

# USER MANUAL

DSL-2740R

VERSION 1.0



**D-Link**<sup>®</sup>

**BROADBAND**

# FCC Notices

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.

**CAUTION:** Change or modification not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the 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.

**CAUTION:** Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

## **RF exposure warning:**

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

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# FCC

## **Federal Communication Commission Interference Statement**

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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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

## **IMPORTANT NOTE:**

### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

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## Package Contents

- DSL-2740R Wireless N ADSL2+ Modem Router
- Power Adapter
- CD-ROM with User Manual
- One twisted-pair telephone cable used for ADSL connection
- One straight-through Ethernet cable
- One Quick Installation Guide

**Warning:** The Router must be used with the power adapter included with the device.



## System Requirements

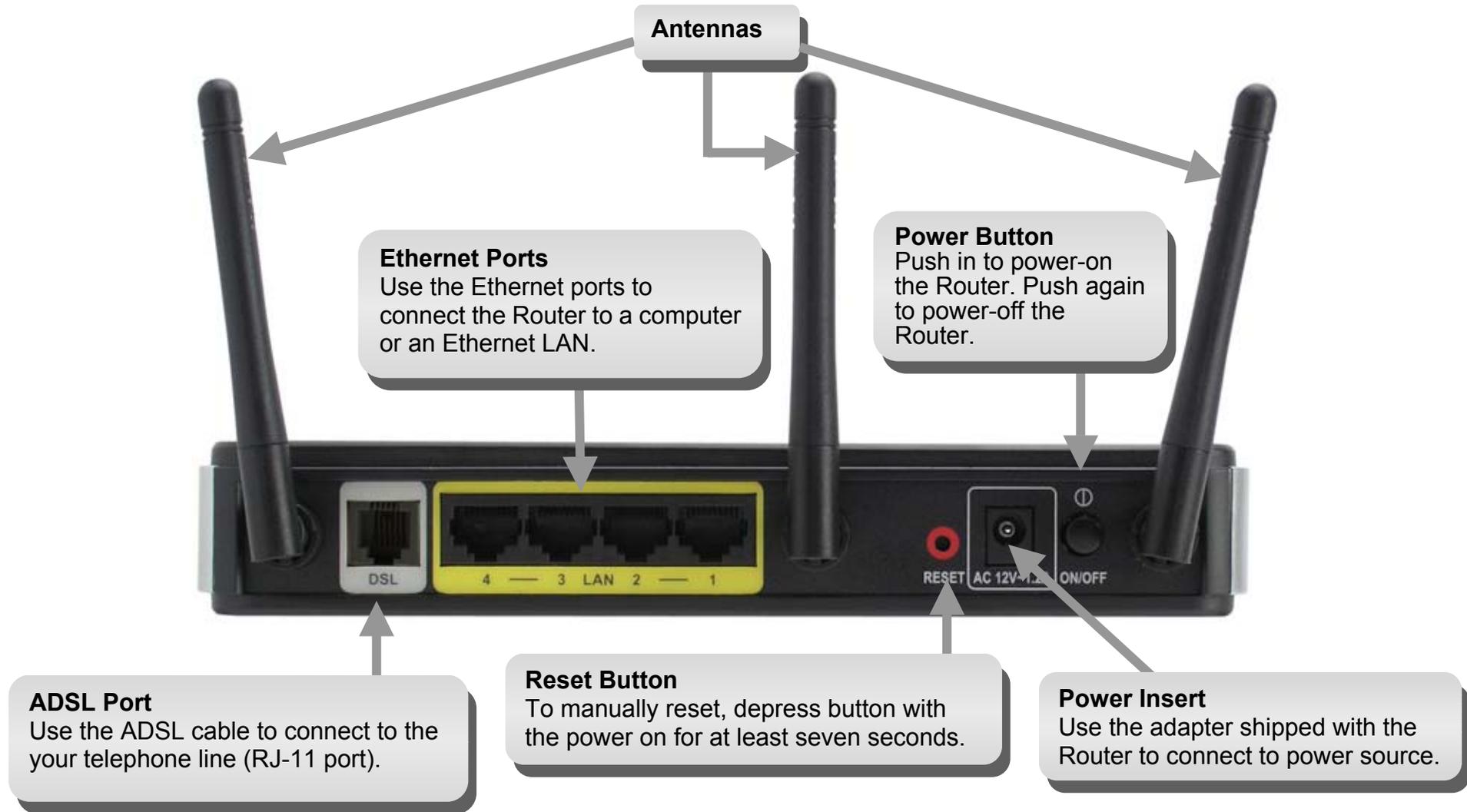
- ADSL Internet service
- Computer with:
  - 200MHz Processor
  - 64MB Memory
  - CD-ROM Drive
  - Ethernet Adapter with TCP/IP Protocol Installed
  - Internet Explorer v6 or later, FireFox v1.5, or Safari 1.3 or above
  - Windows 2000/XP/Vista
- D-Link Click'n Connect Utility

## Features

- **PPP (Point-to-Point Protocol) Security** – The Router supports PAP (Password Authentication Protocol) and CHAP (Challenge Handshake Authentication Protocol) for PPP connections. The Router also supports MSCHAP.
- **DHCP Support** – Dynamic Host Configuration Protocol automatically and dynamically assigns all LAN IP settings to each host on your network. This eliminates the need to reconfigure every host whenever changes in network topology occur.
- **Network Address Translation (NAT)** – For small office environments, the Router allows multiple users on the LAN to access the Internet concurrently through a single Internet account. This provides Internet access to everyone in the office for the price of a single user. NAT improves network security in effect by hiding the private network behind one global and visible IP address. NAT address mapping can also be used to link two IP domains via a LAN-to-LAN connection.
- **TCP/IP (Transfer Control Protocol/Internet Protocol)** – The Router supports TCP/IP protocol, the language used for the Internet. It is compatible with access servers manufactured by major vendors.
- **RIP-1/RIP-2** – The Router supports both RIP-1 and RIP-2 exchanges with other routers. Using both versions lets the Router to communicate with all RIP enabled devices.
- **Static Routing** – This allows you to select a data path to a particular network destination that will remain in the routing table and never “age out”. If you wish to define a specific route that will always be used for data traffic from your LAN to a specific destination within your LAN (for example to another router or a server) or outside your network (to an ISP defined default gateway for instance).
- **Default Routing** – This allows you to choose a default path for incoming data packets for which the destination address is unknown. This is particularly useful when/if the Router functions as the sole connection to the Internet.
- **ATM (Asynchronous Transfer Mode)** – The Router supports Bridged Ethernet over ATM (RFC1483), IP over ATM (RFC1577), and PPP over ATM (RFC 2364).
- **Precise ATM Traffic Shaping** – Traffic shaping is a method of controlling the flow rate of ATM data cells. This function helps to establish the Quality of Service for ATM data transfer.
- **High Performance** – Very high rates of data transfer are possible with the Router. Up to 8 Mbps downstream bit rate using the G.dmt standard.
- **Full Network Management** – The Router incorporates SNMP (Simple Network Management Protocol) support for web-based management and text-based network management via an RS-232 or Telnet connection.
- **Telnet Connection** – The Telnet enables a network manager to access the Router’s management software remotely.
- **Easy Installation** – The Router uses a web-based graphical user interface program for convenient management access and easy set up. Any common web browser software can be used to manage the Router.

