D-Link®

DSL-500 ADSL Router
Quickstart Guide

Installation and setup for a single computer

For LAN installation, see the User's Guide

6DSL500Q..03

Overview

Use this guide to establish an initial ADSL connection for one PC equipped with an Ethernet NIC (Network Interface Card). It is recommended that you install and configure the device using one non-networked computer. This allows you to verify that the ADSL line is functioning and that you are able to communicate with the device. Once the initial ADSL connection is established, you can proceed to build an Ethernet LAN around the device or incorporate it into an existing LAN. This guide is not intended as a thorough text describing all the functions, features and capabilities of the Router. For a more complete discussion of the Router, its functions and some of the concepts associated with its operation, please refer to The User's Guide located on the CD-ROM disc.

Before You Begin

Make sure you have assembled all the equipment and information needed to set up the Router and establish the initial ADSL connection before you begin. Everything needed for the installation is listed and discussed on pages 1 –3. Page 4 has a table that can be used to record the required information.

Low Pass Filters

ADSL and telephone services share the same copper wire to carry their respective signals, a filtering mechanism may be necessary to avoid mutual interference. It may be necessary to install a low pass filter device (also called micro-filter or splitter) for each telephone that shares the line with the ADSL line. Micro-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.

Requirements for Installation

You will need a PC (referred to in this guide as the Manager PC) to set up and use the Router. In addition, it will be necessary to configure the device using information provided by your ADSL service provider. This information is used to establish the parameters of the ADSL connection and identify the Router on the WAN. The requirements for the PCs on your LAN are summarized below.

PC Workstation Requirements

You can use the Router with PCs that meet the conditions discussed here.

Operating System

The web-based management software can be used with any operating system that supports an HTML-based web browser.

Web Browser

Any common web browser such as Microsoft Internet Explorer or Netscape Navigator can be used to configure the Router using the embedded web-based management software.

Ethernet Adapter (NIC)

All PCs using the Router for Internet access, including the Manager PC, must have an Ethernet NIC (Network Interface Card) installed. Each computer on the internal network must have TCP/IP Protocol enabled. If you have an existing Ethernet set up, the PCs should already meet this requirement.

If you are using the Router in the role of a simple bridge (RFC 1483), additional software may be needed for the computer or server connected to the Router (on the LAN side). You may be instructed by your service provider to configure the NIC card for DHCP or PPP connection. Your network service provider will give you more information.

Connection Method

It is necessary to know the connection method used for the ADSL connection. The connection method is also known as the ADSL Protocol, Encapsulation Protocol or Encapsulation Method. These protocols are defined by "RFCs" which are internationally recognized standards for networking protocols. You will be required to configure the Router to use the correct method. PPP connections require account information to be entered and stored in the device. Bridged Ethernet connections require that the IP settings be set manually.

The Router supports three connection methods:

- PPP over ATM (RFC 2364) used by default
- PPP over Ethernet (RFC 2516)
- IP over ATM (RFC 1577)
- Ethernet over ATM (RFC 1483)

PPP Connections (RFC 2516 & RFC 2364)

For PPPoA or PPPoE connections, a verification process is required before the network connection can be established. Use this section to record the information used for authentication.

Account Information (User Name and Password)

For PPP connections, a User Name and Password for the user account are needed to connect to the service provider's network.

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

Bridged Ethernet Connections (RFC 1483)

Using this method, the DSL-500 acts as a transparent bridge, and is invisible to other devices on both the WAN and LAN side of the bridge. It is therefore necessary to provide some means of acquiring global IP settings for your account.

All connections to the Internet require a unique global IP address. For bridged connections, the global IP settings must reside in a TCP/IP enabled device on the LAN side of the bridge, such as a PC, server or firewall hardware. The IP address can be assigned in a number of ways. Your network service provider will give you instructions about any additional connection software or NIC configuration that may be required.

