as well.

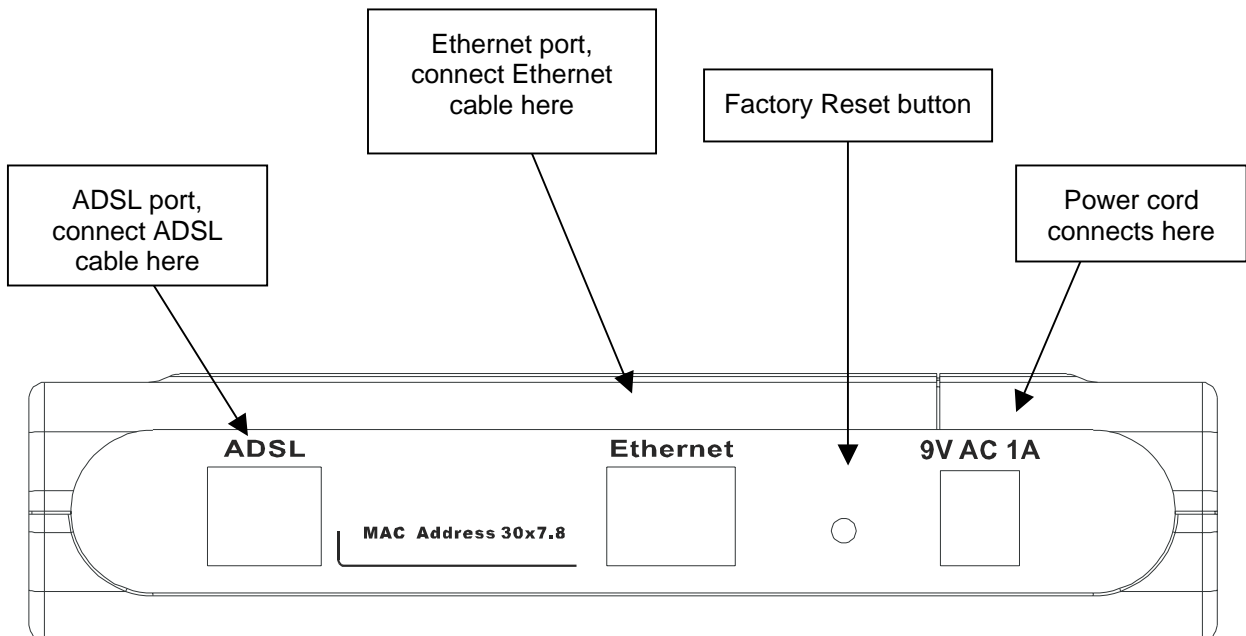


Figure 2. Rear Panel Cable and Power Connections

Hardware Installation

In this chapter you will learn about the various connections you will need to make in order to use the Modem.

When selecting the location for the Modem, allow ample room to access the connections on the rear panel. For convenience, try to place the Modem near your computer so you can monitor the LED indicators. Allow some space above the Modem for ventilation to avoid problems with overheating.

Connect ADSL Line

Use the twisted-pair ADSL cable (standard telephone cable) included with the Modem to connect it to your telephone line. Simply plug one end of the cable into the ADSL port (RJ-11 receptacle) on the rear panel of the Modem and insert the other end into the wall jack.

Computer to Modem Connection

You can connect the Modem directly to a 10/100BASE-TX Ethernet adapter card (NIC) installed on a PC using the Ethernet cable provided as shown in this diagram.

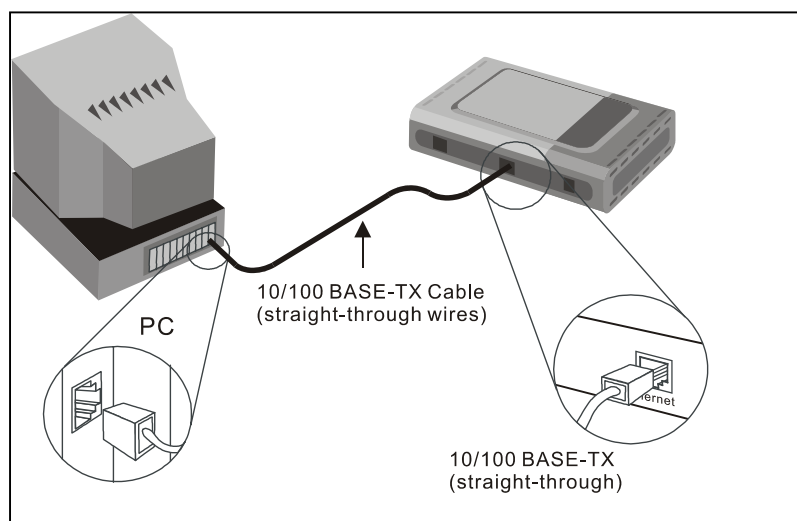


Figure 3. PC to Modem Connection

Connect Ethernet LAN to Modem

The Modem may be connected to any 10/100BASE-TX Ethernet LAN. Any connection to an Ethernet concentrating device such as a switch or hub must operate at a speed of 10/100 Mbps only. When connecting the Modem to any Ethernet device that is capable of operating at speeds higher than 10Mbps, be sure that the device has auto-negotiation (NWay) enabled for the connecting port.

Use standard twisted-pair cable with RJ-45 connectors. The RJ-45 port on the Modem is a crossed port (MDI-X). Follow standard Ethernet guidelines when deciding what type of cable to use to make this connection. When connecting the Modem directly to a PC or server use a normal straight-through cable. You should use a crossed cable when connecting the Modem to a normal (MDI-X) port on a switch or hub. Use a normal straight-through cable when connecting it to an uplink (MDI-II) port on a hub or switch. The Ethernet Link LED indicator will indicate a valid connection.

The rules governing Ethernet cable lengths apply to the LAN to Modem connection. Be sure that the cable connecting the LAN to the Modem does not exceed 100 meters.

Hub or Switch to Modem Connection

Connect the Modem to an uplink port (MDI-II) on an Ethernet hub or switch with a straight-through cable as shown in the diagram below:

If you wish to reserve the uplink port on the switch or hub for another device, connect to any on the other MDI-X ports (1x, 2x, etc.) with a cross-wired cable or use crossover adapter.

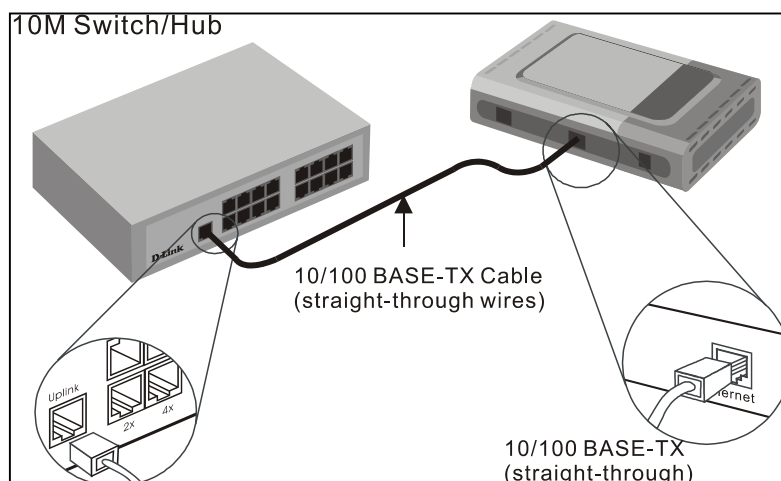


Figure 4. Switch to Modem Connection

Power On Modem

To power on the device:

1. Insert the AC Power Adapter cord into the power receptacle located on the back of the Modem and plug the adapter into a nearby power source.
2. You should see the Power LED indicator light up and remain lit.

First Time Set Up

Now that the Modem is powered on and connected to your computer you are ready to proceed to the next step. However, before going further, make certain you have a valid link to the Modem. You can check this by looking at the Ethernet Link LED indicator on the front panel of the Modem. If the LED is green you have a link, if it is dark, check both ends of the cable to make sure it is firmly connected to the Modem and your computer's Ethernet port.

A valid Ethernet link means that your computer is physically linked to the Modem, however, you will not be able to access the web-based configuration manager until the computer can "see" the device. In order to see the Modem both your computer and the Modem must be in the same IP "neighborhood" or subnet on your local area network (LAN). You will need to check the IP settings of your system and, if necessary, change them so the computer and Modem are in the same subnet. Follow the instructions in this chapter to configure the IP settings of your system.

For some Modem users, it will not be necessary to change any settings on the Modem for the device to work properly. If you received a CD with software for your computer, the Modem may be ready to use. Follow the instructions of your service provider regarding any connection software for your computer. If you need to configure the **VPI**, **VCI** or other connection settings, read the section titled **ATM VC Configuration** in the next chapter on page 16.

The first time you set up the Modem it is best to first establish the ADSL connection using one non-networked computer. This way you can verify that the ADSL service is functioning and that you are able to communicate with the device. Once the initial ADSL connection is established, you can connect the device to the Ethernet LAN.