# Hardware Overview

## Connections



# Hardware Overview

## LEDs



| LED   | Description   |
|-------|---|
| Power | A steady green light indicates the unit is powered on. When the device is powered off this remains dark. Lights steady green during power on self-test (POST). Once the connection status has been settled, the light will blink green. If the indicator lights steady red after the POST, the system has failed and the device should be rebooted. |
| LAN   | A solid green light indicates a valid link on startup. This light will blink when there is activity currently passing through the Ethernet port.  |
| WLAN  | A solid green light indicates a valid link on startup. This light will blink when there is activity currently passing through the Wireless LAN.   |
| DSL   | A steady green light indicates a valid ADSL connection. This will light after the ADSL negotiation process has been settled. A blinking green light indicates activity on the WAN (ADSL) interface.   |

|          |   |
|----------|---|
| Internet | A solid green light indicates the WAN IP address from IPCP or DHCP and DSL is up or a static IP address is configured and PPP negotiation has been successfully completed. If the indicator blinks green, this means the Router is active. If the Router power is off, this remains dark. A solid red light indicates there is no DHCP response, no PPPoE response, PPPoE authentication has failed, and/or there is no IP. |
|----------|---|

# Installation

This section will walk you through the installation process. Placement of the Router is very important. Do not place the Router in an enclosed area such as a closet, cabinet, or in the attic or garage.

## Before You Begin

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

## Installation Notes

In order to establish a connection to the Internet it will be necessary to provide information to the Router that will be stored in its memory. For some users, only their account information (Username and Password) is required. For others, various parameters that control and define the Internet connection will be required. You can print out the two pages below and use the tables to list this information. This way you have a hard copy of all the information needed to setup the Router. If it is necessary to reconfigure the device, all the necessary information can be easily accessed. Be sure to keep this information safe and private.

### **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.

### **Operating Systems**

The DSL-2740R 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, including Windows 98 SE, Windows ME, Windows 2000, Windows XP, and Windows Vista.

### **Web Browser**

Any common Web browser can be used to configure the Router using the Web configuration management software. The program is designed to work best with more recently released browsers such as Opera, Microsoft Internet Explorer® version 6.0, Netscape Navigator® version 6.2.3, 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 Router must be able to connect to it through the Ethernet port on the Router. 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 Router. 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. Additional software must be installed if you are using the device a simple bridge. For a bridged connection, the information needed to make and maintain the Internet connection is stored on another computer or gateway device, not in the Router itself.

If your ADSL service is delivered through a PPPoE or PPPoA connection, the information needed to establish and maintain the Internet connection can be stored in the Router. In this case, it is not necessary to install software on your computer. It may however be necessary to change some settings in the device, including account information used to identify and verify the connection.

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, a server, a gateway device such as a router or similar 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.

# Information you will need from your ADSL service provider

## **Username**

This is the Username used to log on to your ADSL service provider's network. Your ADSL service provider uses this to identify your account.

## **Password**

This is the Password used, in conjunction with the Username above, to log on to your ADSL service provider's network. This is used to verify the identity of your account.

## **WAN Setting / Connection Type**

These settings describe the method your ADSL service provider uses to transport data between the Internet and your computer. Most users will use the default settings. You may need to specify one of the following WAN Setting and Connection Type configurations (Connection Type settings listed in parenthesis):

- PPPoE/PPoA (PPPoE LLC, PPPoE VC-Mux, PPPoA LLC, or PPPoA VC-Mux)
- Dynamic IP Address (1483 Bridged IP LLC or 1483 Bridged IP VC-Mux)
- Static IP Address (Bridged IP LLC, 1483 Bridged IP VC Mux, 1483 Routed IP LLC, 1483 Routed IP VC-Mux)
- Bridge Mode (1483 Bridged IP LLC or 1483 Bridged IP VC Mux)

## **Modulation Type**

ADSL uses various standardized modulation techniques to transmit data over the allotted signal frequencies. Some users may need to change the type of modulation used for their service. The default DSL modulation (Autosense) used for the Router automatically detects all types of ADSL, ADSL2, and ADSL2+ modulation.

## **Security Protocol**

This is the method your ADSL service provider will use to verify your Username and Password when you log on to their network. Your Router supports the PAP and CHAP protocols.

### **VPI**

Most users will not be required to change this setting. The Virtual Path Identifier (VPI) is used in conjunction with the Virtual Channel Identifier (VCI) to identify the data path between your ADSL service provider's network and your computer. If you are setting up the Router for multiple virtual connections, you will need to configure the VPI and VCI as instructed by your ADSL service provider for the additional connections. This setting can be changed in the WAN Settings window of the web management interface.

### **VCI**

Most users will not be required to change this setting. The Virtual Channel Identifier (VCI) used in conjunction with the VPI to identify the data path between your ADSL service provider's network and your computer. If you are setting up the Router for multiple virtual connections, you will need to configure the VPI and VCI as instructed by your ADSL service provider for the additional connections. This setting can be changed in the WAN Settings window of the web management interface.

## **Information you will need about DSL-2740R**

### **Username**

This is the Username needed access the Router's management interface. When you attempt to connect to the device through a web browser you will be prompted to enter this Username. The default Username for the Router is "admin." The user cannot change this.

### **Password**

This is the Password you will be prompted to enter when you access the Router's management interface. The default Password is "admin." The user may change this.

### **LAN IP addresses for the DSL-2740R**

This is the IP address you will enter into the Address field of your web browser to access the Router's configuration graphical user interface (GUI) using a web browser. The default IP address is 192.168.1.1. This may be changed to suit any IP address scheme the user desires. This address will be the base IP address used for DHCP service on the LAN when DHCP is enabled.

### **LAN Subnet Mask for the DSL-2740R**

This is the subnet mask used by the DSL-2740R, and will be used throughout your LAN. The default subnet mask is 255.255.255.0. This can be changed later.

# Information you will need about your LAN or computer:

## **Ethernet NIC**

If your computer has an Ethernet NIC, you can connect the DSL-2740R to this Ethernet port using an Ethernet cable. You can also use the Ethernet ports on the DSL-2740R to connect to other computer or Ethernet devices.

## **DHCP Client status**

Your Router is configured, by default, to be a DHCP server. This means that it can assign an IP address, subnet mask, and a default gateway address to computers on your LAN. The default range of IP addresses the DSL-2740R will assign are from 192.168.1.2 to 192.168.1.254. Your computer (or computers) needs to be configured to obtain an IP address automatically (that is, they need to be configured as DHCP clients.)