IPoA Connections (RFC 1577)

IP over ATM connections may require global IP settings for the device. Your service provider will give you IP settings information if needed. Some IPoA connections function like peer-to-peer connections and therefore do not require IP settings on the WAN interface.

PVC Settings

Some subscribers may be instructed to change the VPI and VCI values for the device. These numbers define a unique route used on the ATM backbone of the WAN. If your service provider asks you to configure these values for your network connection, follow the instructions in the *Connection Profile* section of Chapter 5.

Multiple PVC Support

Up to eight PVCs can be assigned for use by the Router. This can be useful to ADSL clients who wish to dedicate a PVC for a specific application, LAN or server.

Verify Package Contents

Open the box and carefully remove all items. In addition to this Installation Guide, ascertain that you have:

1. One DSL-500 ADSL Router
2. One AC power adapter suitable for your electric service
3. One ADSL telephone cable with RJ-11 connectors for ADSL connection (standard telephone wire)
4. One Cat. 5 Ethernet cable
5. One DSL-500 User's Guide CD-ROM

You will need all of these items listed to install and use the Router.

Install the Router

When all the equipment and information has been assembled, you may proceed to install the Router. Follow these steps:

Step 1

Connect the Router

It will be convenient to place the Router near the PC used for initial configuration of the Router. Select a location that allows access to the connections on the rear panel. You should be able to see the LED indicators on the front panel. When selecting the location for the Router, allow room to access the connections on the rear panel. Also allow some ventilation space above the Router.

Router Cable Connections

Console   Ethernet   ADSL

Connect to PC   **Connect ADSL**
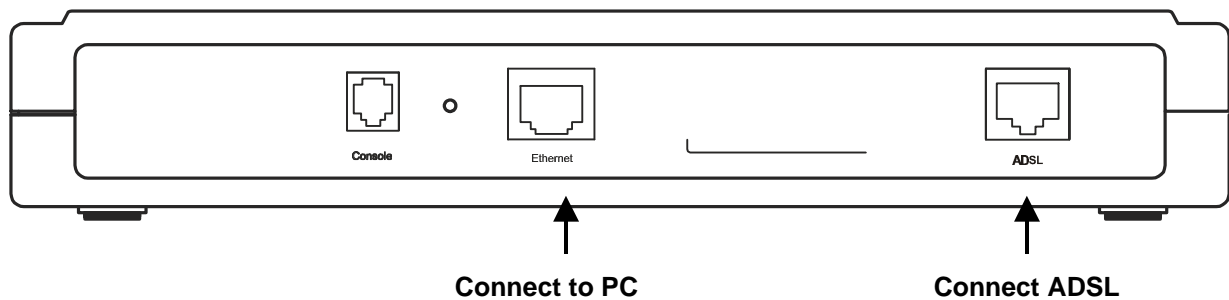
All communication cables connect to the Router on the back of the device as illustrated in the diagram above.

Connection Procedure

If the Manager PC is connected to an existing LAN, disconnect it now. Connect the Router to the Ethernet NIC card of the Manager PC to the Ethernet port (RJ-45). Use Category 5 or better straight-through Ethernet cable. A valid connection will be indicated by the Ethernet Link LED indicator corresponding to the connected port.

Connect the ADSL port to the ADSL telephone outlet (RJ-11) using the ADSL telephone cable included with the device.

Step 2

Power On Router

To power on the device:

1. Insert the AC Power Adapter cord into the power receptacle located on the right side panel of the Router and plug the adapter into a nearby power source.