IP Settings



To access the Modem's management software that uses a web-based (HTML) interface for configuration, you will probably have to change the LAN IP settings of your computer. The LAN IP settings are what your browser uses to find and communicate with the Modem. The Modem has a default IP address of 10.1.1.1 and a subnet mask of 255.0.0.0 these numbers are the LAN IP settings of the Modem. You will need to change the IP settings on your computer so the IP address is 10.1.1.10 and the subnet mask is 255.0.0.0. If you do not know how to change IP settings for your operating system, read the following section or consult the Help directory or the user's guide included with your system.

Configuring IP Settings

Follow these instructions to configure the IP settings for the operating system installed on your computer.





Important: If you are using this Modem to provide Internet access for more than one computer, you can use these instructions later to change the IP settings for the other computers. However you cannot use the same IP address since every computer must have its own IP address that is unique on the local network.

Windows XP



1. In the Windows task bar, click the Start button, and then click **Control Panel**.
2. Double-click the Network Connections icon.
3. In the LAN or High-Speed Internet window, right-click on icon corresponding to your network interface card (NIC) and select **Properties**. (This icon may be labeled *Local Area Connection*).
4. The Local Area Connection dialog box displays with a list of currently installed network items.
5. Make sure that the check box to the left of the item labeled Internet Protocol TCP/IP is checked, and click .
6. In the Internet Protocol (TCP/IP) Properties dialog box, click the button labeled **Use the following IP address**:
7. Type in IP settings as follows, IP address: **10.1.1.10**
8. and Subnet mask: **255.0.0.0**
9. Click  twice to confirm your changes, and close the Control Panel.

Windows 2000

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the Start button, point to **Settings**, and then click **Control Panel**.
2. Double-click the Network and Dial-up Connections icon.
3. In the Network and Dial-up Connections window, right-click the Local Area Connection icon, and then select **Properties**.
4. The Local Area Connection Properties dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 3.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click .
6. In the Select Network Component Type dialog box, select **Protocol**, and then click .
7. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click .
8. You may be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.
9. If prompted, click  to restart your computer with the new settings.

Next, configure IP information:

1. In the Control Panel, double-click the Network and Dial-up Connections icon.
2. In Network and Dial-up Connections window, right-click the Local Area Connection icon, and then select **Properties**.
3. In the Local Area Connection Properties dialog box, select **Internet Protocol (TCP/IP)**, and then click .
4. In the Internet Protocol (TCP/IP) Properties dialog box, click the button labeled **Use the following IP address**:
5. Type in IP settings as follows, **IP address: 10.1.1.10** and Subnet mask: **255.0.0.0**
6. Click  twice to confirm and save your changes, and then close the Control Panel.


Windows Me


In the Windows task bar, click the Start button, point to **Settings**, and then click **Control Panel**.

Double-click the Network and Dial-up Connections icon.

In the Network and Dial-up Connections window, right-click the Network icon, and then select **Properties**.

The Network Properties dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 3.

If Internet Protocol (TCP/IP) does not display as an installed component, click .

In the Select Network Component Type dialog box, select **Protocol**, and then click .



Select **Microsoft** in the Manufacturers box.

Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click .






You may be prompted to install files from your Windows Me installation CD or other media. Follow the instructions to install the files.

If prompted, click  to restart your computer with the new settings.



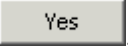
Next, configure the IP information:

1. In the Control Panel, double-click the Network and Dial-up Connections icon.
2. In Network and Dial-up Connections window, right-click the Network icon, and then select **Properties**.
3. In the Network Properties dialog box, select **TCP/IP**, and then click .
4. In the TCP/IP Settings dialog box, click the **Specify IP address** option.
5. Type in IP settings as follows, **IP address: 10.1.1.10** and Subnet mask: **255.0.0.0**
6. Click  twice to confirm and save your changes, and then close the Control Panel.



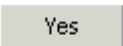

Windows 95, Windows 98 and Windows 98SE

1. First, check for the IP protocol and, if necessary, install it:
2. In the Windows task bar, click the Start button, point to **Settings**, and then click **Control Panel**.
3. Double-click the Network icon.
4. The Network dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled. Skip to step 2.
5. If TCP/IP does not display as an installed component, click .
6. The Select Network Component Type dialog box displays.
7. Select **Protocol**, and then click .
8. The Select Network Protocol dialog box displays.
9. Click on **Microsoft** in the Manufacturers list box, and then click **TCP/IP** in the Network Protocols list box.
10. Click  to return to the Network dialog box, and then click  again.
11. You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
12. Click  to restart the PC and complete the TCP/IP installation.



Next, configure the IP information:

1. Open the Control Panel window, and then click the Network icon.
2. Select the network component labeled TCP/IP, and then click .
3. If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
4. In the TCP/IP Properties dialog box, click the IP Address tab.
5. Click the **Specify an IP address** option.
6. Type in IP settings as follows, **IP address: 10.1.1.10** and Subnet mask: **255.0.0.0**
7. Click  twice to confirm and save your changes.
8. You will be prompted to restart Windows.
9. Click .

Windows NT 4.0

1. First, check for the IP protocol and, if necessary, install it:
2. In the Windows NT task bar, click the Start button, point to **Settings**, and then click **Control Panel**.
3. In the Control Panel window, double click the Network icon.
4. In the Network dialog box, click the Protocols tab.
5. The Protocols tab displays a list of currently installed network protocols. If the list includes TCP/IP, then the protocol has already been enabled. Skip to step 3.
6. If TCP/IP does not display as an installed component, click .
7. In the Select Network Protocol dialog box, select **TCP/IP**, and then click .
8. You may be prompted to install files from your Windows NT installation CD or other media. Follow the instructions to install the files.
9. After all files are installed, a window displays to inform you that a TCP/IP service called DHCP can be set up to dynamically assign IP information.
10. Click  to continue, and then click  if prompted to restart your computer.

Next, configure the IP information:

1. Open the Control Panel window, and then double-click the Network icon.
2. In the Network dialog box, click the Protocols tab.
3. In the Protocols tab, select **TCP/IP**, and then click .
4. In the Microsoft TCP/IP Properties dialog box, click the **Specify an IP address** option.
5. Type in IP settings as follows, **IP address: 10.1.1.10** and Subnet mask: **255.0.0.0**
6. Click  twice to confirm and save your changes, and then close the Control Panel.

Access the Web Configuration Manager

Once the computer has IP settings that allow it to access the web-based configuration software, you can change the settings to enable the Modem to connect to the Internet.

If the browser software on the computer you are using is configured to use a proxy server for Internet access, it is necessary to first disable the proxy connection.

Check for Proxy service in Windows Internet Explorer:

In Windows Internet Explorer, you can check if a proxy server is enabled using the following procedure:

1. In Windows, click on the START button, go to Settings and choose Control Panel.
2. In the Control Panel window, double-click on the Internet Options icon.
3. Click the Connections tab and click on the LAN Settings button.
4. Verify that the "Use proxy server" option is NOT checked. If it is checked, click in the checked box to deselect the option and click OK.

To use the web-based management software, launch your web browser software and use the LAN IP address of the Modem to access the management software. The default LAN IP address of the Modem is used in the Address bar of your web browser window. Type in **http://** followed by the default IP address, **10.1.1.1** in the address bar of the browser. The URL in the address bar should read: **http://10.1.1.1**

A new window appears prompting you for a user name and password needed to gain access the web configuration manager.

Use the default user name: **admin** and password: **admin** for first time set up. You can change the password once you have established the ADSL connection. The user name and password allows any computer on the same subnet as the Modem to access the web configuration manger. This password can also be used to Telnet to the device through the Ethernet or the Internet interfaces. To change this password, see the next chapter.

<p>Note: Do not confuse the user name and password used to access the web-based manager with the ADSL account user name and password needed for PPP connections to access the ADSL or network service provider's network.</p>
--

The first web page you will see when you successfully login is the System View page. This page can be used later, once you have a connection established. For now however, the information contained here is not useful. The menu you need to establish the ADSL connection is the Quick Configuration menu. This menu is located in the Home folder located on the left hand side of your browser window. Open this folder by clicking on it twice.