It is recommended that you collect and record this information here, or in some other secure place, in case you have to re-configure your ADSL connection in the future.

Once you have the above information, you are ready to setup and configure your DSL-2740R.

## **Device Installation**

The DSL-2740R connects two separate physical interfaces, an ADSL (WAN) and an Ethernet (LAN) interface. Place the Router in a location where it can be connected to the various devices as well as to a power source. The Router should not be located where it will be exposed to moisture or excessive heat. Make sure the cables and power cord are placed safely out of the way so they do not create a tripping hazard. As with any electrical appliance, observe common sense safety procedures.

The Router can be placed on a shelf or desktop, ideally you should be able to see the LED indicators on the front if you need to view them for troubleshooting.

## Power on Router

The Router must be used with the power adapter included with the device.

1. Insert the AC Power Adapter cord into the power receptacle located on the rear panel of the Router and plug the adapter into a suitable nearby power source.
2. Depress the Power button into the on position. You should see the Power LED indicator light up and remain lit. The Status LED should light solid green and begin to blink after a few seconds.
3. If the Ethernet port is connected to a working device, check the Ethernet Link/Act LED indicators to make sure the connection is valid. The Router will attempt to establish the ADSL connection, if the ADSL line is connected and the Router is properly configured this should light up after several seconds. If this is the first time installing the device, some settings may need to be changed before the Router can establish a connection.

## Factory Reset Button

The Router may be reset to the original factory default settings by using a ballpoint or paperclip to gently push down the reset button in the following sequence:

1. Ensure the Router is powered on.
2. Press and hold the reset button on the back of the device for approximately 5 to 8 seconds.
3. This process should take around 1 to 2 minutes.

Remember that this will wipe out any settings stored in flash memory including user account information and LAN IP settings. The device settings will be restored to the factory default IP address **192.168.1.1** and the subnet mask is **255.255.255.0**, the default management Username is “admin” and the default Password is “admin.”

## Network Connections

### **Connect ADSL Line**

Use the ADSL cable included with the Router to connect it to a telephone wall socket or receptacle. Plug one end of the cable into the ADSL port (RJ-11 receptacle) on the rear panel of the Router and insert the other end into the RJ-11 wall socket. If you are using a low pass filter device, follow the instructions included with the device or given to you by your service provider. The ADSL connection represents the WAN interface, the connection to the Internet. It is the physical link to the service provider's network backbone and ultimately to the Internet.

### **Connect Router to Ethernet**

The Router may be connected to a single computer or Ethernet device through the 10BASE-TX Ethernet port on the rear panel. 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 Router 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 Router 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 Router directly to a PC or server use a normal straight-through cable. You should use a crossed cable when connecting the Router 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 rules governing Ethernet cable lengths apply to the LAN to Router connection. Be sure that the cable connecting the LAN to the Router does not exceed 100 meters.

### **Hub or Switch to Router Connection**

Connect the Router to an uplink port (MDI-II) on an Ethernet hub or switch with a straight-through cable. 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 crossed cable.

### **Computer to Router Connection**

You can connect the Router directly to a 10/100BASE-TX Ethernet adapter card (NIC) installed on a PC using the Ethernet cable provided.

# Setup

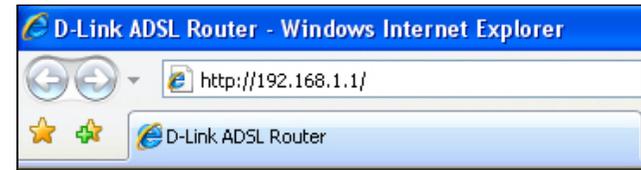
This section will show you how to set up and configure your new D-Link Router using the Web-based configuration utility.

## Web-based Configuration Utility

### Connect to the Router

To configure the WAN connection used by the Router it is first necessary to communicate with the Router through its management interface, which is HTML-based and can be accessed using a web browser. The easiest way to make sure your computer has the correct IP settings is to configure it to use the DHCP server in the Router. The next section describes how to change the IP configuration for a computer running a Windows operating system to be a DHCP client.

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (**192.168.1.1**).



Type **“admin”** for the User Name and **“admin”** in the Password field. If you get a Page Cannot be Displayed error, please refer to the Troubleshooting section for assistance.

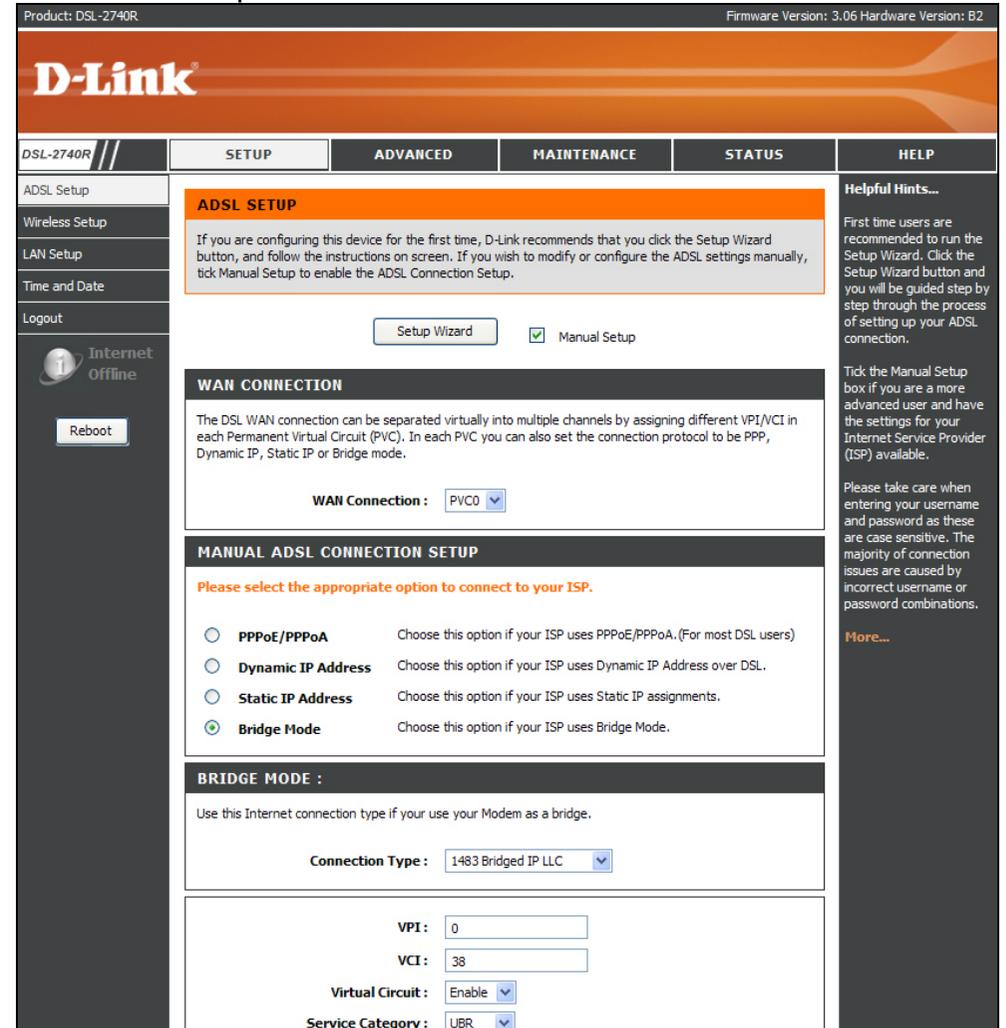


# Quick Setup

This chapter is concerned with using your computer to configure the WAN connection. The following chapter describes the various windows used to configure and monitor the Router including how to change IP settings and DHCP server setup.