2. You should see the Power LED indicator light up and remain lit.

DC Power Connector

7.5V === 1A

Right Side Panel
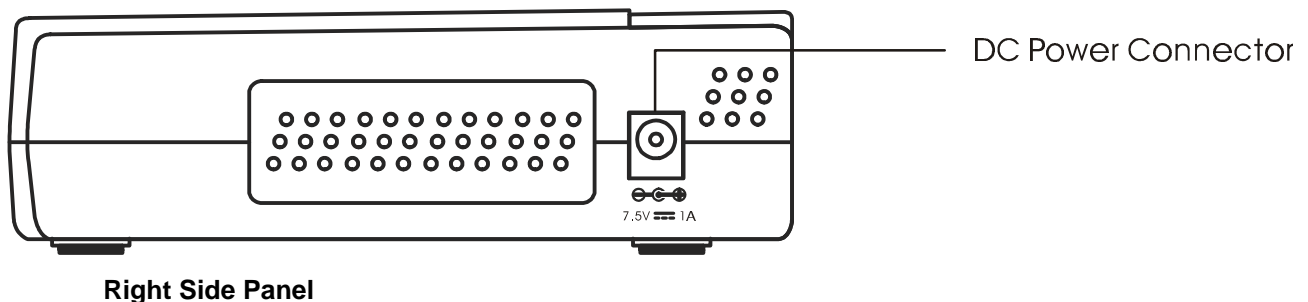
Step 3

Configure PC Network Settings

The Router can be configured easily using a standard web browser to access the web-based manager. Use the web-based manager to establish the initial ADSL connection.

Make sure the Router and the Manager PC are connected directly to each other via an Ethernet connection (see Step 1), and that they are both isolated from any existing LAN. The Manger PC should have a suitable web browser installed (see Additional Requirements).

The Router will act as a DHCP server by default. In order to simplify this procedure, it is advisable use the DHCP server function. The Manager PC must be configured to obtain an IP address from the Router. The following section explains how to do this.

The DHCP server function can be disabled if you prefer to manually set LAN IP addresses on your network. Your User's Guide explains how to manually assign IP addresses on your LAN.
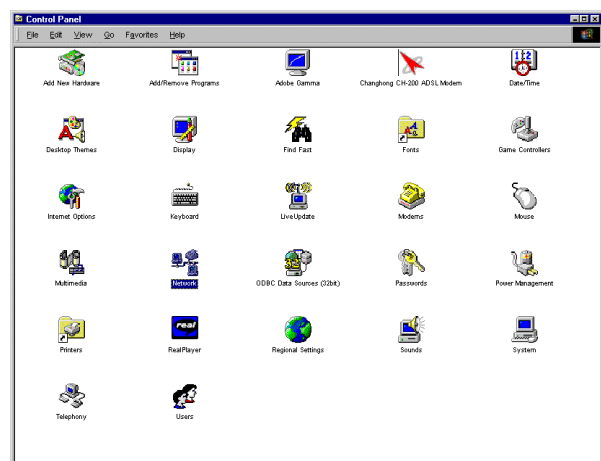
Configure Manager PC

Configure the Manager PC to obtain an IP address by performing the following steps:

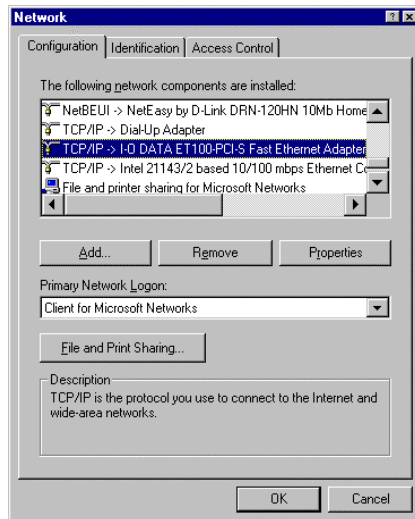1. In Windows 95/98, click on the **START** button, go to **Settings** and choose **Control Panel**.
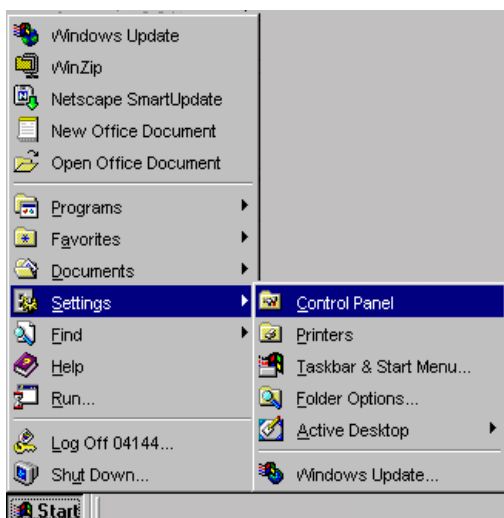
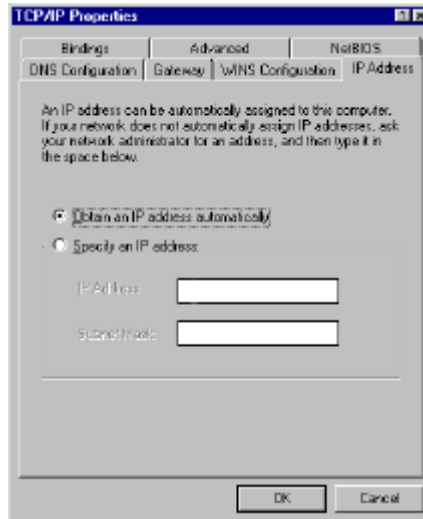2. In the Control Panel window, double-click on the **Network** icon.

3. Under the Configuration tab, select the **TCP/IP** component and click *Properties*.

4. Choose the *Obtain an IP address automatically* option and click OK.

5. Restart the PC to let the new setting take effect.

Access the Web-based Manager

The Manager PC can now use a web browser to communicate with the Router.

Note: **Be sure that the Manager PC is not configured to use a proxy server in the Internet settings. In Windows Internet Explorer, you can check if a proxy server is enabled using the following procedure:**

.   In Windows, click on the START button, go to Settings and choose Control Panel.

'.   In the Control Panel window, double-click on the Internet Options icon.

'.   Click the Connections tab and click on the LAN Settings button.

'.   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 a suitable web browser and direct it to the IP address of the Router. Type in **http://** followed by the default IP address, **192.168.0.1** in the address bar of the browser. The URL in the address bar should read: **http://192.168.0.1**.

In the page that opens, click on the **Login to web-based management module** button in the center.

A new window will appear and you will be prompted for a user name and password to access the web-based manager. Use the default user name **admin** and password **admin** for first time set up. You should change the web-based manager access user name and password once you have verified that a connection can be established. The user name and password allows any PC within the same subnet as the Router to access the web-based manger.
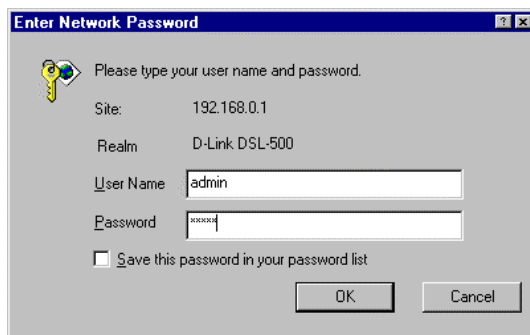
NOTE: Do not confuse the user name and password used to access the web-based manager with the ADSL account user name and password needed for PPP connections to access the ADSL or network service provider's network.

Logging in will bring up the Router/Bridge Configuration window of the web-based management module. In this window, you will see the D-Link DSL-500 folder is open revealing its contents of three subfolders. These subfolders contain menu buttons you can click on to see various menu screens used to configure the device for connection to the WAN and other functions.

Configure the WAN Connection

Now that you have accessed the web-based manager, you can configure the device for the WAN connection. For PPPoE and PPPoA connections, you will need to provide a User Name and Password used by your ISP for authentication purposes. For "Bridged Ethernet" (RFC 1483) connections, a static IP address must be used. It is necessary to supply IP settings for the WAN connection and other information discussed in Chapter 2, *Prepare for Installation*.