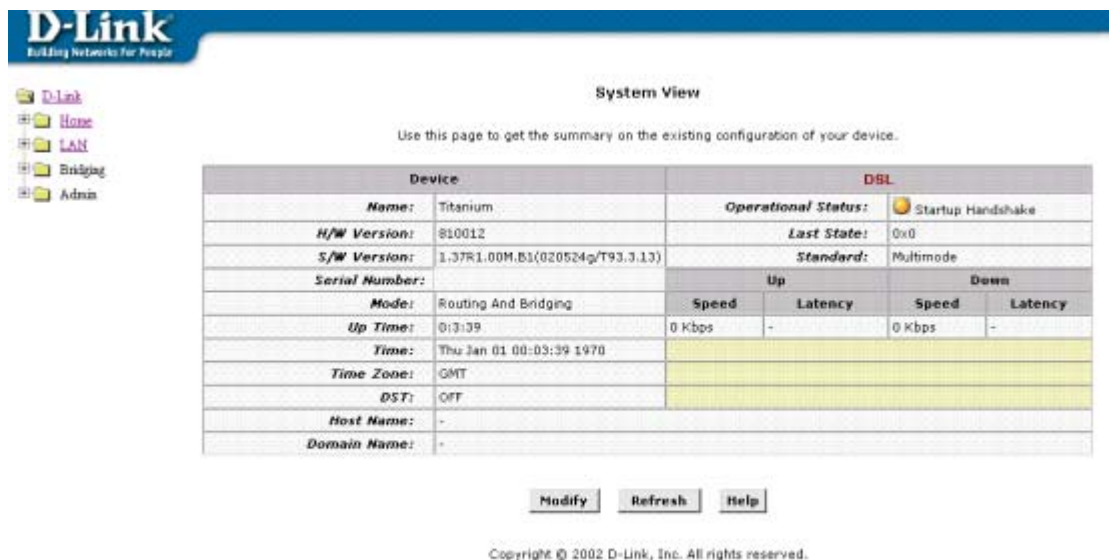


Figure 5. Web-based Manager Main Menu – First Time Log On

In the Home folder you will see two hyperlinks (see Figure 6. Quick Configuration). You need to access the Quick Configuration menu; double-click on the hyperlink for this menu. Once you have accessed the menu you can change the Modem's configuration settings as instructed by your ISP. You will then need to save or "Submit" the settings to the flash memory of the Modem. Finally you will use another menu to commit the new settings so they can be used by the Modem, and restart the device. This last step is done in the Commit & Reboot menu. If you have been given special connection software to install on your computer, you can install it while the Modem is rebooting.

Configure WAN Connection (ADSL Service Connection)

Click on the [Quick Configuration](#) hyperlink to access the configuration settings you need to establish the ADSL connection.

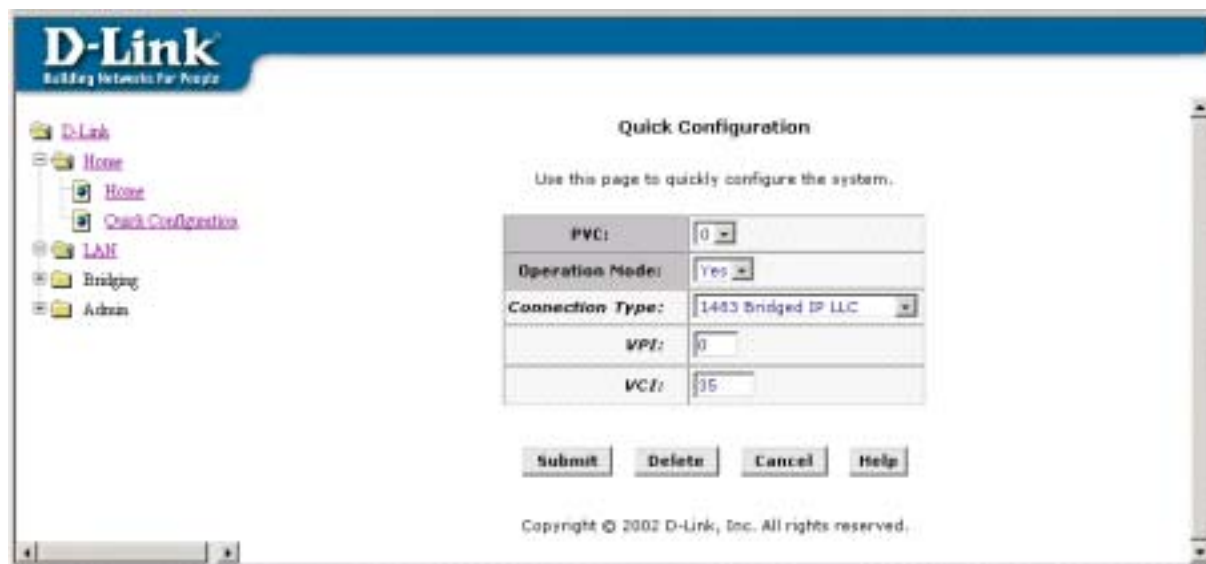


Figure 6. Quick Configuration

In the Quick Configuration window configure the following settings:

Operation Mode	Use this pull-down menu to enable a PVC connection profile. Choose "Yes" to activate the selected PVC or "No" to disable it. Default Operation Mode = Yes for PVC 0. For PVC 1 to PVC 7, default is <i>No</i> .
Connection Type	Choose "Bridged IP LLC" or "Bridged IP VC-Mux" form the pull-down menu. Default Connection Type = <i>Bridged IP LLC</i> .
VPI	Type in the VPI value for the selected PVC. Default = 0.
VCI	Type in the VCI value for the selected PVC. Default = 35.
PVC	Select the PVC for configuration and click the Submit button to refresh the screen. Then you may proceed to change the other parameters. Up to 8 PVCs can be defined. Default = 0.

Submit Configuration Settings


When you have defined the Quick Configuration settings, click **Submit** to save the settings in temporary memory. These settings and all other configuration changes made to the Modem must be Committed (to non-volatile memory) and the Modem must be rebooted for the changes to go into effect. The Modem will negotiate the ADSL connection automatically upon rebooting.

Commit & Reboot



Figure 6. Commit and Reboot Menu

To save current configuration settings as they have been submitted click the Commit button. A message informs you when the settings have been successfully committed to memory. You must now reboot the device to put the settings into effect. Make sure *Reboot* is selected in the **Reboot Mode:** pull-down menu and click **Reboot**.

 WARNING!	<p>Do not reboot the device using the Reset button on the back panel of the Modem to activate new changes. This button resets the device settings to the FACTORY default values. Any custom settings will be lost.</p>
--	--

After the Modem has rebooted it will begin to negotiate the ADSL connection for your account. This will normally take a few seconds. When the ADSL connection has been successfully established, the ADSL Link LED indicator will light steady green. If the ADSL Link indicator does not light after a minute or so access the web configuration manager and double check the settings.

Note: Some accounts use PPP connection software for their Internet service connection. If you have been given a CD with PPP software, install this now as instructed by your service provider. After the Modem has rebooted it will negotiate the ADSL connection. For PPP (PPPoE and PPPoA) connections software is installed on the computer directly connected to the computer. This software is used to verify the identity of your account and establish a secure Point-to-Point connection to the service provider's network infrastructure.

Web-based Configuration

This chapter describes how to use the embedded web-based management software to configure the Modem for additional PVC connection profiles, to change the LAN IP address, to change the global WAN IP address and to perform other management functions.

Manager Interface Layout

The management software used for the Modem initially presents the Quick Configuration menu pictured below when you first log in. On the left side you see four folders, the hyperlinked Setup folder contains the Quick Configuration menu. The LAN folder (or hyperlink) contains a single page used for assigning LAN IP settings to the Modem so it may be used on an Ethernet LAN. The Bridging folder contains three pages, the Bridging page, the ATM VCC page and the EoA page. These are used to configure settings that allow the Modem to operate on the service provider's network. If you are using the Modem for multiple virtual connections, these menus are also used to configure these additional virtual connections (PVCs).



Figure 7. Modem Web-based Quick Configuration Manager GUI

Commonly Used Buttons

The following buttons are used throughout the web management application.

Submit	Stores in <i>temporary</i> system memory any changes you have made on the current page.
Refresh	Redisplays the current page with updated statistics or settings.
Clear	On pages that display accumulated statistics, this button resets the statistics to their initial values.
Help	Launches the online help for the current topic in a separate browser window. Help is available from the main topic pages.

Common Buttons Used in Configuration Manager

Change LAN IP Settings

The LAN IP address identifies the LAN port (eth-0) as a node on your network; that is, its LAN IP address must be in the same subnet as the computers on your LAN.

You can change the default LAN IP address and Net Mask to suit the IP address arrangement you want to set up for your LAN. Click the [LAN](#) hyperlink view the LAN Configuration menu.

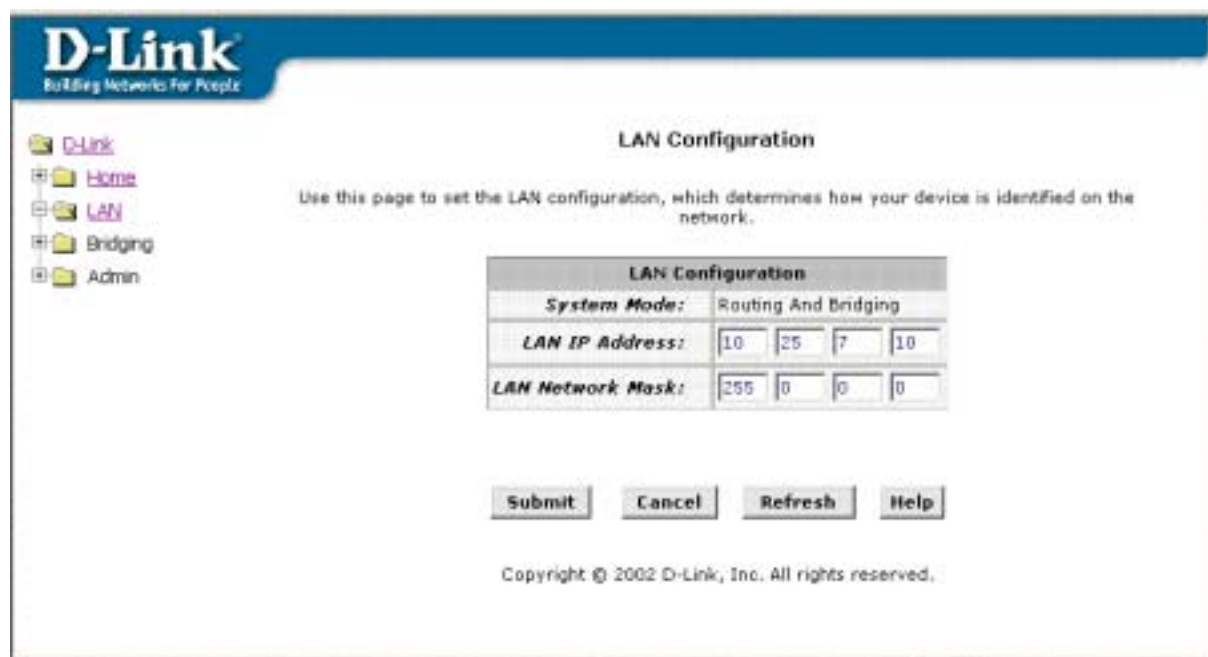


Figure 8. LAN Configuration

To change the Modem Ethernet IP address, click **Refresh** and type in the new settings as described below.