## QUICK SETUP

Click the **Setup Wizard** link in the middle of the top of the window of the Router's opening page to launch a series of setup windows.



### QUICK SETUP – OPENING WINDOW

The first window of the Setup Wizard lists the basic steps in the process. These steps are as follows:

1. Change the Router password.
2. Configure the connection to the Internet.
3. Save the new configuration settings and reboot the system.

### QUICK SETUP – CHANGE YOUR ROUTER PASSWORD

This window of the Setup Wizard is used to change the Router password. D-Link recommends to help secure your network, the user change the Current Password from the factory default “admin.” The New Password should be between 1 and 15 alphanumeric characters. Once you have filled out the fields in this window, including re-typing the new password in the Confirm Password field, click the **Next** button to continue.

If you do not want to change the password, click the **Skip** button to proceed to the next step.

#### WELCOME TO D-LINK SETUP WIZARD

This wizard will guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

- Step 1: Change your DSL-2740R router password
- Step 2: Select Internet Connection
- Step 3: Finish

Next

Cancel

#### STEP 1: CHANGE YOUR PASSWORD

The factory default password of this router is 'admin'. To help secure your network, D-Link recommends that you should choose a new password between 1 and 15 characters. If you do not wish to choose a new password now, just click Skip to continue. Click Next to proceed to next step.

Current Password :

New Password :

Confirm Password :

Back

Next

Skip

Cancel

### QUICK SETUP – SELECT THE INTERNET CONNECTION TYPE

Now use the drop-down menus to select the Country, ISP Provider, and Connection Type used for the Internet connection, and enter VPI and VCI values if applicable. Your ISP has given this information to you—any information that is not required for your provider will automatically be grayed out in this window and subsequent Quick Setup windows.

The Connection Type options are *1483 Bridged IP LLC*, *1483 Bridged IP VC-Mux*, *1483 Routed IP LLC*, *1483 Routed IP VC-Mux*, *PPPoE LLC*, *PPPoE VC-Mux*, *PPPoA LLC*, and *PPPoA VC-Mux*.

Click the **Next** button when you are finished to proceed to the next Setup Wizard window.

### QUICK SETUP – SELECT THE INTERNET CONNECTION TYPE

If the following Setup Wizard window appears, please select the connection type used by your ISP and then click the **Next** button. Most users, however, will be sent directly to a Setup Wizard window for their specific Internet connection type based on the information entered in the previous Setup Wizard window.

**STEP 2: SELECT INTERNET CONNECTION TYPE**

Please select your Country and ISP (Internet Service Provider) from the list below. If your Country or ISP is not in the list, please select "Other".

Country : Click to select ▼

ISP Provider : Click to select ▼

VPI :

VCI :

Connection Type : PPPoE LLC ▼

Back Next Cancel

**STEP 2: SELECT INTERNET CONNECTION TYPE**

Select the connection type to connect to your ISP. Click Next to continue.

**PPPoE/PPPoA** Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users)

**Dynamic IP Address** Choose this option if your ISP uses Dynamic IP Address over DSL.

**Static IP Address** Choose this option if your ISP uses Static IP assignments.

**Bridge Mode** Choose this option if your ISP uses Bridge Mode.

Back Next Cancel

### QUICK SETUP – PPPOE/PPPOA CONFIGURATION

Type in the User Name and Password used to identify and verify your account to the ISP. If you are instructed to change the VPI or VCI number, type in the correct setting in the available entry fields. Most users will not need to change these settings. The Internet connection cannot function if these values are incorrect.

Some users may have to adjust the Connection Type from the drop-down menu at the bottom of this Setup Wizard window. The available connection and encapsulation types are *PPPoE LLC*, *PPoE VC-Mux*, *PPPoA LLC*, and *PPPoA VC-Mux*.

Click **Next** to go to the last Setup Wizard window.

**STEP 2: SELECT INTERNET CONNECTION TYPE**

You have selected PPPoE/PPPoA Internet connection. Please enter the appropriate information below as provided by your ISP (Internet Service Provider).

Please enter the information exactly as shown taking note of upper and lower cases.

Click Next to continue.

**Username:**

**Password:**

**VPI:**

**VCI:**

**Connection Type:**  ▼

### QUICK SETUP – DYNAMIC IP CONFIGURATION

If you are instructed to change the VPI or VCI numbers, type in the correct setting in the available entry fields. The Internet connection cannot function if these values are incorrect. Select the specific Connection Type from the drop-down menu. The available connection and encapsulation types are *1483 Bridged IPLLC* and *1483 Bridged IP VC-Mux*. You may want to copy the MAC address of your Ethernet adapter to the Router. Some ISPs record the unique MAC address of your computer's Ethernet adapter when you first access their network. This can prevent the Router (which has a different MAC address) from being allowed access to the ISP's network (and the Internet). To clone the MAC address of your computer's Ethernet adapter, click the **Clone MAC Address** button. This will copy the information to a file used by the Router to present to the ISP's server used for DHCP.

Click **Next** to go to the last Setup Wizard window.

**STEP 2: SELECT INTERNET CONNECTION TYPE**

You have selected Dynamic IP Internet connection. Please enter the appropriate information below as provided by your ISP.

Some ISPs require that you clone your PC MAC address to the DSL router, simply Click on the button provided.

Click Next to continue.

VPI :

VCI :

Connection Type :  ▾

Cloned MAC Address :

### QUICK SETUP – STATIC IP CONFIGURATION

Enter values for VPI, VCI, IP Address, Subnet Mask, Default Gateway IP address, Preferred DNS Server IP address, and Alternate DNS Server IP address as instructed by your ISP. The Internet connection cannot function if these values are incorrect.

Select the specific Connection Type from the drop-down menu. The available connection and encapsulation types are *1483 Bridged IP LLC*, *1483 Bridged IP VC-Mux*, *1483 Routed IP LLC*, and *1483 Routed IP VC-Mux*.

Click **Next** to go to the last Setup Wizard window.

### QUICK SETUP – BRIDGE MODE CONFIGURATION

If you are instructed to change the VPI or VCI numbers, type in the correct setting in the available entry fields. The Internet connection cannot function if these values are incorrect.