All connection methods available to the Router are discussed in this chapter, beginning with PPPoA connections. PPPoA is the default method used by the Router.

If you are using either a PPPoE or Bridged Ethernet (RFC 1483) connection, it is necessary to change the connection method (read Step 4a on the next page).
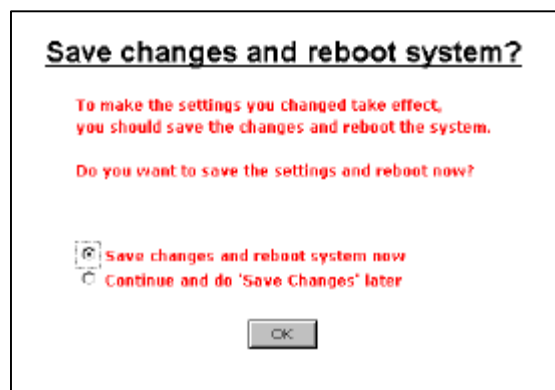
PPPoA Connections

The default connection method used by the Router is Point-to-Point-Protocol over ATM (PPPoA). In the PPPoA Configuration window, you must enter the user name and password for network account authentication and verification. When this information is entered, the changes must be saved and the Router restarted. In the **Bridge/Router Configuration** window, follow these steps to establish the WAN connection using PPPoA:

1. Under **PPPoA Login**, enter the **Login User Name** used for your network account. The user name and login password, are used to authenticate the identity of the ADSL client and provide access to the service provider's network. The user name and login password can be any combination of up to 64 characters.

2. Enter the Login Password.

3. Unless you are instructed to use a different **Authentication** method, leave the default **chap** protocol selected. The alternative method, **pap**, can be selected from the pull-down menu if required by the service provider.

4. Leave the **Connect on Demand** option as **enabled** in the pull-down menu. This will allow the Router to establish a WAN connection upon restarting.

5. Leave **Idle Time** set to the default value 0.

Click on the **OK** button on the bottom of the window. A new screen appears:

6. The **Save changes and reboot system?** message prompt offers two option:

   A. You can save the configuration changes and restart the device now by clicking OK; or,

   B. If you want to change the user name and password used to access the Web Manager, select the "Continue and do 'Save Changes' later" option and click OK, and go to the System Username and Password menu in the Maintenance folder.

Save changes and reboot system?

To make the settings you changed take effect, you should save the changes and reboot the system.

Do you want to save the settings and reboot now?

⦿ Save changes and reboot system now
◯ Continue and do 'Save Changes' later

[OK]

Changing the Connection Profile

The default connection method used by the Router for the WAN connection is PPP over ATM. If you wish to use this method, it is not necessary to change this setting. However, if you will use a static IP address for a "Bridged Ethernet" (RFC 1483) connection, PPP over Ethernet or IPoA (RFC 1577) you must change the connection method.

There are two menus used to change the connection method or connection profile. The Bridge/Router Configuration menu, the first screen that appears when you log in, can be used to configure the device to use one of the three available methods. This procedure is described below. The connection profile can also be changed using the Connection Profile menu, this is described in its own section in Chapter 5.

To change the connection profile using the Bridge/Router Configuration menu, follow these steps:

1. In the **Bridge/Router Configuration** window, use the drop-down menu under **Connection Profile** to select an alternative connection method. The alternative connection options are **Bridge with RFC 1483**, **Router with PPPoE** and **Router with IPoA**. You will also see the VPI and VCI values listed here.