<p>LAN IP Address</p>	<p>The IP address your computers use to identify the device's LAN port.</p> <p>Note that the public IP address assigned to you by your ISP is not your LAN IP address. The public IP address identifies the WAN (ADSL) port on your ADSL/Ethernet router to the Internet.</p> <p>Type in the IP address for the Ethernet LAN interface.</p> <p>Default = 10.1.1.1</p>
<p>LAN Network Mask</p>	<p>The LAN Network mask identifies which parts of the LAN IP Address refer to your network as a whole and which parts refer specifically to nodes on the network.</p> <p>Type in the Subnet Mask for the Ethernet LAN IP interface.</p> <p>Default = 255.0.0.0</p>

Click **Submit** to save the settings in temporary memory. When you are done making changes to the configuration settings, open the **Commit & Reboot** menu and click **Commit** to save your changes to permanent memory.

ATM VC Configuration

When computers access the Internet using the Modem, data is exchanged with your network service provider or ISP through a complex network of telephone switches, Internet routers, servers, and other specialized hardware. These various devices communicate using a common language, or protocol, called *Asynchronous Transfer Mode* (ATM). On the Wide Area Network (WAN) that connects you to your ISP, the ATM protocol performs functions like those that the Ethernet protocol performs on your LAN.

This section describes how to configure the ATM *virtual channel connection* (VCC). The VCC properties define the path the Modem uses to communicate with your ISP over the ATM network.

To view your current configuration, log into the Configuration Manager, and then click the ATM VCC button in the Bridging folder. The ATM VCC Configuration page displays, as shown below:

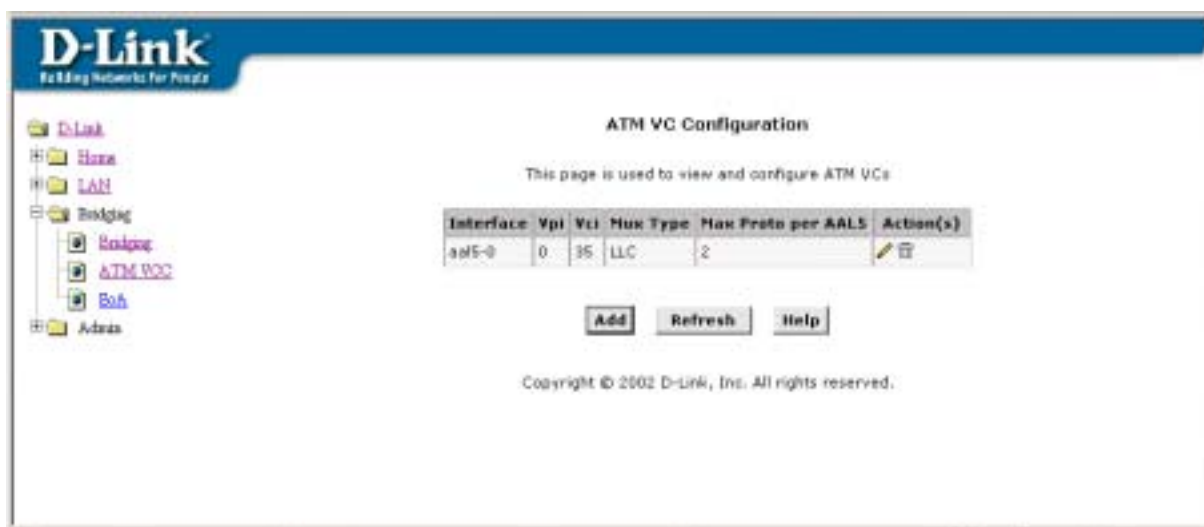




Figure 9. ATM VCC Configuration Menu

To define AAL5 settings for a new virtual connection, click the Add button. To modify an existing AAL5 setting, click the pencil icon () for that set. When you choose to add a new set or modify an existing set, a new menu appears (see below). To delete an existing AAL5 setting, click the trashcan () for that set.

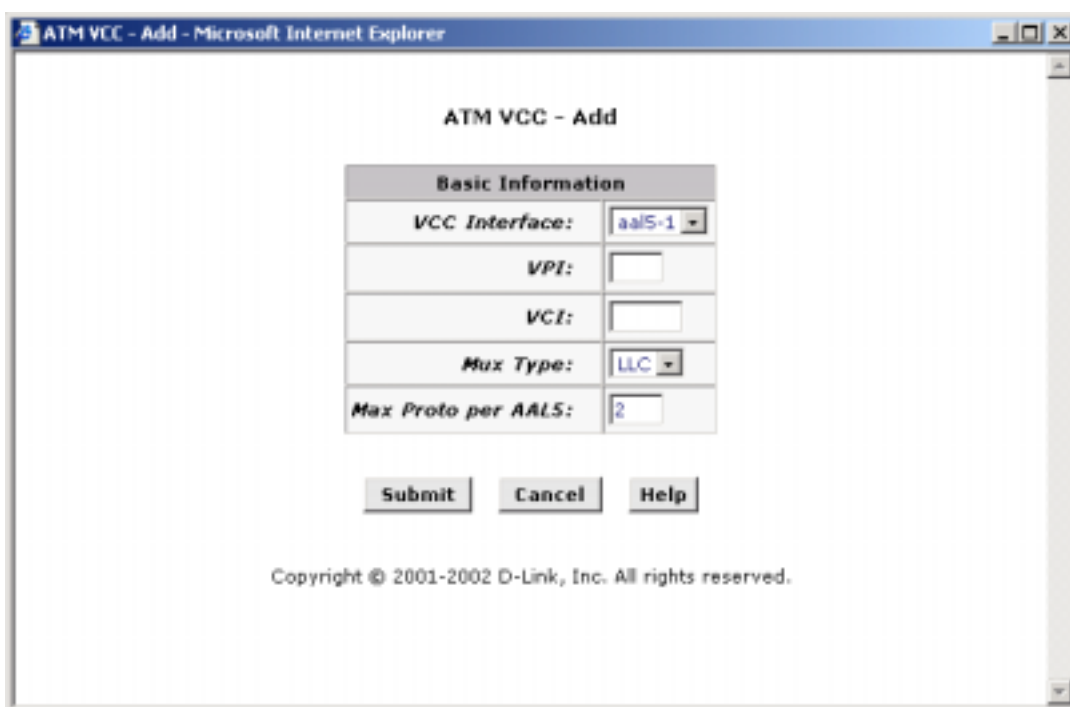


Figure 10. ATM VCC – Add (or Modify) Parameters

To Add or Modify AAL5 Parameters define the following:

VCC Interface	<p>The name of the lower-level interface on which this VC operates. The low-level interface names are pre-configured in the software and identify the type of traffic that can be supported, such as data or voice. Internet data services typically use an AAL5-type interface.</p> <p>If you are adding a new VCC Interface, choose the AAL5 set you want to define from the pull-down menu (Add menu only).</p>
VPI:	<p>This setting (together with the VCI and Mux Type) identifies a unique ATM data path for communication between the Modem and service provider.</p> <p>If you are adding a new VCC Interface or changing the existing VPI value, type in the new VPI value.</p>
VCI:	<p>If you are adding a new VCC Interface or changing the existing VCI value, type in the new VCI value.</p>
Mux Type:	<p>Select VC-Mux or LLC from pull-down menu.</p>
MAX Proto per AAL5	<p>This setting indicates the number of higher-level interfaces that the VC can support (the higher level interfaces can be PPP, EoA, or IPoA interfaces). The Modem supports up to eight however you must make arrangements your service provider for this additional service.</p>

Click **Submit** to save the settings in temporary memory. When you are done making changes to the configuration settings, open the **Commit & Reboot** menu and click **Commit** to save your changes to permanent memory.

Additional Virtual Connections

In order to use more than one PVC setting, it will be necessary to define two set of parameters for each virtual connection. The Bridge parameters and the ATM VC parameters. First use the ATM VC Configuration menu to define new AAL5 settings, and then use the EOA Configuration menu to establish Ethernet over ATM settings.