Select the specific Connection Type from the drop-down menu. The available connection and encapsulation types are *1483 Bridged IP LLC* and *1483 Bridged IP VC-Mux*.

Click **Next** to go to the last Setup Wizard window.

#### STEP 2: SELECT INTERNET CONNECTION TYPE

You have selected Static IP Internet connection. Please enter the appropriate information below as provided by your ISP. Click Next to continue.

VPI:

VCI:

IP Address:

Subnet Mask:

Connection Type:  ▾

Default Gateway:

Back

Next

Cancel

#### STEP 2: SELECT INTERNET CONNECTION TYPE

Enter the bridge information provided to you by your ISP. Click Next to continue.

VPI:

VCI:

Connection Type:  ▾

Back

Next

Cancel

### QUICK SETUP – FINISH

Finally you can confirm that the setup process is completed. If you are satisfied that you have entered all the necessary information correctly, click the **Finish** button to save the new configuration. If you need to change settings from a previous window, click the **Back** button.

#### STEP 3: FINISH

Setup complete. Click Back to review or modify settings. Click Finish to apply current settings. If your Internet connection does not work after apply the settings, you can try the Setup Wizard again with alternative settings or use Manual Setup instead if you have your Internet connection details as provided by your ISP.

Back

Finish

Cancel

# ADSL Setup

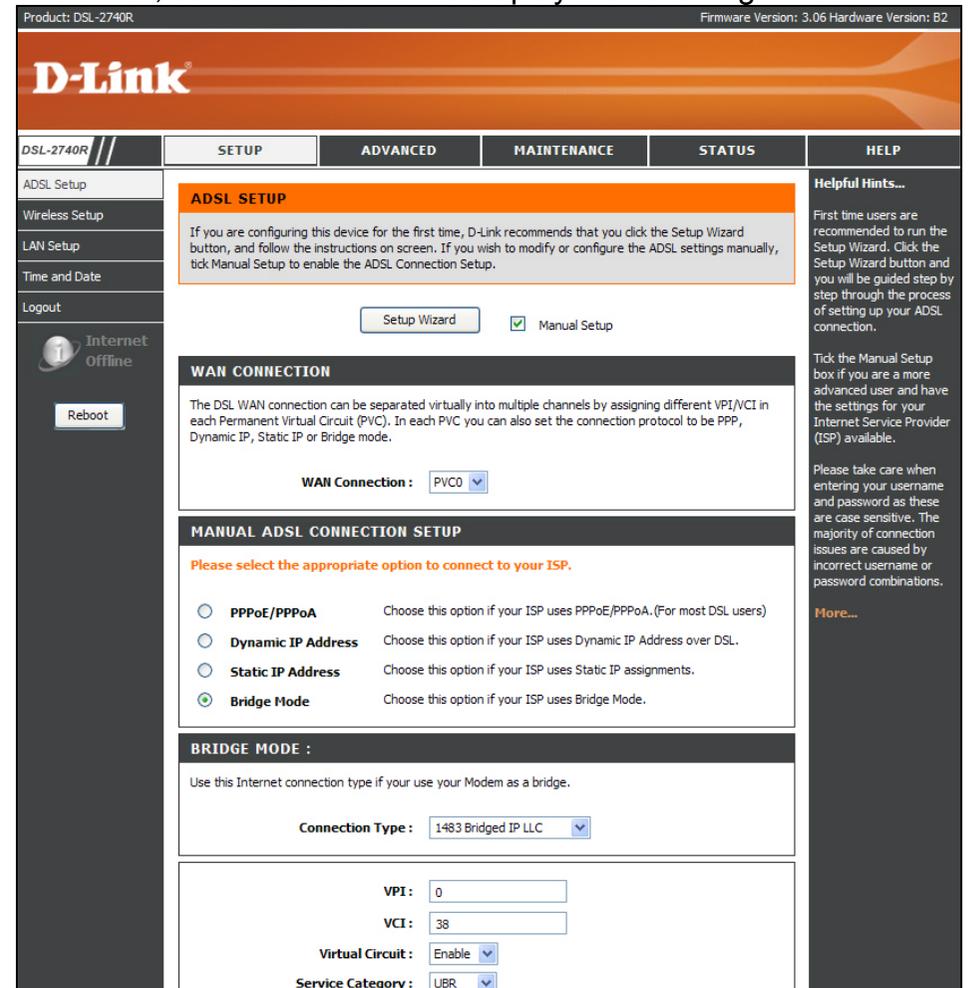
To access the **ADSL Setup** window, simply login to the Router or click either **ADSL Setup** in the **Setup** directory or **Setup** on the tool bar at the top of the Web manager window. The **Manual Setup** check box is selected by default. If not, tick the check box to display the following window:

To configure the Router’s basic configuration settings without running the Setup Wizard, you can access the windows used to configure ADSL Setup, LAN Setup, Time and Date, and Parental Control settings directly from the **Setup** directory.

To access the **ADSL Setup** windows for Manual ADSL Connection Setup for PPPoE/PPPoA, Dynamic IP Address, Static IP Address, and Bridge Mode, click on the **ADSL Setup** link button on the left side of the first window that appears when you successfully access the web manager.

The Router also allows you to change the Web manager’s language settings using the drop-down menu on the left side of the window. The choices are: *English, Spanish, French, Italian, and German.*

Click the PPPoE/PPPoA radio button to access the first Manual ADSL Connection Setup window:



## PPPoE/PPPoA

To configure a PPPoE or PPPoA type WAN connection, follow these steps:

1. Type the Username and Password used for your ADSL account. A typical User Name will be in the form “user1234@isp.co.uk.” The Password may be assigned to you by your ISP or you may have selected it when you set up the account with your ISP. The Service Name field is used for the name of your Internet Service Provider. This is optional.
2. Choose the Connection Type from the drop-down menu. This defines both the connection protocol and encapsulation method used for your ADSL service. The available options are *PPPoE LLC*, *PPPoE VC-Mux*, *PPPoA LLC* and *PPPoA VC-Mux*. If you have not been provided specific information for the Connection Type setting, leave the default setting.
3. Leave the MTU value at the default setting unless you have specific reasons to change this.
4. Some users will want to set an Idle Time Out. This is an age-out value, in minutes, before the Router times out.
5. If you are instructed to change the VPI or VCI values, type in the values assigned for your account.
6. When you are satisfied that all the WAN settings are configured correctly, click the **Save Settings** button. This will save the settings and reboot the Router to let your changes take effect.
7. Upon restarting, the Router should automatically establish the WAN connection. If it does not, click the **Connect** button at the bottom of this window.

**MANUAL ADSL CONNECTION SETUP**

Please select the appropriate option to connect to your ISP.

- PPPoE/PPPoA** Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users)
- Dynamic IP Address** Choose this option if your ISP uses Dynamic IP Address over DSL.
- Static IP Address** Choose this option if your ISP uses Static IP assignments.
- Bridge Mode** Choose this option if your ISP uses Bridge Mode.