2. Click on the **OK** button on the bottom of the window. A new screen will appear:

3. The **Save changes and reboot system?** message prompt offers two option:

   A. You can save the configuration changes and restart the device now by clicking OK; or,

   B. If you want to change the user name and password used to access the Web Manager, select the "Continue and do 'Save Changes' later" option and click OK, and go to the System Username and Password menu in the Maintenance folder.
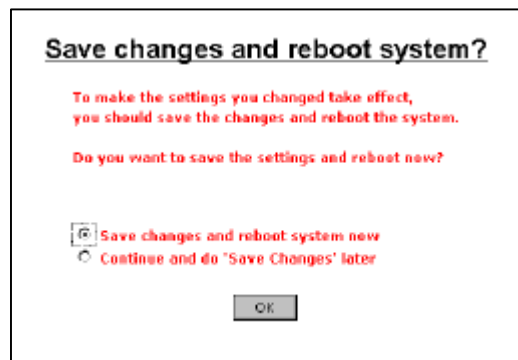
Connect to WAN

PPP Connections

Although the connection methods differ significantly, from the viewpoint of the ADSL subscriber, there is little difference between the two variations of PPP connections. The information entered for PPPoE connections is the same as that used for PPPoA connections.

Once you have changed the connection method to PPPoE, saved the configuration change and restarted the device, you can proceed to enter authentication information used to connect to the WAN. Follow these steps:

1. Under **PPPoE Login**, enter the **Login User Name** used for your network account. The user name and login password, are used to authenticate the identity of the ADSL client and provide access to the service provider's network. The user name and login password can be any combination of up to 64 characters.

2. Enter the Login Password.

3. Unless you are instructed to use a different **Authentication** method, leave the default **chap** protocol selected. The alternative method, **pap**, can be selected from the pull-down menu if required by the service provider.

5. Leave the **Connect on Demand** option as **enabled** in the pull-down menu. This will allow the Router to establish a WAN connection upon restarting.

6. Leave **Idle Time** set to the default value 0.

   Click on the **OK** button on the bottom of the window. The **Save changes and reboot system?** message prompt appears.

7. Click **OK** to save a restart. The Router will connect to the WAN automatically.
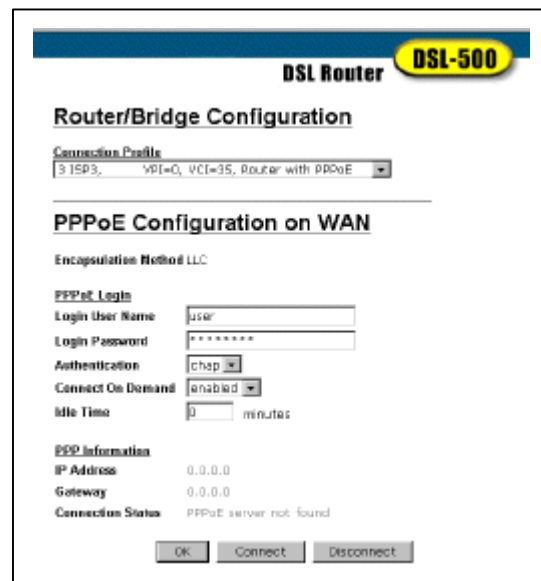
RFC 1483 Bridged Ethernet Connections

If you are using the "Bridged Ethernet" method for the WAN connection, the global IP settings must be configured in another device. When using this connection method, the device functions as a bridge, so it is does not perform any IP functions. The device will have a IP address on the LAN, but not on the WAN interface. After changing the connection profile to **Bridge with RFC 1483**, you will need to configure the PC or server connected to the DSL-500 so the WAN interface a way to obtain a global IP address. This can be accomplished in different ways according to the circumstances of your network and the nature of your ADSL subscriber account. Your network service provider will give you instructions or additional computer software as needed to handle global IP settings for your account.

IPoA Connections

IPoA connections may require that global IP settings be configured for the device manually or be configured to use DHCP to obtain these settings. If you are instructed to set the WAN IP address manually or use DHCP, read the *IPoA Configuration* section of Chapter 5 of the User's Guide. Otherwise, the connection will be established upon restarting the device.