EOA Configuration

Ethernet-over-ATM (EOA) is a commonly used protocol for data transfer between Ethernet LANs and wide-area networks that use the ATM protocol. Telecommunications industry networks often use the ATM in the within the their primary infrastructure or backbone. Network service providers that sell DSL services often use the EOA protocol for data transfer with their customers' DSL modems.

EOA is implemented to create a bridged connection between a DSL modem and the ISP. In a bridged connection, data is shared between the ISP's network and their customer's as if the networks were on the same physical LAN. Bridged connections do not use the IP protocol. EOA can also be configured to provide a routed connection with the ISP, which uses the IP protocol to exchange data.

This section describes how to configure an Ethernet-over-ATM interface on the Modem, if one is needed to communicate with your ISP.

Before creating an EOA interface or modifying the default settings, contact your ISP to determine which type of protocol they use.

Important: Your ISP may use a protocol other than EOA for communication with the Modem, such as the point-to-point protocol (PPP). One type of PPP, named PPP over Ethernet (PPPoE), actually works "on top" of the EOA protocol. The other type, PP over ATM (PPPoA), does not. However, if your ISP uses either type of PPP, you **do not** need to separately create an EOA interface. If your service provider has given you PPP software for installation on your computer, follow the instructions given to you by your ISP and do not change the EOA settings.

To view your current EOA configuration, log into the Configuration Manager, click the EoA button in the Bridging folder, the EOA Configuration page appears:

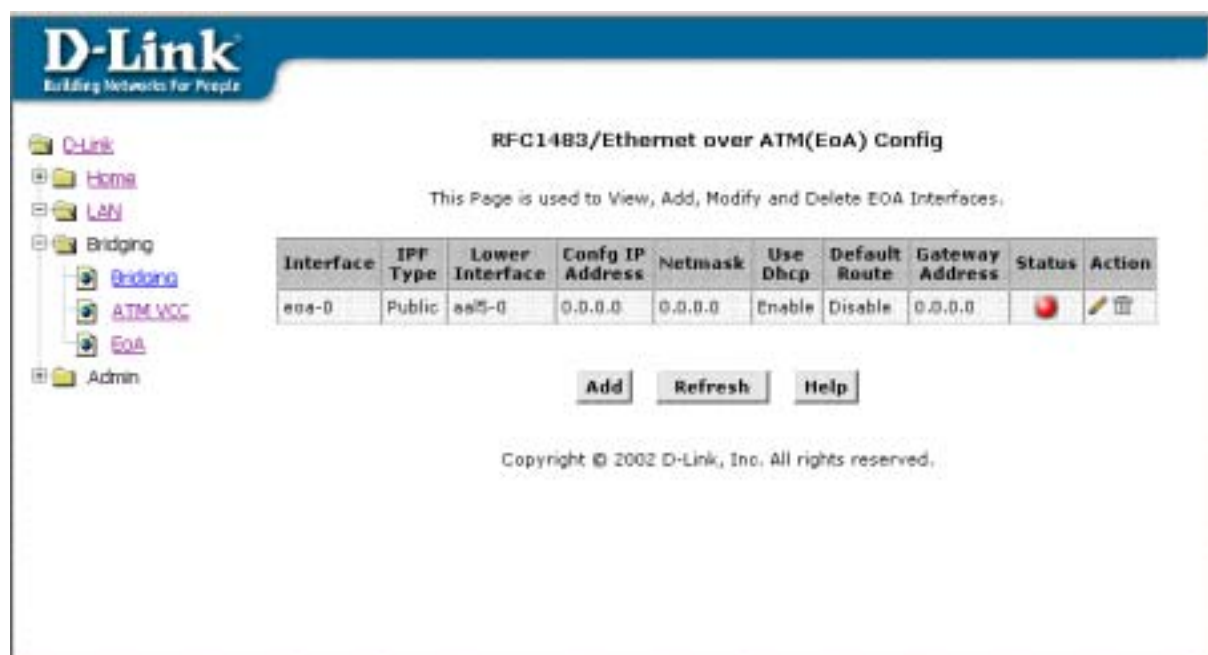


Figure 11. EOA Configuration

To define EOA settings for a new virtual connection, click the Add button. To modify an existing EOA setting, click the pencil icon () for that set. When you choose to add a new set or modify an existing set, a new menu appears (see below). To delete an existing AAL5 setting, click the trashcan () for that set.



Figure 12. EOA Interface – Modify

To Add or Modify AAL5 Parameters define the following:

EOA Interface	This is used (by the Modem) to identify the EOA interface. If you are adding a new EOA interface, choose the EOA set you want to define from the pull-down menu (Add menu only).
Conf. IP Address:	The IP address assigned to the interface. If the interface will be used as a simple bridge to your ISP, then you do not need to specify IP information. If you enable DHCP for this interface, then the Configured IP address will serve only as a request to the DHCP server. The actual address that is assigned by the ISP may differ if this address is not available. Some ISPs use static IP settings that are manually assigned to each account. If your service provider instructs you to configure a Static IP Address, type in the global IP Address for this EOA interface.
Net Mask:	If you are assigned a Static IP Address and Net Mask, type in the Net Mask for this EOA interface.
Use DHCP:	When checked, this setting instructs the device to accept IP information assigned dynamically by your ISP's DHCP server. If the interface will be used for bridging with your ISP, leave this checkbox unselected. Select Enable or Disable for DHCP service.

Click **Submit** to save the settings in temporary memory. When you are done making changes to the configuration settings, open the **Commit & Reboot** menu and click **Commit** to save your changes to permanent memory.

Bridge Configuration

The Modem can be configured to act as a bridging device between your LAN and your ISP. Bridges are devices that enable two or more networks to communicate as if they are two segments of the same physical LAN. This section describes how to configure the Modem to operate as a bridge.

Important: Before changing the bridge configuration, check with your ISP to determine the type of connection used to exchange data with their client's DSL modems (such as Ethernet bridging).

A bridge is a device used to connect two or more networks. A bridge device is able to learn the unique manufacturer-assigned hardware identifier (MAC Address) of each computer or device on either or both networks to which it is connected. It learns that some of the MAC addresses represent computers attached via one of the device's interfaces and other MACs represent computers connected via other interfaces. For example, the MAC addresses of your home computers are learned through (or associated with) the Ethernet port, and the MACs of your ISP's computers are attached via the WAN (DSL) port. It stores the MAC addresses and the interface associated with each MAC in its *bridge forwarding table*.

When the bridge receives a data packet, it compares its destination MAC to the entries in the bridge forwarding table. When the packet's destination MAC address matches one of the entries, it forwards the packet through the interface that connects to the corresponding network. The bridge does not send the data directly to the receiving computer, but broadcasts it to the receiving network, making it available to any node on that network. On the receiving network, the packet is delivered in a form recognized by the network protocol (Ethernet for the LAN side of the Modem) and delivered to its destination.

When the bridge does not recognize a packet's destination MAC address, it broadcasts the packet through all of its interfaces – to both networks.

To add or change bridge configuration settings, log into the Configuration Manager and click on the Bridging button in the Bridging folder.

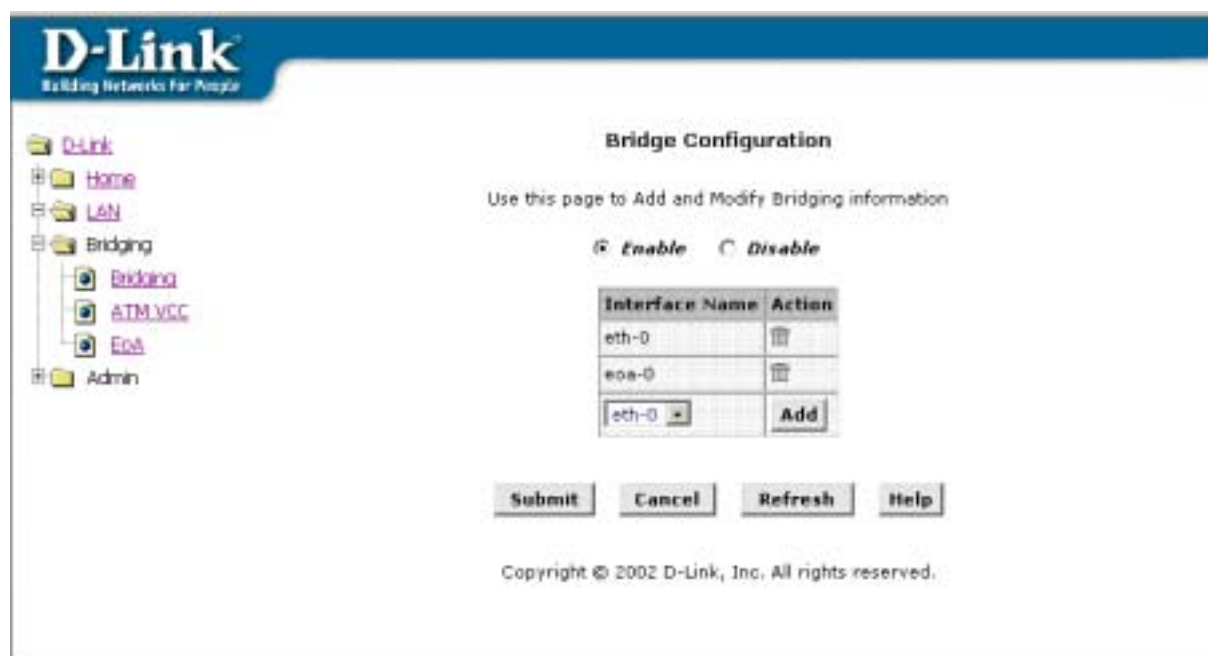


Figure 13. Bridge Configuration Menu

To define Bridge settings for a new virtual connection, click the Add button. To modify an existing Bridge setting, click the pencil icon (✎) for that set. When you choose to add a new set or modify an existing set, a new menu appears (see below). To delete an existing setting, click the trashcan (🗑) for that set.