---

**PPPOE/PPPOA INTERNET CONNECTION TYPE :**

Enter the information provided by your Internet Service Provider (ISP).

**Username :**

**Password :**

**Service Name :**

**Connection Type :**

**MTU :**  (0 means default value 1500bytes)

**Idle Time Out :**  Minutes (0 = Always On)

**Authentication :**

**NAT :**

**IGMP :**

**Default Route :**

---

**VPI :**

**VCI :**

**Virtual Circuit :**

**Service Category :**

**PCR :**  cells/second

**SCR :**  cells/second

**MBS :**  cells

## Dynamic IP Address

A Dynamic IP Address connection configures the Router to automatically obtain its global IP address from a DHCP server on the ISP's network. The service provider assigns a global IP address from a pool of addresses available to the service provider. Typically the IP address assigned has a long lease time, so it will likely be the same address each time the Router requests an IP address.

To configure a Dynamic IP Address WAN connection, follow these steps:

1. Choose the Connection Type from the drop-down menu. This defines both the connection protocol and encapsulation method used for your ADSL service. The available options are *1483 Bridged IP LLC* and *1483 Bridged IP VC-Mux*. If you have not been provided specific information for the Connection Type setting, leave the default setting.
2. Some ISPs record the unique MAC Address of your computer's Ethernet adapter when you first access their network. This can prevent the Router (which has a different MAC address) from being allowed access to the ISP's network (and the Internet). To clone the MAC address of your computer's Ethernet adapter, click the **Clone MAC Address** button.
3. If you are instructed to change the VPI or VCI values, type in the values assigned for your account.
4. When you are satisfied that all the WAN settings are configured correctly, click the **Save Settings** button. This will save the settings and reboot the Router to let your changes take effect.
5. Upon restarting, the Router should automatically establish the WAN connection. If it does not, click the **Connect** button at the bottom of this window.

**MANUAL ADSL CONNECTION SETUP**

Please select the appropriate option to connect to your ISP.

|                                  |                           |   |
|----------------------------------|---------------------------|---|
| <input type="radio"/>            | <b>PPPoE/PPPoA</b>        | Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users) |
| <input checked="" type="radio"/> | <b>Dynamic IP Address</b> | Choose this option if your ISP uses Dynamic IP Address over DSL.      |
| <input type="radio"/>            | <b>Static IP Address</b>  | Choose this option if your ISP uses Static IP assignments.            |
| <input type="radio"/>            | <b>Bridge Mode</b>        | Choose this option if your ISP uses Bridge Mode.                      |

---

**DYNAMIC IP ADDRESS INTERNET CONNECTION TYPE :**

Use this Internet connection type if your Internet Service Provider (ISP) didn't provide you with IP Address information and/or a username and password.

|                          |   |
|--------------------------|---|
| <b>Connection Type :</b> | 1483 Bridged IP VC-Mux <span style="font-size: small;">▼</span> |
| <b>MAC Address :</b>     | 00 : 00 : 00 : 00 : 00 : 00                                     |
|                          | Clone MAC Address   |
| <b>NAT :</b>             | Enable <span style="font-size: small;">▼</span>                 |
| <b>IGMP :</b>            | Disable <span style="font-size: small;">▼</span>                |
| <b>Default Route :</b>   | Enable <span style="font-size: small;">▼</span>                 |

---

|                           |   |
|---------------------------|---|
| <b>VPI :</b>              | <input style="width: 80%;" type="text" value="0"/>              |
| <b>VCI :</b>              | <input style="width: 80%;" type="text" value="38"/>             |
| <b>Virtual Circuit :</b>  | Enable <span style="font-size: small;">▼</span>                 |
| <b>Service Category :</b> | UBR <span style="font-size: small;">▼</span>                    |
| <b>PCR :</b>              | <input style="width: 40%;" type="text" value="0"/> cells/second |
| <b>SCR :</b>              | <input style="width: 40%;" type="text" value="0"/> cells/second |
| <b>MBS :</b>              | <input style="width: 40%;" type="text" value="0"/> cells        |

## Static IP Address

When the Router is configured to use Static IP Address assignment for the WAN connection, you must manually assign a global IP Address, Subnet Mask, and Default Gateway IP address used for the WAN connection.

To configure a Static IP Address WAN connection, follow these steps:

1. Change the IP Address, Subnet Mask, and Default Gateway as instructed by your ISP. These are the global IP settings for the WAN interface. This is the “visible” IP address of your account. Your ISP should have provided these IP settings to you. If your ISP also asks you to change DNS server IP addresses, enter the Preferred DNS Server and Alternate DNS Server information manually.
2. Choose the Connection Type from the drop-down menu. This defines both the connection protocol and encapsulation method used for your ADSL service. The available options are *1483 Bridged IP LLC*, *1483 Bridged IP VC-Mux*, *1483 Routed IP LLC*, and *1483 Routed IP VC-Mux*. If you have not been provided specific information for this setting, leave the default setting.
3. If you are instructed to change the VPI or VCI values, type in the values assigned for your account.
4. When you are satisfied that all the WAN settings are configured correctly, click the **Save Settings** button. This will save the settings and reboot the Router to let your changes take effect.
5. Upon restarting, the Router should automatically establish the WAN connection. If it does not, click the **Connect** button at the bottom of this window.

**MANUAL ADSL CONNECTION SETUP**

Please select the appropriate option to connect to your ISP.

|                                  |                           |   |
|----------------------------------|---------------------------|---|
| <input type="radio"/>            | <b>PPPoE/PPPoA</b>        | Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users) |
| <input type="radio"/>            | <b>Dynamic IP Address</b> | Choose this option if your ISP uses Dynamic IP Address over DSL.      |
| <input checked="" type="radio"/> | <b>Static IP Address</b>  | Choose this option if your ISP uses Static IP assignments.            |
| <input type="radio"/>            | <b>Bridge Mode</b>        | Choose this option if your ISP uses Bridge Mode.                      |

---

**STATIC IP ADDRESS INTERNET CONNECTION TYPE :**

Enter the static address information provided by your Internet Service Provider (ISP).

|                          |   |
|--------------------------|---|
| <b>IP Address :</b>      | <input type="text" value="0.0.0.0"/>                |
| <b>Subnet Mask :</b>     | <input type="text" value="0.0.0.0"/>                |
| <b>Connection Type :</b> | <input type="text" value="1483 Bridged IP VC-Mux"/> |
| <b>NAT :</b>             | <input type="text" value="Enable"/>                 |
| <b>IGMP :</b>            | <input type="text" value="Disable"/>                |
| <b>Default Route :</b>   | <input type="text" value="Enable"/>                 |
| <b>Default Gateway :</b> | <input type="text" value="0.0.0.0"/>                |

(The Default Gateway will apply to all WAN connections.)