To enable bridging, you simply specify the device interfaces on which you want to bridge data, and then enable bridging mode by clicking the *Enable* option.

Click **Submit** to save the settings in temporary memory. When you are done making changes to the configuration settings, open the **Commit & Reboot** menu and click **Commit** to save your changes to permanent memory.

Changing the Manager Password

The first time you log into the Web Configuration Manager, use the default user ID and password (*orion99* and *orion99*). The system allows only one user ID and password. Only the password can be changed.

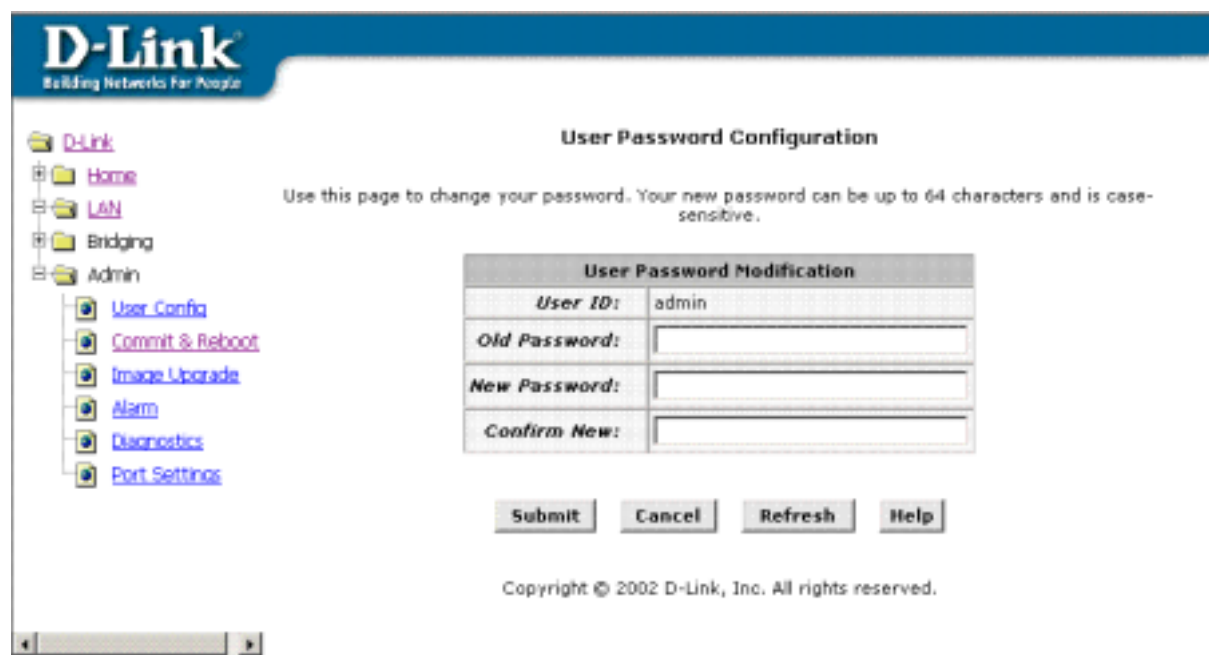


Figure 14. Change User Password

To change user name and password used for management privileges, log into the Configuration Manager, click on the User Config button in the Admin folder and change these settings:

User ID:	This lists the current User ID (user name).
Old Password:	Type in the password used with the current User ID.
New Password:	Type in the new password.
Confirm New:	Type in the new password a second time for confirmation.

Click **Submit** to save the settings in temporary memory. When you are done making changes to the configuration settings, open the **Commit & Reboot** menu and click **Commit** to save your changes to permanent memory.

Commit & Reboot

Whenever you use the Web Configuration Manager to change system settings, the changes are initially placed in temporary storage (called random access memory or RAM). Your changes are made effective when you submit them, but will be lost if the device is reset or turned off.

To save your changes for future use, you can use the commit function. This function saves your changes from RAM to permanent storage (called flash memory).

Note: When you *Submit* changes, they are activated immediately, but they are only saved until the device is reset or turned off. You must *Commit* the changes to save them permanently.

Use the Commit & Reboot menu to commit changes to permanent storage.

After you have submitted all the configuration changes you want to make for this session, click on the Commit & Reboot button in the Admin folder to view the Commit & Reboot page.

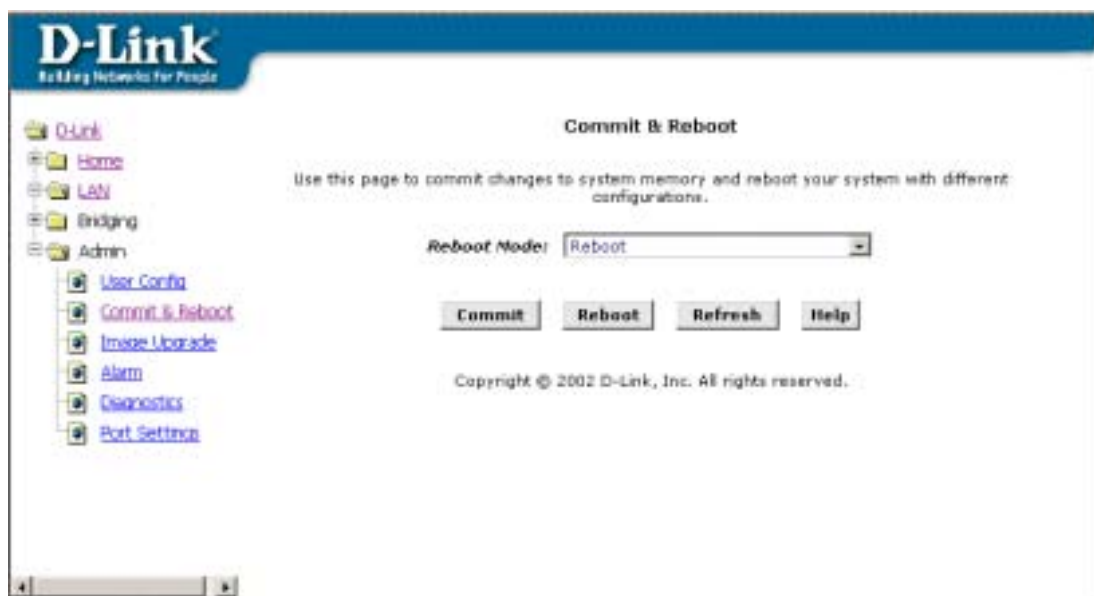


Figure 15. Commit and Reboot

To save current configuration settings as they have been submitted click **Commit**. (Disregard the selection in the Reboot Mode drop-down list; it does not affect the commit process.)

The changes are now saved to permanent storage (flash memory), and the previous settings are copied to backup storage so that they can be recalled if your new settings do not work properly (see the rebooting instructions below).

Reboot the Modem

To reboot the device using the Configuration Manager, display the Commit & Reboot page, select the appropriate reboot mode from the drop-down menu, and then click **Reboot**.



Do not reboot the device using the Reset button on the back panel of the Modem to activate new changes. This button resets the device settings to the manufacturer's default values. Any custom settings will be lost.

Reboot Options

Select the reboot option from the pull-down menu. The options are a described here:

Reboot	A simple reboot. This will put into effect any configuration changes that have been successfully committed to flash memory.
Reboot From Last Configuration	This will reboot the device using the current settings in permanent memory, including any changes you just committed.
Reboot From Backup Configuration	This will reboot the device using settings stored in backup memory. These are the settings that were in effect before you committed new settings in the current session.
Reboot From Default Configuration	This reboots the device to default settings provided by your ISP or the manufacturer. Choosing this option erases any custom settings.

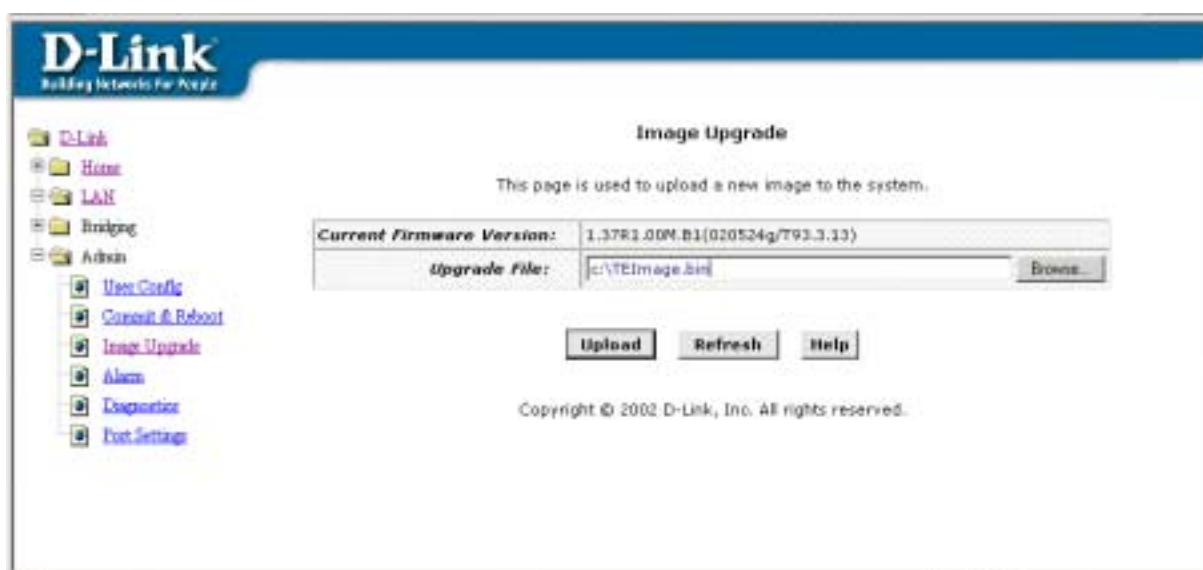


Figure 16. Image (Firmware) Upgrade

Upgrade File:	Type in the full path and file name of the firmware file to be uploaded. Alternatively you may click the Browse button to search for the file on your system.
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When the filenames have been entered, click the Upload button to commence loading the firmware file. If the upload is successful, a message informs you that it was successfully loaded and asks you to reboot the device. Go to the Reboot menu and perform a simple reboot. If the firmware does not load, an error message informs you to try the upload again. Check the filenames and attempt to upload again. If the file still will not load, reboot the device and try again.

Diagnostics

The diagnostics feature executes a series of test of your system software and hardware connections. Use this feature when working with your ISP to troubleshoot problems.

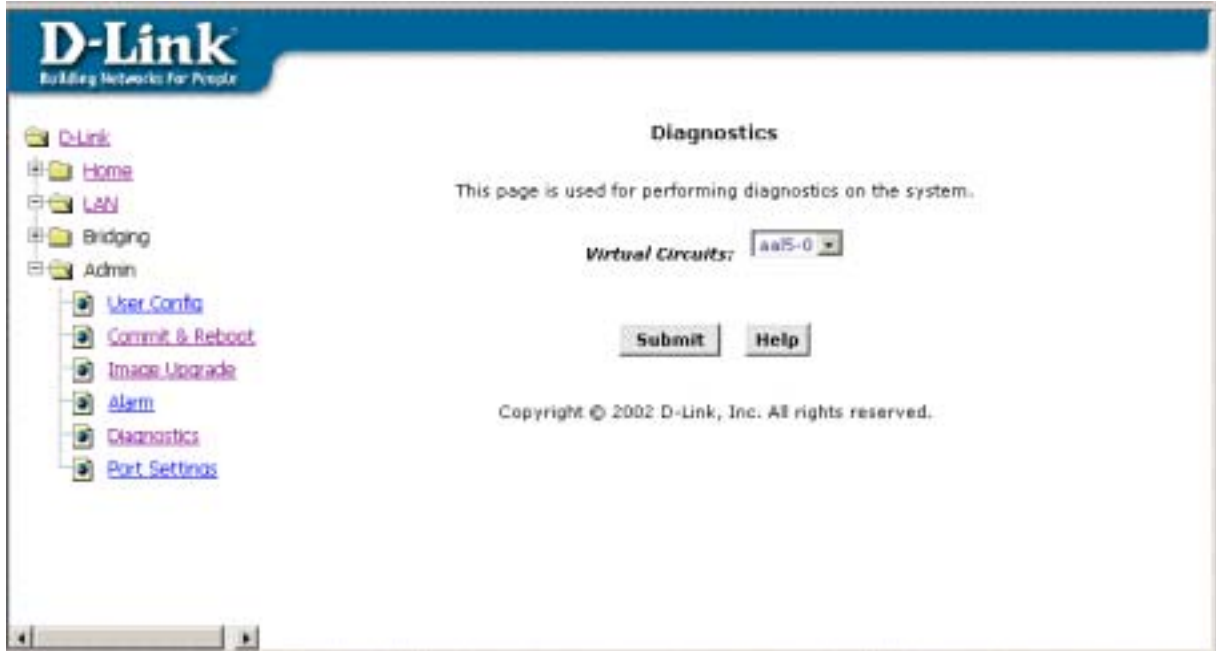


Figure 17. Diagnostics Window

Select the Virtual Circuit and click **Submit**. A message will appear informing you if the loop test succeeded or failed.

The diagnostics utility will run a series of test to check whether the device's connections are up and working. This takes only a few seconds. The program reports whether the test passed or failed. A test may be skipped if the program determines that no suitable interface is configured on which to run the test.

Alarms

The Configuration Manager can be used to view alarms that occur in the system. Alarms, also called traps, are caused by a variety of system events, including connection attempts, resets, and configuration changes.

Although you will not typically need to view this information, it may be helpful in working with your ISP to troubleshoot problems you encounter with the device. (Despite their name, not all alarms indicate problems in the functioning of the system.)

To display the Alarm page, log into the Configuration Manager, click the Alarm button in the Admin folder.

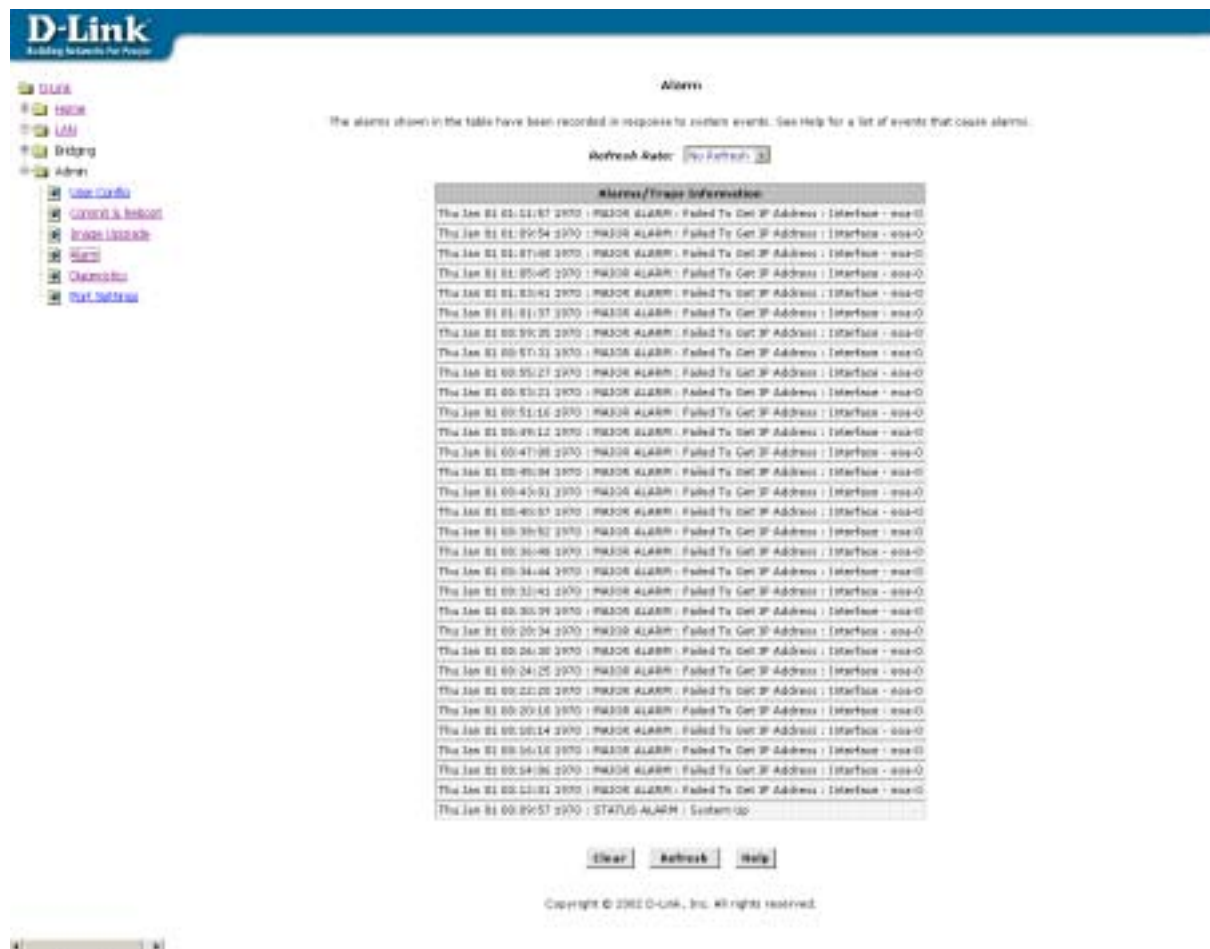


Figure 18. Alarm/Trap Information Page

Listed under Alarm/Trap Information are the time and date of each recorded alarm event, the type of alarm, and a brief statement indicating its cause.