---

|                           |   |
|---------------------------|---|
| <b>VPI :</b>              | <input type="text" value="0"/>              |
| <b>VCI :</b>              | <input type="text" value="38"/>             |
| <b>Virtual Circuit :</b>  | <input type="text" value="Enable"/>         |
| <b>Service Category :</b> | <input type="text" value="UBR"/>            |
| <b>PCR :</b>              | <input type="text" value="0"/> cells/second |
| <b>SCR :</b>              | <input type="text" value="0"/> cells/second |
| <b>MBS :</b>              | <input type="text" value="0"/> cells        |

## Bridge Mode

For Bridged connections it will be necessary for most users to install additional software on any computer that will use the Router for Internet access. The additional software is used for the purpose of identifying and verifying your account, and then granting Internet access to the computer requesting the connection. The connection software requires the user to enter the User Name and Password for the ISP account. This information is stored on the computer, not in the Router.

To configure a Static IP Address WAN connection, follow these steps:

1. Choose the Connection Type from the drop-down menu. This defines both the connection protocol and encapsulation method used for your ADSL service. The available options are *1483 Bridged IP LLC* and *1483 Bridged IP VC-Mux*. If you have not been provided specific information for this setting, leave the default setting.
2. If you are instructed to change the VPI or VCI values, type in the values assigned for your account.
3. When you are satisfied that all the WAN settings are configured correctly, click the **Save Settings** button. This will save the settings and reboot the Router to let your changes take effect.
4. Upon restarting, the Router should automatically establish the WAN connection. If it does not, click the **Connect** button at the bottom of this window.

**MANUAL ADSL CONNECTION SETUP**

Please select the appropriate option to connect to your ISP.

|                                  |                           |   |
|----------------------------------|---------------------------|---|
| <input type="radio"/>            | <b>PPPoE/PPPoA</b>        | Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users) |
| <input type="radio"/>            | <b>Dynamic IP Address</b> | Choose this option if your ISP uses Dynamic IP Address over DSL.      |
| <input type="radio"/>            | <b>Static IP Address</b>  | Choose this option if your ISP uses Static IP assignments.            |
| <input checked="" type="radio"/> | <b>Bridge Mode</b>        | Choose this option if your ISP uses Bridge Mode.                      |

---

**BRIDGE MODE :**

Use this Internet connection type if you use your Modem as a bridge.

**Connection Type :** 1483 Bridged IP VC-Mux ▾

---

|                           |   |              |
|---------------------------|---|--------------|
| <b>VPI :</b>              | <input style="width: 80%;" type="text" value="0"/>                  |              |
| <b>VCI :</b>              | <input style="width: 80%;" type="text" value="38"/>                 |              |
| <b>Virtual Circuit :</b>  | <span style="border: 1px solid #ccc; padding: 2px;">Enable ▾</span> |              |
| <b>Service Category :</b> | <span style="border: 1px solid #ccc; padding: 2px;">UBR ▾</span>    |              |
| <b>PCR :</b>              | <input style="width: 80%;" type="text" value="0"/>                  | cells/second |
| <b>SCR :</b>              | <input style="width: 80%;" type="text" value="0"/>                  | cells/second |
| <b>MBS :</b>              | <input style="width: 80%;" type="text" value="0"/>                  | cells        |

---

Save Settings
Connect
Cancel

## Wireless Setup

To access the **Wireless Setup** window, click the **Wireless Setup** button in the **Setup** directory.

The two essential settings for wireless LAN operation are the Wireless Network Name (SSID) and Wireless Channel. The SSID (Service Set Identifier) is used to identify a group of wireless LAN components. The SSID can be visible (broadcast) or hidden (not broadcast).

Follow the instructions below to change wireless network settings.

1. The Wireless LAN is enabled by default. To disable the wireless interface, click to deselect the **Enable Wireless** check box. If the wireless interface has been disabled, click the **Enable Wireless** check box again to select it.
2. The **Wireless Network Name (SSID)** can be changed to suit your wireless network. Remember that any wireless device using the access point must have the same SSID and use the same channel.
3. If you want the Router to scan the available channel automatically, tick the **Enable Auto Channel Scan** check box.
4. Select a wireless protocol in the **802.11 Mode** drop-down list.
5. The Hide Wireless Network is not selected by default. To make the wireless network invisible, tick the **Hide Wireless Network** check box.

To configure Wireless Security, select **WEP** or **WPA-Personal** in the Security Mode drop-down list.

**WIRELESS**

Use this section to configure the wireless settings for your D-Link router. Please note that changes made on this section will also need to be duplicated to your wireless clients and PC.

---

**WIRELESS NETWORK SETTINGS**

**Enable Wireless :**

**Wireless Network Name (SSID) :**

**Enable Auto Channel Scan :**

**Wireless Channel :**

**802.11 Mode :**

**Hide Wireless Network :**

---

**WIRELESS SECURITY MODE**

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA-Personal, and None. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server.

**Security Mode :**

---

Please take note of your SSID and security Key as you will need to duplicate the same settings to your wireless devices and PC.

## WEP

WEP (Wireless Encryption Protocol or Wired Equivalent Privacy) encryption can be enabled for security and privacy. WEP encrypts the data portion of each frame transmitted from the wireless adapter using one of the predefined keys. Decryption of the data contained in each packet can only be done if the both the receiver and transmitter have the correct key.

By default, authentication is disabled on the access point. To enable **WEP**, select **WEP** in the **Security Mode** drop-down list.

Select the **WEP Key Length** from the drop-down menu. The available key lengths are **128 bit(26 hex digits)** or **64 bit(10 hex digits)** encryption. In the spaces provided, type in **WEP Key 1**, **WEP Key 2**, **WEP Key 3** and **WEP Key 4**. The length of the character string used of the keys depends on the level (Key Length) of encryption selected. Only one key can be active. The active key is selected in the **Default WEP Key** drop-down list.

Click the **Apply Settings** button to save the settings.

**WIRELESS SECURITY MODE**

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA-Personal, and None. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server.

**Security Mode :** WEP ▼

---

**WEP**

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the router and the wireless stations. For 64 bit keys you must enter 10 hex digits into each key box. For 128 bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. For the most secure use of WEP set the authentication type to "Shared Key" when WEP is enabled.

You may also enter any text string into a WEP key box, in which case it will be converted into a hexadecimal key using the ASCII values of the characters. A maximum of 5 text characters can be entered for 64 bit keys, and a maximum of 13 characters for 128 bit keys.

**WEP Key Length :** 128 bit(26 hex digits) ▼ (length applies to all keys)

**WEP Key 1 :**

**WEP Key 2 :**

**WEP Key 3 :**

**WEP Key 4 :**

**Default WEP Key :** WEP Key 1 ▼

**Authentication :** Open or Shared Key ▼

Please take note of your SSID and security Key as you will need to duplicate the same settings to your wireless devices and PC.

Apply Settings
Cancel

## WPA-Personal

WPA uses an encryption method combined with an authentication procedure that requires an acceptance of a pre-configured password. WPA or Wireless Protection Access is an improved standard of wireless security. The T-KD 318 also supports two common encryption types TKIP and AES (explained below).

To configure WPA settings, select **WPA-Personal** in the **Security Mode** drop-down list.

Select **WPA** to use **TKIP** encryption or select **WPA2** to use **AES** encryption in the **WPA Mode** drop-down list. The encryption algorithm **TKIP** (Temporal Key Integrity Protocol) uses per packet key generation (based on WEP), while **AES** (Advanced Encryption Standard) is a block-based encryption method. Both methods require entry of a pre-shared key to allow association. Type a password from 8 to 64 characters long in the **Pre-Shared Key** field.

Click the **Apply Settings** button to save the settings.

### WIRELESS SECURITY MODE

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA-Personal, and None. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server.

**Security Mode :**

### WPA

Use **WPA or WPA2** mode to achieve a balance of strong security and best compatibility. This mode uses WPA for legacy clients while maintaining higher security with stations that are WPA2 capable. Also the strongest cipher that the client supports will be used. For best security, use **WPA2 Only** mode. This mode uses AES(CCMP) cipher and legacy stations are not allowed access with WPA security. For maximum compatibility, use **WPA Only**. This mode uses TKIP cipher. Some gaming and legacy devices work only in this mode.

To achieve better wireless performance use **WPA2 Only** security mode (or in other words AES cipher).

**WPA Mode :**

### PRE-SHARED KEY

**Pre-Shared Key :**

Please take note of your SSID and security Key as you will need to duplicate the same settings to your wireless devices and PC.

## LAN Setup

To access the **LAN Setup** window, click the **LAN Setup** button in the **Setup** directory.

You can configure the LAN IP address to suit your preference. Many users will find it convenient to use the default settings together with DHCP service to manage the IP settings for their private network. The IP address of the Router is the base address used for DHCP. In order to use the Router for DHCP on your LAN, the IP address pool used for DHCP must be compatible with the IP address of the Router. The IP addresses available in the DHCP IP address pool will change automatically if you change the IP address of the Router. See the next section for information on DHCP setup.

To change the LAN Router IP Address or Subnet Mask, type in the desired values in the Router Settings section and click the **Save Settings** button. Your web browser should automatically be redirected to the new IP address. You will be asked to login again to the Router's web manager.

The DHCP server is enabled by default for the Router's Ethernet LAN interface. DHCP service will supply IP settings to workstations configured to automatically obtain IP settings that are connected to the Router through the Ethernet port. When the Router is used for DHCP it becomes the default gateway for DHCP client connected to it. Keep in mind that if you change the IP address of the Router the range of IP addresses in the pool used for DHCP on the LAN will also be changed. The IP address pool can be up to 253 IP addresses.

There are two options for DHCP service:

- You can use the Router as a DHCP server for your LAN.
- You can disable DHCP service and manually configure IP settings for workstations.

**LAN SETUP**

This section allows you to configure the local network settings of your router. Please note that this section is optional and you should not need to change any of the settings here to get your network up and running.

**ROUTER SETTINGS**

Use this section to configure the local network settings of your router. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.

**Router IP Address :**   
**Subnet Mask :**

**DHCP SERVER SETTINGS (OPTIONAL)**

Use this section to configure the built-in DHCP Server to assign IP addresses to the computers on your network.

**Enable DHCP Server :**   
**DHCP IP Address Range :**  to   
**DHCP Lease Time :**  (seconds)

**NUMBER OF DYNAMIC DHCP CLIENTS:0**

| Computer Name | MAC Address | IP Address | Expire Time |
|---------------|-------------|------------|-------------|
|               |             |            |             |

You may also configure DNS settings when using the Router in DHCP mode (**Advanced > DNS Setup**). When “Obtain DNS server address automatically” is clicked under DNS Server Configuration on the **DNS Setup** window, the Router will automatically relay DNS settings to properly configured DHCP clients. To manually enter DNS IP addresses, click the “Use the following DNS server addresses” radio button and type in a Preferred DNS Server and Alternate DNS Server in the fields provided. The manually configured DNS settings will be supplied to clients that are configured to request them from the Router.

Follow the instructions below according to which of the above DHCP options you want to use. When you have configured DHCP as you want, click the **Apply Settings** button to commit the new settings.

### Use the Router for DHCP

To use the built-in DHCP server, tick the **Enable DHCP Server** check box in the DHCP Server Settings (Optional) section if it is not already selected. The IP address pool settings can be adjusted. The DHCP IP Address Range starts with the lowest available IP address (default = 192.168.1.2). If you change the IP address of the Router this will change automatically to be 1 more than the IP address of the Router. The DHCP IP Address Range ends with the highest IP address number in the pool. Type in the DHCP Lease Time in the entry field provided. This is the amount of time in hours that a workstation is allowed to reserve an IP address in the pool if the workstation is disconnected from the network or powered off.

### Disable the DHCP Server

To disable DHCP, deselect the **Enable DHCP Server** check box in the DHCP Server Settings (Optional) section and click the **Save Settings** button. Choosing this option will gray out most of the setting options on this window and require that workstations on the local network be configured manually or use another DHCP server to obtain IP settings.

If you configure IP settings manually, make sure to use IP addresses in the subnet of the Router. You will need to use the Router’s IP address as the Default Gateway for the workstation in order to provide Internet access.

## Time and Date

To access the **Time and Date** window, click the **Time and Date** button in the **Setup** directory.

The Router provides a number of options to maintain current date and time including NTP.

To configure system time on the Router, select the method used to maintain time. The options available include Network Time Protocol (default), using your computer's system clock (deselect the Automatically synchronize with Internet time servers check box and then click the **Copy Your Computer's Time Settings** button), or set the time and date manually (deselect the Automatically synchronize with Internet time servers check box and make the desired changes).

If you opt to use NTP, you must use the drop-down menu to select the NTP server URL in the First NTP Time Server field. You may also want to choose a Second NTP Time Server using the drop-down menu.

The Router also allows you to set the time zone you are in by using the Time Zone drop-down menu. In addition, you can configure Daylight Saving by ticking the Enable Daylight Saving check box and then using the drop-down menus to configure the desired Daylight Saving Offset and Daylight Saving starting and ending dates.

When you are finished, click the **Save Settings** button to set the system time and date information.

**TIME**

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to automatically adjust the time when needed.

**TIME CONFIGURATION**

**Current Router Time:** Jan 01, 2000 02:38:30

**Time Zone:** (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London ▼

**Enable Daylight Saving:**

Month    Day

**DST Start:** Jan ▼ 1 ▼

**Daylight Saving Dates:**

DST End: Jan ▼ 1 ▼

**AUTOMATIC TIME CONFIGURATION**

**Automatically Synchronise with Internet Time Servers:**

**NTP Time Server:**

**SET THE DATE AND TIME MANUALLY**

**Date:** Year: 2007 ▼ Month: 1 ▼ Day: 1 ▼

**Time:** Hour: 2am ▼ Minute: 38 ▼ Second: 30 ▼