To remove all entries from the list, click **Clear**. New entries will begin accumulating and will display when you click **Refresh**.

If you want to display an automatically updating Alarm table, you can click **Alarm Monitor** to display a separate Alarm Monitor window.



Figure 19. Alarm Monitor (Separate Window)

System View

The System View menu located in the Home folder is the first menu you view when you access the web-based configuration manager.

System View

Use this page to get the summary on the existing configurations of your device.

Device		DDBL	
Name:	Titanium	Operational Status:	Startup Harddisk
W/W Version:	810012	Last State:	On
S/W Version:	1.3761.884.801320524q793.3.170	Standard:	Fullmode
Serial Number:		Up	Down
Mode:	Routing And Bridging	Speed	Latency
Up Time:	0:0:39	0 Kbps	--
Time:	Thu Jan 01 00:00:39 1970		
Time Zone:	GMT		
DEFS:	OFF		
Host Name:	-		
Domain Name:	-		

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Figure 20. System View

The System View menu contains read-only information that may be useful for troubleshooting and for evaluating performance of the device or the connection. Information that appears in this menu is described in the table below.

Device Information	
Name:	Name of ADSL controller chip set.
H/W Version:	Hardware version of device.
S/W Version:	Firmware version number
Serial Number:	Device serial number
Mode:	Operation mode of device, <i>Bridge, Router, Bridge and Router</i>
Up Time:	Time since last start up or reboot.
Time Zone:	Time zone in which device is located.
DST:	Daylight Savings Time, if your time zone uses DST, this should be enabled. Yes indicates DST is enabled.
Host Name:	Host or user name used for access and verification.
Domain Name:	Domain name on which device is operating
DSL Information	
Operational Status:	Icon indicates status according to color. Yellow = currently negotiating connection; Green = normal operation; Red = ADSL connection lost



Technical Specifications

GENERAL		
STANDARDS:	ITU G.992.1 (G.dmt) ITU G.992.2 (G.lite)	ITU G.994.1 (G.hs) ANSI T1.413 Issue # 2
DATA TRANSFER RATE:	G.dmt full rate: Downstream up to 8 Mbps Upstream up to 640 Kbps G.lite: Downstream up to 1.5 Mbps Upstream up to 512 Kbps	
MEDIA INTERFACE EXCHANGE:	RJ-11 port ADSL telephone line connection RJ-45 port for 10/100 BASE-T Ethernet connection	

Physical and Environmental	
DC inputs:	120 VAC to 230 VAC 60Hz 24W
Power Adapter:	9 V AC 1A
Power Consumption:	9 Watts Max.
Operating Temperature:	5° to 40° C (41° to 104° F)
Humidity:	5 to 95% (non-condensing)
Dimensions:	142mm x 105 mm x 30 mm
Weight:	300gm
EMI:	FCC Class B
Safety:	CSA International Mark



Low Pass Filters

Most ADSL clients will be required to install a simple device that prevents the ADSL line from interfering with regular telephone services. These devices are low pass filters and are variously referred to as in-line filters, micro-filters, line splitters or split line filters. They are easy to install and use standard telephone connectors and cable.

For some ADSL clients, a telecommunications technician will be sent to the client's premises to modify the telephone line, usually at the point where the telephone line enters the building. If a technician has divided or split your telephone line into two separate lines - one for regular telephone service and the other for ADSL - then you do not need to use any type of filter device. Follow the instructions given to you by your ADSL service provider, ISP or telephone company about where and how you should connect the Modem to the ADSL line.

In-Line Filters

Two common styles of low pass filters are shown in this section, the first is an in-line filter and is illustrated in Figure 16 below. In-line filters are easy-to-install, in-line devices, which attach to the telephone cable between the telephone and wall jack.

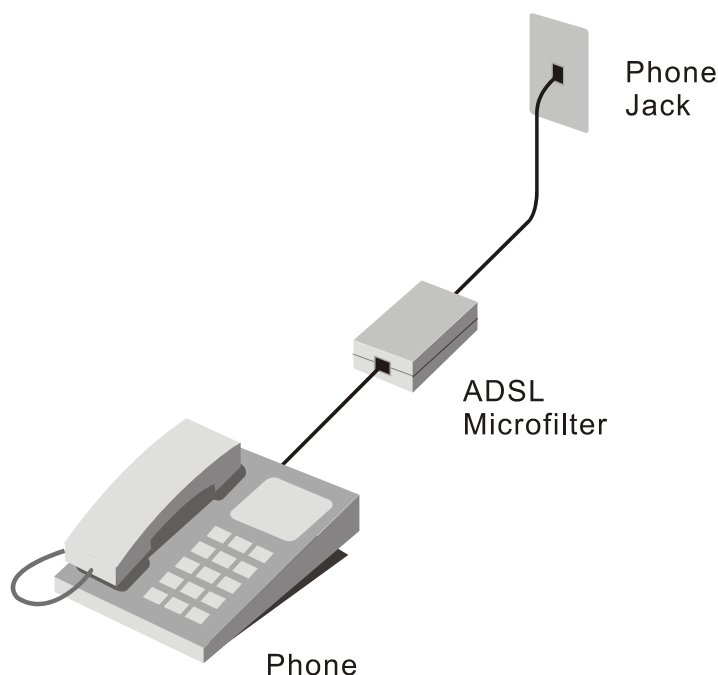


Figure 21. In-line Filter Installation

Note: Do not install an in-line filter between the Modem and the telephone jack. In-line filters are only intended for use with regular telephones, Fax machines and other regular telephone devices.

Split Line Filter

If you are instructed to use a split line style filter you must install the device between the Modem and the phone jack. Use standard telephone cable with standard RJ-11 connectors. The splitter has three RJ-11 ports used to connect to the wall jack, the Modem and if desired, a telephone or telephone device. The connection ports are typically labeled as follows:

Line - This port connects to the wall jack.

ADSL – This port connects to the Modem.

Phone – This port connects to a telephone or other telephone device.

The diagram below illustrates the proper use of the split line style filter.

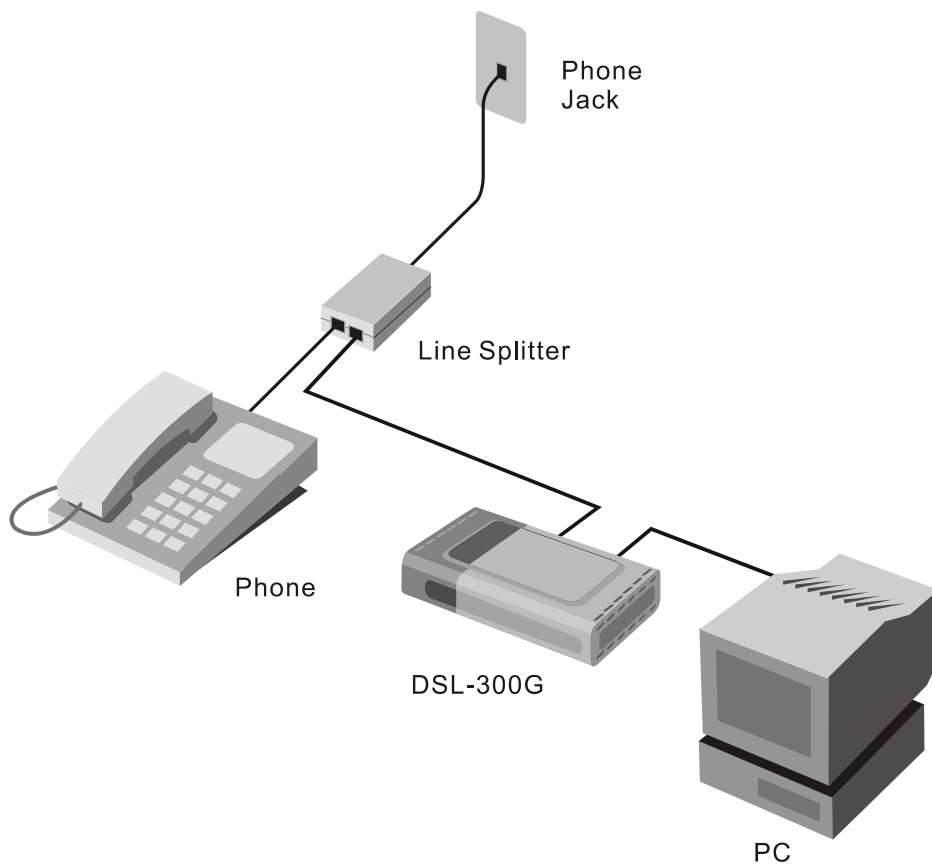


Figure 22. Split Line Filter Installation

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(* Applies to adapters only)

Product was purchased from:

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Reseller's full address: _____

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4. What network operating system(s) does your organization use ?

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 Banyan Vines DECnet Pathwork Windows NT Windows NTAS Windows '95
 Others _____

5. What network management program does your organization use ?

D-View HP OpenView/Windows HP OpenView/Unix SunNet Manager Novell NMS
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